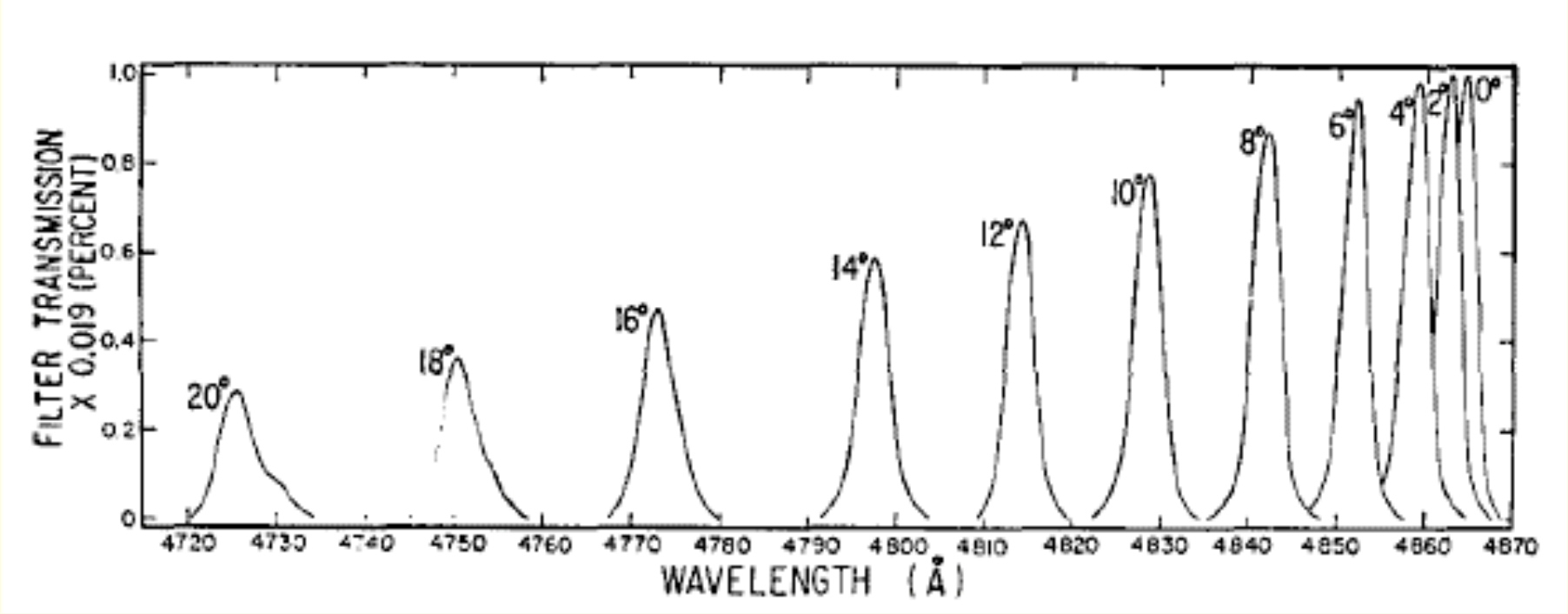
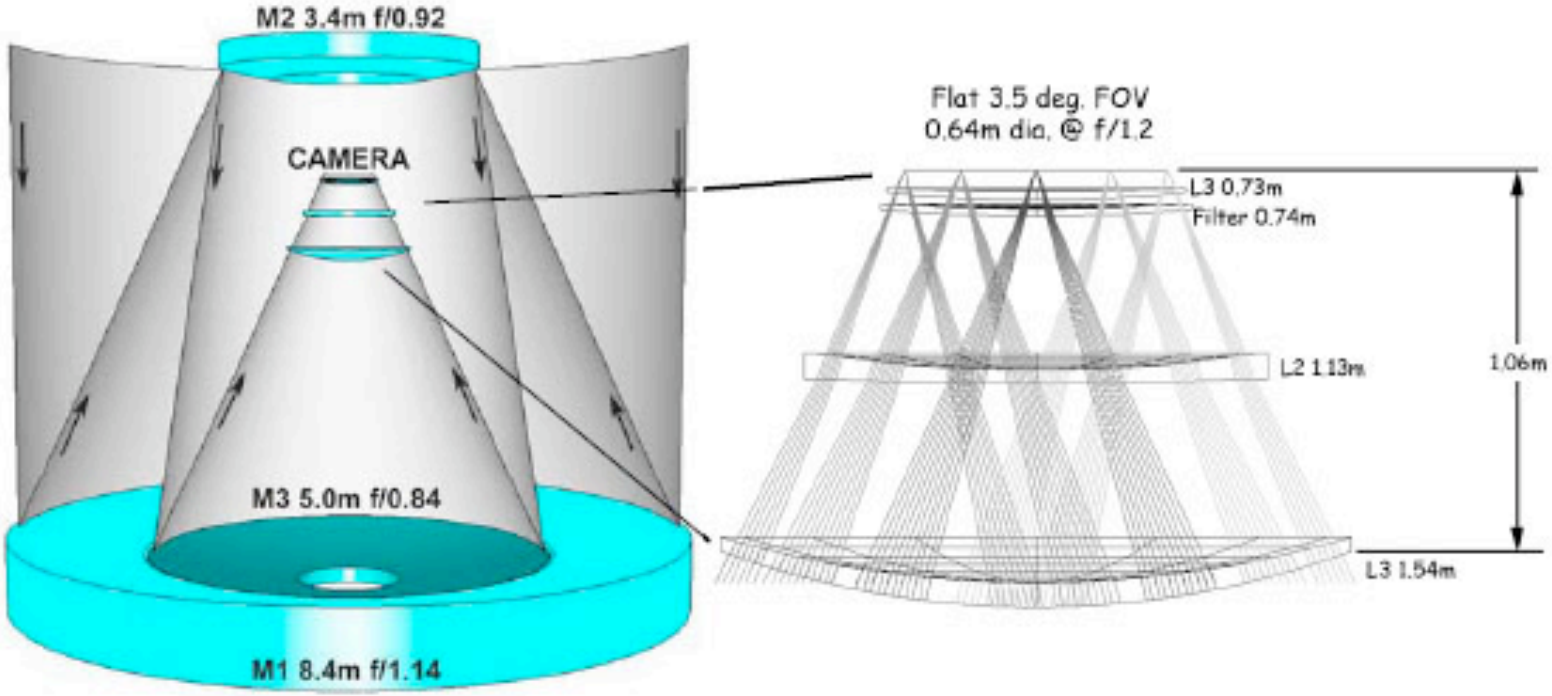
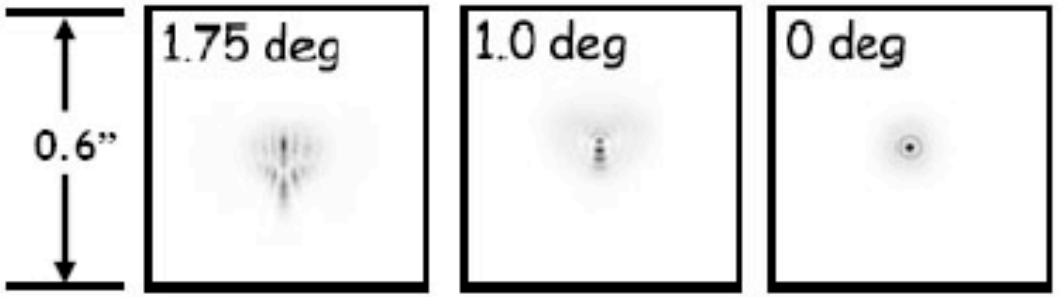
Why is ODI excellent for narrow-band observations?



