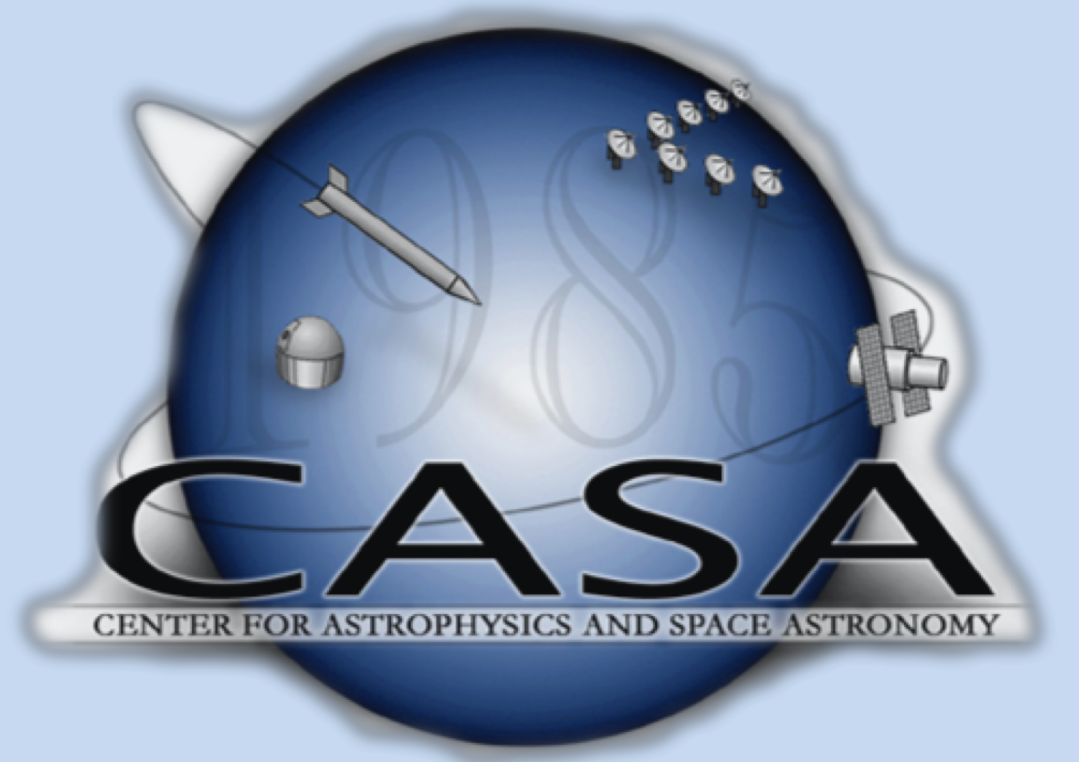




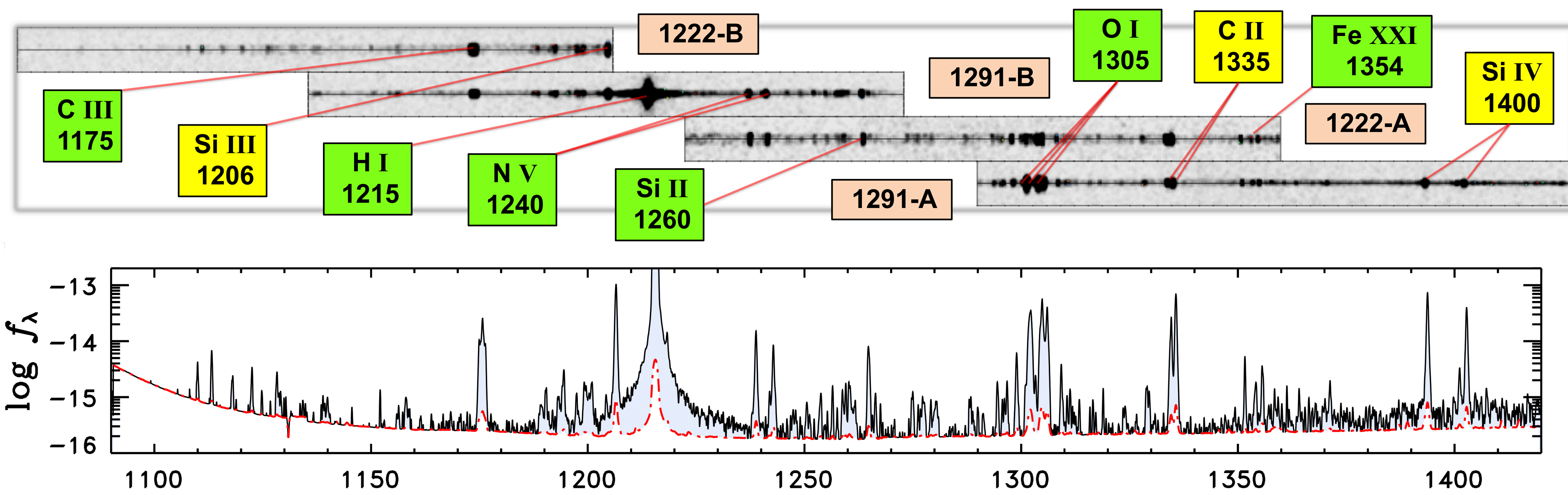
Ecliptic-poles Stellar Survey (EclipSS)

