TÜBİTAK National Observatory

www.tug.tubitak.gov.tr

- *TÜBİTAK National Observatory*

Sites

Bakırlıtepe Site, Saklıkent

Lat.: 36º 49' 27“ N
Long.: 30º 20' 08“ E
Elev.: 2500 m.

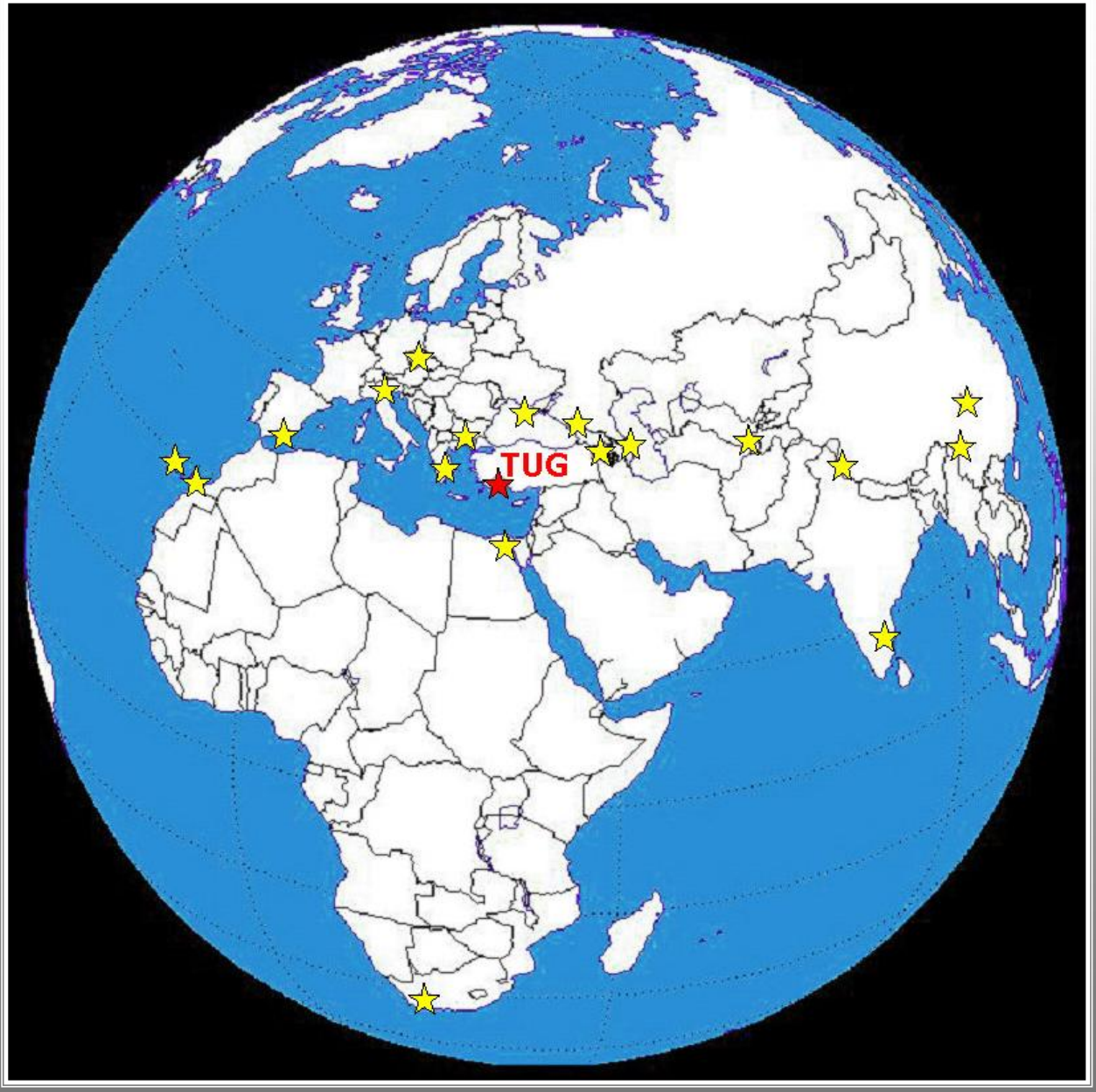
Administration, Antalya

Lat.: 36º 53' 59“ N
Long.: 30º 39' 14“ E
Elev.: 35 m.