Eather & Reasoner (1969)

Why is ODI excellent for narrow-band observations?

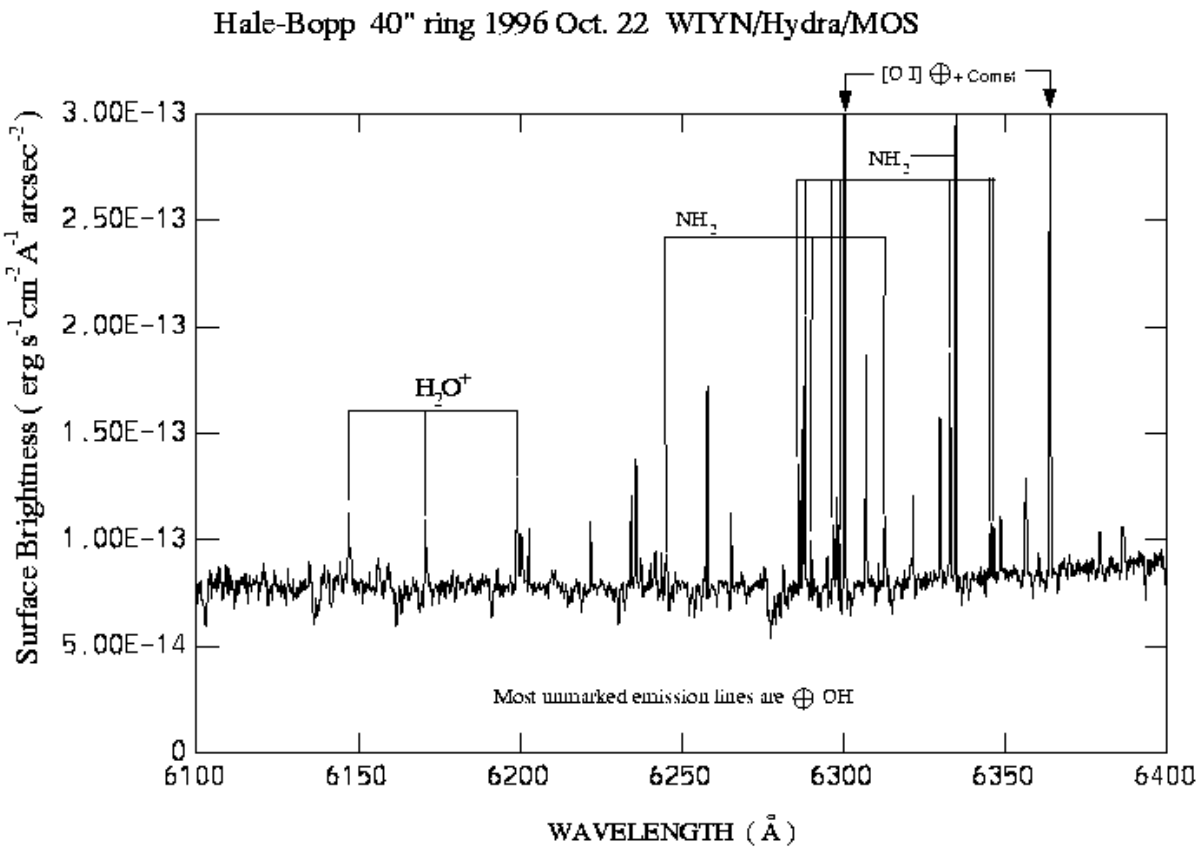


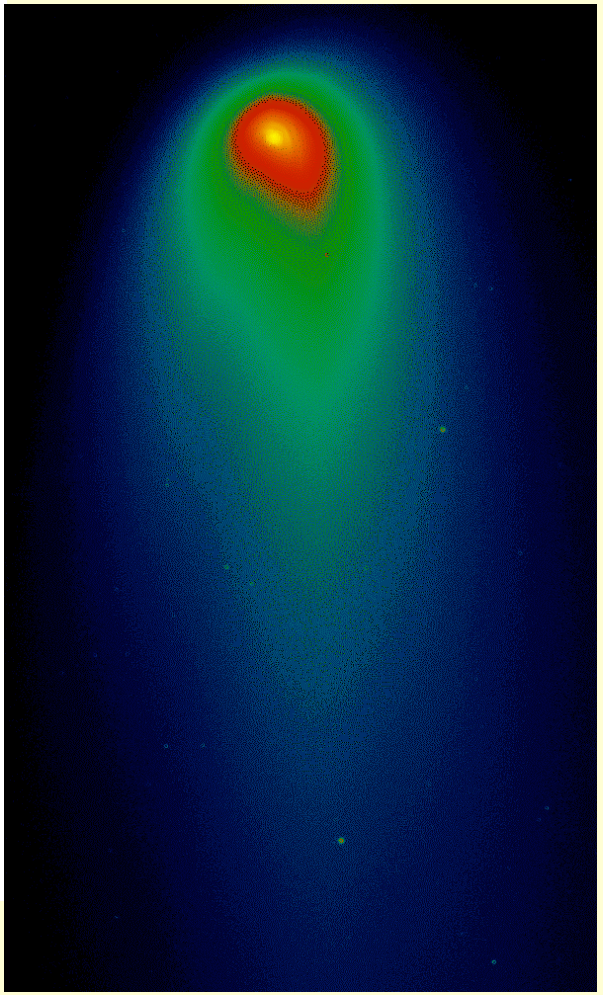


LSST and many new telescope designs have extremely fast converging beams, making narrow-band observations very difficult.

ODI’s f/6.3 beam allows for unique science opportunities.

