KITE, FALCON & OWL ASTRONOMY DATA

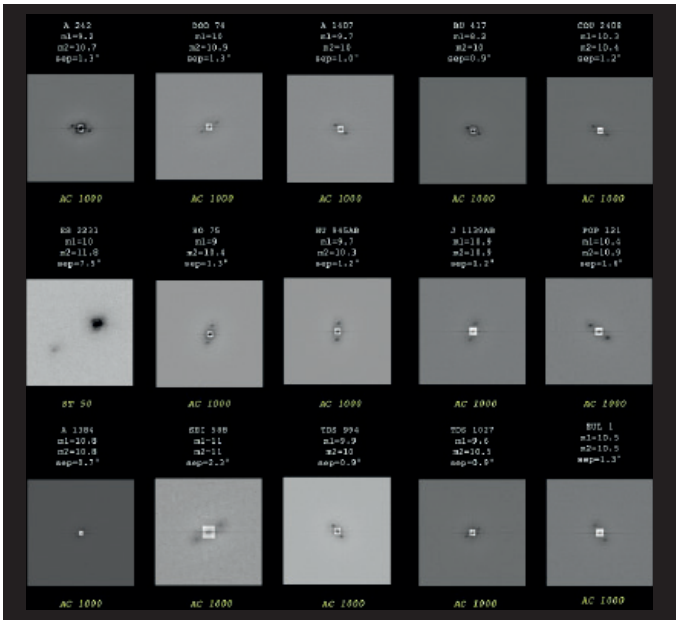
KITE DOUBLE STAR

Equipment & Conditions: Courtesy of Jocelyn Sérot

- Celestron C11 telescope (D=280mm)
- Barlow 3x + Barlow 2x (F=17.2m, E=0.12”/pixel)
- Filter IR-Block Baader
- Exposure time 20-40ms with EM Gain, 1000 acquisitions per double star.
- Magnitudes ranging from about 9 to 11
- Post processing software: Reduc 4.63
  - ST <nn>: sum of the best nn images
  - AC <nn>: auto-correlation of best nn images
  - IT <nn>: inter-correlation of best nn images.
- Seeing 4/10
- Transparency 2/5

Results:

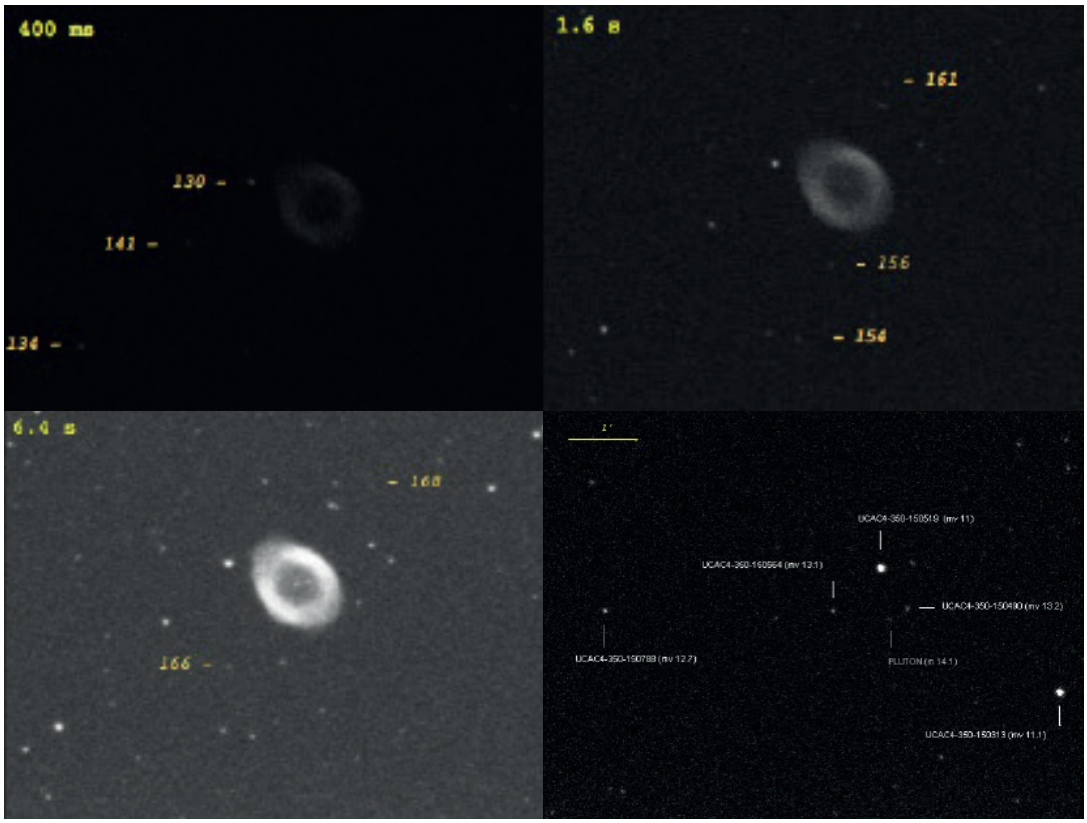
- Good measures up to m1 and m2=11 and ρ=0.9” for dM < 2
- Beyond, harder measures unless the best 10 to 20 images are carefully selected.
- It seems difficult to go below ρ=0.8” for m>10 and/or dM>2



