

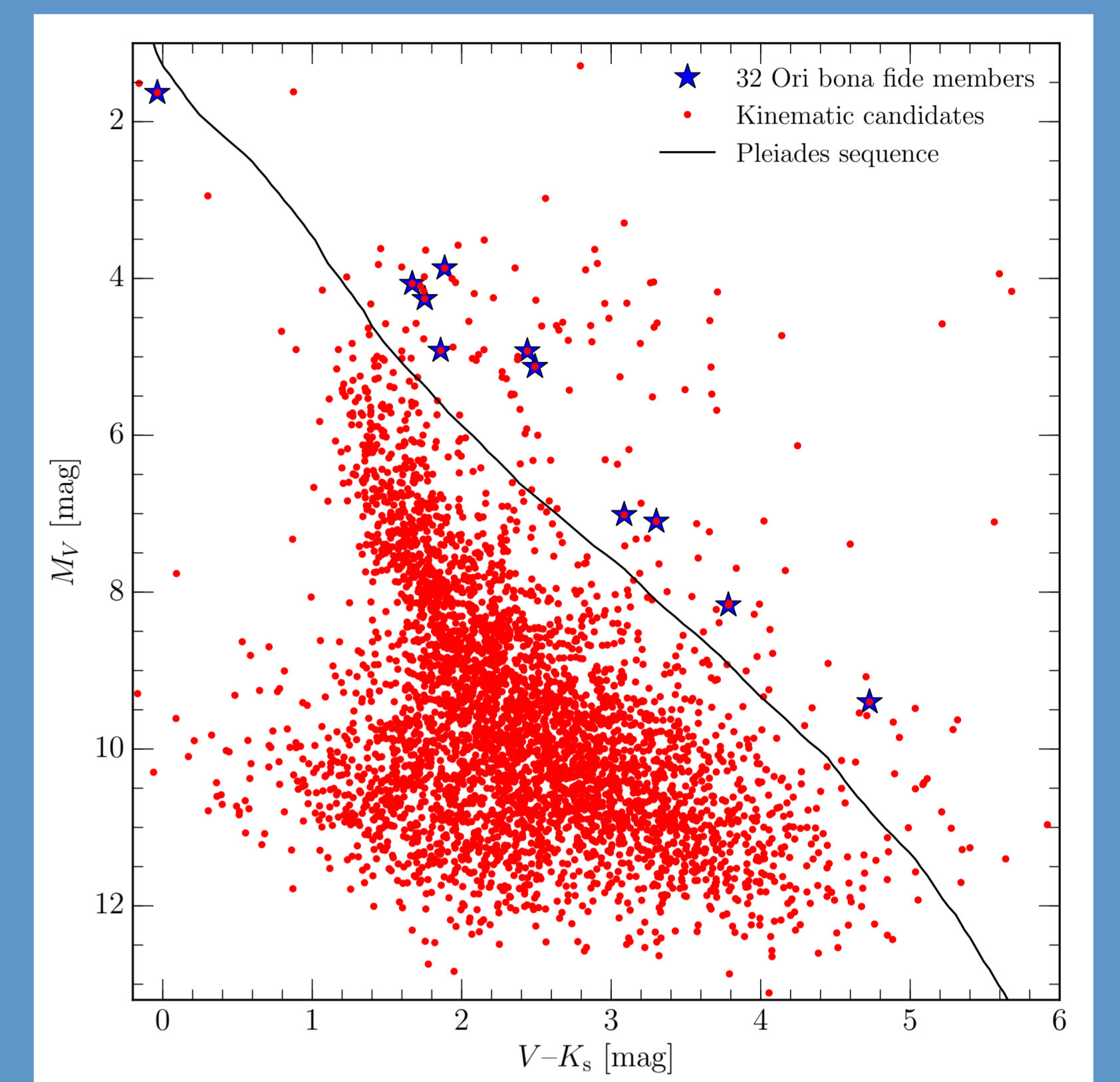