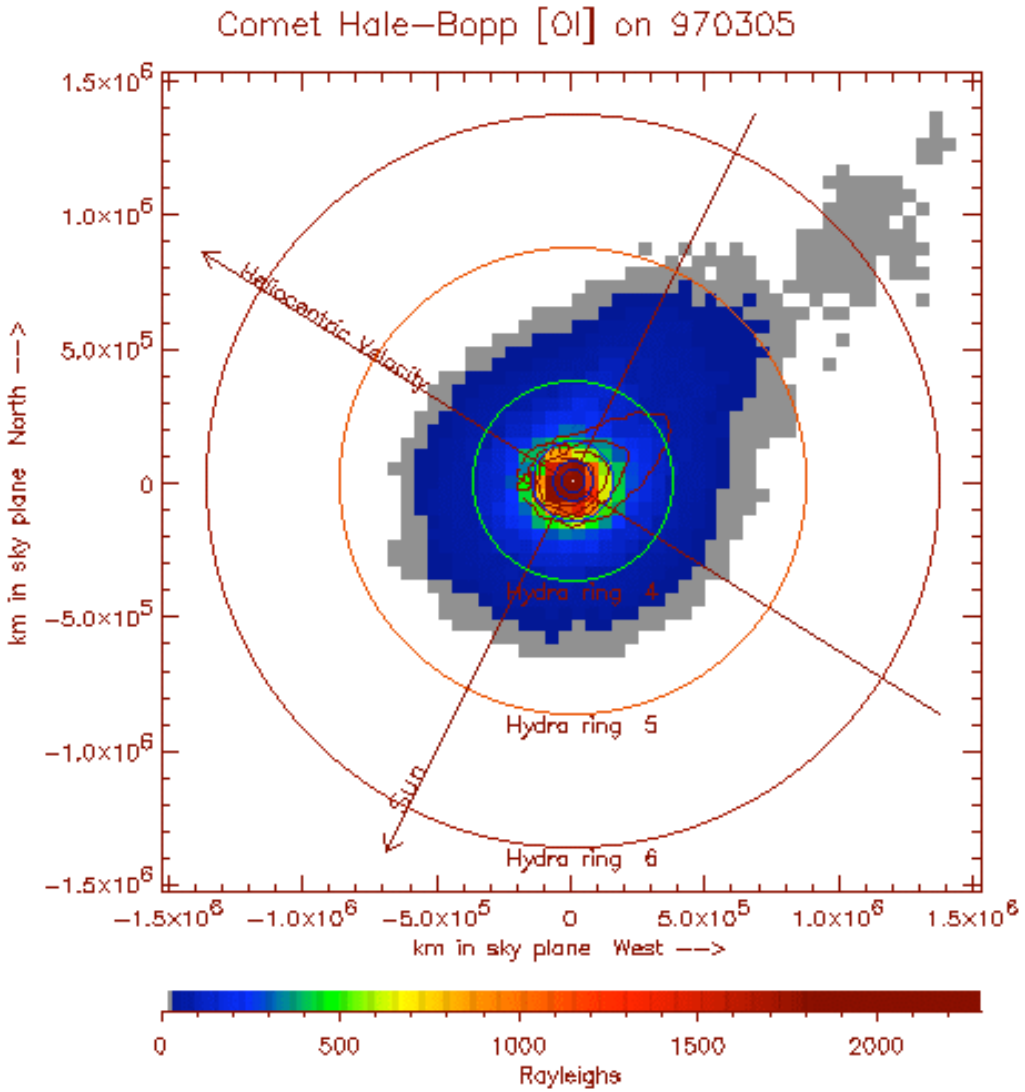
Comets



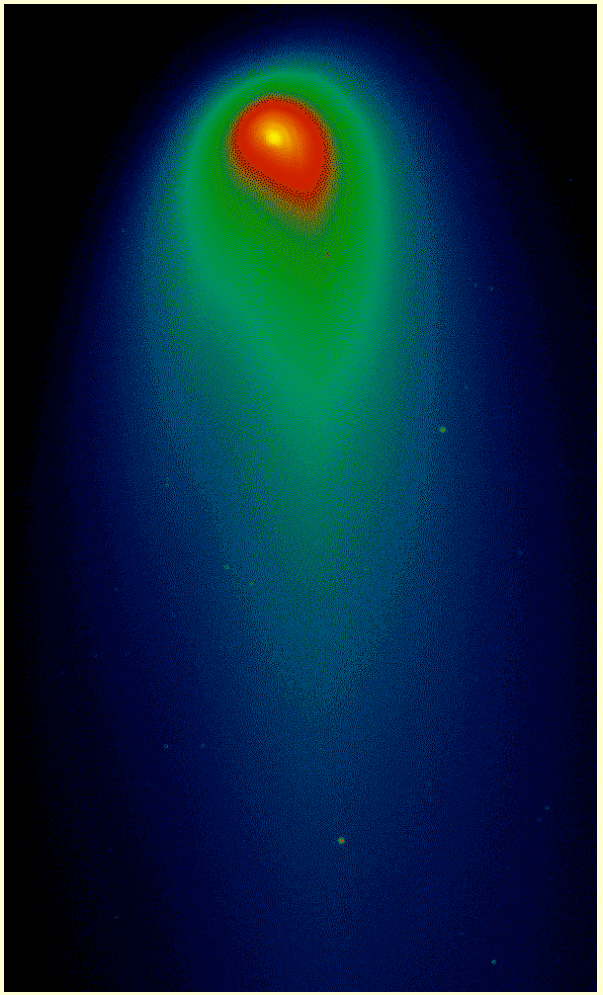


Comet Hale-Bopp
(C/1995 O1)

