Young Nearby Stars

by

Adam Conrad Schneider

(Under the Direction of Professor Inseok Song)

Abstract

Nearby young stars are without equal as stellar and planetary evolution laboratories. The aim of this work is to use age diagnostic considerations to execute a complete survey for new nearby young stars and to efficiently reevaluate and constrain their ages. Because of their proximity and age, young, nearby stars are the most desired targets for any astrophysical study focusing on the early stages of star and planet formation.

Identifying nearby, young, low-mass stars is challenging because of their inherent faintness and age diagnostic degeneracies. A new method for identifying these objects has been developed, and a pilot study of its effectiveness is demonstrated by the identification of two definite new members of the TW Hydrae Association.

Nearby, young, solar-type stars are initially identified in this work by their fractional X-ray luminosity. The results of a large-scale search for nearby, young, solar-type stars is presented. Follow-up spectroscopic observations are taken in order to measure various age diagnostics in order to accurately assess stellar ages. Age, one of the most fundamental properties of a star, is also one of the most difficult to determine. While a variety of procedures have been developed and utilized to approximate ages for solar-type stars, with varying degrees of success, a comprehensive age-dating technique has yet to be constructed. Often-times, different methods exhibit contradictory or conflicting findings. Such inconsistencies demonstrate the value of a uniform method of determining stellar ages.

With recent advances in the burgeoning field of exoplanet detection, reliable host star ages will be more important than ever in order to attain a rigorous understanding of planetary formation and evolution. The contribution of this work to the domain of stellar chronology for solar-type stars is two-fold: increased precision in relative age-dating by augmenting the cluster data used as age calibrators, and a novel statistical age-dating approach whereby all known stellar properties are used in unison to determine a most likely stellar age. By including additional rich open clusters for which their relative ages in comparison with other clusters are well constrained, the precision of an estimated age can be improved. In addition, by employing an innovative statistical approach in concert with the distributions of the newly added and well-studied clusters, age-dating precision can be further refined. The efficacy and applicability of this advanced age-dating procedure is demonstrated by the target selection strategy for the Gemini Planet Imager. The unified age-dating scheme is combined with the large scale spectroscopic survey to create a comprehensive list of nearby, young, solar-type stars with reliable ages as the optimum targets for the direct imaging of exoplanets.

Index words: Young Stars, Circumstellar Disks, Extrasolar Planets

Young of Nearby Stars

by

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Dedication

This work is dedicated to my parents.

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Chapter 1

Introduction

The need for precise ages is ubiquitous throughout many astrophysical processes, from the formation of planets to the evolution of the Universe. Nevertheless, precise ages are limited to relatively few astronomical entities. The age of the Universe, determined by cosmological model fits to *Planck* telescope measurements of the cosmic microwave background (CMB), is 13.798 ± 0.037 Gyr (Planck Collaboration et al. 2013). The oldest known star in the Milky Way Galaxy for which a reliable age has been determined is HD 140283 (14.46 ± 0.31 Gyr: Bond et al. 2013), determined via modern theoretical isochrones and a well-determined parallax measurement. For nearby, young stars, which are vital to the study of stellar and planetary evolution, relative age precision is typically much worse than the ∼0.3% and ∼2% found for the Universe and Milky Way Galaxy, respectively. Because of the importance of nearby young stars to current research, and the necessity of precise stellar ages for the analysis and interpretation of new findings, I have set forth the goal of identifying new nearby young stars and improving the age-dating precision for nearby solar-type stars.

The quantification of time is absolutely fundamental for any scientific investigation in which evolution occurs. In such cases, the most basic questions one must ask are: "What are the characteristics of this inquiry at time t_1? at time t_2? Which of these characteristics are unchanged and which are different?", and "What can account for those similarities and differences?".

When it comes to stars, the questions are the same, but their incredibly long lifetimes of several billions of years with hardly any changes of appearance make estimating the age of individual stars a challenging task. Estimating their age is not only critical to the study of individual stars, but it also ties closely to proper analyses of many seemingly disparate phenomena (e.g., planetary system formation and evolution, ages of open/globular clusters, ages of galaxies, etc.). Several age-dating methods for stars have been developed including some fundamental (nucleocosmochronometry; Ludwig et al. 2010 and kinematic trace-back; Song et al. 2003), model dependent (isochrones; Hillenbrand & White 2004, asteroseismology; Cunha et al. 2007), and empirical methods (stellar spindown, time dependency of stellar activities, decline in surface lithium; Zuckerman & Song 2004). The recent annual review of stellar age-dating by Soderblom (2010) reiterates that no single age-dating method can reliably determine the age of every type of star.

Age dating improvements can assist in calibrating stellar evolution models. The more accurate age dating techniques we have, the better the models can be calibrated. Models and observations can be combined to help determine the time scales for physical properties of stars and planetary systems. Accurate ages can also help to calibrate the long term evolution of planetary systems. While the ages of stars can have important consequences in many realms of astrophysics, the focus of this dissertation will be on the relevance of precise stellar ages to the study of star and planet formation.

1.1 Why Are Young, Nearby Stars Important?

Imaging and spectroscopic studies of young stars can help reveal how stellar and planetary systems form and evolve. The most conspicuous young stars are found in the closest molecular clouds, such as the Orion giant molecular cloud (Megeath et al. 2012), Taurus-Auriga (Rebull et al. 2011), Ophiuchus (Padgett et al. 2008), Lupus (Spezzi et al. 2011), and Chamaeleon (Young et al. 2005). While studies of these regions have helped broaden our depth and understanding of stellar evolution, the distances to these groups (> 100 pc) make observational studies a challenge.

The discovery of the TW Hya Association (Kastner et al. 1997) showed that young associations of stars could exist without being associated with a nearby molecular cloud. Remarkably, members of this nearby region of recent star formation are still being discovered (Schneider et al. 2012b). After the discovery of the TW Hya Association, a widespread search was executed by several groups to identify additional nearby coeval groups of stars. This led to the discovery of multiple other nearby associations of various ages, including the β Pictoris Moving Group, the Tucana-Horologium Association, the AB Doradus Moving Group, the η Cha cluster, the Columba Association, the ϵ Cha Association, and the Argus Association (see Zuckerman & Song 2004 and Torres et al. 2008 for details).

Studies of planetary systems around stars in young nearby associations has led to many of the most recent pivotal discoveries in the field of planetary science. Circumstellar disks, which are intimately tied to a system's final planetary architecture, have been studied in great detail for many of these associations (e.g. Rebull et al. 2008, Schneider et al. 2012a). These studies have shown how circumstellar disks evolve (Wyatt 2008), and have helped to constrain the era of final mass accretion for terrestrial planets (Melis et al. 2010). Members of young nearby stellar groups also make prime targets for exoplanet direct imaging searches (β Pic - Lagrange et al. 2010, 2M1207 - Chauvin et al. 2004, HR8799 - Marois et al. 2008, κ And - Carson et al. 2013).

The primary factors affecting the detectability of exoplanets in direct imaging surveys are the brightness of the host star, the angular separation of the host star and planet, and the brightness of the planet. There are at least two, and likely three, properties of the observed host star that can affect these characteristics. Two such properties that undoubtedly affect exoplanet detectability are distance and age. The third possible factor is mass, as a planet's mass likely depends on the mass of its host star. McBride et al. (2011), using planet mass and semi-major axis distributions determined from radial velocity surveys, perform Monte Carlo simulations providing detection rates and detected planet properties for various stellar samples using the expected performance of the Gemini Planet Imager (GPI - See Chapter 6). By simulating different input samples based on the three host star properties that affect exoplanet detectability, one can inspect which property is most sensitive to exoplanet detection. Not only did they find that a sample of younger stars are by far more advantageous than samples of more massive or less distant stars, but that a direct imaging search around younger stars is more sensitive to planets with lower masses (see their Figure 5). They find that detection rates are highest around young stars, and, detecting a planet with a mass of $\sim$1 M_{Jup} necessitates a very young sample of stars. Therefore, for GPI, or any other direct imaging campaign, a large sample of young, nearby stars is critical to the success of that program.

1.2 Why Are Precise Ages Important?

In the field of planetary system formation and evolution, and any other young star related science fields (e.g., evolution of circumstellar disks, membership analysis for young clusters, sequential or triggered star formation, etc.), reliable, precise age-dating of young (age$\approx 10^{6-7}$ years) and adolescent (age$\approx 10^{8}$ years) stars is of the utmost importance. One of the most exciting recent advances in astronomy is the study of exoplanetary systems. Our ability to measure precise stellar/planetary physical parameters with modern telescopes and instruments surpasses our capacity to precisely determine reliable stellar ages. The limitation in our endeavor toward the complete theory of planet formation and evolution is not set by our ability to discover them, but by the inferior precision of stellar age-dating.

Detectability and analysis of self-luminous giant planets depends sharply on planet age (Fortney et al. 2008). These models highlight the importance of observing young targets and how an incorrect age can lead to an inaccurate determination of planet mass. Therefore, having a reliable age estimate for direct imaging target stars is critical to the overall success of any direct imaging campaign. Figure 1.1 highlights the importance of an accurate stellar age when determining the mass for directly imaged exoplanets.

There are two prominent models which are currently thought to describe how planets form, the core accretion model of Marley et al. (2007) and the hot-start model of Burrows et al. (2003). In the core accretion model, planets are gradually built up by first forming a core by the accretion of planetesimals in the material which surrounds a star. Gas rapidly accretes onto the cores to form gas giant planets (Marley et al. 2007). In the hot-start model, giant planets are assumed to form like stars, possibly through the direct collapse of a disk instability. The differences between how these two models function has direct consequences on the predicted properties of young gas giants. Gas giants formed by core accretion are cooler, smaller, less luminous, and take longer to evolve than those formed in the hot-start model. Therefore, direct observations of luminosities from young Jupiter analogs will allow us to probe which model best describes planetary evolution. Even with the relatively few number of directly observed exoplanets to date, the hot-start models produce better matches to the observed planets than the core accretion models (see Figure 4 of Janson et al. 2011). This same figure also highlights the importance of having an accurate age by which to compare the observed properties of directly imaged extrasolar planets to the models.

The Gemini Planet Imager (GPI: PI-Bruce Macintosh), to be delivered in 2013, is a near-infrared coronagraph aimed at imaging young exoplanets in thermal emitted light. The GPI Exoplanet Survey (GPIES: co-PIs - Bruce Macintosh & James Graham), the only campaign of any size to be accepted for GPI, will carryout over 890 hours of observations

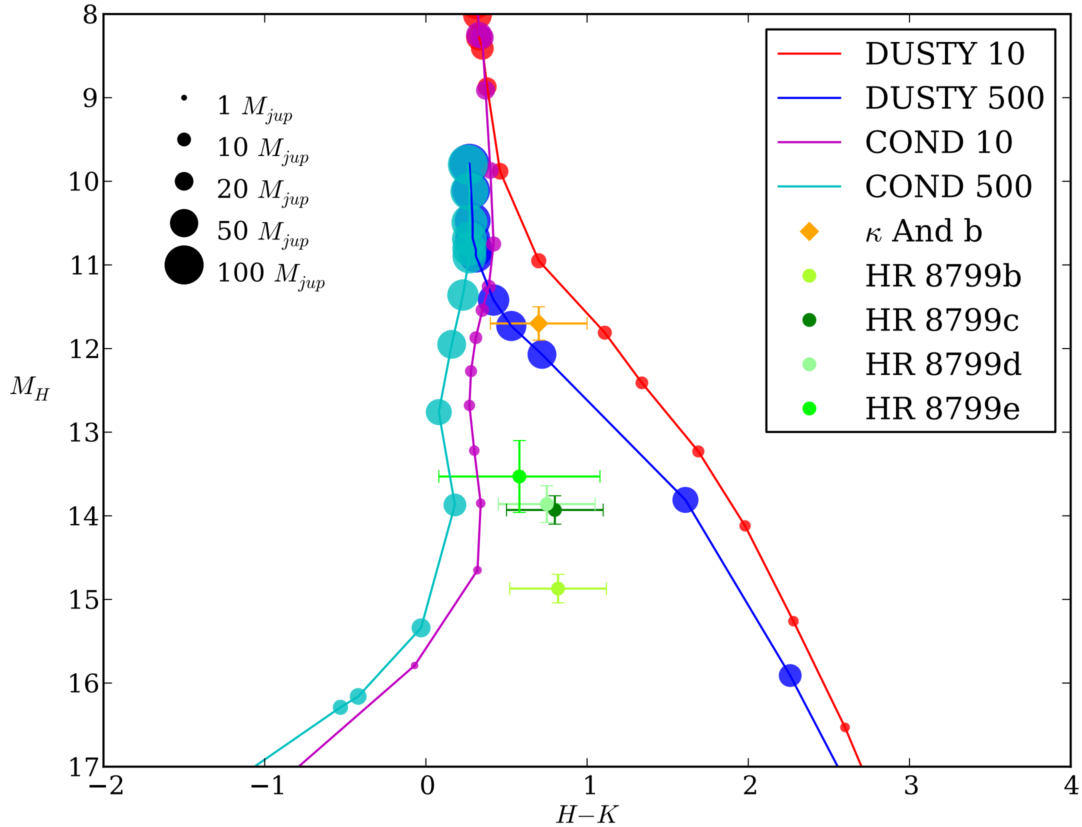

Figure 1.1 A color-magnitude diagram highlighting the importance of accurate ages for mass determinations of directly imaged exoplantets. DUSTY (Baraffe et al. 2003) and COND (Chabrier et al. 200) evolutionary tracks of 10 and 500 Myr are plotted. The symbol sizes along each track correspond to the mass in Jupiter masses, as given in the upper left hand corner of the figure. The positions of the directly imaged exoplanets around HR 8799 (Marois et al. 2008 and Marois et al. 2009) and κ And (Carson et al. 2013) are also plotted.

over the next 3 years around carefully selected targets (∼600 total). Detailed Monte-Carlo simulations indicate the GPIES survey will discover ∼50 exoplanets over the lifetime of the GPI instrument, increasing the number of imaged exoplanets by an order of magnitude. This large sample will for the first time match the statistical power of existing studies of older planets using indirect techniques. However, even with images of ∼50 exoplanets, the amount of useful information we can extract from the gathered data will be limited by our knowledge of the intrinsic properties of the host star of each discovered exoplanet. To maximize the scientific result from this large-scale survey, and to make a significant step toward the eventual goal of obtaining a theory of planet formation and evolution, one has to discern as precisely as possible the ages of GPIES target stars. We at the University of Georgia (Dr. Inseok Song and myself) were tasked with the responsibility of target preparation for the GPIES survey.

GPIES target star age precision is currently limited by placement into one of six age bins (∼10 Myr, ∼30 Myr, ∼70 Myr, ∼100 Myr, ∼300 Myr, $\gtrsim$600 Myr). Therefore, if a faint (M_k≈19 mag) common proper motion object is discovered around a GPIES target, it can be either an ∼10 Jupiter mass planet (if age ∼600 Myr) or an ∼1 Jupiter mass planet (if age ∼10 Myr) (Fortney et al. 2008). An imprecise age for a planet (deduced from its host star) can lead to a very inaccurate analysis of its internal structure, atmospheric physics, and mass. Although our current age-dating precision can reasonably discern ∼10 Myr old stars from ∼600 Myr old stars, the limiting factor in the final analysis of results from upcoming next generation exoplanet surveys (with GPI, SPHERE, P1640, or HiCIAO) will be age-dating precision. To achieve the most advantageous results of such a survey, target prioritization and characterization requires dependable knowledge of stellar ages.

Without the results of next generation major astrometric missions (e.g., GAIA, Pan-STARRS; to place stars on a color-magnitude diagram against theoretical isochrones) or photometric monitoring projects (e.g., LSST; to age-date via asteroseismology), improving age-dating methods is a daunting and challenging task. However, by adding more open clusters as primary age calibrators and employing a modern statistical method, improvements can be made to current age-dating precision (see Chapter 5). One of the goals of this work is to develop a unified age-dating scheme for young and adolescent solar-type field stars which will provide estimated numeric ages and uncertainties instead of the current status of relative ordering of ages into age bins.

This thesis is organized as follows: a summary of age-dating techniques is given in Chapter 2. A new method of identifying nearby young late-type stars is given in Chapter 3. The identification of nearby young solar-type stars is presented in Chapter 4. This is followed by a new method of age determination for solar-type stars in Chapter 5. The application of the new age-dating tool developed in Chapter 5 to the targets prepared for the Gemini Planet Imager is given in Chapter 6, along with a discussion of future work in the field of stellar age-dating.

Chapter 2

Age Diagnostics

2.1 All Spectral Types

The only age-dating method that can be used effectively for stars of any spectral type is to determine convincingly that a star is a member of a moving group, cluster, or association. Ages of moving groups, clusters, and associations are typically more accurate than ages derived for single stars, and can be inferred from the properties of multiple members taken as an ensemble, many times with methods inapplicable to single stars. Five such methods are main-sequence turn-off (MSTO) ages, pre-main sequence (PMS) ages, identification of the lithium depletion boundary (LDB), white dwarf (WD) cooling ages, and kinematic traceback.

Hydrogen burning lifetimes are inversely related to stellar mass. Therefore, the turn-off point of a star cluster on an Hertzsprung-Russell (HR) diagram will become redder and less luminous with time. For a sufficiently rich cluster, the location of the uppermost point of its main sequence can be used to estimate the age of the cluster (Patenaude 1978). An HR diagram, combined with theoretical or empirical isochrones, can also be used to estimate ages based on the PMS populations of young clusters (Hillenbrand & White 2004).

Determining ages from the LDB requires identifying the mass at which lithium is fully depleted in the spectra of very low mass stellar and substellar members of a coeval group of stars. Determining an LDB age has observational limitations, as it requires medium or high resolution spectra of intrinsically faint red objects. To date, this method of determining open cluster ages has been applied to seven different stellar groups: α Persei (85 $\pm$ 10 Myr; Barrado Y Navascués et al. 2004), Blanco 1 (132 $\pm$ 24 Myr; Cargile et al. 2010b), IC 2391 (50 $\pm$ 5 Myr; Barrado Y Navascués et al. 2004), IC 2602 (46 $\pm$ 6 Myr; Dobbie et al. 2010, IC 4655 (28 $\pm$ 5 Myr; Manzi et al. 2008), NGC 2547 (35 $\pm$ 4 Myr; Jeffries & Oliveira 2005) and the Pleiades (130 $\pm$ 20 Myr; Barrado Y Navascués et al. 2004). Open cluster age estimates from LDB determinations are typically $\sim$120-160 % of estimates using MSTO ages, the only exception being IC 4665. The lack of convective-core overshoot considerations for MSTO ages, which can prolong main sequence lifetimes by mixing additional hydrogen into stellar cores, is a likely contributor to this discrepancy. Cargile et al. (2010b) show that a MSTO ages utilizing a model that includes moderate amounts of core overshoot are consistent within their uncertainties to LDB determined ages.

Ages can also be derived via precise WD luminosities compared with WD cooling models. Ages of open clusters determined in this fashion agree well with MSTO ages (DeGennaro et al. 2009).

For kinematic traceback, one must identify coeval stars with similar galactic space motions that are not gravitationally bound. These slowly dispersing, yet similar space motions can be traced backwards in time to find when the group was in closest proximity, at which point the expansion age is determined. This technique is advantageous because it avoids any model dependencies. It has been utilized effectively to determine the age of the β Pic moving group (Song et al. 2003), though attempts to apply this technique to the TW Hya Association were unsuccessful (Weinberger et al. 2013).

Stellar Kinematics

Nearby young moving-group members have been shown to occupy a unique region of UVW space[1] (Zuckerman & Song 2004 and Torres et al. 2008). While UVW space motions can be used effectively as an age indicator for identifying nearby young stars, they are insufficient for age estimation or stellar group membership without additional age information. Figure 2.8 shows UVW space motions for all Hipparcos stars from the XHIP catalog, along with the "good box" defined in Zuckerman & Song (2004) where nearby, young stars are found. Figure 2.8 reiterates that although young, nearby stars occupy a somewhat confined region of UVW space, that area of space is not unique to young stars alone. Therefore, age assignations based solely on a star's kinematics are unsound.

2.2 Single Stars

Stellar properties relating to age can be divided into two categories, which are deemed in this work as age indicators and age evaluators. Age indicators are properties that can be used to identify potential young stars, but, for the most part, are difficult to determine ages from directly. Age evaluators are measurements that can be used to directly estimate a stellar age. Some properties are potentially useful as indicators and evaluators. Unless otherwise stated, the following summary of age diagnostics refers to age evaluators. A visual representation of the usefulness of common age-evaluators as a function of stellar mass is shown in Figure 2.1.

[1] UVW are defined with respect to the Sun. U is positive toward the Galactic center, V is positive in the direction of Galactic rotation, and W is positive toward the north Galactic pole.

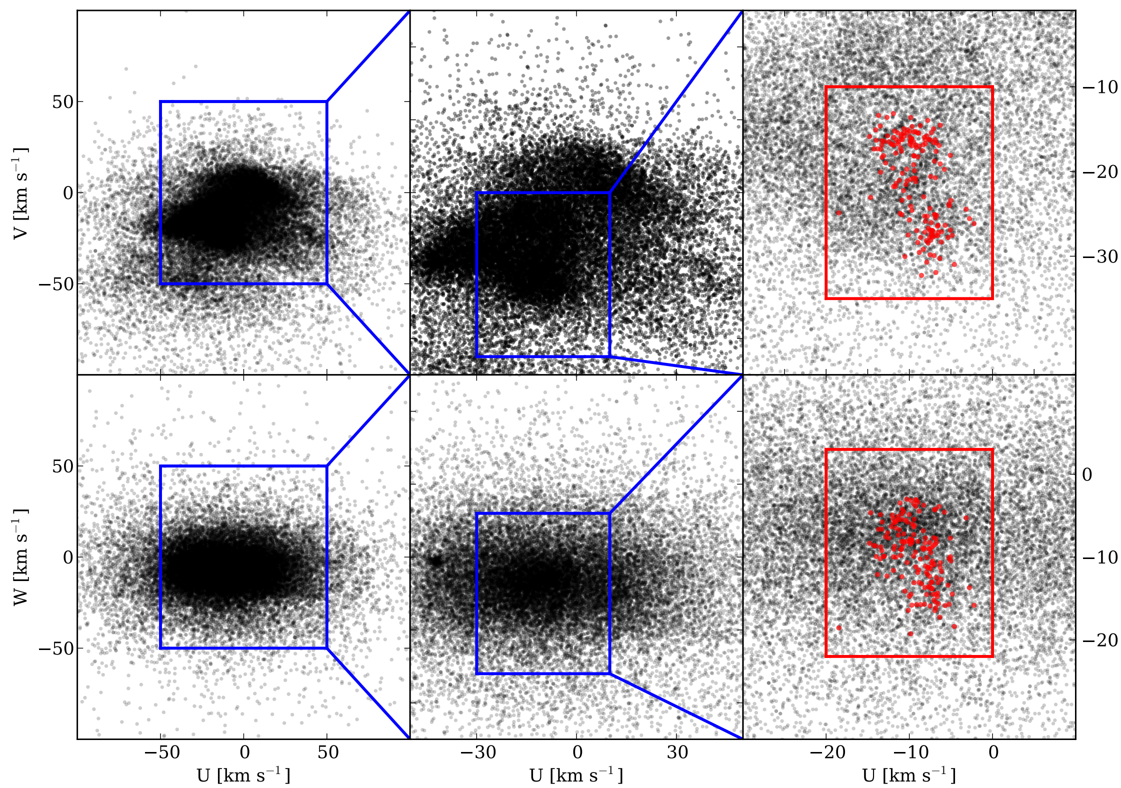

Figure 2.1 UVW space motions of Hipparcos stars from the XHIP catalog (black symbols). The red box indicates the "good box" defined in Zuckerman & Song (2004) where nearby, young stars tend to reside. The red symbols in the right hand plots indicate members of the TW Hya Association (age ∼8 Myr; Zuckerman & Song 2004) the β Pictoris Moving Group (age ∼12 Myr; Song et al. 2003), the Tucana-Horologium Association (age ∼30 Myr; Torres et al. 2008), and the AB Doradus Moving Group (age ∼70 Myr; Torres et al. 2008).

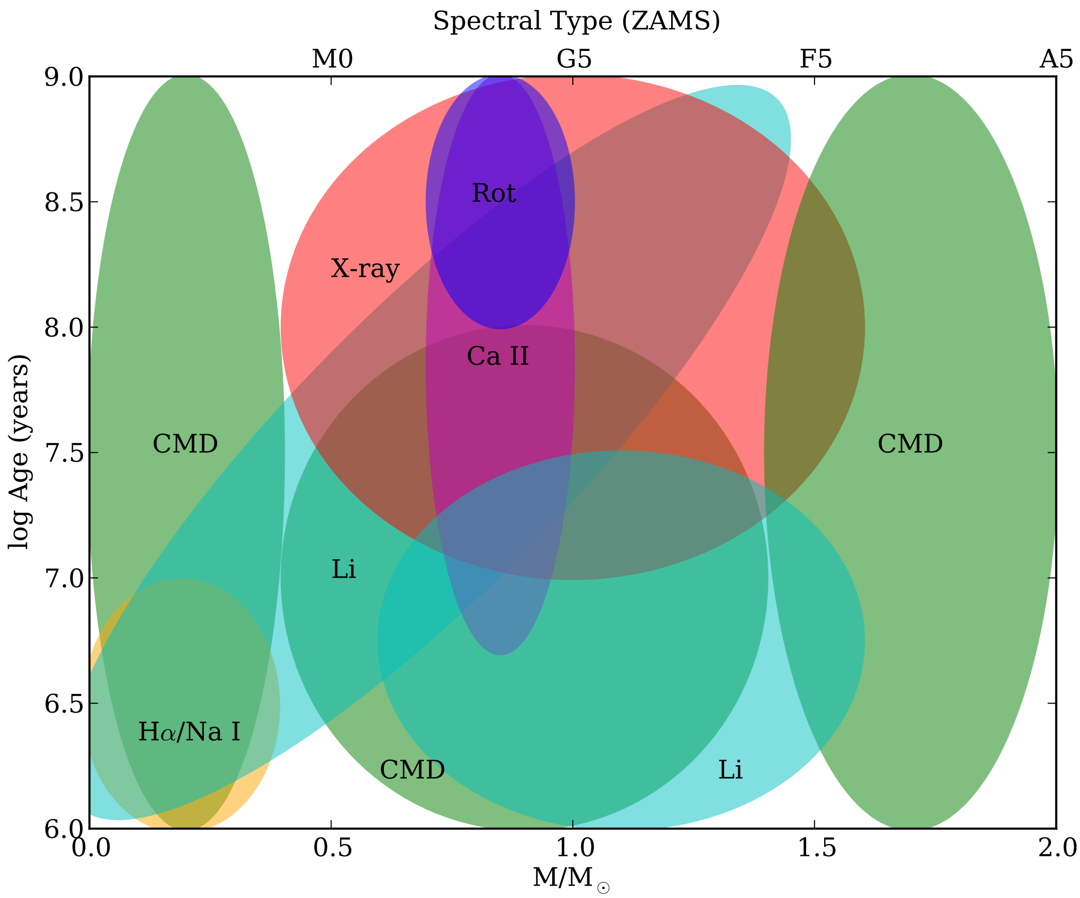

Figure 2.2 The effectiveness of various age-evaluators according to stellar mass. The ellipse boundaries are approximations. Abbreviations in the figure are defined as follows: CMD = placement on a color-magnitude diagram, Hα = Hα emission, Li = Lithium absorption, Ca = Ca II H & K emission, Rot = rotation rate, and X-ray = X-ray luminosity.

2.3 Late-type Stars

Late-type stars (M spectral types) are typically age-dated by placing the star on a color-magnitude diagram (CMD) and comparing its position with theoretical or empirical evolutionary tracks. This method requires a precise distance measurement, which is unavailable for most late-type stars because of their inherent faintness. Activity indicators (e.g., Hα emission, X-ray emission) cannot readily discern young ($\lesssim$100 Myr) stars from a pool of old ($\geq$600 Myr) field stars (Shkolnik et al. 2009). The Li λ6708 absorption feature, an effective age evaluator for young FGK-type stars in the age range of 10-100 Myr, becomes increasingly sensitive to mass and age for M-type stars. The age at which a star becomes hot enough to burn lithium in its core can be seen in the so-called "lithium depletion boundary", which can affect early to mid-M type stars at ages as young as the Beta-Pictoris Moving Group (BPMG; $\sim$12 Myr). Therefore, age-dating late-type stars with ages > 10 Myr using Lithium becomes impractical. Lawson et al. (2009) show that spectroscopic indices, such as the Na I index, that are sensitive to a star's surface gravity can be used to distinguish relative age differences of late-type members of nearby clusters and moving groups. Some gravity sensitive spectral features will strengthen with age as a star evolves and contracts toward the main sequence. In particular, for stars of spectral type M3 and later, the Na I λ8183/8195 doublet index shows a distinct difference between field dwarfs (strong absorption), young stars ($\lesssim$12 Myr) (reduced absorption), and giants, in which the feature is mostly absent (see Figure 3.5).

Late-Type Indicators

Although several young ($\lesssim$100 Myr), nearby ($\leq$80 pc) moving groups were identified during the past decade (Zuckerman & Song 2004, Torres et al. 2008), these include few low-mass members (spectral types later than $\sim$M3). This is mainly due to the fact that unambiguous identification of young M-type stars is difficult if a well-measured trigonometric parallax is missing.

Some young M-type stars have been identified, though they are either co-moving companions of earlier spectral types or in a group of very young ($\lesssim$10 Myr) stars that are relatively confined to a small region of the sky (e.g., TWA and the subregions of the Scorpius Centaurus Complex). With a well-measured trigonometric parallax, one can find a young M-type field star (e.g. AP Col; Riedel et al. 2011), however, a systematic search for young M-type stars needs to wait for the next generation of parallax missions, such as *Gaia*, *Pan-STARRS*, etc.

Rodriguez et al. (2011) and Shkolnik et al. (2011) show that UV-excess is an effective tool for identifying young, M-type objects. M-type stars have multiple emission lines sensitive to age in UV wavelengths. Such a method of identifying young stars was employed in Rodriguez et al. (2011) utilizing UV-excess measurements from the *Galaxy Evolution Explorer* (GALEX; Martin et al. 2005) and led to the proposal of several new TWA candidates. Shkolnik et al. (2011), using GALEX in a similar way, independently confirm the membership of one of the proposed candidates of Rodriguez et al. (2011) (TWA 32) and propose another additional member (TWA 31).

Using the analysis of mid-IR excess fractions for young, nearby associations, we show that a significant number of M-type stars display mid-IR excess emission in stellar groups younger than $\sim$10 Myr (Schneider et al. 2012b). Riaz et al. (2012) found a similar result in their analysis of primordial disk fractions for young clusters, namely that disks around later-type stars remain in the primordial stage for a longer period of time than disks around stars of earlier spectral types. Identification of nearby, young, late-type stars utilizing mid-IR excess is described in detail in Chapter 3.

2.4 Solar-type Stars

For solar-type stars (FGK), ages are typically estimated by comparing a specific age diagnostic with those of a few well-studied clusters, such as the Pleiades and Hyades. There are a variety of age-dating methods that have been considered, including placement on a color-magnitude diagram (Hillenbrand & White 2004), stellar rotation (Barnes 2007), Li λ6708 absorption (Randich et al. 2001), X-ray brightness (Mamajek & Hillenbrand 2008), Hα emission (Panagi & O'Dell 1997), Ca II H & K indices (Mamajek & Hillenbrand 2008), and Galactic space motions (Hanninen & Flynn 2002). The basic science and limitation of each method are described in the following sections.

Evolutionary Tracks

To estimate the age of a solar-type star using the method of evolutionary tracks, it is placed on a CMD. Its position on the diagram is then compared to theoretical evolutionary tracks. This method requires knowledge of the temperature, luminosity, extinction coefficient, and metallicity (with some uncertainty in each) for the star in question. To derive accurate luminosities (or absolute magnitudes), accurate parallax measurements are required. Isochrone comparisons work best for late-type PMS stars and early type stars evolving rapidly off main sequence. Once the main sequence is reached for solar and late-type stars, luminosity only varies slightly with age, making CMD based age-dating impractical.

Lithium Abundance

As a star ages, convective mixing can bring surface material into the stellar interior where the temperature is high enough for lithium burning to occur. The total lithium content of a star will decline as it ages. A star's lithium abundance is determined spectroscopically (specifically the 6708 Å line). Lithium is not a valid age estimator for stars earlier than mid-

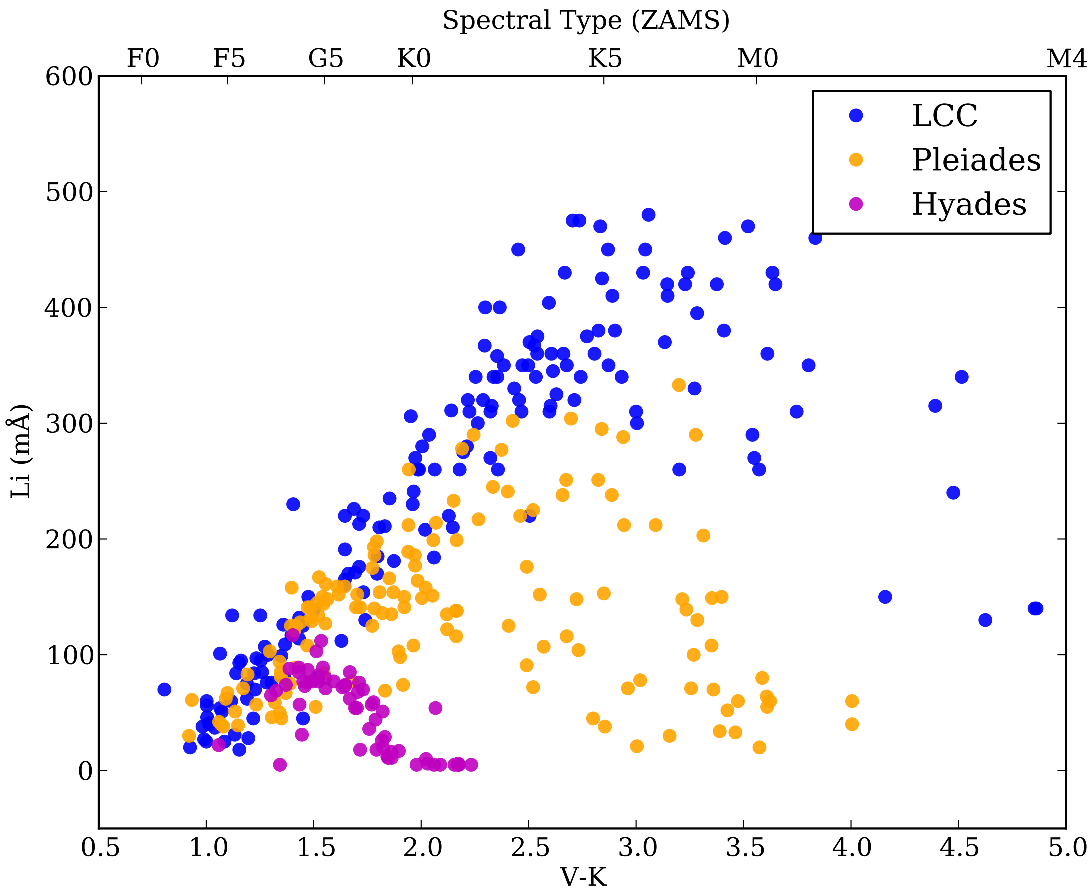

Figure 2.3 Lithium abundances as a function of spectral type for the Lower-Centaurus Crux (10 Myr; Song et al. 2012), Pleiades (100 Myr; Luhman et al. 2005), and Hyades (625 Myr; Perryman et al. 1998) stellar groups.

F because of their smaller convection layer or in stars later than mid-M, for which lithium is rapidly depleted or for which high enough internal temperatures are never reached. A plot of lithium abundances as a function of age and spectral type is displayed in Figure 2.2. V-K color is chosen as a proxy for spectral type in Figures 2.3 - 2.8 because of its long baseline and the availability of V and K magnitudes.

Rotation Rate (Gyrochronology)

Stellar rotation rates decrease as a star ages (Skumanich 1972). A star will lose angular momentum as it ages because of magnetized stellar wind braking. The mass lost through stellar winds carries angular momentum away from the star. Thus the outer convective envelope spins down, creating a shear between it and the inner radiative zone beneath. This shear slows down the overall rotation of the star with time. The spectroscopically measured $v\sin i$ parameter is commonly used as an age indicator, but uncertainty is high because of the ambiguity of $\sin i$ (Vican 2012). A plot of $v\sin i$ values as a function of age and spectral type is displayed in Figure 2.3. Rotation generates large regions of magnetic spots, leading to optical photometric variability. Photometric time-series surveys, from which a rotational period can be measured, are more beneficial (no $\sin i$), but require long-term photometric monitoring. Age-dating with gyrochronology has shown the existence of two well-defined sequences representing two different rotational states (the fast (convective, or C) and the moderate to slow (interface, or I) sequences; Barnes 2003) within the same cluster. While many stars show an increase in period with a decrease in temperature, there exists a second sequence of rapid rotators with little to no temperature dependence. Barnes (2003) attribute these two different rotational sequences to the interaction of the radiative cores and convective envelopes of stars. Those stars on the C sequence have radiative cores and convective envelopes decoupled, while stars on the I sequence do not. A discussion of the limitations of gyrochronology appears at the end of Section 5.2. A plot of rotational periods as a function of age and spectral type is displayed in Figure 2.4.

Ca II H & K

Chromospheric activity decreases as a star ages. It is related to the stellar magnetic dynamo, the strength of which scales with rotational velocity (Mamajek & Hillenbrand 2008). The shear caused by stellar rotation can cause chromospheric heating, forming emission

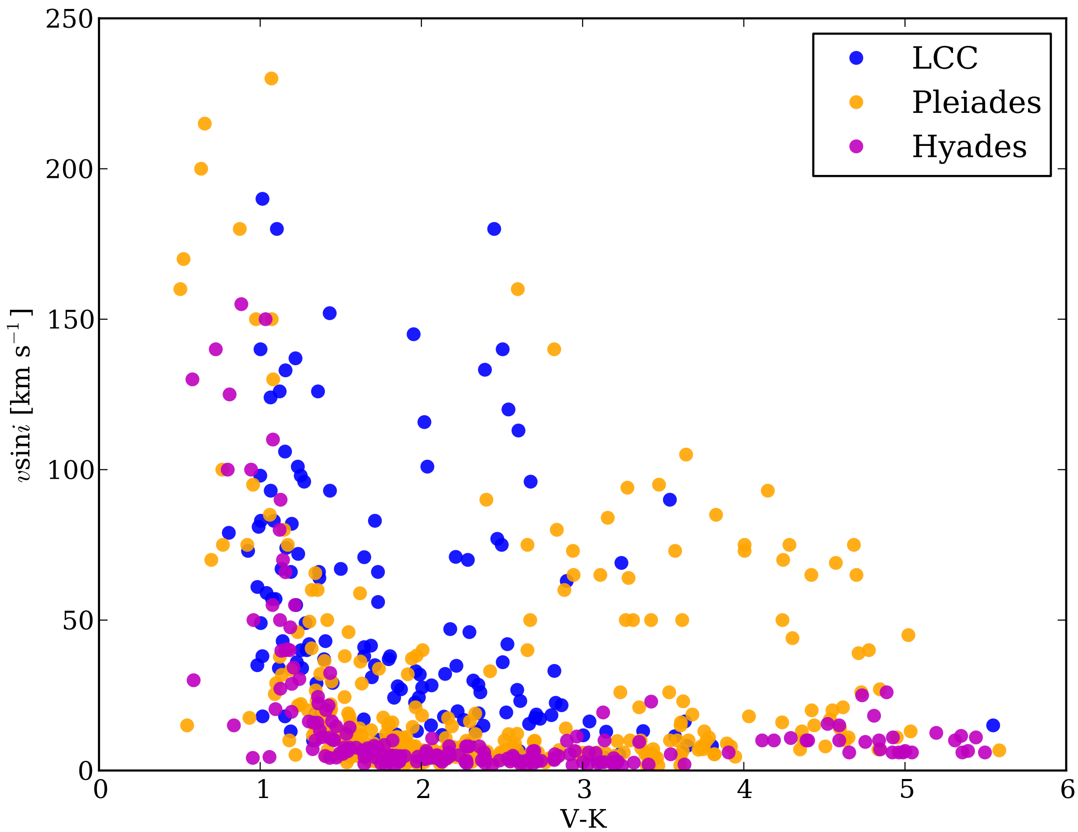

Figure 2.4 $v\sin i$ as a function of spectral type for the Lower-Centaurus Crux (10 Myr; Song et al. 2012), Pleiades (100 Myr; Luhman et al. 2005), and Hyades (625 Myr; Perryman et al. 1998) stellar groups.

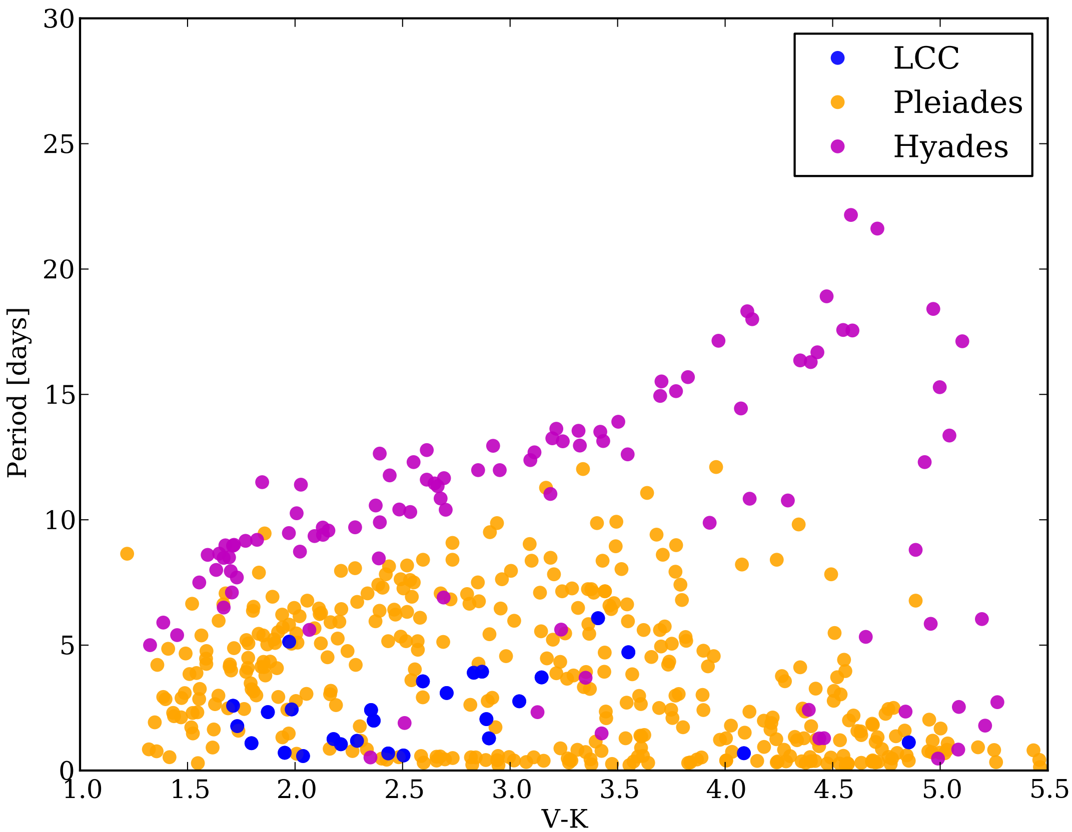

Figure 2.5 Rotational period as a function of spectral type for the Lower-Centaurus Crux (10 Myr; Song et al. 2012), Pleiades (100 Myr; Luhman et al. 2005), and Hyades (625 Myr; Perryman et al. 1998) stellar groups.

lines. Ca II H & K emission lines strengths are one measure used to approximate levels of chromospheric activity. Since these features are in the cores of strong absorption lines, the photosphere is suppressed, and we can see the emission from the chromosphere. Ca II H & K lines are commonly parameterized by the activity index R'_{HK}. The R'_{HK} index was first defined by Noyes et al. (1984) as:

$$R'_{HK} = R_{HK} - R_{phot} \tag{2.1}$$

where R_{phot} is the photospheric contribution to the flux, defined as

$$logR_{phot} = -4.898 + 1.918(B-V)^2 - 2.893(B-V)^3 \tag{2.2}$$

and

$$R_{HK} = 1.34 \times 10^{-4} C_{cf} S \tag{2.3}$$

where C_{cf} is a conversion factor given by:

$$logC_{cf} = 0.25(B-V)^3 - 1.33(B-V)^2 + 0.43(B-V) + 0.24 \tag{2.4}$$

and S is the S-index defined as:

$$S = \alpha \frac{H+K}{R+V}. \tag{2.5}$$

H and K are two 1.09 Å wide bandpasses centered approximately on 3934 and 3967 Å, R and V are two 20 Å wide filters at 3901 and 4001 Å, and α is an instrumental calibration factor.

This method is currently only viable for a small range of stellar masses (F7-K2, Mamajek & Hillenbrand 2008). A plot of R'_{HK} values as a function of age and spectral type is displayed

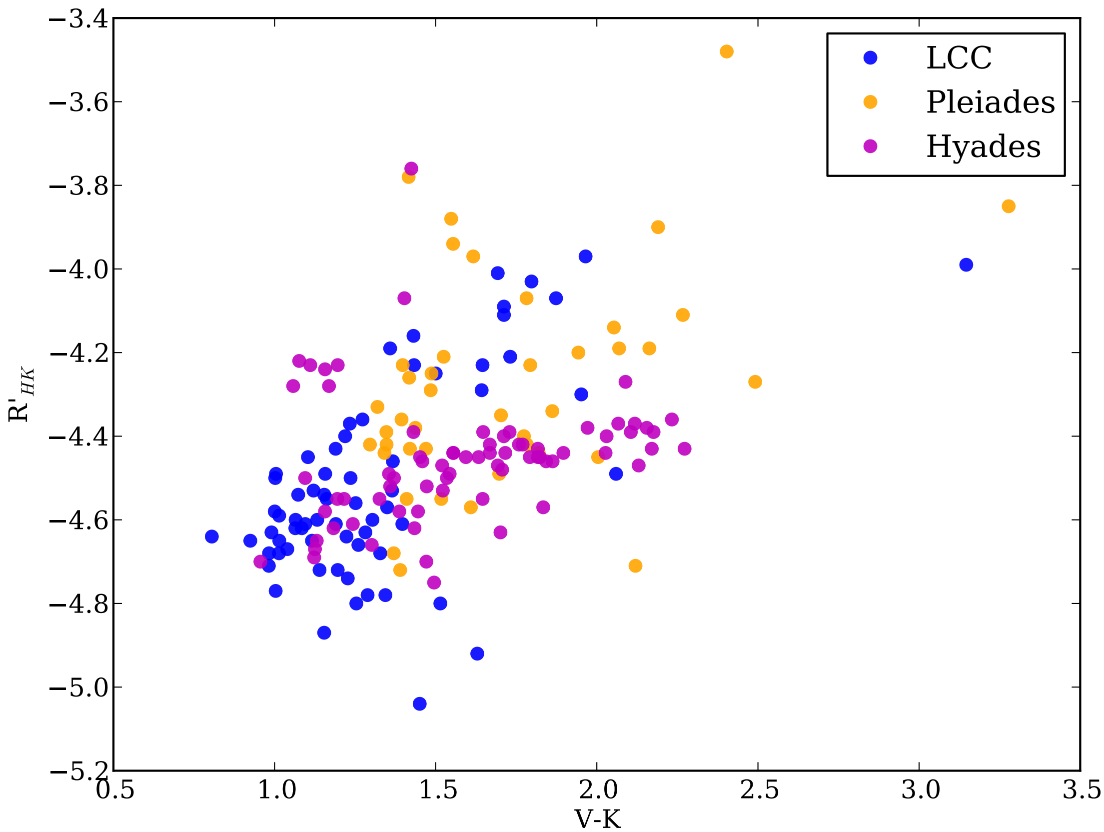

Figure 2.6 R'$_{HK}$ as a function of spectral type for the Lower-Centaurus Crux (10 Myr; Song et al. 2012), Pleiades (100 Myr; Luhman et al. 2005), and Hyades (625 Myr; Perryman et al. 1998) stellar groups.

in Figure 2.5.

Hα Emission

Hα emission and absorption line strengths are another common method of approximating levels of chromospheric activity. Hα emission is also used to identify stars that are actively accreting. A plot of Hα equivalent widths as a function of age and spectral type is shown in

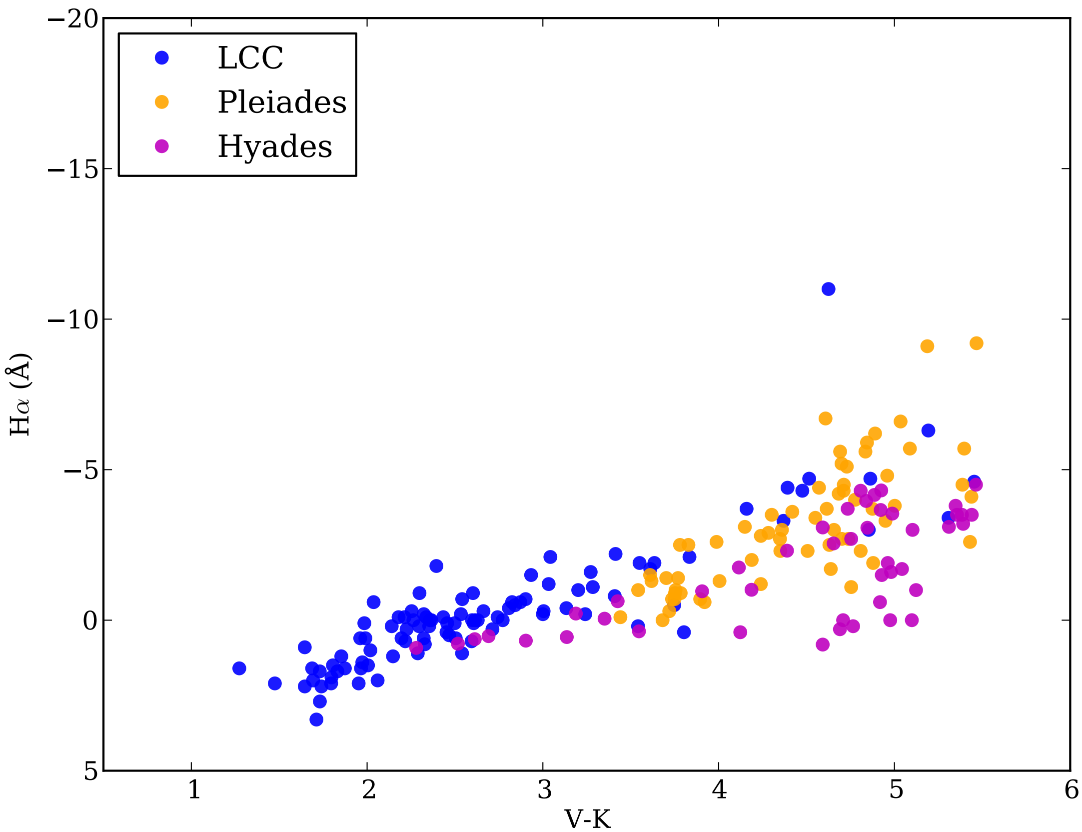

Figure 2.7 Hα as a function of spectral type for the Lower-Centaurus Crux (10 Myr; Song et al. 2012), Pleiades (100 Myr; Luhman et al. 2005), and Hyades (625 Myr; Perryman et al. 1998) stellar groups.

Figure 2.6.

X-ray Luminosity

A third method of estimating chromospheric activity is X-ray activity. X-ray brightness is commonly parameterized by the fractional X-ray luminosity, or L_X/L_{bol}. X-ray luminosity is typically used as an age indicator (Torres et al. 2008), though there is potential to use

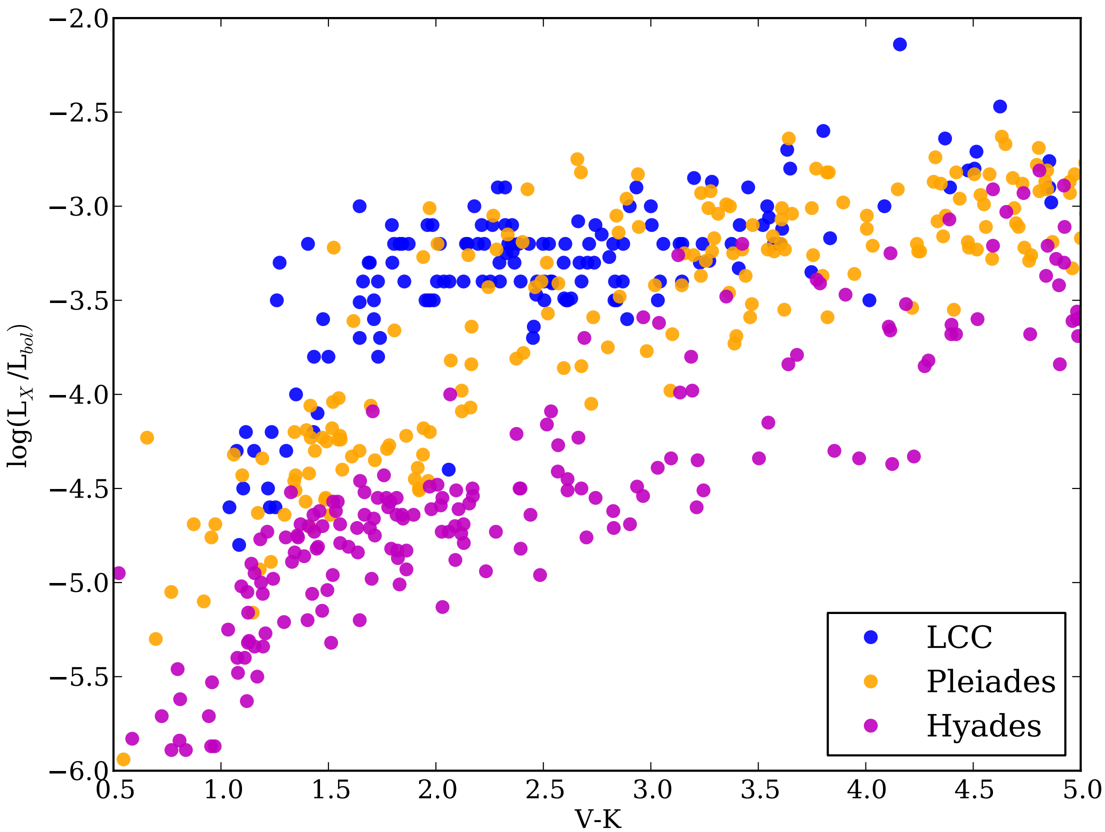

Figure 2.8 The fractional X-ray luminosity as a function of spectral type for the Lower-Centaurus Crux (10 Myr; Song et al. 2012), Pleiades (100 Myr; Luhman et al. 2005), and Hyades (625 Myr; Perryman et al. 1998) stellar groups.

it as an age evaluator (see Section 5.2). Distinguishing relative ages for stars younger than $\lesssim$ 100 Myr can be difficult because L_X/L_{bol} saturates at $\sim 10^{-3}$. A plot of fractional X-ray luminosities as a function of age and spectral type is displayed in Figure 2.7.

Solar-Type Indicators

Dust Luminosity

By identifying debris disk host stars via their excess infrared emission above what is expected from a stellar photosphere, Rhee et al. (2007) show a clear trend of decreasing fractional infrared luminosity versus time for stars with ages greater than 10 Myr. Studies using Spitzer made a substantial contribution to the study of debris disks around sun-like stars, both in quantity and analysis (e.g. Trilling et al. 2008, Carpenter et al. 2009, and Plavchan et al. 2009). Trilling et al. (2008) found that disk activity for stars with ages > 1 Gyr declines very slowly, which directly contrasts the more rapid decay found around stars with ages from 10 Myr to 1 Gyr. They suggest this may be a sign that disks around stars with younger ages are likely due to events analogous to the era of late heavy bombardment in our own solar system. Carpenter et al. (2009) confirmed the findings of Rhee et al. (2007) of decreasing disk luminosity with age. Plavchan et al. (2009) find that the prevalence of bright 70 μm excess is distinctly different for older solar-type and younger late-type ($T_{star} < 5000$ K) stars. The vast majority of the debris disks discovered by IRAS and Spitzer are cold (T < 150K) and exist at distances of ten to hundreds of AU from their host star. Instances of warm dust (T > 150K) are much rarer (Morales et al. 2011 and references therein) and can provide additional age constraints. A rapid rise of dust luminosity at young stellar ages due to warm dust is predicted by simulations, and is ascribed to the beginning stages of oligarchic growth (Kenyon & Bromley 2008). Currie et al. (2008a, 2008b, 2009) find a dust luminosity peak around 10-20 Myr for intermediate mass stars. Melis et al. (2010) find the epoch of final mass accretion of terrestrial planets to be 30-100 Myr for solar type stars, and 10-30 Myr for intermediate mass stars (1.5-8.0 $M_\odot$).

2.5 Early-type Stars

Early-type stars are typically age dated by placement on a color-magnitude diagram in comparison to empirical or theoretical isochrones (e.g., Lowrance et al. 2000, Song et al. 2001). This technique requires a well determined distance, which is not known for most stars. Most errors are due to assigning spectral types based on colors (affected by extinction, metallicity, binarity). Stellar rotation can also modify the evolutionary rates (Rieke et al. 2005). Rhee et al. (2007) find that dust emission around A-F type stars with ages ranging from 10 to 50 Myr is $\sim$35 times larger than that found around stars with similar spectral types and ages $>$ 500 Myr. Therefore, a large dust luminosity can be indicative of a young age for early-type stars, but because of the lack of measurable age diagnostics for early-type stars, they are not considered in this work. However, Mamajek (2012) successfully used the existence of a later-type co-moving companion to reevaluate the age of the controversial planet-hosting star Fomalhaut. Such a method of calibrating early-type star ages show great potential (see Section 7.2).

Chapter 3

Identification of Young M-type Stars

Low-mass stars are the most abundant stellar constituent in our Galaxy and are now known to be likely the typical planet hosts, thanks to recent radial velocity and microlensing results (e.g., Gaudi et al. 2008). Unlike stars with spectral types A-K, M-type stars are somewhat underrepresented in catalogs of nearby stars because of their inherent faintness. Therefore, a survey of nearby young M-dwarfs cannot rely upon existing catalogs of bright stars (such as Hipparcos). In addition, many age diagnostics are degenerate for later spectral types (see Section 2.3). In this Chapter, mid-IR excess emission is used to locate previously unidentified young, low-mass stars. Portions of this Chapter appear in Schneider et al. (2012b).

Based on the Wide-field Infrared Survey Explorer (WISE) channel 4 at 22 μm, for M-type members with spectral types between M0 and M6, Schneider et al. (2012a) derive updated excess fractions of 45^{+15}_{-13}% for the $\sim$5-8 Myr (Luhman & Steeghs 2004) η Cha cluster, and 21^{+12}_{-6}% for members of the TW Hydrae Association ("TWA" – age $\sim$8 Myr; Zuckerman & Song 2004). For the $\sim$12 Myr old β Pictoris Moving Group (BPMG – age $\sim$12 Myr; Song et al. 2003), no evidence was found for protoplanetary (primordial or transitional) disks. Of 20 M-type stars in the BPMG in this spectral range, only one case of marginal 22 μm excess was recovered, coming from a well-known debris disk bearing member AU Mic. This implies that M-type stars with spectral types between M0 and M6 exhibiting mid-IR excess are very likely young (age $\lesssim$ 10 Myr).

Using the fact that random field M-type stars with mid-IR excess are extremely rare, one can search for $\lesssim$10 Myr M-type stars in the solar neighborhood with WISE data. These additional youngest M-type post T-Tauri stars can give an important clue to the mass function of young nearby stellar associations. One can utilize this association of mid-IR excess and youth as a new search method for identifying nearby, young (<10 Myr), late-type stars and brown dwarfs. Low-mass stars and brown dwarfs in this age range should all show additional unambiguous indicators of youth, such as strong Hα emission, lithium absorption, low-gravity spectral features, etc. Therefore, the youth of any candidate young M-type object discovered by its excess emission at mid-IR wavelengths can be evaluated with follow-up spectroscopy.

The TW Hydrae Association is one of the nearest (d$\sim$30-90pc) star forming regions. Its proximity, in combination with its young age make it an ideal area for the study of stellar, planetary, and circumstellar disk evolution. It has also been shown to be useful as a testbed for the evaluation and implementation of new techniques to identify young stars (e.g. UV-excess; Rodriguez et al. 2011, Shkolnik et al. 2011). For the above reasons, the TW Hydrae Association has been chosen to be examined in a pilot study to find young, M-type stars by their mid-IR excess emission.

3.1 Search Method

First, a search area is defined around known TWA members in decimal degress for right ascension (R.A.) and declination (Dec.) (Figure 3.1).

$$150.0 < \text{R.A.} < 205.0$$

$$-50.0 < \text{Dec.} < -25.0$$

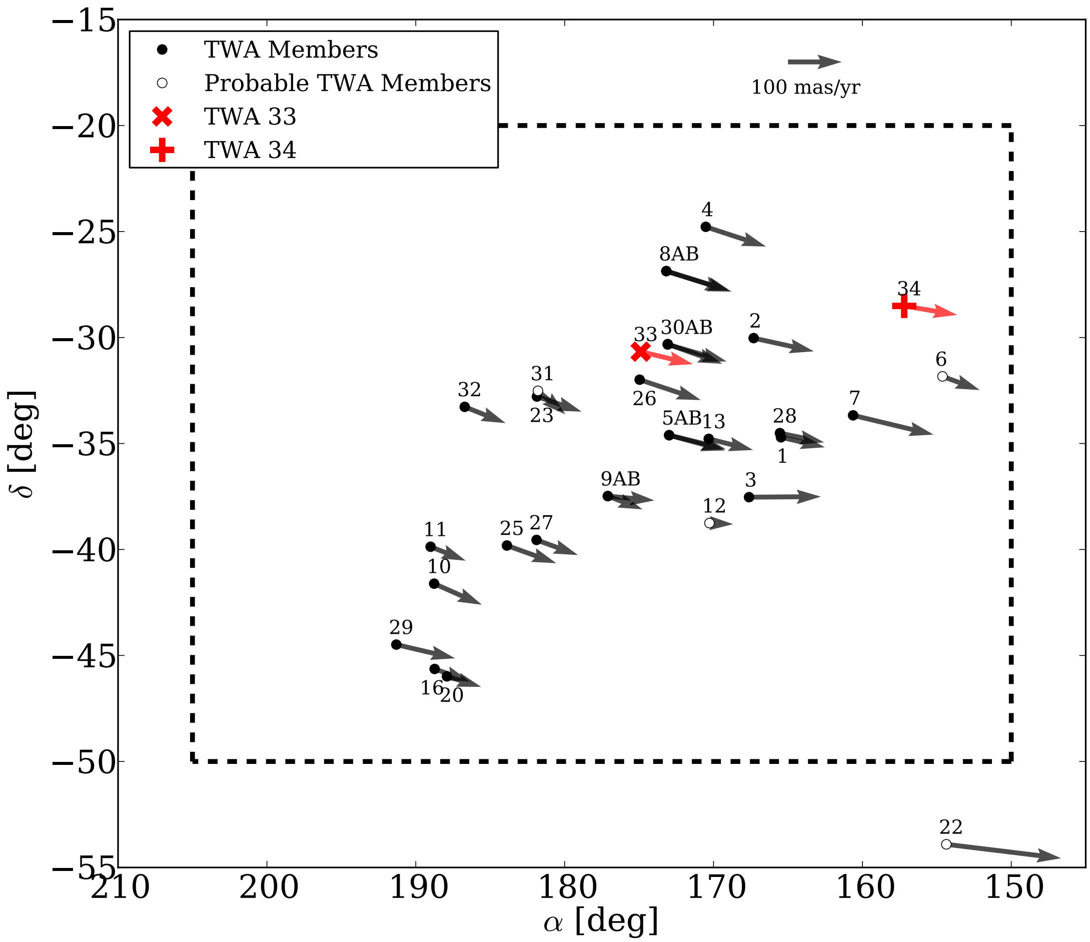

Figure 3.1 The location of TWA 33 and TWA 34 alongside other TWA members. Probable members (6,12, 22, and 31; Schneider et al. 2012a) are displayed as open circles. Arrows indicate the direction and magnitude of the measured proper motions for each member. The large dashed box indicates the search area defined in Section 3.1.

All Two Micron All-Sky Survey (2MASS) sources in this region are cross-matched with WISE using a source matching radius of 5", restricting the search to those matches that are well-detected (i.e., not upper limits) in all 2MASS and WISE bands, and require the WISE extended source flag to be less than 2 (i.e. not associated with a 2MASS extended source catalog object). Then, the following magnitude cut in 2MASS J-magnitude is made in an attempt to exclude extragalactic sources, and various 2MASS/WISE colors are restricted to be those of M-type objects. 2MASS/WISE color selection criteria for M-type objects were determined by examining the colors of known M-type members of the β Pic, η Cha, and TW Hydrae associations.

$$J < 14.0 \text{ (mag)}$$

$$0.5 < J\text{-}H < 0.75 \text{ (mag)}$$

$$0.2 < H\text{-}K_S < 0.5 \text{ (mag)}$$

$$0.8 < J\text{-}K_S < 1.2 \text{ (mag)}$$

$$0.75 < J\text{-}W1 < 2.0 \text{ (mag)}$$

The resulting list is replete with spurious detections in WISE channel 4 (for example, sources with S/N $\geq$ 5, but no obvious source visible in W4 images). To address this issue, a WISE channel 4 magnitude cut was made in such a way as to detect an M-type star at $> 5\sigma$ based on a typical uncertainty for a detectable faint source of $\sim$1.0 mJy. Using the zero-point flux from Jarrett et al. (2011), a source with a flux of 5.0 mJy in WISE channel 4 was found to correspond to a magnitude of $\sim$8.1 mag. Therefore, all sources with a measured WISE channel 4 magnitude brighter than 8.1 mag are kept as candidates.

As stated previously, candidates are required to have detections in WISE channel 4. This refers to the W4 magnitude measured with profile-fitting photometry provided in the WISE catalog. The WISE catalog also provides a W4 magnitude as determined via aperture photometry, which can be found in the "long form" version of the WISE all-sky source catalog. In addition to the requirement that all candidates were well-detected in the profile fitting photometry, candidates are required to be well-detected (i.e., not an upper limit) as determined by their magnitude measured via aperture photometry. By carefully eye-checking a selection of sources, it was found that those with an upper limit in WISE channel 4 determined by aperture photometry, even when the profile-fitting magnitude indicates a good detection, are spurious detections. By forcing PSF fitting and aperture photometric results to be similar, approximately half of all remaining candidates were discarded in this way.

WISE channel 1 and WISE channel 4 magnitudes are then used to select objects with mid-IR excess. As seen in Figure 2 of Schneider et al. (2012a), a typical W1-W4 color for an M-type non-excess star is between 0 and 1. Objects having colors residing in the following range are selected as excess candidates.

$$\text{W1-W4} > 1.0 \text{ (mag)}$$

Mid-IR excess candidate selection is displayed in Figure 3.2.

A total of 76 M-type mid-IR excess candidates were found in the TWA search area defined above. These were then further examined by checking the corresponding WISE images of each candidate for any evidence of contamination, spurious detections in WISE channel 4 (S/N $\geq$ 5, but no obvious source visible in W4 images), or an extended shape indicative of an extragalactic nature. After the WISE image screening, 51 candidates remained. This list was then cross-matched with SIMBAD. Twelve sources were found to be either extragalactic or pulsating variable stars.

One object (2MASS 13373839-4736297), is a known young M-dwarf first discovered by Rodriguez et al. (2011) in their search for young stars utilizing UV-excess. Rodriguez et al. (2011) show that this star, with an estimated spectral type of M3.5 and distance of 126 pc, shows youthful characteristics in its spectrum. They measure an Hα equivalent width of 13.7

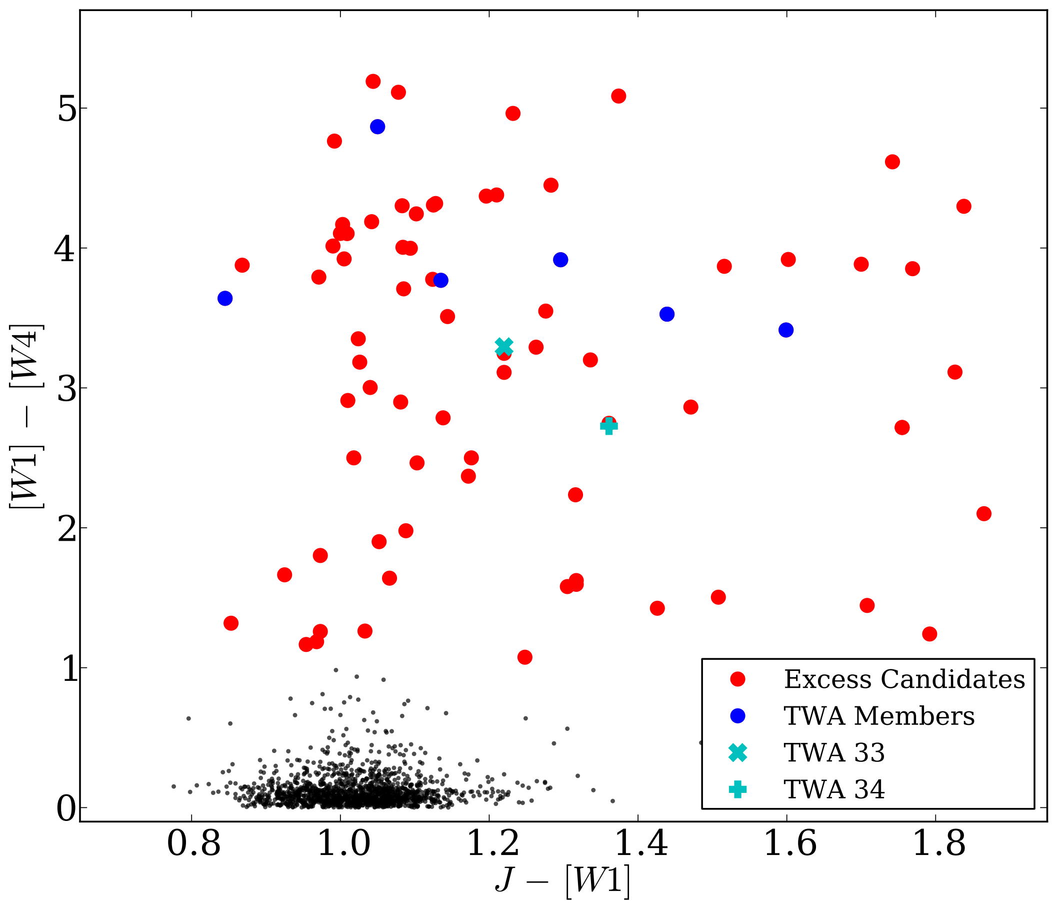

Figure 3.2 J-W1 vs W1-W4 color-color diagram showing the excess candidate selection. Seventy-six excess candidates are shown as large red symbols, while small black symbols represent non-excess candidates (see Section 3.1).

Å in emission, and a Li λ6708 equivalent width of 308 mÅ. This object is likely a member of Lower-Centaurus Crux region (d$\sim$95 pc, age $\sim$10 Myr; Song et al. 2012) of the Scorpius Centaurus Association, based on its estimated distance and proper motion. This is the first evidence for mid-IR excess for this star, which shows that this search method is likely to be useful for other areas of the sky, such as the sub-regions of the Scorpius-Centarus Complex.

Six confirmed TWA members were recovered (TWA 3A, 27, 28, 30A, 31, and 32). The lone late-type (M4), mid-IR excess TWA member not returned with this search method was TWA 30B. This object did not meet the selection criteria because its photospheric emission is heavily obscured up to at least WISE channel 2, likely due to its edge-on disk geometry (Looper et al. 2010b; Schneider et al. 2012a).

For the remaining 32 candidates, their positions are cross-matched with the PPMXL catalog of positions and proper motions (Röser et al. 2010) to inspect for any candidates that have measured proper motions consistent with that of known TWA members. To select the best candidates, a total proper motion magnitude and direction within 1σ of the average of confirmed TWA members is required. Thirty of the candidates show inconsistent proper motions. The last two remaining candidates (2MASS 11393382-3040002 and 2MASS 10284580-2830374), with proper motions consistent with known members of TWA (see Figure 3.1), are discussed in detail in the following section.

