Ulugh Begh Astronomical institute
Maidanak Astronomical Observatory

Observation with Astrotel – telescope

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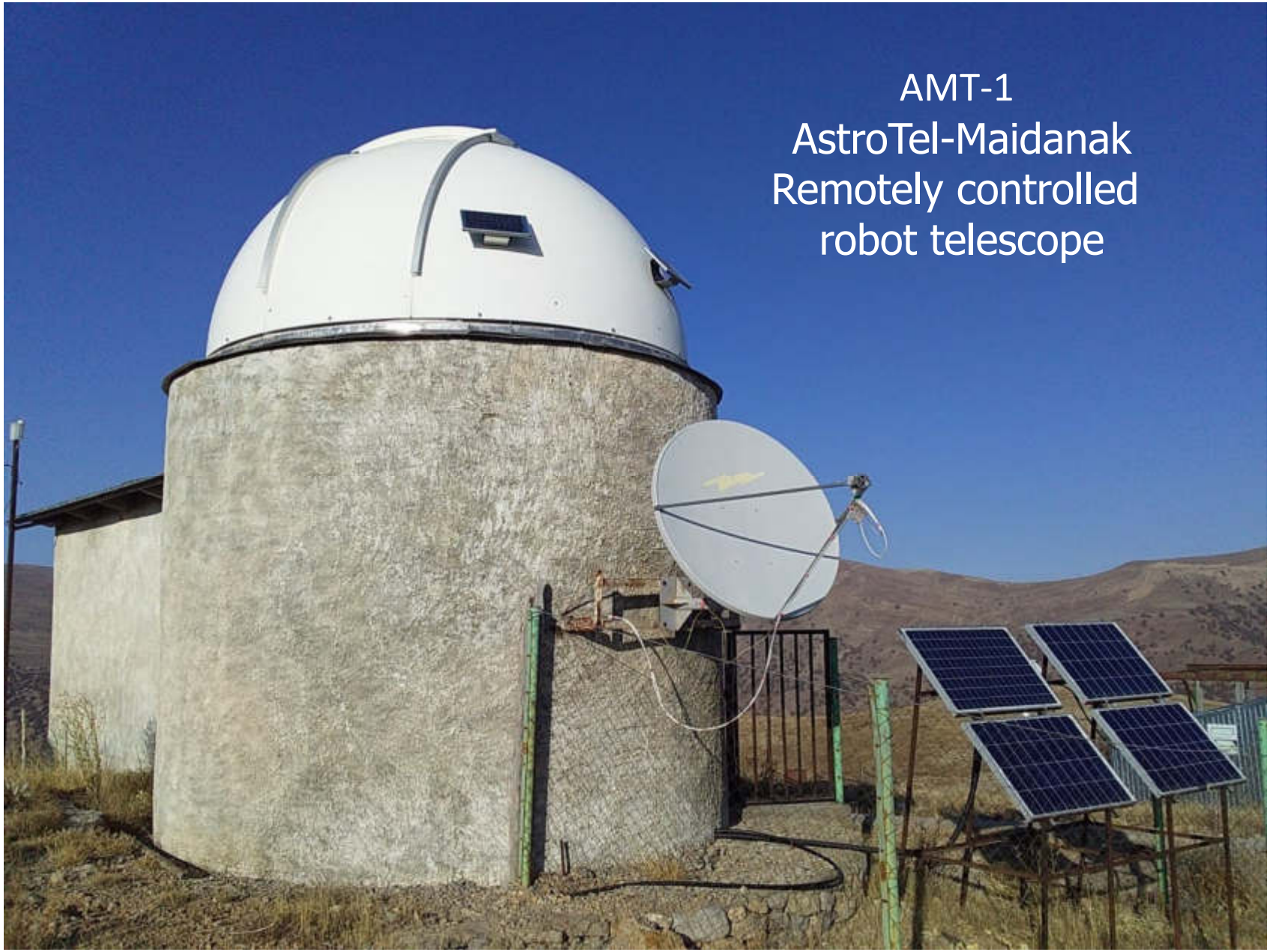
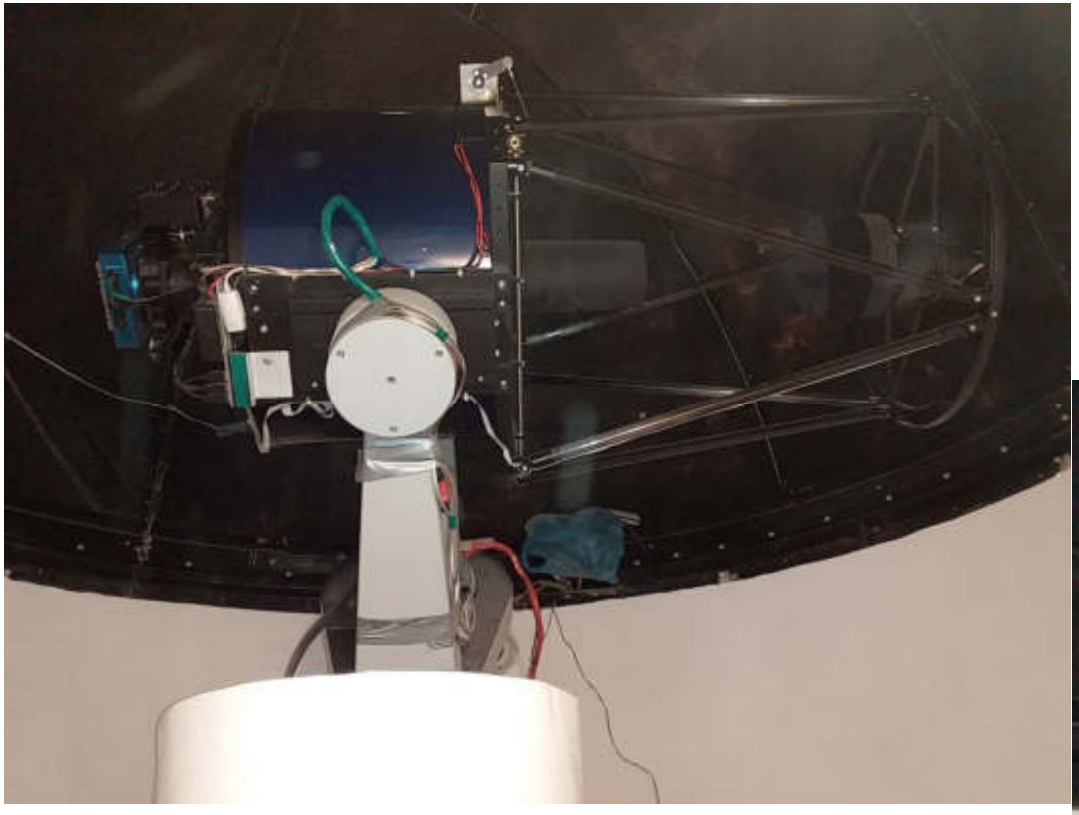
Tashkent-2021