KITE M57 AND PLUTO

Equipment & Conditions:

- Celestron C11 telescope (D=280mm, F=2800mm, E=0.73”/pixel).
- Filter IR-Block Baader
- Single exposures from 400ms to 6.4s with max EM Gain.
- Post processing Hot pixels removal
- Seeing 4/10
- Transparency 2/5



Results:

- Magnitude 14 in 400ms
- Magnitude 15 in <1s
- Close to magnitude 17 in 6.4s.

OWL 320

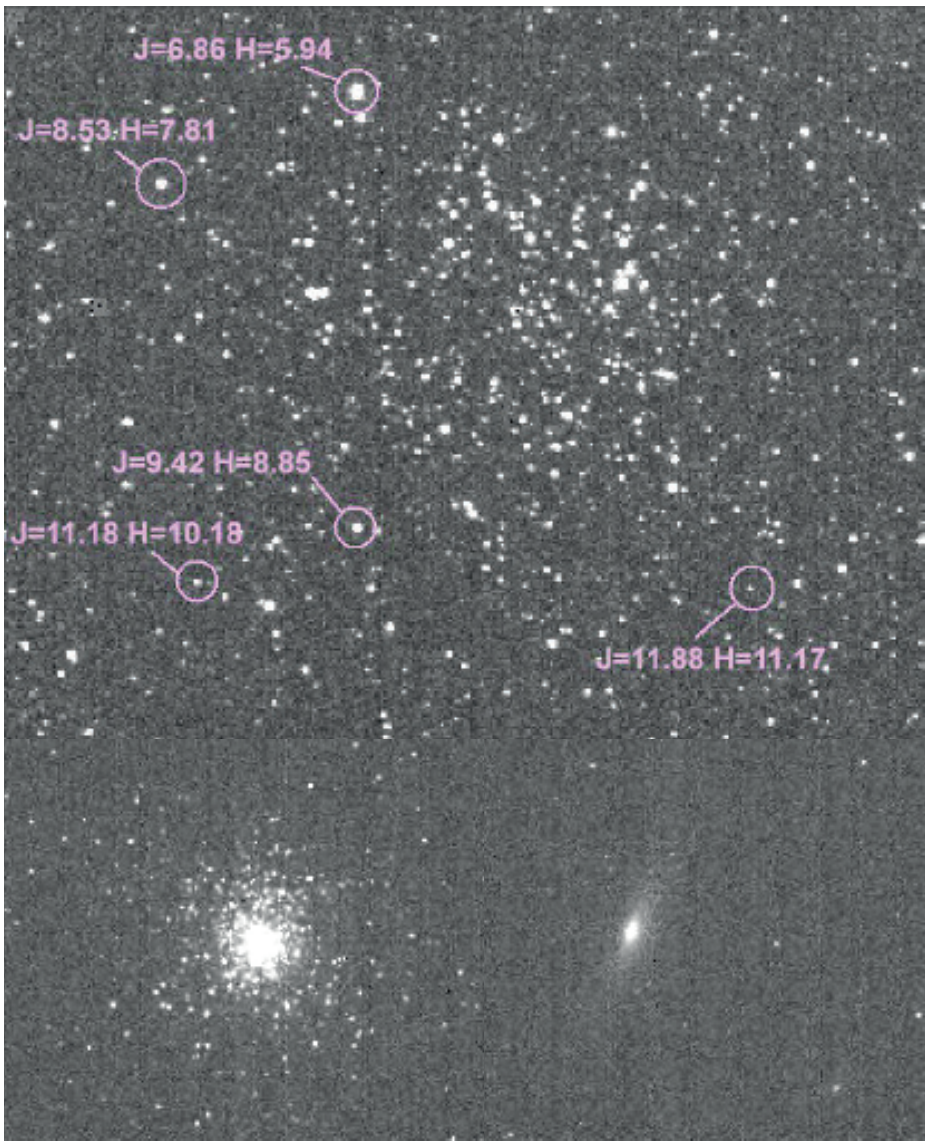
Equipment & Conditions: Courtesy of Alain Klotz, Michel Boër, Jean-Pierre Rivet and Philippe Bendjoya