Public Center, Antalya

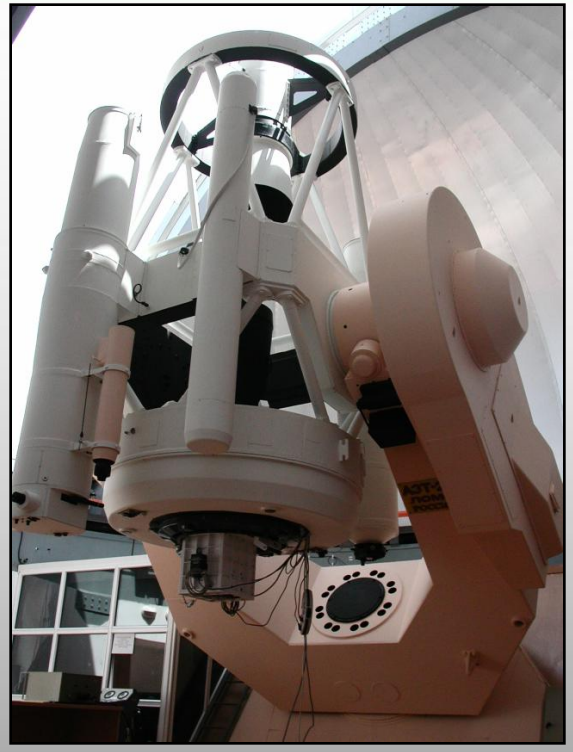
Guest House, Saklıkent

Location of TUG



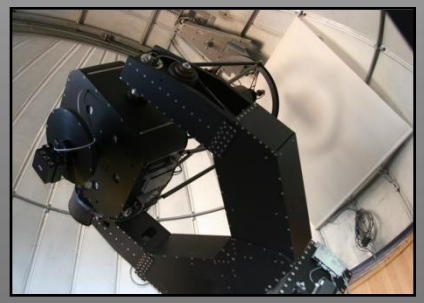
Other observatories

Telescopes

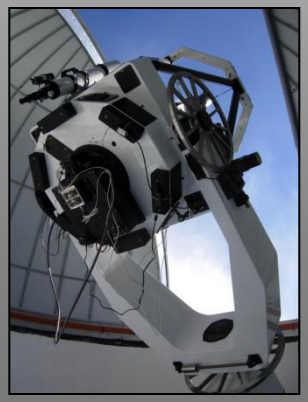


RTT150

ROTSE-IIId



T60

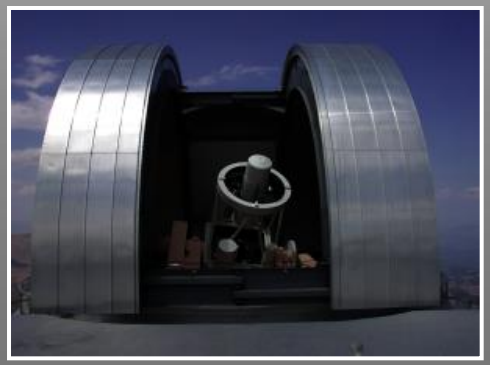


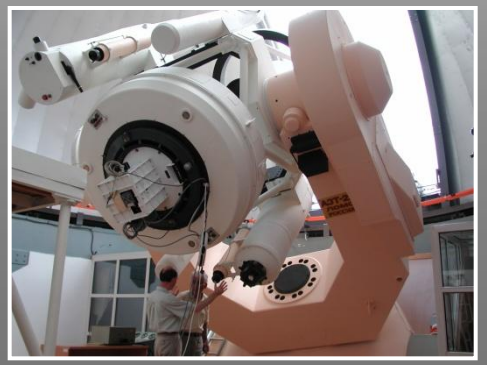
T100

RT40

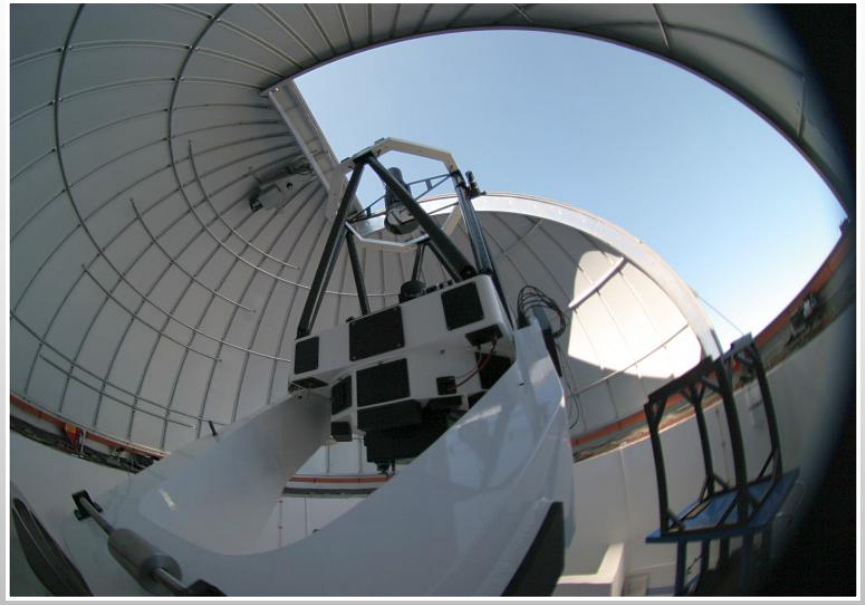
RTT150 Telescope

- 150 cm aperture, f/7.7 and f/48, RC telescope.
- Established in 1995 on behalf of a working protocol between Türkiye and Russia.
- First light in Sep., 2001.
- **TUG:** Site, staff and operational expenses. **KFU, IKI, TUG:** Maintenance, update, instrumentation.
- Three partners share telescope time.
  %40 TUG, %45 KFU, %15 IKI
- **Cassegrain: TFOSC** (2Kx2K), **Andor CCD** (2Kx2K), **Andor EM CCD** (1Kx1K) Narrow Band, UBVRI and SDSS filters.
- **Coude: Andor CCD** (2Kx2K), R=40000.