3.2 Spectroscopic Follow Up & Membership Evaluation

To check for the expected signatures of youth for an M-type TWA member, candidates 2M1139 and 2M1028 were followed up spectroscopically with the Wide Field Spectrograph (WiFeS; Dopita et al. 2007) on the 2.3m telescope located at the Siding Spring Observatory. 2M1139 was observed on 2012 May 30 and 2M1028 was observed on 2012 August 3. The spectra were obtained with the B_{3000} and R_{3000} gratings that cover the wavelength ranges 3400 to 6000 Å and 5600 to 9500 Å respectively, with a resolution of R $\sim$ 3000. A portion of each spectrum containing the Hα emission line and the Li λ6708 absorption line is shown in Figure 3.3 (2M1139) and Figure 3.4 (2M1028). 2M1139 closely resembles the average combined spectrum of old field dwarfs GJ 299 (M4.5) and GJ 551 (M6), while 2M1028 most closely resembles GJ 551. A comparison of each candidate TWA member with these spectra shows a considerable weakening of MgH, CaH, CaOH, KI and NaI features compared to old field dwarfs with similar TiO band strengths (Figures 3.3 & 3.4). As seen in Table 3.1, each candidate shows moderate Hα emission and strong lithium absorption.

As discussed in Section 2.3, the Na I index can help in distinguishing stellar ages for late type stars. The Na I index was measured for both candidates, and, using their R-I colors from the flux-calibrated spectra, their values are compared with the Na I index-color relations for various stellar groups from Lawson et al. (2009) in Figure 3.5. VRI colors (in the Johnson-Cousins system) were computed from the flux-calibrated spectrum for each candidate, and are listed in Table 3.1. The photometry is estimated to be accurate to within $\pm$0.01-0.02 mags. As seen in the figure, the Na I index of each candidate suggests a low surface gravity, and an age similar to TWA. This low-gravity feature, along with the measured equivalent widths of the Hα emission and lithium absorption lines, given in Table 3.1, confirm the youth of both candidates.

As mentioned in Schneider et al. (2012a), for most cases, the determining factor between membership in TWA and the further away, Lower-Centaurus Crux (LCC) region of the Scorpius Centaurus Complex is distance, with a possible boundary between the two regions occurring near 100 pc. The distance to each candidate TWA member is estimated in two ways. First, a photometric distance is calculated using the measured spectral type in combination with an empirical isochrone for known TWA members. The spectral type is estimated to be M4.7 $\pm$ 0.5 for 2M1139 and M4.9 $\pm$ 0.5 for 2M1028 using the TiO5 index as described

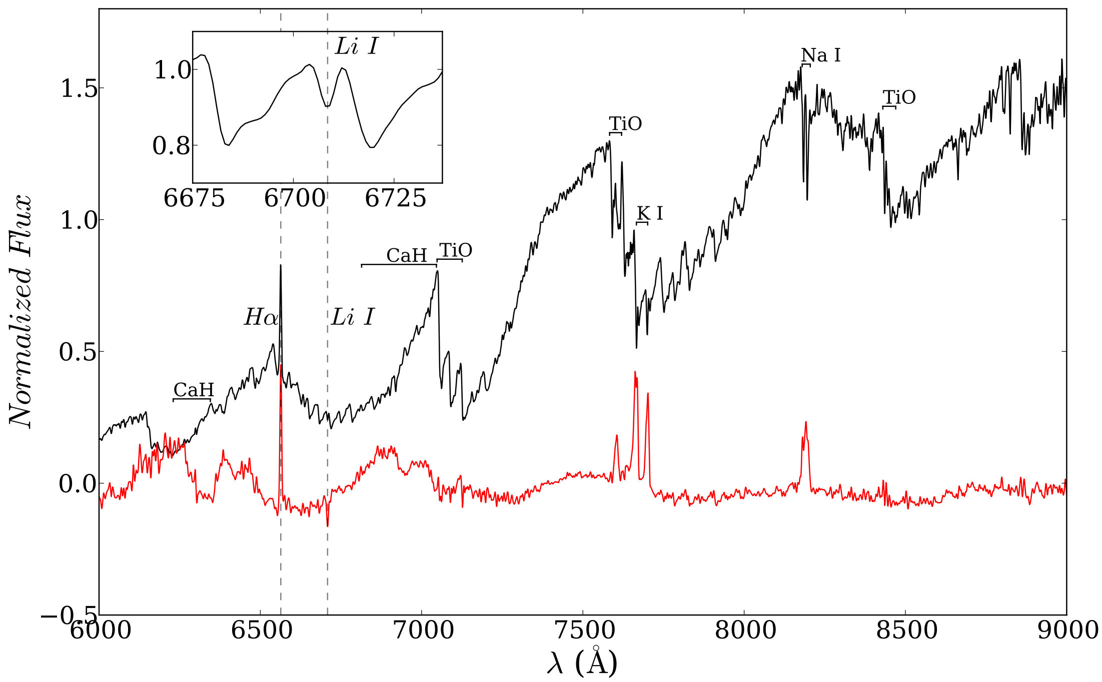

Figure 3.3 A portion of the optical spectrum of TWA 33 (black curve). Major atomic and molecular features have been labeled. The inset shows its lithium absorption feature, and has been normalized to the continuum. The red line is the spectrum of TWA 33 divided by the combined spectra of old disk stars GJ 299 and GJ 551, highlighting the various gravity sensitive features.

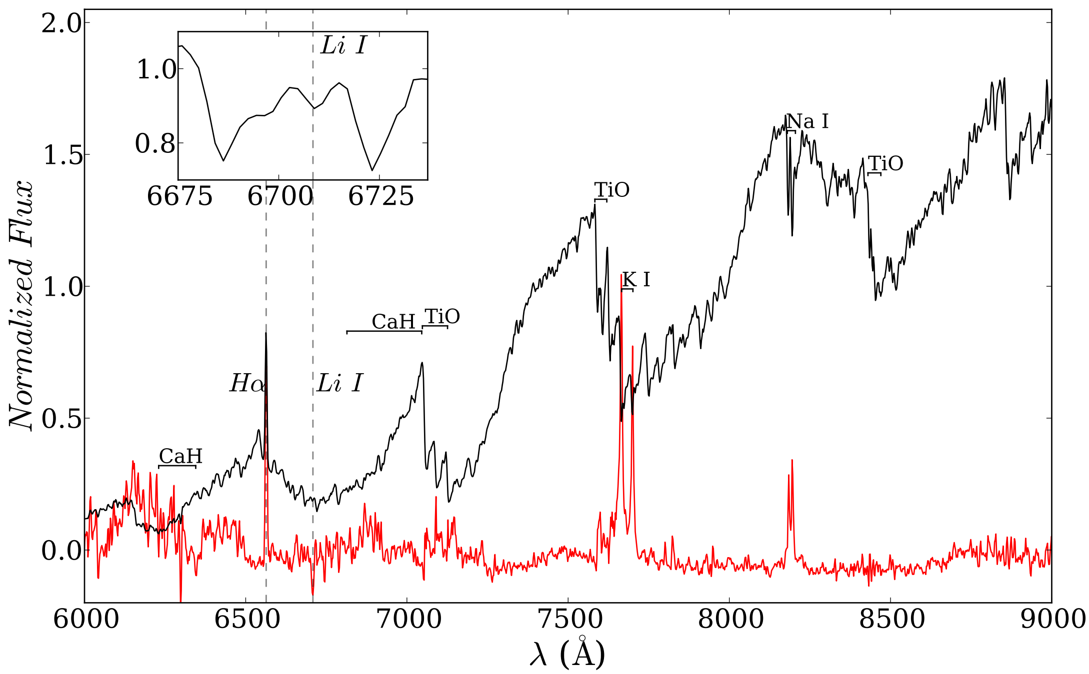

Figure 3.4 A portion of the optical spectrum of TWA 34, displayed in the same manner as Figure 3.3. The red line is the spectrum of TWA 34 divided by the spectrum of GJ 551.

Table 3.1. TWA 33 and TWA 34 Properties

Parameter	Value		Ref.
	TWA 33 (2M1139)	TWA 34 (2M1028)	
α (J2000)	11:39:33.83	10:28:45.80	1
δ (J2000)	-30:40:00.3	-28:30:37.4	1
μ_α	-88.7 ± 6.1 (mas/yr)	-65.5 ± 4.1 (mas/yr)	2
μ_δ	-25.9 ± 6.1 (mas/yr)	-11.1 ± 4.1 (mas/yr)	2
Optical SpT	M4.7 ± 0.5	M4.9 ± 0.5	3
Distance[a]	41 ± 8 pc	50 ± 10 pc	3
Distance[b]	42 ± 4 pc	49 ± 4 pc	3
V - R	1.37 ± 0.03 (mag)	1.65 ± 0.03 (mag)	3
R - I	1.80 ± 0.03 (mag)	1.97 ± 0.03 (mag)	3
J	9.985 ± 0.021 (mag)	10.953 ± 0.027 (mag)	1
H	9.414 ± 0.023 (mag)	10.410 ± 0.024 (mag)	1
K_S	9.118 ± 0.023 (mag)	10.026 ± 0.022 (mag)	1
W1	8.765 ± 0.022 (mag)	9.592 ± 0.023 (mag)	4
W2	8.404 ± 0.019 (mag)	9.116 ± 0.020 (mag)	4
W3	7.135 ± 0.017 (mag)	8.243 ± 0.020 (mag)	4
W4	5.518 ± 0.038 (mag)	6.845 ± 0.075 (mag)	4
Li EW	470 mÅ	370 mÅ	3
Hα EW	-5.8 Å	-9.6 Å	3
Na I index	1.14 ± 0.02	1.12 ± 0.02	3
NUV		22.325 ± 0.397 (mag)	5

References: (1) 2MASS catalog (Curtri et al. 2003); (2) PPMXL catalog (Röser et al. 2010); (3) This work; (4) WISE All-Sky Source Catalog (Curtri et al. 2012); (5) GALEX catalog

[a]Photometric distance using empirical TWA isochrone.

[b]Kinematic distance assuming TWA membership.

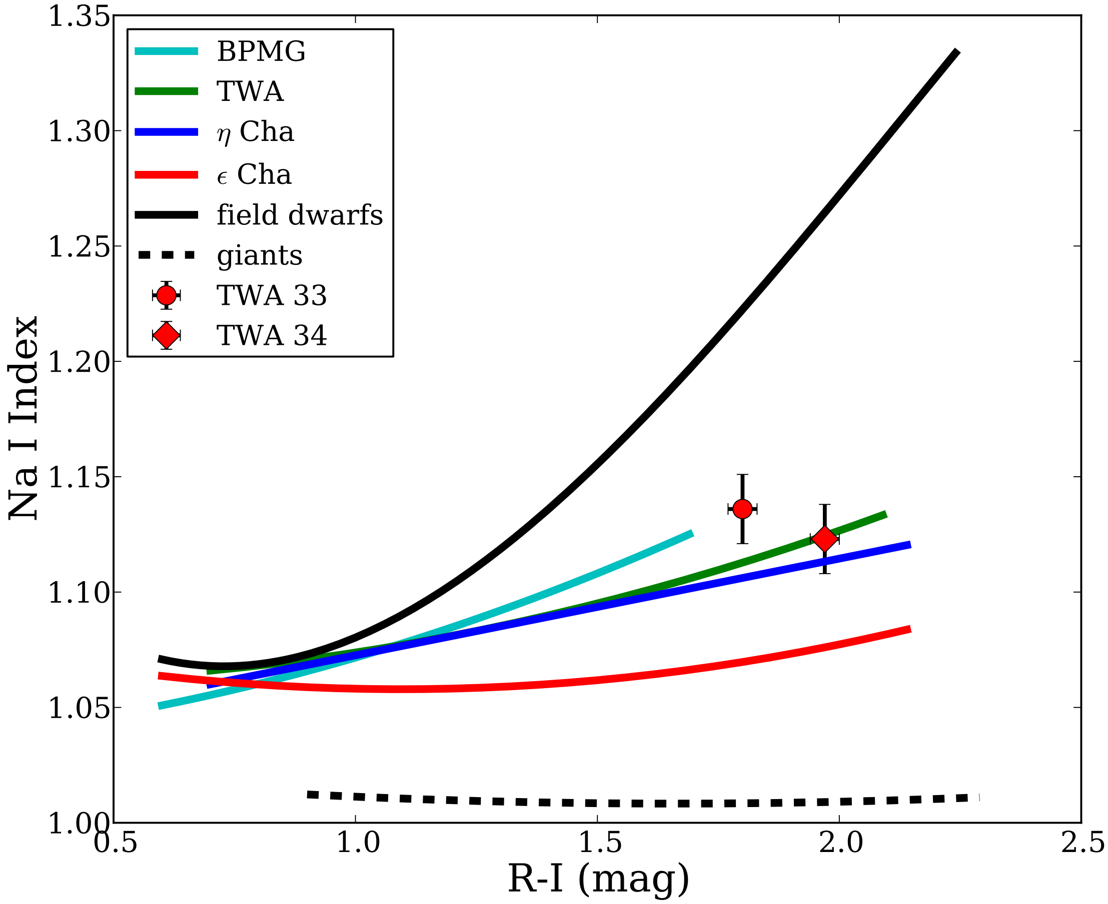

Figure 3.5 Na I index trends for various stellar groups from Lawson et al. (2009). The location of TWA 33 and TWA 34 suggests a low surface gravity, consistent with other TWA members. Ages of these groups are as follows: β Pictoris Moving Group ~12 Myr, TWA ~8 Myr, η Cha ~5-8 Myr, and ϵ Cha ~ 6-7 Myr.

in Reid et al. (1995). Placing these candidates on the empirical TWA isochrone, an absolute K magnitude of $\sim$6.0 mag and $\sim$6.5 mag is estimated for 2M1139 and 2M1028, respectively. From these absolute magnitudes, a photometric distance of $\sim$41 pc for 2M1139 and $\sim$50 pc was calculated for 2M1028. Uncertainties using this method are typically $\sim$20%.

The kinematic distance is also estimated by obtaining a kinematic parallax following the method described in Mamajek (2005). The mean velocity of TWA was calculated using parameters of confirmed members from Schneider et al. (2012a). The adopted TWA space velocity is (U, V, W) = (-10.8, -18.1, -4.4) km s^{-1}. As with TWA 30A and TWA 30B, which have sky positions and proper motions similar to that of 2M1139 (see Figure 3.1), almost all space motion is directed toward the TWA convergent point (Looper et al. 2010a; Looper et al. 2010b). From this motion, a kinematic parallax of 23.6 $\pm$ 1.8 mas is calculated, corresponding to a distance of 42 $\pm$ 3 pc. For 2M1028, a kinematic parallax of 20.3 $\pm$ 1.7 mas is found, which corresponds to a distance of 49 $\pm$ 4 pc. Both estimates are in excellent agreement with the calculated photometric distances. These distance estimates put each candidate well on the TWA side of the $\sim$100 pc dividing line between TWA and the LCC.

Rodriguez et al. (2011) and Shkolnik et al. (2011) show that UV-excess is an effective tool for identifying young, M-type objects. Evidence of UV-excess was searched for using the Galaxy Evolution Explorer (GALEX; Martin et al. 2005) and found that 2M1139 has not been covered in the most recent data release. 2M1028 was detected by GALEX, with a near ultraviolet (NUV) magnitude of 22.325 $\pm$ 0.397 mag. With a 2MASS J-K color of 0.93 mag, and a NUV-J color of 11.37 mag, it is noted that this object would pass the selection criteria outlined in Rodriguez et al. (2011) for young star candidates, namely NUV-J $\leq$ 10.20(J-K) + 2.2, indicative of a young age.

The combination of position, proper motion, spectral signatures of youth, distance estimates, mid-IR excess, and, in the case of 2M1028, UV-excess, lead us to the conclusion that 2MASS 1139 and 2M1028 are indeed authentic members of the TW Hydrae Association.

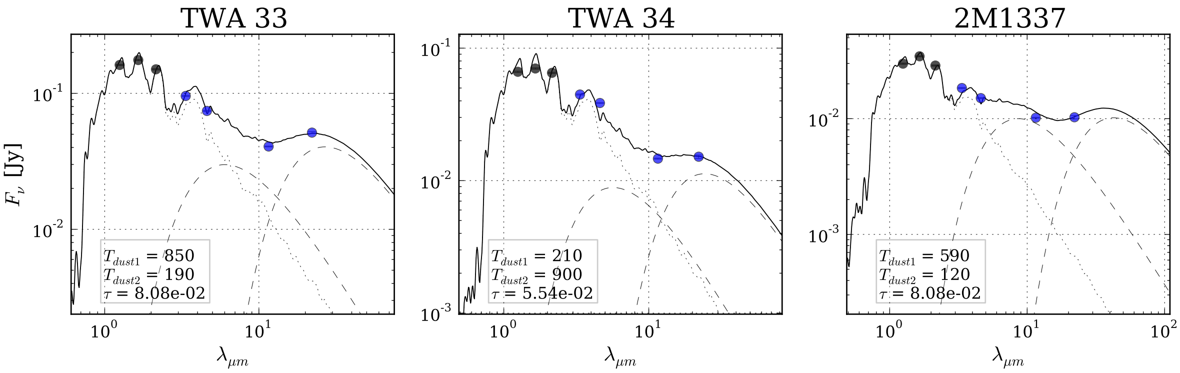

Figure 3.6 Spectral energy distributions of TWA 33, TWA 34, and 2M1337 showing their mid-IR excess emission. The solid circles are photometric measurements from 2MASS and WISE. The thin black curve is an atmospheric model (Hauschildt et al. 1999) fit to the 2MASS data. The dashed lines are single temperature blackbody dust fits to the excess emission with the dust temperatures (in K) as specified in the plot. The thick curve is the spectral model + blackbody dust fit. τ = infrared luminosity = L_{IR}/L_{bol}.

Following the naming convention for TWA members, 2M1139 and 2M1028 are designated TWA33 and TWA 34, respectively. The properties of TWA 33 and TWA 34 are summarized in Table 3.1. Figure 3.6 includes a spectral energy distribution (SED) that shows the mid-IR excess emission of each new member. Also shown is the SED of a likely LCC member 2M1337, first identified as a young star by Rodriguez et al. (2011), the infrared excess of which was discovered in this search.

3.3 Circumstellar Disk Evolution around M-type Stars

At the age of TWA or younger, it is noted that the use of mid-IR excess as a search method is highly effective for TW Hydrae members with spectral types of M4 or later. Including TWA 33 and TWA 34, there are 16 TWA members with spectral types in this range. Fourteen of these were individually detected with WISE (TWA 3B and 5B are too close to their primary members to be resolved individually). Nine of these fourteen members show significant mid-

IR excess emission, eight of which were found with this search method. The discovery of TWA 33 and TWA 34 demonstrates the effectiveness of using mid-IR excess as a tool to identify nearby, young, late-type stars. These stars show many signatures of youth expected for a TWA member, such as Hα emission, lithium absorption, and low surface gravity spectral features. Using two different methods, a distance of $\lesssim$ 50 pc is determined for both stars, consistent with their TWA membership. Also rediscovered is the young, likely LCC member 2M1337, first identified as a young star by Rodriguez et al. (2011). This is the first evidence for the presence of a circumstellar disk around this star.

Considering the high fraction of late-type mid-IR excess stars from TWA and the slightly younger η Cha Association (45% for M-type members - Schneider et al. 2012a), mid-IR excess can likely be a useful tool in identifying more young, nearby, late-type stars and brown dwarfs. One can expand this search for these objects to other areas of interest, such as the sub-regions of the Scorpius-Centaurus Association, or even the entire sky.

An interesting conjecture is whether there is a higher fraction of mid-IR excess stars among the latest M spectral types (M6 or later). For the six known TWA members with spectral type later than M6, three – TWA 27, 30A and 32 – were detected individually by WISE to have excess emission in channel 4. TWA 5B, an M8 dwarf companion to TWA 5A, is too close to its primary to be resolved. TWA 26 and TWA 29 have only upper limits in WISE channel 4, so no strong conclusions regarding mid-IR excess can be deduced from WISE for these members, though TWA 26 shows no excess at 24 μm via Spitzer MIPS (Schneider et al. 2012a). In summary, all WISE detectable late M-type TWA members show mid-IR excess emission at the W4 band. To date, no members of the η Cha cluster have been found with spectral types later than M6, though searches have been performed (Lyo et al. 2006). The BPMG has two known late-type members (excluding giant planet β Pictoris b), HR 7329B (M7.5; Lowrance et al. 2000) and 2MASS 0608-27 (M8.5; Rice et al. 2010). HR 7329B is too close to its host star to be resolved individually with WISE, and 2MASS 0608-27 has an upper limit in WISE channel 4. So, at this point, only TWA has a reasonable number of latest M-type members to check the conjecture of even more prolonged disks among the latest M-type stars. Future missions, such as *Gaia*, which should discover more late-type members of these nearby associations, will allow us to test the hypothesis that primordial disks have longer lifetimes around later-spectral types in this spectral type range.

While I have shown that mid-IR excess emission can be a useful tool for identifying nearby, young, late-type stars and brown dwarfs, caution must be taken when considering association properties, such as disk fraction and mass function. Any objects found with this method will surely bias the measure of disk frequency for a particular group of stars, so the excess fraction for TWA is not updated here. If the hypothesis of longer disk lifetimes around later spectral types is true, then any objects found with this method would bias any estimate of the mass function as well. While the question of whether or not there is a higher fraction of mid-IR excess for the latest spectral types is an interesting one, it cannot be answered with objects found with the search method described in this chapter.

Chapter 4

Identification of Young, Nearby solar-type (FGK) Stars

Stellar X-ray activity is a rough proxy for age for main sequence stars, because younger stars tend to have stronger X-ray emission than older stars of the same mass (see Section 2.4 and Figure 2.7). In order to identify new nearby, young, solar-type stars, specifically for the Gemini Planet Imager, a large scale spectroscopic survey was undertaken to measure various age diagnostics for stars showing significant fractional X-ray luminosities. In order to identify nearby stars with high X-ray luminosities, the entire Tycho-2 catalog (Høg et al. 2000) was cross-matched with the ROSAT all-sky survey. The resulting fractional X-ray luminosities of the cross-correlation are plotted in Figure 4.1 compared with the positions of solar-type members of the Pleiades and Hyades clusters. Optical spectra were obtained for ~3000 of these X-ray bright stars utilizing multiple observatories, including the Dominion Astrophysical Observatory (Canada), the Siding Spring Observatory (Australia), the Liverpool Telescope (Canary Islands), and the Lick Observatory (California). Stars observed with this campaign in comparison with the original X-ray sample are highlighted in Figure 4.2.

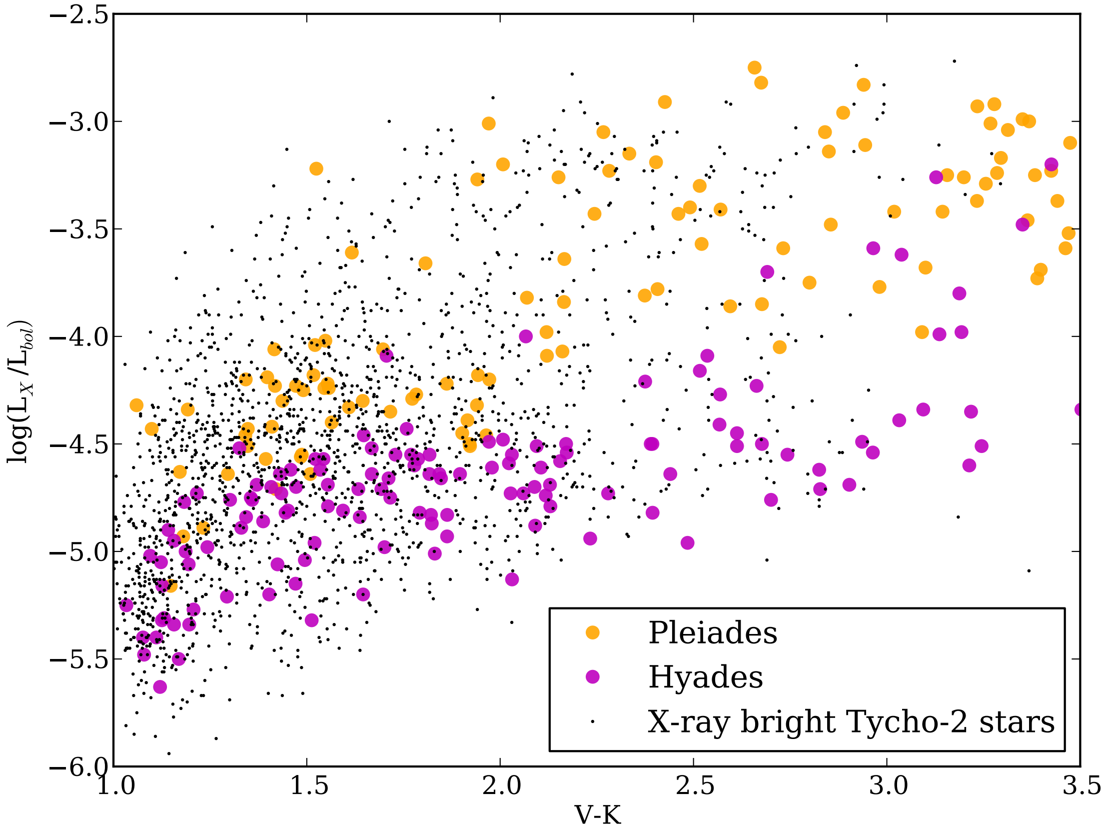

Figure 4.1 Tycho-2/ROSAT cross correlation.

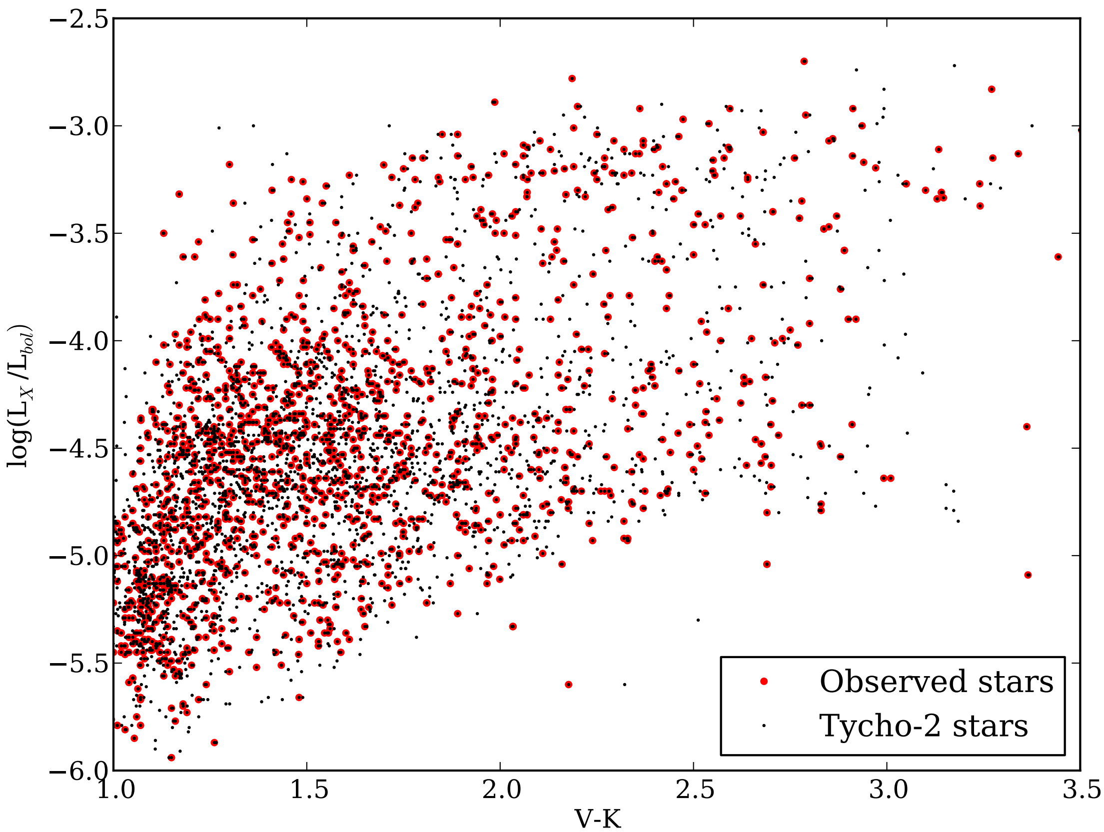

Figure 4.2 Observed stars from Tycho-2/ROSAT cross correlation.

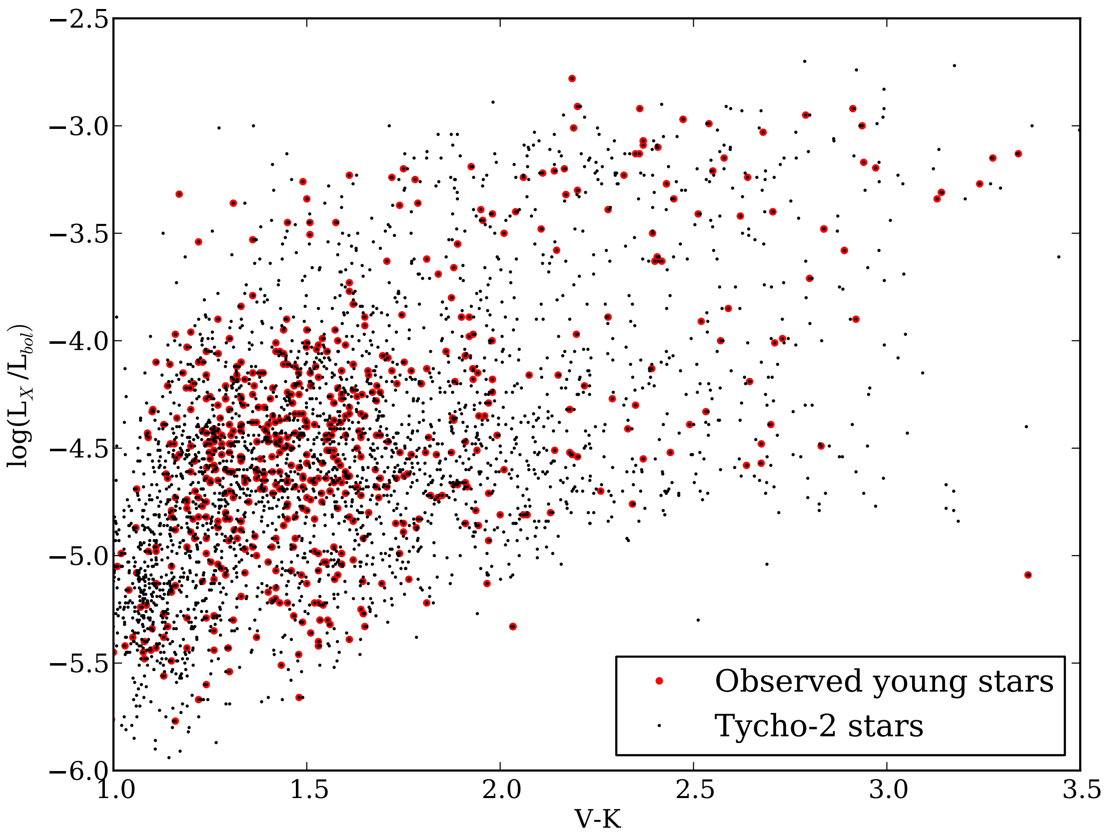

Figure 4.3 Observed young stars from Tycho-2/ROSAT cross correlation.

For each observed star, Hα and Liλ6708 equivalent widths are measured with the Image Reduction and Analysis Facility (IRAF). $v$sin$i$ values were measured by first obtaining equivalent widths of several absorption lines in the region around ~6400 Å, then by following the methods outlined in Strassmeier et al. (1990). For those stars observed in the blue portion of the optical spectrum (~4000 Å), Ca II H & K measurements were performed, then converted to R'_{HK} values following the methods outlined in Schröder et al. (2009). Lastly, radial velocities were determined for stars for which high-resolution echelle spectra were obtained. Radial velocities were evaluated by comparing spectral line locations with several radial velocity standards using the IRAF *fxcor* subroutine. Out of ~3000 stars observed through this program, ~700 were determined to have ages less than the age of the Hyades based on spectroscopic considerations (see Chapter 5). The X-ray luminosities of the young stars found through this survey are again plotted in Figure 4.3. These stars are combined with the list of solar-type stars from the SACY catalog (Torres et al. 2006) and a previous large-scale spectroscopic survey for young nearby stars (Song, I., Zuckerman, B., & Bessell, M. - private communication) to generate the most comprehensive list of nearby, young, solar-type stars. This list is presented in Table 4.1. Approximately 200 new young and adolescent stars found via this initiative were added to the list of targets for GPI (~30% of the entire GPI sample - see Chapter 6). The distribution of young stars found through this work combined with young stars from the SACY and Song, I., Zuckerman, B., & Bessell catalogs is displayed in Figure 6.1, highlighting the young stars determined to be suitable GPI targets.

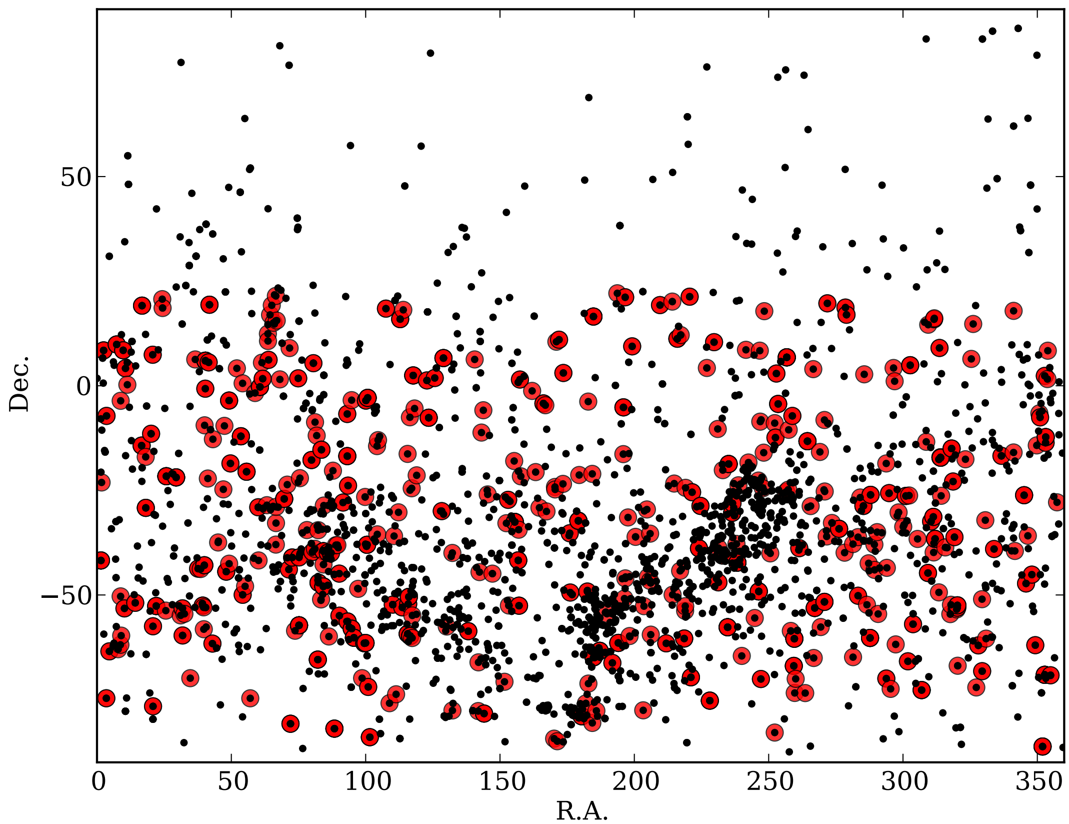

Figure 4.4 Distribution of young (age < 200 Myr) nearby stars. Stars highlighted in red are GPI targets. The prominent clustering in the lower center to right portion of this figure is the Scorpious-Centaurus OB Complex.

Table 4.1: Young Nearby Solar-Type Stars[a]

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC0001-0017-1‡	00:00:12.10	+01:46:17.00	...	300	...	-3.54	7.4	43.0 ± 43.0	...
TYC5260-0131-1‡	00:05:39.60	-07:54:13.00	...	50	...	-3.74	15.9	113.6 ± 102.6	...
HIP490	00:05:52.47	-41:45:10.40	1.09	135	-4.46	-4.41	14.0	113.4 ± 38.5	Tuc Hor
TYC5844-0586-1‡	00:05:57.50	-20:38:55.00	...	30	...	-3.62	4.0	50.7 ± 50.7	...
HIP560‡	00:06:50.10	-23:06:27.00	...	87	...	-5.33	170.7	89.4 ± 89.4	β Pic
HIP682†	00:08:25.69	+06:37:00.52	0.98	150	...	-4.20	18.0	94.1 ± 76.8	...
TYC0001-1187-1‡	00:09:21.80	+00:38:07.00	-0.20	100	...	-3.05	28.1	73.7 ± 61.8	...
HIP795B‡	00:09:51.30	+08:27:12.00	...	140	...	-3.93	9.0	111.8 ± 84.0	...
HIP795†	00:09:51.65	+08:27:11.40	0.92	105	...	-4.18	7.0	50.3 ± 50.3	...
TYC8470-1367-1‡	00:10:08.70	-59:21:28.00	...	110	...	-3.28	18.2	66.5 ± 58.5	...
HIP910†	00:11:15.91	-15:28:02.28	1.24	39	...	...	1.0	123.8 ± 123.8	...
TYC5839-0596-1‡	00:12:07.60	-15:50:33.00	-3.70	100	...	-3.08	36.5	77.4 ± 64.9	...
HIP1113†	00:13:52.83	-74:41:17.52	0.76	194	...	-3.39	9.0	42.2 ± 42.2	Tuc Hor
HIP1134	00:14:10.20	-07:11:56.30	1.32	106	-4.45	-4.26	30.0	74.9 ± 74.0	Columba
HIP1292‡	00:16:12.70	-79:51:04.00	...	60	...	-4.41	5.1	413.5 ± 181.0	...
HIP1427	00:17:49.86	+16:19:51.90	0.85	21	...	-5.14	11.0	389.3 ± 212.7	...
TYC2261-1518-1	00:18:20.80	+30:57:23.70	...	232	...	-2.97	...	52.6 ± 52.6	AB Dor
HIP1481	00:18:26.01	-63:28:38.50	1.21	119	-4.49	-4.18	17.0	70.9 ± 67.6	Tuc Hor
HIP1710‡	00:21:32.10	-34:10:11.00	...	110	...	-3.86	5.7	34.8 ± 34.8	...
HIP1803	00:22:51.57	-12:12:34.50	1.08	77	-4.42	-4.64	11.0	398.3 ± 187.3	...
HIP1910†	00:24:08.87	-62:11:03.84	-1.50	160	...	-3.42	13.0	50.2 ± 40.5	Tuc Hor
HIP1938‡	00:24:28.00	+05:42:43.00	...	80	...	-3.49	14.5	123.9 ± 91.2	...
HIP1993‡	00:25:14.70	-61:30:48.00	-1.30	40	...	...	7.3	66.6 ± 66.6	Tuc Hor
TYC0006-0526-1‡	00:25:32.90	+04:53:46.00	...	30	...	-3.06	15.1	69.2 ± 69.2	...
TYC5840-0915-1‡	00:26:06.10	-15:42:19.00	...	60	...	-3.99	27.4	206.0 ± 122.7	...

Table 4.1:

[a]This table is available in its entirety in Appendix B. A portion is shown here for guidance regarding its form and content.

†OBS catalog.

‡SACY catalog.

Chapter 5

Development of a Unified Age-Dating Tool for Solar-Type Stars

5.1 Issues With Current Age-Dating Methods for Solar-Type Stars

Because the method used to determine the age of a particular star depends on that star's spectral type, multiple age-dating techniques have been developed and employed (Zuckerman & Song 2004, Soderblom 2010). For solar-type stars (FGK), ages are ordinarily estimated by measuring a particular age diagnostic, and assigning an age based on that one measured property. While this is a simple method to return an age for a given star, there are substantial inconsistencies between the different age evaluators (Song et al. 2004, Song et al. 2012). Therefore, relying on one particular age index to determine the age of a star is insufficient.

Age estimation for FGK spectral types is improved in this work via two initiatives: the inclusion of additional clusters with known ages for age diagnostic comparison (Tables 5.1 and 5.2 and Section 5.2) and the implementation of a modern statistical analysis method (Section 5.3). Open clusters are age benchmarks because their ages can be determined by means unavailable for single stars (see Section 2.1). By increasing the number of age comparison clusters, a larger sample of benchmark ages can be compared to increase the current number of age bins. These new clusters can then be combined with a new age-dating scheme that will use all of the available age measures of a star in unison in order to estimate reliably the most likely age.

Two large projects have been undertaken in an attempt to improve stellar age estimation for FGK stars: the upgrade of the list of comparison clusters used in order to have a finer age grid, and the development of a novel statistical approach to determine the most likely numeric age of a star.

5.2 Cluster Data Upgrade

The estimated ages of nearby stars saw a significant improvement by including more than one age evaluator simultaneously (e.g., Zuckerman & Song 2004). For FGK stars in their analysis, features such as Li λ6708, X-ray emission, Hα emission, galactic space motions, and placement on a color-magnitude diagram were inspected and compared to a few well-studied clusters. The age of a well-observed star with one (or more) of the aforementioned age-diagnosticss available is determined by placing the star in one of six age bins ($\sim$10 Myr, $\sim$30 Myr, $\sim$70 Myr, $\sim$100 Myr, $\sim$300 Myr, and $\gtrsim$600 Myr), with uncertainties of one age bin.

A clear visual representation of several of these various age bins is within the plot showing fractional X-ray luminosity versus spectral type, usually in the form of color determined from broadband measurements (Figure 5.1). As seen in the figure, there is a clear separation between the Pleiades (age $\sim$100 Myr) and the Hyades (age $\sim$625 Myr) open clusters. If one is attempting to age-date a star, one can fairly easily determine if the target is younger than, about the same age, or older than each the Pleiades and the Hyades. This implies that one should be able to determine an age for a star by placing it in one of the following five age bins (<100 Myr, ∼100 Myr, 100-625 Myr, ∼625 Myr, and > 625 Myr), with typical uncertainties of one age bin. The estimated position of a fictitous K5 type star (V-K ∼2.8) with an intermediate age between the Pleiades and Hyades is also shown in Figure 5.1 (black diamond). Then, using X-ray brightness (and broadband color) against those of Pleaides and Hyades members, an age estimate for this star can be obtained as $\sim 300^{+325}_{-200}$ Myr.

An example of the benefit of additional clusters is shown in Figure 5.2. Plotted in the figure are the same open clusters as before (the Pleiades and Hyades) along with open cluster NGC 2516 (age ∼150 Myr). With the inclusion of this new cluster, the number of age bins increases from five to seven, thereby increasing the precision of the estimated age of a star. Also plotted in Figure 5.2 is the same K5 star as in Figure 5.1. It can be seen in the figure that the K5 star in question has the appearance of being more likely of the same age as NGC 2516 than either the Pleiades or the Hyades. One can easily envision that the inclusion of additional clusters, especially at well placed intervals, will increase the precision even further. However, the addition of more clusters will result in increased overlap between them, creating further difficulty when assigning an age to a star by visual inspection. Cluster overlap in parameter space can come from multiple factors, including the inherent scatter within a cluster, measurement errors, and the inclusion of non-members. For this reason, a thorough stellar group membership evaluation is critical for age-parameter comparisons. Taking the significant overlap among different clusters into account requires a statistical analysis method (Section 5.3).

In order to append new clusters to the existing age-dating schematic, there are three necessary tasks that must be undertaken. The first is to identify suitable supplementary clusters that are rich, with well determined ages, and close to Earth. The proximity is to ensure that many pertinent observational age-related characteristics are available for a cluster. Many relevant clusters have already been the focus of in-depth studies providing rich

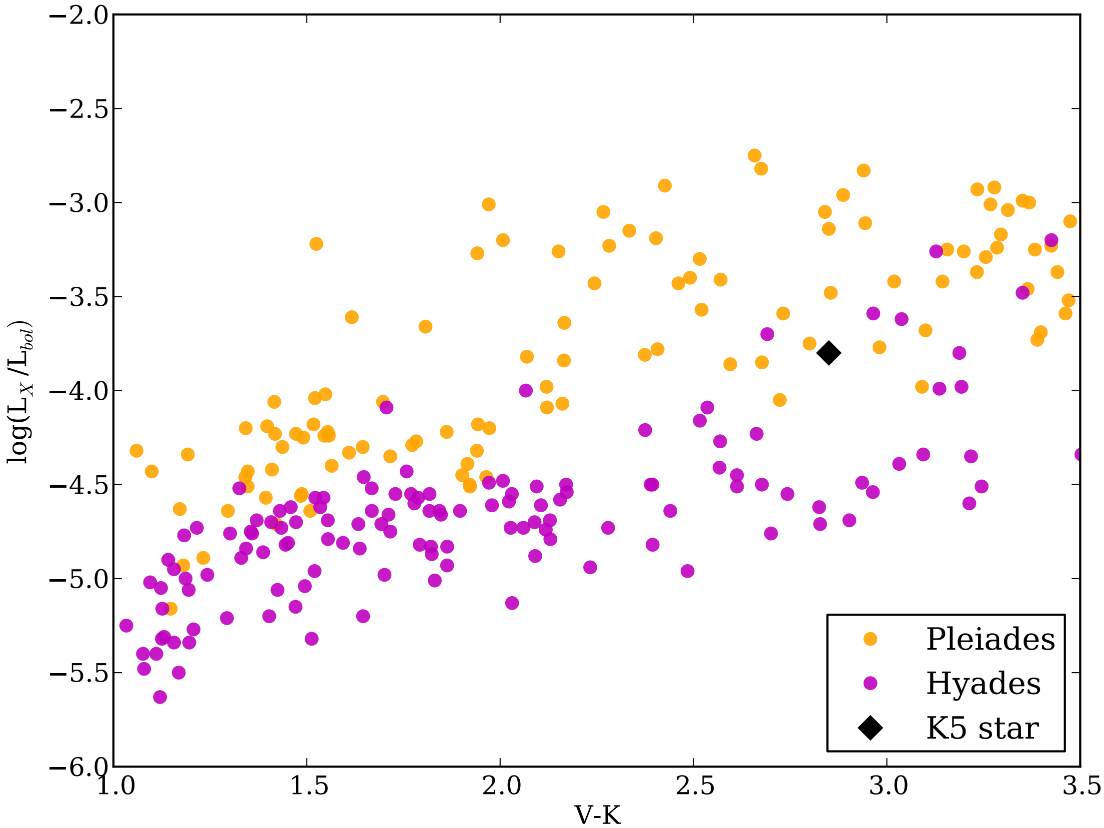

Figure 5.1 The fractional X-ray luminosity as a function of spectral type for the Pleiades and Hyades clusters.

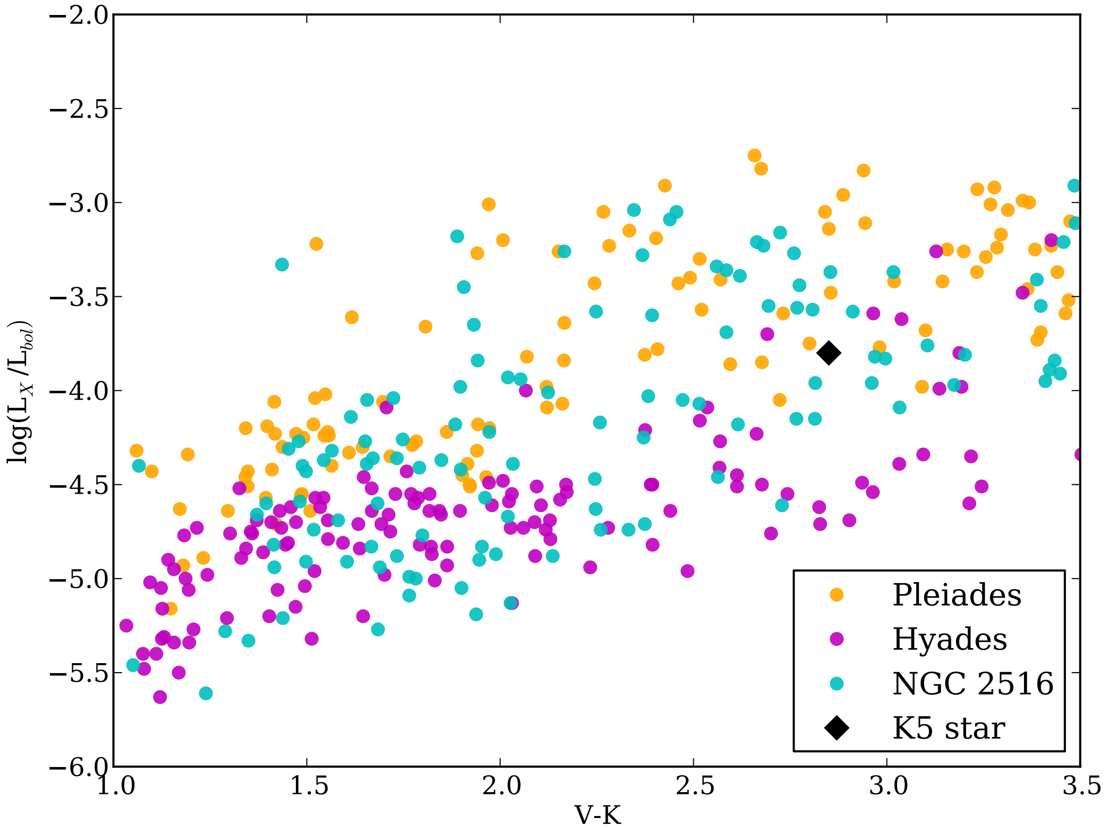

Figure 5.2 The fractional X-ray luminosity as a function of spectral type for the Pleiades, Hyades, and NGC 2516 clusters.

photometric and spectroscopic data. An exhaustive literature search of clusters described in the WEBDA online open cluster database as having more than 50 members and a distance within 1000 pc identified several clusters appropriate for inclusion. Each of these clusters is then queried with the SIMBAD astronomical database, where comprehensive reference lists are provided. These are the primary bibliographic repositories used to extract cluster properties. A secondary list of moving groups and associations was selected from Torres et al. (2008). A list of all clusters, stellar associations, and moving groups that can potentially be utilized for age-dating purposes is listed in Tables 5.1 and 5.2. Open clusters are used as primary age calibrators since associations and moving group ages are hinged on those of open clusters. Once their ages are well calibrated, associations and moving groups can act as secondary age calibrators.

The second task is to systematically gather all age relevant data for selected clusters. This step, while basic, is especially labor-intensive. Many cluster studies are focused on one particular characteristic, such as X-ray luminosity or rotation rate. Therefore, in order to gain a complete picture of the age characteristics for a specific cluster, data from different studies must be culled and stored. The properties of each proposed member of a cluster must be gathered as completely as possible, including age diagnostics as well as photometric measurements. This task was performed for each cluster, moving group, and association in Tables 5.1 and 5.2. While much of the age data necessary to implement a new cluster into the current age-dating scheme is already available in the literature and existing catalogs, the lack of positional information (right ascension and declination) or the use of inconsistent identifiers from study to study can make source matching for each cluster a painstaking process. For this reason, and for ease of access, a relational database system (MySQL) was utilized for the storage of cluster data. Figure 5.3 shows the schematic diagram of the cluster database. A reference summary for the data gathered for all clusters listed in Tables 5.1 and 5.2 is given in Appendix A. Photometric measurements from major photometric catalogs

Table 5.1 Nearby Open Clusters

Name	Distance (pc)	Age (Myr)	Potential Members #	Available Data[a]
NGC 2264	913 ± 40	$\sim$3	1075	**XLRVH**
IC 348	$\sim$310	2-3	288	XlRvH
NGC 2547	474 ± 41	$38.5^{+3.5}_{-6.5}$	826	**X**l**R**vh
IC 2391	144.9 ± 2.5	$\sim$40	142	xLrVH
IC 4665	356 ± 38	42 ± 12	1772	xlrVH
IC 2602	148.6 ± 2.0	46^{+6}_{-5}	95	Xlrvh
α Per	172.4 ± 2.7	$\sim$60	284	**X**Lr**V**ch
Pleiades	120.2 ± 1.9	$\sim$120	1490	**XLRV**cH
Blanco 1	207 ± 12	132 ± 24	314	XlVh
NGC 2516	343 ± 12	$\sim$150	1171	**X**l**RV**
M35	805 ± 40	$\sim$150	360	xl**RV**
M7	270 ± 12	$\sim$220	136	XLVh
M34	$\sim$470	$\sim$220	273	xl**R**vh
Coma Ber	86.7 ± 0.9	500 ± 50	222	xlrv
Praesepe	181.5 ± 6.0	578 ± 12	1430	XLR**V**cH
Hyades	$\sim$46	625 ± 50	724	**X**LR**V**ch
NGC 752	$\sim$450	1900 ± 200	266	xlV
M67	$\sim$900	3700 ± 300	676	xlrvC

[a]The availability of X-ray data, lithium measurements, rotational periods, $v\sin i$ measurements, Ca II H& K measurements, and Hα measurements are labeled as x, l, r, v, c, and h, respectively. A cluster with any data at all will contain the corresponding letter in the available data column. Capital letters indicate that there are more than 50 members for which data is available, while bold capital letters indicate there are more than 100. The references for the ages and distances to each cluster are given in Appendix A.

Table 5.2 Moving Groups and Associations

Name	Distance (pc)	Age (Myr)	Potential Members #	Available Data[a]
Upper Sco	145 ± 2	∼5	536	X**L**r**V**c**H**
ϵ Cha	90-120	∼6	24	xlrvh
η Cha	∼97	6^{+2}_{-1}	18	xlrvh
TW Hya	30-90	∼8	47	xlrvh
UCL	140 ± 2	∼10	289	**XL**Vc**H**
LCC	118 ± 20	∼10	304	**XL**c**VH**
β Pic	10-80	∼12	81	XLrVch
Octans	80-200	∼20	15	xlrv
Columba	30-190	∼30	55	xlrvh
Tuc-Hor	20-120	∼30	116	XLrVcH
Carina	40-160	∼30	23	xlrvh
Argus	10-170	∼40	36	xlrvh
AB Dor	10-130	∼70	111	XLRVch
Car Near	20-50	∼200	17	xlvh

[a]The availability of X-ray data, lithium measurements, rotational periods, $v\sin i$ measurements, Ca II H& K measurements, and Hα measurements are labeled as x, l, r, v, c, and h, respectively. A cluster with any data at all will contain the corresponding letter in the available data column. Capital letters indicate that there are more than 50 members for which data is available, while bold capital letters indicate there are more than 100. The references for the ages and distances to each association and moving group are given in Appendix A.

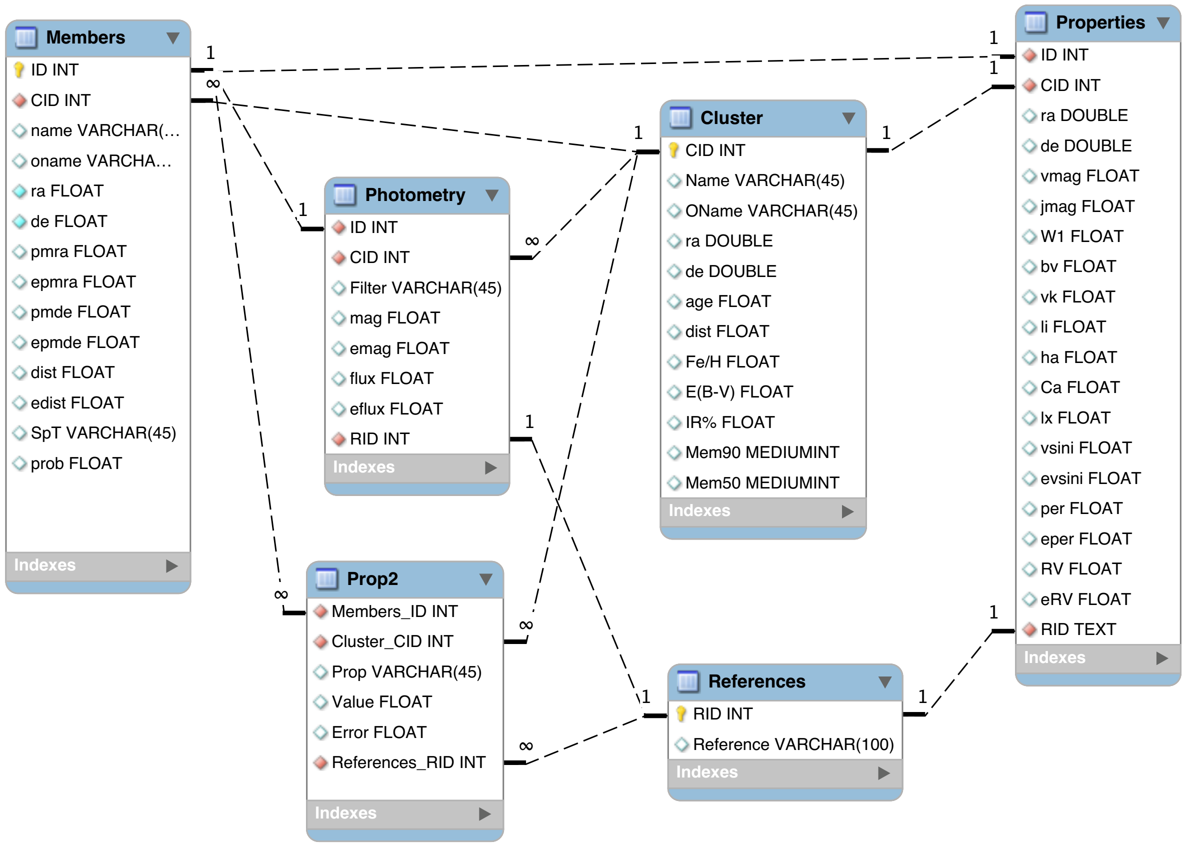

Figure 5.3 Mysql database schematic for open clusters.

(e.g., Tycho-2, 2MASS, WISE, GALEX, IRAS, etc.) were also found and stored for each cluster member.

The third task that must be performed is to evaluate membership for all input clusters. Interlopers can skew distributions of age-indices and need to be flagged. For some clusters, a thorough membership evaluation has been performed (e.g. Blanco 1: Platais et al. 2011, Hyades: Röser et al. 2011). In these instances, final member lists are taken from the literature as the cluster sample. For the clusters for which a comprehensive membership list is unavailable, all published candidate members are stored in the database, with membership to be evaluated when time permits. Initially, the cluster comparison sample is made up of only open clusters, not moving groups and associations. For open clusters, membership of each star is more secure because it can be established fairly confidently based solely on positions and proper motions. Cluster membership can be further evaluated based on color-magnitude diagram (CMD) positions of potential cluster members. For clusters beyond 100 pc, each is plotted on a CMD using the estimated distance to the cluster (see Appendix A). Outliers are identified by visual inspection of each CMD. For each individual outlier, the photometry is examined for potential misidentifications. If the photometry is genuine, outliers are flagged as potential non-members within the database. Stars flagged in this way are not used for further comparison sets. An example of outlier detection based on CMD position for the α Persei cluster is shown in Figure 5.4.

For nearby moving groups and associations, membership must be evaluated on a star-by-star basis utilizing kinematic and age considerations. As an example of how momentous of a task comprehensive membership evaluation for a moving group is, a detailed examination of potential members of the relatively small (member-wise) TW Hya Association is detailed in the following section. This work appears in Schneider et al. (2012a). A similar examination was performed for each other moving group and association in Table 5.2.

Membership of the TW Hydrae Association

Establishing the membership status of TWA is difficult. This is partly due to the overlap with the Lower-Centaurus Crux (LCC) region of the Scorpius Centaurus complex (Sco-Cen). Young stars found in this area can be difficult to place because the age of the LCC (~10-20 Myr) is similar enough to that of TWA that youth indicators alone cannot distinguish between the two. Typically, a distance measurement is relied upon to make the final distinction, because the LCC is generally further away than TWA (LCC ~120 pc; TWA ~50

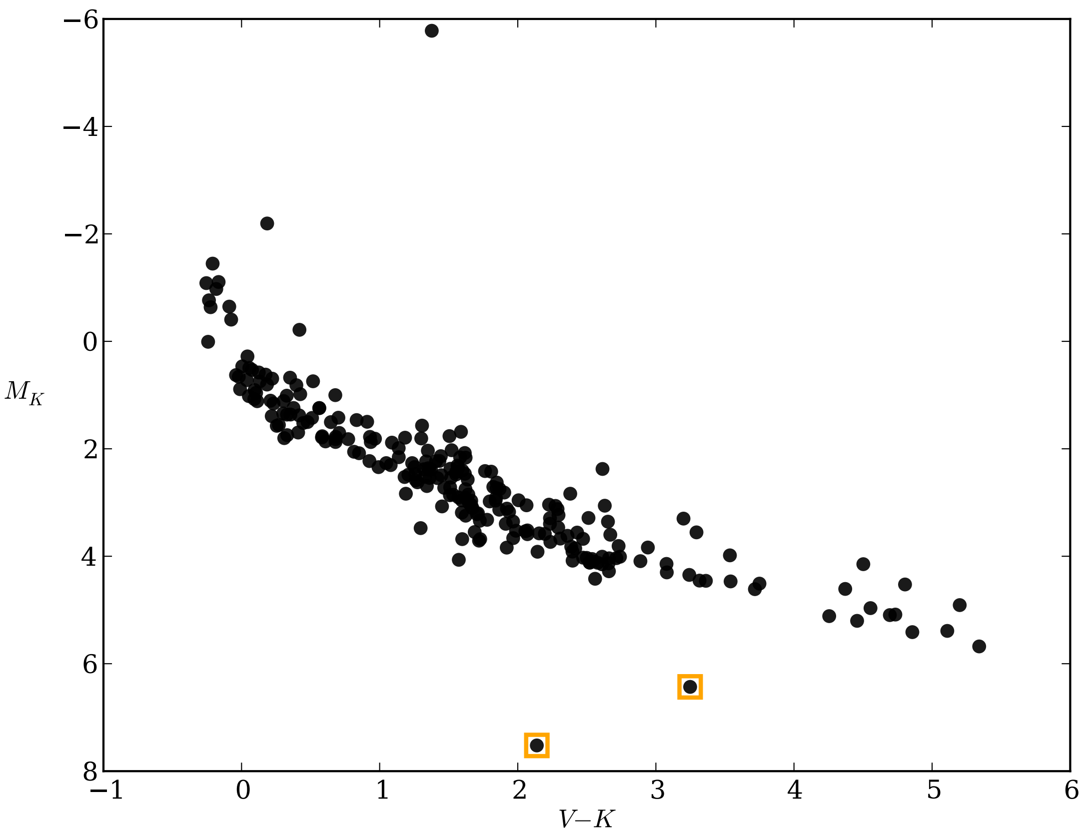

Figure 5.4 Color-magnitude diagram for the α Perseus cluster. Potential non-members based on their CMD position are highlighted by orange boxes.

pc). However, with the addition of new members, such as TWA 29 (d ∼90 pc) and TWA 31 (d ∼110 pc), the boundary between the LCC and TWA is becoming much more ambiguous, providing evidence that TWA may indeed be the front edge of the LCC, as proposed by Song et al. (2003). For the purposes of this work, a distance cut of 100 pc is chosen for the identification of TWA members, acknowledging that this choice will need further revision if more members are identified at intermediate distances.

A current summary of the properties of proposed TWA members is given in Table 5.3. When more than one value for a property of a particular object is available, the most recent measurement is used. A complete list of members is crucial when evaluating properties such as excess fractions, age, and group velocities. Torres et al. (2008) evaluated the membership of all proposed TWA members up to TWA designation 28 (including eight objects labeled as secondaries to TWA members), with the exception of 4 possible members for which kinematical data was found to be lacking. By applying a convergence method to the remaining 32 stars, they found 6 to have a TWA membership probability of zero (15A, 17, 18, 19A, 19B, and 24), and I agree with this assessment based on the discrepant distances found for these stars ($d > 100$) compared to those of members found to have a high probability of membership ($70 > d > 25$). Of the remaining 26, two stars were categorized as unlikely members (12 and 21), and two as possible members (6 and 14). A total of 22 stars were found to be high probability members.

TWA 15B, TWA 22, TWA 23, and TWA 28 were the four possible members not evaluated by Torres et al. (2008). As of this writing, TWA 15B still lacks the kinematical information necessary to properly evaluate its membership, though its estimated distance (100 pc) from Shkolnik et al. (2011) - inconsistent with known TWA members - leads me to label its status as questionable. Teixeira et al. (2009) performed a thorough analysis of the kinematics of TWA 22, but the results were somewhat inconclusive, thus, TWA 22 is retained as a possible member. Shkolnik et al. (2011) reevaluate the kinematics of TWA 23 (found to be a spectroscopic binary), and show its UVW space motions are consistent with being a TWA member. In a similar fashion as TWA 22, Teixeira et al. (2008) thoroughly evaluate the membership of TWA 28 with high precision proper motion and parallax measurements, and determine it is a true member of TWA.

Since the review of Torres et al. (2008), eight objects have been assigned TWA designations (11C, 29, 30A, 30B, 31, 32, 33, and 34). TWA 11C was discovered and determined to be a member of TWA by Kastner et al. (2008) via its common proper motion to TWA 11AB and strong lithium absorption and Hα emission confirming its youth. For TWA 29, first proposed as a member by Looper et al. (2007), new proper motion values are determined in this work based on its 2MASS and WISE positions. These new values, listed in Table 5.3, along with its estimated distance, strong Hα emission, and position relative to other TWA members, make its membership highly likely. TWA 30A and TWA 30B have been determined to be highly likely members by Looper et al. (2010a) and Looper et al. (2010b), respectively. TWA 33 and TWA 34 were found based on the mid-IR excess emission, and share spectroscopic, photometric, and kinematic properties with known members (see Chapter 3). Shkolnik et al. (2011) show that proposed members TWA 31 and 32 share spectroscopic, photometric, and kinematic properties with known members, thereby solidifying their membership. This is definitely the case for TWA 32, with UVW space motions consistent with known TWA members. For TWA 31, though, this is not so obvious.

Shkolnik et al. (2011) quote a photometric distance to TWA 31 of 110 pc, a distance inconsistent with that of known members. Additionally, in their analysis, they compare the UVW of TWA 31 to some stars with questionable membership, such as TWA 12, 14, and 22, making the UVW for TWA 31 seem more reasonable than it should. The claim that TWA 31 is certainly too young to be an LCC member is valid when the LCC is assigned an age of 16 Myr. However, if the LCC is younger ($\sim$10 Myr, as suggested by Song et al. 2012), then the use of age indicators as a deciding factor for membership in TWA or the LCC is unsound. As mentioned above, this may be one of many possible objects between TWA and the LCC that make a distinct boundary between the two unclear. TWA 31 is retained as a possible member for this study because of the large uncertainty (∼10%) in its distance estimate.

In summary, of all stars with TWA designations, 32 bona-fide TWA members, four possible members, one questionable member, two unlikely members, and seven nonmembers are found. This is displayed in Table 5.3 with the following symbols representing the various designations: Y = true member, Y? = possible member, ? = questionable member, N? unlikely member, and N = nonmember.

Table 5.3: TWA Membership

TWA	SpT	dist (pc)	pmra (mas yr^{-1})	pmde (mas yr^{-1})	V_{rad} (km s^{-1})	Li (mÅ)	Hα (Å)	$\log(L_x/L_{bol})$	$v\sin i$ (km s$_{-1}$)	Member?	refs.[a]
1	K6Ve	53	-66.8 ± 1.6	-15.2 ± 1.3	12.66 ± 0.22	435	-172.5	-2.59	6	Y	11,11,7,4,13,6,5,13
2A	M2Ve	48	-91.6 ± 1.8	-20.1 ± 1.3	10.58 ± 0.51	520	-1.72	-3.54	13	Y	11,17,7,17,17,17,5,13
2B	M2	43	...	...	...	...	...	...	...	N	4,5,-,-,-,-,-,-
3A	M4Ve	31	-109.3 ± 8.7	0.8 ± 8.9	9.52 ± 0.86	510	-40.89	-3.33	12	Y	11,17,7,17,17,17,5,13
3B	M4Ve	31	...	...	9.89 ± 0.62	540	-4.26	...	12	Y	11,17,-,17,17,17,-,13
4A	K5V	44	-91.7 ± 1.5	-30.0 ± 1.5	12.74 ± 0.10	380	0	-3.43	9	Y	11,11,7,4,13,2,5,13
4B	K7,M1	47	...	...	5.73 ± 0.14	335,540	0	-3.44	...	Y	4,5,-,4,4,2,5,-
5A	M2Ve	38	-85.4 ± 3.6	-23.3 ± 3.7	13.30 ± 2.00	630	-6.37	-3.05	54	Y	11,17,7,17,17,17,5,13
5B	M8Ve	45	-86 ± 8	-21 ± 8	13.4	300	-5.1	-3.4	16	Y	11,11,9,1,13,1,16,13
6	K7	51	-57.0 ± 2.1	-20.9 ± 2.1	16.9	560	-3.4	-2.82	79.5	Y?	4,7,7,3,4,6,5,6
7	M2Ve	34	-122.3 ± 2.3	-29.3 ± 2.3	12.21 ± 0.24	550	-5.39	-2.38	4	Y	11,17,7,17,17,17,5,13
8A	M3Ve	44	-99.3 ± 9.0	-31.3 ± 8.9	8.34 ± 0.48	550	-5.04	-2.99	7	Y	11,17,7,17,17,17,2,13
8B	M5Ve	27	-95.3 ± 10.0	-29.5 ± 10.3	8.93 ± 0.27	580	-6.21	...	11	Y	11,17,7,17,17,17,-,13
9A	K5Ve	68	-52.8 ± 1.3	-20.2 ± 1.8	9.46 ± 0.38	470	-2.1	-3.09	11	Y	11,11,7,4,13,6,5,13
9B	M1Ve	68	-70.7 ± 13.3	-6.6 ± 15.8	11.3	480	-4.3	-2.28	8	Y	11,11,7,3,13,6,5,13
10	M2Ve	67	-72.6 ± 12.2	-32.1 ± 12.3	6.75 ± 0.40	500	-5.46	-2.93	6	Y	11,17,7,17,17,17,5,13
11A	A0V	67	-53.3 ± 1.3	-21.2 ± 1.1	9.4 ± 2.3	0	-5.91	...	152	Y	11,11,7,4,13,5,-,13
11B	M2Ve	67	...	...	9 ± 1	550	-3.5	-3.22	12	Y	11,11,-,4,13,6,5,13
11C	M4.5	67	-49.6 ± 3	-25.1 ± 3	...	630	-6.66	...	...	Y	19,19,19,-,19,19,-,-
12	M2	63	-36.3 ± 8.6	-1.6 ± 8.9	13.12 ± 1.59	530	-51.0	...	16.2	Y?	4,17,7,17,17,17,-,6
13A	M1Ve	55	-67.4 ± 11.8	-17.0 ± 11.8	12.57 ± 0.50	580	-3.0	...	12	Y	11,11,7,4,13,6,-,13
13B	M1Ve	55	...	...	11.67 ± 0.64	550	-3.0	...	12	Y	11,11, ,4,13,6,-,13
14	M0	113	-43.4 ± 2.6	-7.0 ± 2.4	15.83 ± 2.00	590	-5.68	-3.15	43.1	N?	4,17,7,17,17,17,5,6
15A	M1.5	41	-100.0 ± 33.0	-16.0 ± 6.0	11.2	650	-8.8	-2.82	21.3	N	4,7,7,3,4,6,5,6
15B	M2	100	...	...	10.03 ± 1.66	550	-9.64	...	32.3	?	4,17,-,17,17,17,-,7
16	M1Ve	65	-53.3 ± 5.2	-19.0 ± 5.2	9.01 ± 0.42	380	-3.08	-3.43	11	Y	11,17,7,17,17,17,5,13
17	K5	163	-28.0 ± 8.5	-11.1 ± 8.5	4.6	490	-3.2	-3.23	49.7	N	4,7,7,3,4,6,5,6
18	M0.5	121	-29.0 ± 5.2	-21.2 ± 5.2	6.9	420	-3.3	-3.29	24.1	N	4,7,7,3,4,6,5,6
19A	G5	109	-33.6 ± 0.9	8.5 ± 0.9	11.5 ± 3.8	190	0.57	-3.48	25	N	4,7,7,4,4,2,5,5

Continued on next page

Table 5.3 – *Continued from previous page*

TWA	SpT	dist (pc)	pmra (mas yr^{-1})	pmde (mas yr^{-1})	V_{rad} (km s^{-1})	Li (mÅ)	Hα (Å)	$\log(L_x/L_{bol})$	$v$sin$i$ (km s_{-1})	Member?	refs.
19B	K7	103	-35.6 ± 4.8	-7.5 ± 4.6	15.2	400	-2.2	-2.99	48.7	N	4,7,7,2,4,6,5,6
20	M3Ve	73	-52.0 ± 5.0	-16.0 ± 6.0	8.1 ± 4	160	-3.1	-3.09	30	Y	11,11,7,2,13,6,5,13
21	M1	45	-65.3 ± 2.4	13.7 ± 1.0	17.5 ± 0.8	290	0.0	-3.59	...	N?	5,7,7,3,3,3,5,-
22	M5	22	-175.8 ± 0.8	-21.3 ± 0.8	13.57 ± 0.26	650	-10.48	...	9.7	Y?	6,17,12,17,17,17,-,17
23	M1	61	-68.0 ± 4.0	-23.0 ± 4.0	8.52 ± 1.20	500	8.12	-2.94	14.8	Y	6,17,7,17,17,17,5,6
24	K3	107	-34.4 ± 2.8	-13.1 ± 1.7	11.9 ± 0.9	340	-0.3	-3.16	13.0	N	6,7,7,3,3,6,5,6
25	M1Ve	51	-75.0 ± 2.0	-26.9 ± 1.4	9.2 ± 2.1	555	-2.4	-2.95	13	Y	11,11,7,3,13,6,5,13
26	M8Ve	41	-93 ± 5	-31 ± 10	11.6 ± 2	500	-44.7	-4.8	25	Y	11,11,9,1,13,8,16,13
27	M8Ve	53	-63 ± 3	-23 ± 2	11.2 ± 2	500	-10.2	<-4.8	13	Y	11,11,9,1,13,8,16,13
28	M8.5	55.2	-67.2 ± 0.6	-14.0 ± 0.6	...	...	-64 ± 3	<-4.0	...	Y	10,10,10,-,-,9,16,-
29	M9.5	90	-89.4 ± 10	-20.9 ± 10	...	...	-15 ± 3	...	...	Y	9,20,9,-,-,9,-,-
30A	M5	42	-89.6 ± 1.3	-25.8 ± 1.3	12.3 ± 1.5	610	-6.8	-3.34	...	Y	14,14,14,14,14,14,14,-
30B	M4	44	-83 ± 9	-30 ± 9	12 ± 3	500	-7.4	...	...	Y	15,15,15,15,15,15,-,-
31	M4.2	110	-42 ± 6	-36 ± 3	10.47 ± 0.41	410	-114.8	...	...	Y?	17,17,17,17,17,17,-,-
32	M6.3	53	-62.2 ± 3.5	-24.7 ± 3.9	7.15 ± 0.26	600	-12.6	<-3.10	...	Y	17,17,17,17,17,17,18,-
33	M4.7	50	-88.7 ± 6.1	-25.9 ± 6.1	...	470	-5.8	...	...	Y	21,21,21,21,-,21,21,-,-
34	M4.9	49	-65.5 ± 4.1	-11.1 ± 4.1	...	370	-9.6	...	...	Y	21,21,21,21,-,21,21,-,-

Table 5.3: The references in column 12 refer to columns 2, 3, 4 and 5, 6, 7, 8, 9, and 10, respectively. References: (1) Mohanty et al. (2003); (2) Reid (2003); (3) Song et al. (2003); (4) Torres et al. (2003); (5) De la Reza & Pinzón (2004); (6) Jayawardhana et al. (2006); (7) Mamajek (2005); (8) Barrado Y Navascués (2006); (9) Looper et al. (2007); (10) Teixeira et al. (2008); (11) Torres et al. (2008); (12) Teixeira et al. (2009); (13) da Silva et al. (2009); (14) Looper et al. (2010a); (15) Looper et al. (2010b); (16) Castro et al. (2011); (17) Shkolnik et al. (2011); (18) Rodriguez et al. (2011); (19) Kastner et al. (2008); (20) Schneider et al. (2012a) (21) Schneider et al. (2012b)

After membership is evaluated for each stellar group, properties are primed for comparison. The properties of the selected groups in Tables 5.1 and 5.2 as a function of age and spectral type are visually represented in two ways. Histograms are created for each diagnostic for each stellar group to highlight distributions of each property as a function of age, and are shown in Figures 5.5 - 5.10. The histograms are organized in such a way as to show increasing age from top to bottom first, then left to right. To highlight more specifically the trends for each age-evaluator over time, average values for cluster properties as a function of age are displayed in Figures 5.11 - 5.17. Average values in these figures are separated by spectral type based on V-K colors in the following manner:

$$\text{F: } 0.5 < (\text{V-K}) \leq 1.3$$
$$\text{G: } 1.3 < (\text{V-K}) \leq 1.8$$
$$\text{K: } 1.8 < (\text{V-K}) \leq 4.0\ .$$

A few valuable pieces of information can be gleaned from Figures 5.5 - 5.17. Figures 5.5 and 5.11 show that lithium equivalent widths decrease fairly predictably for K-type stars. For G-type stars, a downward trend can be seen past 30 Myr, and distinguishing between relative ages < 30 Myr is challenging. A trend for F-type stars is difficult to identify.