Comets

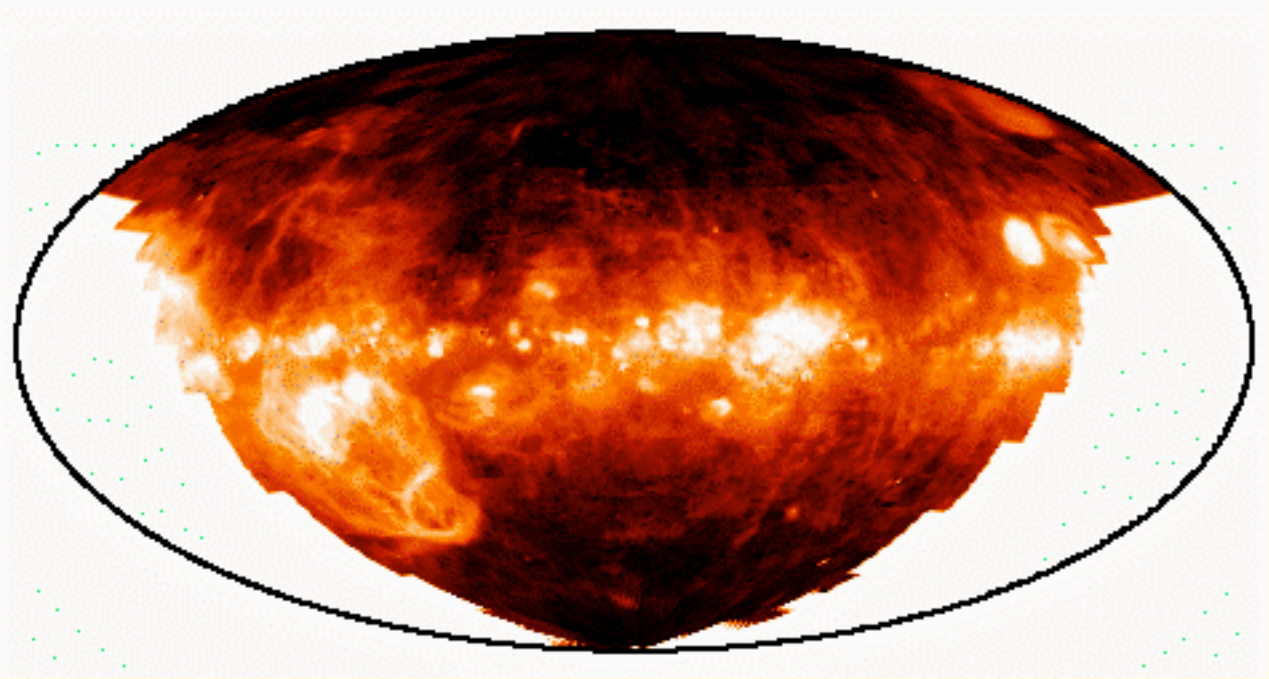


Morgenthaler et al. (2001) – outer ring is 22’ in size



Comet Hale-Bopp (C/1995 O1)

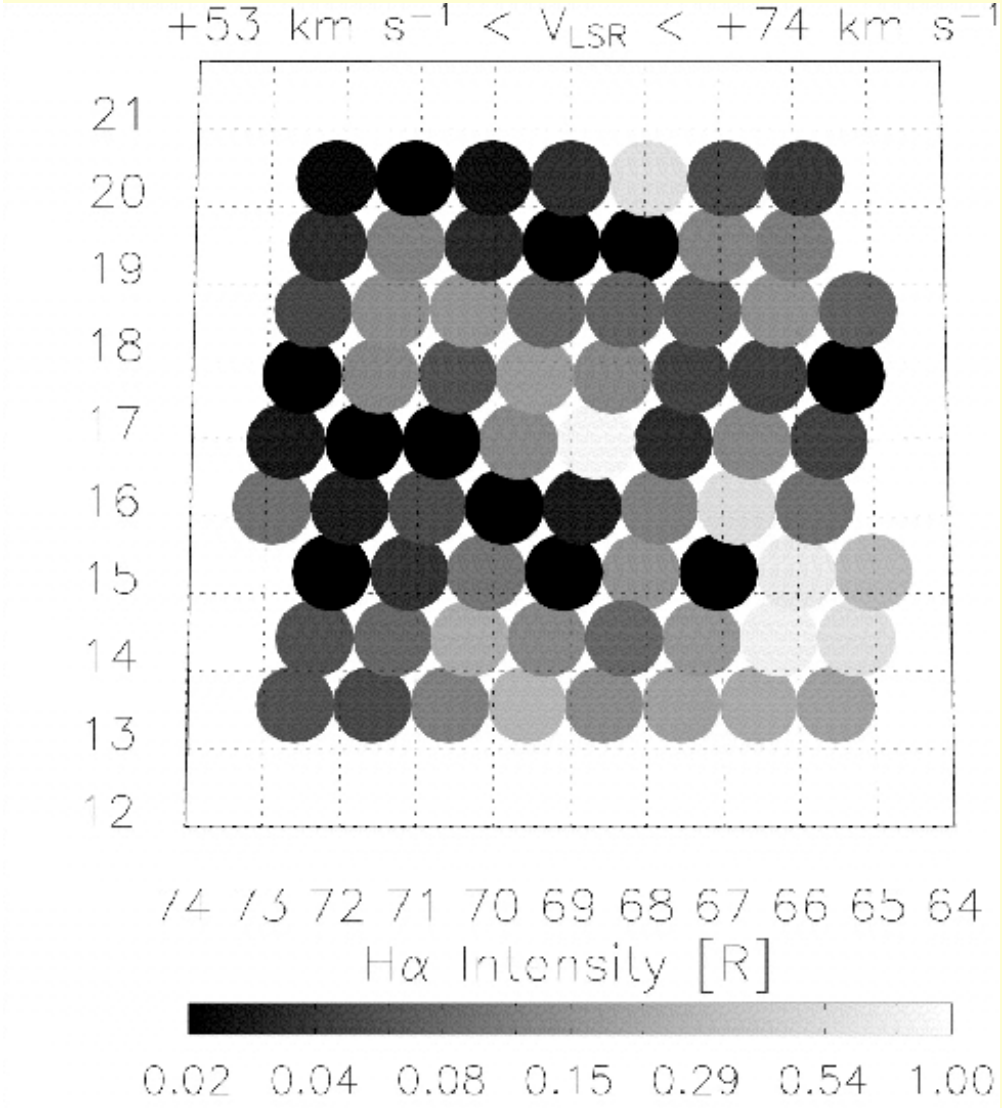
Following up unresolved WHAM sources in the Galaxy



Reynolds et al. (2005) - 85 unresolved Hα regions of enhanced emission at high galactic latitude – for most of them, their nature is unknown.