T100 Telescope

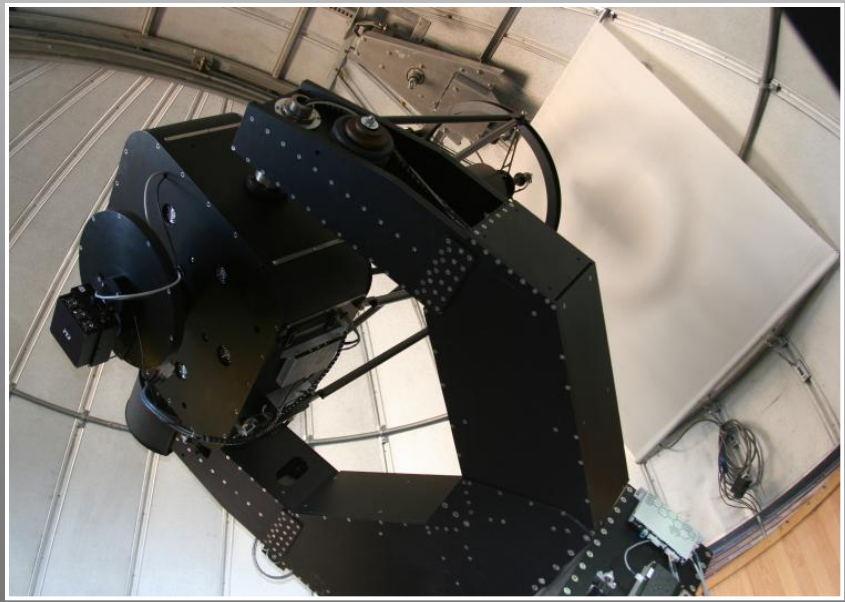


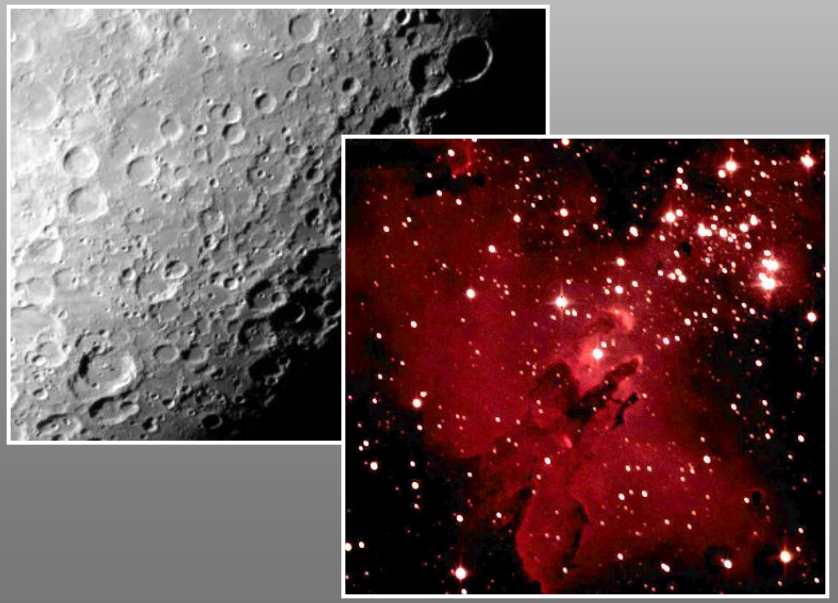
- 100 cm aperture, f/10, RC telescope.
- SI 4Kx4K BB, `Cryo-cooling` CCD large fov (21.5'x21.5‘), UBVRI, SDSS and narrow band filters.
- Installed in Aug., 2010.
- First light in Oct. 7/8, 2009.
- Started scientific projects in Oct., 2010

First Light at T100 (M2 Cluster)

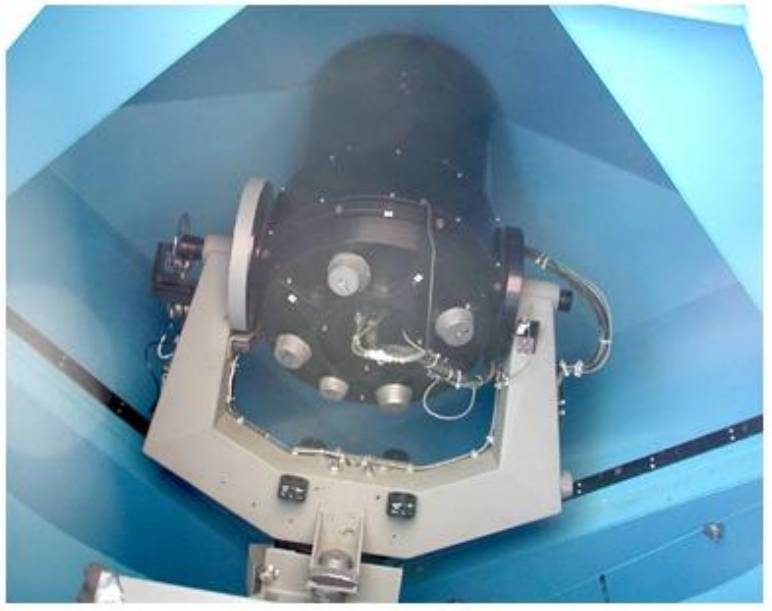
T60 Telescope

- 60 cm aperture, f/10, RC, robotic telescope.
- Installed in Sep., 2010.
- First light in Sep. 5, 2010.
- Started scientific projects in Aug., 2010.
- FLI Proline 2Kx2K BB CCD, UBVRI, SDSS and narrow band filters, fov: 17.5'x17.5'