The fractional X-ray luminosities also show a decreasing trend for K-type stars in Figures 5.6 and 5.12. X-ray luminosities for G-type stars remain relatively constant until $\sim$70 Myr, then show a steady decrease. For F-type stars, X-ray luminosities show a steady decrease from 10 to 600 Myr.

As seen in Figures 5.7 and 5.12, rotational velocity values ($v\sin i$) remain relatively constant for K spectral types. While a general trend of decreasing $v\sin i$ values can be identified for F- and G-type stars, uncertainties are large. The trends are also seen mostly for stars with $v\sin i$ values > 25 km s^{-1} (only $\sim 25\%$ of the entire cluster sample with measured $v\sin i$ values falls within this range). Because of the large uncertainties of $v\sin i$ distributions

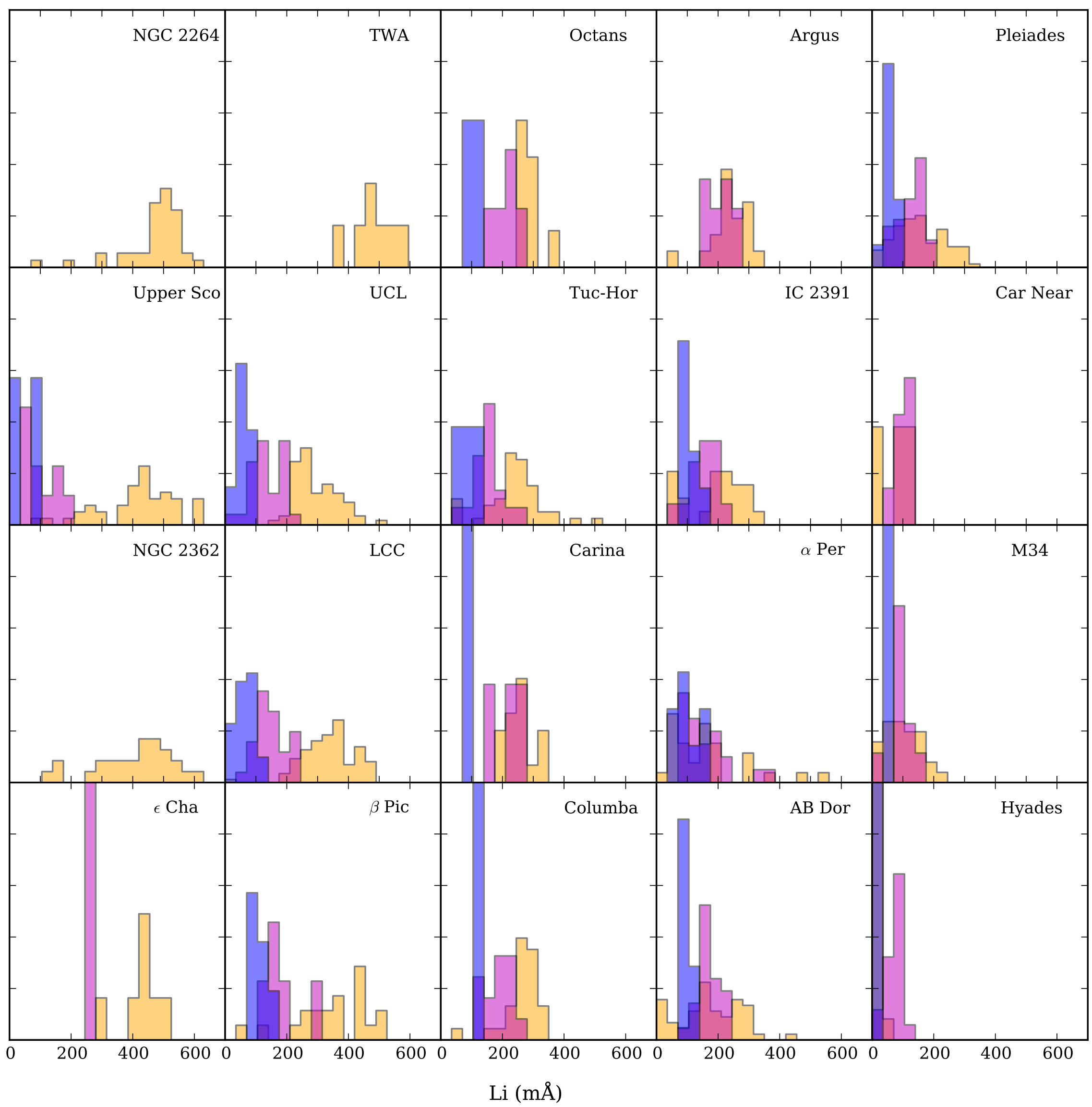

Figure 5.5 Histograms of lithium equivalent widths for solar-type stars from stellar groups in this study. The blue histograms represent F-type stars, while the violet and orange histograms represent G- and K-type stars, respectively.

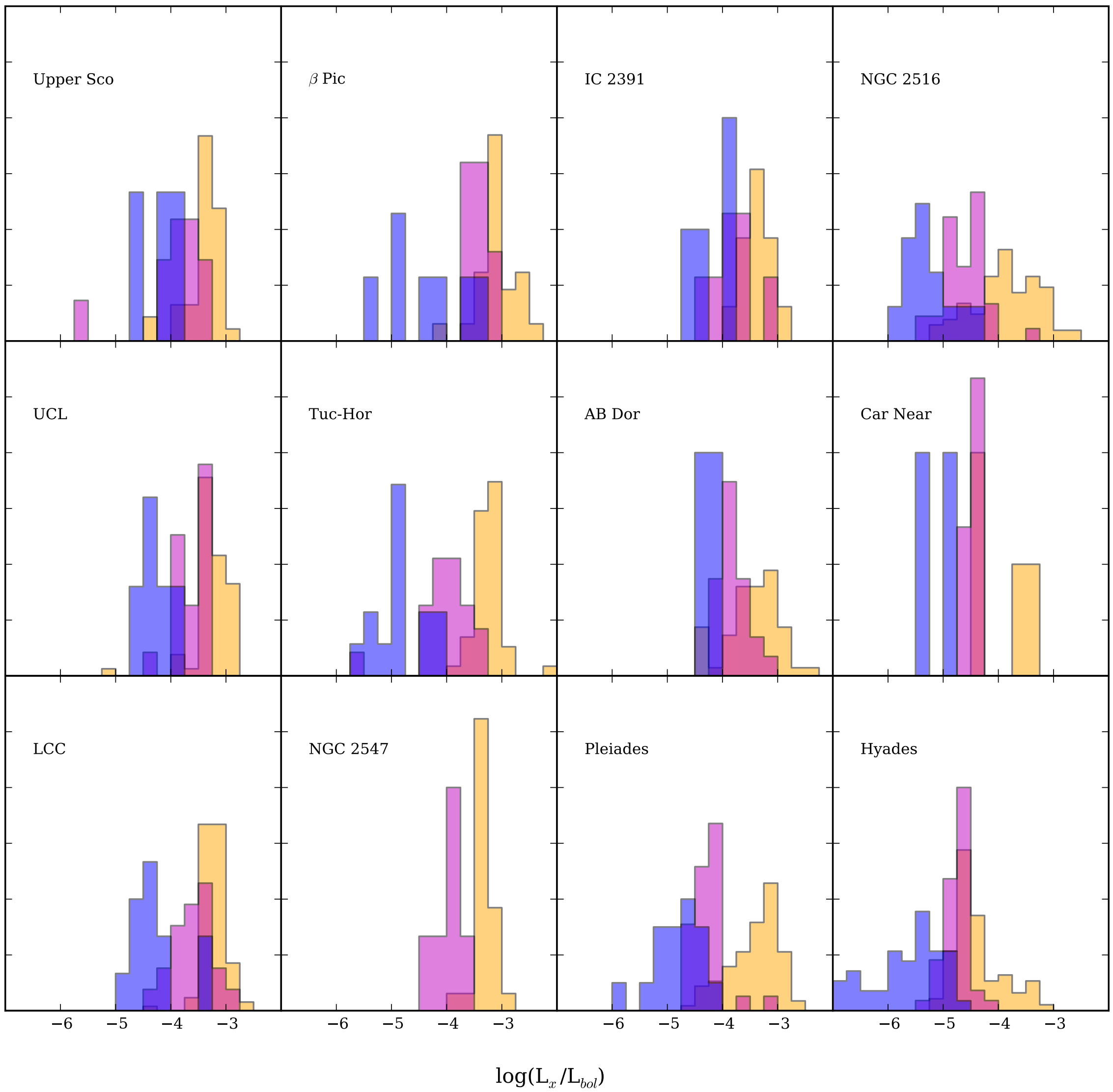

Figure 5.6 Histograms of X-ray luminosities for solar-type stars from stellar groups in this study. The blue histograms represent F-type stars, while the violet and orange histograms represent G- and K-type stars, respectively.

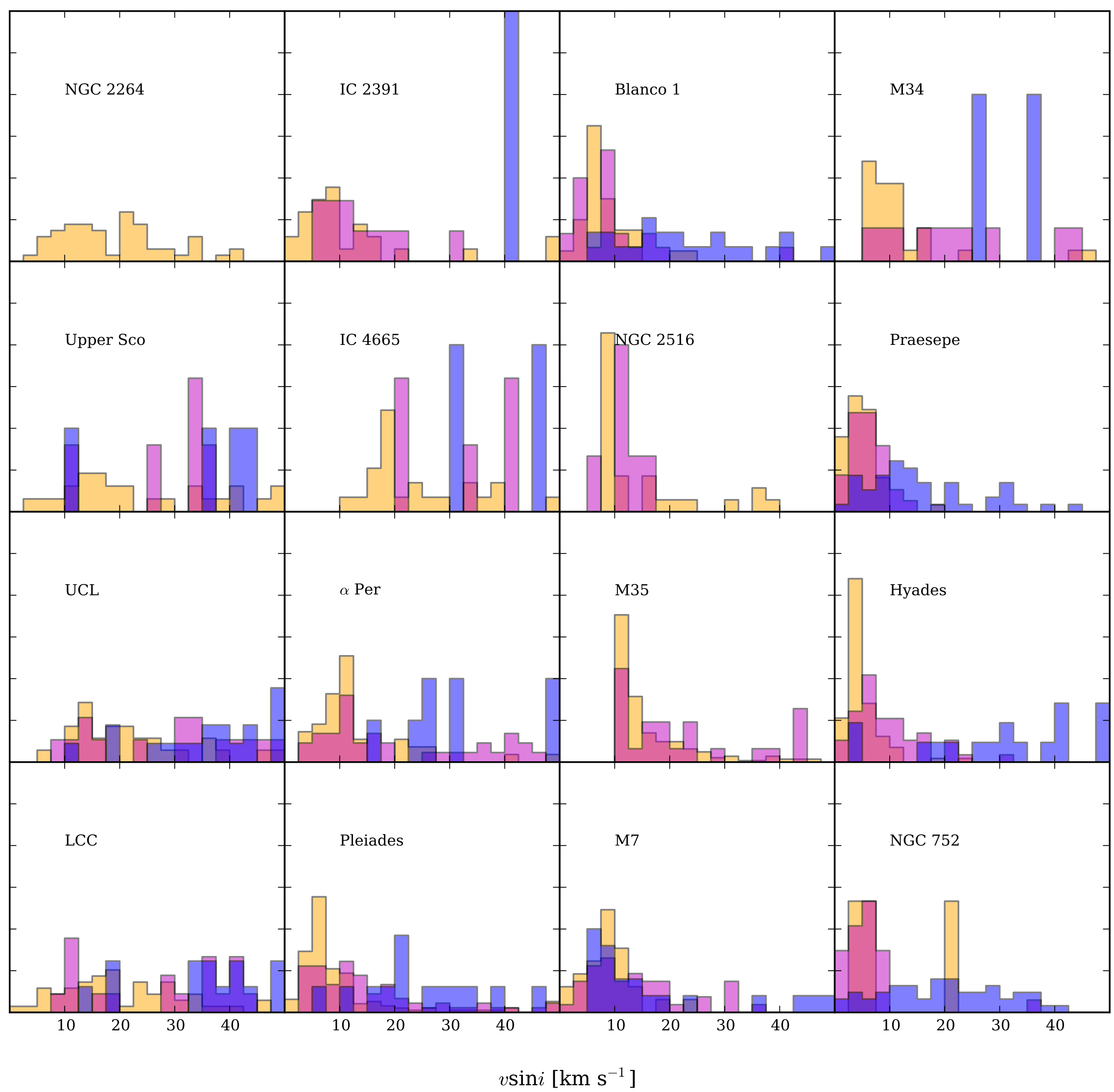

Figure 5.7 Histograms of $v\sin i$ measurements for solar-type stars from stellar groups in this study. The blue histograms represent F-type stars, while the violet and orange histograms represent G- and K-type stars, respectively.

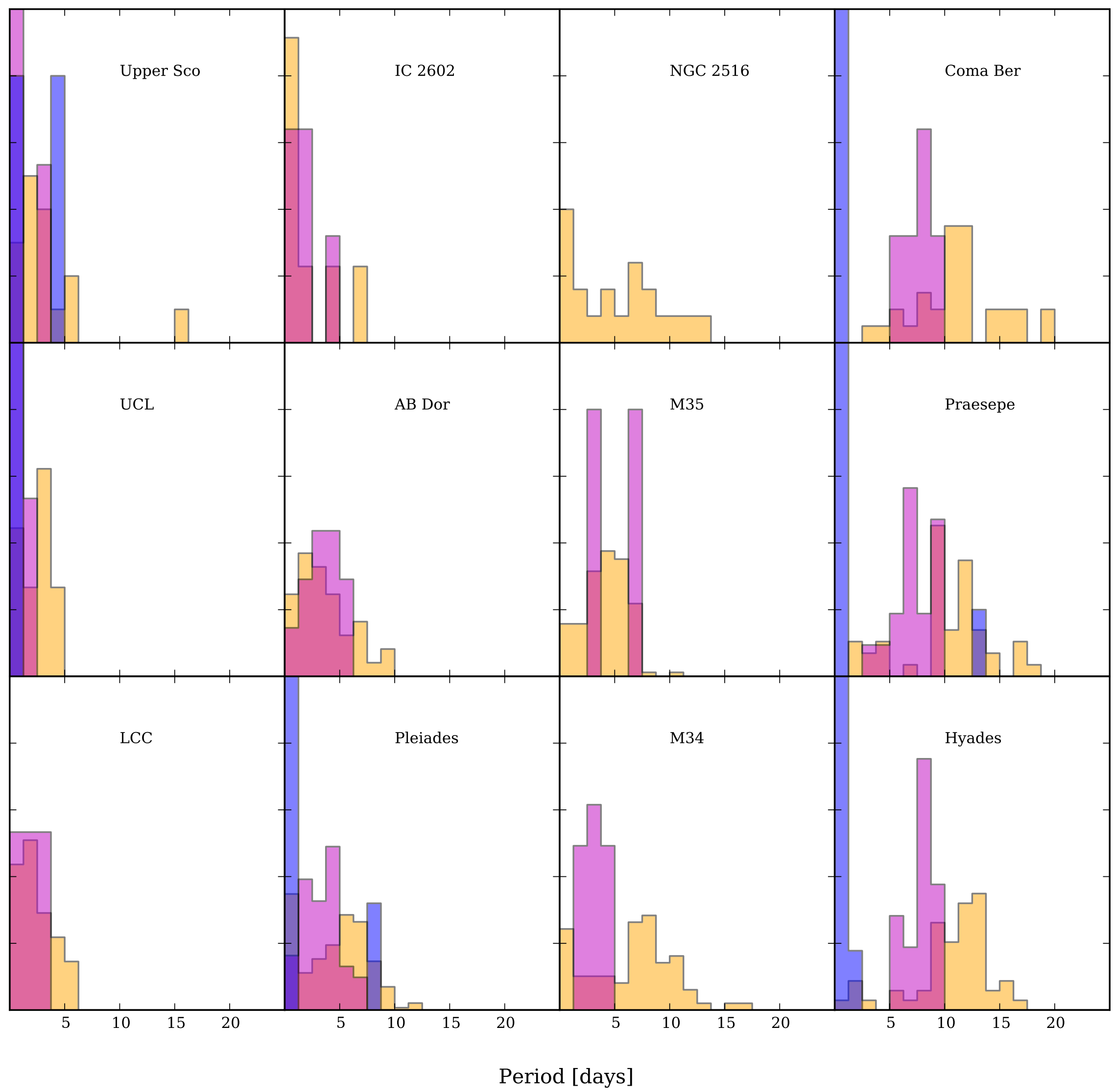

Figure 5.8 Histograms of rotational periods for solar-type stars from stellar groups in this study. The blue histograms represent F-type stars, while the violet and orange histograms represent G- and K-type stars, respectively.

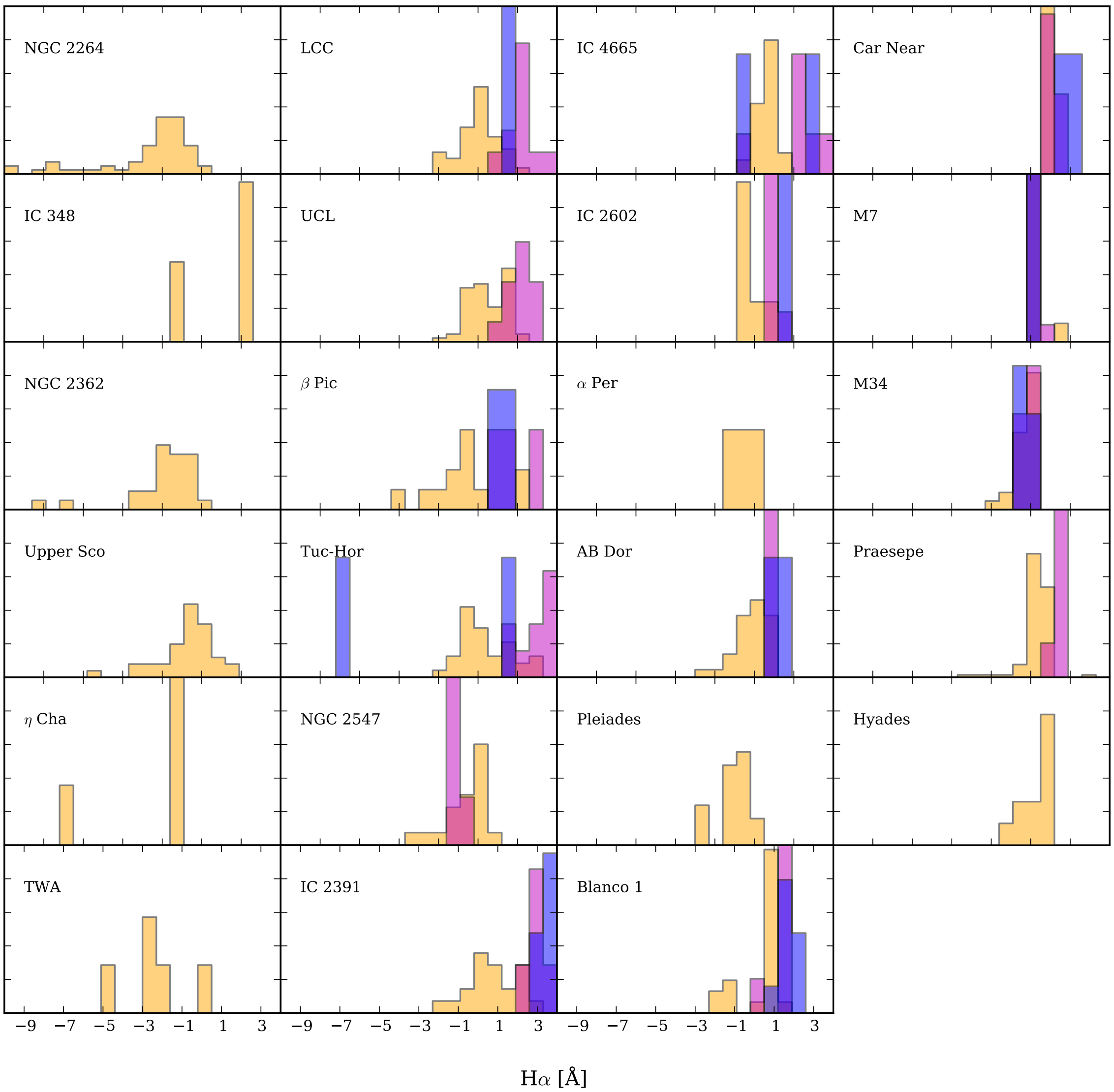

Figure 5.9 Histograms of Hα equivalent widths for solar-type stars from stellar groups in this study. The blue histograms represent F-type stars, while the violet and orange histograms represent G- and K-type stars, respectively.

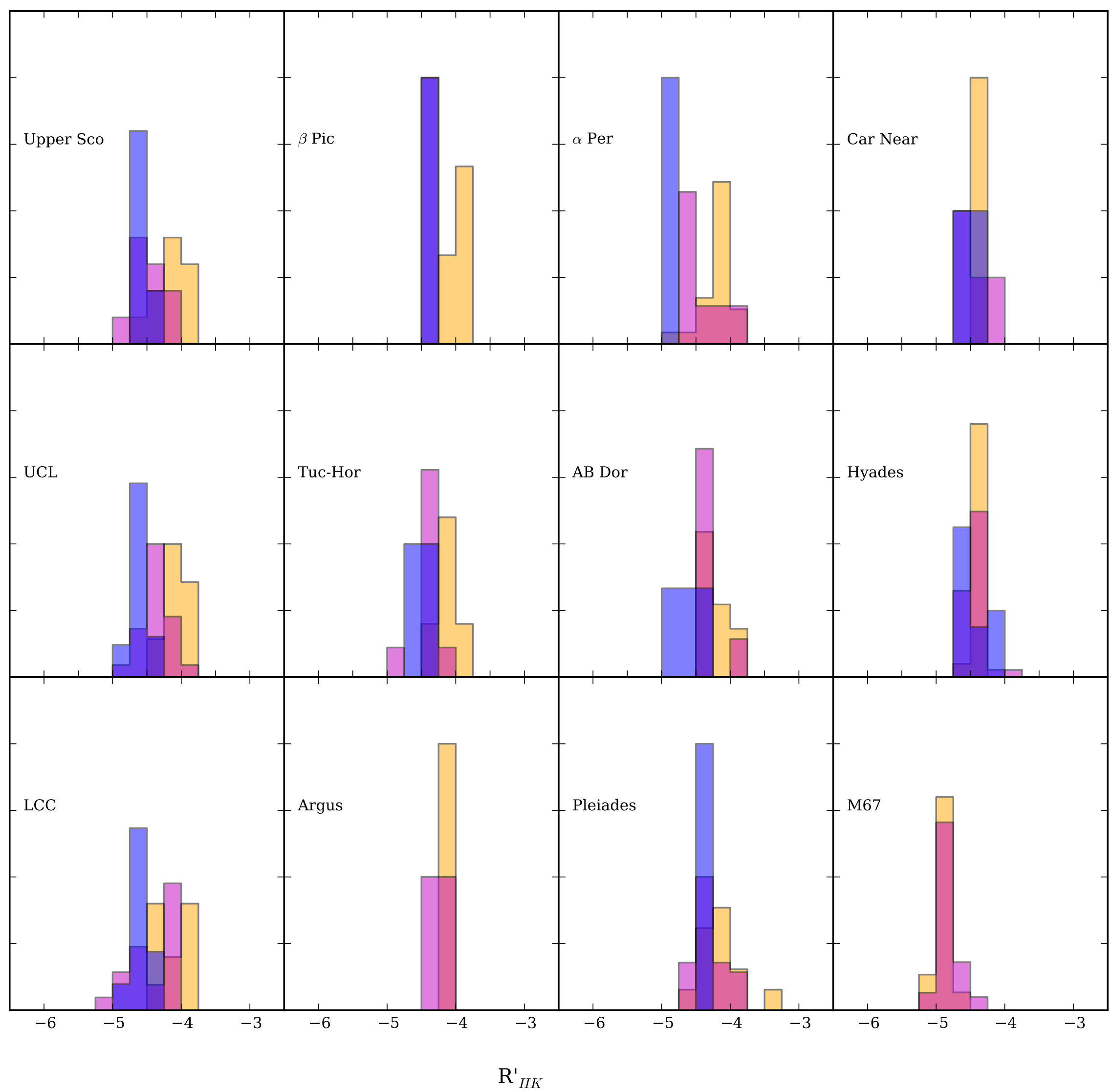

Figure 5.10 Histograms of R'_{HK} values for solar-type stars from stellar groups in this study. The blue histograms represent F-type stars, while the violet and orange histograms represent G- and K-type stars, respectively.

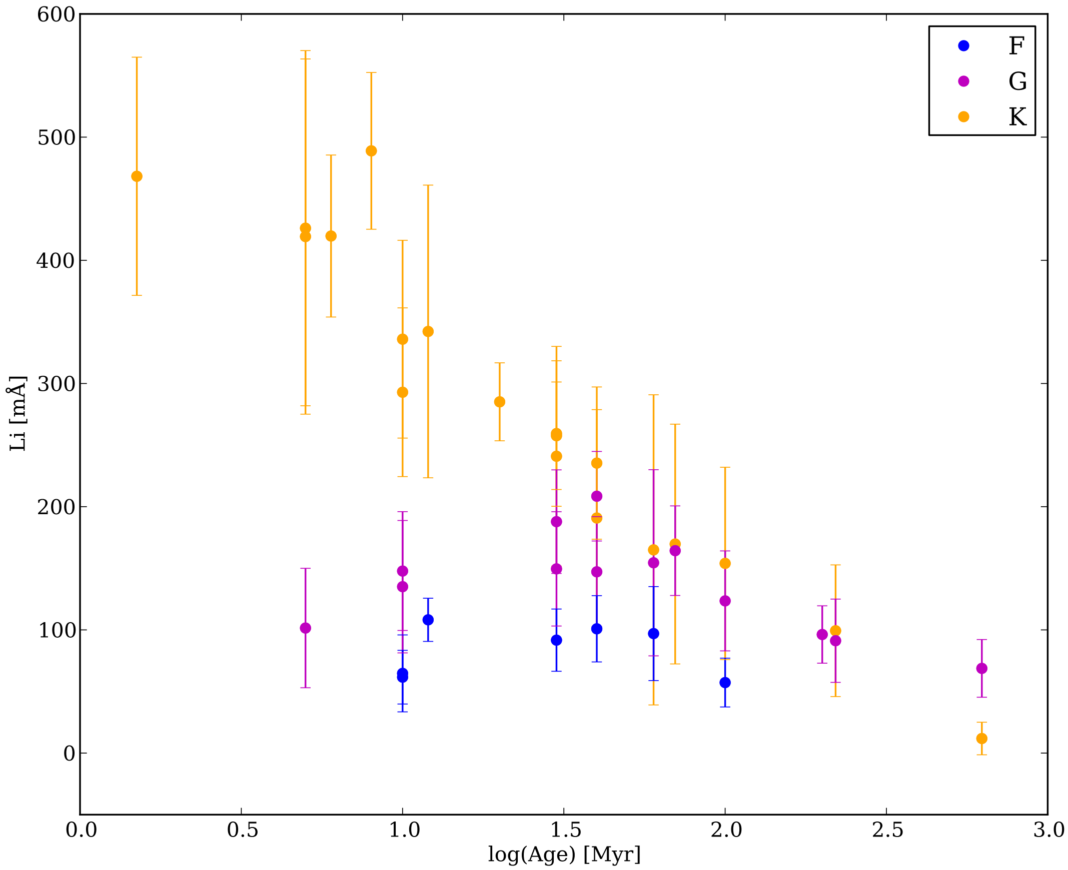

Figure 5.11 The average Liλ6708 equivalent widths as a function of age for stellar groups in this study. The error bars correspond to the standard deviation of the measurements contained within each spectral type bin for each stellar group.

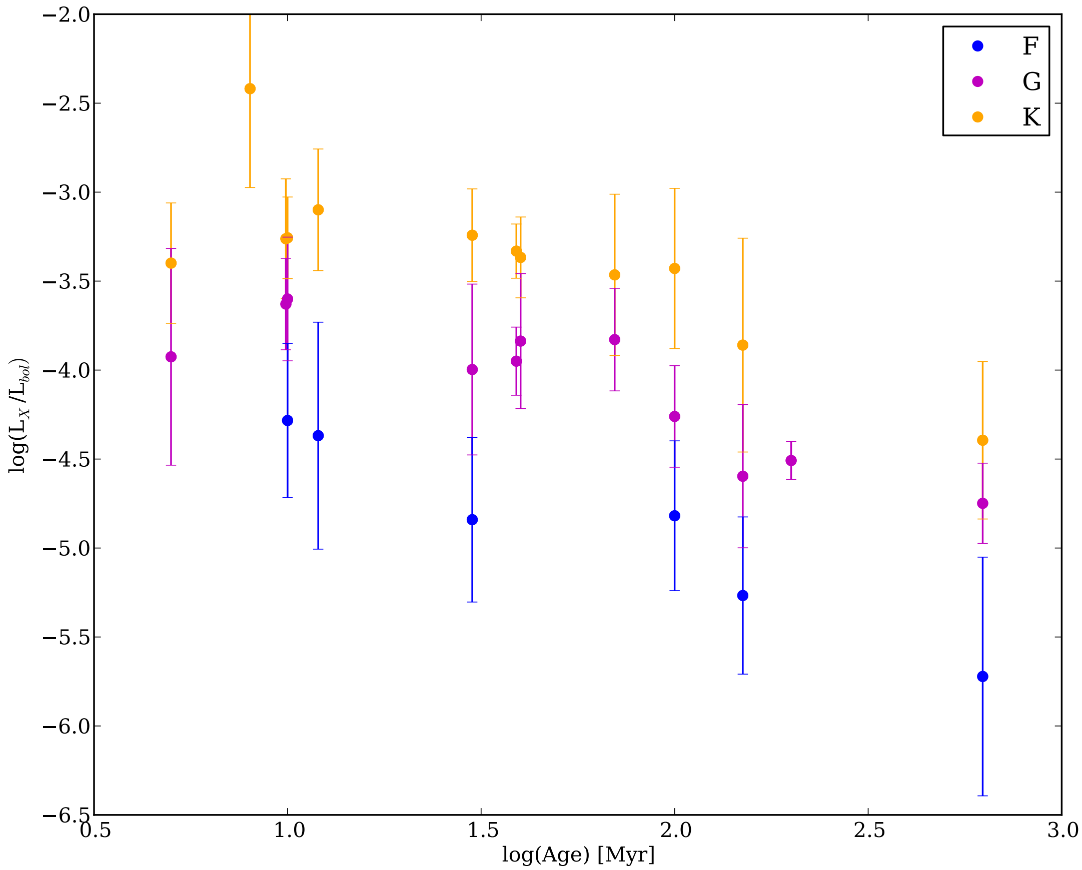

Figure 5.12 The average fractional X-ray luminosities as a function of age for stellar groups in this study.

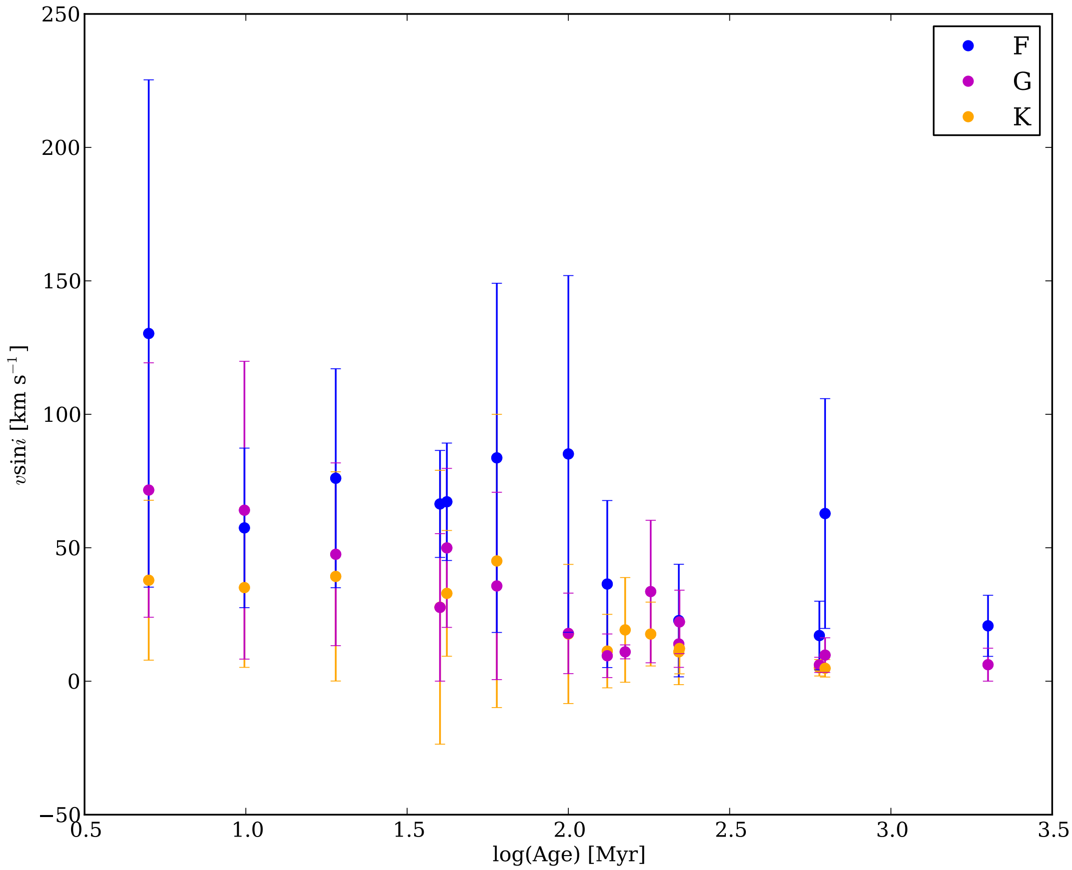

Figure 5.13 Average $v$sin$i$ values as a function of age for stellar groups in this study.

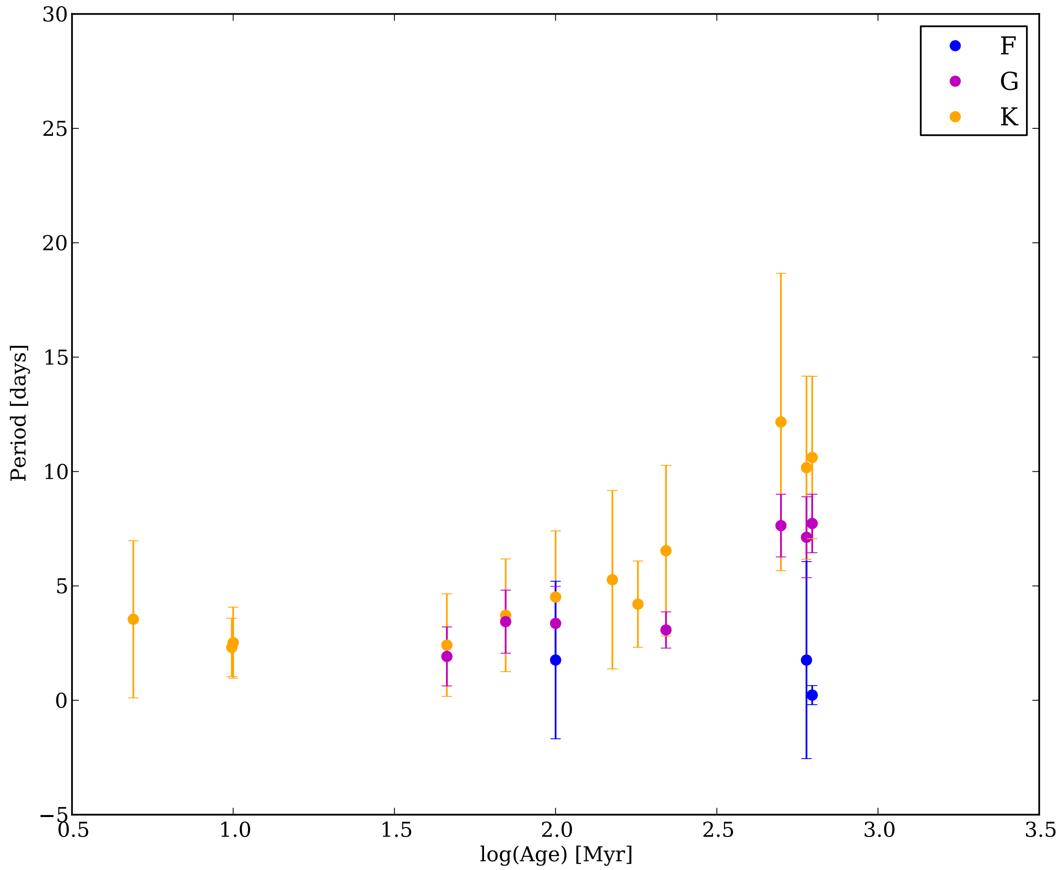

Figure 5.14 Average rotational periods as a function of age for stellar groups in this study.

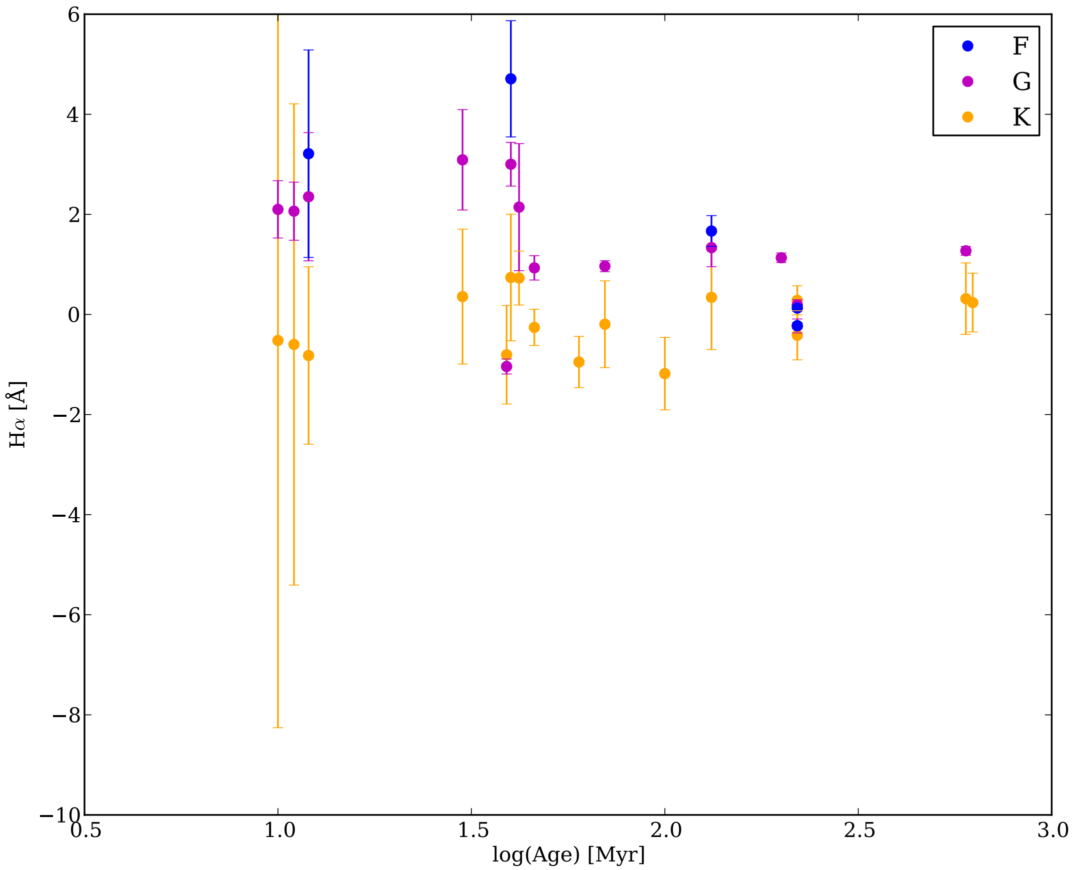

Figure 5.15 The average Hα equivalent width as a function of age for stellar groups in this study.

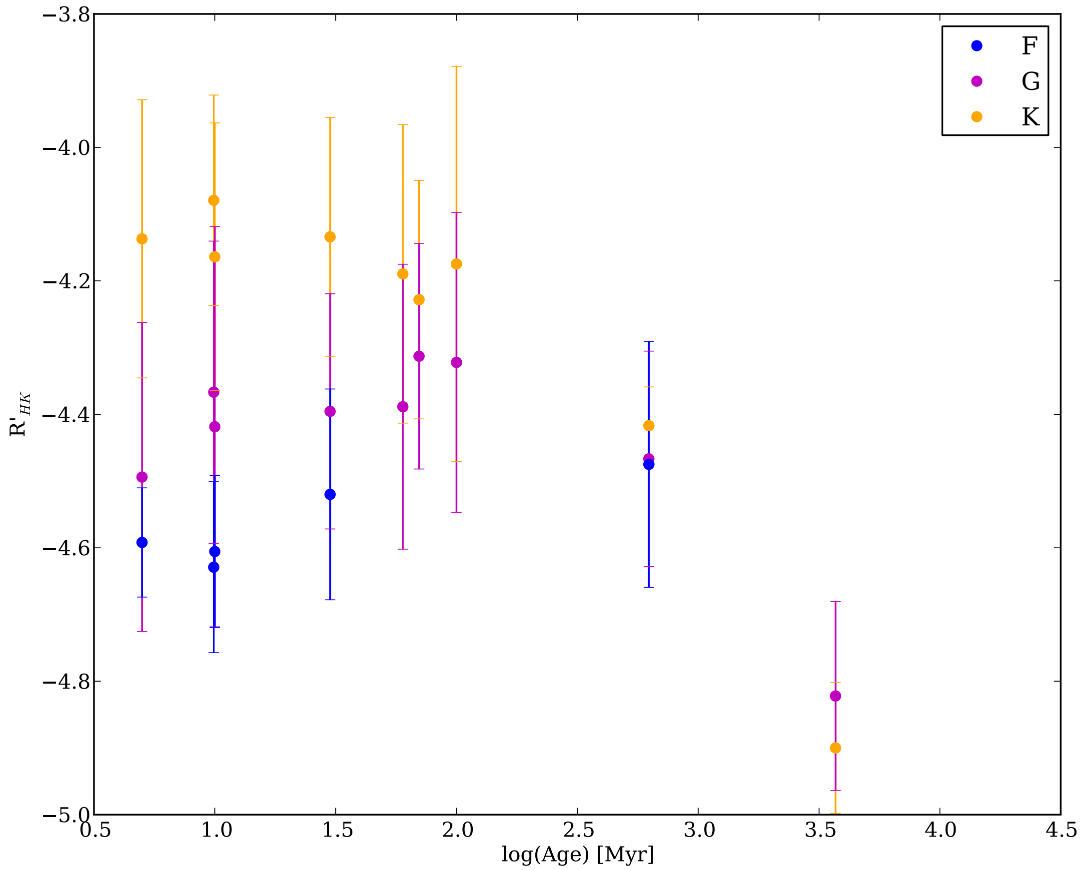

Figure 5.16 Average R'_{HK} values as a function of age for stellar groups in this study.

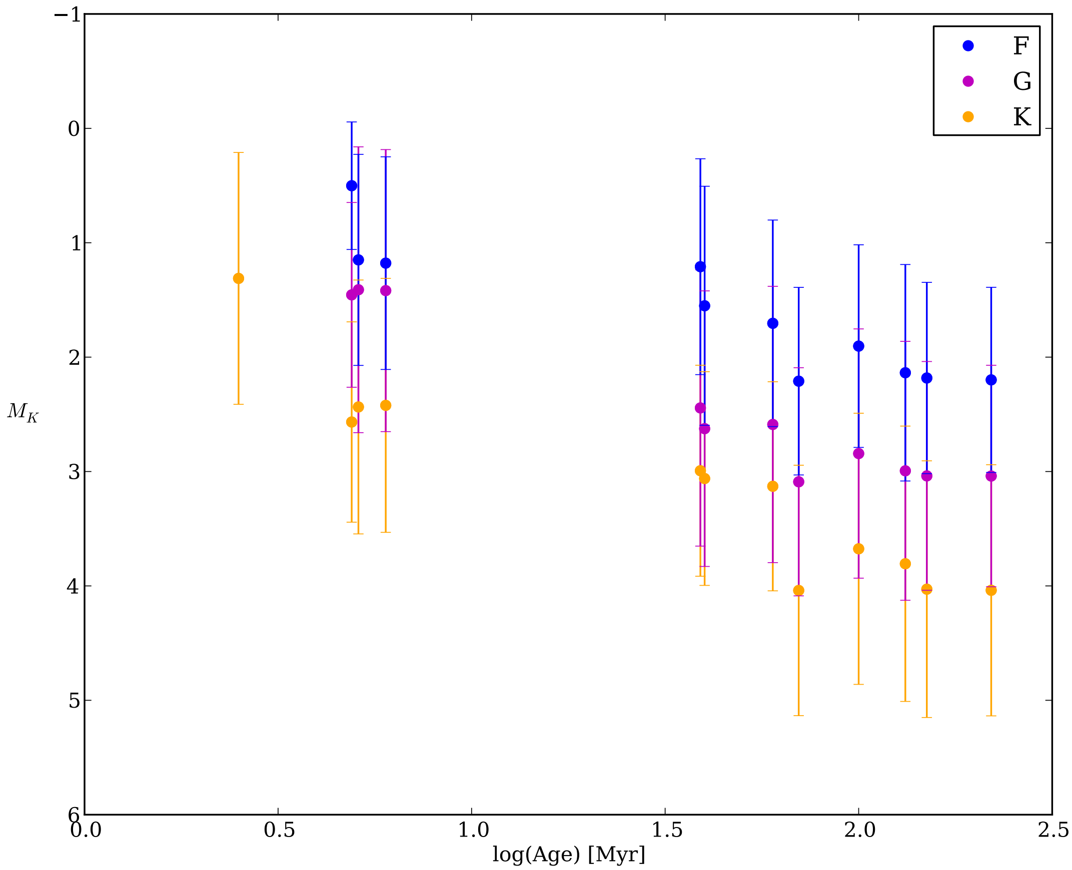

Figure 5.17 Absolute K magnitudes as a function of age for stellar groups in this study.

as a function of age, and the small range of applicable $v\sin i$ values and spectral types for which age information can be obtained, rotational velocities are not considered in the final age-dating process.

Rotational periods for F-, G-, and K-type stars show little variation for ages $<$ 300 Myr (Figures 5.8 and 5.14). Because I am interested in determining ages for stars with ages well-below this threshold, rotational periods are not used in the final estimation of stellar ages.

Hα equivalent widths are also degenerate for F-, G- and K-type stars for all ages between 10 and 600 Myr (Figures 5.9 and 5.15). Clusters with ages $<$ 10 Myr were not included in Figure 5.15 because of the extremely large values in some cases due to active accretion. Hα is also not used in the final age-dating analysis.

R'_{HK} values are degenerate for F-type stars (Figures 5.10 and 5.16). For G-type stars, values remain consistent until $\sim$100 Myr, then drop considerably. For K-type stars, the decreasing trend begins at an earlier age ($\sim$10 Myr). R'_{HK} values are used in the final age-dating analysis, though for a limited range of V-K values.

Absolute K-magnitudes show a consistent decreasing trend for F-, G-, and K- spectral types (Figure 5.17) until ages of $\sim$100-200 Myr (when the main sequence is reached). Though color-magnitude diagram relations are utilized to estimate final ages, caution must be taken due of the ambiguity of stars which show elevated positions above the zero-age main sequence (ZAMS). Stars with elevated positions could be either contracting toward the main sequence (young) or evolving off of it (old). For this reason, in order for CMD positions to be utilized to estimate stellar age, the star in question must also show additional signs of youth (such as Lithium absorption or X-ray emission). CMD position alone is insufficient for determining a stellar age.

Although $v\sin i$ values, rotational periods, and Hα equivalent widths are not to be used in my final age estimation algorithm, these properties still have value as age indicators.

Stellar rotation has been utilized quite extensively to determine stellar ages (Barnes 2007 and Mamajek & Hillenbrand 2008). Figure 5.14 shows that determining a stellar age for a star from its rotational period alone can be inadequate, especially for stars with ages < 100 Myr. This is mainly due to the existence of the two sequences of stellar rotators (I and C - see Section 2.4), and to stars transitioning from one sequence to the other. Gyrochronology does show promise as a method to estimate the ages of ensembles of stars (Barnes 2003) because the upper envelope of a stellar rotation sequence can be identified. For individual stars, it is impractical to assume that their measured rotational periods belong on these sequences. This is because the rotational period space underneath the upper envelope sequence defined by an ensemble can be filled by stars belonging to that same group of coeval stars. For this reason, ages for individual stars found using gyrochronology should be taken as upper limits. Stars having long rotational periods are likely to be old, though old stars do not necessarily have long rotational periods. Consequently $v\sin i$ measurements are useful in a similar way, though the degeneracy of an age-$v\sin i$ correlation is compounded by the $\sin i$ ambiguity. In general, solar-type stars with a large $v\sin i$ are likely young, though young stars are not mandated by a large $v\sin i$. In much the same way, Hα emission strengths can be used for identifying young stars, for a similar statement can be made fairly confidently about young star distributions of Hα measurements. That is, solar-type stars with strong Hα emission are very likely young, but young solar-type stars do not necessarily show strong Hα emission.

5.3 Age-Dating: A Statistical Approach

For many age diagnostics, current age-dating does not use a quantitative approach to determine ages. Age indices are over-plotted against those of several known clusters, and ages are estimated empirically. When the number of clusters is small (<5-6), an examination by

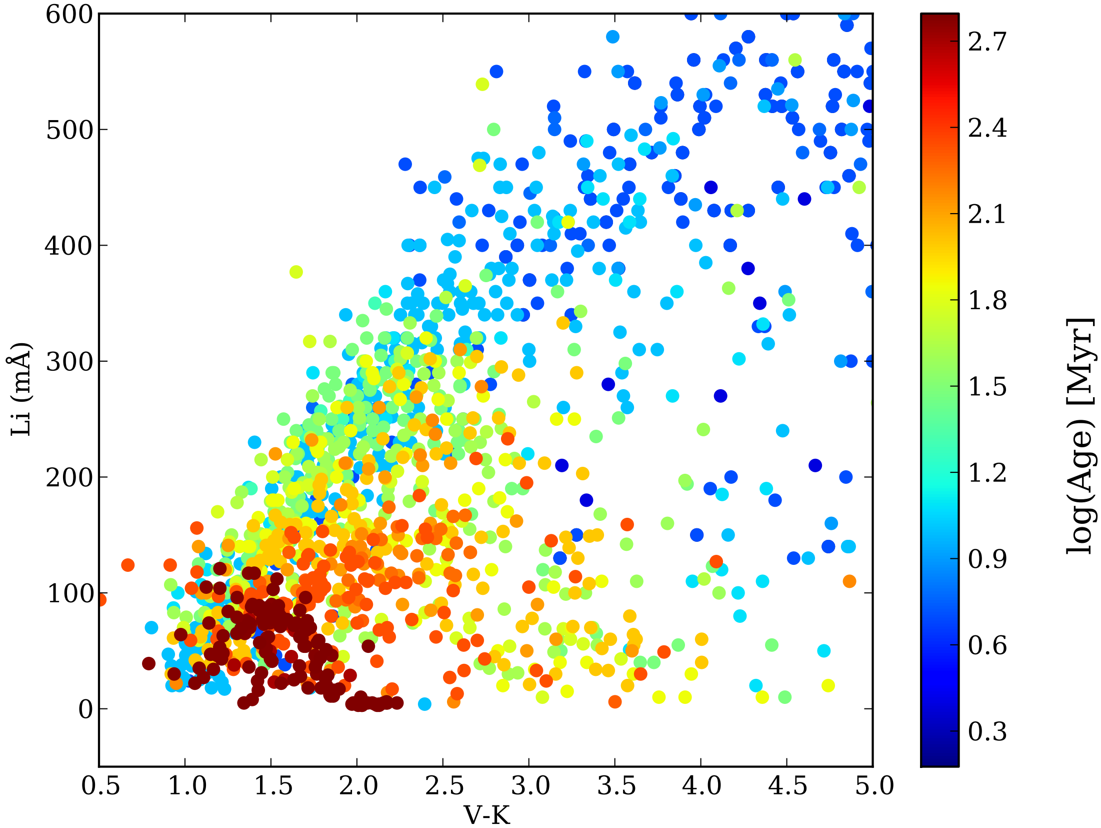

Figure 5.18 Lithium equivalent widths for stars from all clusters in Tables 5.1 and 5.2. The colors represent the literature ages given in Appendix A in Myr.

eye is possible. From the addition of new clusters to the current age-dating schema arose a difficulty when attempting to apply the same techniques. The amount of overlap from newly added clusters on the age evaluation figures made the assignation of an age based on visual inspection impractical. As an example of the overlap seen when multiple stellar groups are utilized, a plot of all stellar groups with lithium measurements from Table 5.1 and 5.2 is displayed in Figure 5.18. A modern statistical method was found to be necessary.

Because stellar ages are determined via comparison with clusters of known ages with discrete age values, this problem is one of classification. The idea is fairly simple - armed with the knowledge of cluster member properties for a variety of ages, to which age group is a new star most likely to belong. And what are the probabilities of belonging to each age group? While the idea is simple, developing a tool to address this problem is not. Because there is significant overlap between the clusters for various properties, identifying the classification scheme which works best is crucial.

Numerous classification schemes were evaluated in order to determine the most useful for the sample of clusters. To identify potential classifiers, I first attempt to classify the simple case of X-ray and lithium data for the Hyades and Pleiades clusters. The classification methods tested are k-nearest neighbors (k-NN), linear support vector classification (LSVC), support vector classification using a radial basis function (RSVC), a decision tree classifier (DT), a random forest classifier (RF), a naive Bayes gaussian (GNB), a linear discriminant analysis (LDA), and a quadratic discriminant analysis (QDA). These classification schemes were implemented using Python programming language package Scikit-learn (Pedregosa et al. 2011).

To evaluate the effectiveness of each of the above techniques, each method is scored by separating each cluster into training and testing sets. The training set consists of sixty percent of the members of each cluster, randomly selected. The test set consists of the other forty percent of the sample. For each classifier, boundaries are defined that will separate stars as belonging to each of the two training sets (either the Pleiades or Hyades sample). Then, each member of the test set is classified as either a Hyades or Pleiades members based upon the boundaries outlined by the training set for each classifier. Scores are based on the number of members that are classified into the correct group. For example, if a classifier gets a score of 70, then it correctly classified 70 percent of the test set.

The k-nearest neighbors algorithm (k-NN) classifies by identifying the closest training data points within the space being examined. For a test sample, the Euclidean distance is calculated for each member of the comparison data set. The k value determines how many training data points are selected. The test sample is then classified into the training set that is most common amongst its k nearest neighbors. While this method works very well for two clusters, accuracy can decrease substantially when additional clusters are added because classes with more members will tend to be predicted more often. A figure showing the classification surfaces using a k-NN classifier on Pleiades and Hyades lithium and X-ray data is displayed in Figure 5.19.

Support vector classification (SVC) finds the optimal hyperplane that separates classes of training samples. Test samples are then classified based on which side of the hyperplane they fall. The linear support vector classification algorithm attempts to identify a linear boundary between each class (Cortes & Vapnik 1995). For the case of two classes, training points are defined as:

$$z_i \in \Re^d, i = 1, \ldots, n \tag{5.1}$$

with a vector $y_i \in \Re^n$ such that y_i = 1 if z_i in class 1, and y_i = -1 if z_i in class 2. SVCs will then identify the hyperplane with the largest margin, where the margin is defined as the shortest perpendicular distance separating the boundary from the closest positive or negative data point. A figure showing the classification surfaces using a LSVC classifier on Pleiades and Hyades lithium and X-ray data is displayed in Figure 5.19.

Alternatively, one can use what is called a kernel function to define a non-linear boundary. A radial basis function is one such kernel function that can be used. The radial basis function kernel (K) is defined by (Hsu et al. 2003) as:

$$K \equiv e^{-\gamma \|z_i - z_j\|^2}. \tag{5.2}$$

A figure showing the classification surfaces using RSVC classifier on Pleiades and Hyades

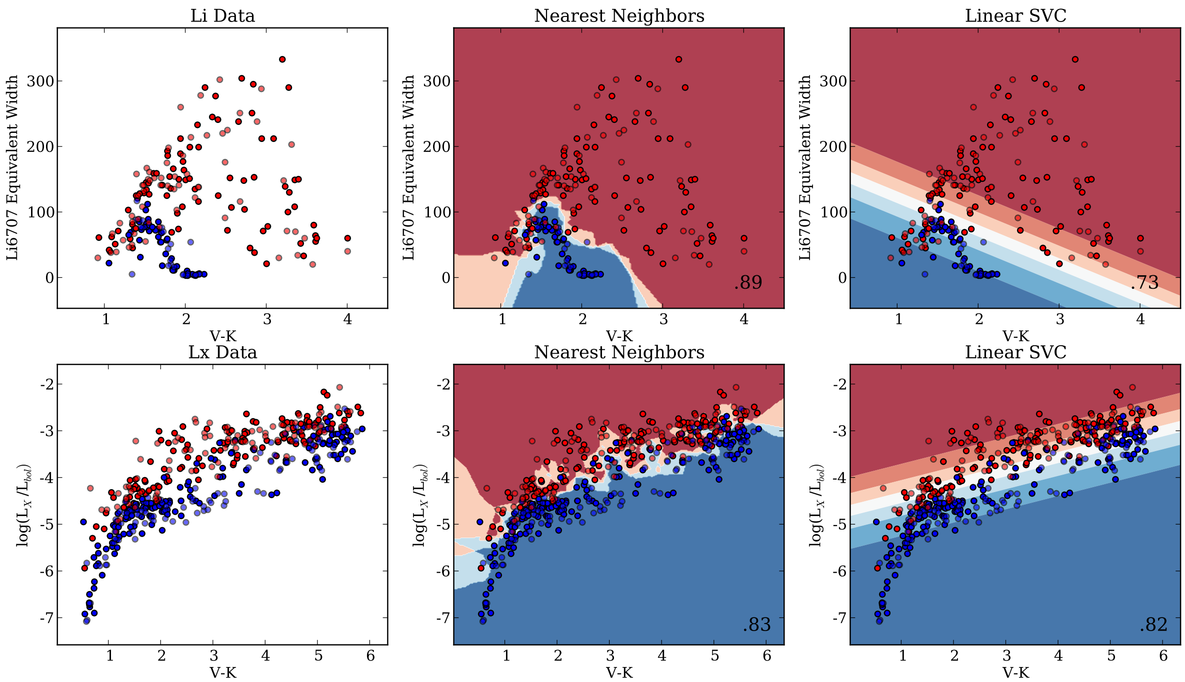

Figure 5.19 Classifier evaluation for the Pleiades and Hyades clusters using the k-nearest neighbors and linear support vector classification algorithms for lithium and X-ray data. The leftmost plots show the entire sample, which consists of the training and test sets (Pleiades in red and Hyades in blue). Solid symbols represent the training sets, while semi-transparent symbols represent the test sets. The contours in the middle and right hand plots show the decision surfaces created for each sample (colors of contours scales with classification probability). Scores are indicated in the bottom right hand corners of each plot.

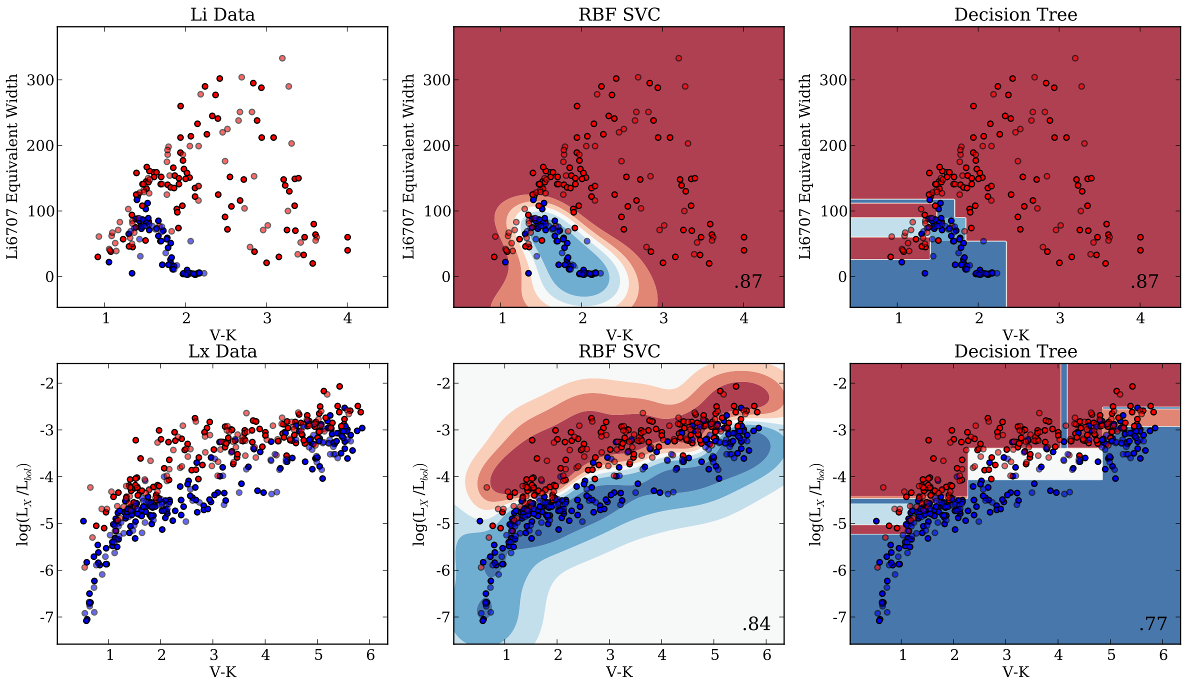

Figure 5.20 Same as Figure 5.19 for the radial basis function support vector classification and decision tree classifier algorithms.

lithium and X-ray data is displayed in Figure 5.20.

A decision tree classifier algorithm uses a decision tree in order to determine an item's target value. Decision trees consist of various nodes (parent, child, and leaf). Simple decision rules are created based upon the data features of the training set. A decision tree classifier will create multiple decision surfaces such that samples of the same class are categorized together (Breiman 2001). A test sample is input into the decision tree constructed from the training set, and classified based on which leaf node it finally rests upon. A figure showing the classification surfaces using a decision tree classifier on Pleiades and Hyades lithium and X-ray data is displayed in Figure 5.20. The random forest classifier algorithm is an extension of the decision tree classifier which introduces randomness in the classifier construction. This method creates a multitude of decision trees for the training set, then uses a majority vote

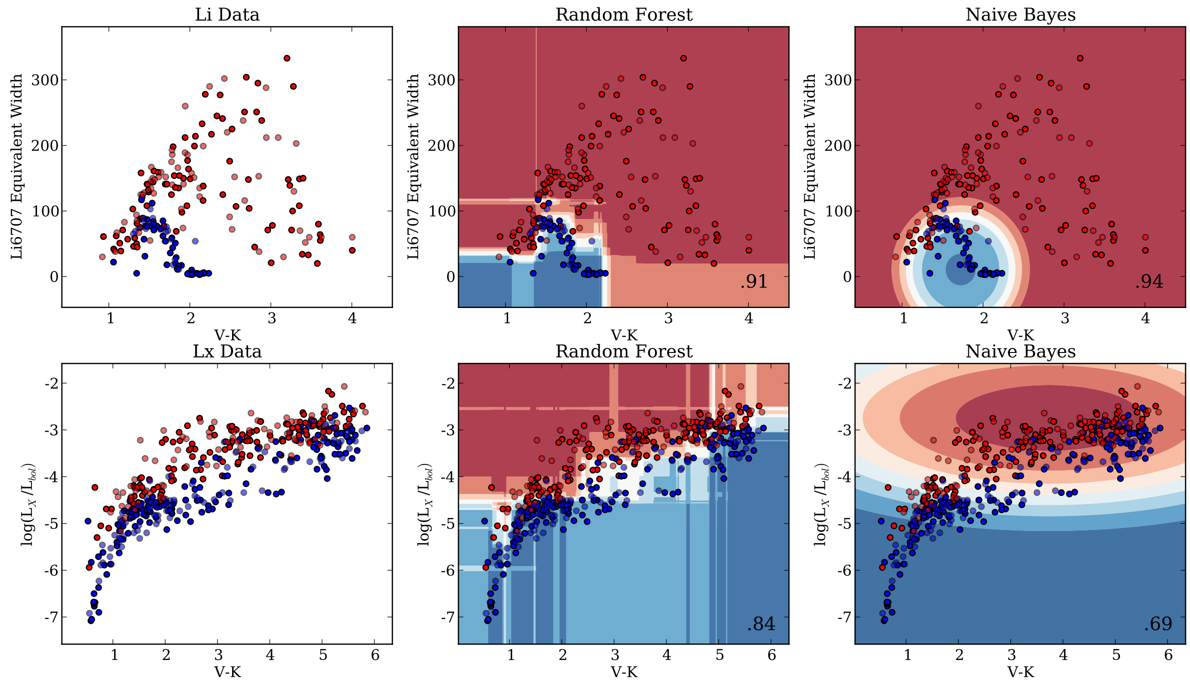

Figure 5.21 Same as Figure 5.19 for the random forest and naive Bayes algorithms.

of the trees to determine the class of the input sample. A figure showing the classification surfaces using a random forest classifier on Pleiades and Hyades lithium and X-ray data is displayed in Figure 5.21.

The naive Bayes gaussian algorithm applies Bayes' theorem under the assumption of independence between every pair of features where the likelihood of each feature is assumed to be Gaussian. Bayes' theorem states:

$$P(y|x_1, \ldots, x_n) = P(y)\frac{P(x_1, \ldots, x_n|y)}{P(x_1, \ldots, x_n)} \tag{5.3}$$

for a class y and vectors x_1 through x_n. If features are assumed to be Gaussian, the likelihood for each feature becomes:

$$P(x_i|y) = \frac{1}{\sqrt{2\pi\sigma_y^2}} exp\left(-\frac{(x_i - \mu_y)^2}{2\pi\sigma_y^2}\right) \tag{5.4}$$

which is parameterized by μ_y and σ_y^2, the mean and standard deviations of the sample. A figure showing the classification surfaces using a Naive Bayes classifier on Pleiades and Hyades lithium and X-ray data is displayed in Figure 5.21.

Linear discriminant analysis classification, first described by Fischer (1936), finds the line for which the projections of the training set sample onto that line are most separated. The boundaries between classes are constructed to maximize the distance between the samples. The distributions of the training sets are assumed to be normally distributed, and a hyperplane is constructed. Similarly, the quadratic discriminant analysis algorithm attempts to find a quadratic boundary. A figure showing the classification surfaces using linear and quadratic discriminant analysis classifiers on Pleiades and Hyades lithium and X-ray data is displayed in Figure 5.22.

The Scikit-learn suite of programs contains a function that will determine the optimum parameters for a given algorithm and sample. For each classification scheme, a grid is constructed in such a way as to determine the maximum score possible for a set of several parameters. This process is represented graphically by a so-called 'heat map'. A heat map for the gamma and C parameters of the radial basis function support vector classification method is shown in Figure 5.23. For this example, the gamma parameter defines the reach of influence for each training set, where a large gamma will move the RSVC closer to a linear classifier. The C parameter defines the simplicity of the training surface by allowing for the tolerance of errors. A small C value will allow for a larger margin between classes, allowing for more samples from the training set to be ignored as mislabeled. Conversely, a large C value will define a smaller margin, attempting to correctly classify mislabeled samples. The heat map represents the corresponding classification score for each value of each parameter.

