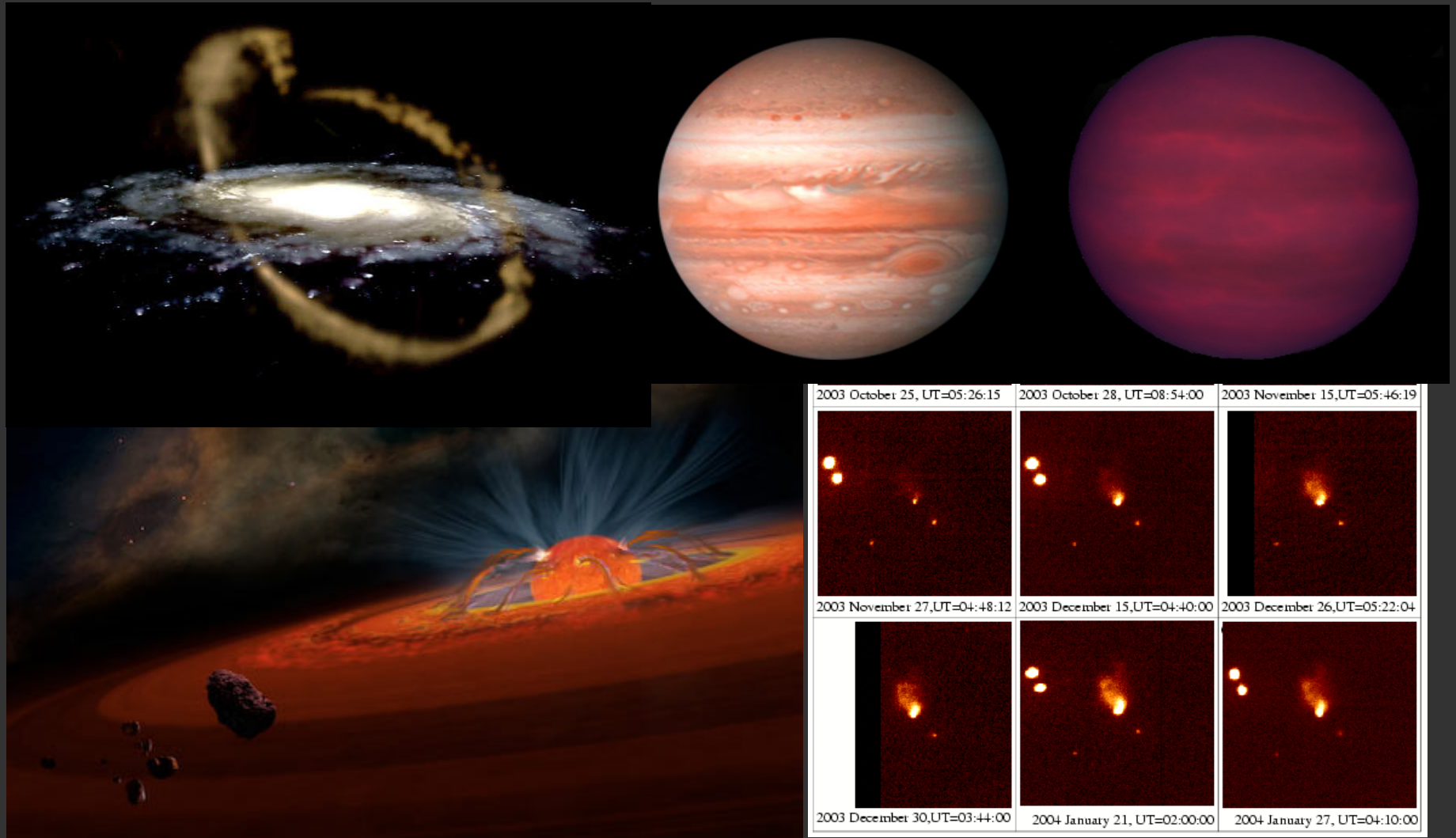


Astrophysics at CIDA and the Venezuela National Astronomical Observatory



CIDA and the Venezuela National Astronomical Observatory

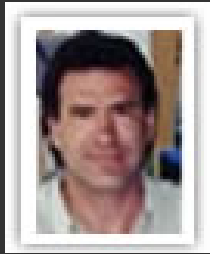
The Fundación Centro de Investigaciones de Astronomía "Francisco J. Duarte" (CIDA) was created in 1975 (we are celebrating our 35 anniversary) as an astronomical institute charged with the following goals:

- Conducting research in Astronomy and its related disciplines
- Operating and developing the National Astronomical Observatory (OAN) of Venezuela
- Preparing new generations of venezuelan astronomers
- Bringing Astronomy to the general public

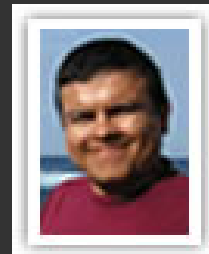
It is a government-funded institute under the direct supervision of the Ministry of Science and Technology



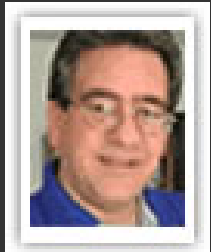
Present CIDA Staff and Postdocs:



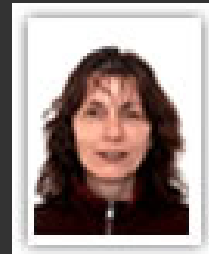
Carlos Abad (Senior Researcher): Astrometry,, Monitoring of Geo. Stat. Sat.