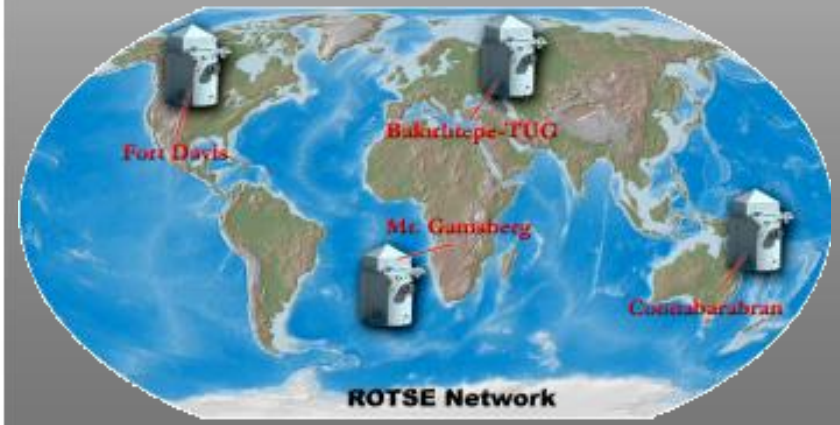


ROTSE-IIId Telescope



- Robotic, 45 cm aperture.
- Working protocol between TUG and Michigan University (USA) signed in 2005.
- Dedicated to observations of Gamma Ray Bursts in optical window.
- 2Kx2K CCD, no filter, fast response, large fov (2.5ºx2.5º)
- Four telescopes in ROTSE network.

Australia
Africa
Türkiye
USA



- *Research Performance*

TUG Performance

4 Optical Telescopes

1.5 m and 1.0 m fully automatic

0.6 m, 0.45 m fully robotic.

Site Quality

Median Seeing: 1.5”