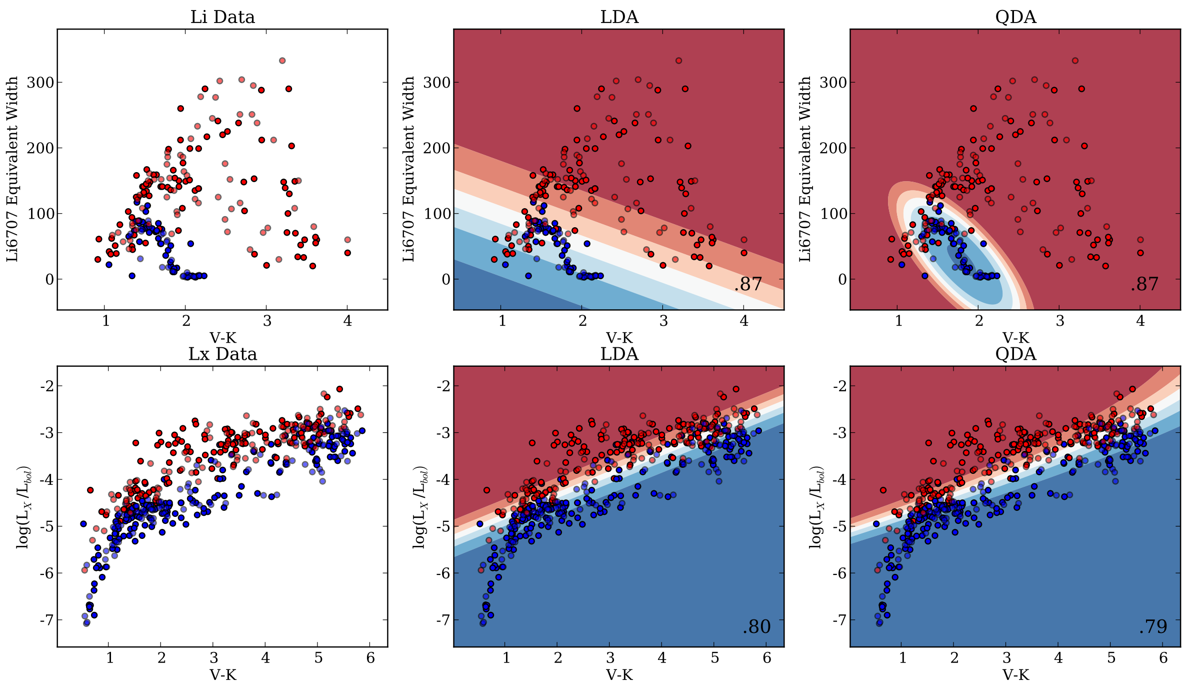

Figure 5.22 Same as Figure 5.19 for the linear discriminant analysis and quadratic discriminant analysis algorithms.

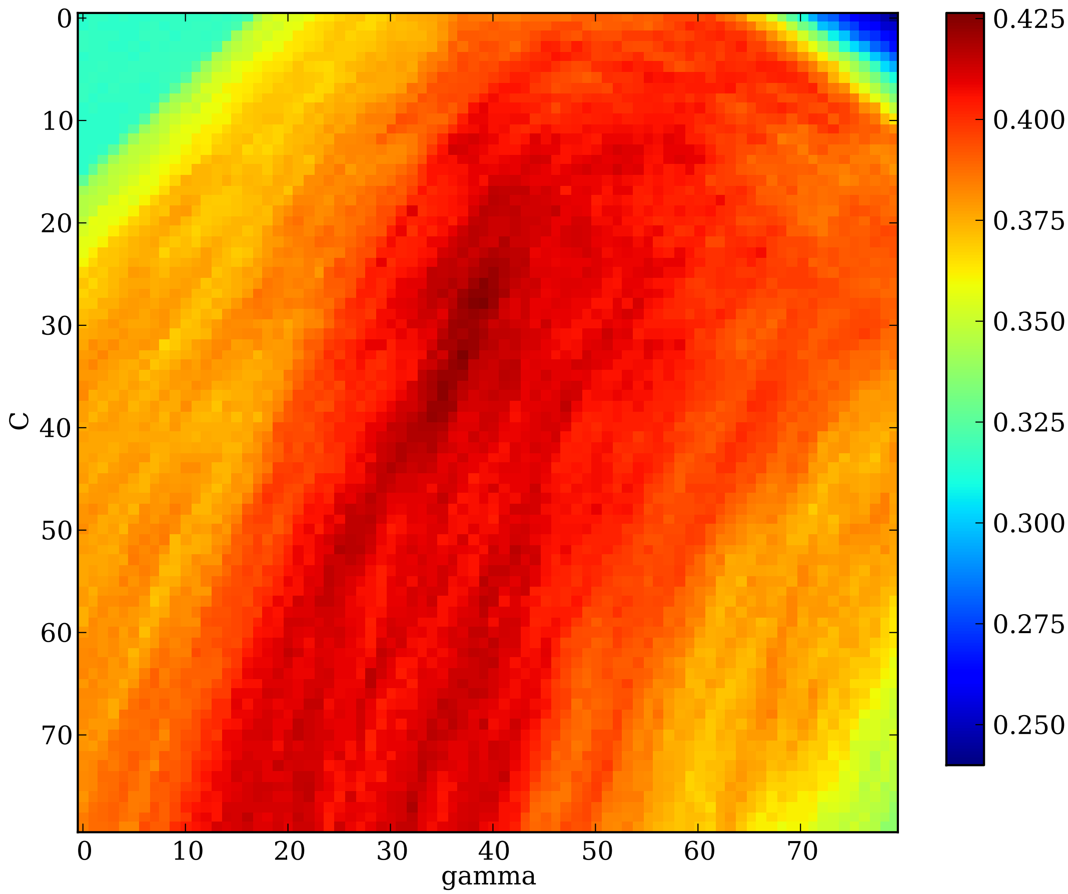

Figure 5.23 Heat map for the gamma and C parameters of the radial basis function support vector classification algorithm.

Once an initial heat map is generated using a large grid spacing, successive iterations with a finer scale can pinpoint the most efficient parameters for each classification. This task was performed for each classification scheme in order to properly compare the effectiveness of each. Once optimum parameters are chosen, X-ray and lithium data for the Pleiades and Hyades clusters are classified using each method.

The classification scores see dramatic changes as more clusters are added as training sets. While more clusters can give a larger range of potential ages, the significant overlap between

Table 5.4. Classification Algorithm Scores: Pleiades and Hyades

Data	kNN	LSVC	RSVC	DT	RF	GNB	LDA	QDA
Lithium	0.91	0.68	0.90	0.90	0.91	0.89	0.80	0.90
X-ray	0.83	0.77	0.86	0.80	0.83	0.67	0.85	0.85

Table 5.5. Classification Algorithm Scores: Entire Cluster Sample

Data	k-NN	LSVC	RSVC	DT	RF	GNB	LDA	QDA
Lithium	0.32	0.30	0.39	0.34	0.37	0.35	0.28	0.37
X-ray	0.33	0.32	0.41	0.38	0.39	0.31	0.37	0.37

the clusters will reduce the scores. To evaluate which method of classification is best suited for the cluster sample, the score of each method is recorded for each algorithm as it attempts to correctly classify the complete sample of comparison clusters of various ages for lithium and X-ray data, respectively. Each method is scored 1000 times, and the average scores are compared to identify the most efficient method of classification for the age-dating cluster sample. The results of this test for the Pleiades and Hyades lithium and X-ray samples are given in Table 5.4. The results of this test for the complete sample of open clusters used for age-dating comparisons are given in Table 5.5.

As seen in Table 5.5, the radial basis function support vector classification algorithm returned the highest scores for both lithium and X-ray data. Not only did the RSVC return the highest scores, but also showed reasonable classification surfaces (Figure 5.20), while many of the other methods attempt to create unphysical boundaries. Therefore, the RSVC classification scheme is the chosen method for age-dating classification in this work.

Once the RSVC algorithm was selected as the most efficient classification algorithm, age-dating routines for each age-dating method were created. There are several steps taken with each age diagnostic used in this work (Lithium absorption, position on a CMD, X-ray emission, and Ca II H & K indices) to create an age-dating routine. First, a program is created to select the appropriate stellar groups suitable to be used as training sets for each diagnostic (see Tables 5.1 and 5.2). Not only will the RSVC scheme classify each star into the most likely stellar group, it will also determine the probability of belonging to each. Therefore, for each star that is to be individually age-dated, single parameter ages can be calculated using the following formula for the weighted mean (Bevington & Robinson 2003):

$$age = \frac{\sum_i a_i w_i}{\sum_i w_i} \tag{5.5}$$

where i is the ith cluster, a_i is the age of the ith cluster, and w_i is the probability of belonging the ith cluster. The uncertainty is then calculated with the following (Bevington & Robinson 2003):

$$\sigma^2_{age} = \frac{\sum_i (a_i - age)^2 w_i}{\sum_i w_i} \tag{5.6}$$

Diagnostic ages for each cluster are found by calculating the weighted average of individual star ages for each diagnostic. Outliers are flagged using robust statistics (Hoaglin et al. 1983), and the inverse of the square of the uncertainties are used as weights for each age (Bevington & Robinson 2003):

$$age_{final} = \frac{\sum_i age_i w_i}{\sum_i w_i} \tag{5.7}$$

where i is the ith age diagnostic, age_i is the age determined via from the ith age diagnostic, and $w_i = \frac{1}{\sigma^2_{age_i}}$. The uncertainty for each age is then calculated with the following (Bevington & Robinson 2003):

$$\sigma^2_{age} = \frac{\sum_i (a_i - age_{final})^2 w_i}{\sum_i w_i} \tag{5.8}$$

After moving groups and associations are added to the final training sets, the ages of every suitable group of stars from Tables 5.1 and 5.2 is evaluated. These ages are then compared to the quoted ages in order to evaluate each diagnostics age-dating effectiveness. The results for each diagnostic are displayed in Figures 5.24 - 5.27.

Figures 5.24 - 5.27 show that age dating using such a statistical scheme is consistent (within the uncertainties) with the quoted ages from the literature. Precise ages found using this new age-dating procedure will be critical for the preparation of targets for the Gemini Planet Imager (see Chapter 6).

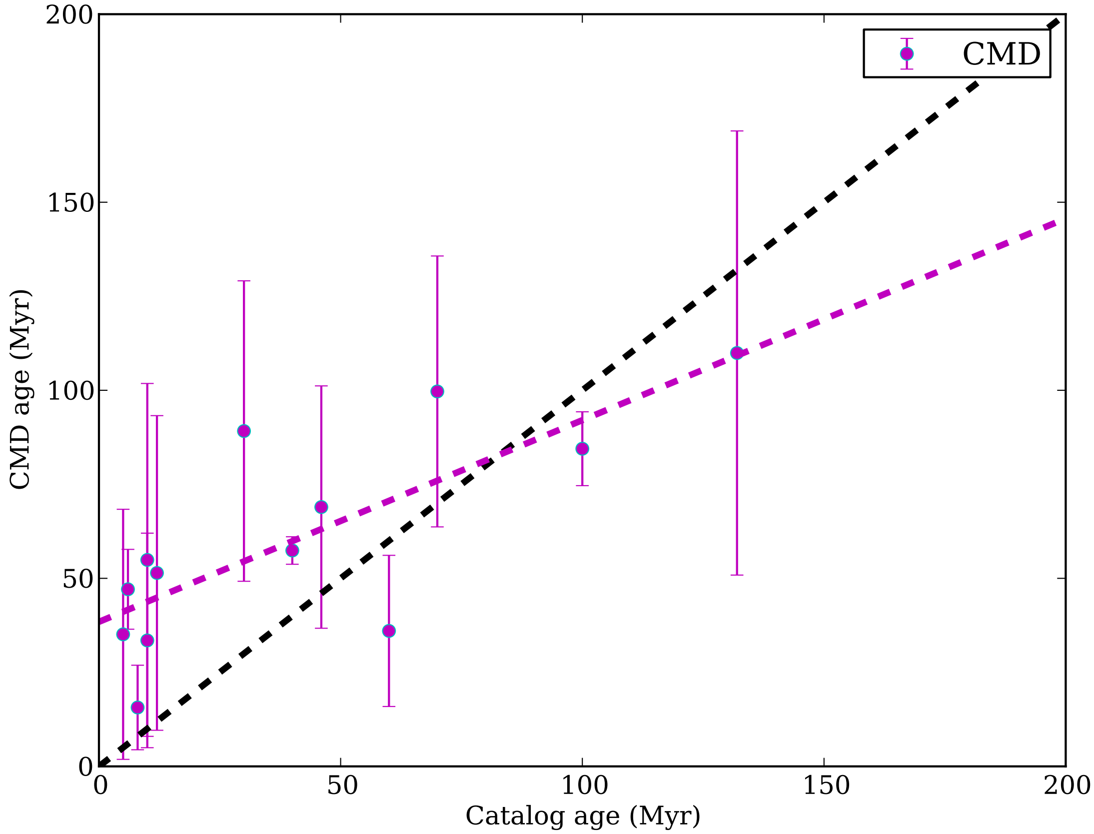

Figure 5.24 A comparison of the CMD ages derived from this statistical age-dating scheme with the quoted ages from the literature for stellar groups with ages < 200 Myr from Tables 5.1 and 5.2. The dashed black line indicates the boundary of where the quoted age = the age derived from the CMD. The dashed purple line is the linear weighted best fit to the CMD derived ages.

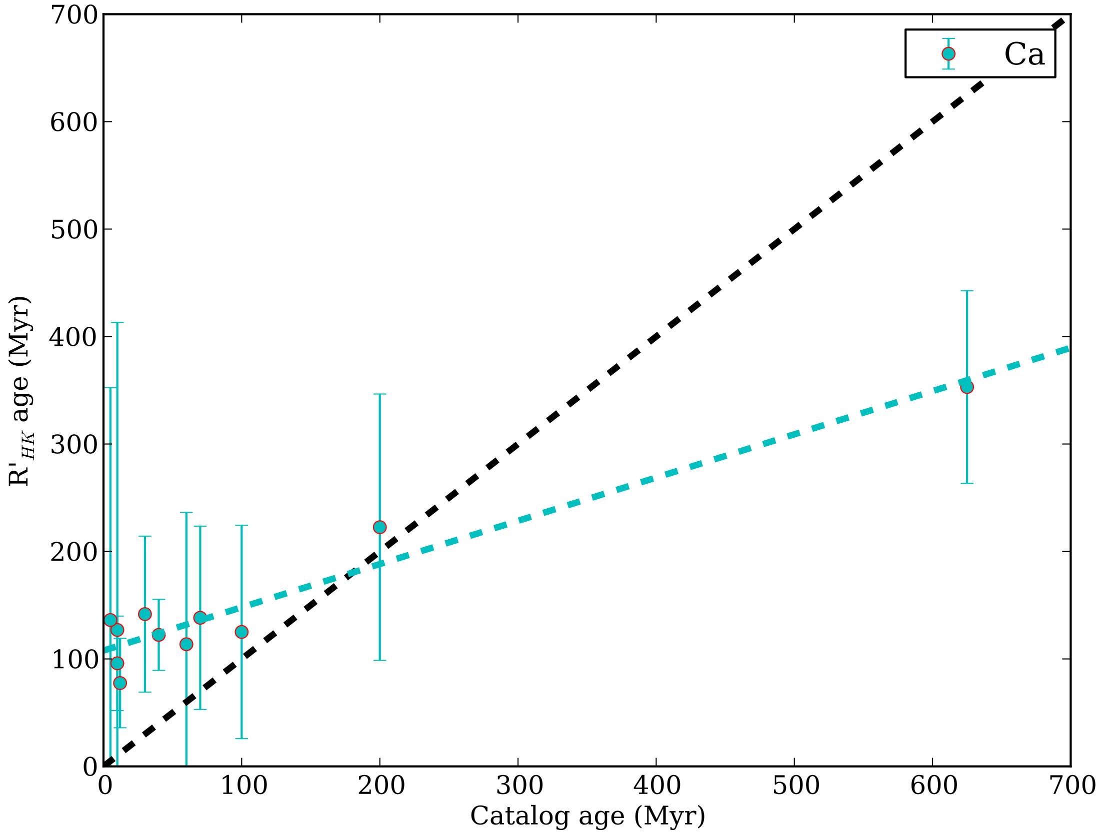

Figure 5.25 A comparison of the Ca II H & K derived ages with the quoted ages from the literature for stellar groups from Tables 5.1 and 5.2 with available Ca II H & K data. The dashed black line indicates the boundary of where the quoted age = the age derived from Ca II H & K. The dashed light blue line is the linear weighted best fit to the Ca II H & K derived ages.

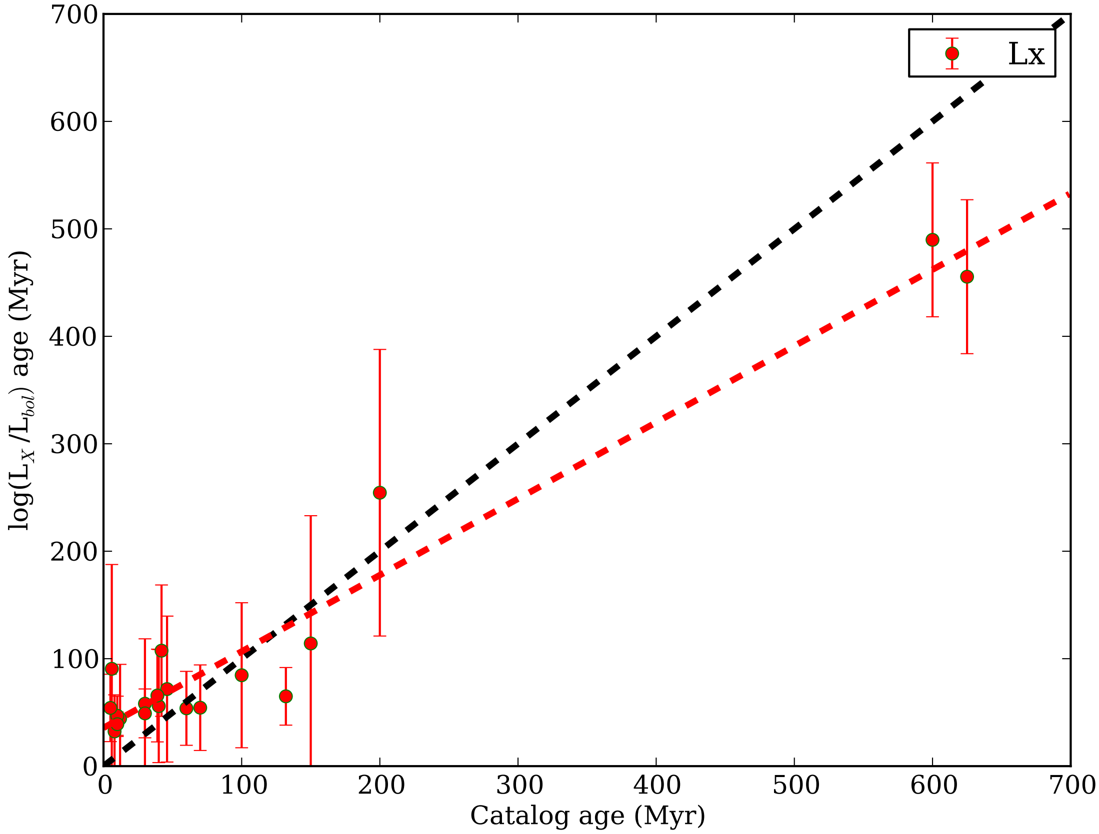

Figure 5.26 A comparison of the X-ray derived ages with the quoted ages from the literature for stellar groups from Tables 5.1 and 5.2. The dashed black line indicates the boundary of where the quoted age = the X-ray derived age. The dashed red line is the linear weighted best fit to the X-ray derived ages.

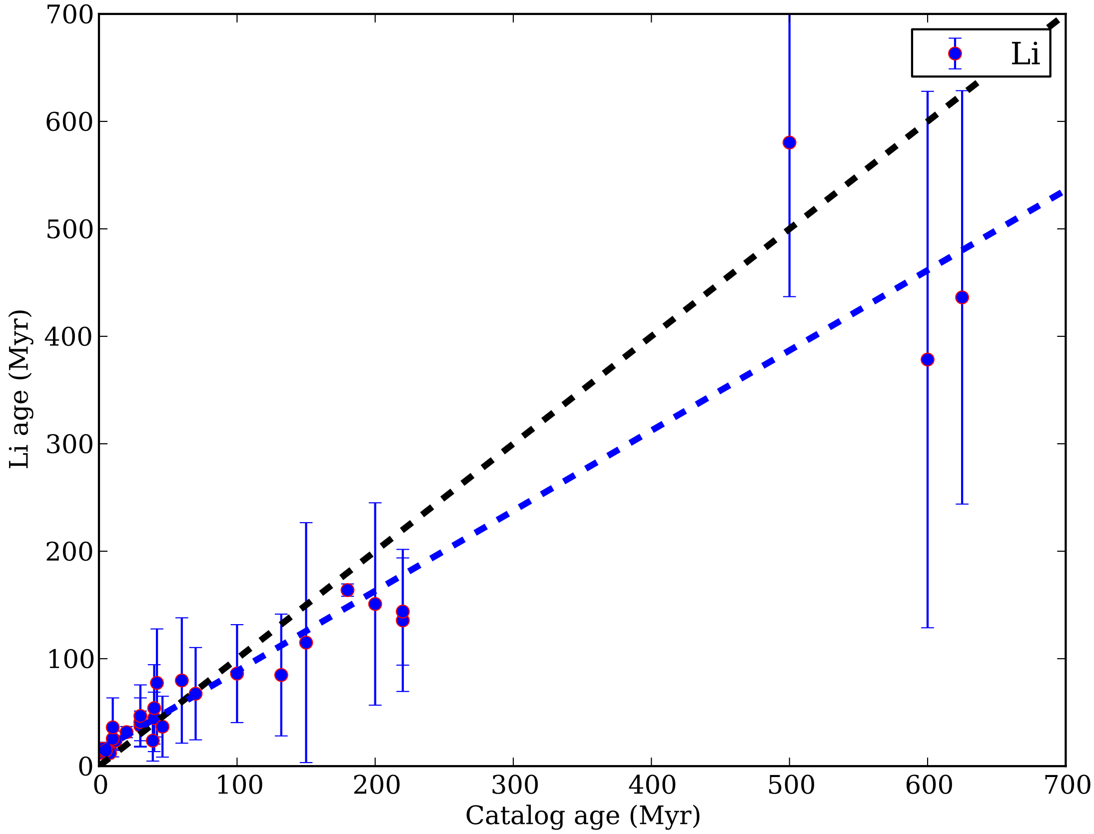

Figure 5.27 A comparison of the Lithium derived ages with the quoted ages from the literature for stellar groups from Tables 5.1 and 5.2. The dashed black line indicates the boundary of where the quoted age = the Lithium derived age. The dashed blue line is the linear weighted best fit to the Lithium derived ages.

Chapter 6

Applications and Future Work

6.1 Target Preparation for the Gemini Planet Imager

A specific example of the benefits of having a unified age-dating scheme are the identification of nearby young stars and target preparation and analysis of stars for the Gemini Planet Imager.

The Gemini Planet Imager (GPI: PI - Bruce Macintosh) is one of the next-generation, state of the art, exoplanet imaging cameras being built and will be part of a global competition (VLT-SPHERE (Europe), Subaru-SEEDS (Japan)) of dedicated, expensive campaigns to image unexplored exoplanet territory around nearby stars. These new cameras have the distinct goal of using novel direct imaging techniques to help form a more complete picture of how planets form and evolve. Indirect methods of exoplanet detection (Doppler and transit), while powerful, cannot access the same discovery space as GPI. Doppler and transit methods require the completion of a full planetary orbit or more, rendering the detection of a planet with a large semi-major axis impractical due to Kepler's third law. Only direct imaging can probe from the "snow line", where core accretion is likely most effective (5 AU), through the planetary migration zone, out to where disks are likely to be subject to instabilities that may form planets directly (50 AU). Direct imaging has already produced some remarkable results (Marois et al. 2008, Kalas et al. 2008, Lagrange et al. 2010, and Carson et al. 2013), but such successes have been achieved in isolation, telling us little about the underlying properties of Jovian planetary systems. For GPI, the only way to obtain robust and reliable statistical results is through a large-scale survey. This was the driving motivation behind the spectroscopic survey for young, nearby stars presented in Chapter 4. The distribution of GPI targets before and after the completion of said spectroscopic survey are given in Figures 6.1 and 6.2.

GPI consists of five essential components - an adaptive optics (AO) system, a coronagraph, an interferometer, an integral field spectrograph, and a software system. These components are described in detail in McBride et al. (2011). McBride et al. (2011) also provide a formula for planet detection probabilities for GPI target stars. The detection probability is given as:

$$p = \mathrm{A}[\log(\frac{t}{1Myr})]^{\alpha}(\frac{d}{40pc})^{\beta}(\frac{M}{M_{\odot}})^{\gamma}$$

where t is the star's age, d is its distance, and M is its mass. This formula emphasizes that the stellar age is the most important factor when considering planet detection probabilities. This formula is the driving force behind GPI target prioritization, and stellar ages will play a key role in determining planet detection probabilities.

For every solar-type GPIES target, ages are estimated using the revised age-dating algorithm outlined in Chapter 5. Figure 6.3 shows a comparison of previous GPI ages with the ages derived in this work via cumulative histograms. As seen in the figure, the total number of stars with estimated ages $<$ 600 Myr is exactly the same for each sample. The age distributions for stars with estimated ages $\lesssim$ 50 Myr are similar, while for ages $>$ 50 Myr, the distributions deviate. These deviations are due to the age binning from previous age estimations methods, which leave large age gaps (e.g. 125 - 300 Myr and 300 - 600

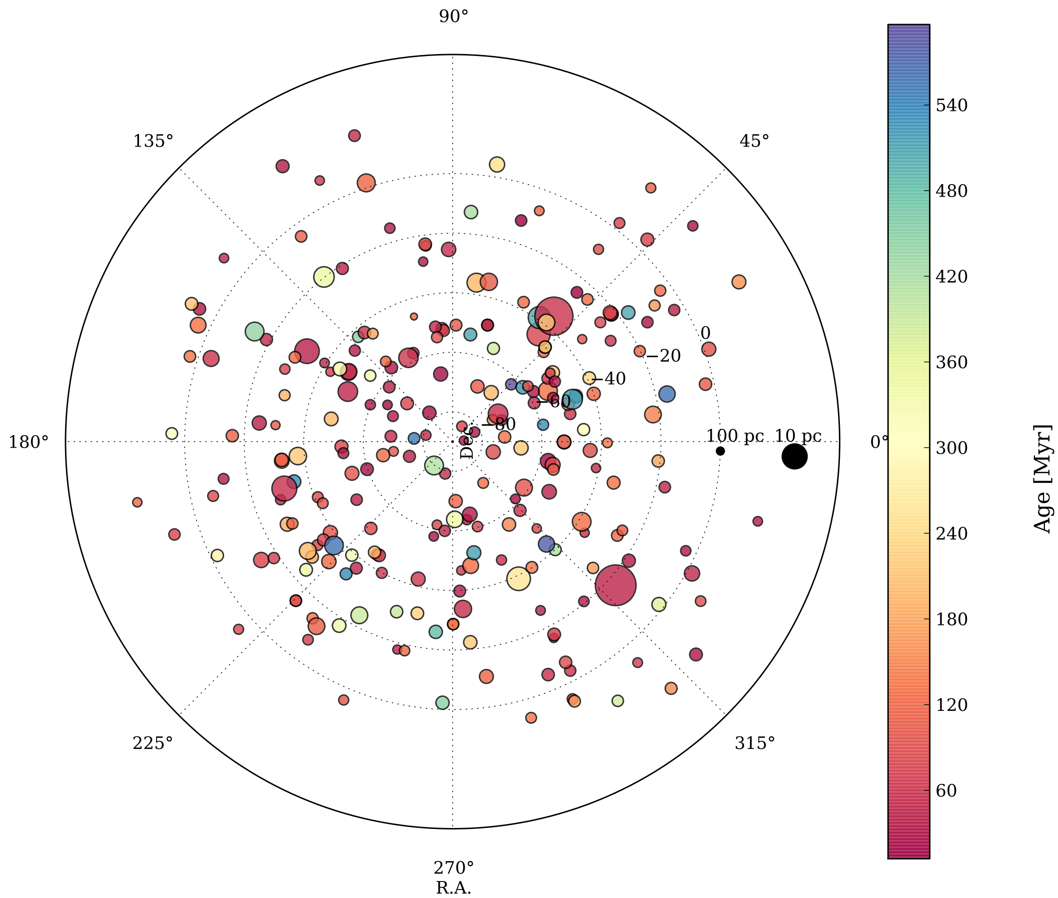

Figure 6.1 The distribution of GPI targets before the addition of targets from the spectroscopic survey of Chapter 4. The symbol size represents the distance to the target, while the color corresponds to the age of the star as determined by the algorithm created in Chapter 5.

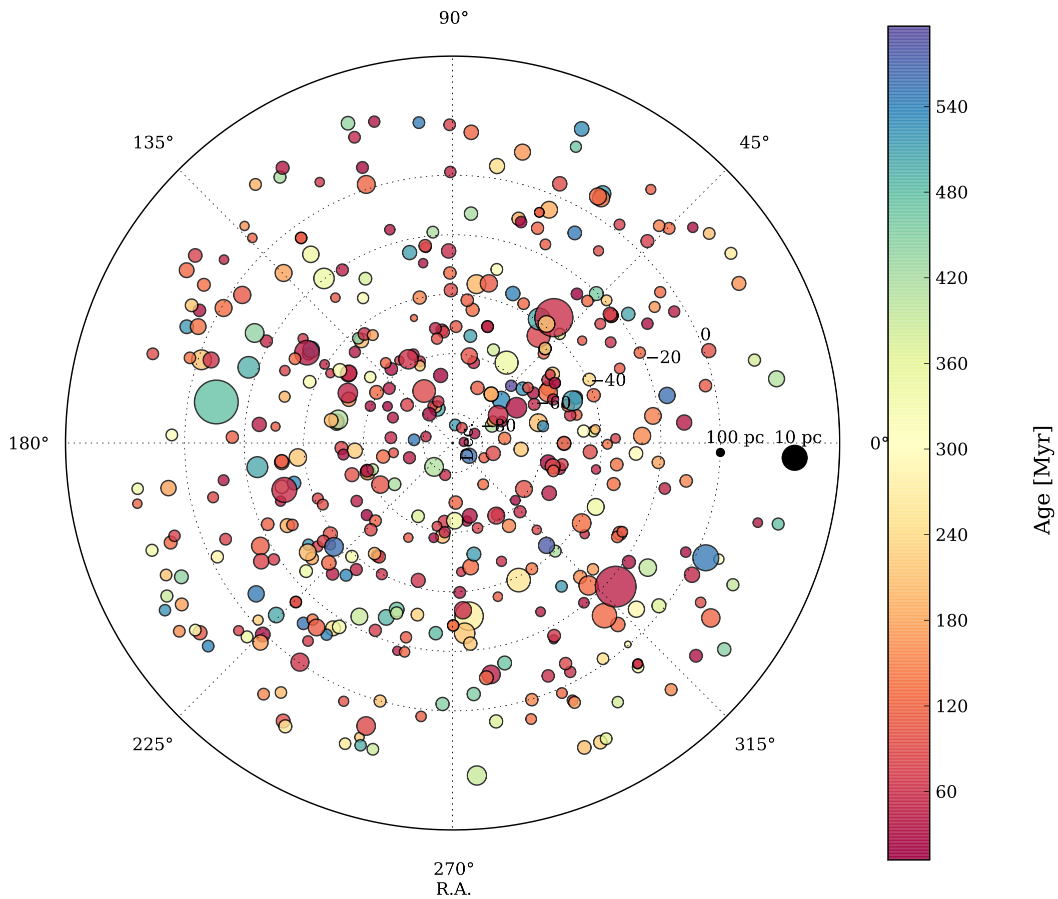

Figure 6.2 The distribution of GPI targets after the addition of targets from the spectroscopic survey of Chapter 4. The symbol size represents the distance to the target, while the color corresponds to the age of the star as determined by the algorithm created in Chapter 5.

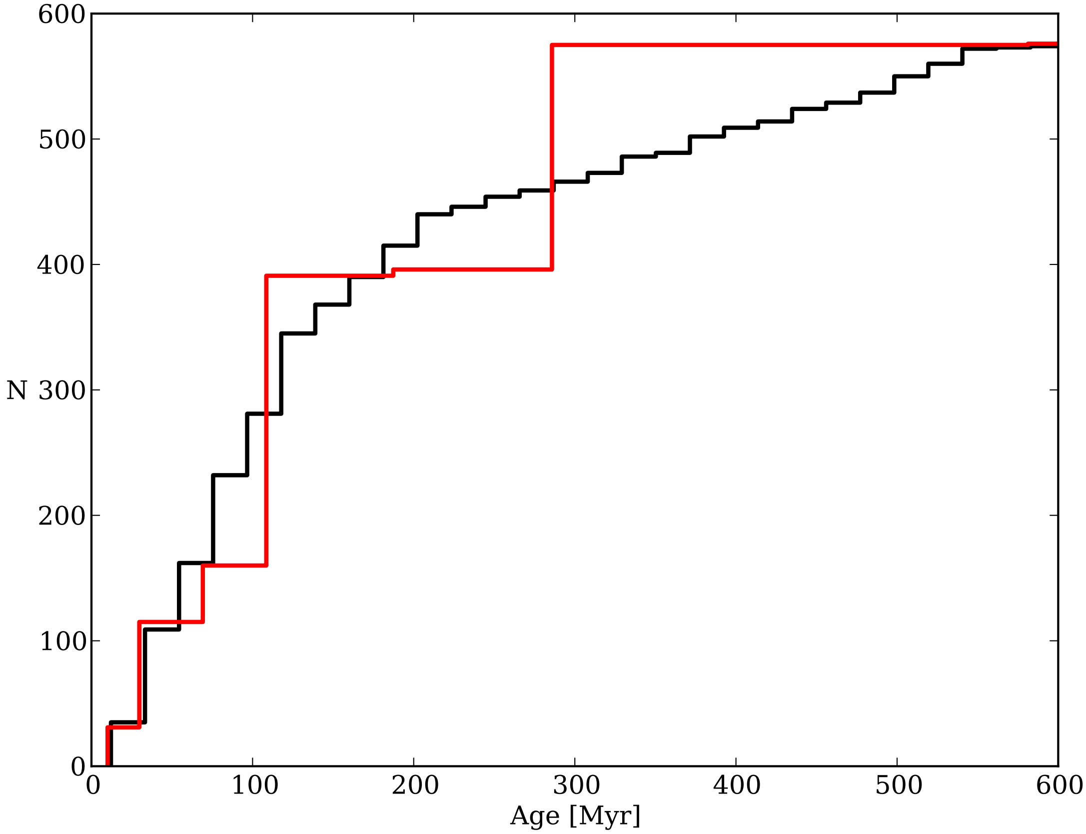

Figure 6.3 Cumulative for ages of GPI targets determined previously by age binning methods (red line), and ages determined in this work by the methods outlined in Chapter 5 (black line).

Myr). Ages derived in this work are more likely to represent the true age distribution of the GPI target sample. Statistically determined ages will significantly improve the target prioritization strategy, and be critical for the analyzation of GPI results.

6.2 Debris Disks

The Wide-field Infrared Survey Explorer (WISE) all-sky survey presents an unprecedented opportunity to explore nearby stars for excess emission at infrared wavelengths indicative of dusty circumstellar disks. While the WISE all-sky survey is an excellent tool for identifying infrared excess around nearby stars, in order to fully interpret these new discoveries, each star will need additional characterization. Foremost, stars with detected IR-excess need to be reliably age-dated. To form a robust picture of debris disk evolution, reliable ages of debris disk host stars are essential. WISE has already been used to add significantly to the pool of nearby stars with IR-excess (Schneider et al. 2012a, Schneider et al. 2012b, Zuckerman et al. 2011) and is expected to produce additional IR-excess discoveries in the hundreds (Padgett et al. 2013). Age-dating such a large number of stars will be a tremendous undertaking, but is absolutely vital to maximize the scientific result of the large-scale survey of nearby stars with IR-excess. To understand how planetesimals and, by extrapolation, young planetary systems are related to the properties of their host stars, characterization of new IR-excess stars is absolutely paramount.

6.3 Calibration of A-type Star Ages

For early-type stars, which evolve off the main sequence rapidly, ages are typically derived from their location on a color-magnitude diagram (CMD) either with sets of theoretical isochrones or with empirically determined color-magnitude relations for coeval groupings of stars. Because age-dating methods for early-type stars and late-type stars are generally uncoupled, there can be a large systematic error between ages of these two groups of stars. Therefore, the most pressing need in age-dating of early-type stars is the cross-calibration of age-dating against results from FGK stars. Unless an early-type star is a member of a cluster or a moving group, its age can only be effectively estimated from its CMD position.

The importance of early-type stars in young star and planet science can be glimpsed from the fact that all three currently imaged exoplanets are all around early type stars (Marois et al. 2008, Kalas et al. 2008, & Lagrange et al. 2010).

Because ages of A-type stars can only be reasonably estimated based on CMD locations, we need to cross-calibrate ages of A-type stars against those from FGK stars (based on the new age-dating method described in Chapter 5). A-type stars with lower mass companions present a rare opportunity to apply two independent age estimates to a coeval system of stars. A volume limited (d$\lesssim$75 pc) survey for companions to A-type stars using high resolution adaptive optics observations was completed by De Rosa et al. (2011). Within this sample, a set of late-type (FGKM) secondaries are available for which the angular separations with their respective host stars are sufficiently large enough to be resolved without image compensations. In addition, catalogs such as the Catalog of Components of Double & Multiple stars (CCDM: Dommanget & Nys 2002) can be inspected for A-type stars with late-type wide separation companions, though in these cases, common proper motion must be confirmed because many visual doubles are included. A cursory investigation of CCDM reveals ~20 additional A-stars with later type companions that exhibit common proper motion indicative of a coeval origin.

An additional companion search can be carried out with existing data. Utilizing positional data from the Two Micron All-Sky Survey (2MASS) and the Wide-field Infrared Survey explorer, companions can be detected by their common proper motion. WISE astrometric precision is quoted as better than $0.''2$ for any source with WISE channel 1 magnitude $<$ 12.5. Nearby Hipparcos stars, all with WISE channel 1 magnitudes in this regime, can be used as a target sample to identify suitable co-moving companions for age-calibration. Any Hipparcos stars with total proper motion $>$ 100 mas yr^{-1} will be discernible from the near zero proper motion of background objects at a 5σ level considering the ~10 year time baseline between the WISE and 2MASS observations. There are ~600 stars with B-V colors consistent with A and early F spectral types with total proper motions above this threshold. Figure 6.4 displays the applicability of this approach with Hipparcos A-star HIP 117452 (d$\sim$42 pc, total proper motion $\sim$145 mas yr^{-1}) and its known K-type companion HD 22340. As seen in the figure, HIP 117452 and its co-moving companion are clearly distinguishable from the relative motion of background objects. Any companions found with this method can be observed spectroscopically. Age diagnostics of the lower mass secondaries (previously outlined in Section 5.3) can be used to test the isochrone derived ages of A-type stars.

As a test case, data were gathered from the literature for TW Hydrae association member HR 4796A and its known M2.5 companion, HR 4796B. The position of HR 4796A on a CMD indicates a very young age of $\sim$10 Myr. Observations of age indicators for the companion, HR 4796B, including Hα and $v\sin i$ from Scholz et al. (2007), and Li measurements from Mentuch et al. (2008) and da Silva et al. (2009), show remarkable agreement with HR 4796A, again indicating an age of $\sim$10 Myr. Additional observations of complimentary systems at various ages will thoroughly evaluate the reliability of isochrone derived ages for A-type stars.

6.4 Future Prospects in Solar-type Age-Dating: Asteroseismology

Asterosiesmology shows much promise as an additional method of determining the precise ages of solar-type stars. Through asterosiesmololgy, oscillation periods are studied in order to extract information regarding the internal structure of stars. Comparisons of a star's oscillation spectrum to predictions of stellar models can return many fundamental stellar properties, such as mass, radius, and age. Such oscillations can be observed in either varied velocities from spectroscopy or variations in intensity from photometry. In an era when the precision of radial velocity and photometric measurements are deliberately tuned to find smaller and smaller variations (largely in the hunt for extrasolar planets), instruments

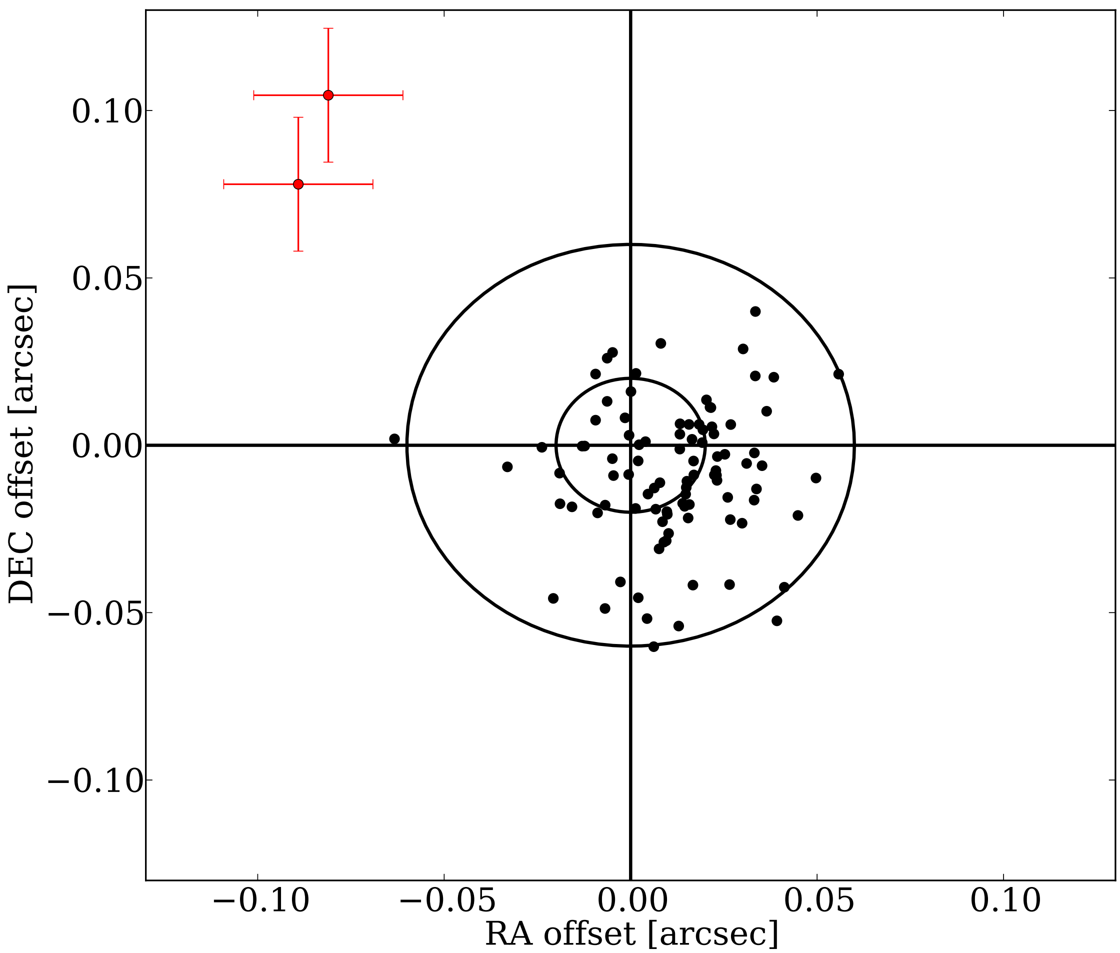

Figure 6.4 Positional offsets between WISE and 2MASS for sources within 10′ of HIP 117452. HIP 117542 and its co-moving companion are represented by red symbols and background reference stars are black symbols. Concentric circles represent the 1 and 3σ uncertainty in position for background objects.

available for asterosiesmology are becoming more readily available (i.e., the *Kepler Mission*; Chaplin et al. 2010).

Chapter 7

Conclusion

The intent of this work is to identify young, nearby stars and develop a unified, self-consistent age-dating scheme that will provide a reliable age estimate with a formal uncertainty for young and adolescent (from ∼5 to ∼600 Myr) solar-type field stars.

A new method of identifying young, nearby, late-type stars by means of their circumstellar disks was utilized to identify two new members of the TW Hya Association (TWA 33 and TWA 34), and the first evidence of a circumstellar disk around the Lower-Centaurus Crux member 2M1337. This method of young, late-type star identification is currently being expanded to the rest of the sky, and will aid in the understanding of circumstellar disk evolution.

New young solar-type stars have been initially selected via their fractional X-ray luminosity, and are confirmed by measurements of various age diagnostics with optical spectroscopy. This list of new young stars is combined with the SACY catalog (Torres et al. 2006) and young star survey of Song, I. Zuckermen, B., & Bessell, M. to generate the most comprehensive list of nearby, young, solar-type stars to date.

Compared to the best current method based on relative age ordering, the new age-dating scheme I created for solar-type stars provides better age precision for a typical star, particularly for stars with intermediate ages (100 - 500 Myr). This was achieved by more than doubling the number of open clusters that are used as primary age calibrators and employing an ensemble based statistical method in a systematic way.

With the improved age estimate precision, more detailed studies of various temporal phenomena in the field of young stars and planets is possible. For example, the temporal change of circumstellar material can be traced, which may aid in determining the dominant dust replenishment mechanism from several proposed possibilities (e.g., late-heavy bombardment, episodic massive collision among planetesimals or planets, gradual grinding in the cometary/asteroid belt, etc.). Improved age estimates will allow us to pinpoint the mass of directly imaged exoplanets which, in turn, will decisively select a correct model of planet formation between "hot start" and "cold start" models. The unified age-dating method based on empirical distributions of various age-evaluators can be eventually tied to a more fundamental age-dating method such as asteroseismology. Such a comparison will provide crucial constraints on stellar evolution models.

Age is one of the most important, fundamental physical stellar parameters and is tied to almost every field of stellar astronomy. The development of an algorithm for improved stellar age-dating will have a significant impact on any study where the precise knowledge of age is of value.

Appendix A

Cluster Reference Summary

A.1 The AB Doradus Moving Group

The age of the AB Doradus Moving Group is most commonly quoted as 70 Myr (Torres et al. 2008). Distances to individual members range from 10-130 pc (Torres et al. 2008). Members of this cluster were extracted from Zuckerman et al. (2004), López-Santiago et al. (2006), Makarov (2007), Torres et al. (2008), da Silva et al. (2009), Viana Almeida et al. (2009), Schlieder et al. (2010), and Zuckerman et al. (2011). X-ray data were taken from this work. Lithium data were taken from Zuckerman et al. (2004), Torres et al. (2006), López-Santiago et al. (2006), Fernández et al. (2008), Mentuch et al. (2008), da Silva et al. (2009), and Weise et al. (2010). Rotational periods were taken from Pojmanski (1997), Pandey et al. (2005), Watson et al. (2006), and Messina et al. (2010). Hα data were taken from Zuckerman et al. (2004), and Torres et al. (2006).

A.2 α Perseus

The age of the α Perseus cluster is most commonly quoted as 60 Myr (see discussion in Zuckerman et al. 2012). The distance is estimated to be 172.4 $\pm$ 2.7 pc (van Leeuwen 2009). Members of this cluster were extracted from Randich et al. (1996), Randich et al. (1998), Mermilliod et al. (2008), Jackson & Jeffries (2010a), Balachandran et al. (2011), Christian et al. (2011), and Zuckerman et al. (2012). X-ray data were taken from Randich et al. (1996), Prosser et al. (1996), Randich et al. (1998), Patience et al. (2002), and Christian et al. (2011). Lithium data were taken from Balachandran et al. (2011). Rotational periods were taken from Watson et al. (2006) and Jackson & Jeffries (2010a). Hα data were taken from Prosser (1992).

A.3 The Argus Association

The age of the Argus association is most commonly quoted as 40 Myr (Torres et al. 2008). Distances to individual members range from 10-170 pc (Torres et al. 2008, Zuckerman et al. 2011). Members of this cluster were extracted from Torres et al. (2008), Messina et al. (2011), and Zuckerman et al. (2011). X-ray data were taken from this work. Lithium data were taken from da Silva et al. (2009). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Messina et al. (2011). There are no available Hα data.

A.4 The β Pictoris Moving Group

The age of the β Pictoris Moving Group is most commonly quoted as 12 Myr. This age is derived from kinematic traceback of known members (Song et al. 2003). Distances to individual members range from 10-80 pc (Zuckerman et al. 2001b, Torres et al. 2008). Members of this cluster were extracted from Zuckerman et al. (2001b), Song et al. (2002), Song et al.

(2003), Kaisler et al. (2004), Zuckerman & Song (2004), Moór et al. (2006), Torres et al. (2006), Makarov (2007), Scholz et al. (2007), Torres et al. (2008), Lépine & Simon (2009), Rice et al. (2010), Schlieder et al. (2010), Kiss et al. (2011), Schlieder et al. (2012a), and Schlieder et al. (2012b). X-ray data were taken from Zuckerman et al. (2001b), De la Reza & Pinzón (2004), Kiss et al. (2011), and this work. Lithium data were taken from Zuckerman et al. (2001b), Song et al. (2002), Song et al. (2003), Kaisler et al. (2004), Torres et al. (2006), Fernández et al. (2008), Mentuch et al. (2008), da Silva et al. (2009), Weise et al. (2010), Kiss et al. (2011), and McCarthy & White (2012). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Messina et al. (2010). Hα data were taken from Zuckerman et al. (2001b), Song et al. (2002), Song et al. (2003), Kaisler et al. (2004), Jayawardhana et al. (2006), Scholz et al. (2007), Lépine & Simon (2009), Weise et al. (2010), Kiss et al. (2011), and McCarthy & White (2012).

A.5 Blanco 1

The age of Blanco 1 is most commonly quoted as 132 $\pm$ 24 Myr (Cargile et al. 2010b). The distance is estimated to be 207 $\pm$ 12 pc (van Leeuwen 2009). Members of this cluster were extracted from Platais et al. (2011). X-ray data were taken from Pillitteri et al. (2004), Cargile et al. (2009), and Stauffer et al. (2010). Lithium data were taken from Panagi & O'Dell (1997) and Jeffries & James (1999). There are no available rotational periods. Hα data were taken from Panagi & O'Dell (1997) and Cargile et al. (2009).

A.6 The Carina Association

The age of the Carina association is most commonly quoted as 30 Myr (Torres et al. 2008). Distances to individual members range from 40-160 pc (Torres et al. 2008). Members of this cluster were extracted from Torres et al. (2008). X-ray data were taken from this work. Lithium data were taken from da Silva et al. (2009). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Messina et al. (2010). There are no available Hα data.

A.7 Carina Near

The age of Carina Near is most commonly quoted as 200 Myr (Zuckerman et al. 2006). Distances to individual members range from 20-50 pc (Zuckerman et al. 2006). Members of this cluster were extracted from Zuckerman et al. (2006). X-ray data, lithium data, and Hα data were taken from Zuckerman et al. (2006). Rotational periods were taken from Watson et al. (2006).

A.8 Columba

The age of the Columba association is most commonly quoted as 30 Myr (Torres et al. 2008). Distances to individual members range from 30-190 pc (Torres et al. 2008). Members of this cluster were extracted from Torres et al. (2008) and Zuckerman et al. (2011). X-ray data were taken from Zuckerman et al. (2011). Lithium data were taken from da Silva et al. (2009) and Zuckerman et al. (2011). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Messina et al. (2010). There are no available Hα data.

A.9 Coma Berenices

The age of the Coma Berenices cluster is most commonly quoted as 500 $\pm$ 50 Myr (Odenkirchen et al. 1998). The distance is estimated to be 86.7 $\pm$ 0.9 pc (van Leeuwen 2009). Members of this cluster were extracted from Casewell et al. (2006), Kraus & Hillenbrand (2007b), and

Cameron et al. (2009). Lithium data were taken from Soderblom et al. (1990) and Ford et al. (2001). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Cameron et al. (2009). There are no available X-ray or Hα data.

A.10 ϵ Chamaeleontis

The age of the ϵ Chamaeleontis association is most commonly quoted as 6 Myr (Torres et al. 2008). Distances to individual members range from 90-120 pc (Torres et al. 2008). Members of this cluster were extracted from Torres et al. (2008). X-ray data were taken from this work. Lithium data were taken from da Silva et al. (2009). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Messina et al. (2011). There are no available Hα data.

A.11 η Chamaeleontis

The age of the η Chamaeleontis association is most commonly quoted as 6^{+2}_{-1} Myr (Luhman & Steeghs 2004). The distance is estimated to be ~97 pc (Mamajek et al. 1999). Members of this cluster were extracted from Torres et al. (2008). X-ray data were taken from Mamajek et al. (1999). Lithium data were taken from Mamajek et al. (1999), Lyo et al. (2004), and Mentuch et al. (2008). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), Lawson et al. (2001), and Messina et al. (2011). Hα data were taken from Mamajek et al. (1999) and Lyo et al. (2004).

A.12 Hyades

The age of the Hyades cluster is most commonly quoted as 625 $\pm$ 50 Myr (Perryman et al. 1998). The distance is estimated to be ~46 pc (Perryman et al. 1998). Members of this cluster were extracted from Röser et al. (2011). X-ray data were taken from Stern et al. (1995), Stauffer et al. (1997), Pizzolato et al. (2003), and Zuckerman & Song (2004). Lithium data were taken from Soderblom et al. (1990) and Sestito & Randich (2005). Rotational periods were taken from Pojmanski (1997), Pizzolato et al. (2003), Zuckerman & Song (2004), Watson et al. (2006), and Delorme et al. (2011). Hα data were taken from Stauffer et al. (1997) and Zuckerman & Song (2004).

A.13 IC 348

The age of IC 348 is most commonly quoted as 2-3 Myr (Herbig 1998). The distance is estimated to be $\sim$310 pc (Herbig 1998). Members of this cluster were extracted from Luhman et al. (2003), Muench et al. (2007), and Alves de Oliveira et al. (2013). X-ray data were taken from Preibisch & Zinnecker (2001), Preibisch & Zinnecker (2004), Alexander & Preibisch (2012), and Stelzer et al. (2012). Lithium data were taken from Dahm (2008b). Rotational periods were taken from Kiziloglu et al. (2005), Cieza & Baliber (2006), and Alexander & Preibisch (2012). Hα data were taken from Preibisch & Zinnecker (2002), Luhman et al. (2003), and Dahm (2008b).

A.14 IC 2391

The age of IC 2391 is most commonly quoted as 40 Myr (Torres et al. 2008). The distance is estimated to be 144.9 $\pm$ 2.5 pc (van Leeuwen 2009). Members of this cluster were extracted from Barrado Y Navascués et al. (2004) and Platais et al. (2007). X-ray data were taken from Patten & Simon (1996), Pizzolato et al. (2003), Siegler et al. (2007), and Marsden et al. (2009). Lithium data were taken from Barrado Y Navascués et al. (2004), Platais et al. (2007), Siegler et al. (2007), and da Silva et al. (2009). Rotational periods were taken from Pizzolato et al. (2003), Watson et al. (2006), Marsden et al. (2009), and Messina et al. (2011). Hα data were taken from Barrado Y Navascués et al. (2004) and Platais et al. (2007).

A.15 IC 2602

The age of IC 2602 is most commonly quoted as 46^{+6}_{-5} Myr (Dobbie et al. 2010). The distance is estimated to be 148.6 ± 2.0 pc (van Leeuwen 2009). Members of this cluster were extracted from Randich et al. (1995), Randich et al. (2001), and Dobbie et al. (2010). X-ray data were taken from Randich et al. (1995), Barnes et al. (1999), Pizzolato et al. (2003), and Marsden et al. (2009). Lithium data were taken from Randich et al. (1997), Randich et al. (2001), and Dobbie et al. (2010). Rotational periods were taken from Barnes et al. (1999), Pizzolato et al. (2003), Watson et al. (2006), and Marsden et al. (2009). Hα data were taken from Randich et al. (1997).

A.16 IC 4665

The age of IC 4665 is most commonly quoted as 42 ± 12 Myr (Cargile et al. 2010a). The distance is estimated to be 356 ± 38 pc (van Leeuwen 2009). Members of this cluster were extracted from Jeffries et al. (2009) and Lodieu et al. (2011b). X-ray data were taken from Giampapa et al. (1998). Lithium data were taken from Martín & Montes (1997), Manzi et al. (2008), and Jeffries et al. (2009). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Scholz et al. (2009). Hα data were taken from Martín & Montes (1997) and Jeffries et al. (2009).

A.17 Lower Centaurus Crux

Recent work by Song et al. (2012) indicate an age for the Lower Centaurus Crux region of ∼10 Myr. The distance is estimated to be 118 ± 20 pc (De Zeeuw et al. 1999). Members of this cluster were extracted from De Zeeuw et al. (1999), Preibisch & Mamajek (2008), and Song et al. (2012) . X-ray data were taken from Mamajek et al. (2002), Preibisch & Mamajek (2008), and Song et al. (2012). Lithium data were taken from Mamajek et al. (2002), Weise et al. (2010), Chen et al. (2011), and Song et al. (2012). Rotational periods were taken from Pojmanski (1997) and Watson et al. (2006). Hα data were taken from Mamajek et al. (2002), Song et al. (2012), and Pecaut et al. (2012).

A.18 M7

The age of M7 is most commonly quoted as ∼220 Myr (Sestito et al. 2003). The distance is estimated to be 270 ± 12 pc (van Leeuwen 2009). Members of this cluster were extracted from Prosser et al. (1995), James & Jeffries (1997), James et al. (2000), and Mermilliod et al. (2009). X-ray data were taken from Prosser et al. (1995) and James & Jeffries (1997). Lithium data were taken from James & Jeffries (1997), James et al. (2000), and Sestito et al. (2003). There are no available rotational periods. Hα data were taken from James & Jeffries (1997).

A.19 M34

The age of M34 is most commonly quoted as ∼220 Myr (Meibom et al. 2011). The distance is estimated to be ∼470 pc (Jones & Prosser 1996). Members of this cluster were extracted from Jones & Prosser (1996), Irwin et al. (2006), and James et al. (2010). X-ray data were taken from Simon (2000). Lithium data were taken from Jones et al. (1997). Rotational periods were taken from Irwin et al. (2006), Watson et al. (2006), James et al. (2010), and Meibom et al. (2011). Hα data were taken from Soderblom et al. (2001).

A.20 M35

The age of M35 is most commonly quoted as ~150 Myr (Meibom et al. 2009). The distance is estimated to be 805 ± 40 pc (Geller et al. 2010). Members of this cluster were extracted from Geller et al. (2010). There are no available X-ray data. Lithium data were taken from Barrado Y Navascués et al. (2001). Rotational periods were taken from Meibom et al. (2009). There are no available Hα data.

A.21 M67

The age of M67 is most commonly quoted as 3700 ± 300 Myr (Sarajedini et al. 2009). The distance is estimated to be ~900 pc (Sarajedini et al. 1999). Members of this cluster were extracted from Mamajek & Hillenbrand (2008) and Yadav et al. (2008). X-ray data were taken from Belloni et al. (1998) and Pasquini & Belloni (1998). Lithium data were taken from Hobbs & Pilachowski (1986), Spite et al. (1987), Jones et al. (1999), and Melo et al. (2001). Rotational periods were taken from Belloni et al. (1998) and Watson et al. (2006). There are no available Hα data.

A.22 NGC 752

The age of NGC 752 is most commonly quoted as 1900 ± 200 Myr (Giardino et al. 2008). The distance is estimated to be ~450 pc (Daniel et al. 1994). Members of this cluster were extracted from Daniel et al. (1994) and Giardino et al. (2008). X-ray data were taken from Giardino et al. (2008). Lithium data were taken from Hobbs & Pilachowski (1984) and

Sestito et al. (2004). Rotational periods were taken from Watson et al. (2006). There are no available Hα data.

A.23 NGC 2264

Age estimates for NGC 2264 range from 0.1 (Rebull et al. 2002) to 10.0 Myr (Flaccomio et al. 1999). The most typical quoted age is $\sim$3 Myr, which is adopted here. The distance is most recently estimated to be 913 $\pm$ 40 pc (Baxter et al. 2009). For a recent summary, please see Dahm (2008a). Members of this cluster were extracted from Dahm & Simon (2005), Sung et al. (2008), Baxter et al. (2009), and Alencar et al. (2010). X-ray data were taken from Ramirez et al. (2004), Flaccomio et al. (2006) and Dahm et al. (2007). Lithium data were taken from King (1998), Soderblom et al. (1999), and Dahm & Simon (2005). Rotational periods were taken from Lamm et al. (2005), Flaccomio et al. (2006), Baxter et al. (2009), and Alencar et al. (2010). Hα data were taken from Soderblom et al. (1999), Dahm & Simon (2005), Dahm et al. (2007), Sung et al. (2008), and Alencar et al. (2010).

A.24 NGC 2516

The age of NGC 2516 is most commonly quoted as $\sim$150 Myr (Irwin et al. 2007). The distance is estimated to be 343 $\pm$ 12 pc (van Leeuwen 2009). Members of this cluster were extracted from Jeffries et al. (2001) and Irwin et al. (2007). X-ray data were taken from Jeffries et al. (1998) and Pillitteri et al. (2006). Lithium data were taken from Jeffries et al. (1998). Rotational periods were taken from Irwin et al. (2007) and Jackson & Jeffries (2010b). There are no available Hα data.

A.25 NGC 2547

The age of NGC 2547 is most commonly quoted as $38.5^{+3.5}_{-6.5}$ Myr (Naylor & Jeffries 2006). The distance is estimated to be 474 ± 41 pc (van Leeuwen 2009). Members of this cluster were extracted from Jeffries et al. (2004) and Irwin et al. (2008). X-ray data were taken from Jeffries et al. (2000), Jeffries et al. (2006), and Jeffries et al. (2011). Lithium data were taken from Jeffries et al. (2003), Oliveira et al. (2003), and Jeffries & Oliveira (2005). Rotational periods were taken from Irwin et al. (2008) and Jeffries et al. (2011). Hα data were taken from Jeffries et al. (2000) and Jeffries et al. (2003).

A.26 Octans

The age of the Octans association is most commonly quoted as 20 Myr (Torres et al. 2008). Distances to individual members range from 80-200 pc (Torres et al. 2008). Members of this cluster were extracted from Torres et al. (2008). X-ray data were taken from this work. Lithium data were taken from da Silva et al. (2009). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Messina et al. (2011). There are no available Hα data.

A.27 Pleiades

The age of the Pleiades is most commonly quoted as ∼120 Myr (Stauffer et al. 1998). The distance is estimated to be 120.2 ± 1.9 pc (van Leeuwen 2009). Members of this cluster were extracted from Stauffer et al. (2007) and Hartman et al. (2010). X-ray data were taken from Stauffer et al. (1994), Micela et al. (1999), and Pizzolato et al. (2003). Lithium data were taken from Butler et al. (1987), Soderblom et al. (1993a), García López et al. (1994), Sestito & Randich (2005), and King et al. (2010). Rotational periods were taken from Pojmanski

(1997), Watson et al. (2006), Jackson & Jeffries (2010a), and Hartman et al. (2010). Hα data were taken from Terndrup et al. (2000).

A.28 Praesepe

The age of Praesepe is most commonly quoted as 578 $\pm$ 12 Myr (Delorme et al. 2011). The distance is estimated to be 181.5 $\pm$ 6.0 pc (van Leeuwen 2009). Members of this cluster were extracted from Adams et al. (2002), Kraus & Hillenbrand (2007b), Mermilliod et al. (2009), Boudreault et al. (2010), and Delorme et al. (2011). X-ray data were taken from Randich & Schmitt (1995) and Patience et al. (2002). Lithium data were taken from Soderblom et al. (1993b). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), Agüeros et al. (2011), and Delorme et al. (2011). Hα data were taken from Adams et al. (2002) and Kafka & Honeycutt (2006).

A.29 Tucana-Horologium

The age of the Tucana-Horologium association is most commonly quoted as 30 Myr (Torres et al. 2008). Distances to individual members range from 20-120 pc (Zuckerman et al. 2001a). Members of this cluster were extracted from Torres et al. (2000), Zuckerman & Webb (2000), Zuckerman et al. (2001a), Song et al. (2003), Zuckerman & Song (2004), Moór et al. (2006), Makarov (2007), Scholz et al. (2007), Fernández et al. (2008), Torres et al. (2008), Reiners (2009), Kiss et al. (2011), Zuckerman et al. (2011), and Zuckerman & Song (2012). X-ray data were taken from Stelzer & Neuhäuser (2001), De la Reza & Pinzón (2004), Kiss et al. (2011), Zuckerman et al. (2011), and this work. Lithium data were taken from Torres et al. (2000), Zuckerman & Webb (2000), Song et al. (2003), Guenther et al. (2005), Torres et al. (2006), Fernández et al. (2008), Mentuch et al. (2008), da Silva et al. (2009), Weise et al.

(2010), Kiss et al. (2011), and Zuckerman et al. (2011). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Messina et al. (2010). Hα data were taken from Torres et al. (2000), Zuckerman & Webb (2000), Song et al. (2003), Jayawardhana et al. (2006), Scholz et al. (2007), Reiners (2009), Weise et al. (2010), and Kiss et al. (2011).

A.30 TW Hya

The age of the TW Hya association is most commonly quoted as 8 Myr (Torres et al. 2008). Distances to individual members range from 30-90 pc (Schneider et al. 2012a). For a recent summary, please see Schneider et al. (2012a). Members of this cluster were extracted from Schneider et al. (2012a) and Schneider et al. (2012b). X-ray data were taken from Schneider et al. (2012a). Lithium data were taken from Schneider et al. (2012a). Rotational periods were taken from Pojmanski (1997), Lawson & Crause (2005), Watson et al. (2006), and Messina et al. (2010). Hα data were taken from Schneider et al. (2012a) and Schneider et al. (2012b).

A.31 Upper Centaurus Lupus

Recent work by Song et al. (2012) indicate an age for the Upper Cetaurus Lupus region of $\sim$10 Myr. The distance is estimated to be 140 $\pm$ 2 pc (De Zeeuw et al. 1999). Members of this cluster were extracted from De Zeeuw et al. (1999), Mamajek et al. (2002), Preibisch & Mamajek (2008), and Song et al. (2012). X-ray data were taken from Mamajek et al. (2002), Preibisch & Mamajek (2008), and Song et al. (2012). Lithium data were taken from Mamajek et al. (2002), Chen et al. (2011), and Song et al. (2012). Rotational periods were taken from Pojmanski (1997), Watson et al. (2006), and Bailey et al. (2012). Hα data were taken from Mamajek et al. (2002), Song et al. (2012), and Pecaut et al. (2012).

A.32 Upper Scorpius

The age of Upper Scorpius is most commonly quoted as ~5 Myr (Preibisch et al. 2002). The distance is estimated to be 145 ± 2 pc (De Zeeuw et al. 1999). Members of this cluster were extracted from De Zeeuw et al. (1999), Kraus & Hillenbrand (2007a), Lodieu et al. (2011a), and Dahm et al. (2012). X-ray data were taken from this work. Lithium data were taken from Preibisch et al. (1998), Preibisch et al. (2002), Preibisch & Mamajek (2008), and Chen et al. (2011). Rotational periods were taken from Pojmanski (1997), Adams et al. (1998), and Watson et al. (2006). Hα data were from Preibisch et al. (1998), Preibisch et al. (2002), Preibisch & Mamajek (2008), Lodieu et al. (2011a), Dahm et al. (2012), and Pecaut et al. (2012).

