

The Black Clouds

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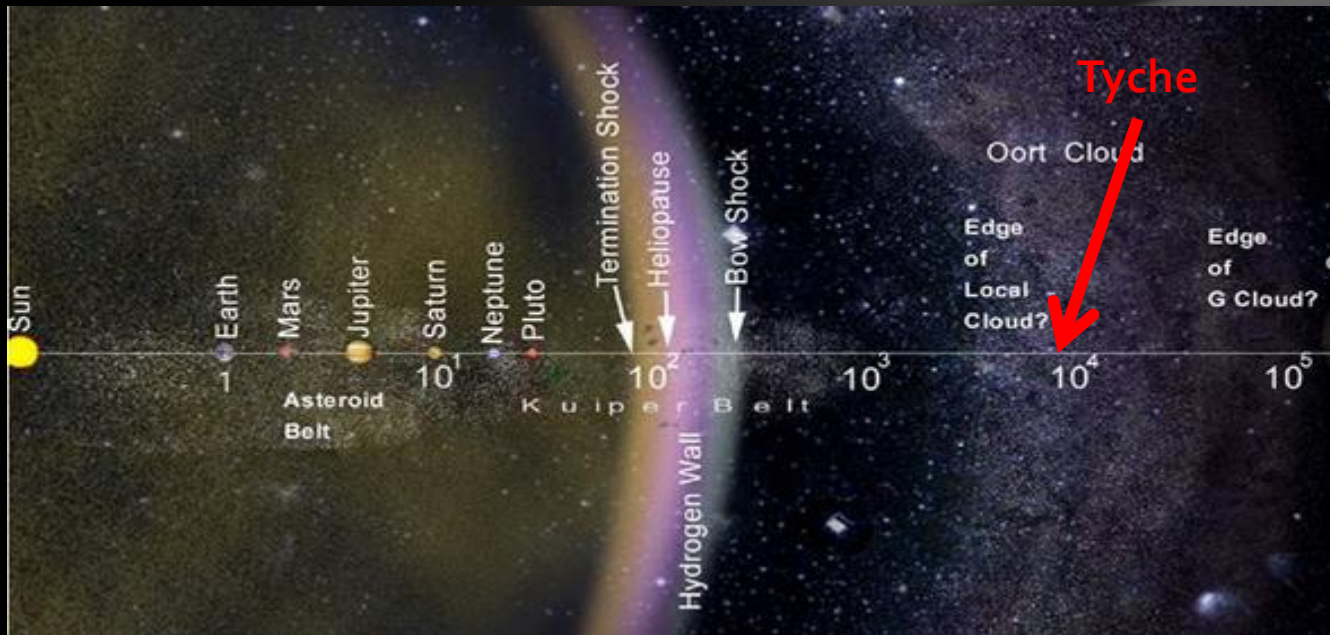
WISE Telescope

- Surveyed sky in 4 infrared wavelengths
- Hundreds of times more sensitive than previous infrared surveys
- Main goals:
 - Survey 99% of the sky in infrared
 - Detect most luminous galaxies, asteroids and low mass stars
- Dropped bands 3 and 4 in the second release



Why Search this Catalog?

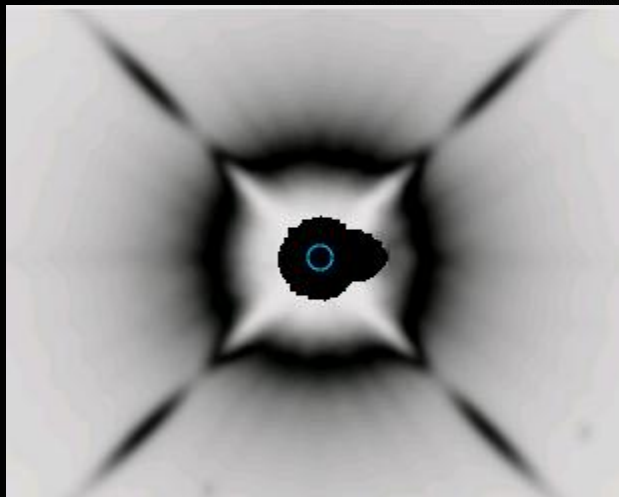
- Brown Dwarfs
 - Low mass stars
 - Hidden behind clouds of gas and dust
- Tyche
 - Hypothetical planet similar to brown dwarf
 - More massive than Jupiter