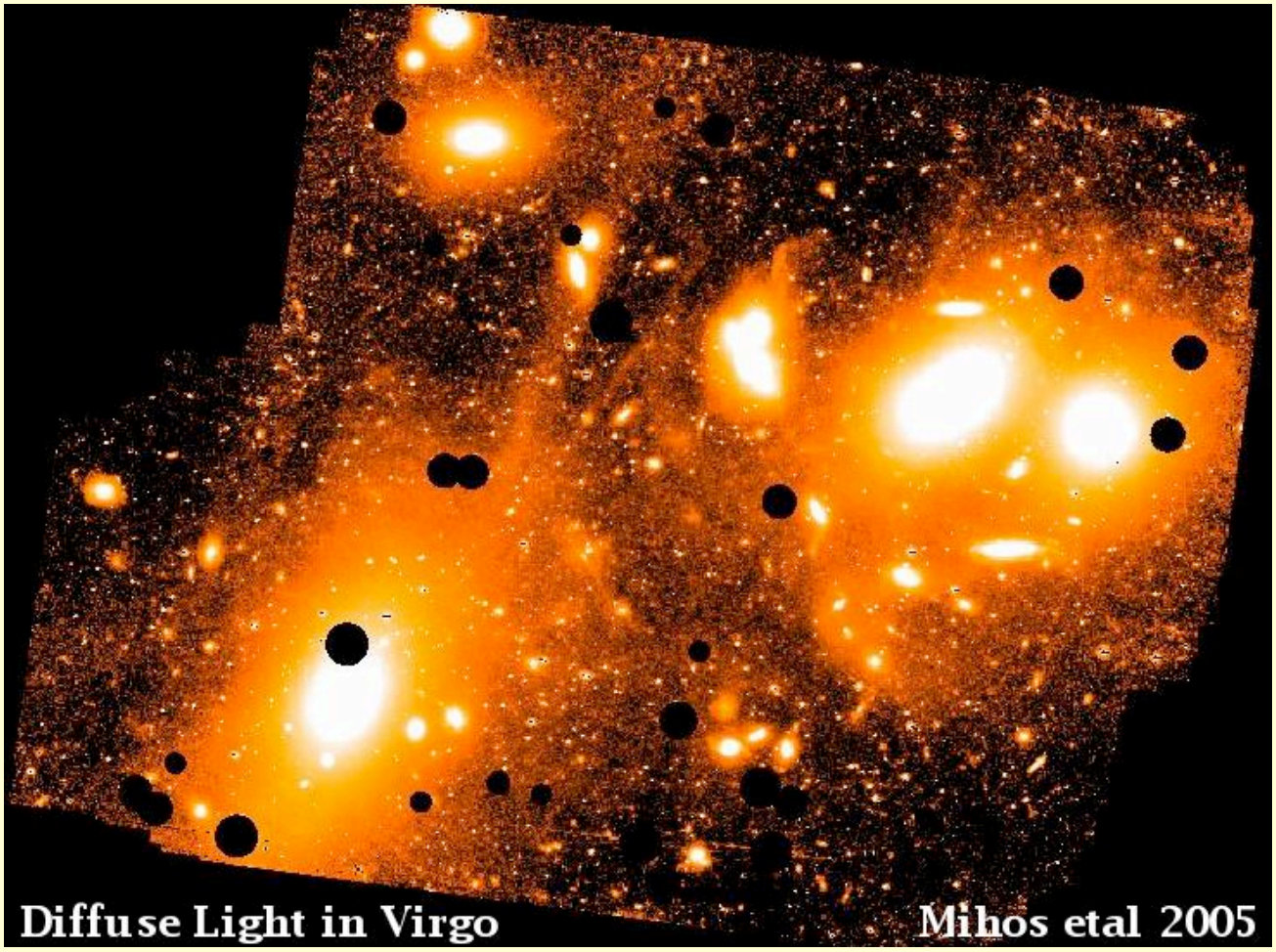
Wisconsin Hα Mapper (WHAM) – surveyed the large-scale distribution of ionized Hydrogen to an angular resolution of about 1 degree

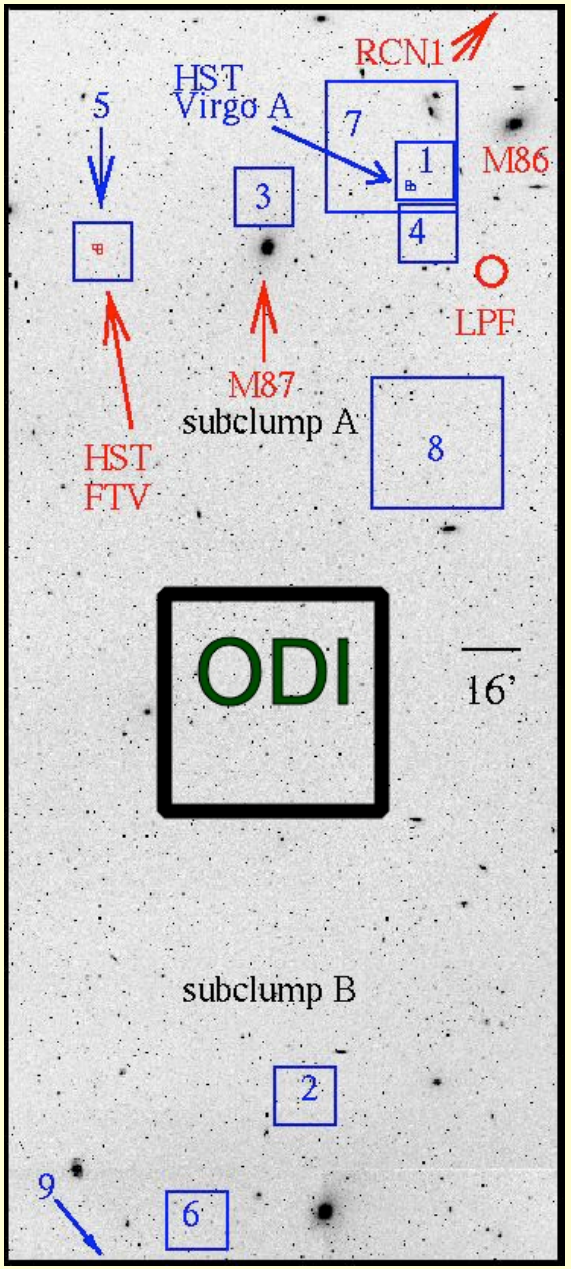
Following up unresolved WHAM sources in the Galaxy



