

Astronomical Station Vidojevica

V SAR

Dr. Milan Bogosavljevic
Astronomical Observatory Belgrade

Belgrade, November 12, 2011

Overview

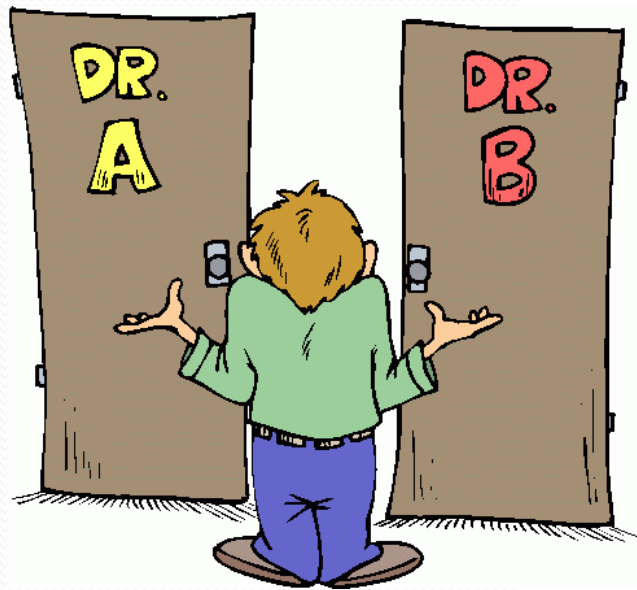


- Why students should care about research at observatories?
- Why make an observatory in Serbia?
- Where is Vidojevica?
- What has been going on at ASV for the past year?
- What is happening in the very near future?
- The status of 1.5m robotic telescope “Milankovic”

Astronomical Observatory, Belgrade – why every undergrad should know everything about it



Public Perception of Science

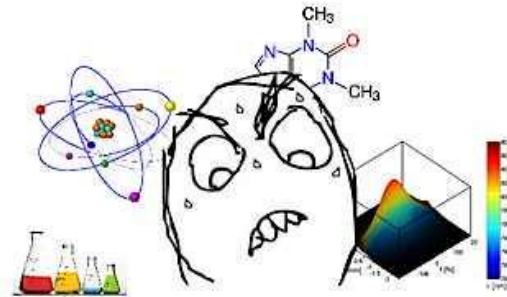
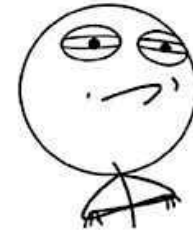


? ? ?
Hmm I wonder if...

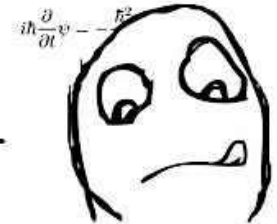
Start



CHALLENGE ACCEPTED



Do science



$$i\hbar \frac{\partial}{\partial t} \psi - \hat{H} \psi = 0$$



Read science

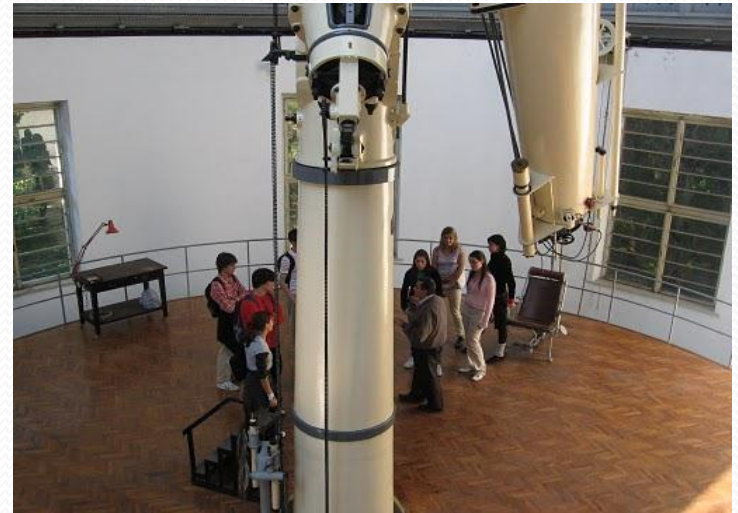


Example: What I tell to other people about YOU (and US):

**Astrophysics degree offered at two
Universities in Serbia (Belgrade and Novi
Sad), 4-10 graduates per year**

**Astrophysics students from Belgrade
moved to the West: Cornell, Caltech,
UMass, Penn State, UofIllinois,
Toronto, Leiden, Max-Planck...**

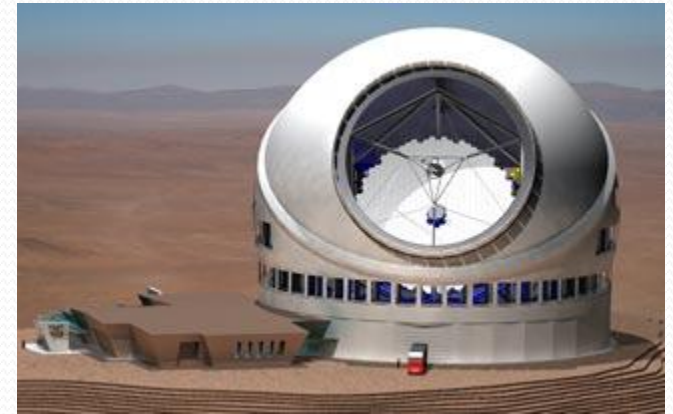
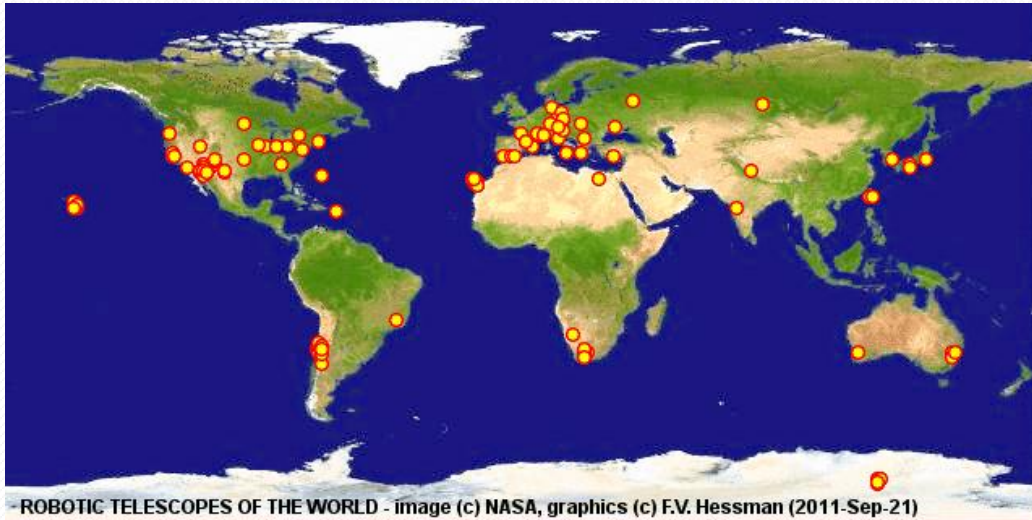
**Post-docs: Hubble fellow, Einstein
fellow...**



**2010 Project “Belissima” :
European Commission FP7
program to revive the
Observatory, build new facilities
and return experienced
researchers**

Why make one more telescope?