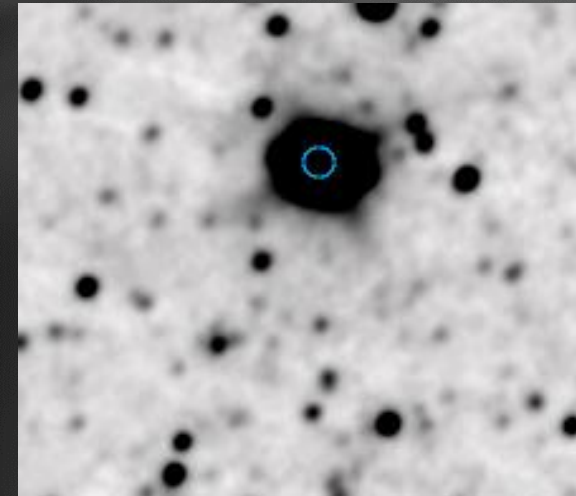
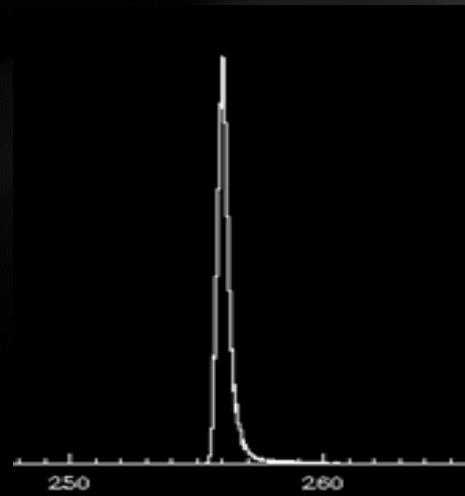
Searching the Catalog

- Telescopes produce FITS images
- Point spread function

5.40350	5.39398	5.39235
5.42492	5.41216	5.40642
5.44636	5.43232	5.42309
5.46101	5.44805	5.43641
5.46261	5.45253	5.44037
5.45136	5.44496	5.43399
5.43145	5.42824	5.41935
5.40886	5.40687	5.39914
5.39003	5.38745	5.37968
5.37848	5.37467	5.36570
5.37415	5.36907	5.35871

