ANNUAL MEETING OF BAV HARTHA
20.-22.05.2016

South Moravian Observatory Under Full Remote Control

$49^h16^m55^s$ +16°27'11"
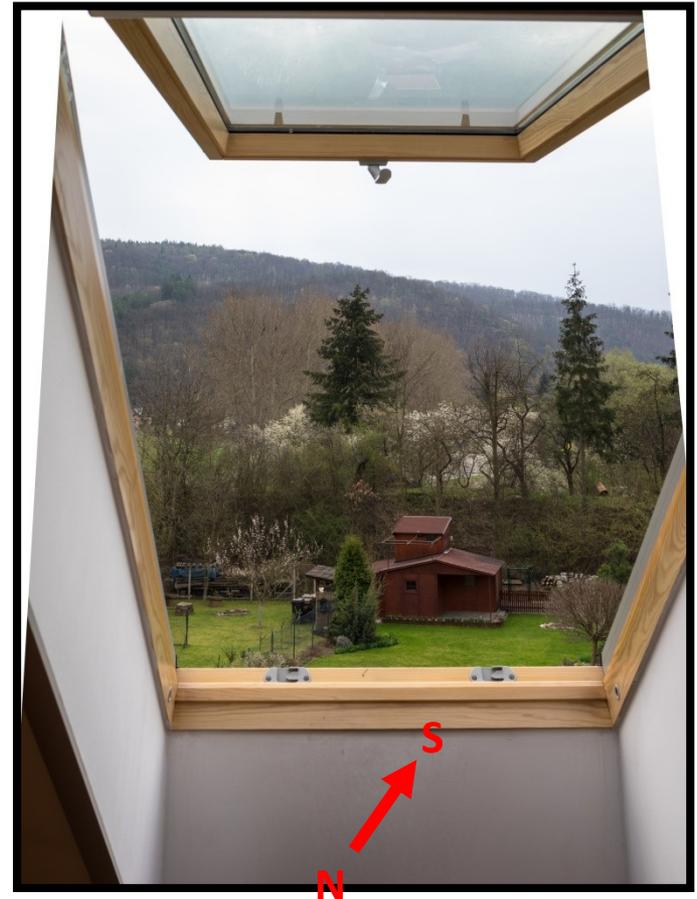
S-M-O   Where it is located

Location 49ʰ16ᵐ55ˢ +16°27'11"