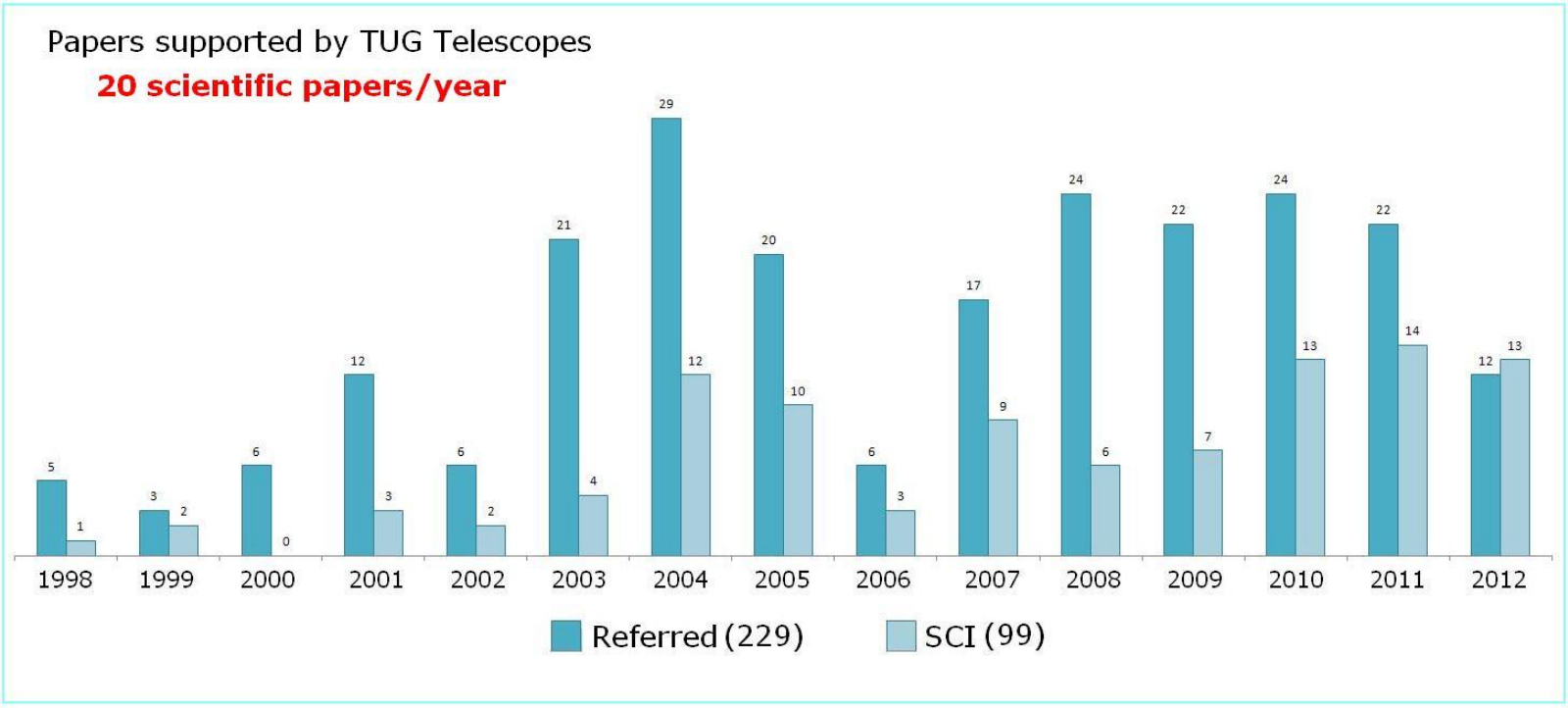
Clear Nights: 220 days/year

Sky Backgr.: 22th mag.

Serving 250 scientists

Scientific proposals

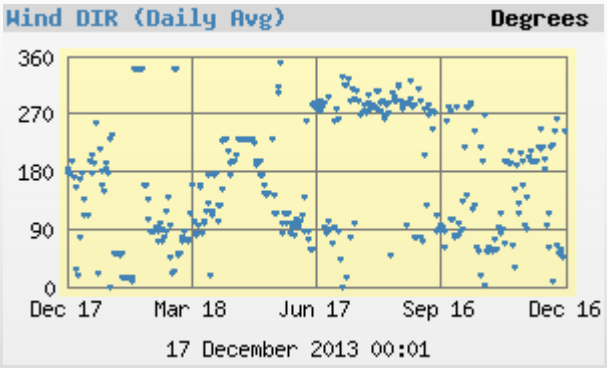