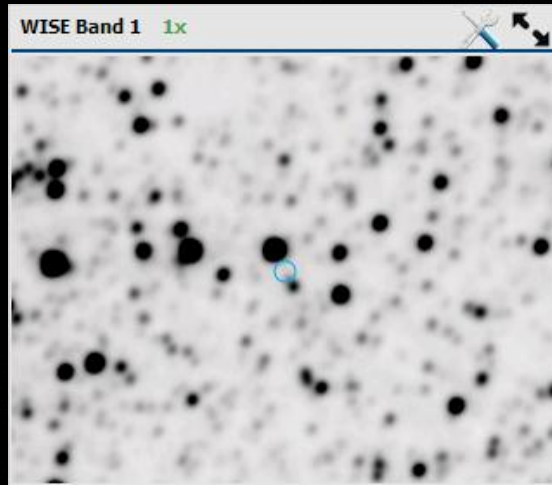


Star

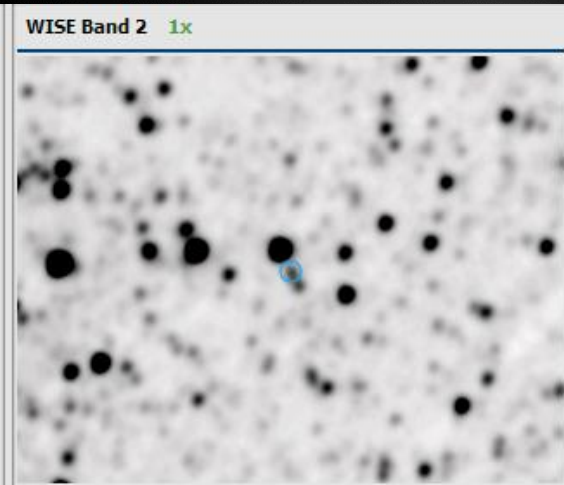


Planet

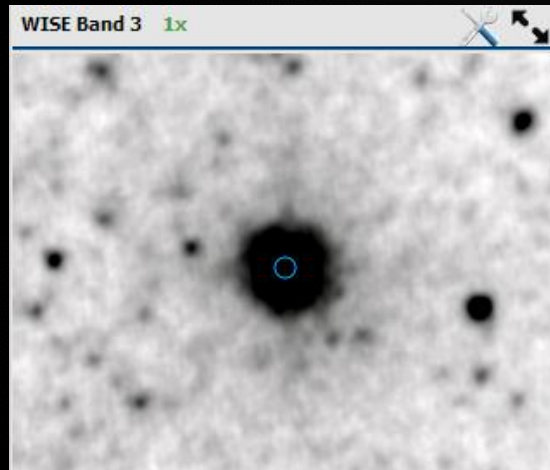
WISE 0622-6855



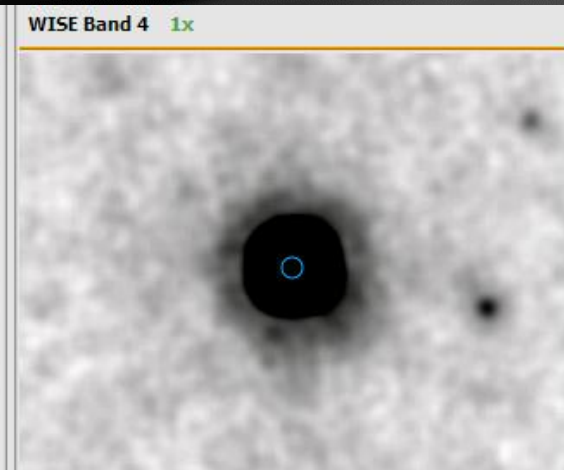
3.4 microns, Mag: 17.43



4.6 microns, Mag: 14.76

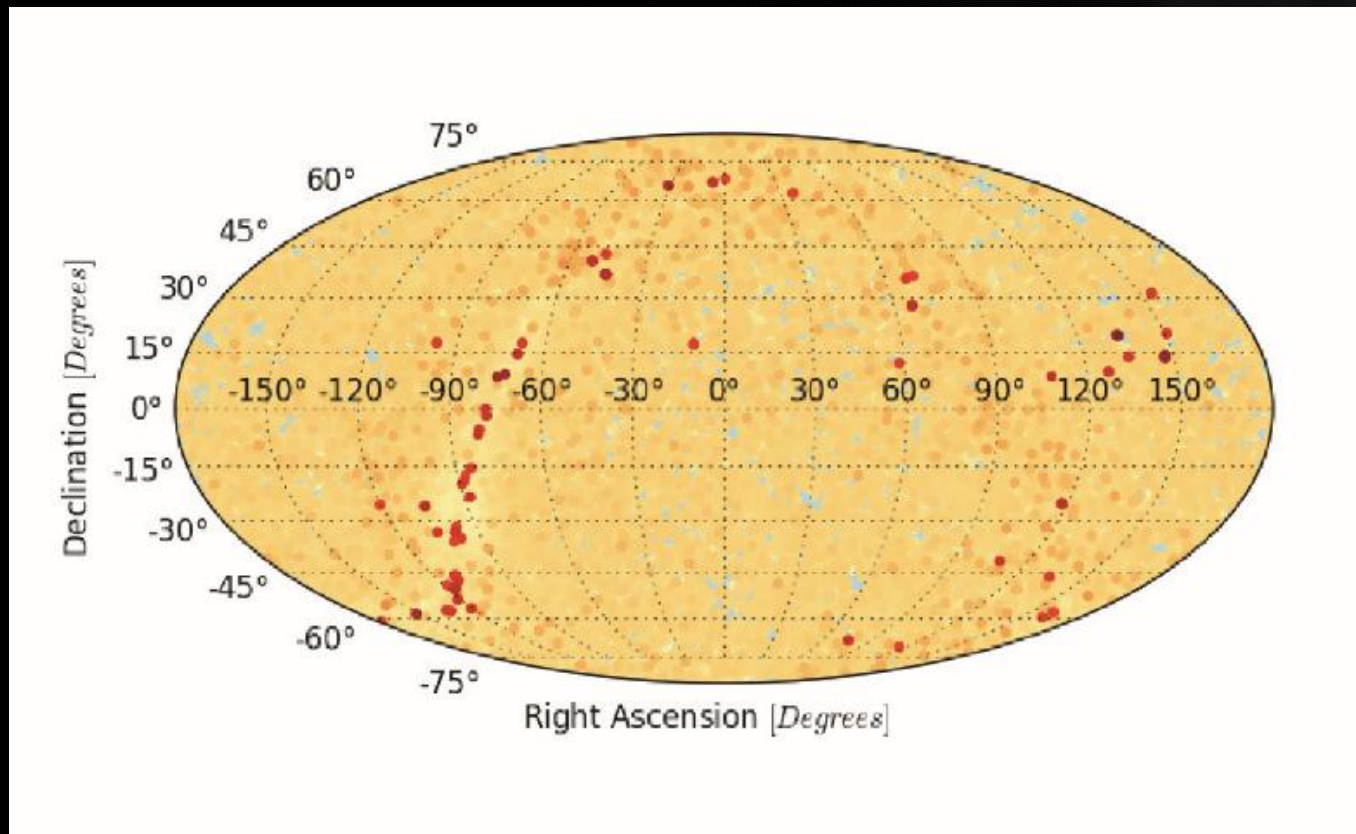


12 microns, Mag: 5.67