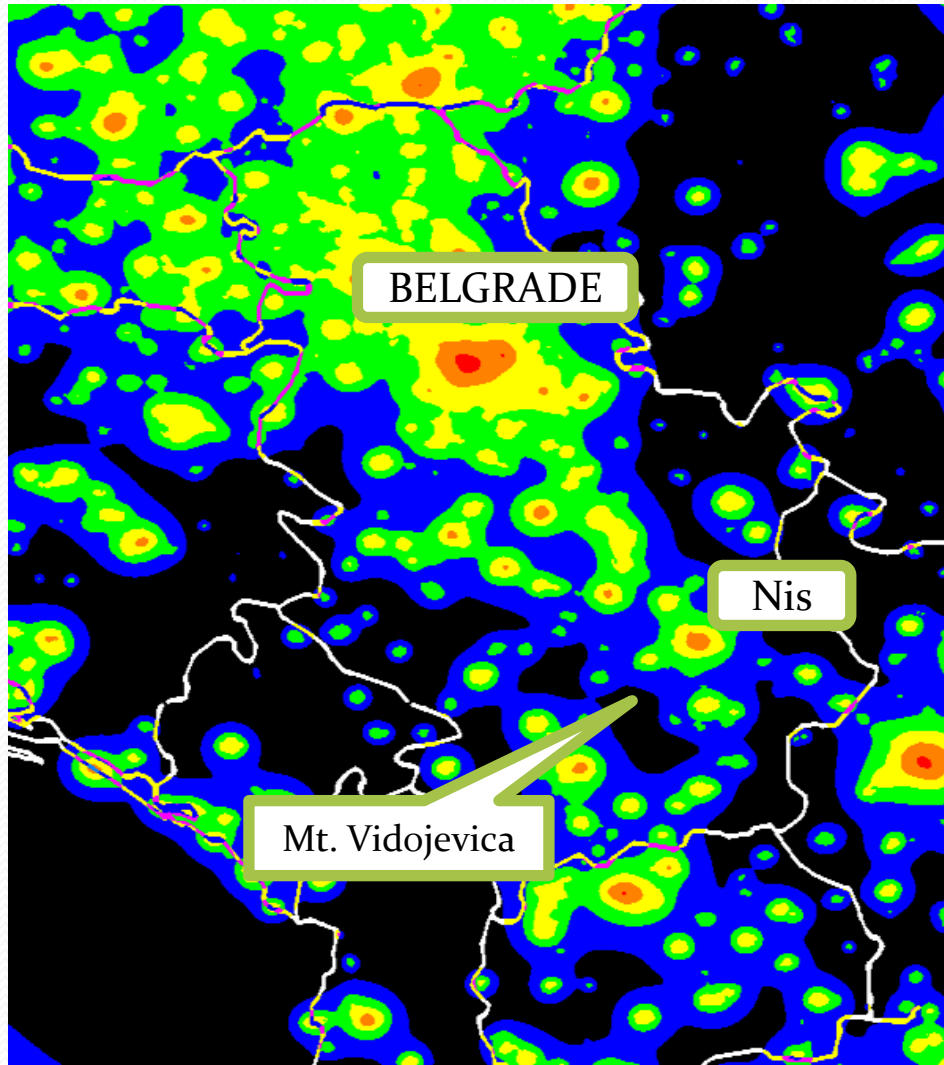
Understanding current technology enables you to identify exciting research



The technology used in astronomy is getting more and more advanced – keep up!



Vidojevica: 300km south, 1155m up



Very few remaining
dark spots in Serbia

(Vidojevica: 21.5 mag/arcsec²)

Site first noted in a survey camaping
back in ~1980's

4 hours drive from Belgrade

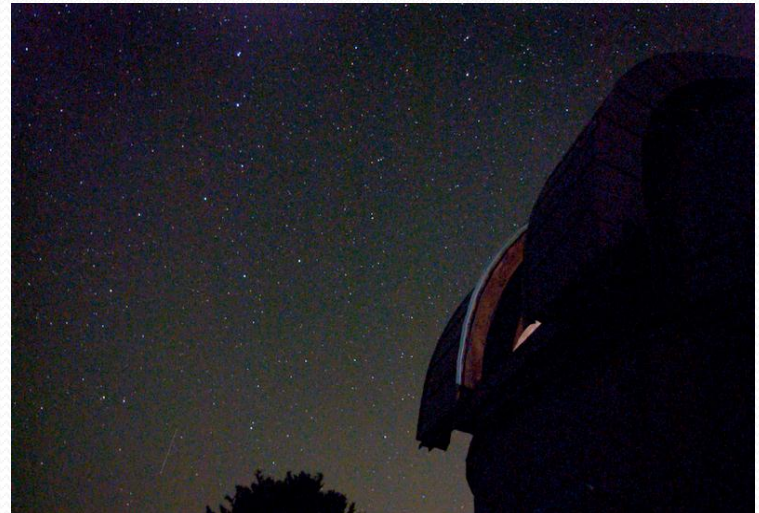
Nearest cities:

Prokuplje (15km) pop. 27,000

Nis (30km) pop. 250,000

The past 12 months

- Fall 2010 / spring 2011 –
 - Commissioning of the 60cm telescope
 - Installation of weather/seeing monitors, internet etc,
- Spring 2011
 - Visits to Tenerife and La Palma with the engineering team
- Summer 2011
 - “First light” at the 60cm
- Fall 2011
 - “Test run”
of scheduled observations



Getting the site going...

