

NEOWISE YSO / AGB / SPHEREx Catalog match

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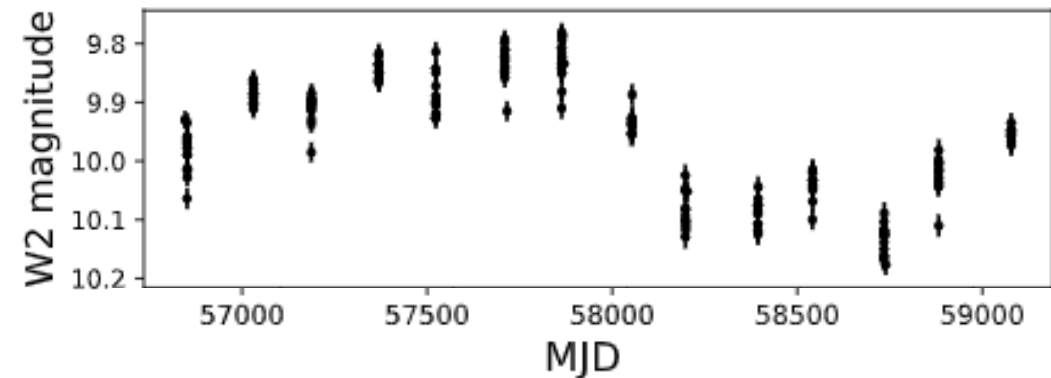
NEOWISE YSO samples – Low-mass YSOs in Gould Belt

YSOs in 20 star-forming regions of Gould Belt ~ total 7000 sources

1. Orion A/B - Megeath et al. (2012)
2. Additional 18 SF regions – Dunham et al. (2015)
3. Taurus – Esplin & Luhman (2019)