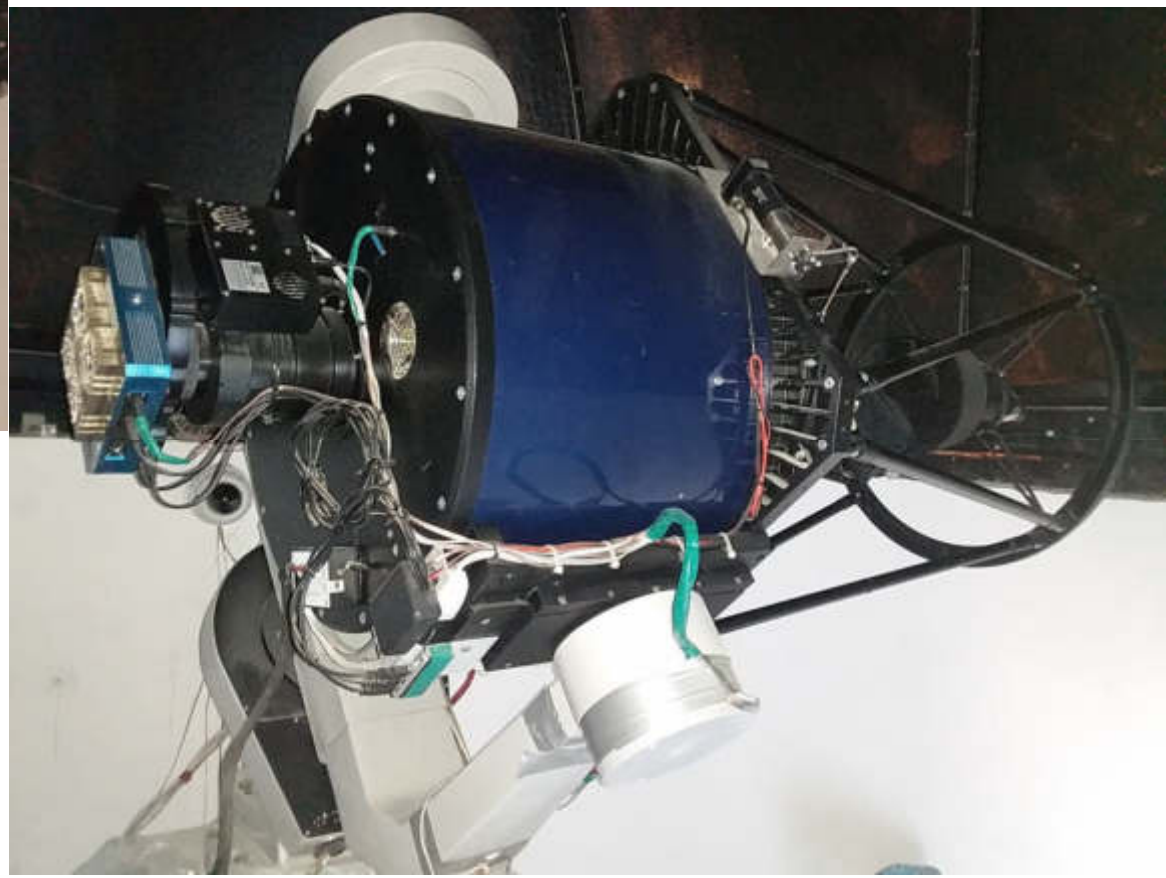
Construction and installation of telescope