60cm dome and our HQ



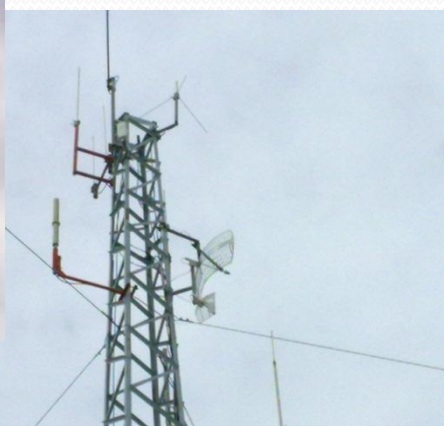
SBIG seeing monitor



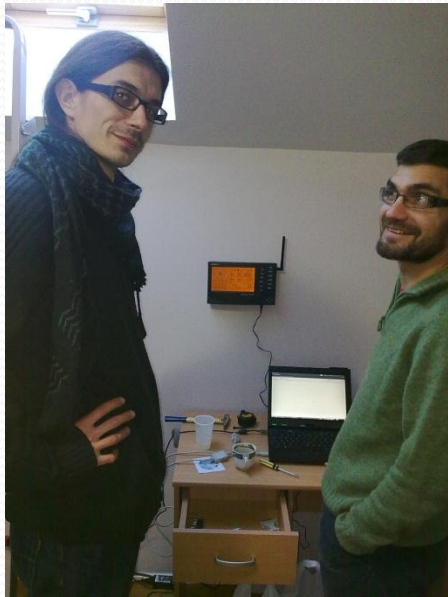
SBIG All-sky cam



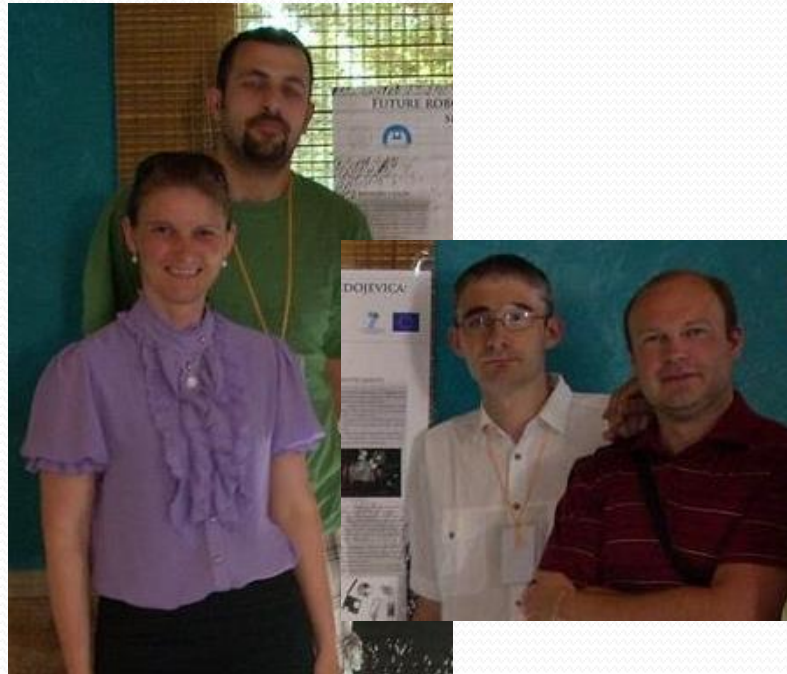
Meteo station and internet



Our crew



Igor and Branimir,
Institute of Physics



Monika, Nemanja, Milan and Oliver
Astronomical Observatory

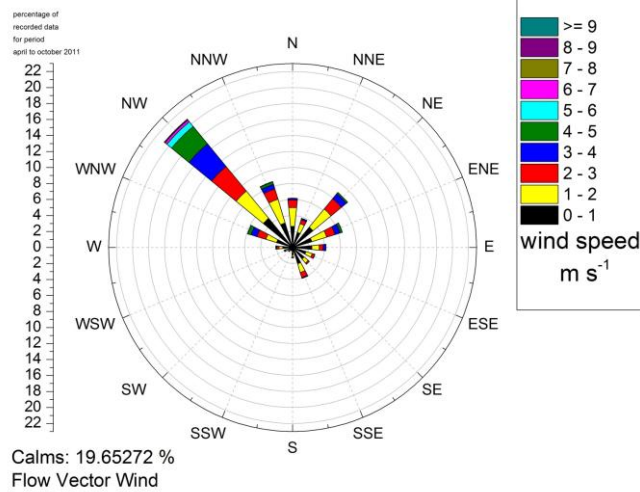
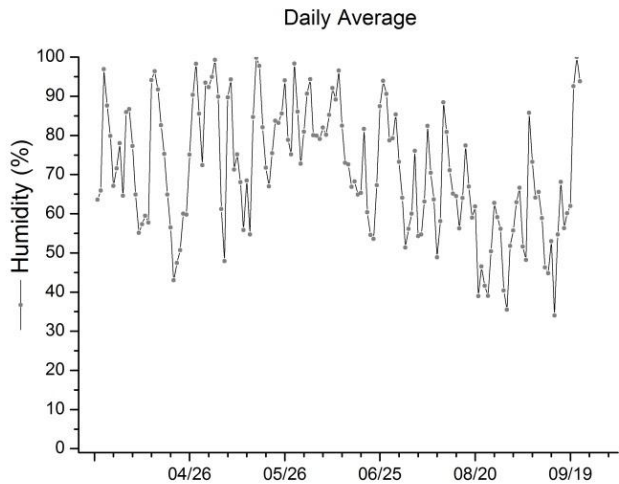