Allocation observing time



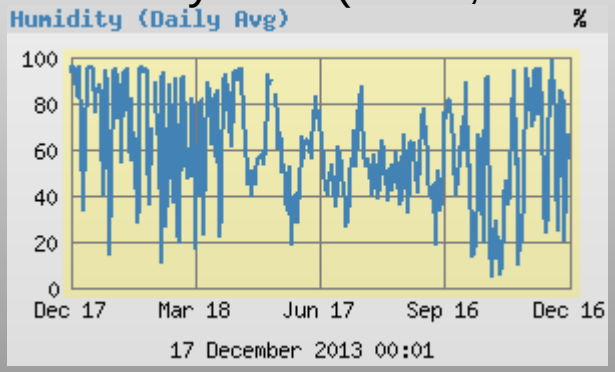
TUG Climate & Recent Graphics

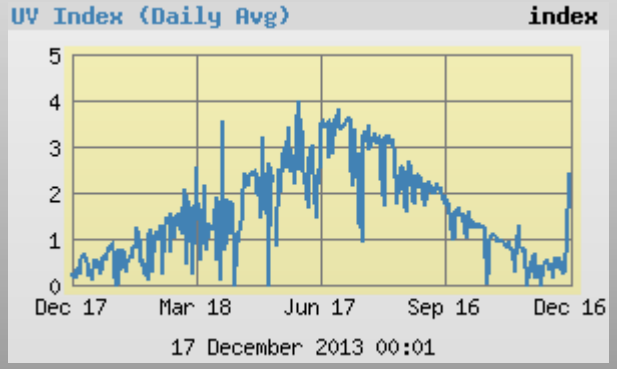
Mean temperature:5 C (min.-19, max.+22)