ca. 200 km South East from Prague, ca. 120 km North of Vienna
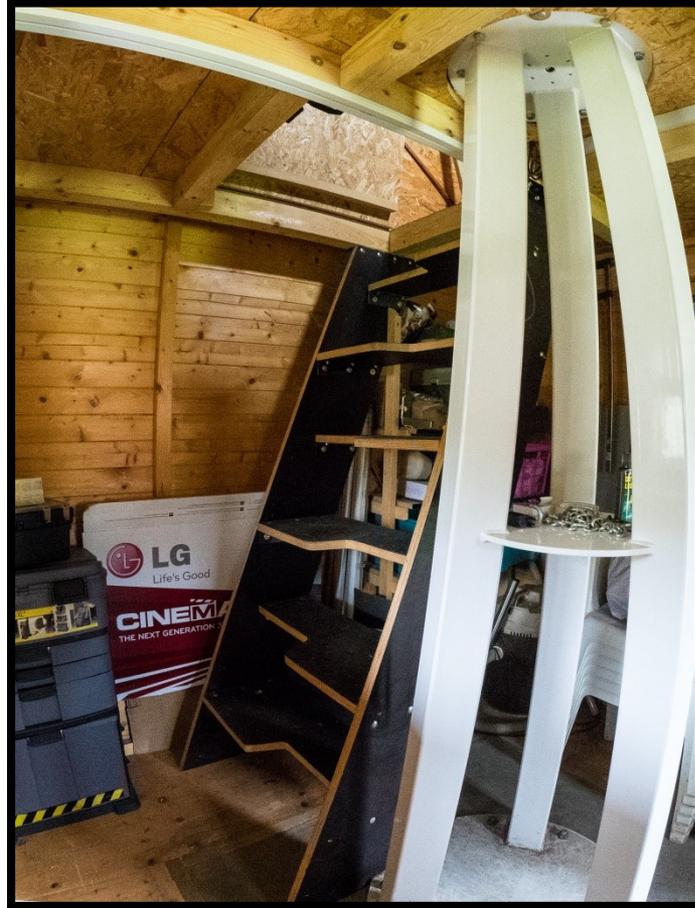
S-M-O   Chudčice 273 ca. 20km NW from Brno
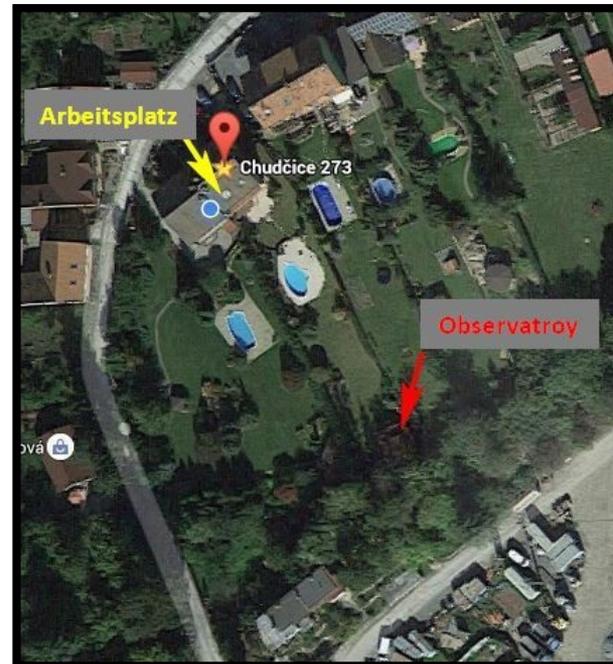
S-M-O   My Garden Observatory

Self-made first floor on a bought wooden cottage, the tripod for the mount is fixed on a concrete ground work 1x1x0,75 m

S-M-O   Rolling Roof Observatory

12V fence gate drive

Footprint   2.3 x 2.5 m; side walls 1.25 m

S-M-O   Telescope – Mount – CCD camera

CCD camera G2-1600
Moravian Instruments
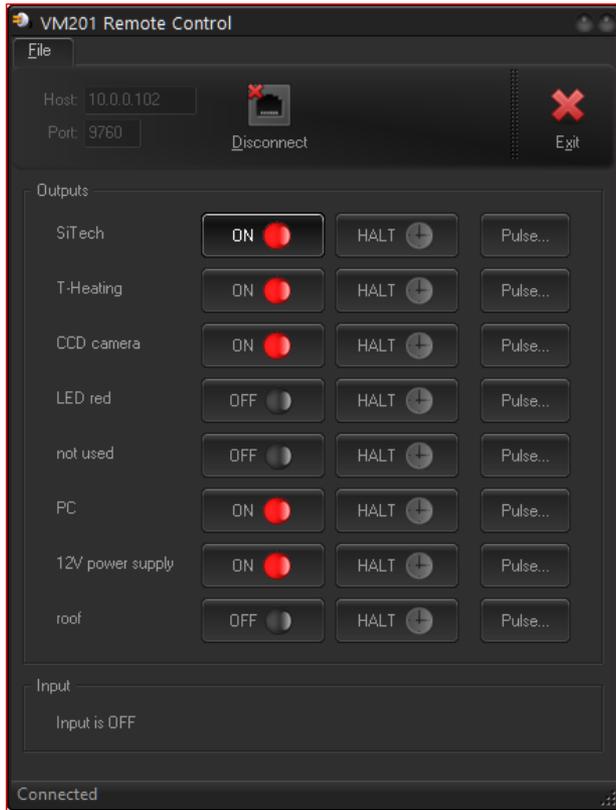Chip: KAF 1603ME with
astronomical filters
C-BVRI with focuser