Raca, our housekeeper

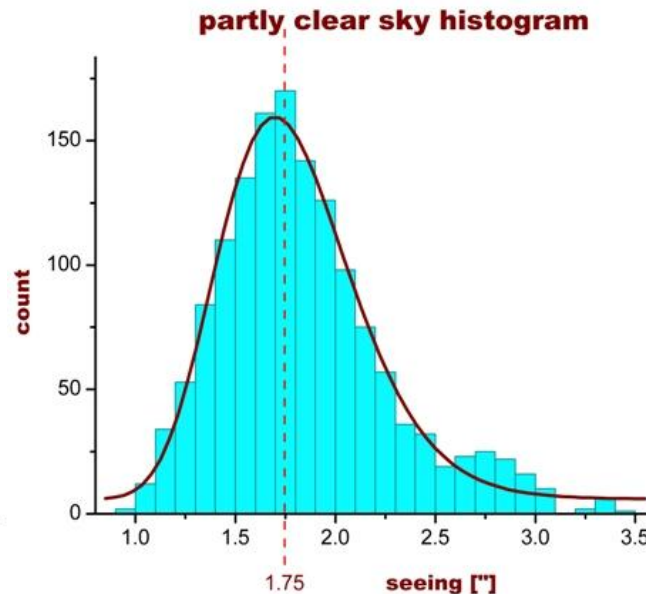
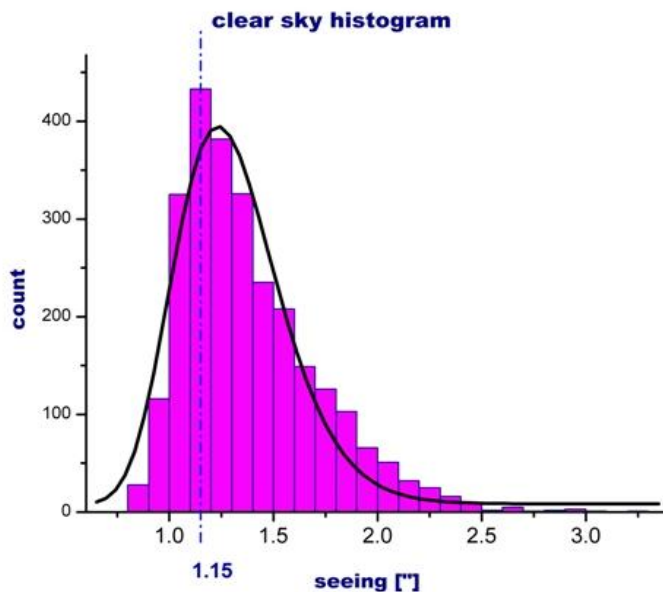