Jesús Hernández (Assistant Researcher): Star formation, Circumstellar Disks, Stellar Spectroscopy and Classification



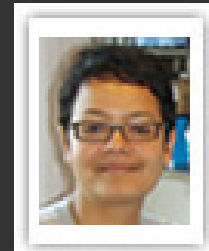
César Briceño (Associate Researcher - Adjunct Director): Star Formation, Variable Stars, Young Stellar Populations



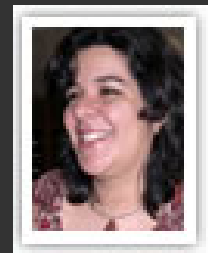
Gladis Magris (Assistant Researcher): Stellar Population Synthesis Models, Dust in Galaxies



Gustavo Bruzual (Senior Researcher): Stellar Population Synthesis Models, Galaxies



Katherine Vieira (Postdoctoral Fellow): Astrometry, galactic and extragalactic populations



Katherina Vivas (Associate Researcher): Stellar Populations, Structure and Origin of the Milky Way, Variable Stars

Another 13 astronomers have worked at CIDA since its creation

CIDA continues its growth plans:

Three new
Postdoctoral
Positions have
been announced,
to start as early
as Dec. 15,
2010

<http://www.cida.gob.ve>



Simon Bolivar Postdoctoral Researcher Positions At CIDA 2010

 [Español](#) / [Inglés](#) 

Simon Bolivar Postdoctoral Researcher Positions at CIDA Mérida, November 2nd, 2010

The Centro de Investigaciones de Astronomía "Francisco J. Duarte" (CIDA), advertises three (03) Postdoctoral Researcher positions. All appointments will be made for an initial period of one (01) year, with the possibility of an extension to three (03) years, contingent on performance and funding. Starting date could be as early as **December 15, 2010**.

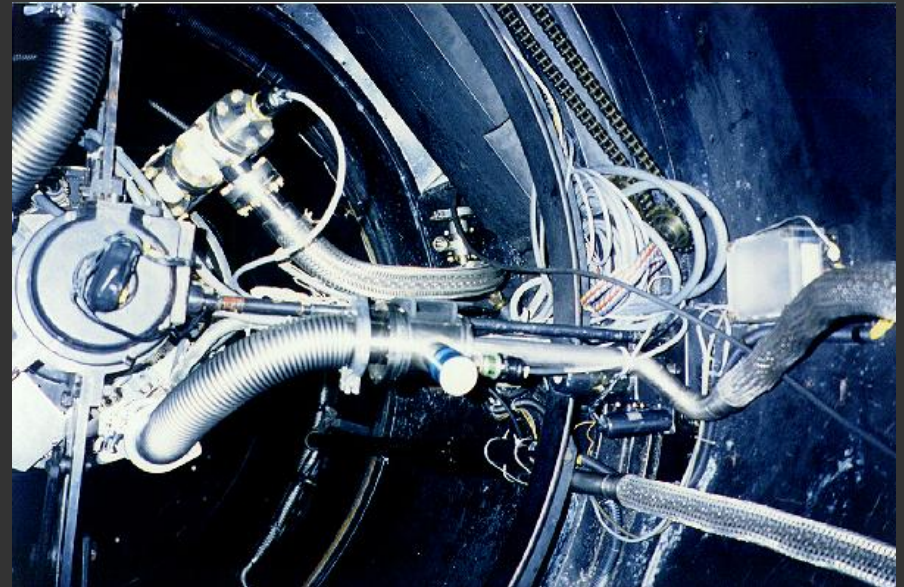
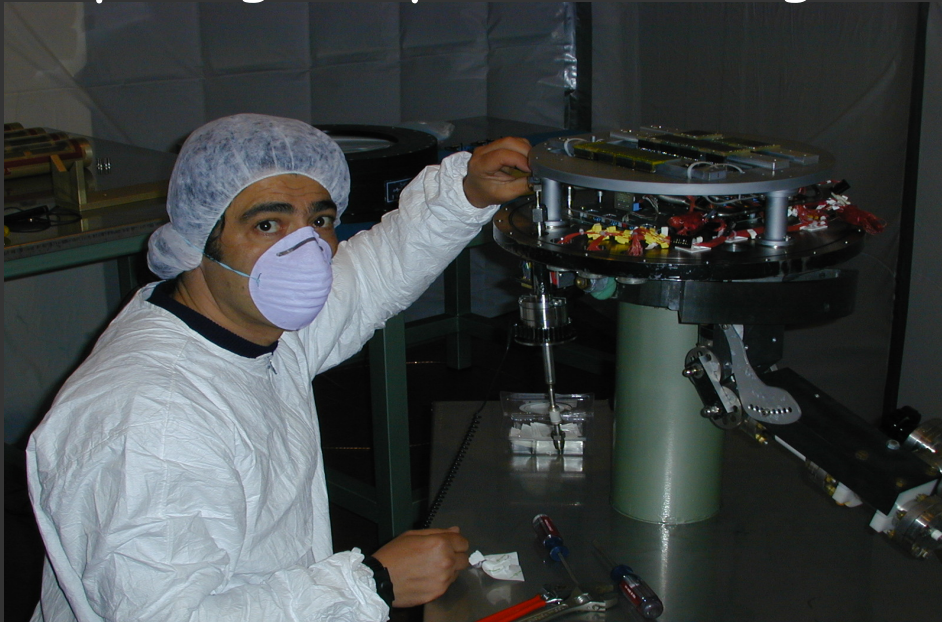
CIDA is an Astronomy and Astrophysics research institute that also operates the Venezuela National Astronomical Observatory (NAO). CIDA staff are presently engaged in theoretical research in Stellar population Synthesis, and in observational work on the Structure of the Milky Way, Galactic Star Formation, Star Formation in the Local Universe, and Astrometry. The prime instrument at the NAO, located at an altitude of 3600m in the Venezuelan Andes, is a 1m effective aperture Schmidt type telescope, equipped with a 8k x 8k CCD Mosaic Camera (QUEST I Camera), and also with a 1m aperture objective prism for wide field slitless spectroscopy.