Orion UK Newtonian 0.3 m f/4.7
mirror better 1/8 λ wave length
FOV 33 x 22 arcmin

Mesu-200 friction drive
mount with SiTech-II
controller,
pay load up to 100 kg
pointing accuracy ±<15 arcmin
pier flip is manually done with
re-centering FOV using plate
solving

S-M-O   Remote Control – Electrical Consumers

Vellemann VM201 8-fold IP relay card for switching
ON / OFF electrical consumers, like:

- SiTech mount controller
- Telescope heating
- CCD camera
- LED illumination
- Personal computer
- 12V power supply unit
- Roof OPEN / CLOSE

S-M-O   Remote Control Observation

South-Moravian-Observatory - Remote Control

S-M-O   Used Software

SIPS by Moravian Instruments

- Controls CCD cam and filter wheel
- Cooling up to 50 K below ambient temperature
- Guides the mount with main camera

additional features:
- User defined database for repeatable targets
- Store and load exposures for repeatable targets
- astrometry of observations
- photometry of observations
- calibration with dark frame and flat field images

SiTechExe controls the mount using pointing model with ca. 30 stars
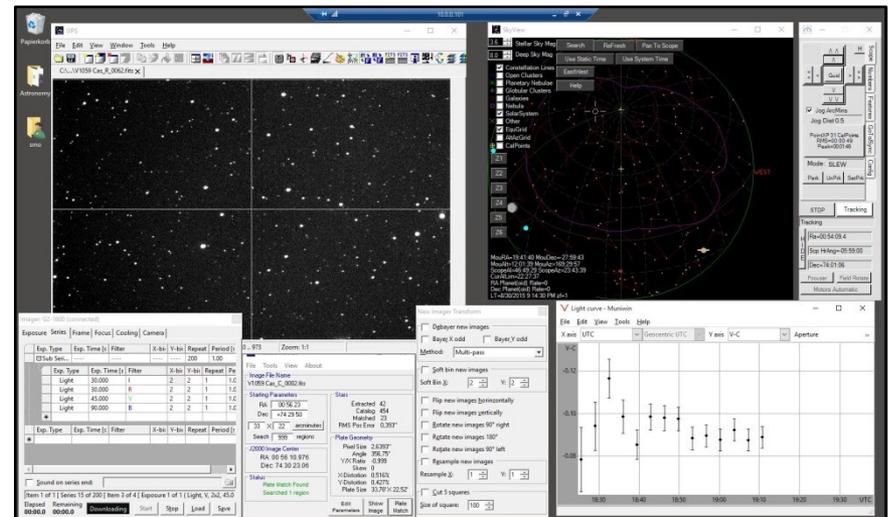SkyView shows position of scope on a sky map

All Sky Plate Solver v1.4 by Giovanni Benintende
freeware download
http://www.astrogb.com/astrogb/All_Sky_Plate_Solver.html
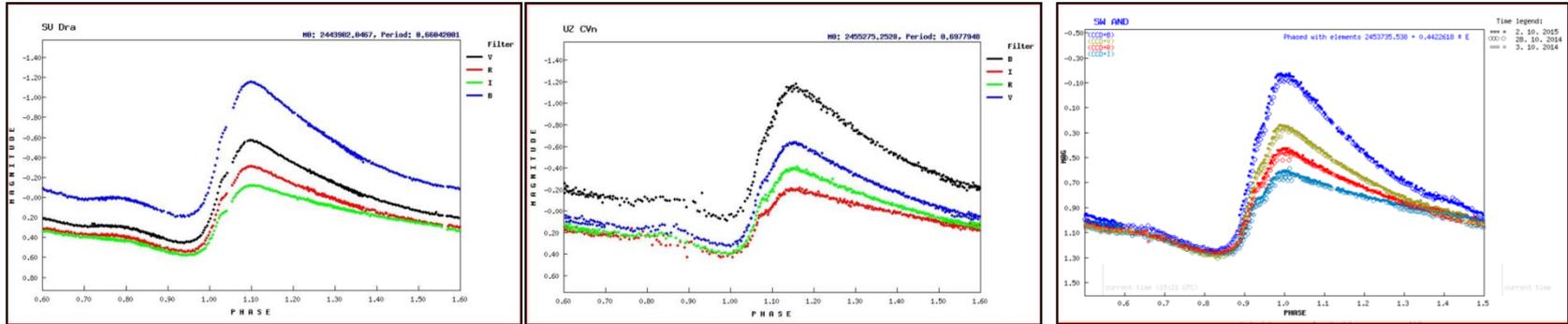
ASCOMPAD for focuser control