Appendix B

Young Nearby Solar-Type Stars

Table B.1: Young Nearby Solar-Type Stars

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC0001-0017-1‡	00:00:12.10	+01:46:17.00	...	300	...	-3.54	7.4	43.0 ± 43.0	...
TYC5260-0131-1‡	00:05:39.60	-07:54:13.00	...	50	...	-3.74	15.9	113.6 ± 102.6	...
HIP490	00:05:52.47	-41:45:10.40	1.09	135	-4.46	-4.41	14.0	113.4 ± 38.5	Tuc Hor
TYC5844-0586-1‡	00:05:57.50	-20:38:55.00	...	30	...	-3.62	4.0	50.7 ± 50.7	...
HIP560‡	00:06:50.10	-23:06:27.00	...	87	...	-5.33	170.7	89.4 ± 89.4	β Pic
HIP682†	00:08:25.69	+06:37:00.52	0.98	150	...	-4.20	18.0	94.1 ± 76.8	...
TYC0001-1187-1‡	00:09:21.80	+00:38:07.00	-0.20	100	...	-3.05	28.1	73.7 ± 61.8	...
HIP795B‡	00:09:51.30	+08:27:12.00	...	140	...	-3.93	9.0	111.8 ± 84.0	...
HIP795†	00:09:51.65	+08:27:11.40	0.92	105	...	-4.18	7.0	50.3 ± 50.3	...
TYC8470-1367-1‡	00:10:08.70	-59:21:28.00	...	110	...	-3.28	18.2	66.5 ± 58.5	...
HIP910†	00:11:15.91	-15:28:02.28	1.24	39	...	...	1.0	123.8 ± 123.8	...
TYC5839-0596-1‡	00:12:07.60	-15:50:33.00	-3.70	100	...	-3.08	36.5	77.4 ± 64.9	...
HIP1113†	00:13:52.83	-74:41:17.52	0.76	194	...	-3.39	9.0	42.2 ± 42.2	Tuc Hor
HIP1134	00:14:10.20	-07:11:56.30	1.32	106	-4.45	-4.26	30.0	74.9 ± 74.0	Columba
HIP1292‡	00:16:12.70	-79:51:04.00	...	60	...	-4.41	5.1	413.5 ± 181.0	...
HIP1427	00:17:49.86	+16:19:51.90	0.85	21	...	-5.14	11.0	389.3 ± 212.7	...
TYC2261-1518-1	00:18:20.80	+30:57:23.70	...	232	...	-2.97	...	52.6 ± 52.6	AB Dor
HIP1481	00:18:26.01	-63:28:38.50	1.21	119	-4.49	-4.18	17.0	70.9 ± 67.6	Tuc Hor
HIP1710‡	00:21:32.10	-34:10:11.00	...	110	...	-3.86	5.7	34.8 ± 34.8	...
HIP1803	00:22:51.57	-12:12:34.50	1.08	77	-4.42	-4.64	11.0	398.3 ± 187.3	...
HIP1910†	00:24:08.87	-62:11:03.84	-1.50	160	...	-3.42	13.0	50.2 ± 40.5	Tuc Hor
HIP1938‡	00:24:28.00	+05:42:43.00	...	80	...	-3.49	14.5	123.9 ± 91.2	...
HIP1993‡	00:25:14.70	-61:30:48.00	-1.30	40	...	...	7.3	66.6 ± 66.6	Tuc Hor
TYC0006-0526-1‡	00:25:32.90	+04:53:46.00	...	30	...	-3.06	15.1	69.2 ± 69.2	...
TYC5840-0915-1‡	00:26:06.10	-15:42:19.00	...	60	...	-3.99	27.4	206.0 ± 122.7	...
TYC9490-1407-2	00:26:51.19	-83:08:19.70	1.71	78	...	-4.27	...	210.7 ± 122.7	...
TYC7528-0257-1‡	00:27:42.90	-41:26:16.00	...	160	...	-3.06	14.7	72.5 ± 65.3	...
HIP2236	00:28:21.13	-45:52:08.70	1.10	35	-4.66	-4.14	9.0	104.0 ± 50.3	...
HIP2237	00:28:21.17	-20:20:05.20	1.17	68	-4.57	-4.86	11.0	458.2 ± 189.7	...
HIP2236A‡	00:28:21.20	-45:52:10.00	...	30	...	-4.15	3.3	101.8 ± 52.7	...
HIP2239†	00:28:26.41	-29:17:04.56	1.43	35	...	-4.95	18.0	426.8 ± 202.3	...
TYC8471-0579-1‡	00:28:44.20	-57:32:54.00	...	100	...	-3.22	12.3	87.3 ± 69.3	...
TYC0596-0145-1†	00:29:18.60	+09:52:30.88	1.71	360	...	...	...	22.0 ± 22.0	...
TYC6991-0874-1‡	00:33:07.30	-32:01:19.00	...	90	...	-3.78	14.4	174.4 ± 107.6	...
HIP2729‡	00:34:51.20	-61:54:58.00	-1.10	360	...	-3.32	122.8	39.7 ± 27.7	Tuc Hor
TYC8030-0804-1‡	00:35:10.10	-50:20:05.00	...	110	...	-2.82	28.3	73.7 ± 67.1	...
HIP2762	00:35:14.66	-03:35:34.00	1.37	61	-4.53	-4.48	25.0	103.5 ± 52.9	...
HIP2780	00:35:28.60	+11:50:25.70	1.23	9	-4.00	-4.70	8.0	298.4 ± 162.0	...
HIP2802	00:35:41.14	-48:00:02.40	1.44	15	-4.62	-5.05	15.0	238.2 ± 168.3	...
HIP2841†	00:36:00.80	-59:43:01.92	1.74	140	...	...	73.0	30.9 ± 30.9	...
TYC0606-0697-1	00:36:25.26	+12:13:01.20	1.33	19	...	-3.93	...	109.5 ± 84.3	...
TYC0603-0461-1†	00:38:59.26	+08:28:41.25	-0.54	187	...	-3.28	25.0	76.9 ± 70.1	...
HIP3210	00:40:51.47	-53:12:35.30	1.23	79	-4.48	-4.46	24.0	116.3 ± 115.2	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP3236	00:41:11.94	+09:21:19.10	1.24	46	-4.54	-5.29	9.0	332.2 ± 191.4	…
TYC2283-1157-1†	00:41:17.34	+34:25:16.84	-0.34	145	…	-2.96	18.0	80.6 ± 67.4	…
TYC9351-1110-1‡	00:42:20.30	-77:47:40.00	-0.10	291	…	-3.31	19.5	40.4 ± 40.4	Tuc Hor
HIP3326†	00:42:23.21	+04:10:00.05	0.90	54	…	-4.24	13.0	100.9 ± 51.2	…
HIP3342‡	00:42:36.00	-16:42:12.00	…	70	…	-4.18	5.7	129.6 ± 43.2	…
TYC9141-1004-1‡	00:44:03.30	-74:37:34.00	…	350	…	-3.20	150.0	29.9 ± 29.9	…
TYC0017-1414-1B†	00:45:04.22	+05:33:18.60	0.49	35	…	-4.00	…	241.1 ± 172.2	…
TYC0017-1104-1†	00:45:04.46	+05:33:11.11	0.71	110	…	-4.00	…	105.0 ± 80.4	…
HIP3540	00:45:10.81	+00:15:12.30	1.14	106	-4.79	-4.55	10.0	151.5 ± 127.2	…
HIP3589†	00:45:50.78	+54:58:40.80	0.91	118	…	-4.01	24.0	55.8 ± 55.8	AB Dor
TYC3266-1767-1†	00:46:53.13	+48:08:44.98	0.06	365	…	-3.23	14.0	30.6 ± 30.6	…
TYC8845-0234-1	00:50:24.20	-64:04:04.10	1.24	98	…	-3.79	…	49.7 ± 49.7	…
TYC0604-1008-1	00:50:55.56	+08:02:45.60	1.43	61	…	-3.96	…	41.8 ± 41.8	…
HIP3990‡	00:51:17.10	-13:06:53.00	…	50	…	-4.16	…	108.3 ± 49.6	…
TYC0608-0938-2	00:52:07.56	+10:36:05.60	1.37	50	…	-3.34	…	18.9 ± 18.9	…
TYC0608-0938-1	00:52:07.57	+10:36:03.40	1.69	57	…	-3.55	…	34.3 ± 34.3	…
TYC5850-0274-1‡	00:52:46.20	-19:55:07.00	…	160	…	-3.50	130.0	38.2 ± 38.2	…
TYC8034-0251-1‡	00:55:25.30	-49:56:57.00	…	172	…	-3.31	17.6	53.2 ± 53.2	…
HIP4448†	00:56:55.39	-51:52:31.80	-0.09	136	…	-3.24	25.0	79.3 ± 66.7	Argus
TYC0015-0491-1‡	00:57:36.80	+04:44:48.00	…	40	…	-3.60	6.3	139.1 ± 101.0	…
TYC7533-0380-1‡	01:00:12.30	-38:18:38.00	-0.10	60	…	-3.33	11.2	106.4 ± 79.3	…
TYC8032-1102-1‡	01:01:16.70	-45:56:37.00	-1.00	100	…	-3.13	…	76.8 ± 64.6	…
TYC7539-0371-1‡	01:02:41.80	-43:21:34.00	…	60	…	-3.57	28.7	119.6 ± 91.4	…
HIP5144	01:05:51.42	+04:54:35.00	1.22	46	-4.96	-5.12	10.0	341.4 ± 186.9	…
HIP5191†	01:06:26.09	-14:17:46.32	0.69	160	…	-3.81	10.0	134.1 ± 93.6	AB Dor
HIP5227‡	01:06:49.00	-22:51:21.00	…	74	…	-3.10	13.0	29.3 ± 29.3	…
TYC1199-0701-1†	01:07:05.52	+19:09:08.36	…	200	…	-3.32	…	72.6 ± 66.0	…
J010711.93-19353†	01:07:11.93	-19:35:35.70	-1.58	270	…	-3.23	14.0	47.1 ± 29.2	β Pic
HIP5363‡	01:08:33.80	-46:40:05.00	…	40	…	-4.79	121.0	41.7 ± 41.7	…
HIP5373‡	01:08:45.70	-25:51:40.00	…	50	…	-4.46	7.0	482.2 ± 200.4	…
HIP5631	01:12:19.20	+12:16:55.00	1.22	76	-4.12	-4.77	7.0	183.6 ± 142.1	…
TYC6427-0300-1	01:12:40.44	-29:10:46.30	0.38	101	-4.12	-3.39	15.0	78.3 ± 63.8	…
TYC2808-0447-1	01:13:05.84	+41:39:15.80	1.25	86	…	-4.29	…	217.7 ± 147.7	…
TYC8852-0264-1†	01:13:15.34	-64:11:35.12	-0.17	287	…	-3.01	24.0	30.1 ± 30.1	Tuc Hor
HIP5743	01:13:45.18	+07:34:42.20	1.15	89	-4.33	-5.22	10.0	306.1 ± 162.6	…
TYC6425-1046-1‡	01:18:24.80	-23:24:17.00	…	50	…	-4.04	…	227.5 ± 168.5	…
HIP6132A‡	01:18:38.00	-73:25:27.00	-1.90	10	…	-3.69	43.0	48.0 ± 48.0	…
TYC8474-0500-1	01:19:05.56	-53:51:01.80	1.41	117	…	-4.05	…	53.9 ± 53.9	…
HIP6276	01:20:32.21	-11:28:02.50	0.84	126	-4.58	-4.37	16.0	183.5 ± 112.1	AB Dor
TYC7004-0515-1‡	01:21:10.10	-37:29:30.00	-0.70	100	…	-2.99	19.3	74.9 ± 63.8	…
HIP6454	01:22:56.71	+07:25:07.40	0.15	64	-4.14	-3.07	12.0	24.4 ± 24.4	…
TYC9356-1284-1†	01:23:17.21	-79:41:32.34	-0.15	500	…	-3.30	93.0	36.7 ± 25.0	…
HIP6485†	01:23:21.14	-57:28:50.52	0.76	190	…	-3.43	9.0	44.7 ± 44.7	Tuc Hor
HIP6494	01:23:25.63	-76:36:42.20	1.04	122	-4.33	-4.56	9.0	185.8 ± 113.4	…

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP6572	01:24:25.31	+06:29:03.50	1.27	91	-4.02	-5.04	8.0	209.2 ± 131.9	...
TYC7002-1488-1‡	01:24:51.80	-30:44:45.00	...	260	...	-3.29	10.8	40.4 ± 40.4	...
TYC7002-2530-1	01:26:57.87	-30:57:38.00	1.29	39	...	-4.21	...	185.7 ± 108.3	...
UCAC210553409‡	01:27:26.70	-49:28:14.00	...	40	...	-3.13	...	54.1 ± 54.1	...
HIP6856†	01:28:08.57	-52:38:18.60	0.36	170	...	-3.27	5.0	79.3 ± 66.7	Tuc Hor
HIP6878†	01:28:34.32	+42:16:04.44	1.25	47	...	-4.40	13.0	119.1 ± 111.5	...
HIP6917	01:29:04.62	+21:43:25.00	0.70	8	-4.24	-4.70	4.0	378.2 ± 174.6	...
HIP7078†	01:31:13.51	+70:15:53.28	1.05	25	...	-5.39	...	419.1 ± 216.1	...
TYC0614-0313-1†	01:31:15.06	+08:35:22.49	-1.20	80	...	-3.40	...	106.5 ± 82.0	...
TYC1211-1028-1†	01:37:08.84	+20:42:00.46	1.07	30	...	-3.85	11.0	155.4 ± 93.5	...
HIP7576	01:37:35.37	-06:45:36.70	0.89	88	-4.37	-4.47	9.0	289.5 ± 154.3	...
TYC1208-0468-1A†	01:37:39.41	+18:35:33.26	-0.55	430	...	-2.98	...	31.2 ± 24.0	β Pic
TYC1208-0468-2B†	01:37:39.41	+18:35:33.26	-0.66	409	...	-2.98	15.0	32.0 ± 25.4	β Pic
TYC7003-1825-1‡	01:37:40.70	-33:33:42.00	...	60	...	-3.14	30.8	58.8 ± 58.8	...
TYC4687-1566-1	01:40:58.81	-05:24:12.80	1.09	34	...	-4.24	...	134.5 ± 50.1	...
HIP7978†	01:42:29.16	-53:44:26.16	1.13	59	...	...	8.0	131.7 ± 131.7	...
HIP8039‡	01:43:14.30	-21:37:11.00	...	80	...	-3.69	5.0	76.2 ± 76.2	...
HIP8039†	01:43:14.30	-21:37:10.92	1.10	41	...	-3.69	...	106.2 ± 80.1	...
HIP8209B†	01:45:38.49	-25:03:03.30	1.31	42	...	-5.10	10.0	112.9 ± 112.9	...
HIP8251‡	01:46:13.00	-46:56:52.00	...	50	...	-3.12	50.0	53.7 ± 33.9	...
TYC6431-0745-1‡	01:49:07.40	-28:21:09.00	-0.80	80	...	-2.91	...	65.7 ± 53.4	...
HIP8486	01:49:23.43	-10:42:12.00	1.05	66	-4.44	-4.41	9.0	339.3 ± 176.9	...
HIP8553‡	01:50:20.30	-23:46:19.00	...	60	...	-4.39	...	373.1 ± 209.8	...
TYC8047-0232-1‡	01:52:14.60	-52:19:33.00	...	339	...	-3.12	19.8	30.0 ± 30.0	Columba
J015402.68-40404†	01:54:02.68	-40:40:44.30	-3.60	190	...	-3.21	...	70.6 ± 63.1	...
TYC7543-0602-1‡	01:55:22.80	-38:46:21.00	-0.90	30	...	-3.14	34.1	74.9 ± 66.2	...
HIP9141	01:57:48.92	-21:54:04.90	1.02	185	-4.30	-4.02	14.0	70.5 ± 63.2	Tuc Hor
TYC5856-2070-1†	02:01:35.57	-16:10:00.72	0.17	195	...	-3.52	...	90.3 ± 78.4	Columba
CD-53386‡	02:01:53.70	-52:34:53.00	-0.30	318	...	-3.00	20.9	39.5 ± 39.5	Tuc Hor
HIP9630	02:03:47.15	+35:35:28.80	0.25	99	...	-3.27	...	49.5 ± 40.7	...
HIP9685‡	02:04:35.10	-54:52:54.00	...	60	...	-4.98	110.0	107.7 ± 107.7	Tuc Hor
HIP9727†	02:05:07.06	+77:16:53.40	0.57	40	...	-4.10	...	33.9 ± 33.9	...
TYC0636-0130-1†	02:06:48.76	+14:45:12.03	1.01	218	...	-3.79	...	64.1 ± 39.7	...
HIP9892†	02:07:17.98	-53:11:56.40	0.70	213	...	-3.30	17.0	37.4 ± 37.4	Tuc Hor
HIP9902†	02:07:26.02	-59:40:45.84	1.21	133	...	-4.01	32.0	52.2 ± 52.2	Tuc Hor
TYC8489-1155-1‡	02:07:32.20	-59:40:21.00	-1.00	254	...	-3.03	10.8	53.6 ± 50.6	Tuc Hor
TYC9495-0376-1‡	02:09:29.80	-85:18:12.00	...	90	...	-3.03	46.0	69.2 ± 67.2	...
TYC8483-1210-1‡	02:10:07.90	-54:30:40.00	-0.80	175	...	-2.97	39.1	68.5 ± 63.6	...
TYC4033-0028-1†	02:10:40.64	+60:57:24.93	1.04	16	...	-4.31	7.0	430.7 ± 199.0	...
TYC8042-1050-1‡	02:10:55.40	-46:03:59.00	-0.50	250	...	-3.10	36.0	50.6 ± 49.1	AB Dor
HIP10272	02:12:15.33	+23:57:30.80	0.93	118	-3.95	-4.18	6.0	82.1 ± 42.6	AB Dor
HIP10321†	02:12:54.96	+40:40:06.96	1.00	70	...	-4.70	3.0	491.3 ± 183.7	...
HIP10339†	02:13:13.30	+40:30:28.08	1.00	60	...	-4.41	5.0	404.2 ± 167.8	...
TYC7554-0787-1‡	02:13:51.50	-41:29:31.00	...	50	...	-3.30	5.1	94.0 ± 76.5	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC7007-0880-1†	02:15:28.57	-32:47:36.96	0.88	66	...	-4.28	12.0	133.4 ± 42.4	...
HIP10644	02:17:02.46	+34:13:29.30	1.57	172	...	-5.11	...	129.2 ± 95.4	...
HIP10679†	02:17:24.67	+28:44:31.20	0.94	163	...	-3.92	16.0	59.8 ± 55.9	β Pic
HIP10680†	02:17:25.22	+28:44:42.72	1.17	147	...	-4.18	30.0	54.4 ± 54.4	β Pic
HIP10699‡	02:17:43.50	-50:14:42.00	...	50	...	-3.75	...	28.2 ± 28.2	...
TYC4693-0709-1	02:18:31.39	-04:55:03.80	1.36	54	...	-4.03	...	117.4 ± 87.3	...
HIP10786‡	02:18:53.20	-69:53:12.00	...	120	...	-4.19	...	98.8 ± 78.8	...
TYC3294-2222-1†	02:21:13.08	+46:00:07.19	0.37	310	...	-3.44	...	32.7 ± 32.7	...
HIP11072‡	02:22:32.50	-23:48:59.00	...	50	...	-4.57	4.0	390.2 ± 200.1	...
HIP11131‡	02:23:14.50	-29:52:10.00	...	65	...	-5.19	6.0	391.7 ± 219.5	...
TYC6435-1940-1B	02:23:14.52	-29:52:09.97	1.12	59	-4.62	-5.13	9.0	458.4 ± 216.4	...
TYC1221-1534-1	02:23:34.10	+22:27:29.30	0.95	73	-4.03	-3.90	16.0	68.6 ± 68.0	...
HIP11337‡	02:25:52.10	-52:57:52.00	...	50	...	-4.40	6.0	132.3 ± 41.8	...
HIP11360†	02:26:16.20	+06:17:33.61	2.20	30	...	-4.92	88.0	175.1 ± 144.6	β Pic
HIP11437B†	02:27:27.90	+30:58:41.80	-4.30	110	...	-3.07	10.0	75.8 ± 64.9	β Pic
HIP11437A†	02:27:29.21	+30:58:25.32	-0.20	251	...	-3.07	6.0	57.2 ± 51.9	β Pic
HIP11537†	02:28:43.85	-31:13:37.56	0.73	50	...	-4.20	4.0	313.9 ± 200.5	...
TYC7555-0572-1‡	02:29:00.30	-41:07:33.00	...	30	...	-3.74	5.5	149.6 ± 104.8	...
TYC7558-0655-1†	02:30:32.41	-43:42:23.29	0.16	30	...	-3.46	11.0	89.6 ± 77.1	Columba
J023046.17-43434†	02:30:46.17	-43:43:49.30	-0.55	30	...	-3.90	...	181.0 ± 112.6	Columba
HIP11815†	02:32:23.09	+03:22:57.32	0.11	160	...	-3.69	...	71.6 ± 71.6	...
HIP11847†	02:32:55.78	+37:20:01.32	1.80	70	...	...	...	56.7 ± 56.7	...
HIP12225†	02:37:24.26	-52:32:35.16	2.64	35	...	...	...	67.8 ± 67.8	...
TYC6436-1169-1‡	02:38:35.30	-29:03:19.00	-0.10	80	...	-3.37	...	84.6 ± 68.4	...
HIP12326‡	02:38:44.20	-52:57:03.00	...	50	...	-3.49	22.3	27.2 ± 27.2	...
TYC8484-1507-1‡	02:38:45.00	-52:57:08.00	...	250	...	-3.34	6.0	31.5 ± 31.5	...
HIP12444	02:40:12.50	-09:27:09.70	1.15	101	-4.63	-5.35	9.0	178.5 ± 121.2	...
HIP12484‡	02:40:39.60	-54:32:60.00	...	90	...	-5.16	8.0	333.0 ± 178.8	...
TYC4699-1214-1	02:41:13.88	-00:41:43.30	1.38	63	-4.51	-4.60	25.0	128.6 ± 41.3	...
HIP12545†	02:41:25.85	+05:59:18.89	-0.83	406	...	-3.08	14.0	33.7 ± 33.7	β Pic
TYC8491-0656-1‡	02:41:46.80	-52:59:52.00	-1.20	298	...	-3.05	80.4	41.9 ± 41.9	Tuc Hor
HIP12635†	02:42:20.88	+38:37:22.08	0.20	150	...	-3.52	6.0	93.1 ± 71.9	AB Dor
HIP12638†	02:42:21.26	+38:37:08.04	1.00	160	...	-3.97	3.0	100.5 ± 77.4	AB Dor
TYC8497-0995-1‡	02:42:33.00	-57:39:37.00	-0.40	120	...	-3.61	5.6	94.3 ± 79.2	Tuc Hor
HIP12653	02:42:33.17	-50:48:02.90	1.19	35	-4.58	-5.03	10.0	409.2 ± 203.4	...
HIP12787†	02:44:21.31	+10:57:41.40	-2.26	371	...	-3.29	24.0	65.8 ± 41.3	...
HIP12787B†	02:44:22.73	+10:57:34.80	-10.40	440	...	...	...	14.2 ± 14.2	...
TYC6436-0095-1‡	02:44:26.40	-26:59:52.00	...	260	...	-3.47	...	31.7 ± 31.7	...
HIP12837	02:45:01.13	-22:09:58.70	1.10	96	-4.68	-4.89	8.0	115.3 ± 107.7	...
HIP12925†	02:46:14.57	+05:35:33.72	1.30	150	...	-4.33	...	77.4 ± 72.6	Tuc Hor
HIP13027A†	02:47:27.38	+19:22:19.30	0.83	160	...	-4.34	...	82.5 ± 78.4	AB Dor
TYC1226-1676-1B	02:47:27.42	+19:22:18.56	0.74	145	-4.25	-4.13	10.0	95.2 ± 48.0	AB Dor
HIP13246	02:50:30.18	+11:52:13.30	0.60	19	-4.24	-3.39	10.0	46.8 ± 39.6	...
HIP13359	02:51:52.80	-61:37:05.70	0.23	54	-4.16	-3.13	17.0	62.5 ± 62.5	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC2338-0893-1†	02:52:17.59	+36:16:48.16	-1.50	150	...	...	...	129.8 ± 116.2	...
HIP13402	02:52:31.90	-12:46:09.40	0.79	192	-4.36	-4.19	10.0	125.9 ± 35.0	...
HIP13513	02:54:02.43	-35:54:15.40	0.79	14	-4.45	-4.76	10.0	468.1 ± 189.9	...
TYC8491-1376-1‡	02:56:38.50	-53:09:39.00	...	40	...	-3.61	...	148.7 ± 101.9	...
TYC7012-0435-1‡	02:57:54.80	-31:47:09.00	...	100	...	-3.48	8.6	115.4 ± 85.6	...
TYC8862-0019-1‡	02:58:04.00	-62:41:14.00	-0.40	374	...	-3.21	7.6	30.8 ± 30.8	Tuc Hor
HIP14007‡	03:00:19.70	-37:27:16.00	...	120	...	-4.40	10.0	125.9 ± 38.8	...
TYC7025-0163-1‡	03:00:46.90	-37:08:02.00	...	230	...	-3.56	5.1	40.3 ± 40.3	...
HIP14230	03:03:28.59	+23:03:41.30	1.02	61	-4.21	-4.99	11.0	437.6 ± 162.6	...
TYC9362-0323-1‡	03:03:44.00	-76:16:10.00	...	10	...	-3.58	17.4	91.5 ± 81.9	...
HIP14307	03:04:33.06	-51:19:20.20	1.30	10	-4.72	-4.85	11.0	437.0 ± 211.8	...
HIP14415	03:06:05.70	-48:47:46.20	1.01	23	-5.14	-4.40	8.0	119.5 ± 52.9	...
TYC8866-0611-1‡	03:06:14.50	-65:21:32.00	...	290	...	-3.08	70.8	31.9 ± 31.9	Tuc Hor
HIP14555‡	03:07:55.70	-28:13:11.00	...	17	...	-2.85	30.0	62.9 ± 55.3	...
TYC2339-1426-1†	03:07:59.21	+30:20:26.09	0.43	200	...	-3.24	...	44.8 ± 44.8	...
HIP14591	03:08:25.19	+10:47:45.40	1.60	87	-4.11	-5.13	11.0	162.3 ± 120.7	...
HIP14807†	03:11:12.29	+22:25:23.88	0.20	37	...	-3.40	5.0	120.4 ± 86.3	AB Dor
HIP14809	03:11:13.81	+22:24:58.20	1.01	133	-3.93	-3.99	8.0	83.4 ± 64.7	AB Dor
TYC8495-0384-1‡	03:11:15.20	-57:01:31.00	-0.30	80	...	-3.35	...	97.2 ± 78.6	...
HIP14857†	03:11:52.51	-39:01:23.16	1.22	46	...	...	6.0	329.7 ± 328.6	...
HIP14913†	03:12:25.68	-44:25:10.92	1.22	80	...	-4.05	...	38.3 ± 38.3	Tuc Hor
TYC0648-1252-1†	03:12:34.28	+09:44:57.14	0.44	143	...	-3.67	...	115.4 ± 83.3	AB Dor
TYC3315-0962-1†	03:16:07.11	+47:24:58.02	0.85	10	...	-3.91	...	126.4 ± 95.1	...
HIP15247†	03:16:40.63	-03:31:48.54	1.82	130	...	-3.93	57.0	59.8 ± 57.9	Tuc Hor
TYC7567-0025-1‡	03:16:45.00	-42:31:33.00	...	165	...	-3.90	11.3	127.6 ± 90.1	...
HIP15310	03:17:32.69	+07:41:24.60	1.24	79	-4.54	-4.67	11.0	331.0 ± 183.5	...
HIP15411†	03:18:41.15	-18:33:35.30	0.91	120	...	...	10.0	34.2 ± 34.2	...
TYC7026-0325-1‡	03:19:08.70	-35:07:00.00	-0.50	65	...	-3.52	6.1	80.5 ± 64.3	Tuc Hor
TYC7568-1271-1‡	03:20:25.50	-38:19:12.00	...	110	...	-3.41	21.2	78.1 ± 63.5	...
UCAC205739644‡	03:24:15.00	-59:01:13.00	-0.80	235	...	-3.39	12.3	59.7 ± 59.7	Tuc Hor
TYC8499-0639-1‡	03:27:39.70	-58:09:50.00	-2.00	110	...	-2.86	...	67.6 ± 62.1	...
HIP16155†	03:28:10.92	+04:09:07.81	1.90	83	...	...	...	267.7 ± 253.6	...
TYC0060-1223-1	03:28:14.93	+04:09:48.40	0.85	53	...	-2.78	...	45.0 ± 45.0	Columba
TYC8060-1673-1†	03:30:49.10	-45:55:57.38	0.28	202	...	-3.55	15.0	60.0 ± 36.3	Tuc Hor
HIP16370†	03:30:52.46	-62:00:28.80	1.35	17	...	-4.49	20.0	99.1 ± 52.6	...
HIP16413‡	03:31:20.80	-30:30:59.00	...	230	...	-3.22	22.3	39.3 ± 39.3	Columba
TYC8870-0372-1‡	03:31:48.90	-63:31:54.00	...	300	...	-3.36	15.8	32.0 ± 32.0	...
TYC7574-0803-1†	03:31:55.66	-43:59:13.52	-0.96	207	...	-3.32	10.0	44.0 ± 27.7	Tuc Hor
TYC5296-1533-1	03:32:55.84	-09:27:29.75	0.84	10	-4.43	-4.86	10.0	499.0 ± 176.1	...
HIP16537	03:32:56.39	-09:27:29.90	1.19	60	...	-4.86	...	477.7 ± 195.8	...
HIP16538	03:32:57.55	+16:35:55.20	1.37	11	-4.15	-5.77	14.0	429.1 ± 218.1	...
HIP16544†	03:33:03.79	-46:43:20.28	1.00	55	...	-4.45	6.0	441.5 ± 177.0	...
HIP16563	03:33:13.44	+46:15:28.00	1.08	231	...	-3.25	...	31.9 ± 31.9	AB Dor
TYC3312-2141-2B†	03:33:13.99	+46:15:20.50	-2.10	60	...	-3.31	20.0	68.4 ± 66.5	AB Dor

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC5299-0452-1†	03:34:16.35	-12:04:07.31	0.81	262	...	-3.44	34.0	38.2 ± 38.2	Tuc Hor
HIP16713	03:35:01.17	+32:01:00.70	2.46	118	...	-4.21	...	34.0 ± 34.0	...
TYC9371-0446-1‡	03:36:42.60	-79:08:11.00	...	60	...	-3.73	5.6	81.5 ± 63.8	...
HIP16846	03:36:47.30	+00:35:15.94	-0.82	55	-4.04	-3.03	34.0	27.3 ± 27.3	...
HIP16853†	03:36:53.33	-49:57:28.80	1.17	154	...	-4.16	21.0	83.9 ± 69.7	Tuc Hor
TYC7572-0567-1	03:38:50.27	-41:10:39.30	1.42	64	...	-4.12	...	78.9 ± 78.9	...
TYC4070-2109-1	03:40:05.22	+63:52:29.70	2.28	25	...	-3.89	...	100.9 ± 48.4	...
HIP17157‡	03:40:29.40	-47:55:31.00	...	50	...	-4.42	...	126.5 ± 75.9	...
TYC7034-0637-1†	03:41:19.96	-35:27:14.31	0.41	10	...	-3.62	...	131.7 ± 36.8	...
HIP17338†	03:42:39.79	-20:32:43.80	0.65	235	...	-3.32	...	36.5 ± 36.5	...
J034345.96-62192†	03:43:45.96	-62:19:28.10	-0.90	100	...	-3.64	...	36.0 ± 36.0	...
TYC8067-2109-1‡	03:45:14.30	-45:59:17.00	...	50	...	-3.22	...	46.8 ± 46.8	...
HIP17675†	03:47:10.58	+51:42:23.76	1.60	50	...	-6.03	35.0	149.3 ± 118.7	...
HIP17764†	03:48:11.33	-74:41:39.12	1.33	60	...	-5.40	24.0	171.3 ± 126.1	Tuc Hor
HIP17782†	03:48:22.94	+52:02:16.80	...	250	...	-3.18	10.0	35.5 ± 35.5	Tuc Hor
TYC5887-0552-1	03:48:42.75	-22:21:24.90	0.83	31	...	-4.19	...	228.4 ± 140.5	...
HIP17820‡	03:48:47.30	-53:10:56.00	...	75	...	-4.38	5.8	128.3 ± 48.1	...
HIP17903†	03:49:43.85	-13:53:11.04	0.80	140	...	-4.50	...	195.9 ± 111.7	...
HIP17928	03:50:03.37	+22:35:30.40	1.22	52	-4.07	-4.55	8.0	121.5 ± 41.0	...
TYC6448-1041-1‡	03:50:18.10	-24:48:34.00	...	30	...	-3.17	...	73.0 ± 67.0	...
TYC1252-0212-1	03:50:24.89	+17:14:47.60	0.44	86	...	-2.91	...	69.9 ± 69.6	...
HIP18187†	03:53:27.19	-41:13:22.44	1.10	83	...	-4.37	...	93.1 ± 91.8	...
TYC4718-0894-1	03:55:20.38	-01:43:44.40	0.76	196	...	-3.36	...	45.9 ± 45.9	AB Dor
HIP18512	03:57:28.80	-01:09:32.80	0.72	11	-4.53	-3.99	9.0	211.2 ± 142.7	...
TYC6461-1120-1†	04:00:03.83	-29:02:16.52	-1.60	380	...	-3.02	...	40.3 ± 26.2	...
TYC6461-1120-2†	04:00:03.96	-29:02:27.90	-0.60	185	...	-3.02	17.0	47.5 ± 27.2	...
HIP18714†	04:00:31.92	-41:44:54.24	0.93	142	...	...	16.0	94.4 ± 94.4	Tuc Hor
TYC5882-1169-1†	04:02:16.48	-15:21:29.87	0.04	230	...	-3.38	14.0	58.1 ± 55.6	Columba
TYC4725-1276-1	04:02:36.66	-00:16:06.00	1.14	109	-4.52	-4.22	15.0	64.2 ± 64.2	AB Dor
TYC8871-0627-1‡	04:03:23.90	-63:05:30.00	...	120	...	-3.23	3.1	42.6 ± 42.6	...
TYC7577-1400-1‡	04:04:04.10	-38:01:02.00	...	190	...	-3.13	25.0	67.4 ± 63.4	...
HIP19052‡	04:04:55.90	-35:26:48.00	...	92	...	-4.58	8.0	258.6 ± 125.4	...
HIP19076	04:05:20.16	+22:00:33.10	1.02	53	-4.13	-4.66	4.0	392.2 ± 158.9	...
TYC0079-1138-1	04:05:34.30	+05:31:01.79	1.10	29	...	...	10.0	193.4 ± 150.9	...
TYC7030-0076-1‡	04:05:52.20	-31:38:38.00	...	240	...	-3.34	24.0	34.6 ± 34.6	...
HIP19148	04:06:16.06	+15:41:53.40	1.20	74	-4.02	-5.17	6.0	278.7 ± 154.5	...
HIP19183	04:06:41.54	+01:41:02.10	1.30	97	-4.68	-4.52	25.0	123.2 ± 40.3	AB Dor
J040711.47-29183†	04:07:11.47	-29:18:34.20	-1.90	310	...	-3.34	20.0	33.3 ± 33.3	...
TYC7030-0970-1	04:11:52.23	-30:19:47.80	0.98	107	...	-4.36	...	203.7 ± 121.4	...
TYC8508-0663-1‡	04:11:55.70	-58:01:47.00	...	225	...	-3.66	20.1	38.7 ± 38.7	Octans
HIP19658†	04:12:43.70	-47:33:56.88	0.96	54	...	-4.52	7.0	461.1 ± 185.2	...
HIP19684	04:13:00.48	-28:32:26.70	1.19	95	-4.66	-4.39	12.0	104.5 ± 98.4	...
HIP19775†	04:14:22.54	-38:19:01.56	1.50	150	...	-3.47	...	45.1 ± 45.1	Columba
HIP19781	04:14:25.59	+14:37:30.30	1.08	29	...	-4.23	10.0	133.5 ± 39.3	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP19786	04:14:27.19	+12:26:07.20	1.11	76	-4.29	-4.39	10.0	127.9 ± 42.7	...
HIP19796	04:14:34.27	+10:42:05.00	1.31	82	-4.43	-4.65	15.0	146.1 ± 135.6	...
TYC2886-1693-1†	04:14:39.07	+42:18:53.92	0.66	79	...	-4.04	...	135.9 ± 40.4	...
HIP19841†	04:15:13.61	+76:17:18.96	0.90	10	...	-4.54	4.0	491.7 ± 189.2	...
HIP19855	04:15:25.84	+06:11:59.70	0.97	60	-4.37	-4.24	10.0	134.2 ± 38.5	...
HIP19859	04:15:28.86	+06:11:13.60	1.02	85	-4.40	-4.47	10.0	122.7 ± 41.3	...
HIP19911	04:16:16.54	+07:09:34.40	1.09	43	-4.06	-5.33	4.0	407.3 ± 148.4	...
HIP20019	04:17:38.88	+16:56:52.50	0.77	62	-4.37	-3.89	11.0	75.9 ± 43.0	...
TYC6463-0202-1‡	04:18:20.70	-29:38:20.00	...	220	...	-3.24	...	48.6 ± 48.6	...
HIP20215	04:19:54.79	+16:31:21.60	1.26	27	-4.58	-4.73	13.0	422.4 ± 214.7	...
HIP20237	04:20:12.90	+19:14:00.80	1.24	94	-4.47	-4.66	12.0	192.4 ± 142.7	...
TYC6457-2731-1‡	04:21:10.30	-24:32:21.00	...	180	...	-3.33	...	46.3 ± 46.3	Columba
TYC7584-1630-1‡	04:21:48.70	-43:17:33.00	...	270	...	-3.41	25.7	31.1 ± 31.1	Columba
TYC6463-1156-1‡	04:22:08.30	-28:49:05.00	-1.20	70	...	-3.22	...	70.6 ± 56.6	...
HIP20440	04:22:44.17	+15:03:22.04	1.16	94	-4.50	-4.35	12.0	90.5 ± 49.2	...
TYC7584-1480-1‡	04:22:45.70	-44:32:52.00	...	285	...	-3.33	34.0	31.8 ± 31.8	...
TYC8505-1904-1‡	04:24:11.60	-57:04:19.00	...	10	...	-5.35	3.1	460.3 ± 220.5	...
HIP20552	04:24:12.32	-57:04:16.20	1.17	24	-4.88	-5.49	9.0	223.3 ± 150.5	...
HIP20553	04:24:12.46	+14:45:29.60	0.99	70	-4.48	-3.95	9.0	101.2 ± 83.3	...
HIP20557	04:24:14.50	+21:44:10.90	1.26	84	-4.00	-4.58	11.0	124.5 ± 40.5	...
HIP20577	04:24:28.26	+16:53:10.40	1.09	72	-4.44	-4.53	9.0	337.7 ± 187.2	...
HIP20661	04:25:37.26	+15:56:27.90	1.32	48	-4.66	-4.75	24.0	212.8 ± 166.8	...
HIP20673†	04:25:41.81	-02:13:56.86	1.10	80	...	-4.43	10.0	280.0 ± 170.5	...
HIP20686	04:25:51.66	+18:51:50.90	1.05	50	-4.42	-4.52	12.0	392.0 ± 179.8	...
TYC1265-0224-1	04:26:05.80	+15:31:27.80	1.19	74	-4.55	-4.42	9.0	142.7 ± 125.2	...
TYC7578-0425-1‡	04:26:17.10	-37:57:34.00	-1.50	30	...	-2.91	35.9	65.7 ± 57.3	...
HIP20712	04:26:18.44	+21:28:13.90	1.19	111	-4.07	-5.09	5.0	157.5 ± 111.6	...
HIP20719	04:26:24.55	+16:51:12.10	1.02	77	-4.39	-4.44	...	327.6 ± 179.6	...
HIP20727†	04:26:30.50	-32:48:58.68	1.35	48	...	...	41.0	72.5 ± 72.5	...
HIP20737†	04:26:38.57	-28:57:06.48	0.75	147	...	-4.41	...	182.2 ± 106.7	...
TYC7585-0787-1‡	04:27:20.50	-44:20:39.00	...	200	...	-3.45	11.8	81.0 ± 68.1	...
HIP20815	04:27:35.83	+15:35:21.30	1.19	106	-4.59	-4.84	11.0	151.9 ± 115.8	...
HIP20826	04:27:46.01	+11:44:11.20	1.16	71	-4.49	-4.56	10.0	203.6 ± 165.3	...
HIP20899	04:28:48.24	+17:17:07.90	1.09	88	-4.43	-4.61	10.0	261.1 ± 163.3	...
HIP20916	04:28:59.71	+16:09:32.90	1.24	48	-4.70	-5.00	25.0	496.5 ± 202.9	...
HIP20935	04:29:20.49	+17:32:42.00	1.14	18	-4.51	-4.70	16.0	389.5 ± 217.4	...
TYC1829-0251-1†	04:29:37.54	+23:20:33.22	-0.60	437	...	-2.95	7.0	39.5 ± 27.7	...
HIP20967‡	04:29:44.10	-48:32:21.00	-0.40	40	...	-3.22	28.0	53.5 ± 53.5	...
HIP20968†	04:29:44.90	-29:01:35.04	1.07	25	...	...	7.0	152.3 ± 152.3	...
TYC7585-0011-1‡	04:30:27.30	-42:48:47.00	...	280	...	-3.31	19.7	31.0 ± 31.0	Octans
HIP21091†	04:31:11.04	+11:14:39.84	0.90	91	...	-4.54	...	234.8 ± 169.0	...
TYC4522-0713-1†	04:32:10.00	+81:16:14.03	1.12	22	...	-2.96	8.0	76.8 ± 71.4	...
TYC0082-0107-1	04:32:17.20	+01:31:36.95	1.00	62	-4.85	...	8.0	165.4 ± 123.8	...
TYC8076-1442-1‡	04:33:05.80	-46:46:34.00	...	60	...	-2.68	...	109.9 ± 109.9	...
TYC8076-0294-1‡	04:33:06.30	-46:46:14.00	...	67	...	-3.31	...	52.4 ± 52.4	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP21280	04:33:58.48	+15:09:49.30	0.91	16	-4.35	-4.60	13.0	484.3 ± 170.0	...
HIP21317	04:34:35.25	+15:30:16.90	1.09	69	-4.35	-4.83	9.0	396.8 ± 175.7	...
TYC7044-0535-1‡	04:34:50.80	-35:47:21.00	-0.10	300	...	-3.28	9.1	31.5 ± 31.5	Columba
TYC0673-1487-1†	04:35:35.18	+10:10:13.57	1.42	85	...	...	...	96.1 ± 96.1	...
HIP21543	04:37:31.99	+15:08:47.18	1.14	74	-4.44	-4.57	9.0	381.6 ± 191.4	...
HIP21625†	04:38:34.15	-09:20:35.56	1.20	49	...	-4.83	...	394.5 ± 207.1	...
HIP21632†	04:38:43.90	-27:02:01.68	0.83	150	...	-3.68	19.0	59.8 ± 58.4	...
HIP21637	04:38:51.23	+23:09:00.40	1.22	81	-4.01	-4.75	4.0	266.3 ± 166.5	...
HIP21818	04:41:18.99	+20:54:07.60	-0.12	59	-4.00	-3.17	8.0	82.2 ± 68.2	...
HIP21962‡	04:43:14.90	-41:06:19.00	-0.20	50	...	-3.09	56.0	76.9 ± 66.6	...
HIP21965†	04:43:17.16	-23:37:41.88	1.32	118	...	-4.41	17.0	60.4 ± 60.4	Tuc Hor
HIP22052†	04:44:33.82	-16:03:54.36	1.20	67	...	-5.07	...	327.4 ± 185.0	...
HIP22121	04:45:38.98	-43:53:49.80	0.71	127	-4.37	-4.30	9.0	203.2 ± 109.1	...
TYC6471-1204-1‡	04:45:53.10	-29:46:40.00	...	200	...	-3.24	...	50.4 ± 50.4	...
HIP22152†	04:46:00.38	+76:36:41.04	1.91	90	...	-4.10	62.0	62.1 ± 62.1	...
HIP22221	04:46:45.53	+09:01:02.90	1.10	61	-4.53	-4.45	9.0	131.4 ± 43.8	...
HIP22263	04:47:36.22	-16:56:05.50	1.06	56	-4.49	-4.78	9.0	494.3 ± 186.7	...
TYC0691-1347-1†	04:47:41.95	+12:14:02.92	...	96	...	-3.46	...	115.2 ± 82.5	...
TYC8083-0455-1‡	04:48:00.70	-50:41:26.00	-0.60	40	...	-3.22	5.4	71.2 ± 57.9	Tuc Hor
HIP22295†	04:48:04.99	-80:46:45.48	1.04	121	...	-3.91	35.0	50.2 ± 50.2	Tuc Hor
HIP22322‡	04:48:30.40	-52:37:44.00	...	30	...	-4.14	3.7	45.6 ± 43.7	...
TYC8077-0962-1‡	04:50:21.60	-45:46:50.00	...	75	...	-3.72	...	147.0 ± 96.5	...
HIP22496	04:50:23.87	+17:12:09.90	1.14	77	-4.44	-4.69	15.0	333.6 ± 177.6	...
HIP22506†	04:50:35.42	-41:02:51.36	0.44	178	...	-3.66	...	83.6 ± 68.9	...
TYC8077-0657-1‡	04:51:53.50	-46:47:13.00	...	250	...	-3.19	...	32.0 ± 32.0	Columba
HIP22715	04:53:04.65	+22:14:07.70	0.78	13	-4.24	-4.39	4.0	312.1 ± 173.9	...
TYC8080-1206-1‡	04:53:05.20	-48:44:39.00	...	250	...	-3.40	...	50.5 ± 50.5	Columba
HIP22844	04:54:52.93	-58:32:52.10	1.43	47	-4.68	-4.98	12.0	205.2 ± 149.7	...
HIP22919	04:55:55.81	+04:40:15.10	1.20	57	-4.74	-4.65	7.0	372.3 ± 210.3	...
TYC5904-1066-1	04:57:52.56	-18:30:20.40	0.91	36	...	-3.89	...	146.6 ± 87.2	...
HIP23100†	04:58:12.96	+40:03:25.56	1.20	110	...	-4.70	10.0	175.8 ± 124.5	...
HIP23117†	04:58:28.46	+37:19:45.12	1.60	25	...	...	30.0	93.5 ± 93.5	...
TYC5323-0413-1	04:58:31.93	-07:55:58.00	1.02	160	...	-4.20	...	117.5 ± 88.3	...
HIP23200‡	04:59:34.80	+01:47:01.00	-1.40	270	...	-3.25	14.0	49.4 ± 39.7	β Pic
TYC6466-0420-1‡	04:59:38.00	-23:02:42.00	...	270	...	-2.96	...	31.0 ± 31.0	...
HIP23309†	05:00:47.09	-57:15:26.28	-1.53	320	...	...	...	23.4 ± 23.4	β Pic
TYC1281-1672-1†	05:00:49.29	+15:27:00.69	-0.52	404	...	-3.26	17.0	40.3 ± 26.1	...
HIP23316†	05:00:51.84	-41:01:06.96	1.10	187	...	-3.45	...	52.9 ± 52.9	Columba
TYC7590-0977-1‡	05:01:50.30	-40:18:23.00	...	40	...	-3.45	19.5	73.9 ± 60.0	...
TYC5912-0665-1†	05:02:07.84	-22:04:54.35	0.61	25	...	-3.62	...	144.5 ± 101.2	...
TYC7587-0925-1‡	05:02:30.40	-39:59:13.00	...	120	...	-3.61	6.8	127.9 ± 89.6	AB Dor
TYC7587-1360-1‡	05:04:00.10	-39:00:11.00	...	50	...	-3.86	2.9	187.0 ± 116.6	...
HIP23662†	05:05:06.50	+06:07:48.86	1.32	90	...	-4.59	...	193.5 ± 154.0	...
HIP23693	05:05:30.69	-57:28:22.70	1.09	69	-4.53	-5.08	13.0	341.8 ± 175.7	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP23694†	05:05:30.74	+52:48:37.44	0.73	25	...	...	7.0	206.4 ± 180.2	...
TYC7053-1558-1‡	05:06:03.90	-35:09:11.00	...	60	...	-3.27	69.0	47.1 ± 47.1	...
TYC1286-2135-1	05:06:17.95	+17:48:59.40	1.24	24	...	-4.47	...	469.0 ± 183.4	...
TYC9500-0821-1‡	05:06:18.50	-86:41:45.00	-1.00	130	...	-3.16	27.4	82.8 ± 68.3	...
TYC9169-0969-1‡	05:06:50.60	-72:21:12.00	...	350	...	-3.45	190.0	32.1 ± 32.1	Octans
TYC4758-1316-1†	05:07:28.48	-05:24:25.34	0.70	65	...	-3.49	...	104.5 ± 80.7	...
TYC7594-1798-1‡	05:08:15.50	-44:49:10.00	...	60	...	-2.97	62.0	77.3 ± 68.8	...
TYC7594-1797-1‡	05:08:16.20	-44:49:04.00	...	10	...	-3.09	4.2	70.3 ± 70.3	...
TYC4759-0010-1†	05:11:09.68	-04:10:54.41	0.70	302	...	-3.27	11.0	31.9 ± 31.9	AB Dor
TYC7051-2059-1‡	05:12:35.80	-34:28:48.00	...	90	...	-3.85	6.9	151.7 ± 105.5	AB Dor
TYC7048-1364-1‡	05:13:10.60	-30:31:48.00	-1.00	160	...	-3.10	14.4	67.7 ± 60.1	...
TYC9162-0291-1‡	05:16:07.40	-68:15:35.00	...	30	...	-3.38	27.1	72.5 ± 61.2	...
TYC8511-0083-1†	05:16:38.82	-52:57:52.77	1.42	15	...	...	3.0	264.4 ± 264.4	...
TYC4752-0020-1‡	05:16:45.50	-01:51:22.00	-12.00	147	...	...	42.0	165.4 ± 124.6	...
TYC7591-0549-1†	05:17:37.21	-42:24:45.39	1.11	29	...	-3.84	...	178.6 ± 147.5	...
TYC6486-0241-1‡	05:17:53.00	-29:34:31.00	...	40	...	-3.36	...	58.1 ± 58.1	...
TYC7048-1453-1‡	05:18:29.00	-30:01:32.00	-0.60	310	...	-3.34	7.1	38.2 ± 38.2	...
TYC7588-0403-1‡	05:19:08.40	-37:40:31.00	...	120	...	-3.49	23.5	112.0 ± 81.9	...
TYC5906-0618-1†	05:19:24.17	-17:44:53.09	0.64	208	...	-3.42	15.0	45.8 ± 45.8	...
J05202574=05470†	05:20:25.74	-05:47:06.50	-60.00	300	...	...	15.0	26.1 ± 26.1	...
HIP24930†	05:20:28.90	-05:48:43.67	-27.00	360	...	-4.10	29.0	28.8 ± 28.8	...
HIP24947†	05:20:38.02	-39:45:18.00	1.23	100	...	-3.85	50.0	37.3 ± 37.3	Columba
J05204750-50424†	05:20:47.50	-05:42:48.10	-35.00	514	...	...	10.0	23.9 ± 23.9	...
TYC1847-0419-1†	05:21:46.83	+24:00:44.45	...	330	...	-3.06	...	29.7 ± 29.7	...
HIP25082†	05:22:11.18	+05:23:43.55	1.81	90	...	-4.32	27.0	61.7 ± 61.7	...
TYC0108-3359-1B†	05:22:11.64	+05:23:50.10	0.63	120	...	-4.29	16.0	78.7 ± 74.4	...
TYC6487-0911-1‡	05:22:31.30	-29:42:39.00	-0.30	60	...	-3.05	...	72.0 ± 65.5	...
HIP25127†	05:22:42.72	+13:13:45.12	0.90	74	...	-4.46	5.0	380.0 ± 201.2	...
TYC7595-0501-1‡	05:22:45.70	-39:17:06.00	-0.80	85	...	-2.89	50.5	56.6 ± 51.4	...
HIP25278	05:24:25.32	+17:23:00.80	1.13	98	-4.10	-4.44	14.0	58.5 ± 58.5	...
HIP25283‡	05:24:30.20	-38:58:11.00	...	12	...	-3.71	4.0	129.5 ± 36.5	AB Dor
TYC5340-1141-1	05:27:04.75	-11:54:03.10	1.47	134	...	-3.53	...	37.4 ± 37.4	β Pic
HIP25544	05:27:39.52	-60:24:56.80	0.94	142	-4.39	-4.83	10.0	207.1 ± 101.5	...
TYC7059-1175-1‡	05:28:00.20	-33:34:37.00	...	120	...	-3.33	38.0	64.7 ± 59.8	...
HIP25580†	05:28:00.91	+33:45:51.12	1.20	15	...	-5.63	6.0	420.1 ± 210.2	...
HIP25627†	05:28:28.01	-39:22:15.60	0.72	82	...	-4.41	9.0	235.6 ± 125.7	...
HIP25647	05:28:44.78	-65:26:56.10	0.11	280	-4.19	-3.01	58.0	32.3 ± 32.3	AB Dor
TYC8086-0069-1‡	05:28:51.40	-46:28:19.00	...	235	...	-3.38	21.1	33.4 ± 33.4	Octans
TYC8086-0954-1‡	05:28:55.10	-45:34:58.00	...	270	...	-3.21	6.8	37.0 ± 37.0	Columba
TYC7059-1111-1‡	05:28:56.50	-33:28:16.00	-0.50	170	...	-2.93	41.5	76.5 ± 66.4	AB Dor
HIP25709‡	05:29:24.10	-34:30:56.00	...	220	...	-4.22	8.3	100.9 ± 96.6	Columba
TYC9162-0698-1‡	05:29:27.10	-68:52:05.00	...	226	...	-3.74	22.3	34.6 ± 34.6	...
HIP25746†	05:29:50.11	-47:04:34.68	1.48	50	...	-5.72	32.0	120.2 ± 111.4	...
HIP25873	05:31:23.45	+12:33:23.20	1.02	14	-4.13	-4.72	3.0	391.5 ± 150.9	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC4770-0880-1†	05:31:38.58	-03:27:07.71	0.91	128	...	-3.91	...	136.3 ± 38.9	...
TYC7056-0004-1‡	05:33:18.60	-30:33:27.00	...	270	...	...	40.0	29.2 ± 29.2	...
TYC8098-0414-1‡	05:33:25.60	-51:17:13.00	-0.60	50	...	-3.57	18.4	77.3 ± 64.1	...
HIP26067‡	05:33:36.20	-51:03:56.00	...	25	...	-3.38	12.0	49.4 ± 31.3	...
TYC5916-0792-1†	05:34:09.16	-15:17:03.18	1.01	210	...	-3.54	15.0	38.5 ± 38.5	Columba
TYC6501-0543-1‡	05:34:59.20	-29:54:04.00	-0.10	180	...	-3.20	...	68.2 ± 62.4	...
TYC7064-0839-1‡	05:35:04.10	-34:17:52.00	-0.40	190	...	-3.22	25.1	68.2 ± 64.7	AB Dor
TYC8094-0919-1‡	05:36:00.70	-49:51:53.00	...	80	...	-3.23	24.9	91.3 ± 71.9	...
TYC7600-0410-1‡	05:36:21.10	-39:22:40.00	-0.70	90	...	-2.77	8.8	56.6 ± 56.6	...
TYC7600-0880-1‡	05:36:22.10	-39:22:29.00	...	100	...	-2.77	14.6	97.9 ± 97.9	...
HIP26369‡	05:36:55.10	-47:57:48.00	-0.90	70	...	-2.78	28.5	57.4 ± 54.8	AB Dor
HIP26373†	05:36:56.83	-47:57:52.92	0.41	270	...	-3.31	...	34.4 ± 34.4	AB Dor
TYC7056-1008-1‡	05:37:01.20	-30:38:23.00	...	250	...	-3.35	49.0	28.5 ± 28.5	...
TYC7600-0516-1†	05:37:05.31	-39:32:26.38	0.10	235	...	-3.29	14.0	46.6 ± 46.6	Tuc Hor
HIP26401A‡	05:37:12.90	-42:42:56.00	...	180	...	-3.67	5.5	69.9 ± 63.7	AB Dor
HIP26401B‡	05:37:13.20	-42:42:57.00	...	270	...	-3.38	4.9	49.7 ± 29.2	AB Dor
TYC4771-0623-1‡	05:37:36.90	-02:08:18.00	-6.00	121	...	...	51.0	172.2 ± 120.6	...
HIP26453†	05:37:39.60	-28:37:34.68	1.32	87	...	-5.03	41.0	79.7 ± 79.7	Columba
TYC0119-1242-1†	05:37:45.34	+02:30:57.49	-0.70	300	...	-2.98	12.0	36.1 ± 36.1	...
TYC0119-0497-1B†	05:37:46.50	+02:31:26.50	-0.10	240	...	-2.98	13.0	52.0 ± 50.4	...
TYC8527-0160-1‡	05:38:24.60	-57:19:07.00	...	130	...	-3.76	...	51.9 ± 51.9	...
TYC9163-0729-1‡	05:38:34.50	-68:53:07.00	...	265	...	-3.18	70.0	32.6 ± 32.6	...
HIP26604†	05:39:17.18	+10:15:35.64	1.12	95	...	-4.45	...	60.3 ± 60.3	...
HIP26689	05:40:17.59	+16:23:35.50	1.24	37	-4.10	-5.60	8.0	392.8 ± 215.9	...
TYC7605-1429-1‡	05:41:14.30	-41:17:59.00	-0.50	250	...	-3.14	54.0	57.6 ± 54.0	AB Dor
TYC7065-0879-1†	05:42:34.25	-34:15:42.19	0.19	272	...	-3.21	12.0	39.5 ± 39.5	Tuc Hor
HIP26981†	05:43:30.14	-39:24:24.84	1.35	10	...	-6.25	22.0	244.9 ± 157.9	...
TYC8091-0275-1‡	05:43:32.10	-47:41:11.00	...	190	...	-3.58	39.0	39.6 ± 39.6	Octans
HIP26990†	05:43:35.78	-39:55:24.96	1.06	148	...	-4.04	...	63.8 ± 59.2	Columba
TYC6502-0111-1‡	05:44:07.50	-28:36:38.00	...	40	...	-3.34	...	66.2 ± 63.1	...
TYC6494-1228-1‡	05:44:13.40	-26:06:15.00	-0.10	320	...	-3.09	...	29.5 ± 29.5	AB Dor
TYC7609-1186-1‡	05:44:41.80	-44:23:08.00	...	20	...	-3.57	80.0	90.8 ± 81.3	...
HIP27134‡	05:45:13.40	-59:55:26.00	...	40	...	-3.19	25.1	50.4 ± 50.4	...
TYC7597-0833-1‡	05:45:16.30	-38:36:49.00	...	250	...	-3.20	22.2	33.1 ± 33.1	Columba
TYC1307-0135-1†	05:46:32.62	+20:18:14.70	1.38	69	...	-4.45	...	335.7 ± 176.4	...
HIP27260†	05:46:42.41	-21:49:36.48	1.10	122	...	-4.26	...	108.5 ± 89.5	...
HD247570†	05:46:47.33	+06:23:01.72	0.52	30	...	-4.32	...	245.8 ± 133.0	...
TYC7601-1276-1†	05:47:06.98	-40:53:25.14	1.35	52	...	...	6.0	148.9 ± 148.9	...
HIP27371‡	05:47:49.50	-40:03:50.00	...	50	...	-4.24	3.2	139.8 ± 40.9	...
TYC7605-1518-1‡	05:48:30.40	-41:27:30.00	-0.50	20	...	-3.26	10.0	91.9 ± 78.5	...
HIP27441†	05:48:36.79	-39:55:55.92	0.66	38	...	-4.24	...	413.9 ± 171.0	...
TYC6498-0101-1‡	05:49:06.60	-27:33:56.00	...	210	...	-3.36	...	46.3 ± 46.3	...
TYC8096-0838-1‡	05:49:44.80	-49:18:26.00	...	220	...	-3.11	55.0	36.2 ± 36.2	Argus
TYC6502-1188-1‡	05:50:21.40	-29:15:21.00	...	270	...	-3.24	...	34.4 ± 34.4	Columba

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP27609	05:50:45.24	-29:06:40.50	1.01	21	-4.64	-4.18	10.0	85.7 ± 45.2	...
TYC8520-0032-1‡	05:51:01.20	-52:38:13.00	...	290	...	-3.15	53.0	30.6 ± 30.6	Columba
TYC5926-1275-1	05:51:17.38	-20:17:42.30	1.04	42	...	...	7.0	197.3 ± 145.4	...
HIP27727‡	05:52:16.00	-28:39:25.00	...	180	...	-3.75	...	47.2 ± 47.2	AB Dor
UCAC212366748‡	05:53:12.10	-45:05:04.00	...	60	...	-2.87	35.0	66.6 ± 66.6	...
UCAC212366750‡	05:53:13.00	-45:05:12.00	-0.90	140	...	-3.27	8.1	37.8 ± 37.8	...
TYC9390-0322-1†	05:53:29.33	-81:56:53.18	0.22	285	...	-3.23	23.0	31.3 ± 31.3	Carina
TYC8528-1324-1‡	05:53:41.40	-56:40:37.00	-1.10	100	...	-3.01	52.0	76.7 ± 67.3	...
HIP28036†	05:55:43.15	-38:06:16.20	1.15	117	...	-4.19	24.0	77.7 ± 72.9	Columba
TYC7598-1488-1‡	05:57:50.80	-38:04:03.00	...	210	...	-3.26	55.0	46.1 ± 46.1	AB Dor
TYC7066-1037-1‡	05:58:11.80	-35:00:49.00	...	250	...	-3.43	20.5	33.1 ± 33.1	Octans
HIP28333‡	05:59:13.40	-38:42:38.00	...	90	...	-4.38	6.0	127.0 ± 48.2	...
HIP28474†	06:00:41.28	-44:53:50.28	0.90	149	...	-4.43	11.0	176.4 ± 110.4	Columba
HIP28498†	06:00:55.34	-54:57:05.04	1.37	80	...	-4.57	93.0	118.1 ± 109.0	...
TYC5361-1476-1†	06:02:21.90	-13:55:32.58	0.06	185	...	-3.55	...	96.0 ± 82.6	...
HIP28648	06:02:57.55	-61:11:35.60	1.47	97	...	-5.11	9.0	176.4 ± 122.0	...
TYC7071-0391-1‡	06:02:58.70	-31:19:50.00	...	150	...	-3.48	...	50.2 ± 50.2	...
TYC8109-0606-1‡	06:03:35.40	-49:11:26.00	-0.10	290	...	-3.07	8.2	29.6 ± 29.6	...
HIP28869	06:05:42.08	-61:44:55.00	1.29	75	-5.48	-4.96	11.0	399.6 ± 182.6	...
HIP28921†	06:06:16.63	-27:54:21.24	0.81	94	...	-4.19	5.0	188.4 ± 116.9	...
TYC7075-1947-1‡	06:06:37.30	-33:10:31.00	...	40	...	-3.32	...	92.6 ± 76.9	...
TYC7079-0068-1‡	06:08:33.90	-34:02:55.00	-0.30	240	...	-3.29	4.7	34.7 ± 34.7	AB Dor
HIP29142	06:08:48.61	-52:08:08.80	1.41	67	...	-5.54	14.0	269.1 ± 175.7	...
TYC7084-0794-1‡	06:09:19.20	-35:49:31.00	-2.20	10	...	-3.17	13.0	64.9 ± 64.9	AB Dor
TYC1326-1524-1†	06:10:15.84	+21:19:56.35	-0.30	20	...	-3.31	...	96.8 ± 81.8	...
UCAC233354957‡	06:11:05.00	+04:53:03.00	-1.70	130	...	-3.33	...	84.2 ± 71.7	...
TYC8102-1690-1‡	06:11:50.30	-45:03:27.00	...	30	...	...	6.9	79.3 ± 79.3	...
TYC8529-1139-1‡	06:11:53.00	-56:19:05.00	...	230	...	-3.28	130.0	39.0 ± 39.0	Argus
TYC7080-0147-1‡	06:11:55.70	-35:29:13.00	-0.20	245	...	-2.90	27.9	41.8 ± 41.8	...
TYC0143-0656-1‡	06:11:58.80	+06:09:25.00	...	190	...	-3.18	...	45.0 ± 45.0	...
TYC4795-0826-1†	06:12:36.11	-06:44:17.50	0.58	90	...	-3.50	...	87.1 ± 72.2	...
TYC5933-1801-1†	06:12:38.81	-16:48:36.36	-0.40	110	...	-2.83	40.0	68.4 ± 64.2	...
HIP29485‡	06:12:43.60	-36:37:55.00	...	90	...	-4.26	31.4	204.8 ± 116.3	...
TYC8529-1246-1†	06:13:05.99	-56:20:25.25	0.42	94	...	-3.73	9.0	149.2 ± 96.9	...
UCAC233529702‡	06:13:24.00	+05:22:11.00	...	240	...	-3.44	...	48.6 ± 48.6	...
HIP29568	06:13:45.33	-23:51:43.90	1.06	76	-4.36	-4.34	10.0	130.6 ± 39.0	...
TYC6513-1245-1‡	06:13:57.80	-27:23:55.00	-0.30	170	...	-3.08	...	73.4 ± 66.7	...
HIP29724†	06:15:38.83	-57:42:06.12	1.20	150	...	-4.18	...	101.7 ± 79.0	...
HIP29873	06:17:23.39	+57:24:53.30	2.01	70	...	-4.47	...	67.3 ± 50.9	...
HIP29964‡	06:18:28.20	-72:02:41.00	-0.50	420	...	-2.90	16.4	33.5 ± 33.5	β Pic
HIP30030†	06:19:08.04	-03:26:20.00	1.05	166	...	-3.67	36.0	41.5 ± 41.5	Tuc Hor
HIP30034†	06:19:12.89	-58:03:15.84	0.03	283	...	-3.31	10.0	31.9 ± 31.9	Carina
TYC6518-1252-1‡	06:20:02.70	-29:05:09.00	...	240	...	-3.18	...	42.9 ± 42.9	...
TYC6514-2145-1‡	06:20:09.00	-26:46:43.00	...	100	...	-4.36	...	211.2 ± 113.0	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC7625-1623-1‡	06:20:43.50	-43:49:45.00	…	40	…	-3.56	32.4	132.2 ± 95.9	…
HIP30261†	06:21:57.26	-34:30:44.28	1.20	180	…	-4.21	…	99.2 ± 84.8	…
TYC7073-0682-1‡	06:22:27.10	-30:27:46.00	…	40	…	-3.09	28.6	68.0 ± 68.0	…
HIP30314	06:22:30.95	-60:13:07.70	1.21	136	-4.55	-4.20	16.0	99.6 ± 78.9	AB Dor
HIP30422†	06:23:46.49	+04:35:45.13	1.25	10	…	-5.16	7.0	262.0 ± 177.0	…
TYC8906-1298-1‡	06:25:12.40	-66:29:10.00	…	250	…	-3.43	190.0	31.9 ± 31.9	Octans
TYC7617-0549-1‡	06:26:06.90	-41:02:54.00	…	310	…	-3.62	11.6	36.3 ± 36.3	Columba
HIP30706†	06:27:07.58	-37:53:44.16	2.60	30	…	-4.80	…	113.1 ± 51.5	…
HIP30729	06:27:20.67	-33:06:49.90	1.10	75	-4.41	-4.80	10.0	468.6 ± 177.0	…
TYC8107-1591-1‡	06:28:06.10	-48:26:53.00	…	280	…	-3.07	41.0	32.4 ± 32.4	Columba
TYC8107-1234-1†	06:28:49.11	-48:31:45.46	0.62	158	…	-4.31	…	199.6 ± 113.5	…
HIP30939†	06:29:36.89	+08:29:32.89	1.70	90	…	-4.70	…	174.8 ± 140.0	…
UCAC235360015‡	06:31:03.60	+10:01:13.00	-0.50	170	…	…	60.0	163.4 ± 124.9	…
HIP31062	06:31:05.69	-59:00:17.00	1.02	13	…	-4.39	15.0	276.3 ± 142.4	…
HIP31279	06:33:37.99	-54:35:25.60	1.33	64	…	-4.87	9.0	274.1 ± 171.0	…
TYC9181-0466-1‡	06:34:41.00	-69:53:06.00	…	210	…	-3.55	13.5	50.4 ± 50.4	…
HIP31568†	06:36:26.26	+27:16:42.96	1.10	86	…	-4.69	9.0	405.1 ± 185.5	…
HIP31711	06:38:00.42	-61:32:00.80	0.94	119	-4.37	-3.73	15.0	65.3 ± 58.6	AB Dor
TYC8108-1722-1‡	06:38:45.50	-47:14:18.00	…	180	…	-3.73	…	42.2 ± 42.2	…
HIP31791	06:38:49.50	-27:44:47.90	1.32	55	-4.50	-4.58	15.0	409.2 ± 195.1	…
TYC8104-0991-1†	06:39:05.74	-45:12:57.59	-0.10	143	…	-3.25	12.0	78.9 ± 65.8	…
HIP31821B‡	06:39:11.60	-26:34:19.00	…	180	…	-4.14	6.0	173.7 ± 112.8	…
HIP31821A‡	06:39:11.60	-26:34:21.00	…	180	…	-4.13	…	145.1 ± 104.4	…
HIP31850	06:39:31.47	+24:35:59.80	1.18	43	-4.35	-4.84	6.0	446.1 ± 208.8	…
TYC7614-1074-1‡	06:39:46.70	-37:50:10.00	…	225	…	-3.50	12.3	50.0 ± 50.0	…
HIP31878†	06:39:50.06	-61:28:42.24	0.33	50	…	-3.84	12.0	98.0 ± 75.7	AB Dor
TYC7087-0737-1‡	06:40:04.90	-30:33:03.00	…	120	…	-3.40	36.1	36.2 ± 36.2	…
TYC7087-2713-1‡	06:40:05.70	-30:33:09.00	…	170	…	-3.26	40.0	48.9 ± 48.9	Octans
TYC4803-1418-1†	06:40:22.36	-03:31:59.11	0.14	294	…	-3.27	27.0	31.6 ± 31.6	…
TYC8116-0553-1‡	06:41:12.50	-52:07:39.00	…	180	…	-3.59	12.5	110.9 ± 81.6	…
TYC7627-2190-1†	06:41:18.51	-38:20:36.15	-0.60	300	…	-3.13	33.0	30.7 ± 30.7	AB Dor
HIP32075B‡	06:42:05.30	-38:00:13.00	…	60	…	-3.67	…	46.0 ± 29.5	…
HIP32075†	06:42:05.52	-38:00:13.68	1.03	80	…	-4.15	…	133.3 ± 108.3	…
HIP32079B‡	06:42:06.60	-64:31:30.00	…	300	…	-3.25	110.0	32.3 ± 32.3	…
HIP32079A‡	06:42:07.40	-64:31:26.00	…	25	…	-4.21	9.2	28.4 ± 28.4	…
HIP32111	06:42:27.09	-42:34:17.70	1.23	9	-4.44	-4.55	14.0	362.7 ± 200.9	…
TYC4803-0625-1†	06:43:01.02	-02:53:19.31	1.21	180	…	-4.19	…	106.2 ± 43.9	Columba
HIP32235†	06:43:46.32	-71:58:35.76	0.79	216	…	-3.86	…	42.2 ± 42.2	Carina
TYC7095-1664-1	06:44:26.48	-33:58:47.30	1.39	22	…	-3.80	…	130.5 ± 91.2	…
TYC7631-1962-1‡	06:45:37.90	-41:12:41.00	…	180	…	-3.31	11.6	58.7 ± 57.3	…
HIP32435†	06:46:13.44	-83:59:30.12	1.12	89	…	-4.46	22.0	78.9 ± 78.9	Tuc Hor
UCAC206727592‡	06:47:53.40	-57:13:32.00	…	170	…	-3.29	7.0	84.5 ± 70.1	AB Dor
TYC7639-1431-1‡	06:48:23.00	-44:11:45.00	…	250	…	-3.26	75.0	35.8 ± 35.8	…
TYC6533-2636-1‡	06:49:45.40	-28:59:17.00	…	230	…	-3.56	…	34.5 ± 34.5	Argus

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP33011	06:52:45.07	+24:58:06.70	1.02	40	-3.95	-5.02	3.0	348.0 ± 134.1	…
TYC7100-2112-1‡	06:52:46.70	-36:36:17.00	…	300	…	-3.11	170.0	33.4 ± 33.4	Columba
J065253.92-05244†	06:52:53.92	-05:24:40.00	-2.80	30	…	-3.27	…	89.4 ± 75.6	…
HIP33072	06:53:16.55	-74:43:32.20	1.42	55	-4.67	-5.67	8.0	304.5 ± 181.2	…
UCAC229416988‡	06:53:24.10	-06:33:13.00	…	200	…	-3.13	…	41.7 ± 41.7	…
HIP33111‡	06:53:47.40	-43:06:51.00	…	180	…	-3.23	16.0	36.7 ± 35.9	…
TYC7101-0503-1‡	06:54:46.40	-37:16:20.00	…	300	…	-2.98	81.0	29.9 ± 29.9	…
TYC9178-0284-1‡	06:55:25.20	-68:06:21.00	-0.10	420	…	-3.39	11.8	33.6 ± 33.6	…
TYC4813-2759-1‡	06:55:44.70	-05:59:22.00	…	180	…	-3.60	…	25.1 ± 25.1	…
TYC4809-1845-1‡	06:56:09.60	-04:59:48.00	…	180	…	-3.30	…	35.4 ± 35.4	…
TYC8118-0871-1‡	06:56:23.50	-46:46:55.00	…	335	…	-3.25	15.6	30.1 ± 30.1	Columba
HIP33392	06:56:43.59	-60:41:11.30	0.81	18	-4.44	-4.55	9.0	416.4 ± 184.1	…
TYC5392-2173-1†	06:56:54.33	-14:24:58.96	0.41	71	…	-3.04	…	80.4 ± 66.2	…
HIP33451†	06:57:17.52	-35:30:25.92	1.34	30	…	-4.44	…	78.5 ± 51.5	…
HIP33455‡	06:57:20.40	-49:29:07.00	…	250	…	-2.90	103.0	30.7 ± 28.9	…
HIP33478‡	06:57:33.90	-24:37:51.00	…	15	…	-5.41	106.0	340.8 ± 201.2	…
HIP33560†	06:58:25.92	-12:59:29.40	0.27	54	…	-3.51	8.0	111.7 ± 86.8	…
HIP33705†	07:00:09.84	-31:08:30.48	1.26	25	…	…	19.0	230.5 ± 230.5	…
TYC6531-2357-1‡	07:00:24.70	-28:00:01.00	…	30	…	-3.37	…	108.9 ± 83.2	…
HIP33733	07:00:27.78	-65:54:32.50	1.29	46	-4.51	-4.65	12.0	480.1 ± 193.1	…
HIP33737†	07:00:30.48	-79:41:46.68	1.30	240	…	-3.37	…	48.4 ± 48.4	Carina
HIP33762†	07:00:43.92	-12:06:21.24	0.47	30	…	…	…	65.2 ± 65.2	…
HIP33817	07:01:13.61	-25:56:55.70	0.98	159	-4.47	-4.81	9.0	216.4 ± 107.2	…
TYC7629-2824-1‡	07:01:51.80	-39:22:04.00	…	240	…	-3.25	…	33.6 ± 33.6	Columba
TYC7637-2111-1‡	07:01:53.40	-42:27:56.00	…	275	…	-3.74	11.3	39.0 ± 39.0	Argus
J070207.12-83082†	07:02:07.12	-83:08:27.70	-0.10	130	…	-3.27	…	91.7 ± 75.8	…
TYC6523-3173-1‡	07:02:13.00	-24:16:06.00	…	120	…	-3.13	50.0	75.9 ± 62.8	…
TYC6531-3198-1‡	07:02:24.30	-26:46:15.00	-1.20	80	…	-3.16	…	74.2 ± 60.3	…
HIP33993	07:03:11.64	-66:53:21.50	2.04	33	-4.70	-5.49	34.0	321.0 ± 188.0	…
TYC8541-0871-1†	07:03:21.57	-55:05:36.31	1.10	197	…	…	…	142.6 ± 129.1	…
TYC8549-0141-1‡	07:03:50.40	-58:27:27.00	…	210	…	-3.17	53.0	52.4 ± 52.4	…
TYC8545-1235-1‡	07:05:12.30	-57:34:14.00	…	70	…	-3.75	27.7	125.0 ± 99.3	…
HIP34208A‡	07:05:35.10	-48:50:24.00	…	120	…	-3.79	…	72.8 ± 48.6	…
HIP34208B‡	07:05:35.20	-48:50:31.00	…	40	…	-2.71	…	60.8 ± 60.8	…
HIP34271	07:06:16.86	+22:41:01.20	1.08	45	…	-4.44	8.0	479.7 ± 162.0	…
TYC7629-0367-1B†	07:06:29.20	-37:47:30.00	0.56	120	…	-3.61	100.0	121.5 ± 35.0	…
J070657.75-53534†	07:06:57.75	-53:53:46.70	-1.35	360	…	-3.44	…	32.5 ± 32.5	…
TYC8131-1761-1‡	07:08:54.20	-50:57:49.00	…	60	…	-3.37	27.6	74.9 ± 71.3	…
TYC1349-1593-1†	07:10:11.02	+18:26:22.02	1.60	390	…	-3.09	…	29.3 ± 29.3	…
TYC8558-1148-1‡	07:10:50.60	-57:36:46.00	…	180	…	-3.32	29.2	40.1 ± 40.1	AB Dor
TYC8554-2168-1‡	07:12:17.30	-54:46:10.00	…	50	…	-3.30	19.8	62.3 ± 62.3	…
TYC7630-2048-1‡	07:14:18.60	-38:25:18.00	…	170	…	-3.23	…	58.4 ± 58.4	…
TYC7634-1391-1‡	07:14:34.40	-39:37:40.00	…	40	…	-3.58	…	86.2 ± 61.8	…
HIP35044‡	07:14:51.20	-27:02:17.00	…	100	…	-5.22	1.8	216.1 ± 115.9	…