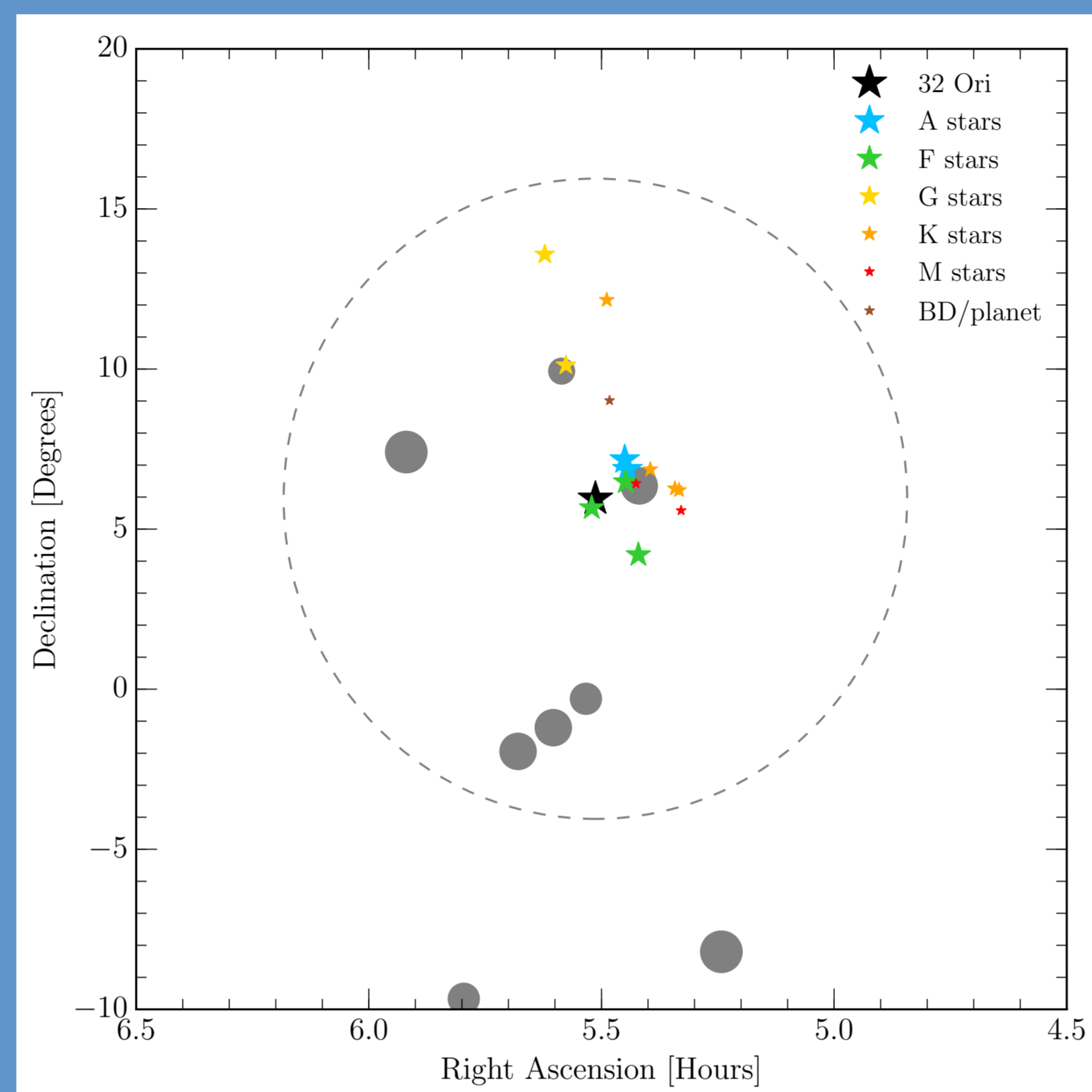
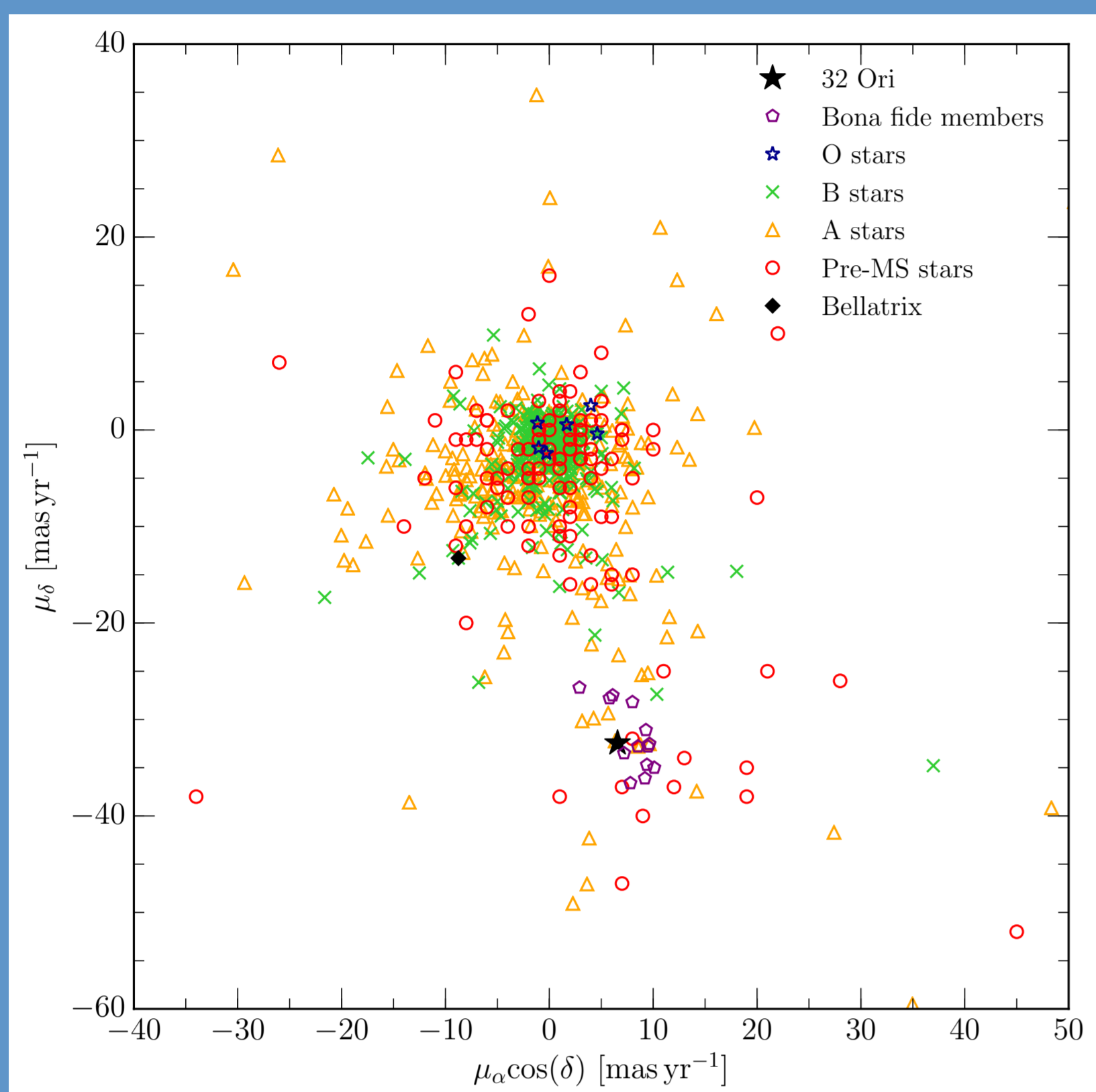
# A Stellar Census of the 32 Ori Moving Group