Dominated direction: SE

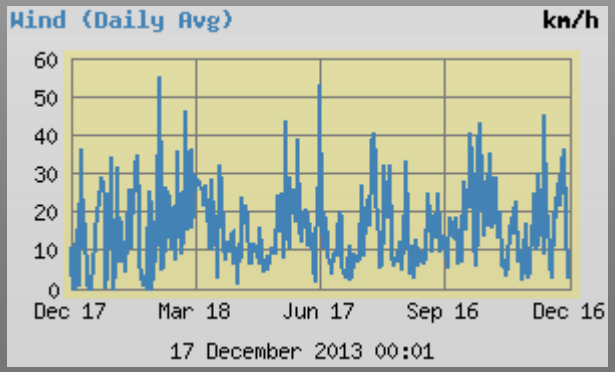


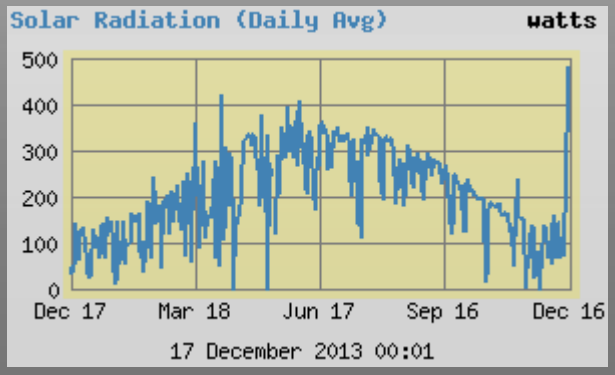
Mean humidity:50% (min.2, max.99%)





Mean wind speed:17 km/h (min:0, max.290)





Ongoing Projects

KSU: Kazan State University
IKI: Russian Academy of Sciences
OAO: Okayama Astrophysical Observatory
MSU: Michigan State University