CIDA students

- 6 graduate students: 2 just handed over their PhD thesis
- 6 undergraduate students doing their senior thesis work
- Received and graduated 4 colombian students so far.

Technical Department

- Observatory maintenance and instrumentation development: 10 engineers (optician, mechanical, software, electronics)
- Computing: 1 Systems manager + 1 webmaster + 2 assistants



CIDA Headquarters: Mérida

- Latitude: $+8^{\circ} 35' 56''$, Longitude: $-71^{\circ} 09' 12''$, located ~ 700 Km S-W of Caracas, in the Venezuelan Andes.
- Altitude= 1600m, average Temperature= 19C
- Pop. $\sim 500,000$
- University city: Universidad de los Andes $\rightarrow \sim 40000$ students



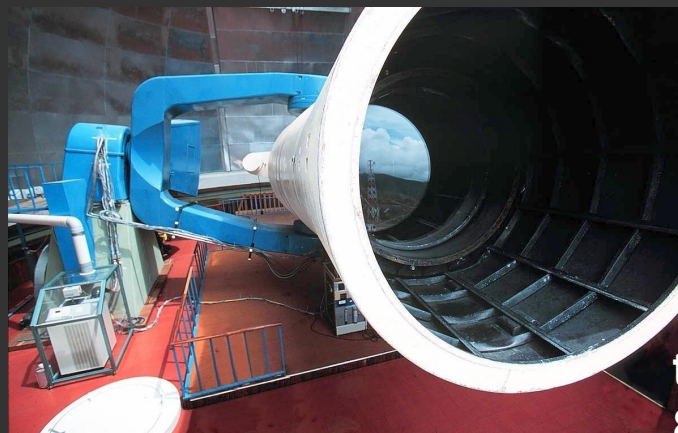
National Astronomical Observatory (OAN)

Latitude: $+8^{\circ} 47' 10.8''$, Longitude: $-70^{\circ} 52' 44.4''$, Elevation: 3600m (highest in equatorial zone), ~50 Km north of Mérida



OAN - Venezuela

Built during the period 1972-1978 under the supervision of its first Director, Dr. Jürgen Stock, the OAN has four main telescopes:

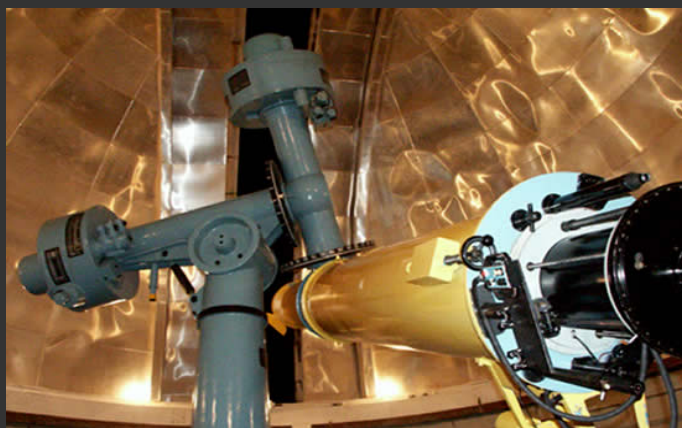


1m f/21 Coudé Reflector (Zeiss Jena): spectrograph, CCD camera. Also prime focus f/5 config. With CCD cam+grism



J. Stock 1.0/1.5m f/3 Schmidt-type telescope (Askania):
8k x 8k CCDMOS + 3° prism

65 cm Refractor (Zeiss Jena)



Double Astrograph
2 x 50cm
(Askania)