AMT-1
AstroTel-Maidanak
Remotely controlled
robot telescope



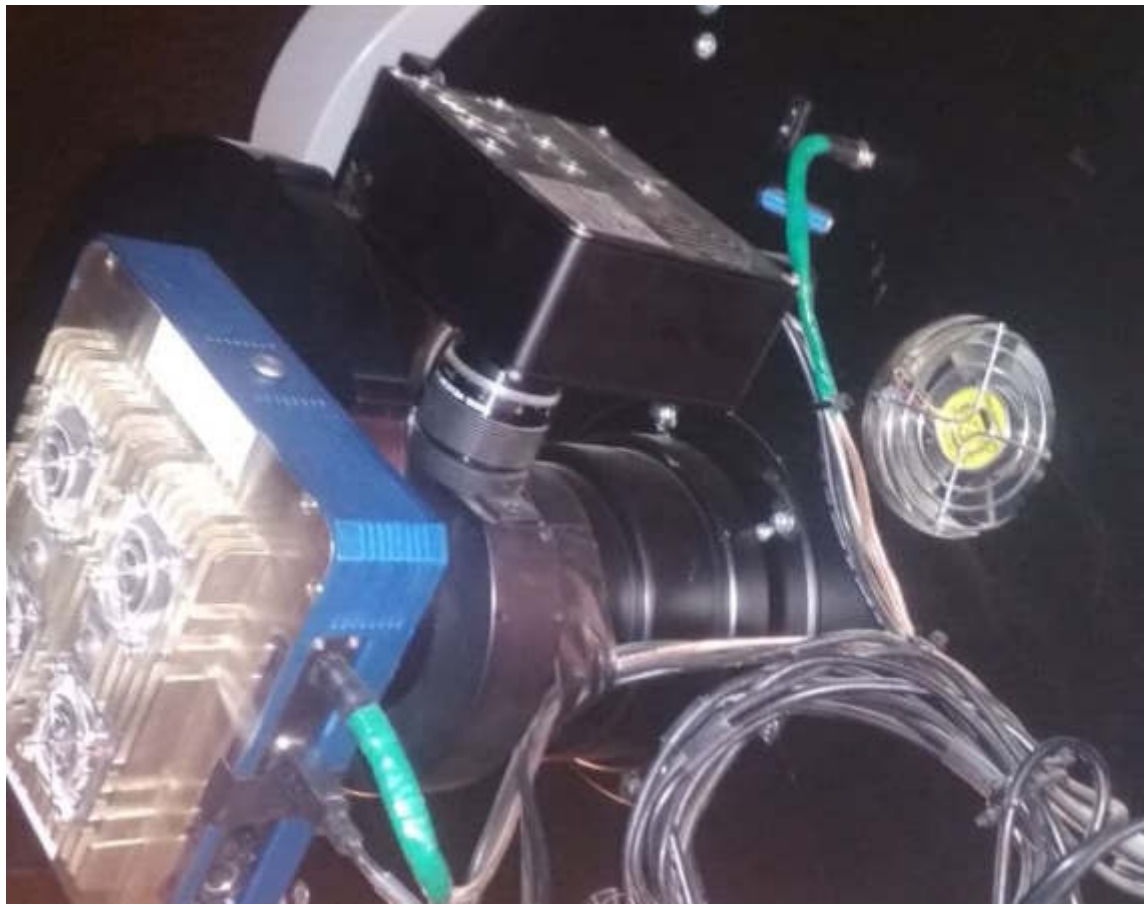
ASTROSIB RC500

Optical configuration:
Corrected Ritchey–Chretien,F=4000mm, f/8,
D=0.508 mm
Fork Mount



Equipment: Apogee Alta U16M
CCD 4096x4096
pixel size in arcsec - 0.45
FOV = 31’ x 31’

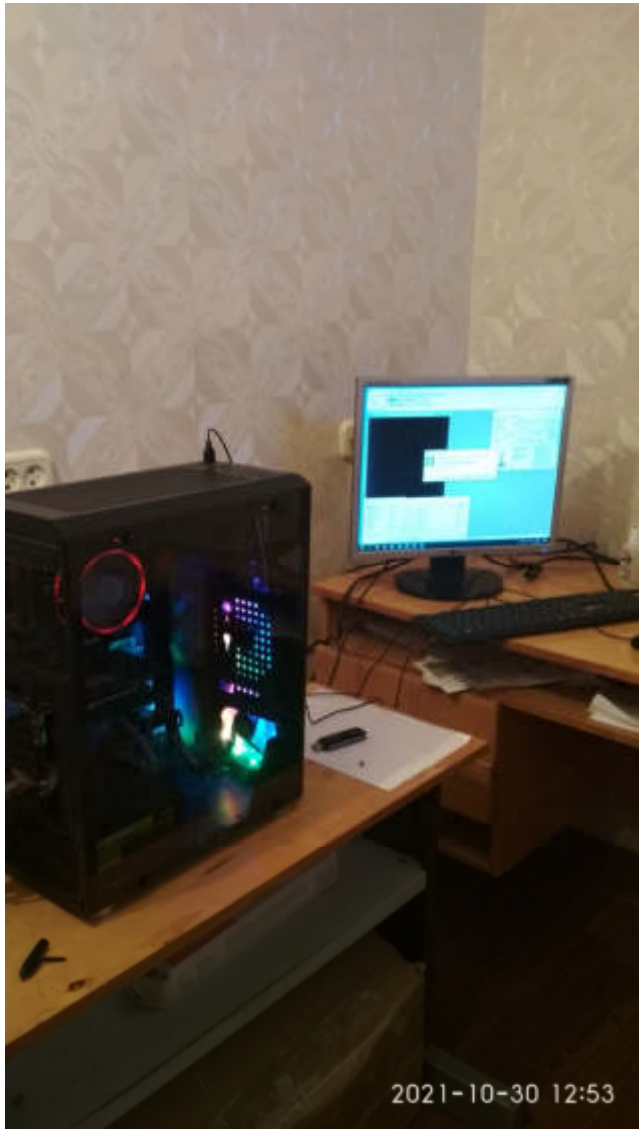
Autoguiding camera:
SBIG ST-402XME CCD 765x510