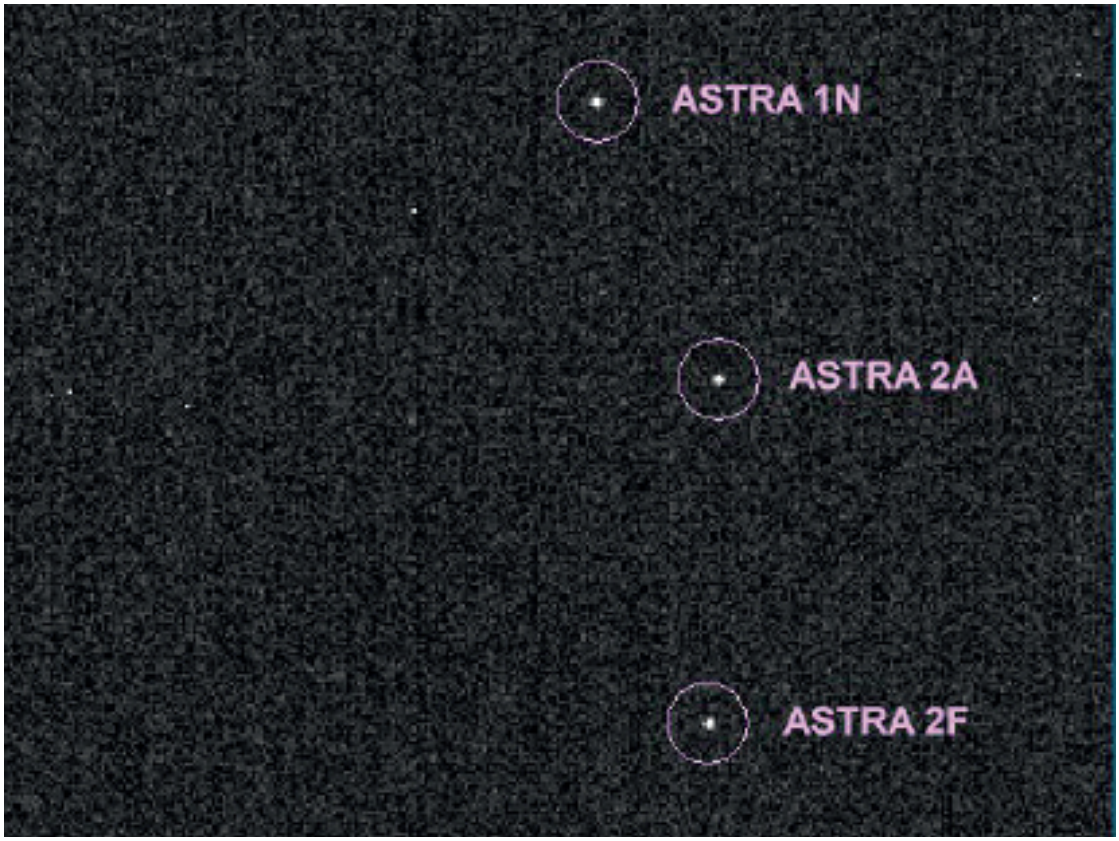
- 1m telescope from C2PU (D=1.0m, F=3.4m, 1.820 arcsec/pixel)
- Exposure time 50ms, 100x acquisitions without NUC or with offset correction
- Messier 11, Messier 15, NGC 7331
- Astra group :

  ASTRA 1N 9.9 (magnitude J)

  ASTRA 2A 10.3 (magnitude J)

  ASTRA 2F 10.0 (magnitude J)





Results:

- Readout noise (132±6) electron/pixel
- Dark current (121,000±1,000) electron/pixel/sec at 15°C
- Linearity <0.5%
- With a 1m telescope, magnitude J=14.6 can be achieved in 5s (100 x 50ms)
- Extrapolations:

  With -40°C cooling 1.2 magnitudes would be gained on the detection limit.

  With a 30cm telescope 1.4 magnitudes would be lost on the detection limit.

OSPREY

Equipment & Conditions: Courtesy of Philippe Lamy, Laboratoire d'Astrophysique de Marseille.