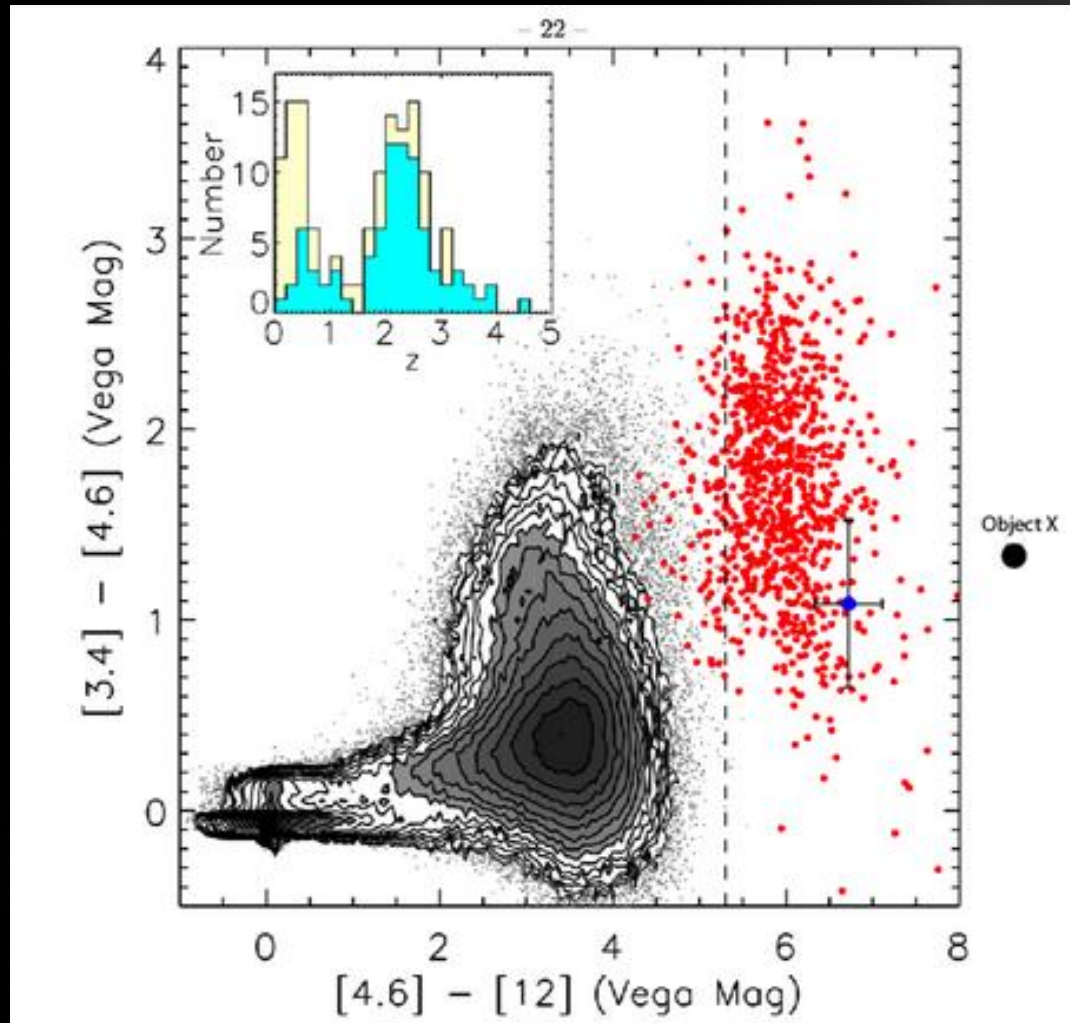


22 microns, Mag: 2.66

Location in the Galactic Plane

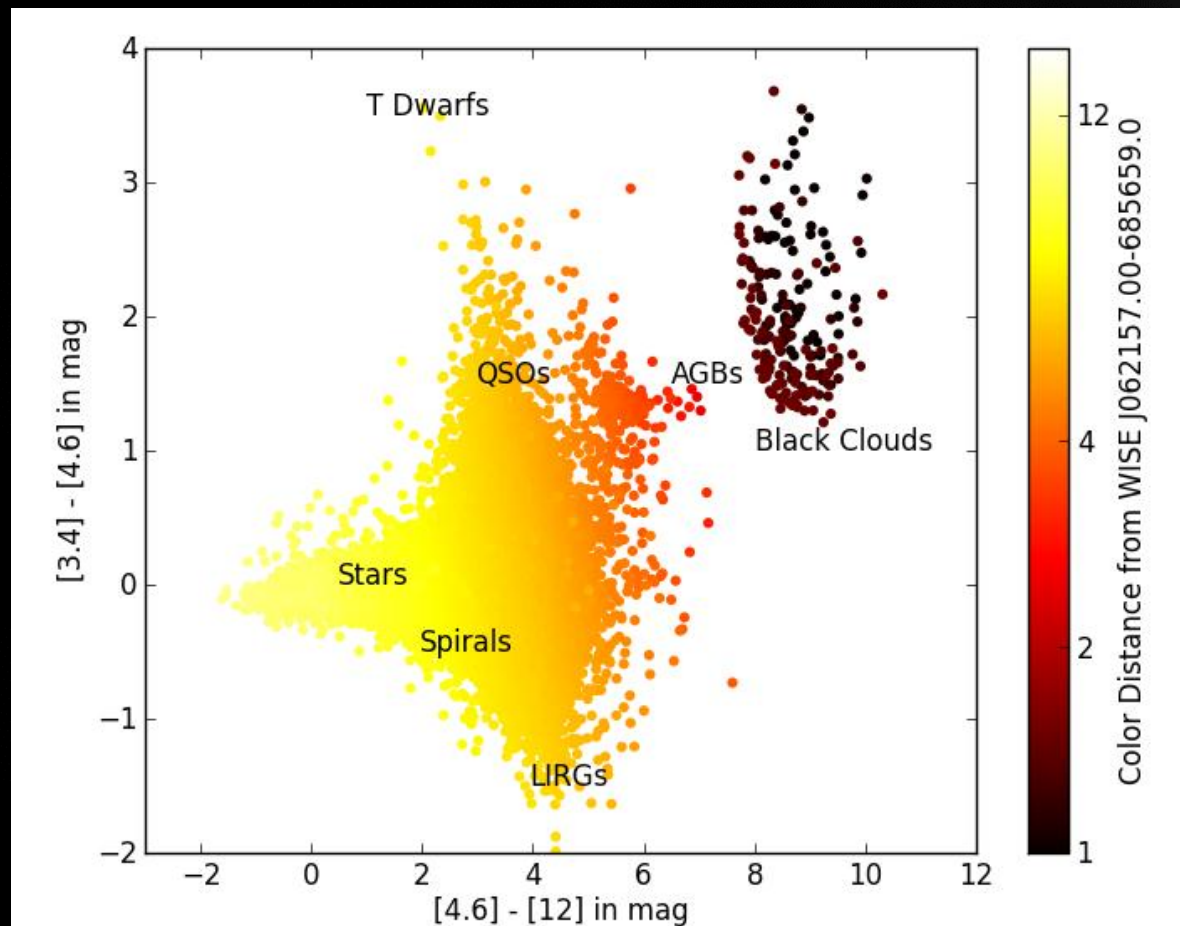


Comparison to Other Results



Color Distance from Object X

- Candidates closer than the LMC similar to Object X
- Color distance = distance of difference between candidates' magnitudes and Object X's magnitude



Conclusions and Results so far..

- Extreme carbon star
- In a very late asymptotic red giant phase
- As a result, we have a software
- Continuing to compare Object X to other carbon stars

- Black clouds exist!

Acknowledgements

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Thank You!