Tom Ayres

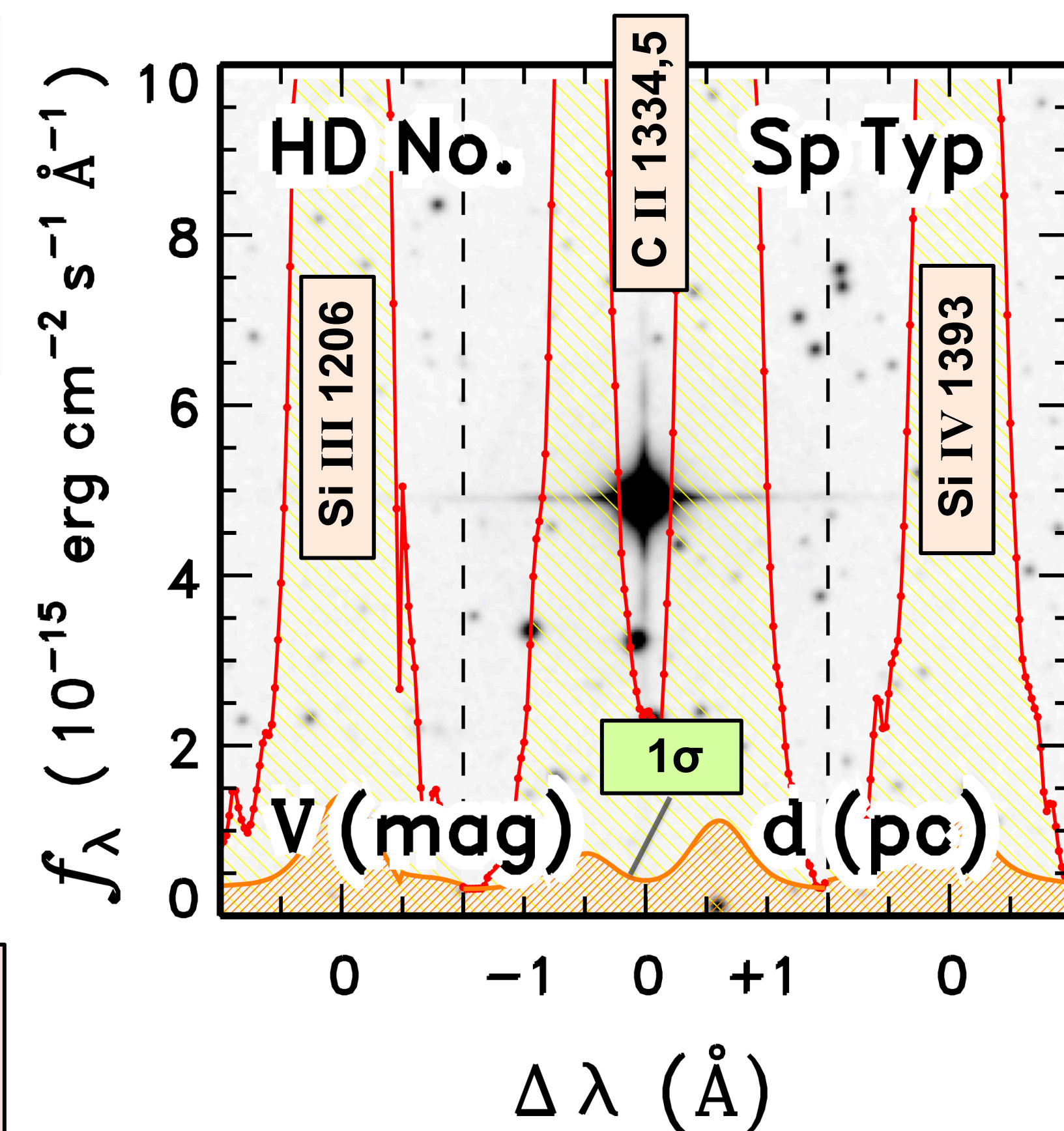
University of Colorado, Boulder



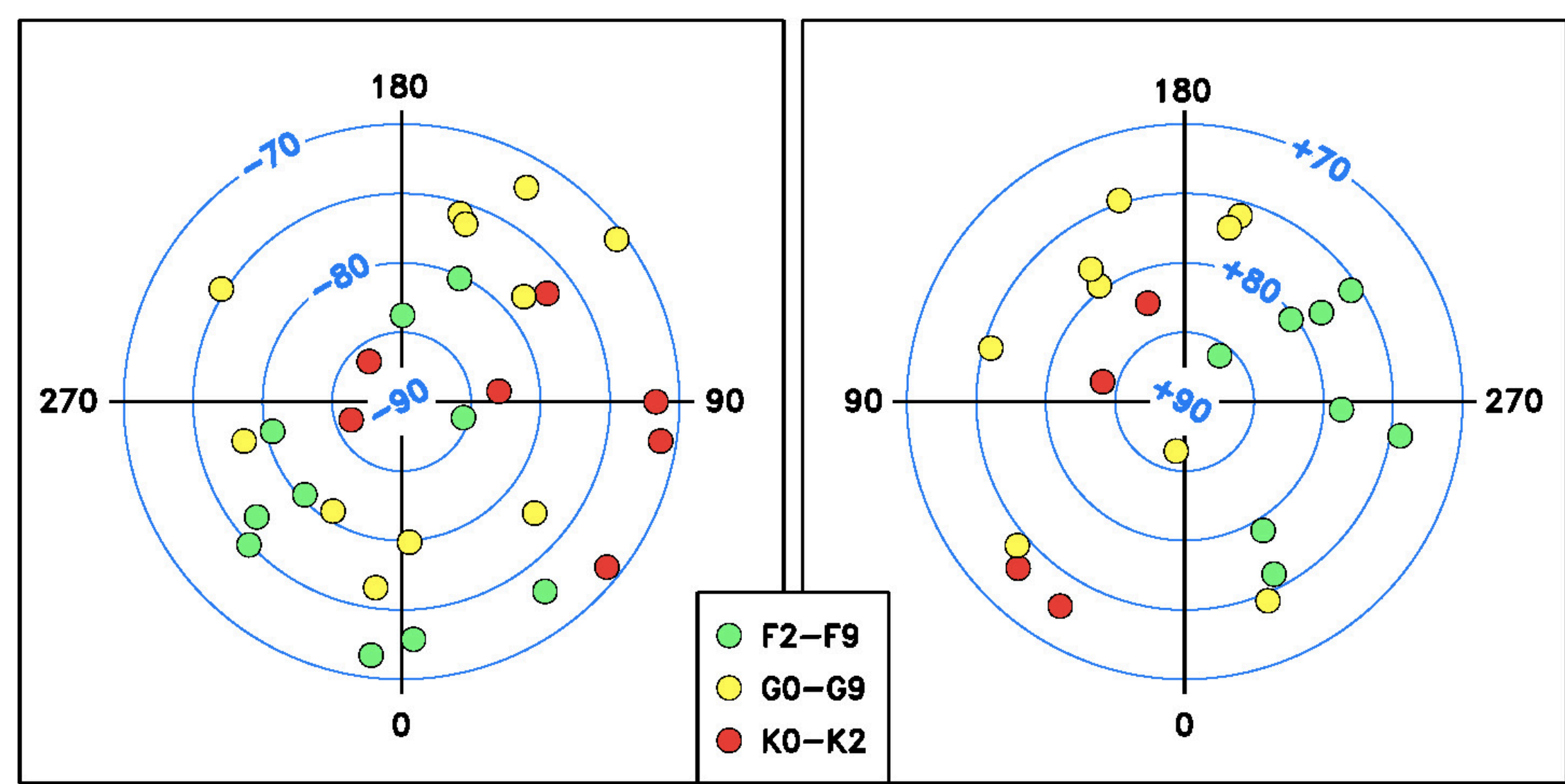
EclipSS is collecting *Hubble*/COS FUV (1070–1430 Å) spectra of sunlike (F2–K2) dwarf stars in the ecliptic polar regions, where surveys like *TESS* (exoplanets, asteroseismology) and *eROSITA* (coronal X-rays) achieve their deepest exposures. Targets are bright enough for *TESS* and *eROSITA*, but not too bright for COS. Combined photometric (starspots), asteroseismic, FUV, and X-rays will inform explorations of stellar activity, and underlying magnetic engine, the Dynamo; including XUV impacts on exoplanet atmospheres.