Dragan helping with the
assembly of the 60cm telescope

Tracking the weather & seeing



Credits:
Milan Stojanovic
Milena Jovanovic



Moral:
Seeing is fine
when clouds
are not around

The instruments on the 60cm



Apogee U42 CCD
2kx2k



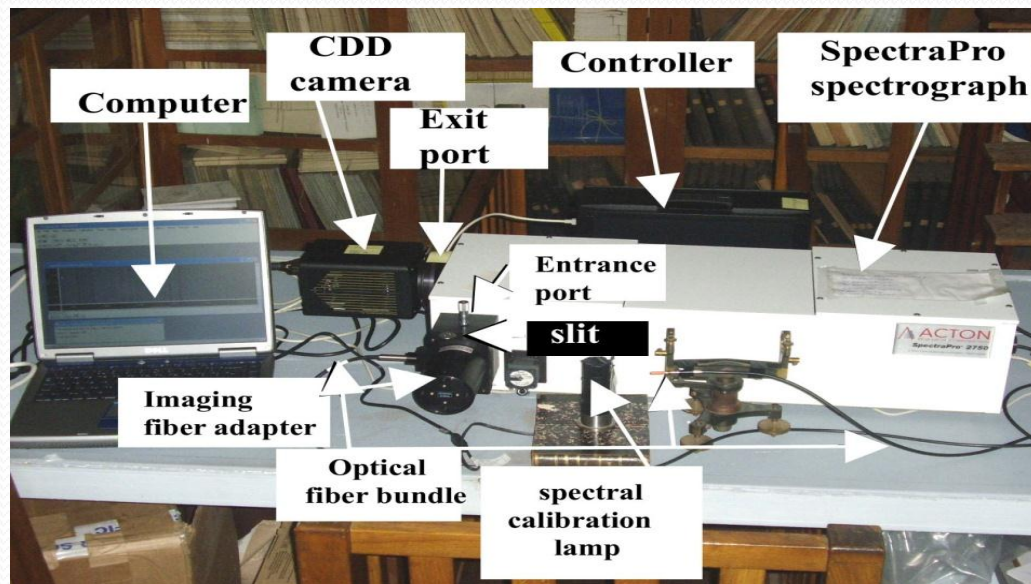
ST-10 ME
CCD 2kx1.4k



Optec IFW
With Bessel BVRI

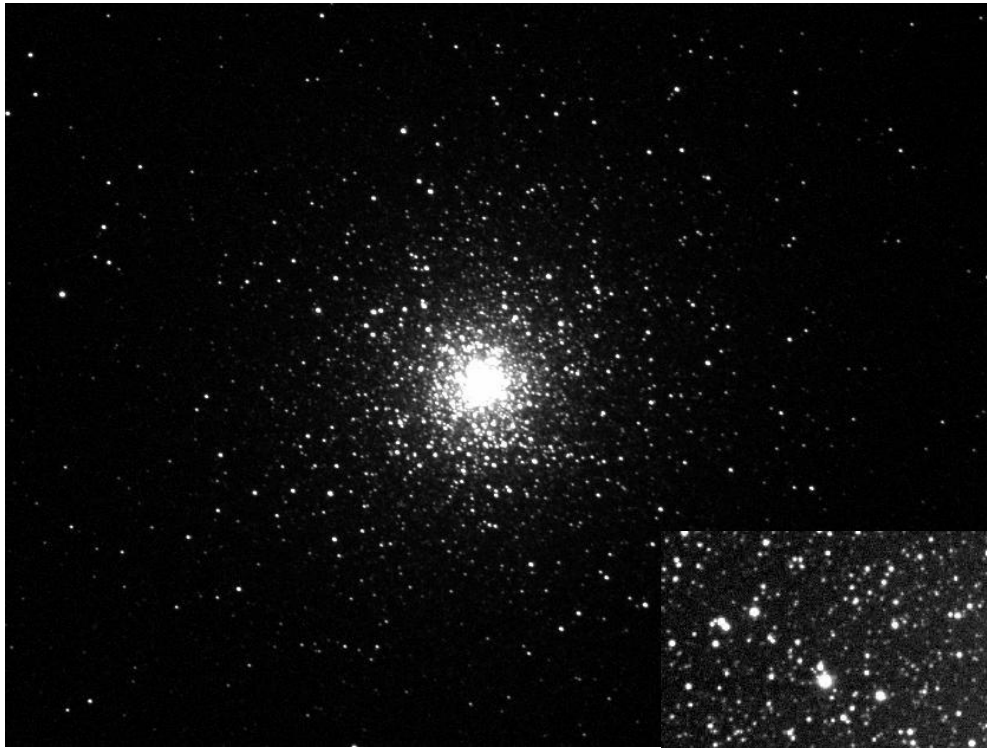
Czerny-Turner Spectrograph

Gratings 300 l/mm, 600 l/mm and 1200 l/mm





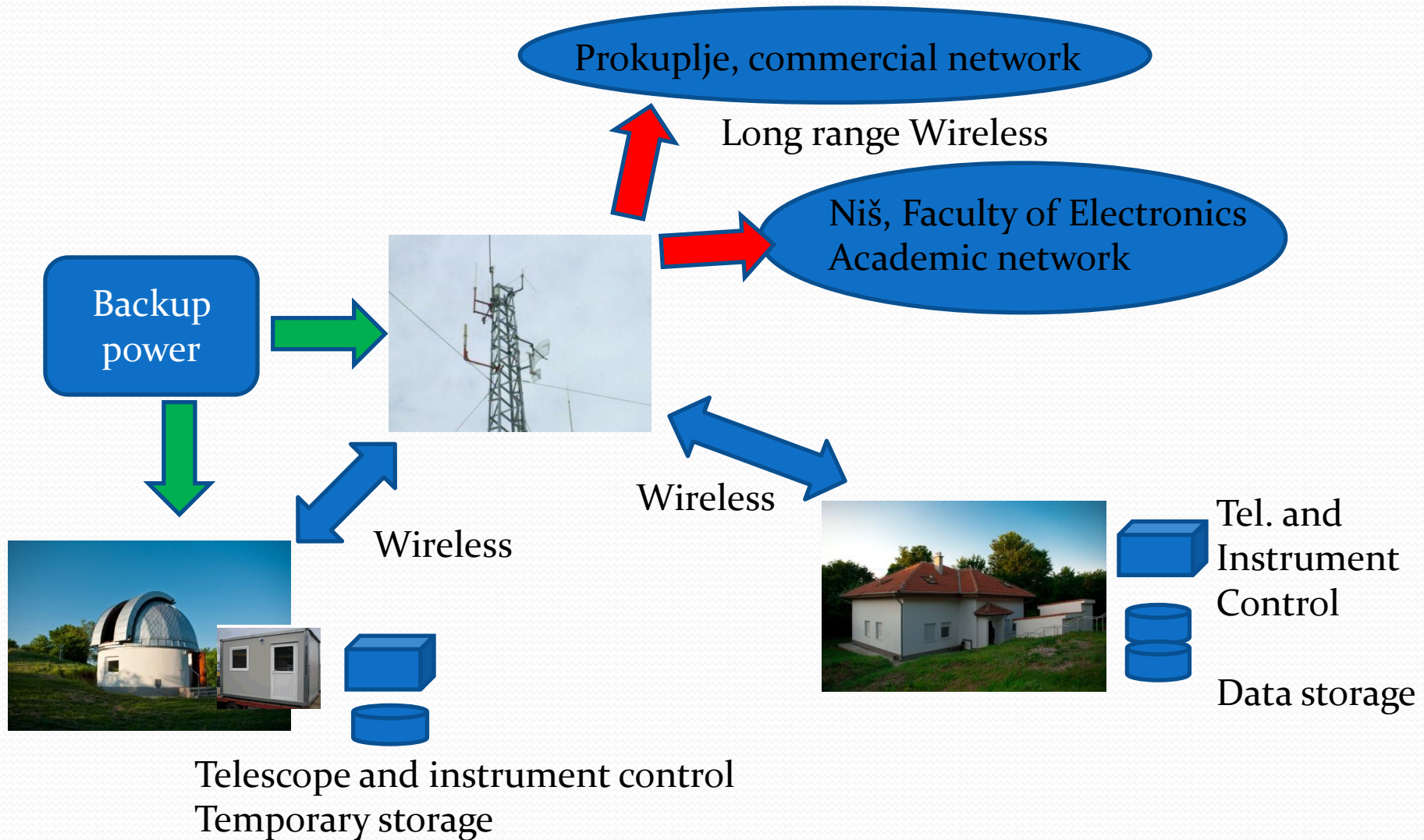
*Planetary nebula M27 imaged with the 60cm telescope at Mt. Vidojevica
Image: M. Bogosavljević, O. Vince (24.08.2011)*