Reynolds et al. (2005) - 85 unresolved Hα regions of enhanced emission at high galactic latitude – for most of them, their nature is unknown.

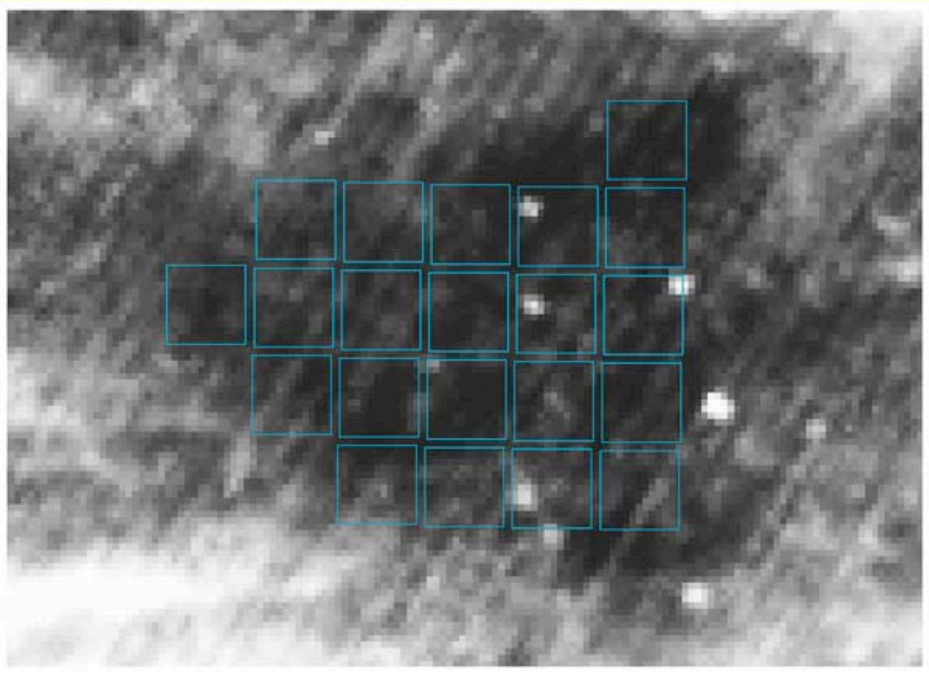
Intracluster Planetary Nebulae

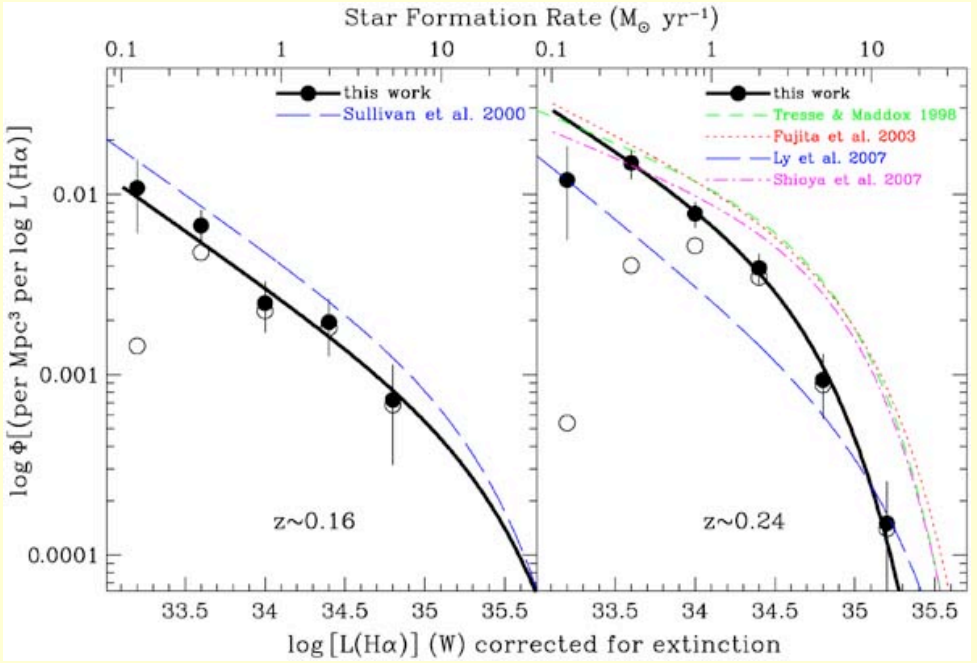




IPNe are excellent dynamical tracers of the intracluster light. Hundreds of IPNe can be found with ODI in a single night of observing time.