- The dome was sealed
- Replaced dome control board
- The mirror was cleaned

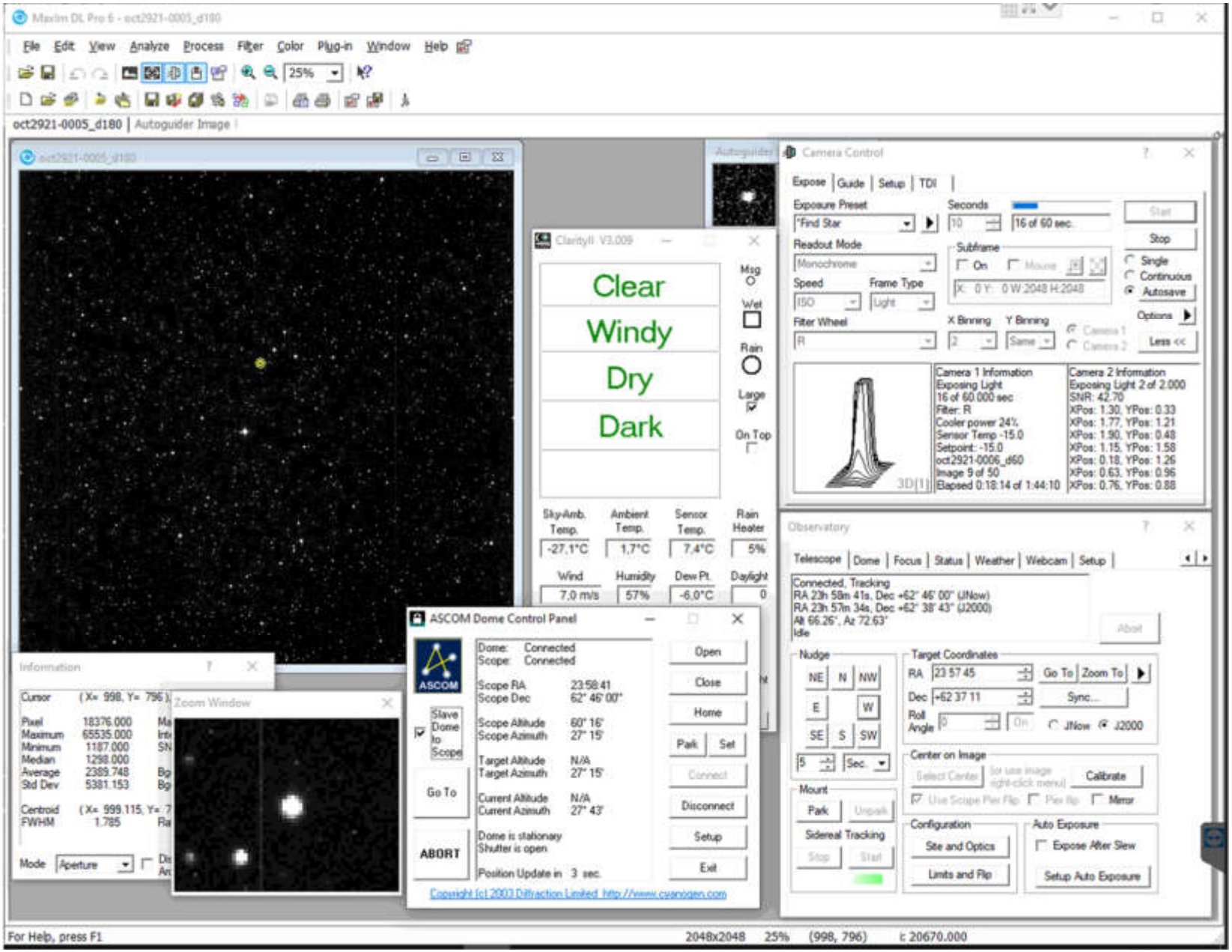
replaced the batteries for uninterruptible power supply of the entire complex of equipment

- the meteo station was repaired



- renovated the observer room and dome space
- replaced the control computer
- updated software

Telescope and dome control software - updated from 32 bit Win XP OS system to 64 bit Win 10 OS (ASCOM drivers & MaxIm DL)