Very near future : the war(m) room – shipping in two weeks



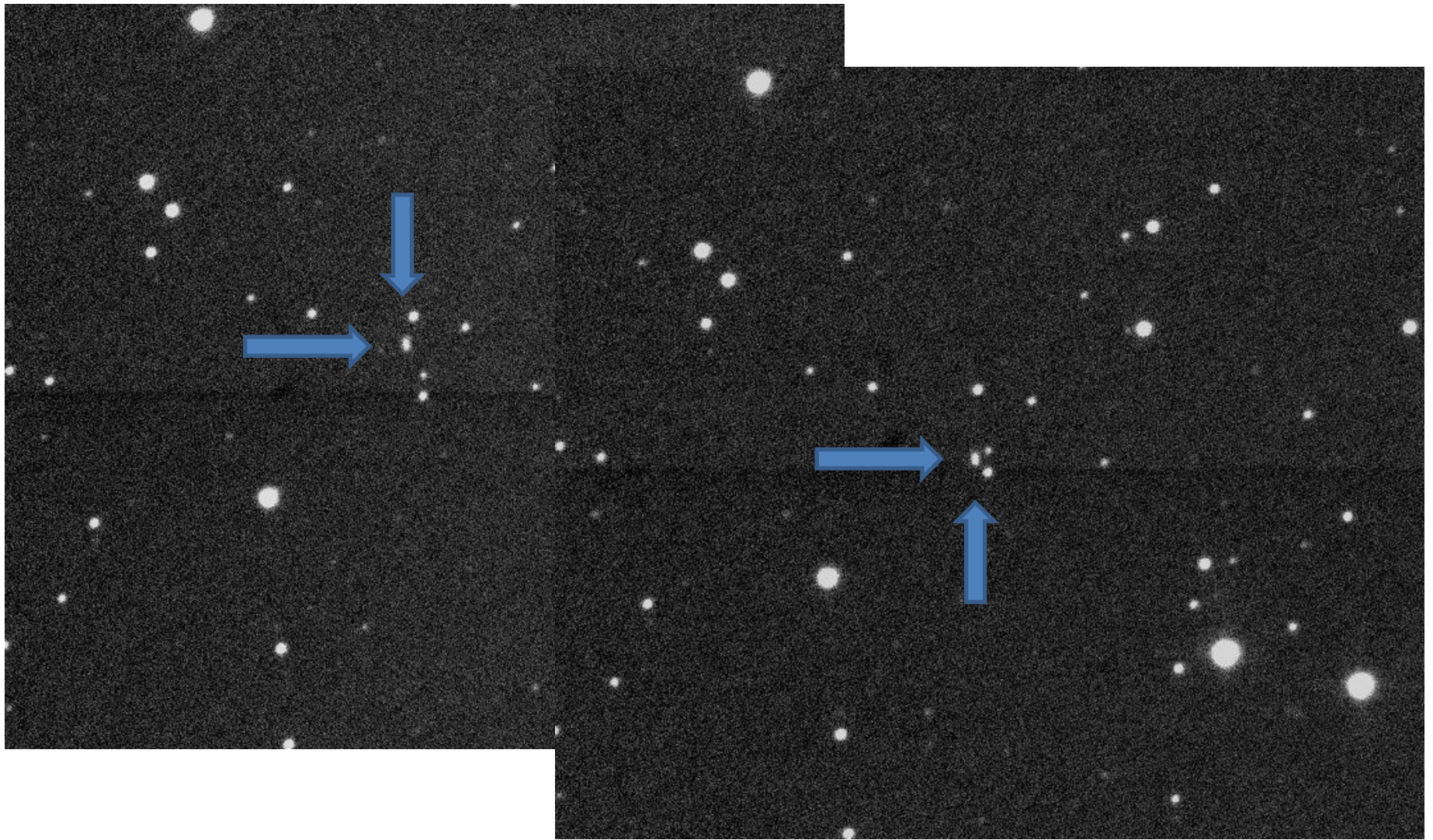
Finalizing computer networks



**What about research at
Vidojevica?**

“Test run” of scheduled observations September – November 2011

- Three projects underway:
 - Photometric lightcurves of close binary systems
(PI Gojko Djurasevic)
 - Orbits of visual binary star systems
(PI Zorica Cvetkovic)
 - Optical observations of reference extragalactic radio sources
(PI Goran Damljanovic)
 - NEW! NEA and Transient Target confirmation!



The motion of NEA candidate asteroid, magnitude $R=18.5$, captured in two 10-minute stacked exposures separated by half an hour on 08-22-2011.



Solar System Dynamics

HORIZONS Web-Interface

This tool provides a web-based *limited* interface to JPL's [HORIZONS system](#) which can be used to generate ephemerides for solar-system bodies. Full access to [HORIZONS](#) features is available via the primary [telnet interface](#). [HORIZONS system news](#) shows recent changes and improvements. A [web-interface tutorial](#) is available to assist new users.

Current Settings

Ephemeris Type [\[change\]](#) : **OBSERVER**

Target Body [\[change\]](#) : **Asteroid (2005 YU55)**

Observer Location [\[change\]](#) : **Astronomical Station Vidojevica [C89]** (21°33'20.1"E, 43°08'24.8"N, 1145.1 m)

Time Span [\[change\]](#) : Start=**2011-11-07**, Stop=**2011-11-11**, Step=**10 m**

Table Settings [\[change\]](#) : QUANTITIES=**1,3,4,9,19,20,23,24,29**

Display/Output [\[change\]](#) : *default* (formatted HTML)