Measuring the decrease in star formation since z ~ 1

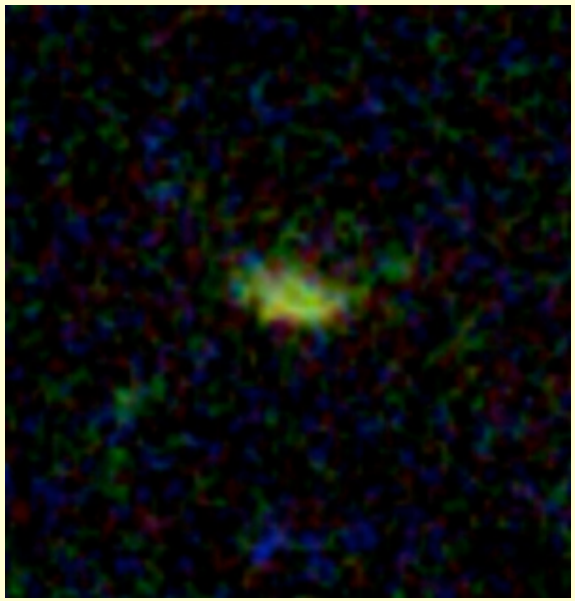




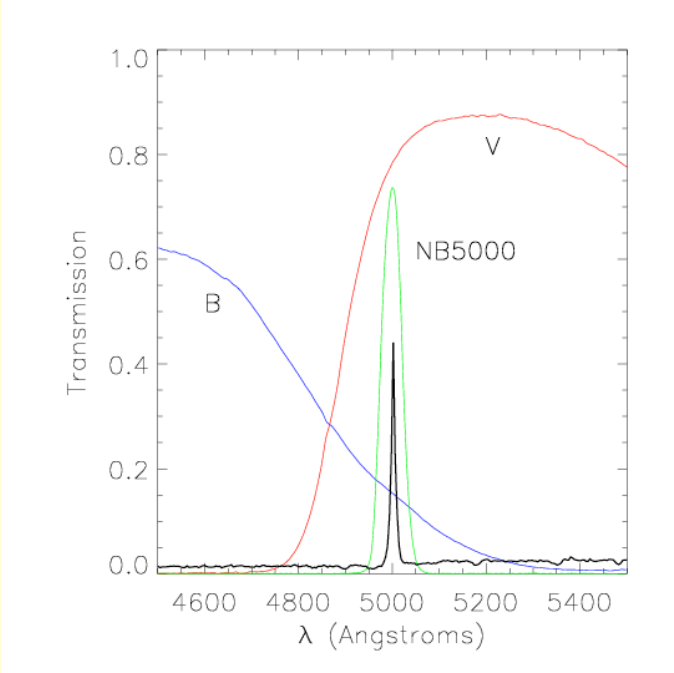
The measured decline in the star formation rate from z = 1 to z=0 varies by over a factor of six between research groups. Above are some first results from Wyoming Survey for Hα – Dale et al. (2008) – an H α survey at z = 0.16, 0.24, 0.32, 0.40

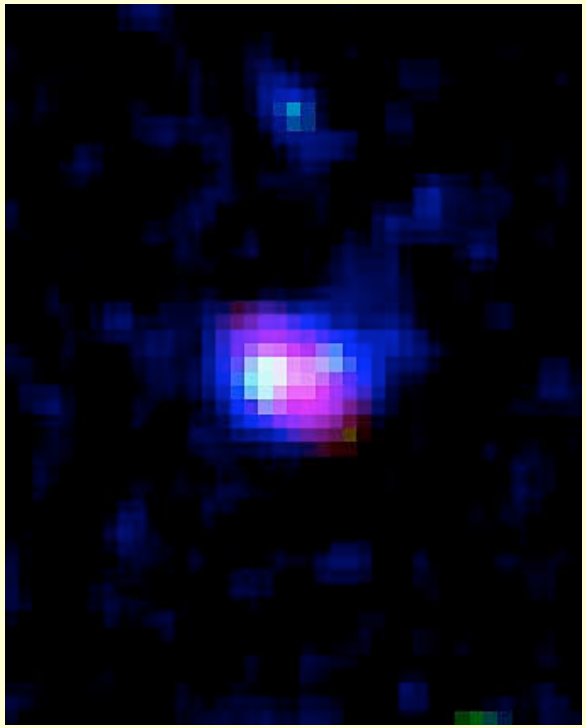
Cosmic variance is a major uncertainty – doing more fields would help enormously.

Ly-α galaxies and blobs



Gronwall, Gawiser et al. (2009) – z = 3.1 LAEs





Himiko – Ouchi et al. (2009) z=6.595 blob

Many groups are using the redshifted Lyman-α λ 1215 emission to study high redshift galaxies (LALA: Rhoads & Malhotra, MUSYC, Gawiser & Gronwall, Ouchi et al.) – all require deep and wide narrow-band surveys