Muniwin 2.1.7
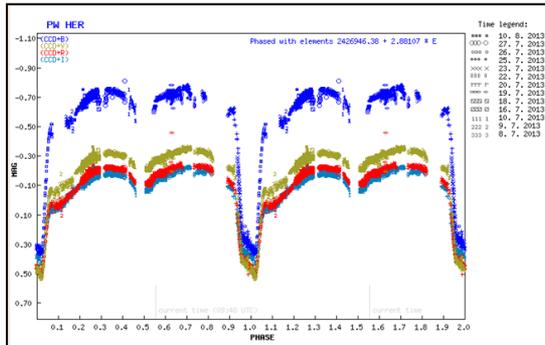for data processing of variable star images using project features like catalogue files
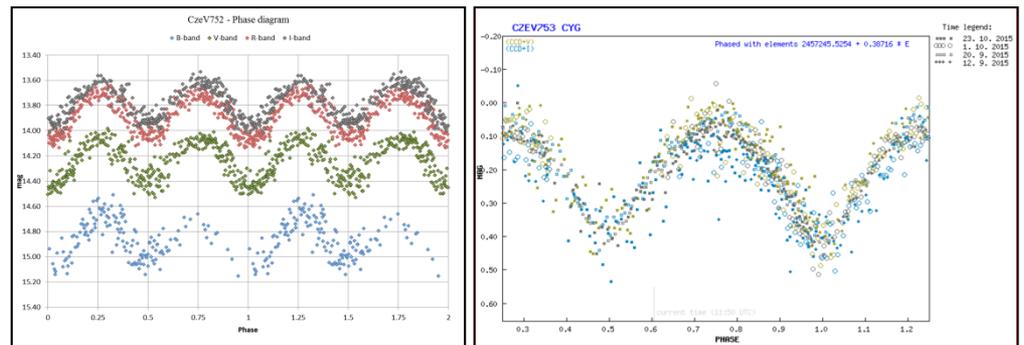
S-M-O   Observations - Exaples

Precise four colour photometry of RR-Lyrae

Four colour photometry of eclipsing binaries

New Variables CzeV 752, CzeV 753 (publication in progress)

S-M-O   Observation Statistics

	2015		until 2016-04-15	
	abs	%]	abs	%]
# of obs. nights	82	91,1%	23	76,7%
# of observations	90	100,0%	30	100,0%
# of "i.O." obs.	62	68,9%	19	63,3%
# of "info" obs.	11	12,2%	2	6,7%
# of "n.i.O". obs	17	18,9%	9	30,0%