- 5398 sources detected by NEOWISE

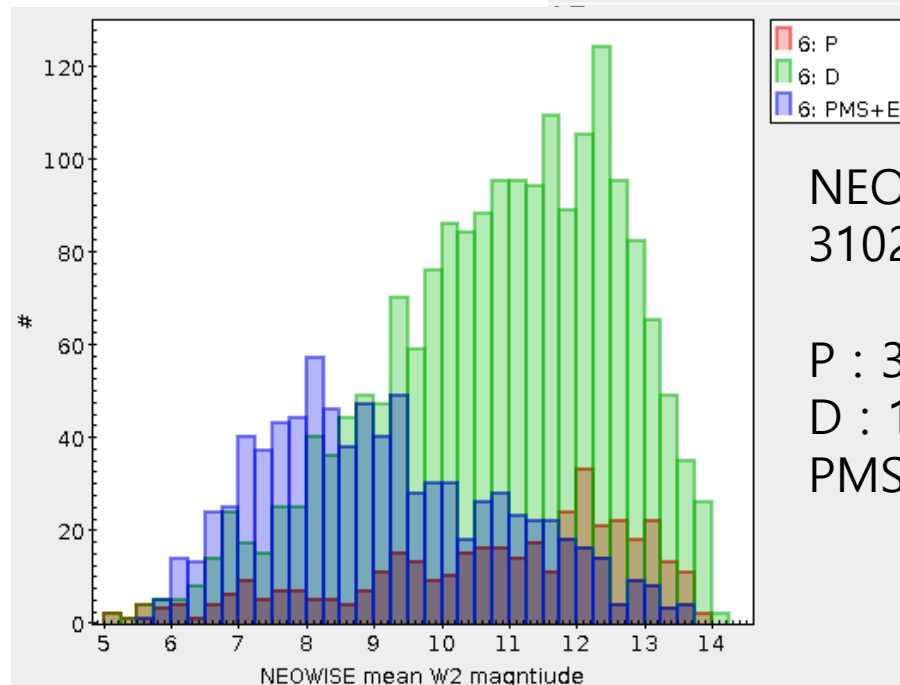
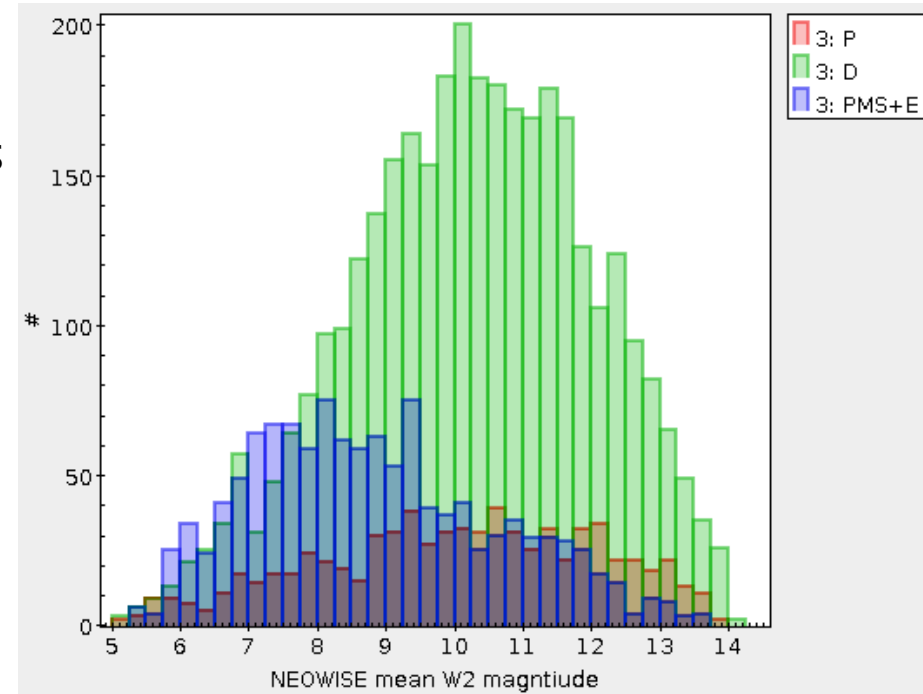
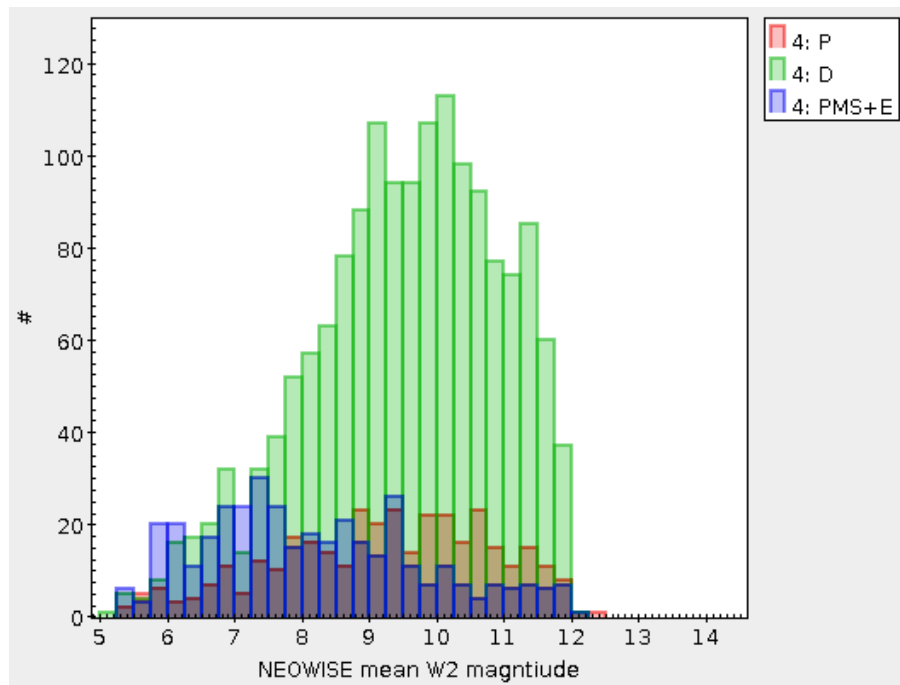
An example of NEOWISE lightcurve



NEOWISE YSO matched with ICE catalog < 3 arcsec

NEOWISE – total 5398 YSOs
P : 735 (14% of 5398)
D : 3459 (64%)
PMS+E : 1204 (22%)

NEOWISE AND
ICE catalog – 2291 YSOs (42.4% of total)
P : 349 (15% of 2291)
D : 1564 (68%)
PMS+E : 378 (16%)

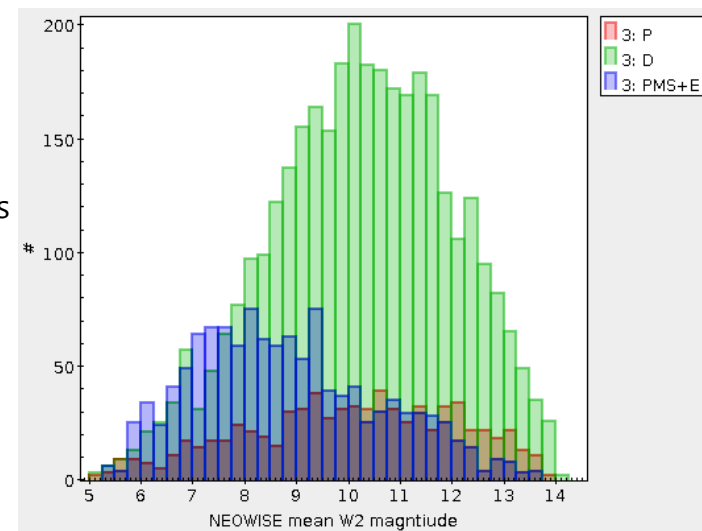


NEOWISE, but not ICE catalog –
3102 YSOs (57.4% of total)