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC7103-1269-1[‡]	07:15:04.70	-30:11:29.00	...	130	...	-3.81	...	42.7 ± 42.7	...
HIP35079[‡]	07:15:19.10	-28:21:53.00	...	80	...	-4.80	...	348.3 ± 161.1	...
HIP35102	07:15:30.79	-75:51:54.10	1.47	100	-4.52	-4.48	22.0	77.7 ± 50.0	...
HIP35185[†]	07:16:18.48	+05:04:34.25	1.03	120	...	-4.55	16.0	168.8 ± 118.3	...
TYC8123-1534-1B	07:17:29.56	-46:58:45.36	0.83	23	-4.37	-4.48	10.0	274.6 ± 134.3	...
HIP35374[‡]	07:18:27.10	-57:21:07.00	...	50	...	-3.40	4.0	26.4 ± 26.4	...
HIP35445	07:19:04.81	-76:25:02.00	1.38	7	-4.80	-5.13	8.0	420.5 ± 206.1	...
TYC8132-2110-1	07:20:21.88	-52:18:34.40	1.23	125	-4.55	-4.47	25.0	123.1 ± 103.5	CarNear
TYC6545-3075-1[‡]	07:21:16.10	-26:53:13.00	...	240	...	-3.34	...	38.8 ± 38.8	...
TYC8559-1016-1[‡]	07:21:23.70	-57:20:37.00	...	247	...	-3.09	11.7	33.3 ± 33.3	Carina
TYC7116-2739-1	07:22:16.28	-35:55:06.60	1.27	125	-4.61	-4.22	14.0	70.5 ± 69.0	...
TYC8128-0544-1[‡]	07:23:15.60	-49:39:24.00	...	30	...	-3.43	38.0	67.7 ± 67.7	...
TYC1355-0214-1	07:23:43.63	+20:25:00.50	-0.83	119	-4.41	-3.31	12.0	84.8 ± 73.1	AB Dor
HIP35877[‡]	07:23:48.60	-33:29:08.00	...	25	...	-3.67	4.0	89.9 ± 68.3	...
HIP35884[†]	07:23:53.76	-17:24:48.24	1.26	35	...	-4.83	...	337.4 ± 206.3	...
TYC9191-1209-1	07:25:18.43	-73:44:14.20	1.05	14	...	...	8.0	191.1 ± 159.3	...
HIP36071[†]	07:25:57.12	-02:14:54.06	1.12	30	...	-4.85	19.0	449.8 ± 207.9	...
HIP36108[‡]	07:26:17.70	-49:40:51.00	...	145	...	-3.81	11.0	51.7 ± 41.2	AB Dor
HIP36121[†]	07:26:26.64	-15:46:12.36	0.75	10	...	-4.84	...	243.7 ± 131.4	...
HIP36238	07:27:44.36	+21:26:42.94	1.78	22	-4.52	-4.87	21.0	208.0 ± 172.4	...
TYC8128-1946-1[‡]	07:28:22.00	-49:08:38.00	...	250	...	-3.20	52.0	31.8 ± 31.8	Argus
TYC7644-0867-1[‡]	07:30:08.30	-37:34:50.00	...	250	...	-3.31	...	39.6 ± 39.6	...
TYC8559-1282-1[‡]	07:30:27.70	-56:35:30.00	...	80	...	-2.92	...	70.1 ± 70.1	...
HIP36515	07:30:42.57	-37:20:22.10	1.06	78	-4.41	-4.51	9.0	340.0 ± 182.6	...
TYC9493-0838-1[‡]	07:30:59.50	-84:19:28.00	...	300	...	-3.49	3.0	32.8 ± 32.8	AB Dor
TYC9493-0838-1[†]	07:30:59.52	-84:19:27.80	0.69	243	...	-3.49	...	41.0 ± 41.0	AB Dor
TYC1360-0957-1[†]	07:31:22.07	+15:55:59.94	-0.35	300	...	-3.07	34.0	36.4 ± 36.4	...
TYC8137-2609-1[‡]	07:31:44.10	-47:00:01.00	...	300	...	-3.30	160.0	34.1 ± 34.1	...
TYC7652-0441-1[‡]	07:33:21.20	-42:55:42.00	...	350	...	-3.21	41.0	29.2 ± 29.2	...
HIP36832	07:34:28.06	-52:58:07.70	1.08	56	-4.37	-3.98	9.0	115.0 ± 49.5	...
TYC5409-1568-1[†]	07:35:16.24	-13:09:06.87	0.93	46	...	-4.25	...	220.2 ± 118.6	...
TYC1365-1688-1[†]	07:36:01.15	+18:08:29.51	0.81	166	...	-4.35	...	113.1 ± 46.5	...
TYC7117-0219-1[‡]	07:37:42.40	-37:11:23.00	-1.10	110	...	-3.31	11.7	86.4 ± 71.7	...
TYC7656-2464-1[‡]	07:37:49.70	-44:10:51.00	...	250	...	-3.07	140.0	34.0 ± 34.0	...
HIP37170[†]	07:38:16.56	+47:44:56.76	1.08	105	...	-4.30	9.0	120.7 ± 96.4	...
TYC9188-1526-1[‡]	07:40:29.70	-71:48:23.00	...	300	...	-3.08	28.6	30.1 ± 30.1	...
TYC8560-0283-1[‡]	07:41:26.90	-57:00:09.00	...	50	...	-3.17	25.5	84.0 ± 70.4	...
HIP37563	07:42:36.12	-59:17:52.10	1.40	123	-4.38	-4.43	12.0	124.0 ± 42.8	CarNear
HIP37635	07:43:21.54	-52:09:52.10	1.58	112	-4.53	-4.60	10.0	160.0 ± 121.2	CarNear
TYC8911-2430-1[‡]	07:43:42.90	-61:07:17.00	...	245	...	-3.35	16.3	44.1 ± 44.1	...
HIP37718	07:44:12.61	-50:27:25.40	1.56	69	-4.48	-4.44	9.0	123.8 ± 118.2	...
HIP37727	07:44:16.57	-50:28:01.00	1.02	42	-4.50	-4.11	9.0	221.7 ± 108.0	...
HIP37855[‡]	07:45:35.60	-79:40:08.00	...	140	...	-3.82	...	49.4 ± 49.4	AB Dor
HIP37879[†]	07:45:50.88	-07:31:46.38	1.16	138	...	-4.16	...	84.2 ± 73.1	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC6544-1477-1‡	07:46:01.30	-24:57:36.00	…	150	…	-3.35	6.5	56.5 ± 55.5	…
HIP37918	07:46:14.87	-59:48:52.00	0.86	113	…	-4.07	11.0	120.6 ± 46.4	CarNear
HIP37923	07:46:17.02	-59:48:35.50	1.18	80	-4.43	-4.05	10.0	173.6 ± 129.5	CarNear
TYC8142-1112-1‡	07:47:26.00	-49:02:51.00	…	230	…	-3.34	24.7	35.2 ± 35.2	Argus
HIP38018†	07:47:30.72	+70:12:25.20	1.00	10	…	-5.03	3.0	454.7 ± 198.1	…
TYC6544-0195-1‡	07:48:31.60	-24:29:53.00	…	110	…	-3.81	16.1	145.8 ± 98.7	…
TYC7657-1711-1‡	07:48:49.80	-43:27:06.00	-3.00	320	…	-2.86	40.0	31.2 ± 31.2	Argus
HIP38188	07:49:29.35	-54:54:04.40	1.35	147	-4.47	-4.61	14.0	109.2 ± 37.6	…
TYC8138-1684-1†	07:49:36.58	-47:52:18.33	1.00	80	…	…	…	85.3 ± 83.1	…
HIP38296	07:50:46.80	+02:28:09.20	1.28	99	-4.48	-4.42	14.0	111.1 ± 101.9	…
TYC8134-1320-1†	07:50:47.55	-46:45:10.30	0.14	17	…	…	4.0	96.9 ± 96.9	…
TYC7658-1345-1‡	07:51:28.40	-43:28:23.00	-0.90	70	…	-3.16	12.7	74.1 ± 60.9	…
TYC8142-2291-1‡	07:52:11.10	-49:54:28.00	…	280	…	-3.17	27.6	32.4 ± 32.4	…
HIP38474†	07:52:47.76	-05:25:41.48	1.52	81	…	-4.71	…	56.5 ± 47.9	…
TYC8561-0970-1‡	07:53:55.50	-57:10:07.00	…	210	…	-3.07	5.6	44.0 ± 44.0	Argus
TYC8923-1147-1‡	07:54:08.70	-65:41:30.00	-4.40	100	…	-3.14	13.7	64.9 ± 56.5	…
HIP38712†	07:55:31.44	+08:51:47.02	2.06	20	…	-5.61	44.0	211.0 ± 145.7	…
TYC8557-1251-1‡	07:55:31.60	-54:36:51.00	…	225	…	-3.26	17.7	41.3 ± 41.3	…
TYC5994-2327-1‡	07:55:56.10	-21:24:24.00	…	115	…	-3.58	3.6	91.7 ± 70.0	…
TYC7654-3725-1†	07:56:36.08	-41:45:26.32	1.15	20	…	-4.23	…	211.6 ± 124.2	…
TYC7128-0437-1‡	07:58:57.90	-35:22:17.00	-2.50	50	…	-3.36	…	103.8 ± 79.6	…
HIP39348	08:02:35.82	+57:16:25.50	1.44	111	…	-3.83	…	32.3 ± 32.3	…
TYC8578-1465-1‡	08:02:48.90	-59:13:28.00	…	300	…	-2.82	72.0	29.4 ± 29.4	…
TYC7671-0963-1†	08:03:11.62	-44:57:26.81	1.07	40	…	-4.44	…	402.9 ± 204.2	…
TYC7671-2854-1‡	08:03:20.20	-43:47:41.00	-0.50	430	…	-2.91	23.5	26.9 ± 26.9	…
TYC6562-0424-1‡	08:03:35.10	-27:16:58.00	…	20	…	-3.74	…	133.2 ± 116.4	…
J080557.53-58294†	08:05:57.53	-58:29:47.00	…	165	…	-3.62	…	58.0 ± 56.8	…
TYC6003-2453-1†	08:06:27.46	-19:49:36.98	1.02	40	…	-5.13	…	343.8 ± 182.4	…
TYC8148-0011-1‡	08:06:53.90	-51:05:12.00	…	220	…	-3.13	45.0	47.7 ± 47.7	…
TYC0789-1624-1	08:06:58.55	+11:56:60.00	1.26	71	-4.25	-4.44	9.0	231.2 ± 151.5	…
TYC8570-1293-1‡	08:08:31.90	-55:33:45.00	-0.20	330	…	-3.14	28.9	31.0 ± 31.0	…
TYC7133-2511-1‡	08:08:39.30	-36:05:02.00	-1.70	570	…	-2.89	8.0	22.0 ± 22.0	…
TYC8566-1252-1‡	08:09:16.80	-54:22:02.00	…	220	…	-3.31	42.0	31.6 ± 31.6	…
TYC8136-0711-1‡	08:09:57.90	-46:17:03.00	…	290	…	-3.21	32.0	32.0 ± 32.0	…
TYC8570-1980-1‡	08:11:09.30	-55:55:56.00	…	250	…	-3.10	17.2	35.1 ± 35.1	…
TYC8140-4762-1‡	08:11:13.80	-46:53:58.00	…	50	…	-3.85	5.4	85.9 ± 63.9	…
TYC0195-2572-1	08:11:15.15	+01:16:36.40	1.27	95	-4.49	-4.15	18.0	84.8 ± 77.3	…
HIP40167	08:12:12.72	+17:38:53.10	1.67	56	-4.78	-5.54	9.0	122.0 ± 111.3	…
TYC1381-1641-1	08:12:13.14	+17:38:54.40	1.13	53	-4.36	-5.33	5.0	477.9 ± 206.7	…
TYC5426-0004-1†	08:13:50.99	-07:38:24.63	…	200	…	-3.34	99.0	68.6 ± 65.7	AB Dor
HIP40527	08:16:31.20	+79:30:04.10	1.94	88	…	-4.44	…	104.1 ± 53.7	…
TYC8161-0042-1‡	08:19:37.90	-52:04:26.00	-0.40	220	…	-3.15	17.0	54.4 ± 54.4	…
TYC6009-5605-1‡	08:20:17.80	-21:58:43.00	…	80	…	-3.34	6.6	84.5 ± 68.7	…
TYC0197-0037-1	08:22:49.98	+01:51:34.00	1.08	157	-4.38	-4.15	12.0	82.6 ± 69.2	…

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC8929-0927-1‡	08:24:06.00	-63:34:03.00	...	205	...	-3.27	73.0	41.1 ± 41.1	Carina
TYC9198-1835-1‡	08:24:42.00	-70:10:02.00	-0.70	70	...	-3.00	39.0	80.2 ± 66.0	...
HIP41261‡	08:25:04.20	-49:09:36.00	...	110	...	-4.44	17.0	214.7 ± 112.0	...
HIP41277†	08:25:17.04	+04:15:13.61	-0.40	130	...	-3.34	12.0	101.5 ± 78.7	...
HIP41278‡	08:25:17.70	-34:22:01.00	...	30	...	-3.82	33.6	79.7 ± 67.4	...
TYC6010-1589-1‡	08:25:24.50	-21:24:37.00	...	70	...	-3.33	5.5	66.8 ± 64.8	...
TYC7661-3880-1‡	08:26:10.00	-39:02:05.00	...	250	...	-3.30	9.8	29.2 ± 29.2	...
HIP41426	08:26:57.74	-52:42:17.81	1.77	19	-4.66	-5.44	9.0	312.8 ± 182.6	...
TYC8576-1309-1‡	08:27:00.80	-56:32:04.00	...	170	...	-3.40	114.0	51.6 ± 51.6	...
TYC8933-1802-1	08:27:09.59	-65:04:43.30	-1.81	153	-4.19	-3.15	22.0	71.5 ± 61.9	...
HIP41662	08:29:40.49	-09:58:35.40	0.12	21	-4.53	-3.58	12.0	142.8 ± 102.0	...
TYC8576-1184-1‡	08:31:02.40	-56:37:07.00	...	50	...	-2.98	67.0	75.9 ± 68.4	...
TYC1941-1088-1	08:31:15.53	+24:24:37.80	1.20	54	...	-4.37	10.0	257.0 ± 140.0	...
TYC6582-2101-1‡	08:31:30.10	-29:56:54.00	...	80	...	-3.25	...	91.2 ± 69.9	...
HIP41911‡	08:32:42.90	-37:28:10.00	...	10	...	-4.35	...	25.7 ± 25.7	...
TYC8933-0364-1	08:32:46.27	-65:08:27.50	1.33	154	-4.34	-4.36	12.0	112.0 ± 87.4	...
HIP41967†	08:33:15.36	-29:57:23.76	0.92	127	...	-4.25	11.0	126.0 ± 91.7	...
TYC8576-1632-1†	08:34:16.62	-57:01:53.43	0.91	30	...	...	1.0	64.2 ± 64.2	...
TYC8576-0789-1†	08:34:16.95	-57:00:56.56	-0.79	20	...	-3.29	...	84.3 ± 78.8	...
HIP42172	08:35:51.05	+06:37:13.90	1.33	99	-4.94	-5.28	8.0	177.5 ± 123.5	...
TYC7136-2264-1‡	08:35:59.80	-30:42:31.00	-2.90	230	...	-2.98	...	60.8 ± 53.7	...
HIP42214	08:36:23.13	-30:02:16.00	1.24	9	-4.43	-4.96	12.0	481.7 ± 186.8	...
TYC9402-0921-1‡	08:36:56.20	-78:56:46.00	-1.00	510	...	-3.03	21.7	23.6 ± 23.6	η Cha
TYC8572-1540-1‡	08:37:10.90	-55:18:10.00	...	210	...	-3.39	19.8	37.2 ± 37.2	...
HIP42281	08:37:15.61	-17:29:41.20	0.88	9	-4.41	-4.93	22.0	470.3 ± 182.9	...
J08385655-79162†	08:38:56.55	-79:16:22.20	-5.02	300	...	...	...	36.1 ± 36.1	...
TYC8580-0916-1‡	08:39:11.60	-58:34:28.00	...	270	...	-3.24	85.0	32.5 ± 32.5	Argus
TYC8163-0861-1†	08:41:36.65	-51:03:04.75	0.75	30	...	-3.97	...	89.1 ± 70.5	...
TYC8930-0601-1‡	08:42:00.50	-62:18:26.00	...	275	...	-3.13	38.5	30.7 ± 30.7	Carina
HIP42753†	08:42:46.32	+31:51:45.72	1.17	52	...	-4.92	...	106.4 ± 106.4	...
HIP42808‡	08:43:18.00	-38:52:57.00	...	70	...	-4.45	3.9	260.7 ± 140.6	...
TYC9403-1650-1†	08:44:12.77	-78:58:43.78	-10.00	440	...	-3.64	...	31.1 ± 31.1	...
HIP42889	08:44:25.50	-62:31:29.10	1.24	19	-4.34	-4.63	22.0	453.3 ± 180.0	...
TYC8573-1902-1‡	08:45:08.30	-55:58:04.00	...	20	...	-3.60	8.5	76.4 ± 68.6	...
TYC8569-1761-1‡	08:45:52.70	-53:27:28.00	...	170	...	-3.24	45.0	42.6 ± 42.6	Carina
TYC9202-0606-1‡	08:45:54.60	-72:32:05.00	-0.30	200	...	-3.13	11.1	62.5 ± 62.5	...
J084722.69-49595†	08:47:22.69	-49:59:57.90	-0.65	30	...	-4.05	...	79.4 ± 43.1	...
TYC7679-0483-1‡	08:47:22.80	-40:47:38.00	-1.80	20	...	-3.13	40.0	68.1 ± 59.7	...
TYC0220-0041-1	08:48:16.18	+03:50:28.60	1.08	90	-4.75	-4.42	12.0	150.3 ± 128.8	...
TYC6584-0136-1‡	08:48:55.70	-28:48:01.00	...	200	...	-3.55	...	88.9 ± 78.3	...
HIP43290‡	08:49:05.70	-39:57:16.00	...	113	...	-4.34	8.4	122.7 ± 38.7	...
TYC9399-1491-1‡	08:49:11.10	-77:35:59.00	...	120	...	-4.13	4.4	132.2 ± 95.3	...
TYC9395-2139-1‡	08:50:05.40	-75:54:38.00	...	261	...	-3.11	43.8	30.4 ± 30.4	Carina
TYC8577-1672-1‡	08:50:08.10	-57:45:59.00	-0.50	308	...	-3.24	23.7	30.8 ± 30.8	Argus

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Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP43410	08:50:32.26	+33:17:06.90	1.96	119	...	-4.41	...	80.7 ± 80.2	...
TYC0220-0712-1	08:51:11.80	+05:09:47.50	0.89	86	-3.96	-4.20	5.0	143.8 ± 105.3	...
TYC8569-3597-1‡	08:51:56.40	-53:55:57.00	...	240	...	-3.16	29.0	45.3 ± 45.3	Carina
TYC8927-2035-1‡	08:52:19.20	-60:04:44.00	...	240	...	-3.19	18.4	36.2 ± 36.2	...
TYC4865-0655-1	08:52:38.90	-01:00:36.00	1.83	92	...	...	...	104.2 ± 104.2	...
TYC5443-0194-1†	08:53:12.09	-07:43:21.18	-0.71	20	...	-3.14	...	55.7 ± 55.7	...
TYC1394-0057-2	08:54:41.60	+16:36:38.80	0.75	17	-4.16	-3.48	5.0	53.4 ± 32.2	...
HIP43860	08:56:06.77	-64:39:38.10	1.11	191	-4.68	-4.21	14.0	51.8 ± 51.8	...
TYC8590-1193-1‡	08:56:31.50	-57:00:41.00	...	300	...	-2.99	18.4	29.5 ± 29.5	...
HIP43897‡	08:56:33.10	+12:25:55.00	...	100	...	-3.69	18.1	32.1 ± 32.1	...
TYC6597-2247-1B†	08:57:03.77	-29:50:54.71	0.85	92	...	-4.18	30.0	208.5 ± 115.1	...
HIP43947†	08:57:04.08	-29:50:45.24	1.49	10	...	-4.62	34.0	120.1 ± 45.5	...
TYC8582-3040-1‡	08:57:45.60	-54:08:37.00	...	320	...	-3.26	24.5	31.4 ± 31.4	Carina
TYC8160-0958-1‡	08:57:52.20	-49:41:51.00	...	260	...	-3.32	33.2	32.6 ± 32.6	Carina
TYC8927-3620-1‡	08:58:48.60	-61:15:15.00	...	300	...	-3.08	99.0	31.0 ± 31.0	...
TYC8582-1705-1‡	08:58:48.70	-53:03:25.00	...	160	...	-3.40	13.4	98.5 ± 78.8	...
TYC6589-0789-1	08:59:18.31	-24:43:43.20	1.11	72	-4.32	-4.68	10.0	435.5 ± 176.9	...
TYC8586-2431-1‡	08:59:28.70	-54:46:49.00	...	240	...	-3.22	128.0	34.8 ± 34.8	Carina
TYC8586-0518-1‡	09:00:03.40	-55:38:24.00	...	250	...	-3.42	44.0	32.4 ± 32.4	Carina
TYC7685-2302-1‡	09:00:03.90	-42:36:27.00	-9.00	400	...	-3.24	13.1	33.7 ± 33.7	...
HIP44216‡	09:00:23.20	-63:00:04.00	-1.50	100	...	-3.31	1.0	20.8 ± 20.8	...
HIP44272	09:00:55.15	+09:03:04.70	1.38	86	-4.31	-4.71	18.0	186.6 ± 144.0	...
HIP44324†	09:01:37.20	+49:44:13.56	1.10	46	...	-4.52	2.0	485.9 ± 180.1	...
TYC8594-0058-1‡	09:02:03.90	-58:08:50.00	...	300	...	-3.15	34.1	30.9 ± 30.9	Argus
HIP44458†	09:03:27.12	+37:50:29.04	1.09	157	...	-4.00	6.0	91.1 ± 73.9	...
TYC6022-1079-1‡	09:03:33.70	-20:35:59.00	-0.50	120	...	-2.97	35.3	75.9 ± 65.1	...
TYC6022-1415-1	09:03:46.10	-19:49:18.00	1.69	81	...	-4.11	...	95.2 ± 89.0	...
HIP44483	09:03:47.52	-19:49:31.30	0.94	62	-4.75	-4.11	17.0	95.6 ± 80.7	...
HIP44526	09:04:20.76	-15:54:51.00	0.70	37	-4.42	-4.13	9.0	254.5 ± 163.0	...
HIP44550‡	09:04:38.40	-41:03:53.00	...	80	...	-3.84	...	28.4 ± 28.4	...
TYC8586-1001-1‡	09:04:44.40	-55:12:21.00	...	70	...	-3.65	10.6	32.6 ± 32.6	...
TYC8586-0966-1‡	09:04:44.50	-55:12:57.00	...	120	...	-3.29	48.2	79.3 ± 65.5	...
TYC8173-0024-1‡	09:05:29.90	-49:18:54.00	...	20	...	-3.37	8.0	48.4 ± 48.4	...
HIP44657	09:05:57.56	-21:31:57.20	1.21	17	-4.37	-5.22	8.0	489.6 ± 194.3	...
TYC2984-1566-1	09:07:00.88	+37:38:54.66	1.05	50	...	...	7.0	175.3 ± 132.9	...
TYC1951-1445-1	09:07:18.08	+22:52:21.55	0.64	18	-4.33	-3.97	10.0	265.5 ± 158.2	...
HIP44890	09:08:46.99	-05:06:58.50	1.25	66	-4.41	-5.22	10.0	439.8 ± 195.4	...
TYC1404-0020-1	09:08:53.88	+17:40:38.30	0.78	74	...	-4.51	8.0	291.2 ± 150.8	...
TYC6586-1249-1	09:09:27.34	-23:31:14.40	0.83	25	...	-4.58	8.0	485.2 ± 194.9	...
TYC8587-1126-1‡	09:09:29.40	-55:38:27.00	...	200	...	-3.46	14.6	44.0 ± 44.0	Carina
TYC2498-0656-1†	09:10:03.66	+35:33:34.13	-0.10	20	...	-3.03	...	67.2 ± 67.2	...
TYC8169-1002-1‡	09:10:07.90	-48:37:43.00	-1.70	30	...	-3.21	64.0	74.8 ± 62.5	...
TYC8174-1586-1‡	09:11:15.60	-50:14:16.00	-0.50	340	...	-3.19	15.8	29.3 ± 29.3	...
TYC7686-2197-1‡	09:11:35.80	-41:17:23.00	-0.90	60	...	-3.47	13.4	120.7 ± 86.1	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC7678-2580-2‡	09:11:54.20	-38:14:32.00	...	50	...	-3.38	...	40.6 ± 40.6	...
TYC7678-2580-1‡	09:11:54.70	-38:14:27.00	...	70	...	-3.74	...	85.6 ± 85.6	...
TYC6590-1360-1‡	09:12:13.70	-25:55:02.00	...	60	...	-2.65	4.2	191.3 ± 146.6	...
TYC8595-1161-1	09:12:47.39	-58:39:17.50	0.55	57	-4.25	-3.50	12.0	95.9 ± 77.2	...
TYC7156-1343-1†	09:13:05.62	-32:21:43.18	0.97	40	...	-4.32	...	198.1 ± 113.8	...
TYC8587-2290-1‡	09:13:16.90	-55:29:03.00	...	240	...	-3.20	39.5	61.4 ± 55.3	Carina
TYC8944-1516-1‡	09:13:30.30	-62:59:09.00	...	280	...	-3.26	84.0	30.9 ± 30.9	Argus
HIP45356	09:14:34.78	-75:17:42.50	1.28	37	-4.44	-5.07	13.0	497.0 ± 188.3	...
HIP45544†	09:16:57.12	-39:24:05.40	1.03	38	...	...	9.0	223.1 ± 192.8	...
TYC1951-1714-1	09:17:19.44	+23:39:15.60	1.44	25	-4.60	-4.43	8.0	105.4 ± 105.4	...
HIP45621	09:17:55.37	-03:23:13.60	0.95	34	-4.40	-4.81	18.0	498.7 ± 177.4	...
TYC7678-0858-1†	09:19:02.67	-37:35:34.77	1.21	20	...	-4.72	...	123.1 ± 84.7	...
TYC9399-2452-1‡	09:19:24.00	-77:38:45.00	-0.10	50	...	-3.15	72.0	58.1 ± 58.1	...
HIP45734	09:19:24.94	-77:38:36.90	1.15	33	-4.41	-3.54	8.0	29.3 ± 29.3	...
HIP45950	09:22:17.79	+06:17:51.30	1.25	94	-4.35	-4.48	11.0	120.8 ± 40.8	...
HIP46063†	09:23:35.04	-61:11:35.88	0.40	270	...	-3.35	...	31.9 ± 31.9	Carina
HIP46076	09:23:47.18	+20:21:51.70	...	111	...	-5.32	...	227.9 ± 138.6	...
TYC4881-0285-1	09:24:35.85	-00:28:37.70	1.10	85	-4.22	-4.15	13.0	119.4 ± 97.5	...
TYC7703-0931-1‡	09:25:06.20	-43:27:58.00	-6.00	100	...	-2.70	34.6	33.9 ± 33.9	...
TYC9400-0106-1	09:27:38.38	-77:44:49.52	0.98	8	...	...	8.0	84.6 ± 84.6	...
HIP46422	09:27:57.54	-66:06:07.70	0.87	26	-4.40	-4.24	10.0	415.4 ± 171.5	...
TYC7695-0335-1‡	09:28:54.10	-41:01:19.00	...	300	...	-3.14	120.0	35.0 ± 35.0	Argus
HIP46523†	09:29:18.72	-44:32:20.40	1.20	86	...	...	9.0	200.0 ± 200.0	...
HIP46535†	09:29:28.56	-44:31:56.64	1.43	63	...	-4.29	37.0	87.8 ± 87.8	...
TYC0826-1182-1	09:30:23.78	+12:56:22.70	1.23	100	-4.27	-4.46	9.0	163.9 ± 121.9	...
TYC0823-1350-1B†	09:30:35.82	+10:36:06.20	0.16	103	...	-3.23	...	69.3 ± 61.0	...
HIP46637	09:30:35.95	+10:36:06.40	0.22	122	-4.22	-3.22	13.0	70.0 ± 58.4	...
HIP46690†	09:31:06.24	+03:04:47.21	1.50	30	...	-4.50	...	143.7 ± 128.0	...
HIP46720A‡	09:31:24.90	-73:44:49.00	...	100	...	-3.82	53.0	33.9 ± 33.9	Carina
HIP46720B‡	09:31:25.20	-73:44:51.00	...	240	...	-3.31	...	18.0 ± 18.0	Carina
TYC8949-0154-1‡	09:31:44.70	-65:14:53.00	...	190	...	-3.20	11.6	66.8 ± 60.1	...
HIP46816	09:32:25.71	-11:11:05.00	-0.12	257	-4.03	-3.09	19.0	40.9 ± 40.9	...
TYC8584-2682-1‡	09:32:26.10	-52:37:40.00	...	245	...	-3.26	17.4	38.8 ± 38.8	Carina
TYC1962-0469-1	09:32:43.85	+26:59:20.80	1.06	173	...	-3.97	...	124.0 ± 92.7	...
TYC4900-0093-1	09:35:09.08	-07:05:08.80	1.44	90	...	-5.11	8.0	374.1 ± 188.6	...
HIP47039†	09:35:11.76	-35:49:25.32	1.63	14	...	-5.29	8.0	248.4 ± 158.3	...
TYC6601-1855-1	09:35:12.20	-23:50:39.40	1.40	97	-4.57	-4.77	10.0	288.2 ± 153.7	...
TYC4900-1772-1	09:35:12.24	-05:50:56.60	1.50	129	-4.58	-4.88	10.0	162.9 ± 109.3	...
TYC6609-0298-1‡	09:35:31.30	-28:02:55.00	-1.40	20	...	-3.12	...	70.6 ± 62.9	...
HIP47135	09:36:18.03	-78:20:42.00	1.17	165	-4.31	-4.37	15.0	113.5 ± 38.6	Argus
HIP47206	09:37:13.01	-42:01:14.60	0.93	30	-4.49	-3.90	12.0	159.5 ± 109.8	...
TYC6610-1225-1	09:38:11.64	-26:22:28.91	1.30	55	...	-4.54	7.0	477.6 ± 181.3	...
HIP47337‡	09:38:46.60	-66:40:04.00	...	110	...	-3.88	22.7	23.5 ± 23.5	...
HIP47338‡	09:38:47.20	-66:39:48.00	...	160	...	-2.88	8.1	71.9 ± 66.6	...
TYC8949-0116-1	09:38:52.70	-64:59:40.00	1.98	93	...	-4.32	...	79.7 ± 79.6	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC5465-0983-1	09:39:18.09	-10:12:39.80	0.35	14	-4.51	-4.58	12.0	313.5 ± 153.2	...
TYC6055-0346-1‡	09:39:51.40	-21:34:17.00	...	260	...	-3.47	10.1	33.0 ± 33.0	...
TYC0827-1143-1	09:40:38.64	+13:41:41.20	0.93	56	-4.33	-4.00	11.0	218.7 ± 136.5	...
TYC6606-1348-1‡	09:40:53.80	-24:58:05.00	...	50	...	-3.24	21.0	57.8 ± 57.8	...
TYC8941-1786-1‡	09:41:08.40	-61:38:19.00	...	400	...	-3.19	150.0	30.2 ± 30.2	...
TYC6606-1001-1	09:41:41.92	-25:57:51.80	1.40	115	-4.55	-4.48	11.0	101.6 ± 96.8	...
TYC8945-1078-1†	09:42:35.24	-62:28:34.50	0.38	50	...	-3.37	...	27.8 ± 26.5	...
HIP47625B‡	09:42:40.50	-55:49:54.00	...	60	...	-4.47	3.4	121.7 ± 39.4	...
HIP47625†	09:42:41.04	-55:49:55.92	1.18	72	...	-4.85	1.0	380.7 ± 191.4	...
TYC8945-0503-1‡	09:42:43.30	-62:28:38.00	...	70	...	-2.99	8.5	57.0 ± 57.0	...
TYC9217-0641-1‡	09:42:47.40	-72:39:50.00	...	240	...	-2.85	23.4	49.6 ± 49.6	Argus
TYC4901-1807-1	09:43:03.65	-07:08:36.30	1.53	64	-5.28	-4.38	8.0	336.0 ± 168.9	...
TYC8946-1225-1‡	09:43:08.80	-63:13:04.00	...	215	...	-3.24	35.3	38.7 ± 38.7	Carina
HIP47681	09:43:20.34	-29:48:14.70	1.32	99	-4.41	-4.65	9.0	312.0 ± 159.4	...
TYC7167-0806-1‡	09:43:54.70	-31:27:11.00	...	160	...	-3.65	...	52.1 ± 52.1	...
TYC6606-0686-1	09:44:12.10	-24:58:58.50	0.61	62	-4.63	-4.93	19.0	303.8 ± 171.8	...
HIP47760‡	09:44:14.10	-11:52:21.00	...	220	...	-3.37	32.1	31.7 ± 31.7	...
TYC7697-2254-1‡	09:47:19.90	-40:03:10.00	...	260	...	-3.15	10.8	32.5 ± 32.5	Argus
TYC1414-0049-1	09:48:33.36	+19:18:56.30	1.07	6	-4.31	-4.43	10.0	325.5 ± 179.1	...
TYC7705-0414-1‡	09:48:43.30	-44:54:08.00	...	220	...	-3.82	...	62.3 ± 62.3	Argus
TYC7705-0414-2‡	09:48:43.50	-44:54:09.00	...	250	...	-3.67	...	59.3 ± 59.3	Argus
TYC8954-0901-1‡	09:49:09.00	-65:40:21.00	...	20	...	-3.44	19.2	60.4 ± 60.4	Argus
TYC8189-0746-1‡	09:49:34.40	-49:04:46.00	...	125	...	-3.39	8.7	52.6 ± 52.6	...
HIP48205	09:49:40.68	+16:22:14.20	1.09	13	-4.30	-4.44	9.0	121.8 ± 34.8	...
HIP48273†	09:50:30.24	+04:20:37.57	2.00	21	...	-4.83	9.0	310.7 ± 202.3	...
TYC6615-0472-1‡	09:50:36.80	-29:33:28.00	-0.20	300	...	-2.89	...	37.8 ± 37.8	...
TYC9404-0195-1‡	09:51:50.70	-79:01:38.00	-0.40	350	...	-3.44	77.5	31.8 ± 31.8	...
HIP48558‡	09:54:11.00	-53:38:28.00	...	280	...	-3.43	23.0	17.2 ± 17.2	...
TYC6612-1122-1	09:55:06.39	-26:32:19.00	0.79	16	-4.28	-4.39	9.0	63.1 ± 63.1	...
HIP48645‡	09:55:06.60	-26:32:19.00	...	10	...	-4.47	4.0	321.7 ± 164.7	...
TYC8946-0872-1‡	09:55:15.10	-62:03:32.00	...	320	...	-2.73	19.5	25.2 ± 25.2	...
TYC7698-0963-1‡	09:55:55.40	-41:09:08.00	...	90	...	-2.94	12.5	76.0 ± 65.5	...
TYC8954-0165-1‡	09:55:58.30	-67:21:22.00	...	170	...	-3.73	19.8	61.5 ± 61.3	Argus
HIP48770‡	09:56:49.40	-49:22:19.00	...	250	...	-3.19	35.0	34.5 ± 34.5	...
TYC9209-0372-1‡	09:57:30.80	-69:21:22.00	...	200	...	-3.43	93.0	39.6 ± 39.6	...
HIP48837	09:57:42.95	+20:10:15.10	1.33	93	-4.29	-4.53	10.0	121.0 ± 41.3	...
TYC0829-0845-1†	09:58:27.18	+08:50:43.67	0.85	10	...	-3.50	30.0	50.8 ± 50.8	...
TYC7702-2034-1‡	09:58:44.70	-41:38:05.00	...	200	...	-3.42	38.0	38.3 ± 38.3	...
TYC6604-0118-1	09:59:08.46	-22:39:34.50	-0.08	46	-4.46	-3.15	16.0	74.1 ± 67.5	...
TYC9217-0417-1‡	09:59:57.70	-72:21:47.00	-0.40	330	...	-3.17	24.4	33.9 ± 33.9	...
TYC7711-1133-1‡	10:00:06.50	-40:03:16.00	...	30	...	-3.00	80.0	62.9 ± 62.9	...
HIP49030	10:00:13.22	+06:15:02.00	1.20	45	-4.65	-5.27	14.0	215.0 ± 145.6	...
TYC8947-0153-1‡	10:02:31.20	-62:03:29.00	-0.10	160	...	-3.17	26.3	77.0 ± 65.8	...
TYC9214-2120-1‡	10:06:41.30	-70:44:53.00	...	70	...	-3.83	10.9	171.2 ± 108.6	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC8951-0289-1‡	10:06:55.70	-63:52:09.00	...	350	...	-3.27	77.0	29.7 ± 29.7	LCC
TYC8182-1315-1†	10:07:25.16	-46:21:49.51	0.22	30	...	-3.32	...	103.7 ± 79.6	AB Dor
HIP49616‡	10:07:29.50	-85:04:33.00	...	45	...	-3.67	21.0	26.2 ± 26.2	...
TYC6625-1087-1†	10:08:03.55	-26:36:38.61	0.28	141	...	-3.41	10.0	71.0 ± 60.4	...
HIP49674	10:08:26.68	-11:06:55.10	0.94	6	-4.16	-4.80	9.0	359.7 ± 161.1	...
TYC3003-0786-1†	10:09:30.35	+41:26:25.94	0.37	173	...	-4.04	...	171.6 ± 112.0	...
HIP49767	10:09:31.90	-32:50:48.30	1.22	59	-4.21	-4.54	10.0	125.0 ± 42.4	...
TYC8195-0762-1‡	10:11:04.10	-51:19:47.00	-0.60	100	...	-3.26	31.7	76.0 ± 62.1	...
HIP49977	10:12:10.93	-27:15:38.30	0.97	84	-4.35	-4.31	10.0	105.2 ± 52.3	...
TYC8599-0697-1†	10:13:14.78	-52:30:53.95	0.06	360	...	-3.24	11.0	30.1 ± 30.1	...
TYC8955-1023-1‡	10:13:21.10	-65:43:52.00	-1.90	30	...	-3.38	9.7	89.3 ± 81.6	...
TYC7712-1462-1‡	10:13:23.30	-40:28:50.00	...	30	...	-3.30	46.0	65.1 ± 62.8	...
HIP50156†	10:14:19.20	+21:04:31.08	-0.75	10	...	-3.42	11.0	114.1 ± 36.0	β Pic
TYC6626-0529-1†	10:14:56.21	-27:38:00.77	0.60	39	...	-3.50	51.0	75.4 ± 61.0	...
TYC7183-1879-1†	10:16:45.43	-31:08:44.20	0.74	79	...	-3.37	11.0	104.2 ± 78.8	...
TYC5490-1186-1	10:17:30.84	-08:09:06.83	0.95	25	...	-3.58	...	98.4 ± 83.9	...
TYC7191-0707-1‡	10:17:39.50	-34:51:53.00	...	90	...	-3.78	...	99.0 ± 87.7	...
TYC7708-1467-1‡	10:17:44.70	-38:05:18.00	...	180	...	-3.38	...	91.7 ± 80.1	...
TYC7708-1467-1B†	10:17:44.70	-38:05:18.31	-0.09	169	...	-3.38	29.0	55.9 ± 36.5	...
HIP50428	10:17:48.38	+05:22:22.30	0.68	34	-4.38	-4.45	...	108.2 ± 105.5	...
TYC7183-1477-1‡	10:18:28.70	-31:50:03.00	-3.80	510	...	-2.94	...	20.2 ± 20.2	TWA
TYC8188-1052-1‡	10:18:55.90	-48:25:14.00	...	30	...	-3.05	36.0	76.1 ± 67.1	...
TYC0251-1015-1	10:19:28.60	+06:34:59.10	0.94	77	-4.38	-4.53	10.0	266.0 ± 127.4	...
HIP50554	10:19:35.68	-05:13:38.40	1.57	110	-4.53	-4.92	26.0	71.1 ± 71.1	...
HIP50693†	10:21:07.92	-17:59:05.64	1.65	87	...	-4.89	22.0	123.7 ± 113.9	...
TYC0840-1167-1	10:21:52.95	+10:41:59.60	0.86	44	-4.51	-5.45	23.0	226.8 ± 154.7	...
TYC7188-0575-1	10:22:04.56	-32:33:26.70	-0.34	22	-4.55	-3.00	19.0	78.3 ± 68.2	...
HIP50796†	10:22:18.00	-10:32:15.36	0.20	10	...	...	8.0	92.9 ± 92.9	...
TYC7713-1595-1‡	10:22:30.40	-39:50:14.00	...	40	...	-4.46	...	219.7 ± 111.1	...
TYC7721-1839-1	10:24:10.80	-44:02:23.00	2.37	110	...	...	...	66.6 ± 66.6	...
TYC6069-0091-1	10:24:50.40	-18:48:22.00	2.66	35	...	...	...	370.3 ± 330.2	...
HIP51068	10:26:04.07	+08:02:07.80	1.25	16	-4.10	-4.22	13.0	100.4 ± 51.2	...
TYC1420-0187-1	10:26:23.30	+17:26:20.30	0.82	74	...	-4.44	12.0	316.9 ± 191.7	...
TYC0246-0357-1	10:27:04.01	+00:48:30.60	1.12	94	-4.07	-4.31	9.0	110.0 ± 97.9	...
TYC7717-1566-1†	10:27:09.70	-41:43:58.52	0.59	185	...	-3.61	12.0	112.3 ± 91.1	...
TYC6069-1214-1†	10:27:37.34	-20:27:10.63	0.52	242	...	-3.67	7.0	47.3 ± 47.3	...
HIP51228	10:27:47.86	-34:23:57.80	1.11	83	-4.19	-4.25	11.0	134.1 ± 107.0	...
HIP51255	10:28:10.53	-25:48:26.40	0.88	47	-4.84	-4.35	8.0	92.6 ± 51.4	...
TYC8601-4517-1B†	10:28:17.91	-52:33:40.06	0.88	20	...	-4.20	35.0	389.8 ± 182.8	...
HIP51266†	10:28:18.72	-52:33:42.48	0.90	56	...	-4.47	7.0	98.4 ± 98.4	...
HIP51386†	10:29:42.24	+01:29:29.11	1.19	117	...	-4.24	7.0	96.3 ± 83.7	...
TYC7722-0752-1	10:31:01.03	-43:36:31.50	1.02	28	-5.01	-4.34	10.0	333.2 ± 142.7	...
TYC7722-0207-1	10:32:43.98	-44:40:56.20	0.43	123	-4.26	-3.44	19.0	67.3 ± 58.7	...
HIP51795	10:34:57.76	-23:10:34.80	1.48	36	-4.77	-5.56	11.0	311.7 ± 176.9	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP51860†	10:35:43.44	-13:57:23.40	1.54	40	...	-4.62	21.0	130.5 ± 40.8	...
J103546.97+02155†	10:35:46.97	+02:15:58.50	-3.38	30	...	-3.17	...	51.5 ± 31.8	...
TYC6620-0232-1‡	10:35:59.70	-23:09:58.00	...	140	...	-3.01	3.7	61.1 ± 59.8	...
HIP51955	10:36:47.90	+47:43:13.20	1.90	121	...	-4.26	...	86.4 ± 76.4	...
TYC9397-2169-1‡	10:39:31.40	-75:37:51.00	...	10	...	-2.74	13.0	46.2 ± 46.2	...
HIP52172‡	10:39:31.80	-75:37:56.00	...	30	...	-3.21	38.0	85.8 ± 72.5	...
HIP52247‡	10:40:32.00	-57:10:50.00	...	15	...	-4.39	3.3	454.7 ± 193.1	...
TYC9215-1181-1‡	10:41:23.00	-69:40:43.00	...	233	...	-3.16	33.1	35.7 ± 35.7	...
HIP52462†	10:43:28.32	-29:03:51.12	0.78	150	...	-4.50	1.0	201.4 ± 108.9	...
HIP52564‡	10:44:47.90	-50:53:06.00	...	30	...	-4.24	5.3	346.1 ± 210.7	...
HIP52787†	10:47:31.20	-22:20:52.80	0.82	120	...	-4.58	2.0	218.4 ± 114.2	...
TYC4913-0474-1	10:47:51.68	-01:13:30.70	0.57	25	-4.15	-3.41	8.0	79.7 ± 79.7	...
TYC8965-1276-1‡	10:49:48.40	-64:46:29.00	-0.50	317	...	-3.03	12.0	29.1 ± 29.1	LCC
TYC9216-0524-1‡	10:49:56.10	-69:51:22.00	...	224	...	-3.34	16.3	57.7 ± 56.4	Argus
TYC1429-1088-1	10:50:54.72	+16:38:20.80	...	83	...	-4.44	...	120.7 ± 113.3	...
HIP53217‡	10:53:04.50	-20:37:41.00	...	140	...	-4.59	3.0	178.2 ± 111.2	...
TYC9216-1339-1‡	10:53:51.50	-70:02:16.00	...	195	...	-3.39	55.0	40.2 ± 40.2	Argus
TYC8619-2379-1‡	10:55:32.90	-55:27:30.00	-1.00	30	...	-2.95	...	76.7 ± 68.5	...
TYC6643-1097-1‡	10:56:02.40	-26:52:47.00	...	40	...	-3.62	...	92.5 ± 60.8	...
HIP53505	10:56:44.40	+13:33:31.70	1.06	50	-4.53	-4.60	15.0	235.8 ± 187.8	...
TYC9212-2011-1‡	10:57:49.40	-69:13:60.00	...	420	...	-3.26	25.9	32.3 ± 32.3	ϵ Cha
TYC6647-1315-1‡	10:58:41.80	-29:08:15.00	...	120	...	-3.98	...	176.3 ± 109.4	...
HIP53691‡	10:59:07.00	-77:01:40.00	-37.00	420	...	-3.38	35.0	18.4 ± 18.4	...
TYC9212-1782-1‡	10:59:40.90	-69:17:04.00	...	200	...	-3.08	23.3	62.4 ± 59.6	...
HIP53911‡	11:01:51.90	-34:42:17.00	-240.00	435	...	-2.70	6.0	20.4 ± 20.4	TWA
UCAC200500035‡	11:02:24.90	-77:33:36.00	-34.00	480	...	-3.30	15.3	25.1 ± 25.1	...
TYC8958-2319-1‡	11:02:40.60	-60:54:34.00	...	30	...	-2.29	14.8	107.8 ± 107.8	...
TYC7204-1026-1‡	11:03:27.90	-32:45:29.00	-0.40	50	...	-3.20	4.3	73.0 ± 55.2	...
UCAC200639458‡	11:04:09.10	-76:27:19.00	-44.00	420	...	...	12.8	19.6 ± 19.6	...
HIP54155†	11:04:41.52	-04:13:15.02	0.96	110	...	-3.72	6.0	61.0 ± 60.5	...
HIP54373†	11:07:27.84	-19:17:29.04	0.43	30	...	...	...	58.3 ± 58.3	...
TYC4924-0726-1	11:07:30.75	-04:38:53.06	1.12	46	-4.76	...	9.0	184.2 ± 145.1	...
TYC8962-1747-1‡	11:08:07.90	-63:41:47.00	-0.60	260	...	-3.26	11.4	45.0 ± 45.0	LCC
TYC5504-0588-1	11:09:29.70	-10:23:29.00	1.76	66	...	-4.45	...	128.4 ± 120.4	...
HIP54745†	11:12:32.64	+35:48:51.84	1.27	78	...	-4.57	7.0	297.7 ± 187.6	...
TYC7734-0537-1‡	11:12:48.00	-42:41:14.00	-0.60	60	...	-3.13	47.0	52.8 ± 52.8	...
HIP55066†	11:16:22.32	-14:41:35.16	0.57	30	...	...	...	67.5 ± 67.5	...
TYC9507-2078-1‡	11:20:34.90	-84:20:29.00	...	140	...	-4.45	7.9	140.1 ± 89.7	...
J112105.53-38451†	11:21:05.53	-38:45:16.50	-2.78	500	...	-3.24	15.0	31.0 ± 24.4	LCC
CD-347390A‡	11:21:17.20	-34:46:46.00	-2.30	580	...	-2.90	12.3	20.5 ± 20.5	TWA
TYC8217-0792-1†	11:21:21.87	-47:36:02.88	-0.60	20	...	...	...	169.1 ± 140.3	...
HIP55487‡	11:21:49.80	-24:11:23.00	...	110	...	-4.41	4.0	124.3 ± 42.5	...
HIP55505‡	11:22:05.30	-24:46:40.00	...	380	...	-3.44	8.9	12.1 ± 12.1	TWA
TYC8617-0909-1†	11:23:46.97	-52:57:39.40	-1.27	40	...	-3.49	8.0	42.8 ± 27.7	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP55642	11:23:55.46	+10:31:46.32	1.68	75	-4.91	-4.92	15.0	166.6 ± 134.3	...
HIP55868	11:27:03.25	+21:51:09.70	1.14	36	-4.16	-5.27	4.0	418.5 ± 159.4	...
TYC8984-2245-1†	11:27:55.36	-66:26:04.44	0.81	70	...	-3.13	...	76.8 ± 64.2	LCC
HIP55943	11:27:55.38	+11:00:36.20	0.42	98	-4.47	-4.64	9.0	162.1 ± 132.6	...
TYC8984-2245-1‡	11:27:55.40	-66:26:04.00	...	367	...	-3.15	19.3	28.7 ± 28.7	LCC
TYC8625-0388-1†	11:32:08.34	-58:03:20.02	0.14	300	...	-3.79	...	45.8 ± 31.8	LCC
HIP56355	11:33:07.44	+07:24:39.60	0.67	29	-4.70	-4.49	21.0	241.9 ± 117.7	...
TYC7216-0481-1	11:33:44.70	-30:39:08.00	1.94	64	...	-4.75	...	195.4 ± 157.4	...
TYC6651-1198-1	11:33:47.48	-23:27:10.44	1.00	19	-5.39	...	7.0	158.3 ± 137.4	...
TYC9511-2179-1	11:34:15.77	-85:07:15.46	0.86	71	-4.31	-3.88	7.0	120.7 ± 96.3	...
HIP56445	11:34:22.05	+03:03:37.50	1.45	52	-4.81	-4.96	13.0	175.8 ± 143.4	...
TYC8222-0105-1‡	11:35:03.80	-48:50:22.00	...	230	...	-3.32	43.0	27.5 ± 27.5	...
TYC6086-1610-1	11:38:16.90	-16:14:08.50	1.12	7	-4.32	-4.08	9.0	107.4 ± 93.0	...
TYC9507-2466-1‡	11:40:16.60	-83:20:60.00	-0.50	199	...	-3.06	11.7	62.9 ± 57.1	...
TYC9238-0612-1†	11:41:27.63	-73:47:02.98	0.66	220	...	-3.34	17.0	41.6 ± 41.6	...
TYC8642-0223-1‡	11:41:48.60	-58:35:11.00	...	110	...	-3.39	11.5	109.3 ± 81.1	...
TYC7229-1944-1	11:42:46.60	-35:48:58.00	2.52	11	...	-3.77	...	64.3 ± 64.3	...
TYC9415-1112-1†	11:43:24.43	-78:08:52.00	1.28	50	...	-3.71	63.0	146.9 ± 118.1	...
HIP57199	11:43:47.11	-21:02:18.00	1.34	17	-4.74	-5.17	11.0	364.3 ± 198.3	...
HIP57207	11:43:49.83	-35:14:52.80	0.95	135	-4.51	-4.05	11.0	75.5 ± 64.3	...
TYC8630-1701-1‡	11:44:07.20	-53:31:49.00	...	40	...	-3.10	21.7	75.2 ± 68.6	...
HIP57269†	11:44:38.64	-49:25:02.28	...	214	...	-3.30	16.0	59.9 ± 59.9	...
HIP57285†	11:44:47.52	-58:15:52.92	1.22	94	...	-4.51	...	126.8 ± 43.2	...
PPMX114545.7-805835†	11:45:45.80	-80:58:35.74	1.01	90	...	-3.00	...	74.8 ± 64.8	...
TYC8634-1393-1‡	11:45:51.80	-55:20:46.00	-0.40	190	...	-3.07	5.4	66.0 ± 60.0	Carina
J11460764-80591†	11:46:07.64	-80:59:10.40	1.07	113	...	...	7.0	162.5 ± 123.0	...
HIP57460	11:46:42.44	-19:28:11.10	1.10	96	-4.18	-4.88	12.0	218.1 ± 136.6	...
TYC8223-0566-1B†	11:47:20.64	-49:53:04.28	-1.62	330	...	-3.17	...	35.2 ± 35.2	LCC
HIP57524†	11:47:24.48	-49:53:02.76	0.57	189	...	-3.21	24.0	43.6 ± 43.6	LCC
HIP57565	11:47:59.22	+20:13:08.20	1.18	26	-4.22	-4.68	7.0	472.7 ± 156.4	...
PPMX114800.7-784210†	11:48:00.76	-78:42:10.47	-5.10	690	...	...	39.0	24.3 ± 24.3	...
HIP57589‡	11:48:24.30	-37:28:49.00	...	470	...	-2.95	7.0	25.3 ± 25.3	TWA
PPMX115028.2-770438†	11:50:28.30	-77:04:38.25	-1.90	370	...	-3.00	53.0	31.9 ± 31.9	...
TYC8981-0807-1‡	11:51:50.50	-64:07:28.00	...	340	...	-3.07	19.0	29.7 ± 29.7	LCC
HIP57950†	11:53:08.16	-56:43:37.92	1.61	70	...	-4.29	...	51.1 ± 51.1	LCC
TYC9411-2240-1†	11:53:16.59	-76:18:56.16	1.12	60	...	-4.37	6.0	337.1 ± 166.4	...
HIP58029†	11:54:05.52	-29:58:56.64	1.20	114	...	-4.15	...	146.4 ± 103.0	...
HIP58106A‡	11:55:01.30	-56:05:46.00	...	10	...	-4.44	8.4	460.0 ± 195.4	...
HIP58106B‡	11:55:01.40	-56:05:49.00	...	10	...	-4.30	2.8	394.4 ± 214.6	...
TYC8639-1114-1‡	11:55:43.00	-56:37:32.00	-1.50	420	...	-2.92	8.2	31.9 ± 31.9	LCC
TYC8631-0128-1†	11:55:57.71	-52:54:00.83	0.10	335	...	-3.50	...	42.6 ± 30.4	LCC
HIP58240†	11:56:42.48	-32:16:05.16	1.00	115	...	-4.19	17.0	112.4 ± 92.6	CarNear
UCAC218174814‡	11:56:43.50	-32:15:41.00	...	20	...	-2.53	4.6	197.0 ± 183.4	...
HIP58241†	11:56:43.92	-32:16:02.64	1.10	110	...	-4.14	...	124.6 ± 93.8	CarNear

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
UCAC3068-16477†	11:56:50.70	-56:22:29.92	-0.57	200	...	-2.92	...	59.0 ± 59.0	...
HIP58290†	11:57:15.84	-48:44:36.60	1.03	10	...	...	12.0	461.3 ± 328.4	...
TYC6100-0803-1	11:57:55.47	-21:19:36.90	1.10	64	-5.03	...	9.0	168.2 ± 126.9	...
HIP58400†	11:58:28.32	-77:54:29.52	-0.35	460	...	-3.11	12.0	21.6 ± 21.6	...
TYC5524-1065-1	11:58:45.80	-14:51:47.00	2.11	68	...	-4.82	...	143.9 ± 133.2	...
TYC6094-0706-1	11:59:25.41	-16:03:06.66	1.00	20	-5.03	...	9.0	489.8 ± 325.4	...
HIP58490†	11:59:42.30	-76:01:26.40	-0.18	422	...	-3.25	12.0	42.9 ± 29.0	ε Cha
TYC8973-2084-1‡	11:59:46.10	-61:01:13.00	...	475	...	-3.34	17.2	36.2 ± 36.2	LCC
HIP58528†	12:00:09.36	-57:07:01.92	1.50	60	...	-4.62	...	127.7 ± 40.2	...
TYC8640-3442-1B†	12:00:11.19	-57:07:01.40	1.46	47	...	-4.64	...	128.4 ± 39.8	...
TYC8640-3442-1C†	12:00:11.50	-57:07:13.10	-1.58	70	...	-4.64	...	123.3 ± 38.9	...
HIP58614†	12:01:12.72	-40:33:09.36	1.08	75	...	-3.85	...	85.8 ± 78.5	...
TYC9420-1420-1†	12:01:39.12	-78:59:16.90	1.26	230	...	-3.79	...	54.5 ± 54.5	ε Cha
TYC9420-1118-1†	12:01:39.24	-78:59:16.90	1.09	28	...	-3.79	...	125.5 ± 86.2	ε Cha
TYC7239-0971-1	12:01:46.10	-34:39:01.09	1.09	79	-4.62	-4.48	19.0	43.5 ± 43.5	...
TYC8982-3046-1‡	12:04:14.40	-64:18:52.00	...	220	...	-3.07	41.0	31.7 ± 31.7	LCC
TYC8982-3213-1†	12:04:48.87	-64:09:55.39	0.39	265	...	-3.18	...	32.3 ± 32.3	LCC
TYC9420-0676-1†	12:04:57.46	-79:32:04.74	...	240	...	...	10.0	33.0 ± 33.0	...
J120512.66-53312†	12:05:12.66	-53:31:23.10	-1.87	270	...	-3.48	...	33.6 ± 33.6	LCC
TYC1442-0986-1	12:05:24.50	+17:17:42.00	2.17	83	...	-5.40	...	125.9 ± 110.5	...
HIP58996†	12:05:47.52	-51:00:11.88	0.95	242	...	-3.55	...	32.5 ± 32.5	LCC
HIP59024†	12:06:06.00	+49:09:30.24	1.75	84	...	-4.82	...	136.5 ± 124.7	...
TYC8640-2515-1‡	12:06:13.50	-57:02:17.00	...	270	...	-3.15	22.6	30.9 ± 30.9	LCC
TYC7763-0750-1‡	12:06:32.90	-42:47:51.00	...	260	...	-3.32	28.3	33.4 ± 33.4	LCC
J120727.43-32466†	12:07:27.43	-32:46:60.00	-2.20	460	...	-3.40	...	36.3 ± 26.2	TWA
TYC8978-4572-1‡	12:07:42.40	-62:27:28.00	-0.30	450	...	-3.35	21.7	34.5 ± 34.5	LCC
TYC9412-2105-1†	12:07:51.17	-75:55:16.06	-0.38	20	...	-3.27	...	85.9 ± 75.1	...
HIP59154‡	12:07:51.20	-75:55:16.00	...	40	...	-3.20	9.0	50.9 ± 30.0	...
TYC9239-1321-1‡	12:09:42.80	-73:44:41.00	-0.10	110	...	-3.17	16.0	71.6 ± 61.1	...
HIP59315†	12:10:06.72	-49:10:50.16	0.83	151	...	-4.49	5.0	131.4 ± 96.3	...
J121010.34-48554†	12:10:10.34	-48:55:45.90	-0.27	360	...	-3.49	...	24.0 ± 24.0	LCC
J12100928-48554B†	12:10:10.34	-48:55:45.90	-3.08	50	...	-3.49	...	28.1 ± 28.1	LCC
HIP59422†	12:11:21.84	-03:46:43.39	1.60	70	...	-5.22	...	124.0 ± 113.1	...
J12112262-16472B†	12:11:22.62	-16:47:24.70	0.98	10	...	-4.67	...	432.6 ± 203.6	...
HIP59431†	12:11:26.88	+53:25:08.40	0.88	67	...	-4.38	4.0	241.3 ± 125.0	...
HIP59432†	12:11:27.84	+53:25:18.48	0.73	95	...	-4.42	6.0	219.5 ± 117.2	...
TYC8644-0340-1†	12:11:31.43	-58:16:53.21	0.15	360	...	-3.17	...	28.7 ± 28.7	LCC
TYC9231-1566-1‡	12:11:38.10	-71:10:36.00	...	280	...	-3.44	13.1	33.5 ± 33.5	ε Cha
TYC8986-3110-1‡	12:12:08.00	-65:54:55.00	-0.70	470	...	-3.27	22.5	35.0 ± 35.0	LCC
TYC8238-2416-1‡	12:12:11.20	-49:50:08.00	-0.10	430	...	-3.14	15.5	30.3 ± 30.3	LCC
TYC4393-1510-1†	12:12:15.10	+68:52:59.77	-1.22	112	...	-3.39	27.0	110.4 ± 85.5	...
TYC8636-2515-1†	12:12:35.75	-55:20:27.33	-0.10	310	...	...	...	27.3 ± 27.3	LCC
TYC8978-3494-1‡	12:12:48.90	-62:30:32.00	-0.90	550	...	-2.70	8.2	17.3 ± 17.3	...
TYC7760-0835-1†	12:13:06.96	-40:56:31.59	0.83	161	...	-3.43	12.0	38.3 ± 38.3	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC8978-5124-1‡	12:13:57.00	-62:55:13.00	-0.50	470	...	-3.00	5.1	25.2 ± 25.2	LCC
J12143187-51101B†	12:14:31.87	-51:10:15.70	-0.45	310	...	-3.20	...	30.6 ± 30.6	LCC
TYC8242-1324-1†	12:14:34.09	-51:10:12.51	0.20	333	...	-3.20	...	30.1 ± 30.1	LCC
HIP59716†	12:14:50.72	-55:47:23.50	1.62	100	...	-3.32	...	41.5 ± 41.5	LCC
HIP59721†	12:14:52.31	-55:47:03.60	-0.71	330	...	-2.91	...	20.9 ± 20.9	LCC
HIP59726‡	12:14:57.40	-41:08:22.00	...	70	...	-4.48	3.5	361.9 ± 189.6	...
HIP59764†	12:15:18.72	-63:25:30.36	1.09	190	...	-3.48	...	25.0 ± 25.0	LCC
HIP59781B‡	12:15:27.80	-62:32:21.00	...	125	...	-3.67	4.6	47.6 ± 34.1	LCC
HIP59781†	12:15:28.32	-62:32:20.40	1.22	130	...	-4.13	...	62.5 ± 62.5	LCC
TYC8637-1558-1‡	12:16:01.20	-56:14:07.00	-1.30	480	...	-3.03	90.0	26.8 ± 26.8	...
HIP59854†	12:16:27.84	-50:08:35.88	0.67	188	...	-3.18	...	46.7 ± 46.7	LCC
TYC8986-0497-1‡	12:16:30.00	-67:11:48.00	-0.60	430	...	-3.14	69.0	26.3 ± 26.3	LCC
TYC9231-1185-1†	12:16:40.25	-70:07:36.19	...	422	...	-3.50	...	35.5 ± 35.5	LCC
TYC8641-1961-1‡	12:17:04.70	-57:43:56.00	-0.70	160	...	-2.98	24.5	66.0 ± 61.0	...
HIP59914‡	12:17:24.00	-21:03:30.00	...	35	...	-3.05	13.5	44.4 ± 26.9	...
TYC9420-0439-1‡	12:17:26.90	-80:35:07.00	...	200	...	-4.36	42.0	197.6 ± 118.8	...
HIP59993‡	12:18:13.70	-20:50:25.00	...	50	...	-4.53	13.7	493.8 ± 180.1	...
TYC8645-1339-1‡	12:18:27.60	-59:43:13.00	-0.10	360	...	-3.15	11.7	34.5 ± 34.5	LCC
TYC8641-2187-1†	12:18:58.02	-57:37:19.16	0.10	310	...	-3.22	60.0	33.2 ± 33.2	LCC
HIP60074	12:19:06.60	+16:32:55.10	1.12	117	-4.01	-4.38	5.0	122.0 ± 40.4	...
TYC8979-1493-1‡	12:19:07.20	-63:09:54.00	...	50	...	...	29.0	166.2 ± 129.4	...
TYC8983-0098-1†	12:19:21.63	-64:54:10.36	0.26	362	...	...	15.0	22.3 ± 22.3	LCC
UCAC3080-14958†	12:19:59.40	-50:18:40.64	-1.00	262	...	-2.88	...	43.9 ± 43.9	LCC
TYC9412-1370-1‡	12:20:34.40	-75:39:29.00	-0.10	230	...	-3.09	12.0	58.0 ± 52.5	Argus
HIP60205†	12:20:44.16	-52:15:24.84	1.09	90	...	-4.01	...	58.1 ± 58.1	LCC
TYC8983-0795-1‡	12:20:54.50	-64:57:24.00	-1.10	470	...	-3.41	46.0	32.0 ± 32.0	LCC
TYC7757-0183-1	12:21:07.90	-38:18:09.00	1.87	95	...	-4.92	...	171.6 ± 123.0	...
TYC8242-2226-1‡	12:21:08.10	-52:12:23.00	-0.80	480	...	-3.21	5.2	25.9 ± 25.9	LCC
TYC8633-0508-1‡	12:21:16.50	-53:17:45.00	...	230	...	-3.18	43.0	33.5 ± 33.5	LCC
TYC8983-0564-1†	12:21:30.79	-64:03:52.77	-0.76	378	...	-3.33	...	33.7 ± 33.7	LCC
J122146.49+01563†	12:21:46.49	+01:56:36.00	-0.34	20	...	-3.28	...	67.7 ± 63.7	...
TYC8238-1462-1†	12:21:55.65	-49:46:12.49	0.36	294	...	-3.42	18.0	31.5 ± 31.5	LCC
TYC8234-2856-1†	12:22:04.30	-48:41:24.95	0.49	342	...	-3.23	16.0	29.6 ± 29.6	...
HIP60348†	12:22:24.96	-51:01:34.32	1.55	100	...	-4.25	...	60.8 ± 60.8	LCC
TYC8633-0028-1‡	12:22:33.20	-53:33:49.00	...	197	...	-3.65	...	43.2 ± 43.2	LCC
HIP60438†	12:23:28.32	-23:09:41.04	-0.90	20	...	-3.23	...	71.6 ± 43.5	...
TYC8641-1281-1‡	12:23:40.10	-56:16:33.00	...	450	...	-3.41	120.0	35.6 ± 35.6	LCC
TYC8983-0854-1†	12:23:47.49	-64:02:54.95	-0.66	374	...	-3.41	...	43.1 ± 30.9	LCC
TYC6693-0231-1‡	12:23:52.60	-28:12:04.00	-1.10	30	...	-2.93	12.3	74.1 ± 69.3	...
TYC8637-1258-1‡	12:24:20.60	-54:43:54.00	...	220	...	-3.21	36.0	58.2 ± 58.2	LCC
TYC8983-2153-1†	12:24:41.92	-64:37:01.43	-0.49	50	...	-3.46	...	83.1 ± 66.2	...
HIP60553†	12:24:47.76	-75:03:09.36	-0.23	20	...	-3.27	...	94.3 ± 80.5	...
HIP60567†	12:24:54.96	-52:00:15.84	1.12	100	...	-3.77	...	49.5 ± 49.5	LCC
TYC9420-0742-1‡	12:25:13.40	-78:57:35.00	...	140	...	-3.63	13.0	87.9 ± 71.6	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC8243-1939-1‡	12:26:48.40	-52:15:07.00	-1.50	420	...	-3.23	13.1	33.5 ± 33.5	LCC
TYC8979-1997-1†	12:27:16.63	-62:39:14.20	...	377	...	-3.15	...	31.8 ± 31.8	LCC
TYC8243-2885-1‡	12:27:56.50	-52:10:60.00	...	205	...	-3.37	14.9	71.9 ± 67.2	...
TYC8979-1683-1†	12:28:25.40	-63:20:58.74	0.84	260	...	-2.91	...	29.3 ± 29.3	LCC
HIP60885‡	12:28:40.00	-55:27:19.00	...	200	...	-3.72	52.0	28.2 ± 28.2	LCC
HIP60913†	12:29:02.40	-64:55:00.48	0.88	214	...	-4.41	...	83.8 ± 83.8	LCC
HIP60994†	12:30:05.04	-13:23:35.16	1.50	65	...	-4.27	...	127.7 ± 51.9	...
TYC8243-2975-1‡	12:30:29.60	-52:22:27.00	...	420	...	-3.16	5.3	34.7 ± 34.7	AB Dor
HIP61284†	12:33:30.00	-75:23:11.40	1.20	96	...	-4.38	...	218.0 ± 148.6	...
TYC8654-2791-1‡	12:33:33.80	-57:14:07.00	...	420	...	-3.23	23.1	32.5 ± 32.5	LCC
HIP61357	12:34:21.81	-41:50:44.70	1.01	123	...	-4.51	10.0	200.8 ± 110.5	...
J123504.28-41363†	12:35:04.28	-41:36:38.50	-5.65	490	...	-3.17	...	33.7 ± 24.2	TWA
TYC9420-0112-1B†	12:36:11.12	-79:31:38.22	0.65	60	...	-3.76	...	126.8 ± 46.0	...
TYC9420-0068-1†	12:36:16.42	-79:31:34.50	-0.10	150	...	-3.85	5.0	148.6 ± 99.4	...
TYC8244-0494-1‡	12:36:17.70	-50:42:42.00	-0.40	475	...	-3.33	17.5	35.4 ± 35.4	LCC
TYC8992-0605-1†	12:36:38.97	-63:44:43.47	0.40	400	...	-3.38	110.0	31.7 ± 31.7	LCC
TYC8646-0166-1†	12:36:58.97	-54:12:17.97	0.61	290	...	-3.36	...	33.7 ± 33.7	LCC
TYC8658-1264-1‡	12:38:35.60	-59:16:44.00	-0.60	470	...	-3.10	33.1	33.8 ± 33.8	LCC
TYC8244-3022-1	12:38:47.50	-51:13:06.00	1.62	114	...	-4.52	...	148.0 ± 118.7	...
HIP61723	12:39:06.51	-74:34:26.30	1.14	99	-4.58	-4.92	8.0	298.8 ± 148.0	...
TYC8650-1272-1‡	12:39:11.00	-54:29:25.00	...	130	...	-4.19	11.2	191.6 ± 114.3	...
TYC9412-0059-1‡	12:39:21.30	-75:02:39.00	-0.70	459	...	-3.29	20.2	34.2 ± 34.2	ϵ Cha
TYC8654-1115-1‡	12:39:38.00	-57:31:41.00	...	320	...	-3.11	24.3	30.4 ± 30.4	LCC
HIP61804†	12:39:60.00	-17:41:03.48	0.85	100	...	-3.95	...	100.5 ± 84.0	...
TYC8244-0139-1‡	12:40:46.60	-52:11:05.00	...	350	...	-2.93	14.9	26.7 ± 26.7	...
TYC8659-2604-1‡	12:41:18.20	-58:25:56.00	...	300	...	-3.38	101.0	32.0 ± 32.0	LCC
HIP61984†	12:42:08.88	-31:49:10.20	1.08	73	...	-4.61	...	326.7 ± 198.9	...
TYC4162-0626-1†	12:43:33.28	+60:00:52.67	0.80	99	...	-4.34	4.0	200.0 ± 119.0	...
TYC7775-0600-1‡	12:43:51.80	-39:46:16.00	...	399	...	-3.09	18.1	32.8 ± 32.8	...
TYC8659-1441-1‡	12:44:24.10	-58:55:22.00	-0.30	350	...	...	96.0	23.1 ± 23.1	LCC
HIP62171†	12:44:26.64	-54:20:48.12	1.46	86	...	-4.53	...	83.1 ± 83.1	LCC
TYC8992-0420-1‡	12:44:34.80	-63:31:46.00	-0.90	390	...	-3.05	63.0	31.9 ± 31.9	LCC
TYC8249-0052-1‡	12:45:06.80	-47:42:58.00	-0.20	340	...	-3.08	16.8	29.4 ± 29.4	LCC
TYC7248-0518-1‡	12:45:47.60	-31:30:06.00	...	100	...	-3.00	31.9	75.4 ± 63.9	...
TYC8647-0324-1†	12:45:48.85	-54:10:58.34	-0.24	340	...	-3.23	...	30.5 ± 30.5	LCC
HIP62349	12:46:32.77	+24:08:44.00	1.22	29	-4.82	-5.43	8.0	483.6 ± 220.4	...
HIP62403†	12:47:19.20	-66:14:15.00	0.36	204	...	...	3.0	126.5 ± 126.5	...
TYC9228-1355-1†	12:47:21.94	-68:08:40.17	-0.54	424	...	-3.50	...	41.9 ± 30.4	LCC
HIP62427†	12:47:38.64	-58:24:56.52	1.40	122	...	...	...	58.1 ± 58.1	LCC
TYC8651-0442-1‡	12:47:48.20	-54:31:31.00	-1.80	540	...	-3.02	1.7	19.5 ± 19.5	LCC
HIP62438	12:47:48.89	+19:01:27.50	1.25	20	-4.51	-4.96	14.0	387.4 ± 205.8	...
HIP62445‡	12:47:51.90	-51:26:38.00	-0.70	450	...	-3.42	170.0	21.3 ± 21.3	LCC
TYC7783-2098-1‡	12:47:55.70	-44:57:35.00	-0.80	100	...	-3.59	33.2	92.4 ± 75.9	...
TYC7783-1908-1‡	12:48:07.80	-44:39:17.00	...	330	...	-3.08	71.0	30.8 ± 30.8	LCC