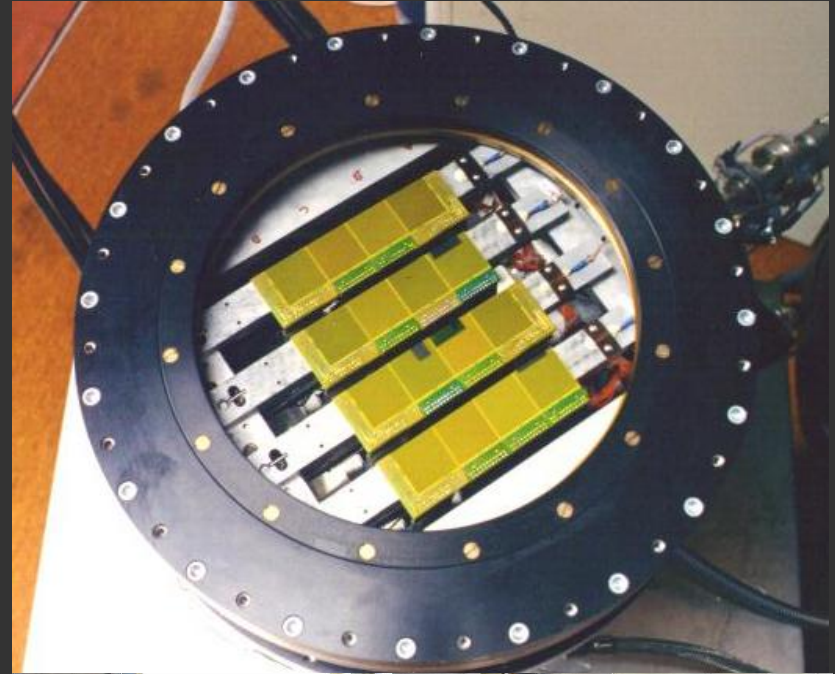


1995-2001

QUEST: a milestone for Venezuelan Astronomy

In 1995 a collaboration agreement was signed between CIDA, Universidad de los Andes at Mérida (ULA) and the Universities of Yale and Indiana (US) -> the goal of the QUEST project (Quasar Equatorial Survey Team), was to build an 8k x 8k CCD mosaic camera for the 1m Schmidt-type telescope at OAN, to do a large area search for lensed quasars. With its 64 megapixels it was at its time one of the largest astronomical cameras.

50% of the telescope time was devoted to QUEST and the other 50% to other projects



Solar System: discovery of 2000 EB173

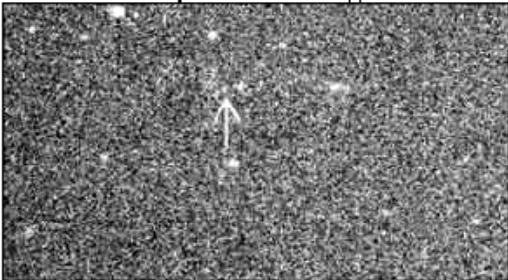
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'Mini-Pluto' spotted orbiting the Sun



Object EB 173 seen against a crowded star-field
By BBC News Online science editor Dr David Whitehouse

Astronomers have discovered the largest object orbiting the Sun since they found Pluto in 1930.

About a quarter of the size of Pluto, it is the second largest so-called minor planet, or asteroid, to be spotted.

Dr David Hughes,
University of Sheffield
"I think this is a very significant discovery"

Designated 2000 EB 173, the object was detected in March from an observatory in Venezuela.

It circles the Sun every 240 years between the orbits of Uranus and Pluto, and is bright enough to be seen by amateur astronomers armed with a 30 cm (12 inch) telescope.