Brightness measured with Sky Quality Meter in zenith   19.5 – 20.5 mag/arcsec²

S-M-O   Project: Modification of the Telescope Tube

Original tube by Orion UK is made from aluminum sheet and is extremely instable. Therefore it will be replaced by a very stable tube made from glass – carbon fibre laminate.
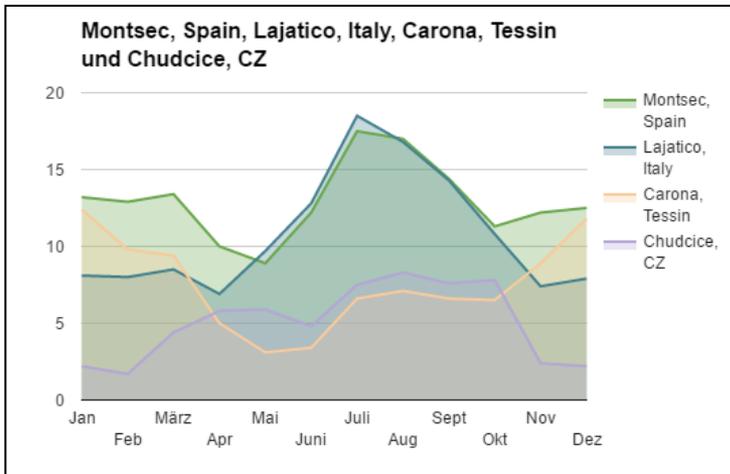
Features:
- New very stable secondary mirror holder
- Integrated dew cap
- Secondary mirror heating
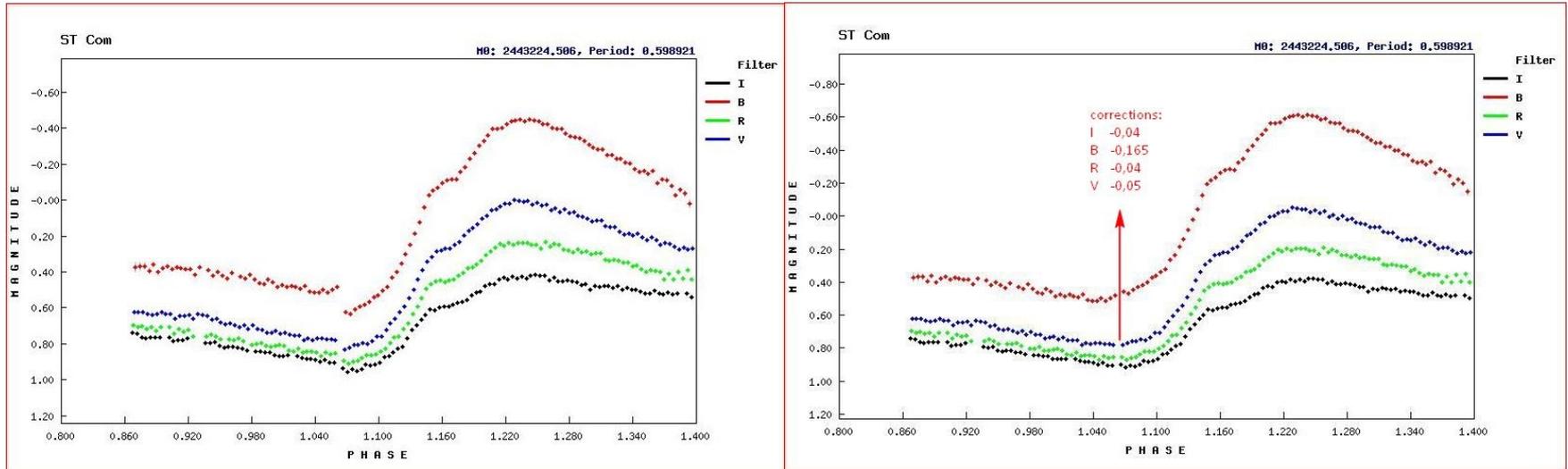- Tube ventilation
- Tube flap

S-M-O Project: Remote Telescope At New Location With Better Observation Conditions

Montsec, Spain, Lajatico, Italy, Carona, Tessin und Chudcice, CZ

Astronomical Centre Lajatico Toscana, Italy

S-M-O   Project: Pier For German Equatorial For Solving Shift In Magnitudes after Meridian Flip

Thank you for your attention.