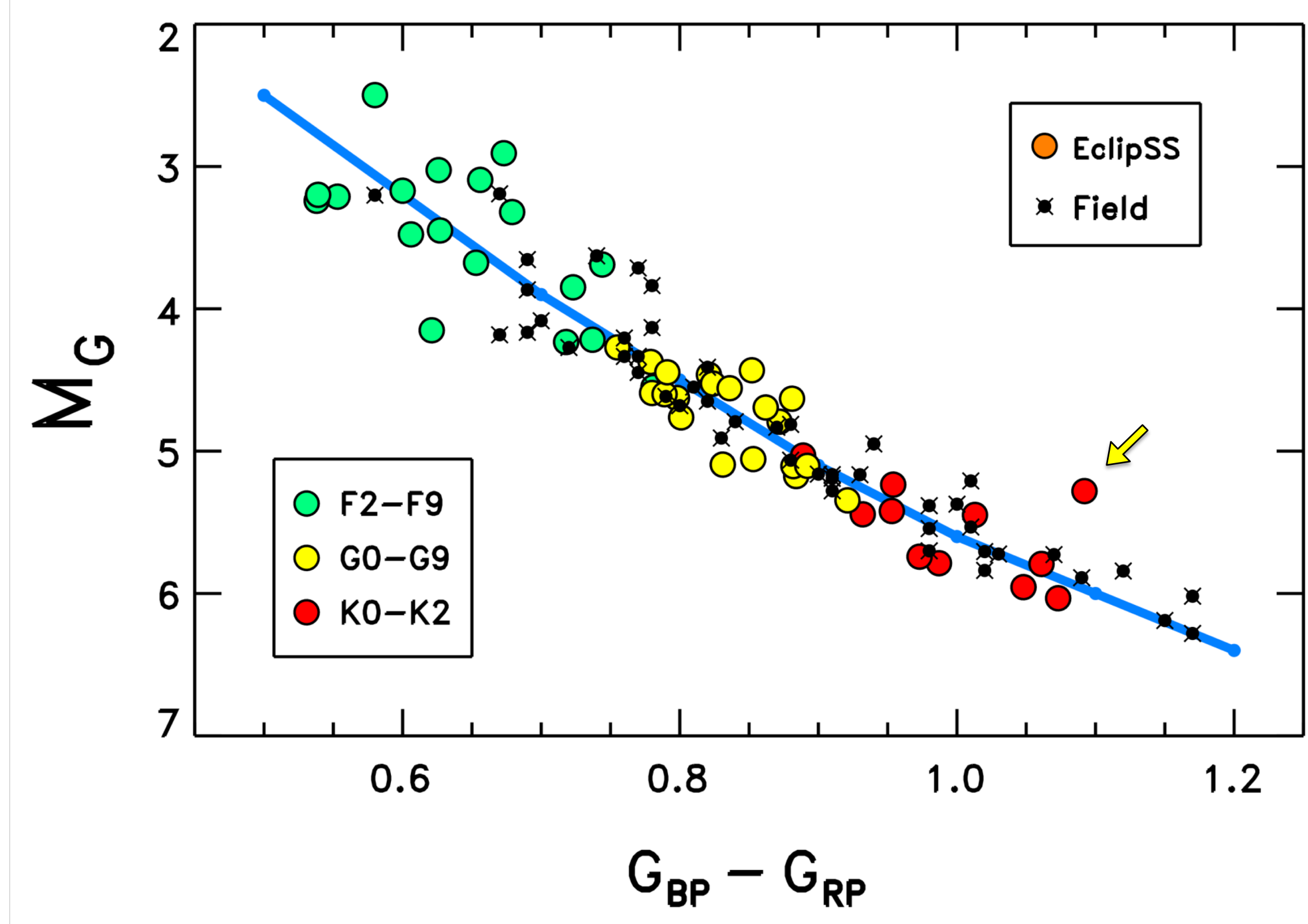
Upper panel: overlapping FUV detector segments (“1222-B” etc.) of COS G130M CENWAVs. Key spectral features marked. **Lower panel:** merged spectrum (shaded); red dot-dashed curve is 1σ noise level. y-axis is log flux density (cgs per Å); x-axis is wavelength (Å). G130M resolution is 18 km/s, fully resolving the emission lines.