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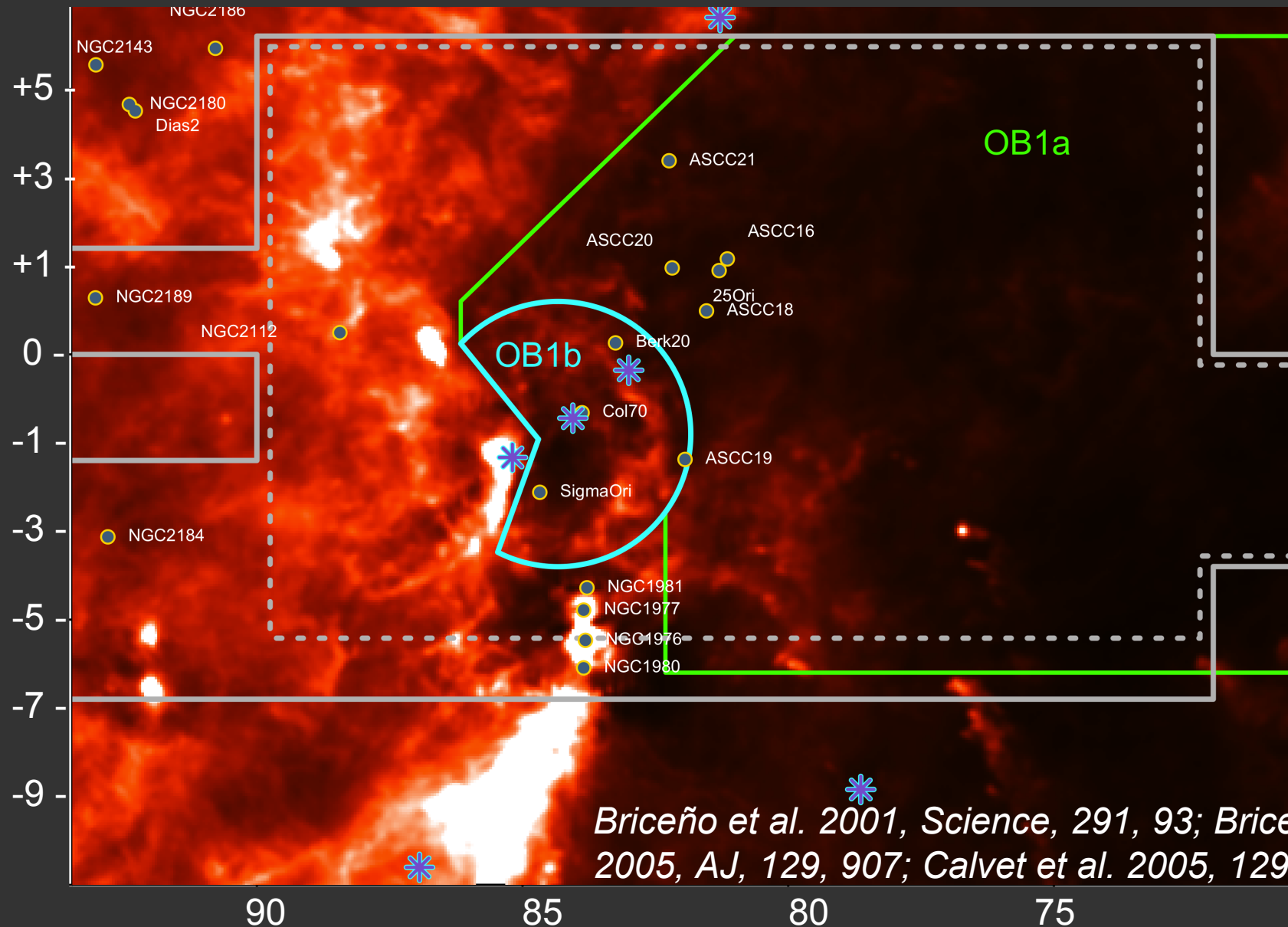
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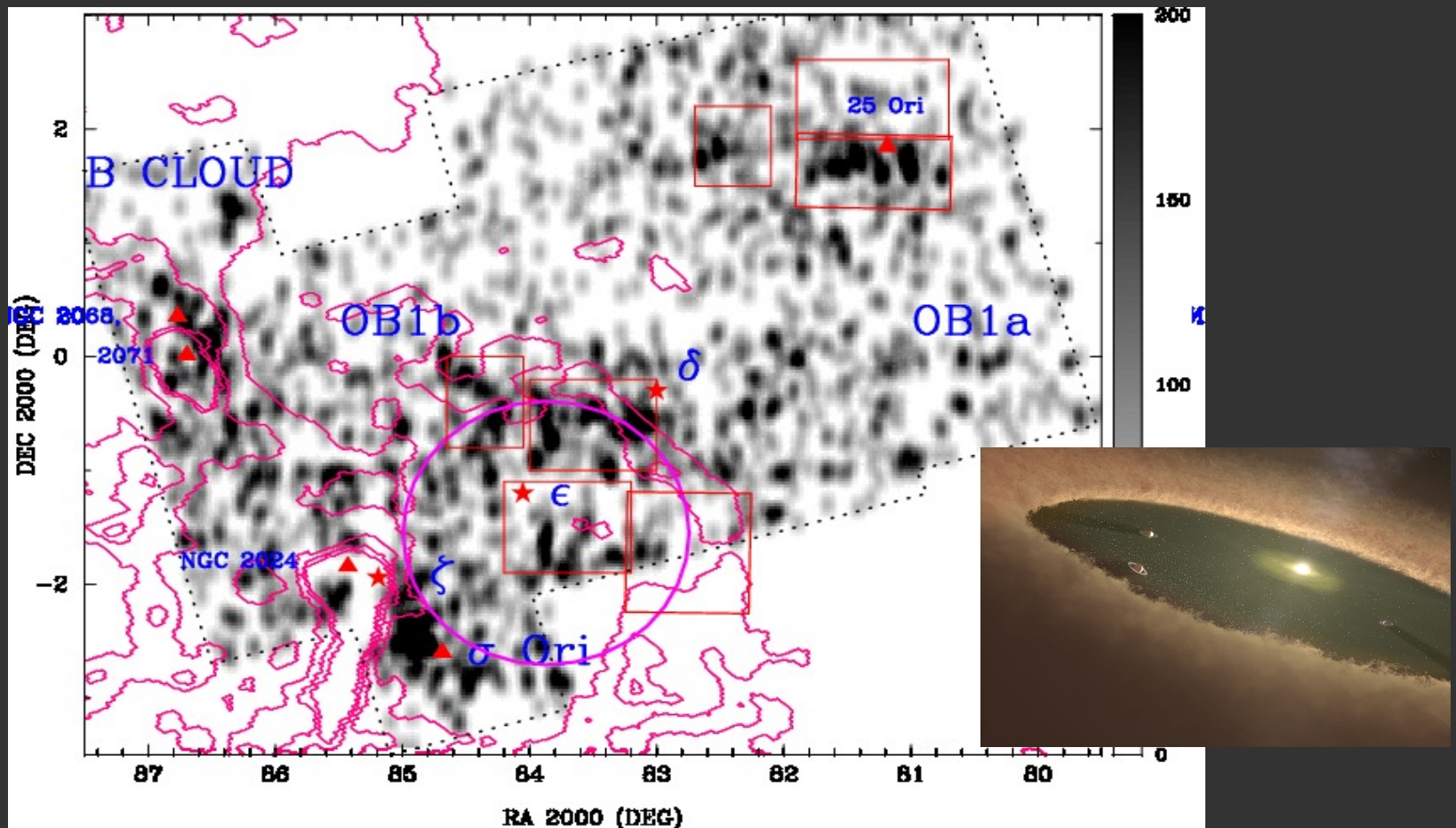
In 2001, a team of scientists from ULA, CIDA and Yale University discovered the trans-neptunian object 2000 EB173, at that moment thought to be the brightest and largest yet found in the Solar System, only slightly smaller than Pluto (Ferrin et al. ApJ Lett. 548, 243)