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC8655-0149-1†	12:48:48.18	-56:35:37.80	0.63	210	...	-3.35	...	40.3 ± 40.3	LCC
HIP62657†	12:50:19.68	-49:51:48.96	1.46	120	...	-4.34	...	62.5 ± 62.5	LCC
TYC6117-1334-1‡	12:50:33.20	-21:16:33.00	...	100	...	-3.16	8.5	45.4 ± 45.4	...
HIP62686	12:50:41.94	+20:32:05.60	0.58	59	-4.55	-4.52	10.0	263.2 ± 122.7	...
TYC8257-1545-1‡	12:50:51.40	-51:56:35.00	-0.80	500	...	-3.35	16.3	25.6 ± 25.6	...
TYC8647-2425-1†	12:51:04.14	-52:53:32.13	-1.10	395	...	-2.79	...	23.2 ± 23.2	...
UCAC3067-19927†	12:51:12.51	-56:30:46.52	-2.11	460	...	-3.23	...	17.1 ± 17.1	LCC
HIP62776	12:51:51.98	+00:05:06.30	1.52	90	-4.58	-4.42	10.0	103.8 ± 99.8	...
FS20030652†	12:52:14.72	-55:53:37.20	-1.70	360	...	-3.03	...	36.5 ± 36.5	LCC
HIP62860†	12:53:03.84	+19:36:18.36	1.90	34	...	-4.38	...	103.5 ± 100.0	...
HIP63008	12:54:39.98	+22:06:28.80	1.06	87	-4.46	-4.50	12.0	227.1 ± 162.7	...
TYC9245-0535-1‡	12:56:08.40	-69:26:54.00	-1.20	510	...	-2.65	16.3	13.4 ± 13.4	LCC
TYC8989-0583-1†	12:56:09.40	-61:27:25.46	-0.16	334	...	...	42.0	25.4 ± 25.4	LCC
TYC7780-1467-1‡	12:56:12.30	-41:22:20.00	...	360	...	-3.21	13.5	30.2 ± 30.2	...
HIP63272†	12:57:57.84	-52:36:54.36	1.77	100	...	-4.64	...	64.5 ± 64.5	LCC
TYC8648-2024-1B†	12:58:11.77	-54:11:14.66	0.10	150	...	-3.48	...	39.0 ± 39.0	...
TYC9245-0617-1‡	12:58:25.60	-70:28:49.00	-0.20	400	...	-3.31	24.3	30.8 ± 30.8	ϵ Cha
HIP63317	12:58:32.06	+38:16:43.90	1.18	107	...	-3.62	...	65.5 ± 61.7	...
HIP63322†	12:58:35.04	+38:16:48.72	0.83	102	...	-3.45	6.0	89.8 ± 70.3	...
HIP63486	13:00:29.55	-09:06:01.20	1.61	140	-4.62	-4.63	18.0	155.2 ± 97.7	...
HIP63497	13:00:38.85	+18:22:22.30	1.87	68	...	-5.34	...	140.6 ± 120.3	...
TYC8648-0446-1‡	13:01:50.70	-53:04:58.00	...	370	...	-3.22	...	29.3 ± 29.3	LCC
TYC8648-0446-1†	13:01:50.71	-53:04:58.30	0.22	290	...	-3.29	...	32.6 ± 32.6	LCC
TYC8652-1791-1‡	13:02:37.50	-54:59:37.00	...	300	...	-3.08	...	28.7 ± 28.7	LCC
TYC8993-0409-1†	13:02:47.02	-62:13:59.08	0.29	440	...	-3.25	...	31.2 ± 31.2	LCC
HIP63734	13:03:39.01	-16:20:11.66	1.65	164	-4.52	-4.48	9.0	108.4 ± 38.0	...
HIP63742	13:03:49.76	-05:09:40.70	0.85	155	-4.31	-4.32	11.0	187.4 ± 107.1	AB Dor
TYC7262-1575-1	13:04:26.30	-36:50:06.00	1.30	55	...	-4.28	...	335.7 ± 153.6	...
HIP63862‡	13:05:16.80	-50:51:24.00	...	140	...	-4.14	10.9	104.8 ± 81.3	...
HIP63905	13:05:46.28	-18:49:33.00	1.29	81	-4.48	-4.66	10.0	416.6 ± 185.2	...
HIP63948	13:06:21.24	+21:09:12.26	1.75	67	-4.84	-4.36	21.0	34.9 ± 34.9	...
HIP63975†	13:06:35.76	-46:02:02.04	1.80	50	...	...	...	124.9 ± 124.9	LCC
TYC8258-1878-1‡	13:06:40.10	-51:59:39.00	...	360	...	-3.34	...	30.3 ± 30.3	LCC
HIP63994†	13:06:49.92	-62:06:39.96	1.33	100	...	-3.69	...	38.4 ± 38.4	...
HIP63995†	13:06:50.88	-77:52:13.80	1.40	24	...	-4.44	...	398.1 ± 179.0	...
TYC8246-1527-1‡	13:06:54.40	-45:41:31.00	-0.50	470	...	-3.07	...	22.2 ± 22.2	LCC
HIP64011†	13:06:59.28	-37:44:39.48	1.06	117	...	-4.26	...	112.2 ± 88.9	...
HIP64044†	13:07:33.60	-52:54:19.44	1.19	150	...	-3.79	...	49.2 ± 49.2	LCC
TYC6115-0596-1	13:09:09.84	-19:44:30.80	1.52	71	-4.46	-4.16	17.0	80.1 ± 79.0	...
HIP64292†	13:10:36.24	-31:28:14.52	0.71	107	...	-4.36	13.0	196.8 ± 115.9	...
TYC0305-0880-1†	13:11:41.03	+05:37:01.17	0.43	180	...	-3.41	119.0	80.7 ± 67.4	...
HIP64408‡	13:12:03.20	-37:48:11.00	...	120	...	-5.88	...	219.4 ± 123.5	...
HIP64407	13:12:03.49	-16:11:52.40	1.46	95	-4.82	-5.77	13.0	88.6 ± 88.6	...
HIP64478‡	13:12:55.70	-59:49:00.00	...	40	...	-3.97	15.4	24.1 ± 24.1	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	vsin$i$ (km s^{-1})	Age (Myr)	Note
TYC8247-0468-1‡	13:13:07.10	-45:37:44.00	-0.50	420	...	-3.33	...	33.2 ± 33.2	LCC
TYC8990-0701-1‡	13:13:28.10	-60:00:45.00	...	170	...	-3.39	...	53.3 ± 53.3	LCC
TYC9242-0290-1‡	13:14:01.10	-68:46:39.00	-0.50	370	...	-3.23	18.4	33.3 ± 33.3	LCC
TYC8259-0689-1‡	13:14:23.80	-50:54:02.00	...	300	...	-2.97	70.0	31.0 ± 31.0	LCC
TYC8259-0689-1†	13:14:23.84	-50:54:01.93	0.49	250	...	-2.97	...	39.2 ± 39.2	LCC
HIP64663‡	13:15:16.70	-50:58:07.00	...	10	...	-3.57	30.9	26.0 ± 26.0	...
HIP64732	13:16:03.15	-05:40:07.10	0.26	125	-4.23	-3.32	19.0	32.6 ± 31.9	...
HIP64792	13:16:46.70	+09:25:25.40	1.25	85	-4.51	-4.48	9.0	84.8 ± 84.8	...
TYC8649-0251-1‡	13:17:56.90	-53:17:56.00	...	240	...	-3.15	92.0	39.0 ± 39.0	LCC
HIP64970	13:18:58.38	-25:35:44.00	1.25	54	-4.77	-4.12	12.0	66.7 ± 47.1	...
TYC8674-2317-1†	13:21:20.27	-59:03:44.14	-1.27	456	...	-3.50	34.0	39.6 ± 27.2	LCC
HIP65208†	13:21:49.92	-36:06:43.92	1.46	46	...	...	21.0	57.6 ± 57.6	...
TYC8248-0539-1‡	13:22:04.50	-45:03:23.00	...	150	...	-3.56	...	48.4 ± 48.4	...
TYC9246-0971-1	13:22:07.54	-69:38:12.26	-34.27	405	-3.99	-3.33	13.0	34.8 ± 34.8	ϵ Cha
TYC8252-0533-1‡	13:23:35.90	-47:18:47.00	-0.40	410	...	-3.35	...	33.9 ± 33.9	LCC
HIP65390†	13:24:03.84	-45:14:13.92	0.99	102	...	-4.45	2.0	208.5 ± 146.4	...
HIP65423	13:24:35.30	-55:57:24.00	1.24	178	...	-3.51	25.0	40.4 ± 40.4	LCC
HIP65469†	13:25:08.16	+38:55:21.36	0.63	97	...	-4.59	8.0	235.6 ± 111.1	...
TYC8260-2447-1‡	13:25:46.30	-51:05:50.00	...	40	...	-3.35	56.0	60.5 ± 60.5	...
HIP65517†	13:25:47.76	-48:14:57.84	0.63	193	...	-3.21	...	47.0 ± 47.0	LCC
HIP65517‡	13:25:47.80	-48:14:58.00	...	230	...	-3.20	37.0	34.3 ± 34.3	LCC
TYC6725-1177-1‡	13:26:16.60	-29:05:11.00	...	25	...	-3.21	...	72.0 ± 71.9	...
TYC8256-1840-1†	13:27:05.95	-48:56:18.12	-0.59	350	...	-3.12	...	39.3 ± 27.7	LCC
HIP65775†	13:29:03.36	+42:14:17.88	1.28	87	...	-4.78	...	298.9 ± 172.9	...
TYC6717-0829-1‡	13:29:11.00	-25:23:53.00	-2.50	110	...	-2.98	...	67.1 ± 57.4	...
TYC7268-1034-1‡	13:29:46.40	-32:20:02.00	...	50	...	-3.30	4.8	76.5 ± 59.7	...
TYC7792-0719-1‡	13:31:12.70	-40:52:44.00	-0.10	50	...	-3.22	...	78.9 ± 66.7	...
HIP66001‡	13:31:53.60	-51:13:33.00	...	240	...	-3.21	33.4	23.6 ± 23.6	LCC
HIP66001†	13:31:53.76	-51:13:32.88	0.17	250	...	-3.23	...	22.8 ± 22.8	LCC
HIP66072	13:32:41.77	+22:30:07.20	-0.63	198	-4.15	-2.95	27.0	51.9 ± 29.7	...
TYC8261-0566-1†	13:33:02.00	-46:51:40.13	4.00	30	...	-4.23	...	50.6 ± 50.6	...
TYC5545-1288-1	13:33:10.10	-08:26:23.00	1.50	74	...	-4.64	...	393.5 ± 198.2	...
TYC7788-1884-1‡	13:33:58.70	-37:42:36.00	...	20	...	-3.54	...	66.8 ± 60.3	...
TYC8663-1375-1‡	13:34:20.30	-52:40:36.00	...	230	...	-3.35	66.0	35.5 ± 35.5	LCC
TYC7796-2110-1‡	13:34:31.90	-42:09:31.00	-1.00	400	...	-3.39	113.0	27.5 ± 27.5	LCC
HIP66273‡	13:34:57.40	-29:55:24.00	...	220	...	-4.01	21.4	37.8 ± 37.8	...
HIP66358‡	13:36:08.30	-33:28:45.00	...	80	...	-3.92	11.4	121.6 ± 92.5	...
TYC7796-1788-1†	13:37:57.29	-41:34:41.91	0.59	275	...	-3.20	...	32.7 ± 32.7	LCC
TYC7800-0858-1†	13:38:05.96	-43:44:56.39	...	310	...	-3.49	...	44.5 ± 30.9	LCC
HIP66563†	13:38:42.24	-29:33:38.52	1.49	81	...	-5.40	29.0	116.7 ± 104.0	...
TYC7796-0286-1†	13:38:49.38	-42:37:23.38	0.14	320	...	-3.65	...	35.0 ± 35.0	...
TYC7277-0791-1‡	13:38:56.40	-36:34:48.00	...	20	...	-3.63	...	108.3 ± 88.3	...
TYC8261-2619-1‡	13:40:14.20	-45:42:59.00	...	80	...	...	10.8	60.7 ± 60.7	...
TYC8261-2618-1‡	13:40:14.50	-45:42:36.00	...	50	...	-3.62	47.3	85.2 ± 82.9	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC8261-1690-1†	13:40:25.54	-46:33:51.45	-1.08	334	...	-2.79	13.0	27.3 ± 27.3	LCC
HIP66941†	13:43:08.64	-69:07:39.36	1.80	300	...	-3.52	...	22.9 ± 22.9	LCC
HIP66941‡	13:43:08.70	-69:07:39.00	...	200	...	-3.33	215.0	30.4 ± 30.4	LCC
TYC8262-2044-1†	13:43:21.96	-46:38:08.57	1.70	50	...	-3.96	...	65.4 ± 65.4	...
HIP66963‡	13:43:28.50	-54:36:44.00	...	200	...	-3.10	36.4	44.3 ± 44.3	LCC
HIP66963†	13:43:28.56	-54:36:43.20	0.69	230	...	-3.11	...	31.4 ± 31.4	LCC
TYC7274-0609-1‡	13:43:31.10	-35:20:25.00	...	50	...	-3.82	...	179.9 ± 114.8	...
TYC7801-1947-1†	13:43:55.67	-43:45:40.34	1.24	130	...	-3.79	...	55.1 ± 55.1	...
HIP67009†	13:43:57.36	-41:20:56.04	1.11	130	...	-4.63	13.0	167.1 ± 113.2	...
HIP67013‡	13:44:00.90	-61:21:59.00	...	60	...	-3.54	6.2	35.6 ± 35.6	...
TYC8266-2914-1†	13:44:24.43	-47:06:34.09	0.86	300	...	-3.47	130.0	44.7 ± 30.2	LCC
TYC8675-2609-1‡	13:44:28.80	-59:28:54.00	...	40	...	-3.79	10.2	134.2 ± 100.4	...
TYC9012-1005-1‡	13:44:42.80	-63:47:49.00	-0.30	460	...	-3.14	4.3	27.2 ± 27.2	LCC
TYC8270-2110-1‡	13:45:42.00	-49:04:59.00	...	100	...	-3.73	35.8	29.1 ± 29.1	...
TYC8274-0030-1‡	13:45:56.00	-52:22:25.00	-0.80	410	...	-2.98	...	31.3 ± 31.3	LCC
HIP67186	13:46:06.81	+05:06:56.20	0.78	32	-4.18	-4.01	5.0	44.8 ± 38.6	...
TYC9247-0333-1‡	13:47:08.80	-70:21:07.00	...	120	...	-3.58	6.5	84.4 ± 68.3	...
TYC9255-1748-1	13:47:11.51	-74:45:58.50	1.05	115	-4.41	-4.64	10.0	247.5 ± 120.0	...
TYC8270-2015-1‡	13:47:50.60	-49:02:06.00	-1.00	320	...	-3.14	67.0	30.0 ± 30.0	UCL
TYC9426-0682-1	13:49:13.07	-75:49:47.20	0.66	224	-4.16	-3.45	15.0	34.4 ± 34.4	Argus
HIP67522†	13:50:06.24	-40:50:08.52	0.63	150	...	-3.42	...	54.2 ± 54.2	UCL
HIP67522‡	13:50:06.30	-40:50:09.00	...	220	...	-3.42	51.0	31.6 ± 31.6	UCL
HIP67527†	13:50:07.68	-44:51:02.52	0.91	63	...	-4.27	8.0	112.7 ± 54.3	...
TYC8263-2453-1‡	13:52:47.80	-46:44:09.00	...	150	...	-3.29	50.0	55.9 ± 55.9	UCL
HIP67819†	13:53:32.88	-35:39:51.12	1.38	34	...	-5.46	12.0	324.9 ± 189.4	...
TYC9243-1332-1‡	13:54:07.40	-67:33:45.00	...	220	...	-3.25	11.8	46.5 ± 46.5	LCC
TYC8267-2879-1‡	13:54:42.10	-48:20:58.00	-0.20	330	...	-3.19	...	30.8 ± 30.8	LCC
HIP67953†	13:54:58.32	-08:03:31.54	1.27	67	...	-4.30	...	56.3 ± 56.3	...
TYC4974-0584-1†	13:54:58.37	-05:43:54.15	0.89	157	...	-4.29	...	126.4 ± 92.1	...
J13545841-08033B†	13:54:58.41	-08:03:32.20	1.00	130	...	-4.11	...	98.5 ± 77.6	...
TYC8271-0864-1†	13:56:34.67	-49:07:14.68	-0.36	320	...	-3.10	19.0	30.3 ± 30.3	LCC
HIP68186‡	13:57:34.00	-31:39:11.00	-2.10	50	...	-3.32	30.0	28.8 ± 28.8	...
TYC1470-0009-1	13:58:13.62	+19:17:11.85	0.21	268	...	-3.61	12.0	44.3 ± 44.3	...
HIP68251†	13:58:20.16	+10:08:04.92	1.10	40	...	-4.95	17.0	375.7 ± 197.3	...
TYC7811-0866-1‡	14:00:49.70	-42:36:57.00	...	360	...	-3.16	...	29.7 ± 29.7	...
TYC0316-0893-1	14:01:51.70	+00:25:46.00	1.82	68	...	-4.27	...	96.9 ± 96.9	...
TYC7811-2909-1‡	14:02:20.70	-41:44:51.00	-0.20	340	...	-3.30	...	30.2 ± 30.2	UCL
HIP68593†	14:02:31.68	+31:39:38.88	1.33	66	...	-5.47	4.0	292.6 ± 177.1	...
HIP68805†	14:05:10.80	-09:02:54.56	1.50	56	...	-4.42	...	124.6 ± 41.4	Columba
TYC7807-0677-1‡	14:06:00.40	-41:12:25.00	-0.30	400	...	-3.26	...	30.0 ± 30.0	...
TYC8677-0344-1‡	14:06:02.80	-58:32:45.00	-0.60	300	...	-3.10	17.1	32.6 ± 32.6	...
TYC6145-0793-1	14:06:30.40	-20:03:58.00	1.63	104	...	-4.50	...	177.4 ± 138.8	...
TYC9435-0456-1‡	14:06:43.00	-79:49:13.00	...	30	...	-3.91	4.2	83.8 ± 68.2	...
HIP68994†	14:07:29.28	-61:33:43.92	1.57	100	...	-5.09	65.0	79.5 ± 79.5	Argus

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP68998‡	14:07:33.50	-54:15:50.00	...	100	...	-4.54	11.0	220.2 ± 109.7	...
TYC7804-1548-1‡	14:10:10.40	-38:52:54.00	...	100	...	-3.16	...	72.2 ± 62.1	...
TYC6730-0365-1‡	14:10:49.60	-23:55:29.00	...	360	...	-3.09	...	30.1 ± 30.1	...
TYC7804-1633-1‡	14:12:46.90	-38:31:22.00	-0.40	420	...	-2.83	...	29.4 ± 29.4	...
J141544.13-61421†	14:15:44.13	-61:42:12.30	-2.10	30	...	-3.12	...	54.6 ± 54.6	...
TYC9244-0814-1‡	14:16:05.70	-69:17:36.00	...	150	...	-3.43	10.2	91.0 ± 70.2	LCC
TYC8289-0232-1	14:16:24.50	-52:25:16.00	1.68	125	...	-4.38	...	98.7 ± 88.9	...
HIP69751†	14:16:32.88	+20:07:19.56	1.31	40	...	-4.78	33.0	162.5 ± 149.5	...
HIP69751B†	14:16:32.98	+20:07:14.80	0.74	94	...	-4.77	4.0	115.1 ± 111.9	...
HIP69781‡	14:16:57.90	-49:56:42.00	...	140	...	-3.74	15.0	67.4 ± 36.8	...
HIP69790†	14:17:03.03	+50:59:45.20	0.91	29	...	-3.52	...	58.2 ± 58.2	...
TYC7286-0248-1‡	14:17:20.10	-32:30:47.00	-0.80	470	...	-3.18	...	33.6 ± 33.6	...
TYC9010-1272-1‡	14:18:04.90	-62:18:59.00	...	210	...	-3.41	38.0	36.5 ± 36.5	...
TYC7294-0932-1‡	14:18:34.50	-35:46:58.00	-0.50	80	...	-3.24	...	75.3 ± 63.0	...
TYC8281-1811-1‡	14:18:53.30	-48:27:31.00	-1.20	610	...	-3.17	100.0	29.2 ± 29.2	...
TYC9248-0077-1‡	14:19:02.20	-71:09:40.00	...	80	...	-3.15	27.6	84.7 ± 69.5	...
TYC6731-0058-1‡	14:19:21.20	-23:22:14.00	...	130	...	-4.06	...	184.1 ± 113.7	...
TYC9014-0118-1‡	14:19:54.10	-64:38:18.00	...	50	...	-3.86	15.6	94.4 ± 74.1	...
TYC9252-0033-1B‡	14:19:54.50	-72:10:41.00	...	222	...	-2.88	35.1	50.3 ± 50.3	...
TYC9252-0033-1A‡	14:19:54.80	-72:10:40.00	...	215	...	-2.89	34.3	55.5 ± 55.5	...
TYC8281-1497-1‡	14:20:48.90	-47:48:44.00	-1.00	510	...	-3.13	...	29.1 ± 29.1	...
HIP70142†	14:21:08.88	+37:24:03.96	0.85	80	...	-4.56	6.0	316.8 ± 159.9	...
TYC8277-0192-1‡	14:21:43.80	-46:52:08.00	...	420	...	-3.07	...	30.2 ± 30.2	...
HIP70202‡	14:21:48.30	-48:04:19.00	...	140	...	-3.42	...	43.2 ± 37.2	...
TYC9244-1463-1	14:22:19.30	-69:05:20.00	2.51	23	...	-4.98	...	261.9 ± 175.1	...
TYC7290-2071-1‡	14:22:30.30	-35:32:19.00	-0.30	410	...	-2.28	...	26.0 ± 26.0	...
HIP70351‡	14:23:39.10	-72:48:29.00	...	170	...	-4.03	16.9	84.6 ± 72.0	...
TYC8690-1100-1‡	14:23:47.40	-59:35:26.00	...	400	...	-3.32	...	34.1 ± 34.1	...
HIP70376‡	14:23:56.40	-50:29:58.00	...	160	...	-3.38	16.1	27.6 ± 27.6	UCL
TYC0912-1575-1	14:24:05.45	+11:14:57.50	1.45	102	...	-4.29	12.0	127.8 ± 106.4	...
TYC0912-1576-1	14:24:05.70	+11:15:13.00	1.69	104	...	-4.39	...	113.5 ± 98.2	...
TYC8289-1388-1‡	14:24:47.80	-50:41:33.00	...	270	...	-3.05	...	32.0 ± 32.0	...
TYC0915-1391-1†	14:25:55.93	+14:12:10.17	-2.30	98	...	-2.95	21.0	56.4 ± 56.4	...
TYC9010-2749-1‡	14:27:04.30	-62:46:55.00	-0.30	120	...	-3.52	23.8	130.5 ± 94.3	...
TYC8282-0516-1‡	14:27:05.60	-47:14:22.00	...	320	...	-3.23	...	30.1 ± 30.1	...
TYC7817-0622-1‡	14:28:09.30	-44:14:17.00	...	290	...	-3.50	...	34.2 ± 34.2	...
TYC4977-1458-1	14:28:12.10	-02:13:16.00	1.57	93	...	-4.53	...	301.1 ± 175.8	...
TYC7813-0224-1‡	14:28:19.40	-42:19:34.00	...	270	...	-3.01	...	31.6 ± 31.6	UCL
HIP70826	14:29:01.24	+12:07:19.70	-0.06	82	-4.03	-3.63	12.0	29.3 ± 29.3	...
J14301274-43495†	14:30:12.74	-43:49:54.10	-0.72	340	...	...	...	23.0 ± 23.0	...
TYC7295-0768-1‡	14:31:50.30	-31:13:21.00	-1.70	30	...	-3.03	...	76.7 ± 67.9	...
TYC9010-4839-1‡	14:32:08.30	-63:42:15.00	...	150	...	-3.73	11.6	119.1 ± 92.5	...
TYC9006-2259-1‡	14:34:16.00	-60:24:29.00	-0.70	90	...	-3.40	35.0	116.8 ± 85.7	...
TYC9261-1244-1‡	14:34:56.00	-70:30:07.00	...	180	...	-3.24	3.4	66.4 ± 60.5	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC0910-1278-1†	14:35:34.56	+08:00:57.77	0.85	72	…	-4.44	4.0	366.4 ± 197.1	…
TYC8679-0484-1‡	14:35:36.60	-53:47:38.00	…	100	…	-3.88	…	83.4 ± 69.9	…
TYC8679-0146-1‡	14:35:48.00	-52:40:56.00	-0.40	200	…	-3.60	…	83.7 ± 72.7	…
TYC6749-0218-1‡	14:36:15.20	-24:23:26.00	…	110	…	-3.43	…	118.3 ± 86.2	…
TYC8683-0571-2‡	14:36:20.30	-55:15:38.00	…	30	…	-3.45	…	70.5 ± 70.5	…
TYC8683-0571-1‡	14:36:20.40	-55:15:29.00	…	30	…	-3.43	…	74.4 ± 63.2	…
TYC7814-1450-1‡	14:37:04.20	-41:45:03.00	…	170	…	-3.17	…	74.3 ± 66.0	UCL
TYC8683-0242-1‡	14:37:50.20	-54:57:41.00	…	390	…	-3.02	…	28.3 ± 28.3	UCL
TYC9513-2528-1	14:38:02.10	-85:17:52.00	1.53	21	…	-4.16	…	77.8 ± 77.8	…
TYC8287-0714-1‡	14:38:03.50	-49:32:02.00	-0.40	450	…	-3.15	…	31.2 ± 31.2	…
TYC9513-2528-1	14:38:17.50	-85:17:52.00	1.94	58	…	-4.16	…	74.8 ± 74.8	…
TYC7814-1672-1‡	14:38:22.60	-42:19:34.00	…	340	…	-3.32	…	30.4 ± 30.4	…
TYC7818-0189-1‡	14:38:54.40	-43:10:22.00	-1.20	450	…	-3.25	…	33.1 ± 33.1	…
HIP71631†	14:39:00.48	+64:17:30.12	0.94	176	…	-3.58	15.0	51.8 ± 51.8	…
HIP71683‡	14:39:36.50	-60:50:02.00	…	6	…	…	2.7	493.4 ± 277.0	…
HIP71718†	14:40:10.56	+57:42:47.52	1.20	90	…	-4.73	5.0	168.1 ± 138.0	…
TYC8287-0413-1‡	14:41:19.40	-50:01:20.00	-1.00	420	…	-3.44	…	25.3 ± 25.3	…
TYC9019-0996-1‡	14:41:31.80	-66:47:40.00	-2.00	60	…	-3.46	12.5	88.0 ± 71.4	…
TYC8283-0264-1‡	14:41:35.00	-47:00:29.00	…	310	…	-2.80	…	27.9 ± 27.9	UCL
TYC7827-2182-1‡	14:42:09.40	-42:47:21.00	…	100	…	-4.86	…	228.8 ± 114.0	…
HIP71899	14:42:23.17	+21:17:35.40	1.03	71	-4.53	-4.61	14.0	207.0 ± 164.0	…
HIP71933‡	14:42:43.60	-48:47:59.00	…	140	…	-3.45	2.0	45.4 ± 45.4	…
HIP72048‡	14:44:14.10	-69:40:27.00	…	80	…	-4.35	14.8	108.3 ± 104.2	…
TYC5573-0276-1	14:44:17.20	-11:36:37.00	1.55	173	…	-4.15	…	58.4 ± 56.1	…
HIP72197B†	14:46:00.69	-25:26:39.10	1.02	115	…	-5.48	…	53.7 ± 53.7	…
TYC8291-1530-1‡	14:46:20.20	-50:55:45.00	-0.60	420	…	-3.37	…	30.6 ± 30.6	…
TYC9257-0789-1‡	14:46:21.40	-67:46:16.00	…	150	…	-3.48	88.0	37.9 ± 37.9	Argus
TYC1481-0366-1	14:46:57.18	+18:18:01.10	1.14	98	…	-4.52	12.0	253.1 ± 140.5	…
TYC8283-2795-1‡	14:47:31.80	-48:00:06.00	…	200	…	-3.30	…	44.5 ± 44.5	…
HIP72399†	14:48:09.66	-36:47:02.19	0.10	18	…	-3.14	12.0	61.0 ± 61.0	…
HIP72400†	14:48:10.56	-36:47:00.60	0.14	30	…	-3.00	…	77.1 ± 67.1	…
TYC7309-2483-1	14:50:04.00	-37:23:58.00	2.05	18	…	-4.88	…	323.8 ± 200.8	…
HIP72567	14:50:15.72	+23:54:42.40	1.34	107	-4.71	-4.71	9.0	205.1 ± 131.0	…
TYC7305-0380-1‡	14:50:25.80	-35:06:49.00	-0.10	350	…	-3.37	…	31.7 ± 31.7	UCL
PPMX145035.0-345905†	14:50:35.08	-34:59:05.70	-0.69	405	…	-3.14	…	34.5 ± 34.5	UCL
PPMX145035.0-345905†	14:50:35.08	-34:59:05.70	-0.85	330	…	…	14.0	24.8 ± 24.8	UCL
TYC7828-2913-1‡	14:52:42.00	-41:41:55.00	-0.80	430	…	-3.17	…	33.7 ± 33.7	UCL
TYC6759-1372-1	14:52:48.90	-28:54:48.00	1.70	72	…	-4.34	…	195.9 ± 142.8	…
HIP72799	14:52:49.48	-28:54:51.40	1.10	59	-4.61	-4.34	13.0	127.7 ± 52.1	…
HIP72986†	14:54:54.96	-41:21:52.56	1.90	39	…	-4.55	…	130.7 ± 41.5	…
TYC8292-2095-1‡	14:55:26.70	-51:29:01.00	…	215	…	-3.19	…	49.4 ± 49.4	…
TYC8693-0036-1‡	14:55:39.60	-59:13:08.00	…	380	…	-3.34	…	31.1 ± 31.1	…
TYC9270-1659-1	14:55:48.70	-73:10:11.00	2.18	93	…	-4.64	…	103.2 ± 103.2	…
TYC7820-2305-1	14:56:14.10	-38:51:19.60	0.66	110	-4.43	-3.63	12.0	65.6 ± 61.0	…

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP73108†	14:56:30.72	-34:37:54.12	1.18	61	...	-4.59	6.0	88.6 ± 53.4	...
TYC7310-2431-1‡	14:57:19.60	-36:12:27.00	...	290	...	-3.41	...	33.8 ± 33.8	UCL
HIP73269†	14:58:30.48	-28:42:33.48	1.20	130	...	-4.66	...	153.8 ± 110.5	...
HIP73269†	14:58:30.48	-28:42:33.48	1.10	115	...	...	...	128.9 ± 128.9	...
TYC7310-0503-1‡	14:58:37.70	-35:40:30.00	-0.50	410	...	-3.34	30.8	32.2 ± 32.2	UCL
TYC7824-1291-1‡	14:59:22.80	-40:13:12.00	...	250	...	-3.36	...	32.7 ± 32.7	UCL
TYC7306-1366-1‡	14:59:44.70	-34:25:47.00	-0.30	420	...	-3.22	...	32.4 ± 32.4	...
TYC7833-0141-1‡	15:00:37.70	-43:08:34.00	-0.40	420	...	-3.15	...	35.1 ± 35.1	...
TYC7833-2037-1‡	15:00:51.90	-43:31:21.00	...	330	...	-3.24	...	30.0 ± 30.0	UCL
HIP73480	15:01:01.44	+02:53:51.50	1.38	41	-4.76	-5.19	14.0	460.1 ± 213.1	...
TYC7829-0504-1‡	15:01:11.60	-41:20:41.00	...	250	...	-3.21	94.0	31.6 ± 31.6	UCL
TYC8685-0436-1‡	15:01:20.50	-54:24:16.00	...	150	...	-3.22	7.1	81.9 ± 71.3	...
TYC8297-1613-1‡	15:01:58.80	-47:55:46.00	...	190	...	-3.70	...	47.1 ± 47.1	...
TYC7825-0956-1‡	15:04:28.60	-39:24:26.00	...	80	...	-3.52	...	100.0 ± 76.5	...
HIP73754	15:04:33.06	-28:18:00.20	1.21	79	-4.54	-4.69	7.0	293.0 ± 176.4	...
HIP73761‡	15:04:40.10	-30:31:20.00	...	110	...	-3.94	...	25.7 ± 25.7	...
HIP73850	15:05:33.90	-30:33:03.80	1.43	12	-4.62	-4.73	18.0	286.6 ± 202.4	...
TYC7319-0749-1‡	15:07:14.80	-35:04:60.00	-0.60	347	...	-3.40	13.0	30.7 ± 30.7	UCL
TYC0919-1659-2	15:07:32.91	+09:13:30.00	1.13	55	-4.07	-4.35	5.0	253.5 ± 154.3	...
HIP74016	15:07:33.05	+09:13:33.50	1.17	78	-4.03	-4.42	5.0	103.2 ± 100.1	...
TYC8297-3606-1‡	15:07:54.10	-47:30:29.00	...	400	...	-3.19	...	31.5 ± 31.5	...
TYC4560-2770-1	15:07:56.56	+76:12:01.30	0.60	196	...	-2.99	...	69.6 ± 66.1	...
HIP74049‡	15:07:57.80	-45:34:46.00	...	110	...	-4.32	6.0	201.6 ± 112.7	...
HIP74049†	15:07:57.84	-45:34:44.76	1.07	70	...	-4.49	...	435.9 ± 197.9	...
J15075876+04150†	15:07:58.76	+04:15:01.90	1.01	20	...	-3.13	7.0	66.2 ± 66.2	...
TYC0343-0836-1†	15:07:59.58	+04:15:20.88	...	143	...	-3.14	11.0	73.6 ± 64.0	...
TYC7833-2400-1‡	15:08:37.70	-44:23:17.00	-0.50	386	...	-3.00	109.0	30.1 ± 30.1	UCL
TYC7833-2559-1‡	15:08:38.50	-44:00:52.00	...	260	...	-3.32	24.4	31.4 ± 31.4	UCL
TYC8293-0092-1‡	15:09:27.90	-46:50:57.00	...	120	...	-3.38	...	77.8 ± 67.0	...
TYC7826-0179-1‡	15:10:58.20	-39:26:50.00	-0.30	150	...	-3.36	...	97.2 ± 80.2	...
TYC7826-0179-2‡	15:10:58.30	-39:26:50.00	...	150	...	-3.23	...	44.4 ± 44.4	...
HIP74344†	15:11:38.16	-64:56:11.76	0.83	64	...	-4.26	1.0	136.5 ± 37.6	...
HIP74405	15:12:23.60	-75:15:15.00	0.46	202	-4.17	-3.40	12.0	63.7 ± 60.6	Argus
TYC7312-0236-1‡	15:12:44.50	-31:16:48.00	-0.10	380	...	-3.18	...	29.8 ± 29.8	...
TYC8294-2230-1‡	15:12:50.20	-45:08:05.00	...	270	...	-3.12	...	31.8 ± 31.8	UCL
HIP74467	15:13:00.42	-43:08:41.50	0.99	18	-4.67	-4.35	6.0	431.2 ± 183.9	...
HIP74565‡	15:14:07.50	-41:03:36.00	...	174	...	-3.46	26.1	39.5 ± 36.2	...
TYC6766-0965-1	15:14:32.38	-25:31:13.70	0.69	52	-4.47	-4.16	8.0	280.4 ± 168.9	...
TYC7830-1237-1‡	15:14:47.50	-42:20:15.00	...	350	...	-3.29	...	31.1 ± 31.1	...
HIP74651	15:15:13.97	-30:58:39.90	1.00	121	-4.51	-3.95	12.0	70.1 ± 61.6	...
TYC7316-0888-1‡	15:15:45.40	-33:31:60.00	-0.80	385	...	-3.21	22.0	28.4 ± 28.4	...
TYC7822-1763-1‡	15:16:08.00	-38:52:31.00	...	160	...	-3.77	...	70.8 ± 62.8	...
HIP74731†	15:16:21.60	-54:08:03.48	1.00	140	...	-4.17	...	79.2 ± 70.3	...
HIP74821	15:17:27.68	+22:17:59.00	0.94	93	-4.74	-4.64	13.0	211.5 ± 152.6	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC8694-1685-1[‡]	15:18:01.70	-53:17:29.00	...	320	...	-3.24	37.0	30.7 ± 30.7	UCL
TYC7822-0433-1[‡]	15:18:07.60	-38:04:24.00	-2.70	100	...	-3.14	...	71.4 ± 58.8	...
TYC7313-1015-1[‡]	15:18:20.50	-30:56:35.00	-0.40	230	...	-3.24	...	61.6 ± 56.1	...
TYC7822-0158-1[‡]	15:18:26.90	-37:38:02.00	-0.70	365	...	-3.11	21.6	28.8 ± 28.8	UCL
HIP74931	15:18:42.18	+10:25:26.70	1.08	54	-4.68	-4.44	7.0	122.4 ± 34.9	...
TYC7826-2835-1[‡]	15:19:16.00	-40:56:08.00	-0.30	408	...	-3.14	17.3	31.2 ± 31.2	...
TYC6774-0723-1[‡]	15:19:34.60	-28:46:22.00	...	40	...	-3.35	...	63.9 ± 63.9	...
TYC8298-1675-1[‡]	15:19:37.00	-47:59:34.00	...	270	...	-3.00	...	31.5 ± 31.5	...
GSC7835-2338[‡]	15:20:12.50	-38:21:58.00	...	410	...	-3.20	...	29.6 ± 29.6	...
TYC7835-2210-1[‡]	15:20:13.20	-38:21:59.00	-1.00	500	...	-2.86	...	28.2 ± 28.2	...
TYC7313-0615-1[‡]	15:20:24.10	-30:37:32.00	-1.00	570	...	-3.27	...	21.4 ± 21.4	...
HIP75100	15:20:46.97	-40:53:52.30	1.55	57	-4.59	-4.52	34.0	75.8 ± 53.0	...
HIP75206	15:22:08.39	-47:55:38.90	1.39	37	-4.80	-5.38	8.0	496.4 ± 221.8	...
TYC9509-1351-1	15:22:14.50	-83:03:22.20	0.71	21	-4.43	-4.15	7.0	322.7 ± 146.3	...
TYC7839-1800-1[‡]	15:23:59.70	-39:29:15.00	...	60	...	-2.79	...	74.7 ± 74.7	...
HIP75379[†]	15:24:12.00	-10:19:18.84	1.30	65	...	-6.18	...	117.7 ± 103.9	...
TYC7325-0465-1[†]	15:24:32.35	-36:52:02.75	0.16	340	...	-3.41	16.0	32.7 ± 32.7	UCL
TYC7325-0212-1[‡]	15:25:03.60	-36:04:45.00	...	367	...	-3.16	23.2	29.1 ± 29.1	...
HIP75483[†]	15:25:11.76	-46:59:12.84	0.55	207	...	-3.49	8.0	57.7 ± 57.7	...
TYC7835-2569-1[‡]	15:25:17.00	-38:45:26.00	...	150	...	-3.53	17.0	96.2 ± 74.6	...
TYC8295-1530-1[‡]	15:25:59.60	-45:01:16.00	...	308	...	-3.52	26.4	34.4 ± 34.4	UCL
HIP75636[‡]	15:27:10.50	-41:38:33.00	...	60	...	-3.11	...	55.1 ± 55.1	...
HIP75769	15:28:44.02	-31:17:38.40	0.62	20	-4.36	-3.50	18.0	41.0 ± 37.5	...
HIP75802	15:29:08.70	-39:17:26.70	1.05	105	-4.56	-4.18	10.0	76.5 ± 74.2	...
HIP75836	15:29:26.91	-28:50:51.80	0.65	43	-4.52	-3.66	11.0	37.9 ± 35.2	...
TYC7326-0928-1[‡]	15:29:38.60	-35:46:51.00	-0.30	386	...	-3.42	19.4	31.3 ± 31.3	UCL
TYC7326-0638-1[‡]	15:29:47.30	-36:28:37.00	-1.40	454	...	-3.26	14.5	29.9 ± 29.9	...
HIP75924A[‡]	15:30:26.20	-32:18:13.00	...	260	...	-3.03	45.0	16.4 ± 16.4	UCL
HIP75924B[‡]	15:30:26.30	-32:18:12.00	...	270	...	-3.00	...	15.1 ± 15.1	UCL
HIP75962[†]	15:30:50.16	-07:45:36.14	0.69	143	...	-4.15	1.0	190.7 ± 113.4	...
J153100.05-18480[†]	15:31:00.05	-18:48:00.40	-0.19	50	...	-3.39	...	52.0 ± 52.0	...
TYC7840-1065-1	15:31:05.65	-40:34:34.90	0.46	118	-4.28	-3.19	10.0	70.8 ± 62.5	...
TYC7318-0593-1[‡]	15:31:21.90	-33:29:39.00	...	320	...	-3.28	...	30.5 ± 30.5	...
TYC7326-0687-1[‡]	15:31:34.10	-36:02:29.00	...	420	...	-3.21	...	33.6 ± 33.6	...
HIP76028[†]	15:31:42.72	-20:09:51.48	1.08	107	...	-4.37	3.0	118.3 ± 103.5	...
HIP76107[†]	15:32:36.72	-52:21:19.44	0.65	15	...	...	...	76.7 ± 76.7	...
TYC9034-0968-1[‡]	15:33:27.50	-66:51:25.00	...	295	...	-3.48	5.9	40.0 ± 40.0	...
TYC7836-1509-1[‡]	15:34:07.40	-39:16:17.00	-0.10	241	...	-3.23	43.0	41.7 ± 41.7	...
TYC5028-1055-1	15:34:19.70	-05:41:25.00	1.64	100	...	-4.61	...	181.0 ± 139.2	...
TYC7840-1008-1[‡]	15:34:38.20	-40:02:28.00	-0.80	450	...	-3.22	...	32.1 ± 32.1	...
TYC7836-1585-1[‡]	15:35:00.40	-39:15:14.00	-0.10	50	...	-3.05	...	65.3 ± 65.3	...
HIP76304	15:35:13.63	-28:28:27.10	1.22	64	-5.09	-4.31	8.0	92.0 ± 50.8	...
TYC7844-2273-1[‡]	15:35:15.30	-41:56:59.00	...	130	...	-3.18	...	69.4 ± 60.9	...
HIP76472[‡]	15:37:04.70	-40:09:22.00	-0.10	290	...	-3.31	...	23.8 ± 23.8	UCL

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC7840-1265-1†	15:37:22.70	-40:17:59.68	-6.70	266	...	...	...	50.3 ± 50.3	...
TYC7327-0689-1‡	15:37:51.30	-30:45:16.00	-0.40	410	...	-3.15	...	33.4 ± 33.4	...
TYC7848-1659-1‡	15:38:43.10	-44:11:47.00	...	351	...	-3.30	21.0	30.3 ± 30.3	...
J15385680-57421B†	15:38:56.80	-57:42:19.20	-4.44	390	...	-3.27	...	30.5 ± 30.5	β Pic
HIP76629†	15:38:57.60	-57:42:26.28	0.43	294	...	-3.27	11.0	31.7 ± 31.7	β Pic
J15390000-57420†	15:39:00.00	-57:42:01.70	0.77	30	...	-3.27	...	55.4 ± 55.4	...
HIP76650†	15:39:07.68	-42:38:13.56	0.77	25	...	...	10.0	449.6 ± 331.3	...
HIP76673‡	15:39:24.40	-27:10:22.00	...	280	...	-3.14	...	43.2 ± 29.2	UCL
KWS97TTS57†	15:39:46.37	-34:51:02.77	-0.20	386	...	-3.04	...	36.8 ± 36.8	UCL
HIP76768†	15:40:28.32	-18:41:44.88	-0.50	128	...	-3.17	8.0	50.5 ± 28.9	AB Dor
TYC6785-0476-1‡	15:41:06.80	-26:56:26.00	...	360	...	-3.36	...	30.4 ± 30.4	US
TYC8696-1949-1‡	15:41:31.10	-53:30:30.00	-0.40	420	...	-3.33	27.7	34.2 ± 34.2	...
TYC6781-0415-1‡	15:41:31.20	-25:20:36.00	-2.20	410	...	-3.05	...	31.7 ± 31.7	...
HIP76910	15:42:15.90	+09:39:03.20	1.75	64	-4.81	-5.33	3.0	110.1 ± 105.2	...
HIP76990	15:43:11.99	-44:43:11.10	0.58	6	-4.41	-4.53	9.0	440.9 ± 188.5	...
TYC7335-0805-1	15:43:15.60	-35:14:35.00	1.62	36	...	-4.69	...	136.4 ± 134.0	...
TYC7331-0782-1‡	15:44:03.80	-33:11:11.00	-0.70	370	...	-3.35	...	29.3 ± 29.3	UCL
TYC0355-0991-1	15:44:30.80	+03:22:35.00	2.92	34	...	-5.33	...	179.5 ± 138.4	...
TYC7837-0494-1‡	15:44:47.10	-38:11:41.00	-0.70	490	...	-2.98	...	24.9 ± 24.9	...
HIP77135A‡	15:44:57.70	-34:11:54.00	...	240	...	-3.36	...	36.4 ± 36.4	UCL
HIP77135B‡	15:44:57.80	-34:11:51.00	-0.20	400	...	-3.10	...	13.4 ± 13.4	UCL
HIP77152†	15:45:07.44	+28:28:11.28	1.70	74	...	-4.77	...	408.8 ± 190.7	...
TYC8696-1232-1‡	15:45:17.90	-53:18:10.00	-1.50	40	...	-3.12	30.0	73.2 ± 58.3	...
HIP77190‡	15:45:42.70	-46:32:33.00	...	190	...	-3.26	25.2	44.6 ± 44.6	...
HIP77199	15:45:47.64	-30:20:54.90	-0.98	461	-3.98	-2.92	14.0	39.9 ± 27.4	Tuc Hor
TYC7845-1174-1‡	15:45:52.20	-42:22:16.00	-0.30	380	...	-2.84	...	27.8 ± 27.8	UCL
TYC6786-0811-1‡	15:46:10.70	-28:04:23.00	...	180	...	-4.12	...	66.1 ± 62.7	...
TYC6786-0811-1	15:46:10.77	-28:04:23.10	0.36	62	-4.15	-4.12	11.0	136.7 ± 96.1	...
TYC7340-0723-1‡	15:46:41.20	-36:18:47.00	-1.60	376	...	-3.41	7.1	30.6 ± 30.6	...
TYC8317-0551-1‡	15:46:51.80	-49:19:05.00	...	280	...	-3.23	...	32.5 ± 32.5	UCL
HIP77310	15:47:00.09	-62:47:48.40	1.19	46	-4.92	-4.54	9.0	374.9 ± 188.5	...
TYC0938-0150-1	15:47:02.36	+12:20:48.80	1.20	68	...	-4.44	8.0	310.2 ± 175.7	...
TYC6782-0900-1†	15:47:07.47	-25:19:46.82	-0.44	450	...	-3.04	22.0	40.6 ± 29.0	UCL
TYC7841-1001-1‡	15:47:41.80	-40:18:27.00	-0.80	376	...	-3.46	12.4	31.5 ± 31.5	...
TYC6790-1227-1‡	15:48:02.90	-29:08:37.00	...	340	...	-3.31	...	30.7 ± 30.7	...
HIP77407‡	15:48:09.30	-23:22:24.00	...	170	...	-3.42	...	24.1 ± 24.1	...
TYC7849-3155-1‡	15:48:42.00	-43:35:21.00	...	360	...	-2.94	...	28.9 ± 28.9	...
TYC7328-1706-1†	15:49:02.71	-31:02:53.77	-0.10	350	...	-3.29	70.0	30.1 ± 30.1	UCL
HD142353†	15:49:14.58	+68:59:48.06	1.21	10	...	-4.87	...	497.9 ± 194.1	...
TYC6782-0878-1‡	15:49:21.00	-26:00:06.00	-0.10	400	...	-3.14	...	35.2 ± 35.2	US
HIP77524‡	15:49:45.00	-39:25:09.00	...	410	...	-3.34	...	16.0 ± 16.0	...
TYC5022-0067-1	15:50:07.42	-02:22:10.90	...	138	-4.31	-3.10	15.0	73.8 ± 62.6	...
HIP77584†	15:50:26.16	+01:49:08.80	1.01	120	...	-4.53	1.0	186.7 ± 120.1	...
TYC8709-2818-1‡	15:50:46.50	-59:58:50.00	...	250	...	-3.08	47.0	45.0 ± 45.0	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP77656‡	15:51:13.70	-42:18:51.00	...	275	...	-3.57	13.3	18.4 ± 18.4	UCL
HIP77655†	15:51:13.92	+35:39:29.52	0.64	122	...	...	3.0	162.6 ± 122.5	...
HIP77723	15:52:03.82	+20:14:53.50	1.22	62	...	-4.25	8.0	117.1 ± 51.7	...
TYC7838-0556-1‡	15:52:04.50	-37:47:44.00	...	50	...	-4.19	...	107.9 ± 77.8	...
HIP77736‡	15:52:15.30	-26:19:05.00	...	150	...	-3.66	...	53.9 ± 53.9	...
TYC5023-0018-1	15:52:34.40	-01:53:58.00	1.49	79	...	-4.99	...	446.6 ± 188.1	...
TYC7846-1538-1	15:53:27.32	-42:16:00.20	0.66	203	-4.20	-3.45	27.0	33.6 ± 33.6	UCL
TYC8705-2083-1‡	15:53:48.30	-57:38:11.00	-0.20	30	...	-3.12	18.8	83.4 ± 69.8	...
HIP77917	15:54:44.38	+09:15:00.40	1.27	62	-4.69	-5.06	9.0	307.3 ± 172.1	...
TYC6779-1372-1‡	15:54:59.90	-23:47:18.00	...	250	...	-3.31	56.0	33.9 ± 33.9	US
TYC6783-2045-1‡	15:55:48.80	-25:12:24.00	...	230	...	-3.49	...	41.9 ± 41.9	US
HIP78024†	15:55:54.72	-02:09:51.34	1.25	75	...	-5.66	1.0	135.9 ± 114.6	...
HIP78067	15:56:22.79	+20:25:07.40	1.56	35	-4.56	-4.56	29.0	126.2 ± 41.6	...
TYC8697-1438-1‡	15:56:43.70	-53:24:42.00	-0.70	130	...	-2.46	...	55.2 ± 55.2	...
TYC7846-0833-1‡	15:56:44.00	-42:42:30.00	-2.30	530	...	-3.08	...	17.8 ± 17.8	UCL
TYC7842-0250-1‡	15:56:59.10	-39:33:43.00	...	240	...	-3.32	...	40.4 ± 40.4	UCL
HIP78133‡	15:57:14.70	-41:30:20.00	...	200	...	-3.43	...	37.8 ± 37.8	UCL
HIP78136†	15:57:17.76	-29:59:45.60	1.26	60	...	-4.63	27.0	169.3 ± 150.5	...
TYC6779-0780-1‡	15:58:12.70	-23:28:37.00	...	280	...	-3.36	...	33.8 ± 33.8	US
HIP78345†	15:59:49.44	-36:28:27.48	-0.33	423	...	-3.20	14.0	43.2 ± 28.4	UCL
HIP78345‡	15:59:49.50	-36:28:28.00	-0.50	476	...	-3.21	16.0	45.0 ± 29.9	UCL
TYC9031-4159-1‡	15:59:58.00	-64:33:59.00	...	110	...	-4.07	19.2	171.9 ± 111.3	...
FS20030805†	16:00:49.45	+46:47:06.90	0.20	52	...	-3.29	...	64.0 ± 64.0	...
TYC7333-1260-1‡	16:01:07.90	-32:54:53.00	...	200	...	-3.32	55.0	38.4 ± 38.4	UCL
TYC7333-0719-1‡	16:01:09.00	-33:20:14.00	-0.80	352	...	-3.15	18.8	29.4 ± 29.4	UCL
TYC8314-0797-1‡	16:01:10.70	-48:04:44.00	-0.50	430	...	-3.33	14.0	34.0 ± 34.0	...
HIP78483‡	16:01:18.40	-26:52:21.00	...	200	...	-3.57	78.0	28.0 ± 28.0	US
HIP78505	16:01:37.03	-78:42:42.40	1.38	87	-4.45	-4.70	13.0	398.5 ± 180.0	...
TYC6208-1543-1‡	16:01:58.20	-20:08:12.00	...	280	...	-3.15	50.0	43.9 ± 43.9	US
TYC8722-3145-1‡	16:02:17.00	-59:44:32.00	...	70	...	-3.11	70.0	68.6 ± 63.8	...
EXLup†	16:03:05.46	-40:18:25.80	-60.50	307	...	-3.18	...	41.3 ± 26.3	UCL
TYC6780-0056-1‡	16:03:35.50	-22:45:56.00	...	430	...	-2.78	34.0	29.5 ± 29.5	US
HIP78684‡	16:03:45.40	-43:55:49.00	...	390	...	-3.02	61.0	15.5 ± 15.5	UCL
TYC7855-1106-1‡	16:03:52.50	-39:39:01.00	...	350	...	-3.14	6.3	36.9 ± 36.9	UCL
TYC7334-0429-1‡	16:04:30.60	-32:07:29.00	-0.20	354	...	-3.52	28.0	32.7 ± 32.7	...
TYC6208-1239-1‡	16:04:47.80	-19:30:23.00	-0.20	400	...	-3.40	...	31.7 ± 31.7	US
TYC7851-0305-1	16:04:55.40	-38:57:16.00	1.85	130	...	-3.99	...	55.8 ± 55.8	...
HIP78833	16:05:35.07	+15:15:27.00	1.02	93	-4.45	-5.09	12.0	346.4 ± 170.5	...
TYC7851-0001-1‡	16:05:45.00	-39:06:07.00	-0.30	350	...	-3.12	51.0	29.1 ± 29.1	UCL
TYC6784-1219-1‡	16:05:50.60	-25:33:14.00	...	350	...	-3.12	10.1	28.5 ± 28.5	US
TYC7338-0986-1‡	16:05:52.10	-34:39:33.00	-0.30	400	...	-2.87	14.0	32.6 ± 32.6	...
TYC0945-0806-1	16:06:10.33	+08:35:44.40	1.50	110	-4.50	-4.30	17.0	94.3 ± 83.2	...
FS20030811†	16:07:13.97	+34:01:35.94	-1.60	24	...	-3.14	...	73.8 ± 61.2	...
HIP78977‡	16:07:17.80	-22:03:37.00	...	160	...	-3.85	82.0	37.3 ± 34.4	US