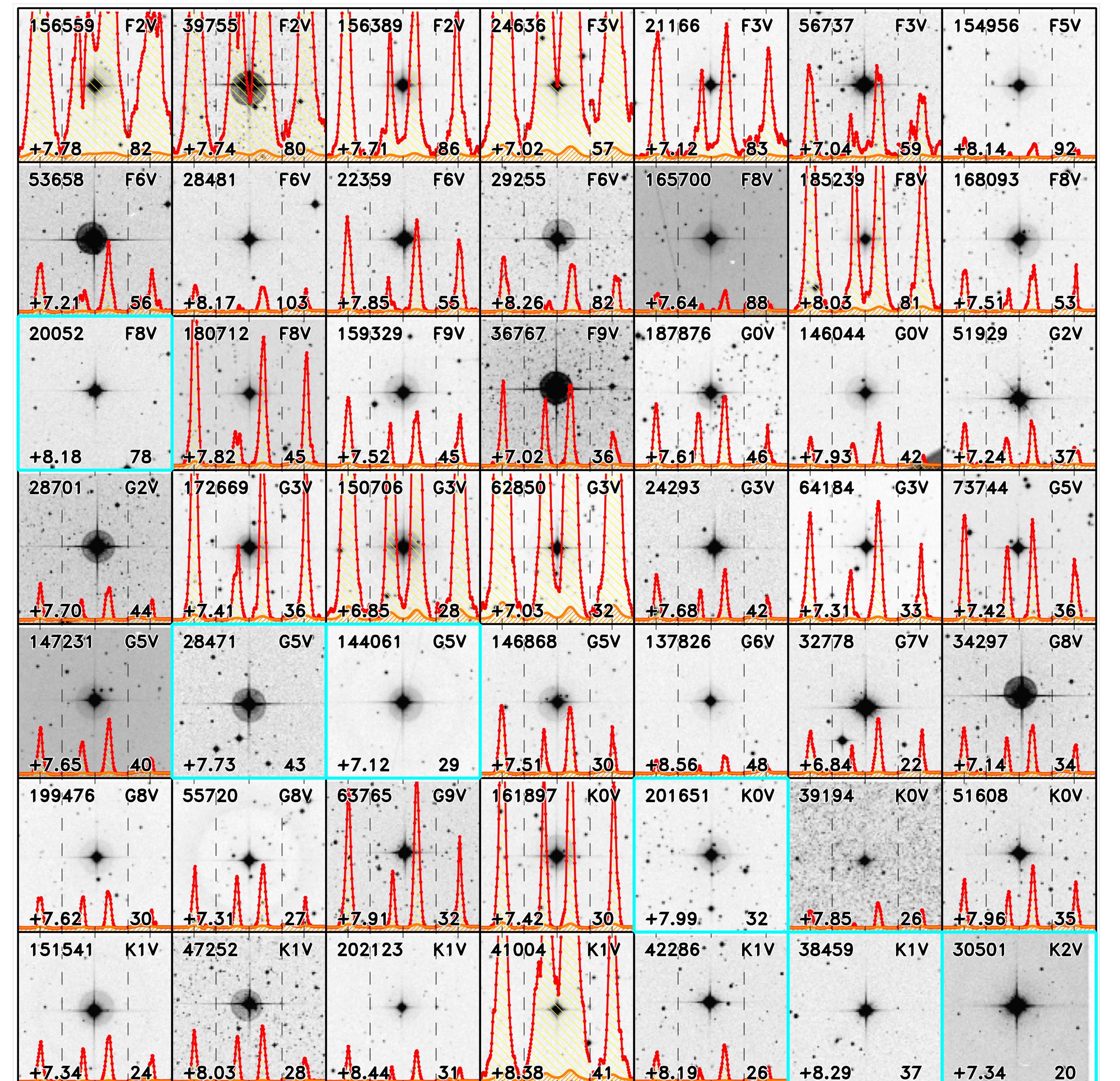
As of Jan 2019, **43 of 49 targets observed**. Select FUV emissions superposed on POSS images at right (**key above**). Blue-outlined snapshots: **not yet observed**. *Gaia* H–R diagram **at left**. One star likely unresolved double of similar M_G components (**arrow**).



Polar coordinates of EclipSS targets: many in *Tess* Camera 4, some in Cam 3



Gaia H-R diagram



5' x 5' Palomar Obs Sky Survey fields

† Based on observations from *HST*, supported by grant GO-15300 from Space Telescope Science Institute; thanks also to CDS’s *SIMBAD* stellar database & ESA’s *Gaia* space astrometry mission