Cameron P. M. Bell<sup>1</sup>, Simon J. Murphy<sup>2</sup> & Eric E. Mamajek<sup>3</sup>

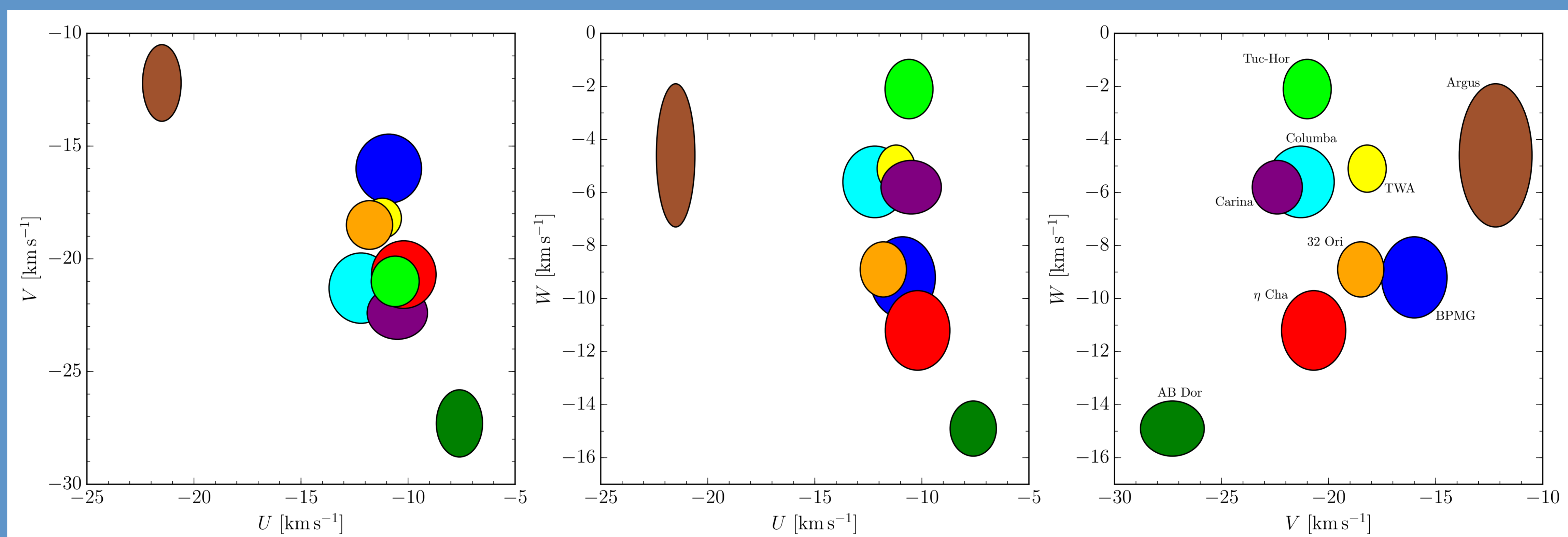
<sup>1</sup> ETH Zürich, <sup>2</sup> UNSW Canberra, <sup>3</sup> University of Rochester

**Background:** The 32 Ori moving group was first identified by Mamajek (2007) as a concentration of co-moving stars in a proper motion diagram and represents the first northern, young (~20 Myr) stellar aggregate within 100 pc of the Sun. Since its discovery, 15 bona fide members (including a potential planetary-mass object; see Burgasser et al. 2016) have been identified. In the era of SPHERE, GPI, ALMA, etc. the group therefore represents a benchmark population with which to study the early evolutionary stages of stars, circumstellar discs and planets; especially during the epoch of terrestrial planet and satellite formation.