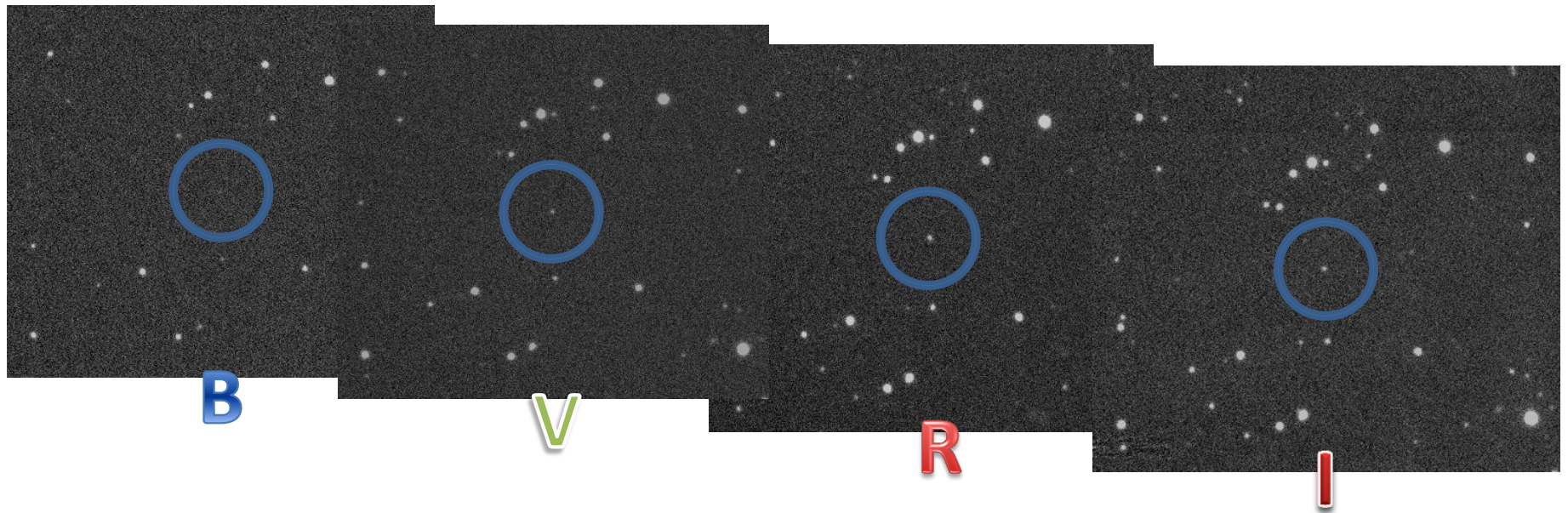
MASTER Kislovodsk
discovery image

Ra = 23h 20m 22.36s ,
Dec=44d 43m 30.8s
Mag=15.9
2011-08-17 23:10:15 UT

DSS Image

MASTER Tunka
reference image

2011-07-13 18:34:32 UT



Photometry of an unknown optical transient source from MASTER survey



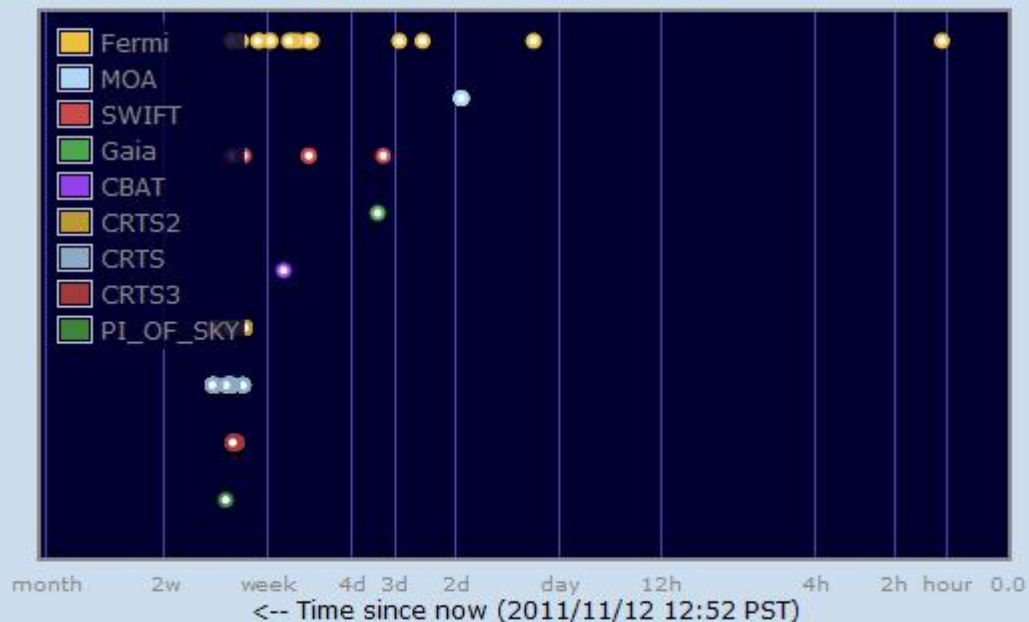
Skyalert.org

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Recent Events

In the picture below, time is measured with "right now" at the right. Ages of recent events -- the last 200 received -- are shown by stream. Click on an event to bring up a new window with detailed portfolio.



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About Skyalert

SkyAlert collects and distributes astronomical **events** in networks that come from a common source, with a common vocabulary. Streams and the events themselves, at the links below. You can find interesting, that comes with an [Atom feed](#) of those that pay more, no less.

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- [Authoring your own event stream](#)
- [Validate a VOEvent or author an event](#)
- [Resolve an event identifier \(IVORN\)](#)
- [Guide to Running Skyalert \(pdf\)](#)
- [Install your own Skyalert](#)
- Contact us at help@skyalert.org

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Present Time: 12 Nov 2011; 08:58 UT

ATel News

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Email Circulation: 2213

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OR

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 Sub-Millimeter
 Far-Infra-Red
 Infra-Red
 Optical
 Ultra-Violet
 X-ray
 Gamma Ray
 >GeV

Telegram Index

Telegrams Posted Within the Last 30 Days ([All](#))

79 Selected of 3759 Telegrams

- 3759 [Swift observations of the supersoft X-ray transient XRF 111111A / MAXI J0158-744](#)**
K.L. Li, A.K.H. Kong, P.H.T. Tam, J.H.K. Wu (NTHU, Taiwan) -- 12 Nov 2011; 02:36 UT
- 3758 [MAXI J0158-744/XRF 111111A: Swift X-ray and U band detection](#)**
J. A. Kennea, E. A. Hoversten (PSU), P. Curran (CEA-Saclay), P. A. Evans (U Leicester), H. A. Krimm (CRESST/GSFC/USRA),.... -- 12 Nov 2011; 00:48 UT
- 3757 [Preliminary RXTE timing solution confirms the long term spin down of SAX J1808.4-3658 and the expansion of its orbit.](#)**
A. Papitto (Univ. Cagliari, Italy), A. Riggio (INAF OAC, Italy), L. Burderi (Univ. Cagliari, Italy),.... -- 11 Nov 2011; 16:41 UT
- 3756 [MAXI GSC and SSC detection of a soft X-ray transient near SMC: XRF](#)**
M. Kimura (Osaka U.), H. Tomida (JAXA), T. Sootome, M. Serino, T. Mihara,(RIKEN), M. Morii

Supernovae

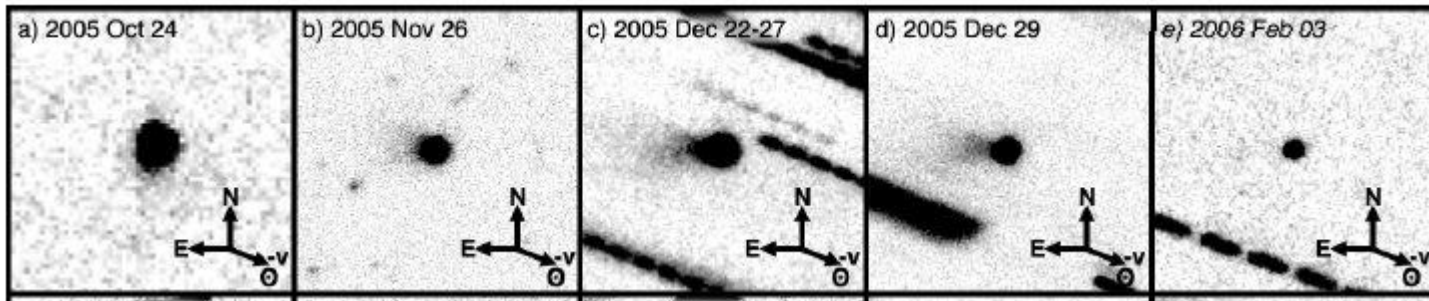
- 3749 [ASAS-SN and Swift follow-up of P SN J10081059+5150570: An Unusual Type IIa Supernova ?](#)**
J. L. Prieto ...
- 3748 [MASTER SN candidate 5 magnitude brighter than SDSS J072844.02+451937.1 host galaxy](#)**
V. Shumkov on behalf of MASTER-Team....
- 3739 [PTF weekly SN discovery report, November 6, 2011](#)**
Avishay Gal-Yam...
- 3738 [Swift observations of SN2011hg](#)**
R. Margutti...

Recently

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K.L. Li...
- 3758 [MAXI J0158-744/XRF 111111A: Swift X-ray and U band detection](#)**
J. A. Kennea...
- 3756 [MAXI GSC and SSC detection of a soft X-ray transient near SMC: XRF 111111A / MAXI J0158-744](#)**
M. Kimura ...