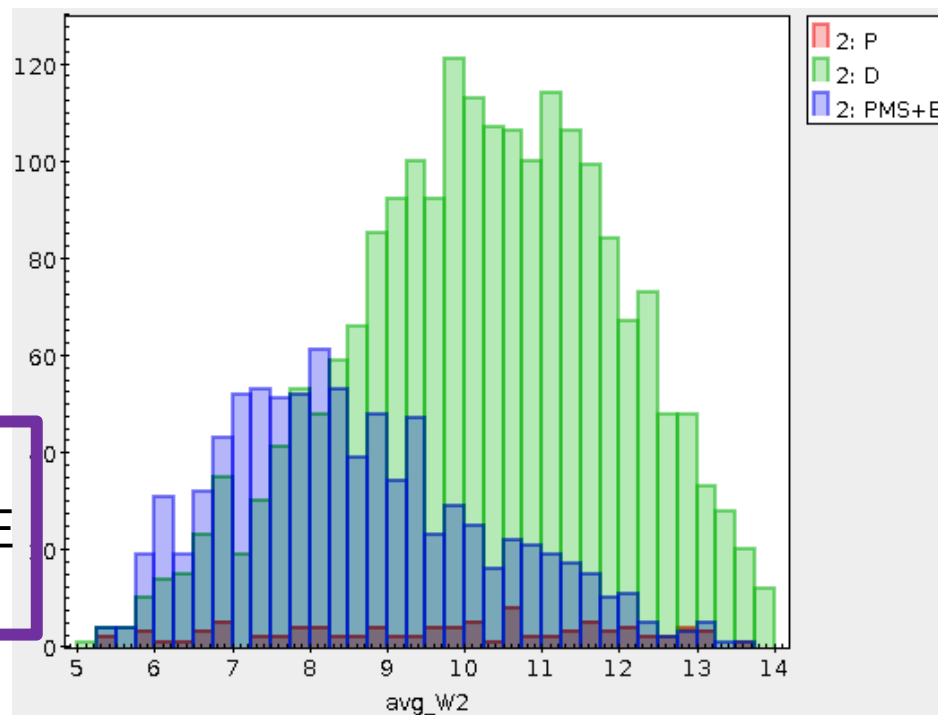
P : 387 (12% of 3102)
D : 1889 (61%)
PMS+E : 826 (27%)

NEOWISE YSO matched with Gaia DR2 x ALLWISE YSO catalog (Marton+ 2019) < 3 arcsec

NEOWISE – total 5398 YSOs
P : 735 (14% of 5398)
D : 3459 (64%)
PMS+E : 1204 (22%)



3029 YSOs of 5398 (56%)
P : 92 (3% of 3029)
D : 2070 (68%)
PMS+E : 867 (29%)



Most embedded YSOs are almost excluded from the Gaia x ALLWISE catalog

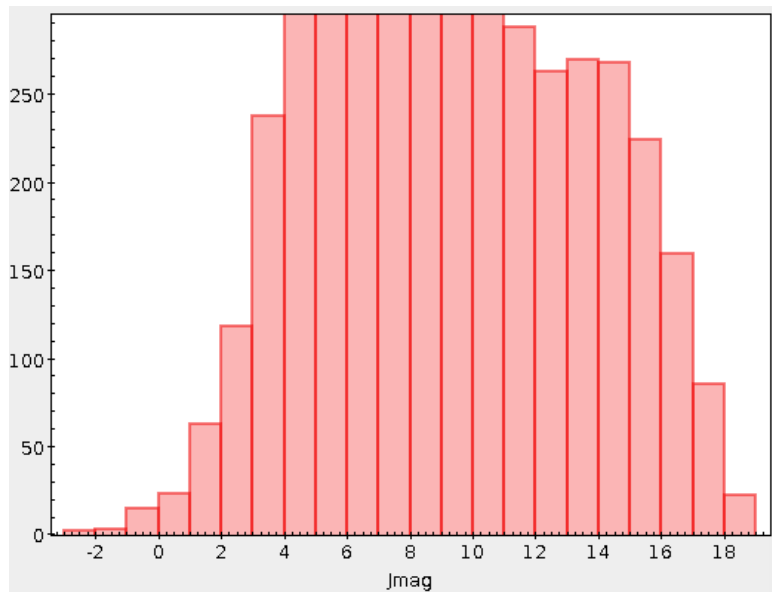
O-rich / C-rich AGB catalog + Ice catalog

- O-rich / C-rich AGB catalog - from Suh & Hong (2017)
- < 3 arcsec distance criterion

AGB catalog – 4,996 sources

After matching with SPHEREx Ice catalog → 450 sources matched

2mass Jmag distribution
AGB catalog (Suh & Hong 2017)



2mass Jmag distribution
AGB + SPHEREx Ice catalog