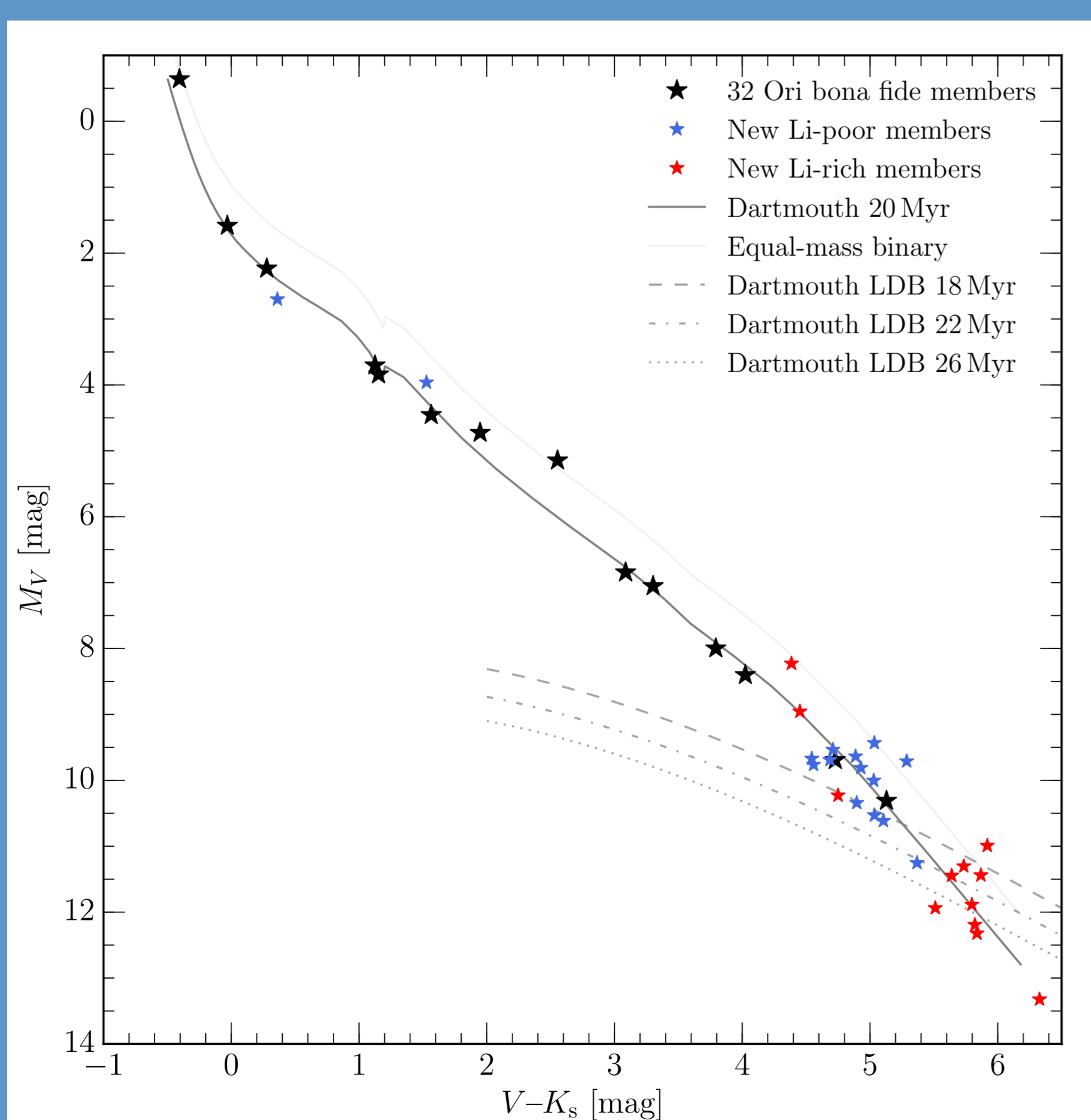
**What we did:** We report the first large-scale spectroscopic survey for new members of the 32 Ori moving group after selecting candidates with Galactic space motion and positions in colour-magnitude diagram space consistent with group membership.



*Left:* Proper motions of stars within 10° of 32 Ori. *Middle:* Spatial distribution of the 15 bona fide members. The dashed circle indicates the search radius within which we have identified new members. *Right:*  $M_V$ ,  $V-K_s$  colour-magnitude diagram of potential kinematic members from UCAC4 with best-fit distances between 70 and 110 pc and for which the lowest total difference between projected and observed proper motions is  $\leq 10$  mas yr<sup>-1</sup>.



Galactic  $UVW$  space motion of the 32 Ori moving group compared to those of other young groups/associations within 100 pc.



**What we found:** Based on a combination of radial velocity, H $\alpha$  emission and Li absorption, we identify ~30 new members (reduction still ongoing, so this number may increase!).

*Left:*  $M_V$ ,  $V-K_s$  colour-magnitude diagram of the 14 bona fide members as listed in Bell et al. (2015) with the new members overlaid.

Isochronal and LDB ages suggest the group is essentially coeval with the  $\beta$  Pictoris moving group.

## References:

- Bell et al. 2015, MNRAS, 454, 593
- Burgasser et al. 2016, ApJ, 820, 32
- Mamajek 2007, in IAU Sym. Vol. 237, Triggered Star Formation in a Turbulent ISM

**Questions?:** For more information regarding the study just ask or, if you don't recognise me without the long hair, send me an e-mail at [cbell@phys.ethz.ch](mailto:cbell@phys.ethz.ch).

**Acknowledgements:** We would like to thank the ANU TAC for the allocated time which made this study possible.