Star Formation: the CIDA Variability Survey of Orion OB1 – CVSO (~180 deg²)



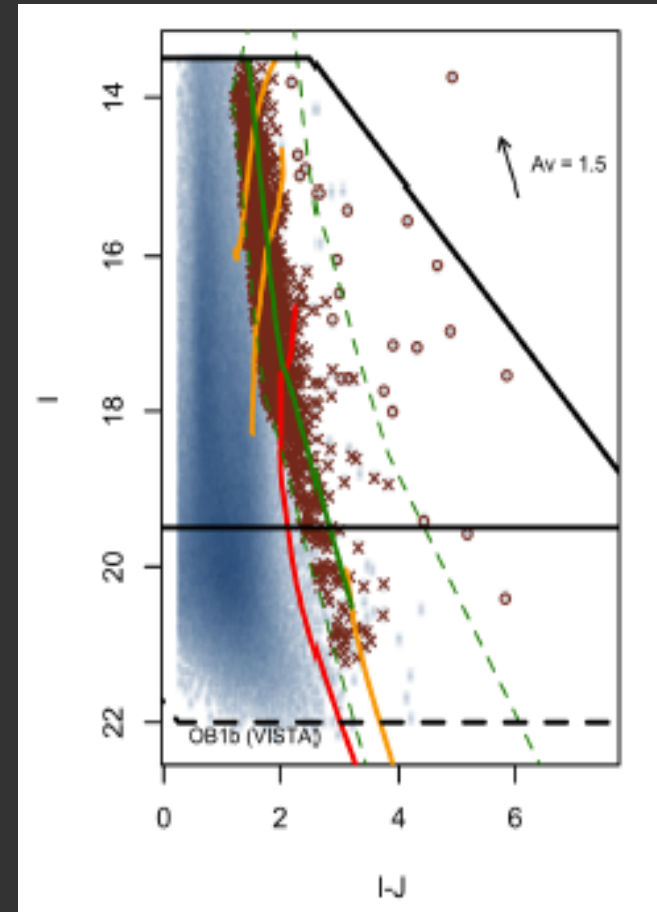
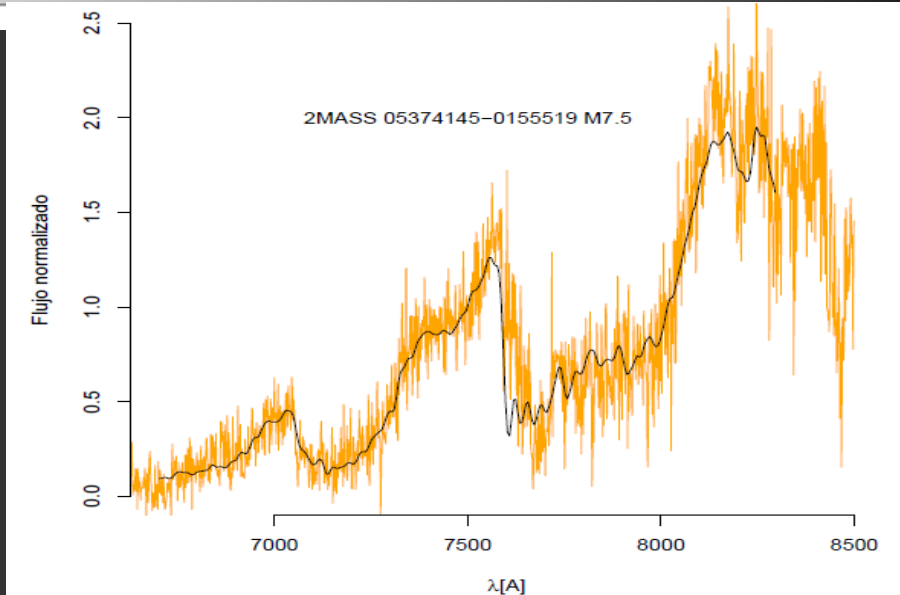
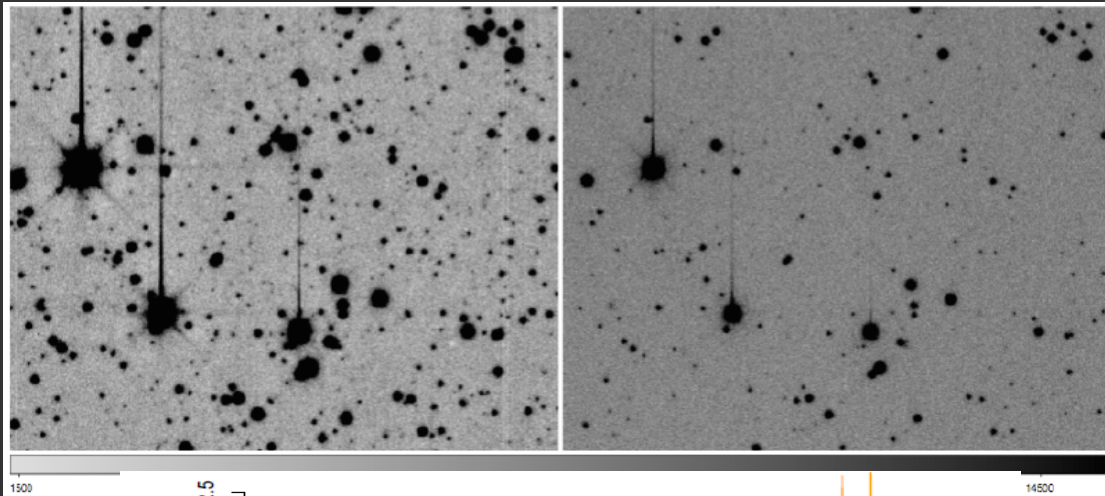
Discovery of the 25 Orionis cluster