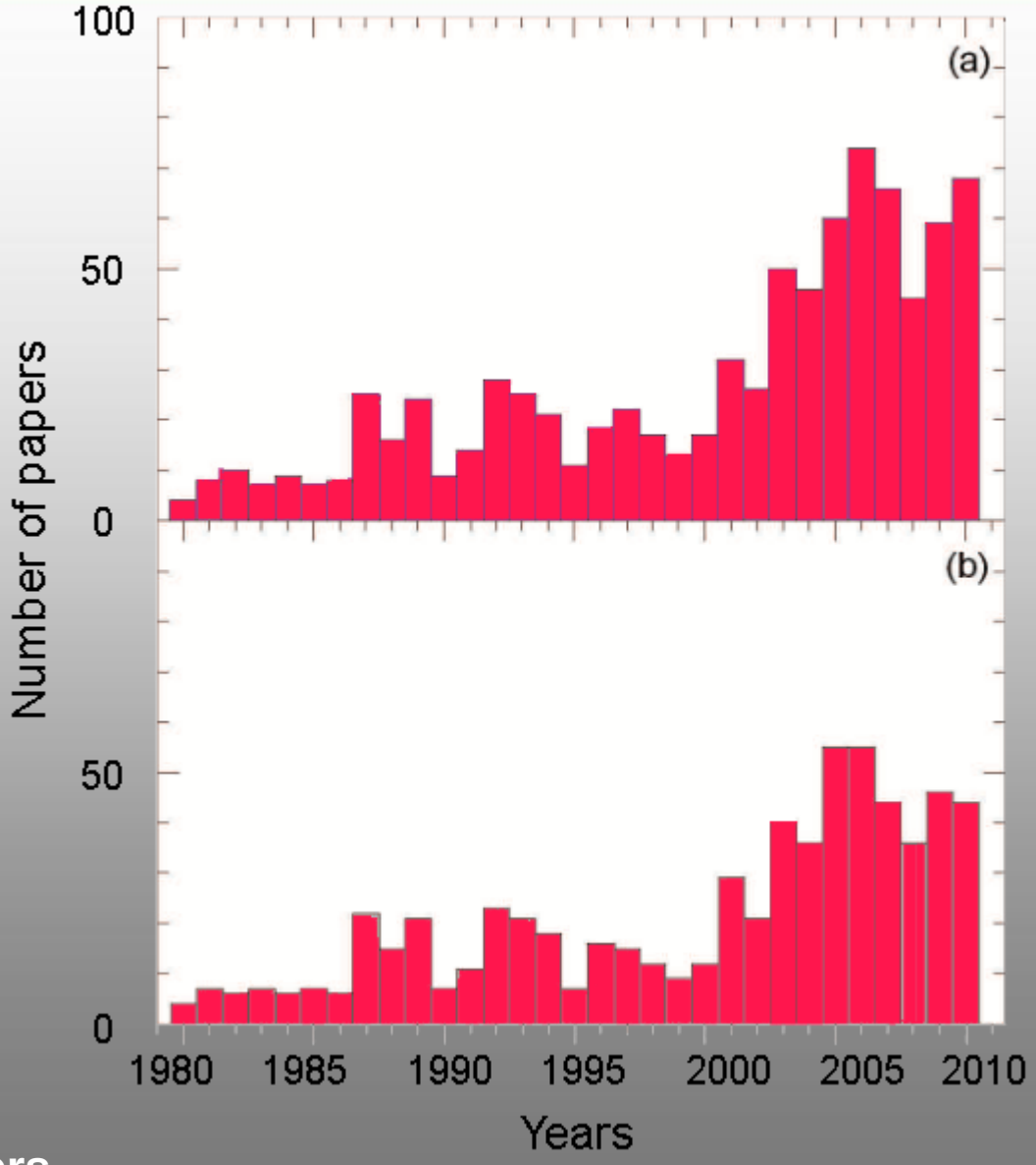
International Joint Projects

- **Optical monitoring of gravitational lens systems (TUG+KFU)**
- **Investigation of Celestial Reference frame (ICRF) (KFU+TUG)**
- **Optical observations of X-ray sources, black holes and microquasars (KFU+TUG+IKI)**
- **Optical counterparts of GRBs and Soft Gamma Ray Repeaters (TUG+IKI+KFU)**
- **Near Earth Objects (KFU+TUG)**
- **Galactic thin and thick disk kinematics (TUG)**
- **Exosolar Planet Search with "I_2 cell" spectroscopy (TUG+KFU+OAO)**
- **Optical Observations of Gamma Ray Bursts (TUG-MSU)**

National Projects

- **Disk precession and quasi-periodic oscillations (QPO) in cataclysmic variables monitoring light curves, search for superhumps**
- **Deep imaging of nova shells**
- **Narrow band imaging to identify supernova remnants in nearby galaxies**
- **Oscillations in white dwarfs**
- **Photometry of variable stars in selected star clusters**
- **Short and long term photometry of selected semi-regular variables**
- **Infrared photometry of red variables**
- **Spectroscopy of variable and/or binary stars**

Publications for Turkish Astronomers



(a) All papers
(b) Corresponding authors from Turkey

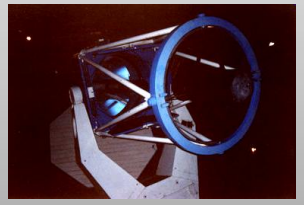
- *Future Projects*

Future Projects

Telescope Experts Training Project

2010 – 2013
Budget ~ 1,2 Million USD
Cooperation with ESO
2 Mechanical, 2 Opto-mechanical, 2 Electronic, 2 Software Engineers

1.52 m. Telescope Design and Construction Project



2013 – 2016
Budget ~ 5 Million USD
Domestic Manufacture

2.5 m. Optical Telescope Project

2014 – 2018
Budget ~ 50 Million USD
Turn Key Solution

Radio Telescope Project

Site Selection (2007 – 2008)


Thanks