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP79083‡	16:08:35.10	-20:45:30.00	...	80	...	-3.92	42.0	21.9 ± 21.9	...
TYC6784-0039-1‡	16:08:43.40	-26:02:17.00	...	360	...	-3.23	40.0	29.5 ± 29.5	US
TYC6784-0039-1†	16:08:43.41	-26:02:16.77	0.53	160	...	-3.27	...	72.8 ± 62.0	US
HIP79165	16:09:26.68	+11:34:27.20	1.64	60	-4.54	-4.66	8.0	443.0 ± 200.0	...
HIP79203†	16:09:55.20	-18:20:25.80	1.45	66	...	...	...	71.4 ± 71.4	...
TYC8319-1323-1‡	16:10:03.20	-50:26:12.00	...	200	...	-3.64	94.0	84.1 ± 71.8	...
TYC7856-0051-1‡	16:10:04.80	-40:16:12.00	-0.30	420	...	-3.41	57.7	34.9 ± 34.9	...
TYC6784-0997-1‡	16:10:19.20	-25:02:30.00	...	480	...	-3.29	7.7	18.2 ± 18.2	US
HIP79252‡	16:10:28.90	-22:13:48.00	...	240	...	-3.20	47.0	18.6 ± 18.6	US
TYC6209-1316-1‡	16:12:40.50	-18:59:28.00	-0.20	480	...	-3.10	75.0	24.5 ± 24.5	US
TYC8722-1018-1‡	16:12:50.40	-58:24:40.00	...	150	...	-3.15	20.8	65.6 ± 61.0	...
TYC6213-0306-1‡	16:13:18.60	-22:12:49.00	...	410	...	-3.42	6.6	31.4 ± 31.4	...
TYC7355-0317-1‡	16:13:58.00	-36:18:13.00	...	330	...	-2.99	17.6	28.5 ± 28.5	UCL
TYC6793-0819-1‡	16:14:11.10	-23:05:36.00	...	430	...	-3.38	27.5	33.9 ± 33.9	US
TYC6209-0769-1‡	16:14:13.80	-19:39:36.00	...	140	...	...	...	169.5 ± 122.7	...
TYC7347-0850-1‡	16:14:19.10	-33:26:04.00	...	180	...	-3.52	34.4	70.1 ± 64.4	...
HIP79595	16:14:22.12	+02:38:49.87	1.52	125	-4.68	-4.83	38.0	106.2 ± 97.3	...
TYC2583-1846-1	16:14:41.04	+33:51:31.70	1.26	59	...	-3.34	...	49.9 ± 49.9	...
TYC9442-1129-1‡	16:14:46.00	-76:01:50.00	...	105	...	-3.15	36.0	73.1 ± 62.7	...
TYC8319-1687-1‡	16:14:52.00	-50:26:18.00	...	350	...	-3.18	23.6	28.8 ± 28.8	UCL
TYC6801-0186-1†	16:14:59.18	-27:50:22.89	0.16	354	...	-3.34	16.0	29.5 ± 29.5	US
TYC3068-1298-1	16:15:42.55	+44:33:09.40	1.14	52	...	-3.24	...	72.3 ± 68.2	...
TYC6793-1406-1‡	16:16:17.90	-23:39:48.00	...	340	...	-3.43	33.8	32.5 ± 32.5	US
HIP79730	16:16:19.67	-01:38:53.50	1.33	57	-4.74	-5.29	11.0	245.1 ± 162.3	...
TYC6793-0501-1‡	16:17:31.40	-23:03:36.00	...	260	...	-3.07	36.5	30.8 ± 30.8	US
TYC6214-2006-1‡	16:18:04.80	-22:24:39.00	...	70	...	-3.49	26.1	102.2 ± 80.7	...
TYC6805-0669-1‡	16:18:11.10	-29:11:13.00	...	300	...	-3.11	60.0	30.6 ± 30.6	...
TYC0380-1301-1	16:18:16.51	+07:19:57.50	0.45	86	-4.35	-3.48	12.0	71.6 ± 63.1	...
HIP79908‡	16:18:38.60	-38:39:12.00	...	160	...	-3.74	...	41.5 ± 41.5	UCL
TYC6793-1151-1†	16:18:51.10	-23:50:30.88	0.39	133	...	-3.61	10.0	139.6 ± 95.7	...
HIP79958‡	16:19:15.90	-55:30:17.00	-0.10	110	...	-3.24	16.8	85.0 ± 67.0	...
TYC6214-2384-1‡	16:19:34.00	-22:28:29.00	...	400	...	-3.31	12.5	32.0 ± 32.0	US
HIP79983‡	16:19:34.40	-36:24:11.00	...	180	...	-3.89	...	55.9 ± 55.5	...
TYC7351-1585-1‡	16:19:50.60	-33:54:45.00	...	240	...	-3.49	30.6	31.7 ± 31.7	...
HIP80065‡	16:20:32.50	-45:48:35.00	...	75	...	-4.39	3.5	305.2 ± 191.1	...
TYC6794-0504-1‡	16:20:57.90	-23:52:34.00	...	320	...	-3.31	31.7	32.5 ± 32.5	...
TYC7857-0648-1‡	16:21:12.20	-40:30:21.00	...	320	...	-3.31	22.0	31.7 ± 31.7	UCL
HIP80290‡	16:23:22.90	-26:22:16.00	...	200	...	-3.23	37.0	39.3 ± 39.3	...
TYC7857-0514-1‡	16:23:29.60	-39:58:01.00	...	241	...	-3.30	33.0	30.8 ± 30.8	UCL
TYC8312-0298-1‡	16:23:35.60	-46:31:46.00	-1.00	70	...	-4.04	35.2	87.5 ± 65.9	...
TYC6806-0888-1‡	16:23:47.00	-28:50:02.00	...	310	...	-3.19	42.0	30.0 ± 30.0	...
HIP80320‡	16:23:53.90	-29:46:40.00	...	250	...	-3.66	32.5	28.8 ± 28.8	...
HIP80337‡	16:24:01.30	-39:11:35.00	...	26	...	-4.67	3.0	498.3 ± 199.6	...
TYC8316-0679-1‡	16:24:32.30	-46:57:57.00	...	300	...	-3.29	76.0	32.1 ± 32.1	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC6794-0156-1‡	16:24:51.40	-22:39:33.00	-0.20	320	...	-3.29	29.4	32.1 ± 32.1	...
HIP80448‡	16:25:17.60	-49:08:52.00	...	120	...	-3.60	21.0	34.6 ± 34.0	...
HIP80448†	16:25:17.76	-49:08:51.36	0.83	126	...	...	17.0	141.2 ± 123.4	...
TYC6798-0544-1†	16:25:19.25	-24:26:52.74	1.11	400	...	-3.50	22.0	33.1 ± 33.1	...
HIP80491	16:25:49.24	-27:49:08.90	0.39	8	-4.43	-4.35	7.0	128.4 ± 37.8	...
TYC0959-0989-1	16:26:48.87	+08:23:26.00	1.05	111	-4.44	-4.51	10.0	196.5 ± 131.3	...
PPMX162657.0-303223B†	16:26:57.00	-30:32:23.33	-0.50	440	...	-2.80	...	27.9 ± 27.9	...
PPMX162657.6-303227†	16:26:57.63	-30:32:27.96	-0.53	455	...	-2.87	14.0	27.7 ± 27.7	...
TYC8312-2664-1‡	16:27:27.90	-45:42:40.00	-0.10	300	...	-3.21	34.0	33.6 ± 33.6	...
TYC5626-0979-1	16:27:28.96	-08:34:19.20	0.84	183	-4.31	-4.53	10.0	192.6 ± 111.4	...
TYC7853-0227-1‡	16:27:30.50	-37:49:22.00	...	350	...	-3.26	35.1	29.7 ± 29.7	UCL
TYC6794-0337-1‡	16:27:39.50	-22:45:23.00	-0.10	450	...	-3.34	10.2	22.7 ± 22.7	US
HIP80636‡	16:27:52.30	-35:46:60.00	...	270	...	-3.27	72.0	30.5 ± 30.5	...
HIP80686	16:28:27.81	-70:05:04.80	1.21	117	-5.49	-4.64	7.0	85.2 ± 85.2	...
HIP80719†	16:28:48.96	-08:07:43.21	2.14	57	...	-5.54	43.0	119.2 ± 111.9	...
HIP80758†	16:29:20.16	-30:57:39.24	0.20	235	...	-3.48	6.0	40.5 ± 40.5	...
TYC8724-1284-1‡	16:29:24.70	-59:51:46.00	-0.20	50	...	-2.92	7.9	59.2 ± 59.2	...
TYC6215-0184-1‡	16:29:48.70	-21:52:12.00	-0.50	430	...	-3.35	87.0	23.6 ± 23.6	US
TYC6803-0897-1‡	16:29:49.90	-27:28:50.00	...	420	...	-3.22	19.7	30.9 ± 30.9	...
TYC6807-0919-1‡	16:30:38.00	-29:54:22.00	...	420	...	-2.89	29.5	27.9 ± 27.9	...
TYC7854-0346-1‡	16:31:37.60	-38:04:35.00	...	90	...	-3.25	77.0	59.1 ± 59.1	...
TYC7353-2640-1‡	16:31:42.00	-35:05:17.00	...	310	...	-3.26	28.8	31.2 ± 31.2	UCL
TYC6807-0694-1‡	16:32:03.50	-28:30:18.00	...	250	...	-3.50	140.0	45.9 ± 45.9	...
TYC7353-2991-1‡	16:32:24.70	-35:12:46.00	-0.50	450	...	-3.01	26.7	32.9 ± 32.9	...
HIP81010†	16:32:38.16	-15:59:13.92	1.17	76	...	-4.42	10.0	114.2 ± 110.4	...
HIP81023	16:32:51.83	+03:14:47.30	0.78	12	...	-3.89	9.0	76.3 ± 45.0	...
HIP81068†	16:33:30.24	+17:49:43.68	1.28	40	...	...	20.0	121.0 ± 121.0	...
TYC6799-0451-1‡	16:33:41.90	-25:23:34.00	-4.60	580	...	-3.51	37.0	16.0 ± 16.0	...
TYC8337-2282-1‡	16:33:50.40	-51:19:01.00	...	350	...	-3.38	6.0	31.8 ± 31.8	...
TYC6799-0361-1‡	16:34:53.10	-25:18:17.00	...	297	...	-3.13	45.0	30.8 ± 30.8	...
TYC7349-2447-1‡	16:35:22.40	-33:28:53.00	-0.90	460	...	-2.95	12.9	26.9 ± 26.9	UCL
TYC7353-0768-1‡	16:37:43.40	-33:56:53.00	...	270	...	-3.17	21.1	29.0 ± 29.0	...
HIP81425	16:37:48.03	+13:41:13.90	1.75	31	-4.73	-5.16	27.0	220.7 ± 153.8	...
HIP81488‡	16:38:38.50	-39:33:04.00	...	150	...	-3.94	...	50.8 ± 42.5	...
TYC7854-1572-1‡	16:38:48.80	-38:33:52.00	...	320	...	-3.14	28.1	32.6 ± 32.6	...
TYC6804-1870-1‡	16:38:49.50	-27:35:29.00	...	320	...	-3.23	7.6	33.0 ± 33.0	...
HIP81540	16:39:14.47	+15:03:38.00	1.16	83	-4.57	-4.76	11.0	383.2 ± 185.0	...
TYC7358-0013-1‡	16:39:37.10	-35:40:41.00	...	440	...	-3.19	29.0	32.6 ± 32.6	...
HIP81594‡	16:39:47.60	-52:00:00.00	...	20	...	-4.17	3.4	317.5 ± 207.5	...
TYC7858-0830-1‡	16:39:59.30	-39:24:59.00	...	290	...	-3.44	27.4	33.1 ± 33.1	UCL
HIP81662	16:40:56.49	+21:56:53.30	1.25	84	-4.87	-5.21	8.0	365.6 ± 184.0	...
HIP81716	16:41:29.18	+01:18:48.60	0.93	19	-4.51	-4.16	8.0	374.7 ± 183.4	...
HIP81726†	16:41:34.80	+30:52:32.52	2.20	30	...	-4.60	...	367.5 ± 209.5	...
HIP81753	16:41:53.49	-63:24:09.60	0.51	33	-4.29	-3.34	17.0	31.9 ± 31.9	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R′$_{HK}$ (dex)	L_x	$v$sin$i$ (km s^{-1})	Age (Myr)	Note
TYC7346-1182-1‡	16:42:07.70	-30:38:38.00	...	270	...	-3.17	27.6	32.4 ± 32.4	...
TYC7871-1282-1‡	16:42:24.00	-40:03:30.00	...	310	...	-3.69	134.0	33.8 ± 33.8	UCL
TYC8334-1076-1‡	16:42:38.10	-50:33:42.00	...	30	...	-3.22	47.0	78.5 ± 69.4	...
TYC7346-0610-1‡	16:43:25.20	-30:22:48.00	...	350	...	-3.11	24.1	29.4 ± 29.4	...
TYC7346-0910-1‡	16:43:30.30	-31:33:27.00	...	10	...	-3.38	23.8	65.8 ± 65.8	...
TYC6796-1666-1‡	16:43:52.00	-23:30:53.00	-0.10	20	...	-3.05	15.6	73.0 ± 69.5	...
TYC6800-0663-1‡	16:43:56.90	-25:08:37.00	-4.00	600	...	-3.00	6.3	24.7 ± 24.7	...
TYC6813-0143-1‡	16:45:26.10	-25:03:17.00	-7.20	500	...	-3.55	...	19.4 ± 19.4	...
TYC7867-0816-1‡	16:46:40.30	-38:08:51.00	...	275	...	-3.26	16.1	30.2 ± 30.2	...
UCAC226246540‡	16:47:13.60	-15:14:27.00	-1.70	600	...	-3.15	...	19.5 ± 19.5	...
HIP82273†	16:48:39.84	-69:01:39.36	1.47	150	...	-6.87	...	121.8 ± 101.4	...
HIP82303†	16:48:59.76	-08:55:47.71	1.23	50	...	-4.30	21.0	89.9 ± 89.9	...
TYC9522-3697-1‡	16:49:00.30	-82:53:08.00	...	100	...	-3.41	17.1	104.1 ± 83.8	...
TYC7879-0980-1‡	16:49:13.30	-43:55:28.00	...	290	...	-3.54	31.4	33.9 ± 33.9	...
TYC6817-1757-1‡	16:49:36.00	-27:28:08.00	-0.20	230	...	-3.10	13.0	50.0 ± 50.0	...
HIP82369	16:49:49.98	-10:46:58.10	1.55	11	-4.78	-5.48	13.0	307.6 ± 183.2	...
HIP82388	16:50:05.20	-12:23:13.90	1.06	128	-4.45	-4.34	12.0	118.3 ± 37.8	...
HIP82447‡	16:50:57.50	-36:45:19.00	...	40	...	-3.24	16.0	27.9 ± 27.9	...
TYC0388-2348-1	16:51:29.15	+02:55:34.70	0.50	144	-4.22	-3.42	14.0	103.5 ± 77.3	...
PPMX165210.8-335933†	16:52:10.86	-33:59:33.46	-1.04	350	...	...	64.0	22.4 ± 22.4	UCL
TYC7363-1059-1‡	16:52:54.70	-32:38:48.00	...	423	...	-3.45	7.6	35.1 ± 35.1	...
HIP82583‡	16:52:56.00	-26:45:02.00	...	50	...	-3.58	32.0	63.0 ± 49.4	...
HIP82587†	16:52:58.08	+31:42:06.12	2.43	30	...	-5.60	57.0	138.0 ± 125.0	...
TYC5051-1354-1	16:52:59.19	+00:01:22.40	1.01	28	-4.52	-4.45	10.0	497.8 ± 175.7	...
TYC4426-1093-1†	16:53:36.09	+73:44:22.98	1.10	93	...	-4.17	...	126.8 ± 107.2	...
HIP82688	16:54:08.16	-04:20:23.70	1.13	140	-4.46	-4.25	14.0	91.9 ± 74.2	AB Dor
HIP82688†	16:54:08.16	-04:20:23.68	1.10	116	...	-4.24	...	113.8 ± 88.6	AB Dor
HIP82709†	16:54:22.08	-38:05:53.52	1.00	120	...	-4.84	10.0	228.5 ± 117.0	...
TYC6814-0928-1‡	16:54:51.40	-24:55:34.00	-0.10	172	...	-3.17	13.2	73.1 ± 63.3	...
UCAC218709446‡	16:55:50.50	-31:14:45.00	...	190	...	-3.10	18.0	65.1 ± 62.8	...
HIP82907‡	16:56:32.90	-63:53:02.00	...	90	...	-4.08	1.2	185.0 ± 115.2	...
HIP83000†	16:57:40.32	+09:22:30.22	1.02	27	...	...	4.0	265.7 ± 240.5	...
TYC0397-2199-1	16:58:03.46	+05:47:05.20	0.15	37	-4.44	-3.63	6.0	124.6 ± 110.0	...
TYC8335-0262-1‡	16:58:10.20	-48:53:46.00	-0.70	30	...	-2.96	10.7	69.5 ± 59.6	...
TYC8726-0057-1‡	16:59:55.30	-52:46:20.00	...	250	...	-3.25	20.0	32.0 ± 32.0	...
HIP83181	17:00:01.60	-07:31:53.80	1.92	108	...	-5.42	...	218.8 ± 144.4	...
TYC7360-0394-1‡	17:00:16.60	-30:03:32.00	...	30	...	-3.17	33.4	84.2 ± 70.0	...
HIP83214‡	17:00:25.40	-37:56:14.00	...	60	...	-4.50	3.0	269.8 ± 133.4	...
HIP83232‡	17:00:35.00	-27:38:04.00	-95.00	420	...	-3.40	15.0	25.4 ± 25.4	...
TYC6818-1336-1‡	17:00:43.00	-27:25:18.00	...	150	...	-3.56	71.0	35.4 ± 35.4	...
TYC6814-1152-1‡	17:00:49.90	-25:47:07.00	...	200	...	-3.56	26.1	31.6 ± 31.6	...
HIP83274	17:01:09.63	+27:11:48.00	2.05	127	...	-5.42	...	81.0 ± 80.1	...
TYC7364-0911-1†	17:02:27.80	-32:04:36.29	0.67	226	...	-3.45	12.0	33.1 ± 33.1	...
TYC9451-1066-1‡	17:03:24.00	-79:37:14.00	...	40	...	-2.76	...	58.9 ± 53.6	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP83465‡	17:03:33.20	-32:36:51.00	...	170	...	-3.60	19.1	27.2 ± 27.2	...
TYC8332-2024-1‡	17:04:23.50	-48:15:09.00	-0.30	480	...	-3.12	15.6	27.4 ± 27.4	...
HIP83546†	17:04:30.48	+52:09:41.76	1.20	107	...	-4.13	...	99.2 ± 82.7	...
TYC6815-0874-1‡	17:04:33.30	-25:34:20.00	...	270	...	...	90.0	29.1 ± 29.1	...
TYC5064-1063-1	17:05:08.46	-01:47:09.60	0.06	77	-4.49	-3.40	13.0	103.0 ± 75.7	...
FS20030872†	17:05:16.49	+75:30:04.74	2.40	28	...	-4.25	...	75.5 ± 75.5	...
HIP83601†	17:05:16.80	+00:42:12.15	1.04	70	...	-4.95	5.0	351.5 ± 179.4	...
HIP83601†	17:05:16.80	+00:42:12.15	1.12	69	...	...	6.0	242.5 ± 242.5	...
TYC6815-0084-1‡	17:06:01.20	-25:20:30.00	...	310	...	-3.29	57.0	31.2 ± 31.2	...
HIP83676†	17:06:08.16	-06:10:01.52	0.84	16	...	...	5.0	432.7 ± 331.9	...
TYC5651-1005-1	17:06:20.79	-12:29:29.30	0.29	9	-4.59	-4.04	8.0	275.5 ± 164.7	...
HIP83744	17:06:56.79	+06:47:49.00	0.07	67	-4.30	-3.21	12.0	78.6 ± 64.8	...
HIP83744†	17:06:56.88	+06:47:49.06	0.38	185	...	-3.25	5.0	67.3 ± 63.4	...
HIP83747	17:06:57.52	+06:48:03.70	0.23	155	-4.36	-3.27	11.0	80.2 ± 64.5	...
UCAC220674962‡	17:07:12.20	-27:13:37.00	-26.00	540	...	...	...	9.9 ± 9.9	...
HIP83889	17:08:44.04	-02:06:30.90	0.99	93	-4.68	-4.61	15.0	229.4 ± 158.1	...
UCAC220676335‡	17:08:54.30	-27:12:33.00	-18.00	580	...	-3.09	...	25.6 ± 25.6	...
TYC6815-1239-1‡	17:09:11.90	-24:50:29.00	...	260	...	-4.19	11.6	66.6 ± 62.9	...
HIP83962	17:09:47.92	-10:31:22.90	1.63	71	-4.48	-5.38	9.0	152.3 ± 125.5	...
HIP83978‡	17:10:00.70	-18:00:56.00	...	200	...	-3.14	97.0	20.9 ± 20.9	...
TYC9530-0994-1†	17:10:42.44	-87:30:09.35	-0.20	70	...	-3.44	...	94.3 ± 76.1	...
TYC6233-0078-1‡	17:12:00.60	-15:47:10.00	...	510	...	-3.21	...	23.4 ± 23.4	...
TYC6812-0248-1‡	17:12:08.70	-23:09:49.00	...	360	...	-2.57	17.5	21.0 ± 21.0	...
HIP84229B‡	17:12:58.90	-58:35:47.00	...	130	...	-4.04	4.2	94.8 ± 79.2	...
TYC6816-0234-1†	17:13:32.83	-26:02:07.20	0.61	350	...	-3.17	34.0	29.5 ± 29.5	...
HIP84290‡	17:13:54.00	-38:17:42.00	...	30	...	-5.17	11.4	458.3 ± 210.4	...
TYC7878-0227-1‡	17:13:55.20	-41:42:57.00	...	160	...	-3.04	12.2	74.7 ± 64.0	...
TYC6820-0223-1†	17:15:03.62	-27:49:39.76	-2.28	580	...	-3.15	12.0	37.6 ± 25.2	...
HIP84397	17:15:17.24	-07:12:06.00	1.02	47	-4.49	-4.38	4.0	121.3 ± 50.8	...
HIP84397†	17:15:17.28	-07:12:06.01	1.12	97	...	-4.38	22.0	117.3 ± 105.5	...
TYC7374-0103-1‡	17:16:07.70	-37:28:27.00	-0.60	400	...	-3.21	9.9	32.4 ± 32.4	...
TYC6812-0348-1‡	17:16:18.10	-23:10:47.00	-0.30	455	...	-3.15	15.4	33.2 ± 33.2	...
TYC6820-0090-1‡	17:16:29.80	-26:55:16.00	...	180	...	...	66.0	117.7 ± 117.7	...
TYC7362-0724-1‡	17:16:58.00	-31:09:04.00	...	270	...	-3.17	36.7	30.6 ± 30.6	...
TYC6824-0651-1‡	17:17:21.40	-28:36:41.00	...	230	...	-3.45	21.2	36.9 ± 36.9	...
HIP84586†	17:17:25.44	-66:57:02.52	0.24	310	...	-3.23	33.0	21.9 ± 21.9	β Pic
HIP84632	17:18:04.95	+03:08:49.10	1.57	24	-4.66	-5.24	12.0	263.3 ± 168.3	...
HIP84642	17:18:14.70	-60:27:26.80	0.72	203	-4.33	-3.41	14.0	53.1 ± 53.1	Tuc Hor
TYC7878-0723-1‡	17:18:42.00	-41:46:24.00	-0.50	420	...	-2.92	7.5	29.7 ± 29.7	...
TYC9288-0744-1‡	17:18:47.60	-73:25:13.00	-1.70	130	...	-3.45	37.0	121.5 ± 87.6	...
HIP84755B‡	17:19:29.50	-54:21:43.00	...	125	...	-2.98	14.1	78.6 ± 66.9	...
TYC6825-0179-1	17:19:30.70	-22:59:19.00	2.12	72	...	-3.84	...	52.1 ± 52.1	...
J171942.09-46152†	17:19:42.09	-46:15:26.50	-15.00	640	...	-3.41	...	29.4 ± 29.4	...
FS20030888†	17:20:00.23	+35:41:13.32	1.60	61	...	-3.58	...	37.1 ± 37.1	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP84827‡	17:20:12.70	-70:02:43.00	...	40	...	-4.10	8.0	79.0 ± 47.9	...
HIP85000	17:22:25.01	+15:08:12.60	1.70	20	-4.53	-4.30	25.0	116.9 ± 100.5	...
TYC2604-0556-1†	17:22:28.64	+36:58:42.14	-0.35	45	...	-3.15	...	75.4 ± 64.3	...
TYC7374-0241-1‡	17:22:29.00	-37:26:56.00	...	410	...	-3.10	30.2	31.1 ± 31.1	...
J172453.51-39144†	17:24:53.51	-39:14:43.80	0.09	292	...	-3.76	...	38.0 ± 38.0	...
J172453.51-39144†	17:24:53.51	-39:14:43.80	...	260	...	-3.76	24.0	39.1 ± 39.1	...
TYC6829-0426-1	17:25:19.30	-26:08:34.00	2.04	93	...	-4.40	...	119.5 ± 108.5	...
TYC6829-0509-1‡	17:25:33.70	-25:17:07.00	-0.20	400	...	-3.26	...	30.5 ± 30.5	...
TYC7883-2069-1†	17:25:34.28	-38:48:39.72	0.33	40	...	-3.37	...	96.7 ± 79.2	...
TYC7883-2069-1‡	17:25:34.30	-38:48:40.00	...	115	...	-3.37	...	97.3 ± 74.9	...
HIP85307	17:25:57.84	-01:39:06.80	0.77	49	-4.64	-5.33	13.0	226.5 ± 151.7	...
TYC7387-0798-1‡	17:26:41.70	-35:40:52.00	...	390	...	-3.33	18.7	30.7 ± 30.7	...
TYC6234-1287-1‡	17:26:56.50	-16:31:35.00	-0.60	480	...	-3.13	16.9	19.8 ± 19.8	...
HIP85414	17:27:13.88	+42:13:05.00	1.55	63	...	-5.07	...	499.3 ± 190.5	...
TYC7379-0480-1‡	17:27:25.50	-33:16:49.00	...	390	...	-3.38	29.8	30.3 ± 30.3	...
TYC7379-0279-1‡	17:28:55.60	-32:43:57.00	...	120	...	-3.98	3.9	175.3 ± 110.5	AB Dor
TYC8728-2262-1	17:29:55.08	-54:15:48.10	0.21	351	-4.11	-3.20	29.0	31.7 ± 31.7	β Pic
TYC7884-1448-1‡	17:30:06.70	-38:03:40.00	...	255	...	-2.84	52.7	33.6 ± 33.6	...
TYC6243-0170-1‡	17:32:23.90	-18:50:26.00	...	420	...	-3.25	...	31.1 ± 31.1	...
HIP85852	17:32:41.34	+74:13:38.20	0.21	28	...	-3.91	...	22.4 ± 22.4	...
TYC9288-0754-1‡	17:34:24.00	-73:26:55.00	...	50	...	-3.67	...	150.1 ± 100.5	...
TYC7380-0103-1‡	17:34:38.40	-33:28:14.00	-0.10	280	...	-3.00	140.0	36.2 ± 36.2	...
HIP86036	17:34:59.26	+61:52:32.70	1.64	97	...	-5.09	...	305.4 ± 163.7	...
TYC9061-3875-1‡	17:36:50.40	-64:29:07.00	...	70	...	-3.50	6.9	79.3 ± 73.1	...
TYC5084-0093-1	17:36:52.40	-03:20:36.00	1.66	72	...	...	...	455.6 ± 279.7	...
HIP86201	17:36:57.09	+68:45:26.00	2.25	46	...	-5.05	...	233.5 ± 159.2	...
TYC0426-1084-1	17:37:12.18	+07:21:42.80	1.25	83	-4.59	-4.36	23.0	99.5 ± 96.5	...
HIP86245†	17:37:26.88	+22:21:11.52	1.04	74	...	-4.55	...	316.6 ± 192.2	...
TYC5672-0216-1†	17:37:46.47	-13:14:46.67	-0.70	300	...	-2.57	143.0	29.6 ± 29.6	AB Dor
TYC7896-3885-1‡	17:38:06.10	-44:03:32.00	...	350	...	-3.33	44.0	30.9 ± 30.9	...
TYC6839-0513-1‡	17:38:26.20	-29:01:50.00	...	80	...	-3.20	...	72.2 ± 62.7	...
HIP86346†	17:38:39.60	+61:14:15.72	-1.09	40	...	-3.08	17.0	70.6 ± 55.5	AB Dor
TYC7896-3812-1‡	17:38:40.40	-44:17:43.00	...	30	...	-2.89	17.4	60.2 ± 60.2	...
TYC7888-3177-1‡	17:39:00.70	-39:47:12.00	...	60	...	-2.87	...	73.1 ± 69.1	...
TYC8351-1314-1	17:39:52.10	-50:34:28.20	1.45	80	...	-4.06	...	62.5 ± 62.5	...
HIP86455‡	17:39:55.60	-23:03:41.00	...	140	...	-4.44	16.4	108.9 ± 50.1	...
TYC0427-0709-1	17:40:57.38	+05:54:46.50	1.04	140	...	-4.87	...	211.7 ± 106.2	...
HIP86598†	17:41:48.96	-50:43:27.48	1.02	194	...	-3.64	37.0	33.1 ± 33.1	β Pic
TYC9526-0787-1‡	17:42:09.00	-86:08:05.00	...	70	...	-3.98	20.6	56.4 ± 56.4	Octans
HIP86672‡	17:42:30.40	-28:44:56.00	...	260	...	-3.66	15.5	33.6 ± 33.6	...
HIP86684†	17:42:40.56	-22:22:10.56	1.04	146	...	-4.28	11.0	92.0 ± 79.2	...
HIP86940	17:45:54.20	+08:54:18.40	0.54	40	-4.44	-4.83	14.0	400.7 ± 205.6	...
TYC0994-0790-1	17:45:55.20	+08:54:40.00	1.83	97	...	-4.83	...	187.0 ± 128.6	...
TYC0424-1952-1†	17:46:25.44	+03:58:48.88	0.48	55	...	-3.58	16.0	132.1 ± 36.7	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC8754-0666-1	17:46:48.20	-59:06:19.00	1.38	138	…	-4.00	…	94.3 ± 75.3	…
TYC9062-2790-1‡	17:47:05.90	-65:03:44.00	…	120	…	-2.99	64.0	77.1 ± 65.1	…
TYC8742-2065-1†	17:48:33.74	-53:06:43.42	0.58	270	…	…	20.0	29.7 ± 29.7	β Pic
TYC7389-0724-1‡	17:48:49.90	-37:24:43.00	…	25	…	-4.59	19.1	442.8 ± 197.9	…
HIP87368‡	17:51:06.80	-32:18:28.00	…	250	…	-3.33	85.0	23.2 ± 23.2	…
J175134.16-48545†	17:51:34.16	-48:54:55.40	-4.00	385	…	-3.09	…	32.9 ± 32.9	…
TYC5091-0144-1	17:53:32.28	-03:54:54.90	1.39	34	…	-4.10	…	291.7 ± 128.2	…
TYC6849-1795-1‡	17:54:54.10	-26:49:42.00	-2.70	60	…	-3.07	…	70.3 ± 52.8	…
HIP87914A‡	17:57:31.70	-57:39:51.00	…	60	…	-3.55	11.0	57.0 ± 36.6	…
TYC1553-1449-1	17:58:07.80	+15:08:43.00	2.43	22	…	-4.08	…	182.6 ± 106.4	…
TYC7886-1894-1‡	17:58:31.50	-37:43:03.00	-0.20	300	…	-3.15	6.0	38.4 ± 38.4	…
TYC0421-2471-1†	17:58:55.50	+01:55:05.72	0.66	10	…	-4.10	7.0	302.1 ± 204.1	…
TYC6846-1066-1‡	18:02:19.80	-24:52:10.00	…	25	…	-4.06	8.6	103.5 ± 79.3	…
TYC7907-4968-1‡	18:03:00.80	-41:26:06.00	…	30	…	…	…	66.2 ± 66.2	…
HIP88399†	18:03:03.36	-51:38:55.68	1.34	114	…	-4.53	11.0	62.2 ± 62.2	β Pic
HIP88404†	18:03:04.80	-08:10:48.94	1.63	82	…	-5.72	33.0	165.1 ± 126.3	…
TYC6846-0570-1‡	18:03:26.40	-25:15:59.00	…	40	…	-4.16	…	142.7 ± 101.4	…
HIP88601	18:05:27.22	+02:30:08.30	1.01	9	-4.56	-4.93	9.0	485.5 ± 206.1	…
TYC7399-0863-1‡	18:05:56.50	-34:38:30.00	…	120	…	-2.95	33.2	73.1 ± 64.5	…
HIP88694‡	18:06:23.70	-36:01:11.00	…	100	…	-4.50	7.6	197.5 ± 144.1	…
TYC1562-0663-1†	18:07:24.12	+19:42:22.90	-0.90	260	…	-3.29	…	53.7 ± 53.7	…
TYC5676-0291-1†	18:08:01.34	-08:58:58.06	0.65	181	…	-3.81	13.0	104.1 ± 83.4	…
TYC8751-1647-1‡	18:08:20.80	-56:45:30.00	…	50	…	-3.26	2.4	51.8 ± 51.8	…
TYC8358-1922-1	18:12:33.40	-46:34:55.00	1.67	93	…	-4.06	…	80.9 ± 74.6	…
TYC1009-0335-1	18:13:37.60	+08:54:16.00	1.06	38	…	…	…	68.3 ± 67.7	…
J181422.09-32461†	18:14:22.09	-32:46:10.80	-1.60	140	…	-2.89	…	71.1 ± 66.7	β Pic
J181835.44-37101†	18:18:35.44	-37:10:11.50	-8.10	620	…	-3.23	…	31.6 ± 31.6	…
HIP89805†	18:19:40.08	-63:53:09.24	1.12	73	…	-4.80	13.0	337.7 ± 185.6	…
HIP89829‡	18:19:52.20	-29:16:33.00	…	290	…	-3.23	114.7	31.3 ± 31.3	β Pic
TYC5685-0158-1‡	18:22:35.40	-11:29:41.00	…	100	…	-3.30	…	57.9 ± 57.9	…
TYC7405-0729-1‡	18:24:20.40	-37:15:14.00	…	390	…	-3.04	35.9	28.6 ± 28.6	…
TYC7401-2446-1†	18:24:50.57	-34:11:26.41	0.59	160	…	-3.81	16.0	132.0 ± 89.8	…
HIP90753A‡	18:30:59.60	-55:32:55.00	…	160	…	-3.65	4.8	67.3 ± 37.9	…
TYC6869-0257-1	18:31:53.31	-28:30:40.00	1.28	51	…	-4.21	…	272.1 ± 131.5	…
TYC0450-0064-1‡	18:32:19.00	+02:14:54.00	-3.20	180	…	-2.68	…	36.9 ± 36.9	…
TYC8363-3122-1	18:32:27.20	-48:11:56.00	1.42	169	…	-3.45	…	39.1 ± 39.1	…
HIP90936	18:33:00.85	-39:53:30.60	1.64	43	-4.66	-4.99	32.0	150.5 ± 134.6	…
TYC6869-1019-1	18:33:24.85	-29:52:00.30	1.02	58	…	-4.14	…	212.8 ± 116.9	…
TYC3539-2623-1	18:33:55.61	+51:43:11.60	-1.03	50	…	-3.13	…	49.7 ± 26.6	…
HIP91043†	18:34:20.16	+18:41:24.72	0.69	200	…	-3.37	30.0	35.5 ± 35.5	…
HIP91073†	18:34:35.52	+12:32:20.04	1.50	74	…	-4.64	…	350.4 ± 198.5	…
HIP91159	18:35:53.19	+16:58:33.10	1.26	63	-4.53	-4.10	8.0	77.0 ± 77.0	…
HIP91217†	18:36:27.84	+09:07:22.15	1.67	35	…	-5.19	10.0	213.7 ± 149.0	…
TYC6267-2271-1†	18:36:36.42	-15:06:42.72	-0.05	20	…	-3.30	23.0	61.2 ± 61.2	…

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP91439†	18:38:53.52	-76:29:57.12	1.26	26	...	-4.30	26.0	91.3 ± 91.3	...
HIP91569†	18:40:21.84	+13:22:12.00	1.16	45	...	-4.55	...	142.4 ± 140.0	...
TYC7415-0284-1‡	18:41:48.60	-35:25:44.00	...	270	...	-3.26	35.0	31.2 ± 31.2	...
HIP91732	18:42:22.52	-47:45:39.20	1.55	43	-4.67	-4.27	35.0	18.3 ± 18.3	...
HIP91837	18:43:25.45	-55:46:00.80	0.69	18	-4.63	-4.65	10.0	406.1 ± 210.8	...
HIP91940†	18:44:30.72	+33:59:46.32	1.24	94	...	-4.41	13.0	104.7 ± 97.6	...
TYC7915-0531-1‡	18:45:34.80	-37:50:20.00	...	296	...	-3.20	74.3	31.6 ± 31.6	...
TYC9077-2489-1‡	18:45:37.00	-64:51:46.00	-2.10	490	...	-3.11	110.0	37.0 ± 25.5	β Pic
HIP92104‡	18:46:16.30	-27:20:47.00	...	110	...	-4.15	14.0	54.4 ± 45.0	...
TYC6292-0670-1	18:47:51.93	-22:10:18.50	1.20	84	...	-4.04	...	95.4 ± 85.5	...
TYC9300-0529-1‡	18:49:45.10	-71:56:58.00	...	300	...	-2.65	25.8	28.7 ± 28.7	Octans
TYC9300-0891-1‡	18:49:48.70	-71:57:10.00	...	310	...	-2.81	9.0	31.0 ± 31.0	Octans
TYC7408-0054-1‡	18:50:44.50	-31:47:47.00	-1.80	492	...	-3.10	49.7	18.6 ± 18.6	β Pic
HIP92680	18:53:05.86	-50:10:49.20	0.21	96	-4.28	-3.24	46.0	63.4 ± 58.6	β Pic
HIP92680‡	18:53:05.90	-50:10:50.00	...	287	...	-3.28	69.0	31.4 ± 31.4	β Pic
TYC7420-0774-1‡	18:53:06.00	-36:10:23.00	...	375	...	-3.30	29.6	33.9 ± 33.9	...
HIP92882	18:55:31.02	-16:22:34.40	1.36	9	-4.88	-5.45	16.0	275.5 ± 174.8	...
TYC6290-2226-1‡	18:56:14.10	-19:43:19.00	...	310	...	-3.30	...	39.5 ± 39.5	...
TYC6868-0657-1‡	18:56:17.00	-26:42:15.00	...	40	...	-4.08	...	190.2 ± 117.2	...
HIP92984†	18:56:37.20	+04:15:55.19	1.20	81	...	-4.68	12.0	246.9 ± 167.0	...
TYC6872-1011-1‡	18:58:04.20	-29:53:05.00	-2.80	483	...	-2.99	33.8	20.7 ± 20.7	β Pic
TYC7413-2076-1‡	18:58:48.50	-32:49:17.00	...	200	...	...	...	144.7 ± 132.6	...
HIP93375	19:01:06.04	-28:42:49.60	1.15	149	-4.49	-4.15	17.0	68.1 ± 62.4	AB Dor
HIP93378‡	19:01:06.80	-58:53:30.00	...	300	...	-3.83	230.0	29.5 ± 29.5	...
HIP93412†	19:01:28.56	-34:22:35.04	1.45	100	...	-4.17	...	66.1 ± 66.1	...
TYC7421-0493-1‡	19:02:02.00	-37:07:44.00	-0.90	352	...	-3.34	20.3	30.1 ± 30.1	...
TYC0466-1374-1†	19:02:17.09	+02:44:21.95	0.95	50	...	-3.97	...	135.1 ± 41.4	...
HIP93503	19:02:34.58	-38:00:07.30	1.18	15	-5.24	-4.51	8.0	401.2 ± 202.9	...
HIP93815	19:06:19.93	-52:20:26.30	1.54	42	-4.64	-4.10	32.0	19.3 ± 19.3	Tuc Hor
HIP93817	19:06:21.36	+27:42:49.50	...	112	...	-3.13	...	72.7 ± 62.9	...
HIP94020	19:08:31.70	-30:58:21.10	1.03	41	-4.37	-4.45	8.0	469.4 ± 160.0	...
HIP94050‡	19:08:50.50	-42:25:41.00	...	25	...	-3.75	5.0	62.4 ± 38.6	...
TYC8760-1468-1‡	19:09:21.50	-54:17:07.00	...	270	...	-3.25	80.0	40.2 ± 40.2	...
TYC7929-0650-1‡	19:09:31.60	-44:12:58.00	...	100	...	-3.33	4.1	62.8 ± 57.3	...
HIP94235†	19:10:57.84	-60:16:19.20	1.13	140	...	-4.04	23.0	77.8 ± 67.3	AB Dor
TYC7418-2446-1‡	19:11:34.70	-34:35:09.00	...	90	...	-3.46	30.4	84.8 ± 70.2	...
TYC6878-0195-1†	19:11:44.66	-26:04:08.53	...	316	...	-3.50	10.0	41.4 ± 29.0	β Pic
HIP94309‡	19:11:45.40	-19:11:21.00	...	110	...	-3.52	48.0	33.1 ± 33.1	...
TYC6304-0955-1‡	19:13:47.10	-20:27:21.00	-0.40	60	...	-3.45	6.5	108.1 ± 79.8	...
HIP94645	19:15:33.16	-24:10:44.80	1.30	35	-4.89	-5.30	10.0	488.5 ± 216.5	...
TYC7918-0222-1‡	19:17:23.80	-37:56:50.00	-0.60	470	...	-3.29	29.1	34.2 ± 34.2	...
TYC7930-0263-1‡	19:17:43.80	-44:00:17.00	-0.20	40	...	-3.14	16.0	80.0 ± 68.8	...
TYC7922-0341-1	19:18:42.10	-39:33:03.00	2.13	85	...	-4.79	...	111.2 ± 111.2	...
HIP94966	19:19:30.98	-36:39:29.90	1.36	39	-4.83	-5.43	13.0	354.4 ± 193.7	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP95149‡	19:21:29.80	-34:59:01.00	...	155	...	-4.20	13.0	107.2 ± 85.5	...
TYC6887-1804-1‡	19:21:36.10	-28:13:33.00	...	60	...	-4.05	4.9	217.6 ± 139.0	...
HIP95244	19:22:40.30	-20:38:33.60	0.89	31	-4.45	-3.85	10.0	23.8 ± 23.8	...
HIP95266‡	19:22:57.30	-14:15:32.00	...	83	...	-3.05	5.0	70.2 ± 67.7	...
HIP95270‡	19:22:58.90	-54:32:17.00	...	120	...	...	16.0	92.2 ± 92.2	β Pic
J192338.21-46063†	19:23:38.21	-46:06:31.40	-0.89	403	...	-3.37	...	33.3 ± 33.3	...
TYC7943-0444-1‡	19:25:04.70	-43:34:03.00	...	90	...	-3.00	22.5	69.0 ± 57.0	...
HIP95753‡	19:28:32.00	-35:07:59.00	-0.80	90	...	-3.13	...	34.7 ± 34.6	...
TYC3547-1807-1†	19:28:50.44	+47:56:44.63	0.19	32	...	-3.36	...	90.1 ± 77.5	...
HIP95849	19:29:40.57	-30:47:49.70	1.24	80	-4.68	-4.96	10.0	307.0 ± 168.8	...
TYC9527-1764-1	19:30:33.20	-84:23:06.00	2.73	76	...	-3.97	...	41.7 ± 41.7	...
HIP95938†	19:30:40.08	+35:06:08.64	1.47	98	...	-4.33	...	99.8 ± 91.6	...
TYC8761-0306-1‡	19:30:49.00	-52:43:48.00	...	260	...	-3.44	34.8	30.8 ± 30.8	...
TYC6302-2521-1‡	19:35:03.80	-18:33:57.00	...	30	...	-3.69	...	83.0 ± 68.9	...
HIP96334‡	19:35:09.70	-69:58:32.00	...	150	...	-4.28	9.8	117.9 ± 36.6	...
TYC7944-1191-1‡	19:35:56.80	-43:31:04.00	...	70	...	-3.82	21.9	137.5 ± 100.6	...
HIP96514†	19:37:16.08	+26:09:15.84	1.46	117	...	-4.23	...	105.4 ± 48.4	...
TYC6893-1548-1‡	19:39:06.40	-25:44:06.00	-0.10	130	...	-3.01	19.8	71.5 ± 61.2	...
TYC6893-1391-1†	19:39:18.66	-25:39:01.31	0.88	90	...	-3.62	...	106.7 ± 79.2	...
TYC6299-2608-1‡	19:40:45.50	-16:17:02.00	...	60	...	-4.67	...	80.2 ± 80.2	...
HIP96880†	19:41:35.76	-72:26:44.16	0.61	162	...	-3.97	13.0	134.9 ± 37.9	...
HIP96932†	19:42:12.96	-36:37:59.88	1.46	10	...	...	13.0	427.3 ± 345.9	...
TYC6299-0946-1‡	19:43:06.50	-16:32:57.00	...	30	...	-4.20	...	210.2 ± 122.7	...
HIP97216	19:45:28.35	-07:01:09.80	1.24	38	-4.67	-4.32	13.0	42.7 ± 41.8	...
TYC5736-0649-1‡	19:45:36.00	-14:27:54.00	...	250	...	-3.81	206.0	41.3 ± 41.3	...
HIP97255	19:45:57.30	+04:14:54.60	1.09	102	-4.45	-4.01	15.0	89.3 ± 80.8	...
TYC9467-0543-1‡	19:47:03.90	-78:57:43.00	...	257	...	-3.23	28.7	31.3 ± 31.3	...
TYC7933-1623-1‡	19:47:19.00	-38:55:17.00	...	80	...	-3.01	15.0	79.0 ± 65.1	...
HIP97384	19:47:33.34	+01:05:21.90	1.64	25	-4.67	-4.45	9.0	49.1 ± 44.5	...
HIP97438†	19:48:15.36	+59:25:21.36	1.13	97	...	-4.74	6.0	231.5 ± 148.5	...
TYC9085-2522-1B†	19:49:06.64	-61:48:40.50	1.38	39	...	-4.78	15.0	266.7 ± 190.4	...
HIP97508	19:49:07.25	-61:48:53.20	1.30	47	-4.67	-4.78	14.0	219.8 ± 163.9	Tuc Hor
HIP97557	19:49:44.02	-32:45:49.70	1.16	86	-4.60	-4.59	10.0	317.1 ± 183.6	...
HIP97675†	19:51:01.44	+10:24:57.96	1.16	49	...	-6.02	5.0	362.8 ± 177.0	...
TYC7439-0724-1‡	19:51:21.90	-31:05:48.00	...	200	...	-3.15	...	49.9 ± 49.9	...
TYC6895-0579-1	19:51:24.89	-24:47:28.60	1.15	135	...	-4.26	...	119.8 ± 89.1	...
TYC6321-0117-1†	19:52:21.27	-18:46:37.57	0.68	74	...	-3.97	...	138.9 ± 116.3	...
TYC6321-0117-1‡	19:52:21.30	-18:46:38.00	...	90	...	-3.97	4.8	159.6 ± 113.1	...
TYC7439-2051-1†	19:53:26.08	-30:16:10.33	1.76	75	...	-4.29	...	108.6 ± 100.9	...
TYC7439-2052-1B†	19:53:26.31	-30:16:15.45	1.71	150	...	-4.08	...	68.4 ± 37.7	...
TYC9523-1757-1‡	19:53:56.80	-82:40:42.00	...	275	...	-3.12	39.0	32.7 ± 32.7	Octans
HIP98278	19:58:07.54	-51:54:20.40	1.37	31	-4.74	-4.99	15.0	421.3 ± 207.4	...
TYC5155-1500-1†	19:59:24.10	-04:32:06.15	1.19	134	...	-3.90	13.0	83.6 ± 69.3	AB Dor
HIP98470†	20:00:20.16	-33:42:09.72	1.30	70	...	-4.01	...	53.2 ± 53.2	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
TYC2674-1400-1†	20:00:45.59	+32:57:00.07	0.94	47	...	-3.83	...	140.4 ± 96.6	...
J200137.15-33131†	20:01:37.15	-33:13:13.50	-1.40	110	...	-3.60	...	110.2 ± 79.9	β Pic
HIP98681†	20:02:35.86	-50:02:57.80	1.10	10	...	...	13.0	101.9 ± 101.9	...
HIP98839†	20:04:18.00	-26:19:45.84	1.21	106	...	-4.30	13.0	122.6 ± 41.5	...
HIP98864†	20:04:36.48	-35:12:50.40	1.14	113	...	-4.12	30.0	66.3 ± 64.5	...
TYC1617-1356-1	20:04:46.90	+15:54:38.00	1.83	34	...	-4.80	...	436.8 ± 214.0	...
TYC5164-0567-1†	20:04:49.36	-02:39:20.34	0.41	257	...	-3.41	8.0	35.3 ± 35.3	AB Dor
J200556.39-32165†	20:05:56.39	-32:16:58.50	-1.54	180	...	-3.81	13.0	69.8 ± 38.0	...
TYC9098-1297-1	20:07:19.79	-65:51:08.80	1.04	110	-4.46	-4.07	11.0	150.6 ± 105.2	...
TYC8404-0354-1‡	20:07:23.80	-51:47:27.00	-1.00	60	...	-2.94	42.0	69.9 ± 55.6	Argus
HIP99273†	20:09:05.28	-26:13:26.04	1.48	100	...	-4.89	31.0	82.5 ± 82.5	β Pic
TYC0503-0700-1†	20:10:43.82	+04:54:49.25	-0.60	120	...	-3.07	...	80.4 ± 66.0	...
TYC7952-0273-1‡	20:11:12.60	-40:32:04.00	...	190	...	-3.47	6.1	40.8 ± 40.8	...
TYC8400-0567-1‡	20:14:14.30	-50:06:50.00	...	50	...	-3.72	4.9	162.5 ± 105.1	...
TYC8785-0956-1	20:14:56.00	-56:58:40.00	2.11	35	...	-4.33	...	81.7 ± 81.7	Tuc Hor
TYC8785-1322-1	20:14:56.57	-56:58:28.20	1.50	27	-4.27	-4.32	18.0	81.1 ± 81.1	Tuc Hor
TYC8785-0956-1	20:14:56.60	-56:58:34.00	1.95	50	...	-4.33	...	77.9 ± 77.9	Tuc Hor
TYC8781-0550-1	20:15:04.30	-54:30:05.00	1.83	76	...	-4.10	...	65.7 ± 65.7	...
HIP99809	20:15:04.49	-54:30:00.50	1.28	66	-4.88	-4.10	2.0	68.0 ± 68.0	...
HIP100046†	20:17:50.16	+54:19:20.28	1.60	36	...	-5.26	...	278.6 ± 168.3	...
HIP100111†	20:18:30.72	+19:01:51.96	1.37	72	...	...	18.0	204.4 ± 172.1	...
HIP100117‡	20:18:35.10	-65:51:27.00	...	50	...	-3.43	16.5	23.2 ± 23.2	...
TYC5753-1786-1‡	20:19:03.00	-14:02:04.00	-2.00	100	...	-2.83	...	64.0 ± 59.8	...
HIP100259†	20:20:03.60	+23:38:17.16	1.00	69	...	-4.17	2.0	167.8 ± 111.4	...
TYC7957-0418-1‡	20:21:09.00	-42:30:04.00	...	200	...	-2.92	60.0	60.2 ± 57.5	...
HIP100417	20:21:43.04	-36:36:35.90	1.58	93	...	-4.54	...	95.7 ± 51.3	...
TYC9095-1266-1	20:22:48.47	-65:15:28.10	0.87	222	...	-4.05	9.0	43.9 ± 43.9	...
HIP100511†	20:22:52.32	+14:33:03.96	1.20	44	...	-5.55	...	393.8 ± 208.6	...
TYC6333-1938-1‡	20:24:52.10	-18:08:08.00	-0.10	30	...	-3.72	6.3	84.4 ± 68.4	...
TYC9316-0071-1†	20:27:46.26	-72:43:54.99	0.88	173	...	-4.05	15.0	129.2 ± 39.9	...
TYC6341-0530-1‡	20:28:49.20	-22:00:59.00	...	60	...	-3.06	20.8	63.0 ± 63.0	...
HIP101022†	20:28:49.92	-01:44:04.06	1.23	62	...	-5.08	7.0	368.8 ± 183.4	...
HIP101036‡	20:28:59.00	-17:26:05.00	...	130	...	-4.79	20.0	217.5 ± 109.8	...
HIP101236	20:31:13.29	+05:13:06.10	0.39	58	...	-2.92	...	68.6 ± 68.6	...
HIP101315	20:32:07.61	+15:11:11.20	1.23	44	-4.45	-4.47	14.0	43.1 ± 42.7	...
HIP101422‡	20:33:13.30	-58:06:44.00	...	182	...	-4.06	25.0	31.0 ± 31.0	...
HIP101432	20:33:22.95	-41:31:27.60	1.47	12	-4.49	-4.37	10.0	97.2 ± 54.3	...
TYC5759-0110-1‡	20:34:25.00	-10:40:58.00	...	50	...	-3.85	...	195.4 ± 119.7	...
TYC4649-1265-1†	20:34:27.53	+82:53:35.56	0.39	40	...	-3.30	5.0	82.8 ± 69.8	...
TYC5767-0485-1‡	20:34:35.80	-13:23:25.00	...	80	...	-3.85	...	126.6 ± 96.1	...
HIP101551‡	20:34:47.00	-33:55:19.00	...	20	...	-4.42	4.8	117.6 ± 113.0	...
TYC2165-1507-1†	20:35:56.57	+27:42:40.17	0.29	120	...	-3.04	...	79.4 ± 65.8	...
TYC5188-2384-1	20:36:06.60	-06:40:45.00	1.12	65	...	-4.52	...	463.7 ± 199.9	...
HIP101726	20:37:11.54	-44:44:40.60	1.09	58	-4.44	-4.29	10.0	129.1 ± 37.1	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	vsin*i* (km s^{-1})	Age (Myr)	Note
HIP101769	20:37:32.87	+14:35:42.70	1.86	66	-4.67	-5.45	36.0	120.9 ± 110.8	...
TYC9312-0175-1‡	20:38:26.00	-69:32:25.00	...	60	...	-3.31	34.0	53.7 ± 53.7	...
HIP102029	20:40:35.26	+15:38:35.30	1.40	27	-4.71	-5.08	19.0	253.0 ± 168.2	...
TYC6925-0087-1‡	20:41:13.60	-25:17:43.00	...	90	...	-3.27	18.1	59.4 ± 59.4	...
TYC5768-0643-1‡	20:41:17.10	-14:45:27.00	-0.40	30	...	-3.25	...	89.2 ± 73.1	...
TYC8407-1073-1†	20:42:40.03	-46:40:17.33	0.12	220	...	-3.60	9.0	85.1 ± 81.1	...
TYC8791-1649-1‡	20:44:20.90	-53:51:03.00	-1.00	100	...	-3.15	50.0	82.1 ± 67.1	...
TYC6339-1120-1†	20:45:17.57	-20:24:11.02	1.30	130	...	-4.08	...	132.2 ± 34.9	...
TYC7967-0420-1‡	20:45:36.80	-39:49:57.00	...	80	...	-3.27	24.0	89.1 ± 73.7	...
TYC7963-0047-1‡	20:46:01.20	-37:37:32.00	-0.90	70	...	-3.07	14.4	79.9 ± 65.1	...
HIP102490	20:46:13.26	+15:54:25.80	0.98	61	-4.39	-4.39	14.0	174.7 ± 134.3	...
TYC1634-2227-1	20:46:13.32	+15:54:31.70	1.08	42	-4.43	-4.14	19.0	243.9 ± 109.3	...
HIP102531	20:46:38.87	+16:07:28.60	1.05	25	-4.53	-5.09	7.0	103.3 ± 75.3	...
TYC6925-0588-1‡	20:46:54.60	-24:35:41.00	...	200	...	-3.38	16.9	68.2 ± 63.1	...
HIP102626†	20:47:45.12	-36:35:40.20	-0.15	280	...	-2.16	120.0	48.2 ± 31.0	Tuc Hor
J20481934-28012†	20:48:19.34	-28:01:26.70	-2.41	60	...	-3.03	...	57.0 ± 57.0	...
HIP102851	20:50:10.54	+29:23:03.30	0.74	71	...	-4.01	...	183.8 ± 111.7	...
TYC0512-1759-1	20:51:19.06	+00:58:07.00	1.44	42	...	-4.22	...	135.7 ± 101.5	...
HIP103107†	20:53:25.92	-49:22:58.08	1.22	60	...	-4.22	12.0	84.9 ± 84.9	...
TYC6348-0566-1†	20:53:29.67	-17:34:25.32	0.50	250	...	-3.38	110.0	40.3 ± 40.3	...
TYC6348-0566-1‡	20:53:29.70	-17:34:25.00	...	300	...	-3.38	140.0	32.1 ± 32.1	...
TYC1090-0074-1†	20:54:21.08	+09:02:23.82	1.09	165	...	-3.97	16.0	91.3 ± 78.1	AB Dor
TYC2700-0118-1†	20:54:22.48	+36:58:04.38	1.01	38	...	...	3.0	71.2 ± 68.1	...
HIP103311†	20:55:47.52	-17:06:50.40	1.57	150	...	-3.43	120.0	46.8 ± 46.8	β Pic
TYC6349-0200-1‡	20:56:02.70	-17:10:54.00	-0.80	420	...	-3.41	15.6	26.4 ± 26.4	β Pic
TYC5183-0701-1	20:56:35.34	-01:57:10.90	1.24	90	-4.82	-5.28	11.0	364.6 ± 181.0	...
HIP103389	20:56:47.27	-26:17:46.40	1.36	73	-4.59	-4.73	14.0	155.5 ± 137.5	...
TYC0517-0923-1	20:57:15.02	+02:53:14.40	1.41	70	...	-4.21	...	122.3 ± 98.7	...
HIP103517‡	20:58:18.80	-43:45:06.00	-0.10	120	...	-3.48	7.0	48.5 ± 37.3	...
HIP103569	20:59:04.53	+04:17:38.00	1.31	12	-4.09	-5.23	6.0	324.0 ± 192.6	...
HIP103587‡	20:59:17.90	-78:10:51.00	...	100	...	-4.09	...	94.1 ± 81.4	...
TYC8804-1252-1‡	20:59:18.60	-59:01:58.00	-0.10	290	...	-3.36	67.0	31.4 ± 31.4	...
J210010.66-34080†	21:00:10.66	-34:08:08.90	...	194	...	-3.63	16.0	23.6 ± 23.6	...
HIP103833	21:02:25.85	+27:48:26.40	1.21	159	...	-3.23	...	52.0 ± 52.0	...
HIP103882	21:02:57.97	-38:37:52.30	1.77	90	-4.77	-5.38	18.0	85.5 ± 85.5	...
TYC6923-0609-1‡	21:04:08.80	-23:41:27.00	...	40	...	-3.49	6.2	126.2 ± 93.3	...
TYC7965-0705-1‡	21:05:40.10	-38:42:24.00	...	80	...	-2.94	8.6	78.9 ± 78.9	...
TYC5779-0271-1‡	21:07:08.40	-11:35:06.00	-0.70	190	...	-3.61	...	93.7 ± 80.5	...
HIP104239‡	21:07:10.40	-13:55:23.00	...	50	...	-4.58	5.6	441.0 ± 197.8	...
TYC7471-0591-1‡	21:07:37.80	-31:24:49.00	-0.50	50	...	-3.01	19.6	82.0 ± 67.4	...
HIP104441	21:09:22.31	-36:42:20.30	1.73	18	...	-5.44	21.0	469.0 ± 220.2	...
HIP104476‡	21:09:51.60	-24:24:03.00	...	30	...	-4.35	5.1	396.2 ± 212.1	...
HIP104504	21:10:07.82	-24:49:22.90	1.13	75	...	-4.98	10.0	464.2 ± 186.8	...
HIP104526A‡	21:10:25.40	-54:34:26.00	...	113	...	-4.10	4.5	97.8 ± 47.5	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP104526B‡	21:10:25.70	-54:34:28.00	...	99	...	-4.05	6.6	85.5 ± 45.4	...
HIP104604‡	21:11:22.80	-52:20:21.00	...	50	...	-3.68	12.0	42.5 ± 37.1	...
TYC7476-0598-1‡	21:11:55.20	-32:58:37.00	...	250	...	-3.23	29.0	38.7 ± 38.7	...
J21122238-14595B†	21:12:22.38	-14:59:57.90	0.99	58	...	-4.55	13.0	96.0 ± 96.0	...
HIP104687†	21:12:22.56	-15:00:00.00	1.02	69	...	-4.55	15.0	86.0 ± 86.0	...
TYC6351-0286-1‡	21:13:05.30	-17:29:13.00	-0.10	20	...	-3.56	7.9	102.6 ± 89.5	AB Dor
HIP104864	21:14:32.79	-22:52:41.10	1.12	77	-4.36	-4.02	9.0	108.4 ± 90.2	...
HIP104894	21:14:52.74	-31:11:00.80	0.76	6	...	-4.02	16.0	207.5 ± 138.4	...
TYC6359-0671-1	21:15:14.75	-21:17:41.70	1.40	89	...	-4.96	...	376.0 ± 171.7	...
TYC7970-1102-1	21:16:22.00	-40:20:04.10	1.50	95	...	-4.51	...	118.5 ± 40.0	...
HIP105044	21:16:37.93	-36:10:24.10	1.23	62	-4.07	-4.53	12.0	114.2 ± 114.2	...
TYC6347-1351-1‡	21:17:52.50	-16:32:59.00	...	50	...	-3.66	19.1	99.0 ± 85.6	...
TYC5206-0915-1‡	21:18:33.50	-06:31:44.00	...	40	...	-3.24	...	72.6 ± 65.0	...
TYC9473-0014-1‡	21:18:47.10	-81:45:18.00	...	120	...	-3.23	20.0	65.7 ± 58.3	...
HIP105324‡	21:20:02.50	-27:18:16.00	...	74	...	-4.40	7.5	236.8 ± 132.6	...
HIP105388	21:20:49.93	-53:02:02.30	0.64	222	-4.19	-3.37	15.0	36.2 ± 36.2	Tuc Hor
HIP105404	21:20:59.78	-52:28:39.20	0.29	131	-4.27	-3.23	14.0	73.1 ± 61.3	Tuc Hor
TYC1110-1491-1	21:21:22.00	+10:20:06.00	2.04	71	...	-4.27	...	105.5 ± 100.0	...
HIP105441†	21:21:24.24	-66:54:56.52	0.39	30	...	...	...	218.6 ± 197.4	Tuc Hor
TYC9114-1267-1‡	21:21:28.70	-66:55:06.00	...	15	...	-3.04	4.5	66.6 ± 55.5	...
HIP105612	21:23:27.07	-75:29:38.60	1.21	21	-4.36	-4.44	...	409.5 ± 170.7	...
TYC7983-0727-1	21:23:44.21	-39:48:07.70	1.42	68	...	-4.11	...	53.9 ± 53.9	...
TYC9528-0727-1‡	21:26:58.20	-85:42:06.00	...	170	...	-3.46	17.5	79.8 ± 66.2	...
HIP105918	21:27:06.66	+16:07:27.70	1.24	65	-4.50	-4.65	8.0	200.2 ± 163.7	...
TYC6372-1266-1‡	21:27:33.30	-20:54:48.00	...	200	...	-3.19	1.8	58.6 ± 58.6	...
TYC8427-0495-1	21:29:28.40	-48:08:44.70	1.38	58	...	-4.61	...	226.5 ± 178.1	...
HIP106183‡	21:30:25.00	-60:12:25.00	...	50	...	-4.18	8.9	285.7 ± 194.9	...
HIP106230†	21:31:01.20	+59:25:05.16	1.27	60	...	-4.43	...	385.3 ± 171.3	...
TYC6939-0352-1‡	21:31:23.80	-22:34:23.00	...	100	...	-3.82	4.9	55.9 ± 55.9	...
HIP106335	21:32:11.70	+00:13:17.90	-0.30	134	...	-3.24	...	83.2 ± 66.9	...
HIP106368†	21:32:36.96	-24:09:15.48	1.97	30	...	...	...	354.7 ± 309.2	...
TYC6365-0135-1‡	21:32:57.00	-17:33:50.00	...	60	...	-3.72	...	165.0 ± 107.4	...
TYC5212-1503-1†	21:33:06.65	-03:11:38.30	1.04	25	...	-4.19	7.0	214.4 ± 119.4	...
TYC9103-0368-1‡	21:34:51.60	-60:38:41.00	...	50	...	-3.24	22.7	80.7 ± 67.7	...
TYC7493-1435-1	21:36:51.59	-35:53:09.20	1.19	25	...	-4.65	...	479.6 ± 198.0	...
TYC9111-0182-1‡	21:37:15.60	-65:02:20.00	...	30	...	-3.11	40.7	75.8 ± 71.5	...
HIP106828‡	21:38:11.00	-10:53:40.00	...	50	...	-3.76	...	122.2 ± 88.8	...
TYC8424-0626-1‡	21:38:16.10	-45:11:38.00	...	20	...	-3.06	10.0	69.6 ± 69.6	...
HIP106913	21:39:09.91	-27:18:22.90	1.09	50	-4.52	-5.20	10.0	487.5 ± 198.9	...
TYC5209-0253-1	21:39:31.39	+00:03:04.10	1.22	90	-4.78	-5.43	10.0	209.5 ± 144.8	...
TYC5217-1126-1	21:39:45.05	-04:59:19.20	1.23	70	...	-4.38	...	177.2 ± 142.0	...
HIP107095	21:41:32.93	-14:02:48.80	1.23	59	-4.60	-4.68	12.0	472.0 ± 194.7	...
HIP107107†	21:41:43.68	+06:25:14.99	0.93	150	...	-4.42	...	137.2 ± 97.0	...
TYC5800-0887-1‡	21:43:03.60	-14:52:08.00	...	70	...	-3.58	...	111.4 ± 87.6	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP107345‡	21:44:30.10	-60:58:39.00	-1.30	55	...	-3.28	8.2	70.8 ± 61.9	Tuc Hor
HIP107350	21:44:31.20	+14:46:19.90	1.11	97	-4.47	-4.46	10.0	121.6 ± 41.1	...
TYC6367-0898-1	21:46:40.52	-18:09:17.20	1.30	85	...	-4.91	...	295.9 ± 164.9	...
TYC1674-0615-1†	21:48:09.41	+19:10:12.91	-0.54	60	...	-3.21	...	88.6 ± 71.9	...
HIP107684‡	21:48:48.50	-39:29:09.00	...	190	...	-3.98	10.4	77.1 ± 71.6	AB Dor
HIP107779	21:50:04.89	-38:36:51.50	1.17	58	-4.58	-4.75	11.0	372.0 ± 201.1	...
TYC5789-0889-1	21:51:04.60	-07:54:11.00	1.93	83	...	-4.82	...	167.1 ± 131.2	...
HIP107947	21:52:09.67	-62:03:07.80	1.27	118	-4.48	-4.03	29.0	46.9 ± 46.9	Tuc Hor
HIP108162	21:54:50.73	-77:20:15.20	0.84	13	-4.49	-4.70	...	496.8 ± 185.0	...
HIP108228	21:55:31.42	+10:52:49.60	1.13	33	-4.10	-5.39	4.0	396.8 ± 156.1	...
HIP108422†	21:57:51.36	-68:12:49.32	1.23	250	...	-3.16	125.0	37.8 ± 37.8	Tuc Hor
HIP108422‡	21:57:51.50	-68:12:50.00	...	294	...	-3.17	128.2	30.3 ± 30.3	Tuc Hor
HIP108456	21:58:13.51	+82:52:10.80	1.87	106	...	-3.36	...	37.4 ± 37.4	...
TYC4649-3690-1	21:58:20.35	+82:52:16.10	1.85	43	...	-3.20	...	88.1 ± 68.6	...
TYC5808-0401-1‡	21:59:46.90	-13:22:25.00	...	80	...	-3.14	...	53.9 ± 53.9	...
TYC0549-1015-1‡	21:59:59.90	+03:02:25.00	...	170	...	-3.15	...	70.5 ± 62.4	...
HIP108774†	22:02:05.28	+44:20:35.16	0.84	76	...	-4.92	...	476.1 ± 186.2	...
TYC5227-1176-1‡	22:02:30.20	-04:06:12.00	...	200	...	-3.80	...	106.7 ± 84.1	...
TYC8441-0343-1	22:02:31.74	-47:40:37.40	1.30	112	...	-4.54	...	132.9 ± 113.0	...
HIP108809†	22:02:32.88	-32:08:01.68	2.11	53	...	-4.55	...	122.8 ± 42.8	...
TYC8441-0991-1	22:03:16.10	-48:16:17.00	1.89	110	...	-3.90	...	44.4 ± 44.4	...
TYC8441-0425-1†	22:03:20.89	-48:16:06.08	1.29	136	...	-3.30	...	49.0 ± 49.0	...
HIP108912	22:03:42.30	-60:26:14.90	0.71	101	-4.43	-4.47	12.0	122.1 ± 40.5	...
TYC3609-2652-1	22:04:56.56	+47:14:04.20	0.26	91	...	-3.71	...	54.1 ± 46.0	...
HIP109097‡	22:05:58.70	-56:28:20.00	...	50	...	-3.80	7.2	37.8 ± 35.9	...
HIP109110	22:06:05.24	-05:21:28.50	1.04	58	-4.42	-4.44	10.0	453.8 ± 172.2	...
TYC4271-0037-1B†	22:06:36.03	+63:45:18.00	-0.01	40	...	-3.03	17.0	70.9 ± 57.5	...
TYC9117-1052-1‡	22:11:31.20	-60:03:37.00	...	340	...	-3.13	21.8	29.9 ± 29.9	...
TYC8809-0745-1	22:12:38.37	-54:17:26.20	1.61	57	...	-4.97	...	427.3 ± 206.5	...
HIP109652	22:12:46.69	-20:53:25.20	1.43	91	-4.57	-4.70	29.0	121.8 ± 118.5	...
TYC5809-0287-1‡	22:13:03.80	-12:59:41.00	-0.70	170	...	-3.01	...	74.3 ± 66.0	...
HIP109695‡	22:13:10.80	-11:10:39.00	...	20	...	-3.19	...	14.4 ± 14.4	...
TYC9117-1777-1‡	22:13:12.20	-60:04:55.00	...	30	...	-3.23	10.9	55.8 ± 55.8	...
TYC8438-0111-1‡	22:13:16.70	-47:13:56.00	...	260	...	-3.54	12.2	34.4 ± 34.4	...
TYC4654-1153-1†	22:13:20.41	+84:45:37.21	-0.40	30	...	-2.96	49.0	58.0 ± 58.0	...
HIP109901†	22:15:35.04	-39:00:50.40	0.12	217	...	-3.19	11.0	52.9 ± 52.9	...
HIP109941‡	22:16:00.60	-14:11:02.00	-0.30	30	...	-3.08	...	81.0 ± 69.1	...
TYC8822-0927-1‡	22:16:21.90	-52:38:43.00	...	100	...	...	...	207.2 ± 195.6	...
TYC8002-0041-1‡	22:19:10.30	-42:35:15.00	-0.30	120	...	-3.09	27.7	64.6 ± 60.8	...
TYC3615-1729-1†	22:20:07.03	+49:30:11.73	0.38	267	...	-3.20	18.0	33.3 ± 33.3	...
TYC8442-0335-1‡	22:20:07.50	-48:37:38.00	...	225	...	-3.54	16.4	32.5 ± 32.5	...
HIP110349	22:21:00.58	+06:35:27.30	1.17	59	-4.78	-4.92	9.0	346.5 ± 187.2	...
TYC9120-0185-1‡	22:23:11.30	-62:35:52.00	-1.60	70	...	-2.30	16.7	68.3 ± 68.3	...
HIP110518	22:23:20.46	-14:57:03.10	1.41	10	-4.74	-4.67	14.0	65.5 ± 52.9	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP110623	22:24:37.33	+16:53:48.80	1.14	27	-4.43	-4.42	20.0	432.6 ± 169.1	...
HIP110629	22:24:39.12	-41:26:24.90	1.53	9	-4.68	-5.44	...	327.1 ± 187.4	...
TYC8442-1253-1‡	22:26:08.60	-48:59:50.00	...	100	...	-3.48	19.3	119.6 ± 88.8	...
TYC0563-0546-1‡	22:26:17.70	+03:51:41.00	...	60	...	-2.88	...	55.6 ± 55.6	...
TYC4268-0772-1†	22:26:25.07	+62:15:03.26	0.77	56	...	-4.70	5.0	349.6 ± 163.0	...
TYC7503-0723-1‡	22:26:31.10	-36:34:03.00	...	20	...	-3.17	18.9	71.8 ± 67.1	...
TYC6385-0683-1	22:26:34.12	-16:44:29.60	1.11	111	-4.48	-4.21	12.0	187.8 ± 108.9	...
HIP110778	22:26:34.15	-16:44:31.70	1.13	101	-4.44	-4.24	12.0	112.8 ± 92.1	...
HIP110778B‡	22:26:34.30	-16:44:30.00	...	120	...	-4.28	9.0	186.1 ± 111.6	...
TYC5226-0080-1‡	22:26:53.30	+00:50:40.00	...	110	...	...	...	168.4 ± 124.6	...
TYC7997-0446-1	22:33:15.86	-38:44:24.90	1.35	40	...	-4.27	...	146.2 ± 103.9	...
TYC7497-1354-1‡	22:34:01.30	-30:36:18.00	...	120	...	-2.96	21.9	74.9 ± 66.1	...
HIP111420	22:34:24.66	-19:03:10.00	1.35	72	-4.58	-4.21	31.0	81.4 ± 80.9	...
TYC6392-0290-1	22:37:56.54	-20:20:39.60	1.63	49	...	-4.20	...	73.9 ± 73.9	...
TYC9124-0888-1‡	22:38:21.80	-65:22:45.00	...	40	...	-2.31	8.4	400.8 ± 168.1	...
TYC0567-0136-1	22:38:30.20	+02:18:12.00	1.53	45	...	-4.39	...	383.2 ± 160.4	...
TYC8452-0235-1‡	22:39:30.30	-52:05:17.00	...	245	...	-3.14	9.2	34.0 ± 34.0	...
HIP112052†	22:41:45.36	-39:27:41.40	1.03	73	...	-4.30	11.0	123.2 ± 36.5	...
HIP112073‡	22:42:01.60	+09:46:09.00	-1.70	50	...	-3.20	...	70.4 ± 59.6	...
TYC7501-1001-1‡	22:42:26.50	-34:04:29.00	-0.30	60	...	-3.29	20.0	89.1 ± 70.2	...
TYC9340-0437-1‡	22:42:48.90	-71:42:21.00	-1.90	440	...	-2.96	7.5	24.0 ± 24.0	β Pic
TYC7504-1181-1‡	22:44:37.60	-36:24:10.00	...	100	...	-3.04	25.2	79.1 ± 64.2	...
TYC6386-0896-1‡	22:44:38.90	-15:56:29.00	-0.20	100	...	-3.10	10.2	80.4 ± 66.1	...
TYC4269-0405-1†	22:44:40.90	+62:03:57.43	0.39	68	...	-3.82	...	159.9 ± 108.9	...
TYC1701-0642-1†	22:44:41.54	+17:54:18.30	0.33	235	...	-2.96	15.0	52.3 ± 52.3	...
TYC8004-0083-1‡	22:46:33.50	-39:28:45.00	...	175	...	-3.48	15.1	48.5 ± 48.5	...
TYC6390-0487-1‡	22:46:43.00	-17:59:07.00	...	160	...	-3.34	9.8	82.8 ± 68.4	...
TYC9537-0066-1	22:47:03.20	-88:19:29.70	1.66	19	...	-4.59	...	256.0 ± 185.5	...
HIP112515‡	22:47:26.70	-44:57:55.00	...	85	...	-4.68	9.0	325.9 ± 183.8	...
HIP112581	22:48:06.81	-37:45:24.00	1.06	61	-4.52	-4.62	10.0	323.1 ± 202.0	...
TYC9484-0316-1†	22:50:56.50	-79:09:56.87	1.67	90	...	-4.03	...	66.4 ± 66.4	...
TYC4654-1421-1†	22:51:28.86	+85:25:21.41	0.59	173	...	-3.71	4.0	126.5 ± 88.1	...
TYC9337-1828-1‡	22:52:37.00	-68:43:17.00	...	50	...	-3.27	...	70.8 ± 66.7	...
HIP113001‡	22:53:06.00	+07:28:19.00	-1.00	70	...	-3.01	26.1	67.8 ± 42.2	...
HIP113052	22:53:41.60	+37:56:18.50	...	100	...	-3.30	...	27.5 ± 27.5	...
HIP113174†	22:55:02.64	+37:04:36.48	1.40	62	...	-5.84	8.0	157.9 ± 122.0	...
TYC3227-1478-1†	22:55:44.44	+44:50:52.24	0.77	20	...	-4.24	...	259.7 ± 141.9	...
HIP113283	22:56:23.84	-31:33:54.70	0.70	36	-4.46	-4.57	8.0	274.5 ± 125.9	...
TYC0572-0382-1‡	22:56:49.50	+02:35:39.00	...	140	...	-3.48	...	80.6 ± 67.6	...
TYC8447-0025-1‡	22:56:58.60	-45:13:20.00	...	130	...	-3.73	10.5	162.0 ± 109.5	...
TYC5235-1137-1	22:58:52.89	-00:18:57.50	0.82	26	-4.44	-4.33	10.0	295.6 ± 167.4	...
TYC5238-1223-1‡	22:59:02.10	-04:31:35.00	...	120	...	-3.32	21.7	97.2 ± 78.3	...
HIP113502	22:59:11.16	+06:09:02.00	1.33	13	-4.62	-4.62	22.0	131.3 ± 40.7	...
HIP113579	23:00:19.22	-26:09:12.20	1.05	164	-4.32	-4.17	12.0	106.1 ± 81.4	AB Dor

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP113598‡	23:00:28.20	-33:44:42.00	...	70	...	-3.28	25.0	46.7 ± 46.7	...
HIP113829	23:03:05.05	+20:55:07.10	0.87	61	...	-4.57	4.0	409.2 ± 202.3	...
HIP113839	23:03:11.57	-47:15:18.40	1.32	73	-4.57	-4.43	12.0	109.5 ± 109.5	...
HIP113905†	23:04:01.92	+74:28:38.28	0.94	89	...	-4.74	...	298.6 ± 171.3	...
TYC0582-0114-1‡	23:04:53.00	+06:31:60.00	-0.20	100	...	-3.01	8.7	78.4 ± 65.9	...
TYC1160-0104-1‡	23:04:58.10	+09:49:16.00	...	40	...	-3.28	...	80.4 ± 66.5	...
HIP114046‡	23:05:52.00	-35:51:11.00	...	50	...	...	1.0	59.4 ± 59.4	...
HIP114066†	23:06:04.56	+63:55:35.04	-1.50	35	...	-3.07	8.0	68.1 ± 58.5	AB Dor
TYC0576-1039-1	23:06:26.60	+00:22:13.00	1.60	339	...	...	...	23.4 ± 23.4	...
TYC8005-1060-1‡	23:06:34.60	-38:55:36.00	-0.40	315	...	-3.22	114.0	35.1 ± 35.1	...
TYC2751-0009-1†	23:07:24.88	+31:50:14.14	0.10	242	...	-2.91	8.0	49.8 ± 49.8	...
TYC6395-1046-1‡	23:08:40.20	-16:22:60.00	...	10	...	-3.18	8.5	76.5 ± 71.7	...
TYC0576-1220-1‡	23:08:50.50	+00:00:53.00	...	250	...	-3.38	39.0	31.0 ± 31.0	...
TYC5242-0324-1‡	23:09:37.10	-02:25:55.00	-0.40	200	...	-3.54	13.3	80.2 ± 72.7	...
TYC5242-0530-1‡	23:09:47.10	+00:49:35.00	...	40	...	...	2.1	211.5 ± 184.3	...
HIP114379†	23:09:57.12	+47:57:29.88	0.24	70	...	-3.24	13.0	60.7 ± 60.7	...
HIP114385†	23:09:58.80	+47:57:33.84	1.11	102	...	-3.46	7.0	42.5 ± 42.5	...
HIP114530†	23:11:52.08	-45:08:09.96	0.88	220	...	-3.65	3.0	38.3 ± 38.3	AB Dor
TYC8831-0091-1	23:12:49.40	-52:40:11.00	1.20	96	...	-4.14	...	169.0 ± 124.9	...
HIP114736†	23:14:31.68	-53:57:28.08	0.43	17	...	...	15.0	98.4 ± 98.4	...
HIP114948	23:16:57.48	-62:00:04.10	1.28	74	-4.54	-4.49	11.0	100.5 ± 100.5	...
HIP114952	23:16:59.07	-07:09:39.20	1.38	18	-4.65	-5.43	13.0	338.7 ± 185.1	...
HIP115054†	23:18:09.84	-40:49:26.76	1.35	20	...	-5.42	15.0	303.2 ± 179.3	...
TYC5828-1164-1‡	23:19:09.60	-14:14:56.00	...	110	...	-3.25	22.3	86.2 ± 67.8	...
TYC4609-0535-1	23:19:26.05	+79:00:12.10	0.50	239	...	-3.21	...	43.0 ± 43.0	...
HIP115162†	23:19:39.60	+42:15:10.44	0.90	160	...	-4.27	4.0	124.8 ± 36.4	AB Dor
TYC8461-1251-2	23:20:50.17	-50:18:23.68	1.59	16	...	-5.76	...	259.5 ± 161.8	...
HIP115341†	23:21:44.40	+45:10:34.32	0.82	15	...	-4.77	7.0	459.4 ± 200.3	...
TYC9338-2016-1‡	23:21:52.50	-69:42:12.00	...	259	...	-3.12	29.9	28.8 ± 28.8	...
TYC5825-0027-1†	23:21:55.66	-10:50:03.63	-0.36	30	...	-2.94	15.0	56.3 ± 56.3	...
TYC0584-0343-1‡	23:21:56.40	+07:21:33.00	...	300	...	-3.42	14.6	30.5 ± 30.5	...
TYC5250-1083-1‡	23:23:01.20	-06:35:44.00	-0.10	105	...	-3.22	26.4	79.9 ± 67.4	...
HIP115527	23:24:06.26	-07:33:02.70	1.09	117	-4.42	-4.26	10.0	125.8 ± 37.9	...
HIP115555‡	23:24:25.70	-45:09:15.00	...	50	...	-2.96	75.0	52.6 ± 52.6	...
TYC5247-0640-1‡	23:25:29.60	-04:13:57.00	...	40	...	-3.05	18.3	80.8 ± 68.0	...
TYC9344-0293-1‡	23:26:10.70	-73:23:50.00	-2.20	123	...	-3.05	61.0	48.0 ± 48.0	Tuc Hor
TYC5250-0594-1‡	23:27:04.90	-06:01:04.00	-0.20	30	...	-2.88	15.5	49.6 ± 49.6	...
TYC9529-0340-1†	23:27:49.43	-86:13:18.70	0.44	240	...	-3.14	67.0	31.5 ± 31.5	Tuc Hor
TYC6403-0526-1†	23:30:07.72	-17:17:01.81	-0.20	50	...	-3.10	16.0	59.2 ± 59.2	...
HIP116045‡	23:30:49.30	-47:24:19.00	...	60	...	-3.35	8.1	48.8 ± 27.5	...
TYC9339-2158-1‡	23:31:00.80	-69:05:11.00	...	30	...	-3.83	4.1	212.4 ± 164.3	...
TYC9339-2158-1†	23:31:00.82	-69:05:10.80	0.72	30	...	-3.84	...	181.5 ± 143.7	...
TYC9339-2158-1B†	23:31:00.82	-69:05:10.80	0.69	30	...	...	...	78.8 ± 77.4	...
HIP116063	23:31:02.57	-69:04:35.20	1.24	99	-4.52	-4.49	9.0	124.6 ± 41.2	...

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Table B.1 – *Continued from previous page*

Name	R.A. (J2000)	Dec. (J2000)	Hα (Å)	Li (mÅ)	R'_{HK} (dex)	L_x	$v\sin i$ (km s^{-1})	Age (Myr)	Note
HIP116063B†	23:31:02.64	-69:04:35.04	1.31	95	...	-4.49	...	200.9 ± 150.3	...
HIP116069†	23:31:06.48	+02:21:48.64	1.53	65	...	...	18.0	72.1 ± 72.1	...
TYC8838-0463-1	23:31:22.90	-58:12:42.00	1.85	64	...	-4.82	...	224.3 ± 153.0	...
HIP116122†	23:31:44.16	-53:46:11.28	1.03	37	...	-4.53	16.0	468.7 ± 185.3	...
TYC8019-0407-1	23:32:06.50	-43:35:24.00	1.62	85	...	-4.45	...	177.7 ± 143.7	...
TYC5835-0469-1	23:32:19.11	-13:37:17.90	1.16	126	-4.42	-4.25	10.0	139.2 ± 92.0	...
TYC5835-0239-1‡	23:32:22.70	-13:39:07.00	...	100	...	...	6.5	209.1 ± 180.0	...
TYC9339-0101-1‡	23:32:37.00	-69:54:31.00	...	40	...	-3.52	15.7	76.7 ± 76.7	...
TYC6406-0180-1‡	23:33:06.10	-17:54:42.00	...	30	...	-3.99	5.5	229.2 ± 127.2	...
HIP116258‡	23:33:23.80	-12:39:53.00	...	30	...	-4.32	3.8	419.2 ± 196.5	...
HIP116384‡	23:35:00.30	+01:36:19.00	...	15	...	-3.65	4.5	118.9 ± 36.2	CarNear
HIP116431†	23:35:36.00	+08:22:57.79	1.58	56	...	...	...	65.6 ± 65.6	...
HIP116436	23:35:40.00	-27:29:24.40	1.22	58	-4.63	-4.69	11.0	377.6 ± 209.2	...
TYC6403-0563-1‡	23:36:08.90	-16:28:08.00	...	150	...	-3.29	52.6	94.8 ± 76.3	...
HIP116662A‡	23:38:30.50	+04:19:00.00	...	180	...	-3.61	...	59.6 ± 59.6	...
HIP116662B‡	23:38:30.50	+04:18:57.00	...	160	...	-3.30	...	48.1 ± 30.9	...
TYC5254-0746-1‡	23:39:17.60	-03:10:39.00	...	80	...	-3.12	9.0	73.8 ± 64.3	...
HIP116748B‡	23:39:39.30	-69:11:40.00	-0.10	232	...	-2.90	14.6	52.5 ± 51.8	Tuc Hor
HIP116748	23:39:39.36	-69:11:44.10	0.58	216	-4.21	-3.26	16.0	32.3 ± 32.3	Tuc Hor
HIP116771†	23:39:56.88	+05:37:38.46	1.27	21	...	-6.20	8.0	436.3 ± 209.8	...
TYC5255-0933-1‡	23:40:06.10	-04:02:55.00	...	150	...	-3.45	33.6	50.2 ± 50.2	...
HIP116910†	23:41:54.24	-35:58:39.36	0.45	200	...	-3.15	...	51.5 ± 51.5	AB Dor
HIP116910‡	23:41:54.30	-35:58:40.00	...	230	...	-3.14	31.1	36.4 ± 36.4	AB Dor
TYC5252-0533-1‡	23:43:02.30	-01:48:16.00	-1.00	120	...	-2.91	54.0	74.3 ± 64.4	...
TYC6984-0926-1	23:44:35.70	-26:28:24.00	2.07	59	...	-4.39	...	79.3 ± 79.3	...
TYC5830-0995-1	23:44:39.90	-08:50:40.00	2.61	33	...	-4.74	...	272.7 ± 196.2	...
TYC9133-0959-1‡	23:45:36.70	-65:01:02.00	-0.10	50	...	-3.25	13.0	87.2 ± 72.9	...
TYC7521-0936-1‡	23:46:03.10	-35:35:21.00	...	70	...	-3.02	9.0	74.9 ± 65.0	...
HIP117481	23:49:19.57	-27:51:14.90	1.21	94	-4.60	-4.66	11.0	158.0 ± 132.1	...
TYC7519-0251-1‡	23:51:46.70	-33:02:40.00	...	80	...	-3.58	4.7	60.8 ± 60.8	...
HIP117666‡	23:51:46.80	-06:36:47.00	...	20	...	-4.28	4.7	342.3 ± 204.8	...
TYC5259-0705-1‡	23:51:50.80	-06:36:47.00	...	100	...	-4.27	...	64.1 ± 64.1	...
HIP117696‡	23:52:10.20	-11:43:15.00	...	115	...	-4.12	27.8	104.7 ± 86.1	...
TYC5253-0969-1‡	23:52:24.40	+00:55:60.00	...	240	...	...	45.0	32.2 ± 32.2	...
HIP117946	23:55:26.47	+22:11:37.10	0.72	12	-4.20	-4.00	4.0	237.6 ± 169.6	...
HIP117980	23:55:48.72	-13:57:59.90	1.22	18	-4.64	-4.75	11.0	296.8 ± 202.3	...
HIP118008	23:56:10.52	-39:03:06.90	0.75	58	-4.36	-4.41	9.0	261.3 ± 137.6	AB Dor
HIP118008‡	23:56:10.70	-39:03:08.00	...	78	...	-4.40	2.6	226.4 ± 124.4	AB Dor
HIP118100‡	23:57:23.20	-16:05:44.00	...	60	...	-3.90	16.0	98.8 ± 76.4	...
TYC9339-1814-1	23:57:57.00	-68:04:37.00	1.60	57	...	-4.46	...	368.3 ± 173.6	...
TYC9533-1157-1‡	23:58:17.70	-86:26:24.00	...	266	...	-3.10	33.8	31.1 ± 31.1	Octans

Table B.1: †OBS catalog. ‡SACY catalog.

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