The first populous ~ 10 Myr cluster within 500 pc \rightarrow ideal laboratory to study early evolution of sun-like stars during the time when disks have largely dissipated (Briceño et al. 2007, *ApJ*, 661, 1119; also Briceño et al. 2005, *AJ*, 129, 907; Hernández et al. 2007, *ApJ*, 662, 1067; Briceño et al. 2008 in *Handbook of Star Forming Regions*, Vol.1, p.838)



Young Brown Dwarfs in Orion OB1

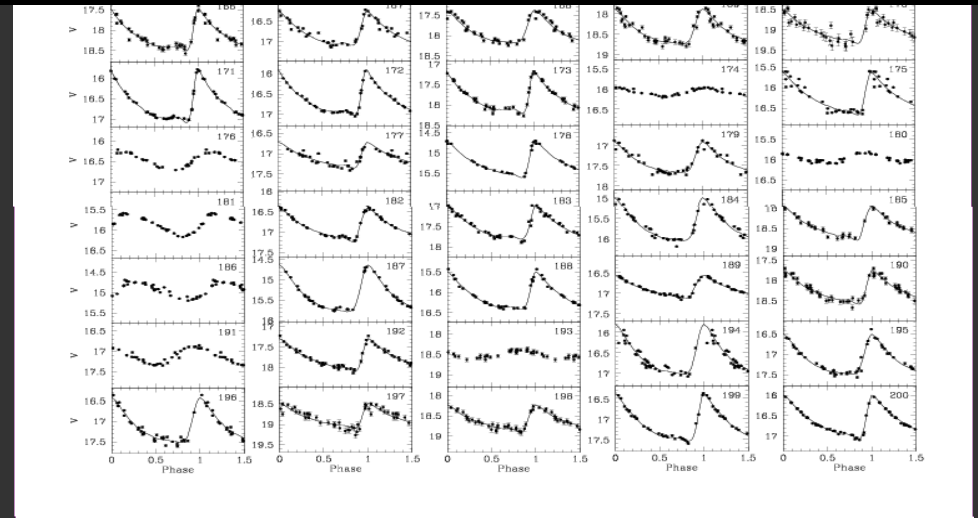
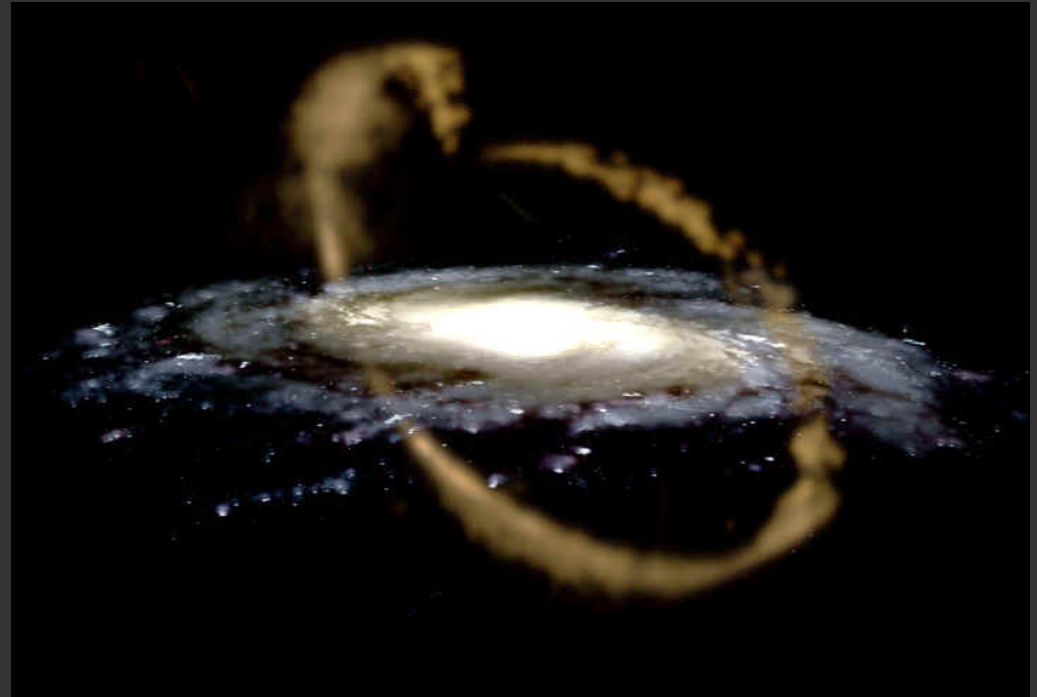
Coadd multiepoch optical data to go ~ 2 mag deeper + combine with deep near-IR from VISTA in 30 deg² region



(Downes et al. 2008, *AJ*, 136, 51;
Downes et al. 2010, in prepar.)