- Solar eclipse 3rd of November 2013 in Gabon
- Lunette Televue-85:f=600mm, dia=85mm, f/7
- IFOV = 1.89 arcsec/pixel
- Exposure time 0.3 sec

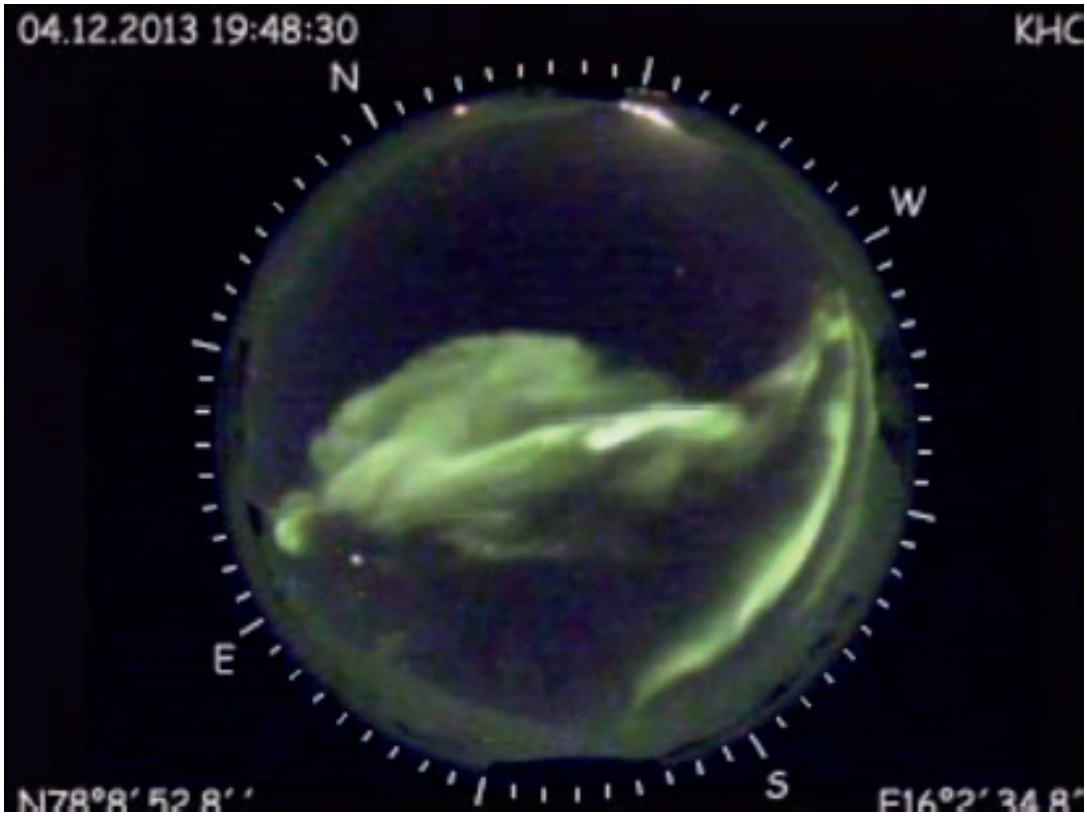
Results:

- Analysis in progress

HAWK ALL-SKY COLOR VIDEO

Equipment & Conditions: Courtesy of Dr. Fred Sigernes, Kjell Henriksen Observatory (KHO), The University Centre in Svalbard (UNIS), http://kho.unis.no/Raptor.htm

- Northern Lights monitoring
- Camera: Raptor Hawk EM246
- Mode: EMCCD auto gain
- Color matrix: CYMG
- Lens: Fujinon C-mount F/1.4 (185 degree circular)
- Spatial coverage: All sky
- Resolution: PAL 352 x 288 pixels
- Frame Accumulation: DirectShow Capture XE-1s
- Data storage: Hourly AVI movies (Xvid compression)
- Quicklook refresh time: 60s



ABOUT RAPTOR PHOTONICS

Raptor Photonics Limited is a global leader and manufacturer of high performance, industrial-grade and extremely rugged ultra-low light digital & analogue cameras. Raptor specializes in complete cameras and core engine solutions using CCD, EMCCD, Scientific CMOS and SWIR sensor technology. The extreme low light capability of Raptor's cameras makes them ideal for day/night surveillance, homeland security and scientific markets. Raptor Photonics Ltd is a registered ISO 9001:2008 company and is headquartered in Larne, Northern Ireland.

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