Most Viewed

MONECOM: followup of MBCs with MONET



Hsieh et al, 2011

Targets: $^{176}\text{P}/\text{Linear}$, $\text{P}/2010 \text{ R}_2$ (La Sagra) and $^{238}\text{P}/\text{Read}$



High school students from Croatia
Serbia and Greece working on a real
science project

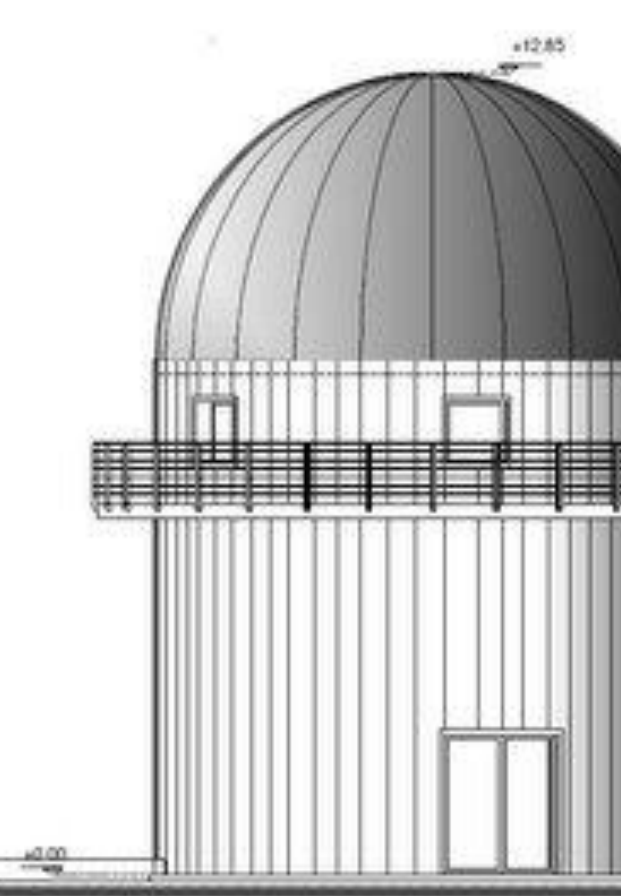
Serbian team: Training and
mentorship at ASV

We had fun 😊

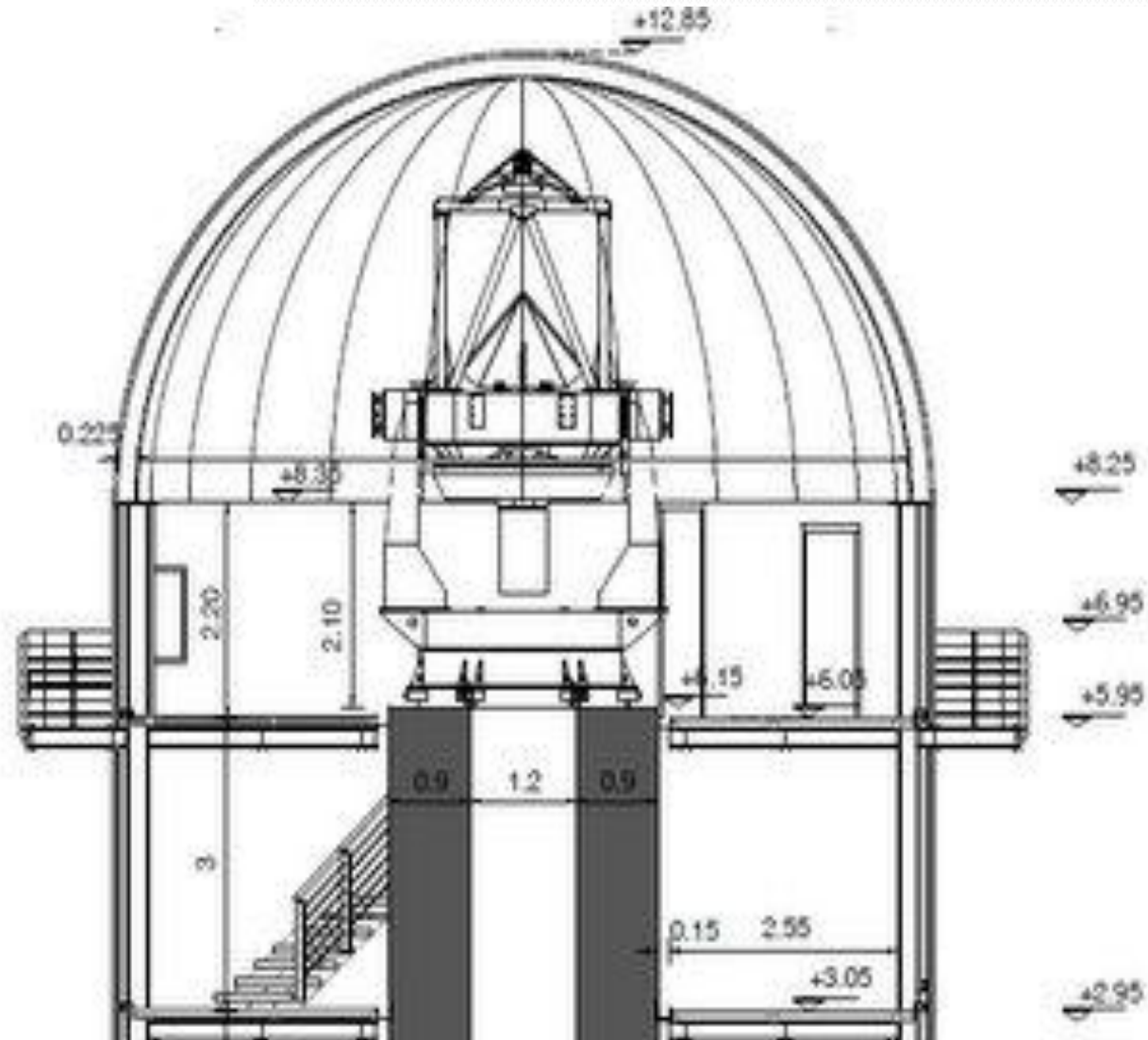


The future at Vidojevica

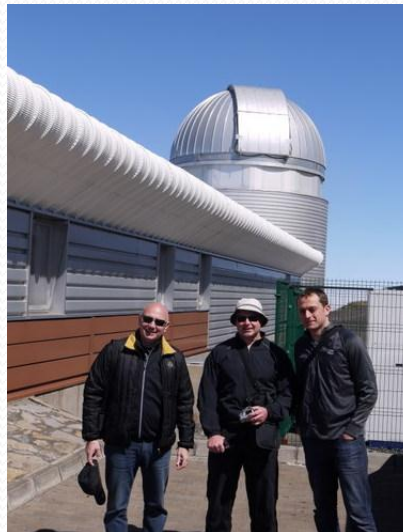
First draft design – Dopisis, Greece



Front Elevation



Seeking good advice (Tenerife, La Palma)



Surveying the market, preparing a tender



Visit to Astelco



At Astrosysteme
Austria (ASA)



Zach Ioannou from Greece



Timeline

- January 2012 – contracts signed, telescope ordered
- Summer 2012 – dome ordered
- Summer/Fall 2012 – building design completed
- Winter 2012 – construction permits
- Spring 2013 – construction begins on site
- Fall 2013 – factory acceptance tests for the telescope



For further info:

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<http://www.aob.rs>,

<http://belissima.aob.rs>

<http://vidojevica.aob.rs>



We even started a facebook page 😊

Thank you for your attention