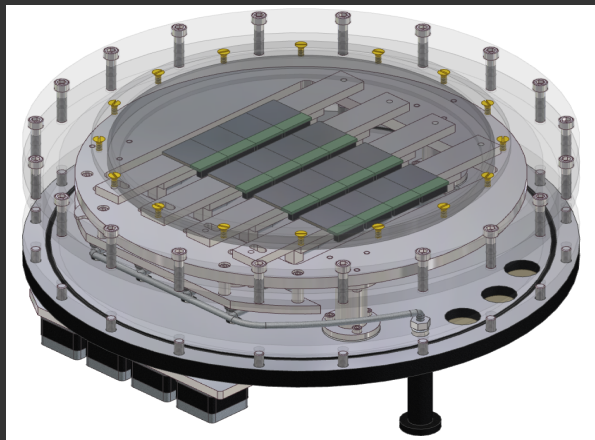
Structure and Origin of the Milky Way

Since 1998 Kathy Vivas (CIDA) and her collaborators at Yale Univ. have mapped the spatial distribution of RR Lyrae stars in the Halo and Thick Disk to show the existence of considerable substructure in phase space (stellar streams), remnants of events of accretion of dwarf galaxies like Sagittarius (Vivas et al. 2001, *ApJ Lett.*, 554, 33; Vivas et al. 2004, *AJ*, 157, 1158; Vivas & Zinn 2006, *AJ*, 132, 714; Vivas et al. 2005, *AJ*, 129, 189; Vivas et al. 2008, *AJ*, 136, 1645; Mateu et al. 2009, *AJ*, 137, 4412, Sesar et al. 2010, *ApJ*, 717, 133)

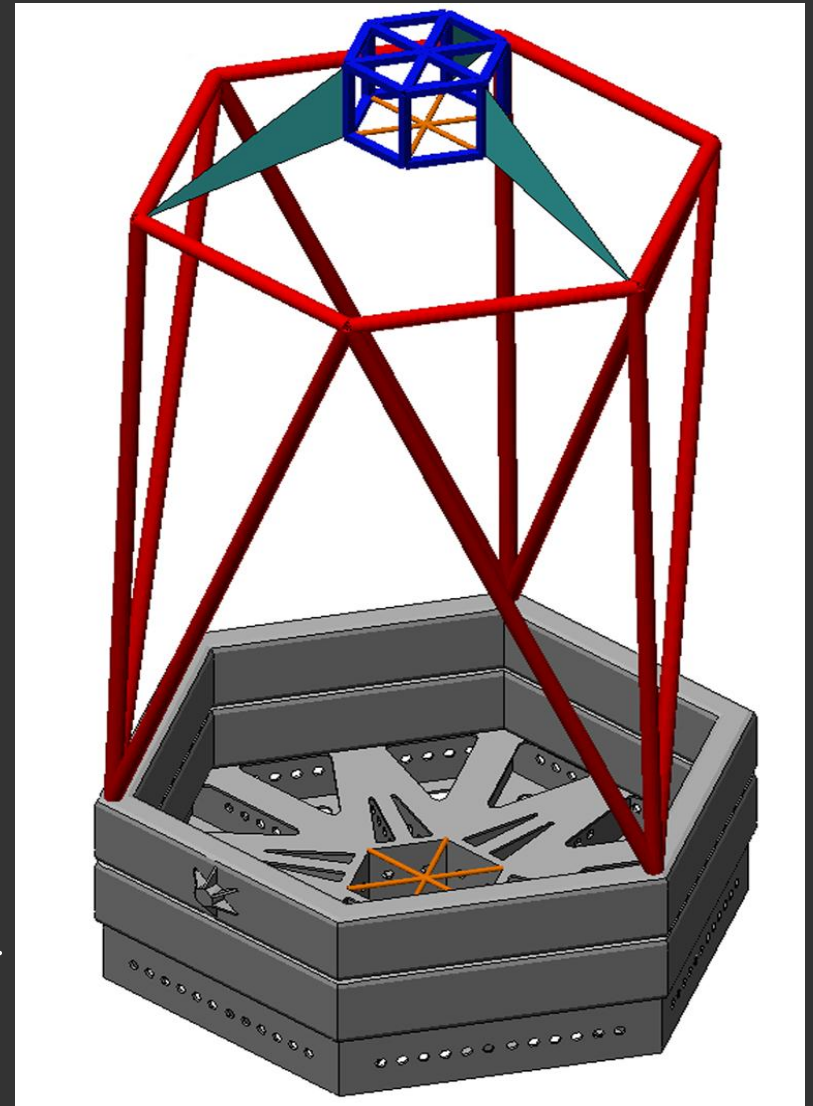


THE FUTURE

- 18 New CCDs for the 8k x 8k CCD Mosaic Camera (16+2 spares): 8 are deep-depletion
→ 25% QE @ 1 μm .
- Built by e2v Inc. (UK)
- Delivered Nov. 2010
- First light ~ Oct. 2011 (UBVRHaIZY)



- Replace Double Astrograph OTA by a 2m-class spectroscopic telescope -> 2015?



Thank you!