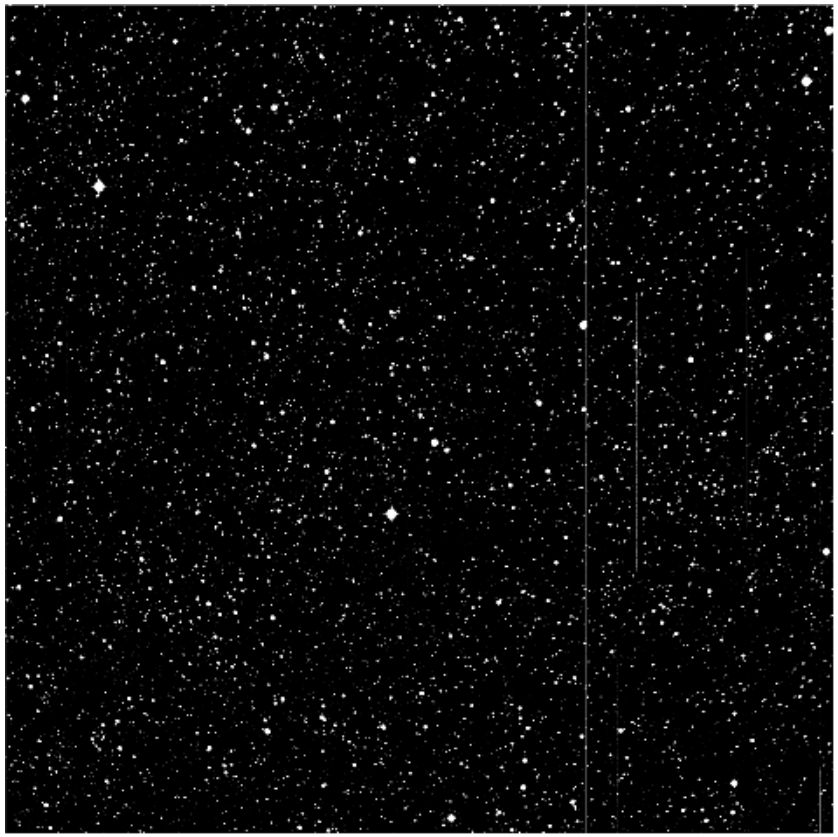

Maxim DL Pro 6 - oct2921-0005_d180
File Edit View Analyze Process Filter Color Plug-in Window Help
oct2921-0005_d180 | Autoguider Image
Autoguider
Camera Control
Expose Guide Setup TDI
Exposure Preset
*Find Star
Seconds
16 of 60 sec
Start
Stop
Readout Mode
Monochrome
Subframe
Single
Continuous
Autosave
Options
Speed
Frame Type
Filter Wheel
X Binning
Y Binning
Less <<
Camera 1 Information
Exposing Light
16 of 60.000 sec
Filter: R
Cooler power 24%
Sensor Temp -15.0
Setpoint: -15.0
oct2921-0006_d60
Image 9 of 50
Elapsed 0:18:14 of 1:44:10
Camera 2 Information
Exposing Light 2 of 2.000
SNR: 42.70
XPos: 1.30, YPos: 0.33
XPos: 1.77, YPos: 1.21
XPos: 1.90, YPos: 0.48
XPos: 1.15, YPos: 1.58
XPos: 0.18, YPos: 1.26
XPos: 0.63, YPos: 0.96
XPos: 0.76, YPos: 0.88
ClarityII V3.009
Clear
Windy
Dry
Dark
Msg
Wet
Rain
Large
On Top
Sky-Amb. Temp.
-27.1°C
Ambient Temp.
1.7°C
Sensor Temp.
7.4°C
Rain Heater
5%
Wind
7.0 m/s
Humidity
57%
Dew Pt.
-6.0°C
Daylight
0
Observatory
Telescope Dome Focus Status Weather Webcam Setup
Connected, Tracking
RA 23h 58m 41s, Dec +62° 46' 00" (JNow)
RA 23h 57m 34s, Dec +62° 38' 43" (J2000)
Alt 66.26°, Az 72.63°
Idle
Abort
Nudge
NE N NW
E W
SE S SW
Sec.
Target Coordinates
RA 23 57 45
Dec +62 37 11
Roll Angle
Go To
Zoom To
Sync...
JNow J2000
Center on Image
Select Center
Calibrate
Mount
Park
Unpark
Sidereal Tracking
Stop
Start
Configuration
Site and Optics
Limits and Flip
Auto Exposure
Expose After Slew
Setup Auto Exposure
Information
Cursor
Pixel 18376.000
Maximum 65535.000
Minimum 1187.000
Median 1298.000
Average 2389.748
Std Dev 5381.153
Centroid
FWHM 1.785
Mode Aperture
Zoom Window
ASCOM Dome Control Panel
ASCOM
Dome: Connected
Scope: Connected
Scope RA 23:58:41
Scope Dec 62° 46' 00"
Scope Altitude 60° 16'
Scope Azimuth 27° 15'
Target Altitude N/A
Target Azimuth 27° 15'
Current Altitude N/A
Current Azimuth 27° 43'
Dome is stationary
Shutter is open
Position Update in 3 sec.
Slave Dome to Scope
Go To
ABORT
Open
Close
Home
Park
Set
Connect
Disconnect
Setup
Exit
Copyright (c) 2003 Diffraction Limited http://www.cyanogen.com
For Help, press F1
2048x2048
25%
(998, 796)
c: 20670.000

Remote observation statistics (Summer-Autumn 2021)

Month	Nights	Dur. of obs.*
June	8	35.125 h
July	5	29.525 h
August	24	168,5 h
September	21	150 h
October	12	62.25 h
Total	70	445.4 h

* the duration of observations does not include the readout time, and the time spent to take the calibration frames

Example

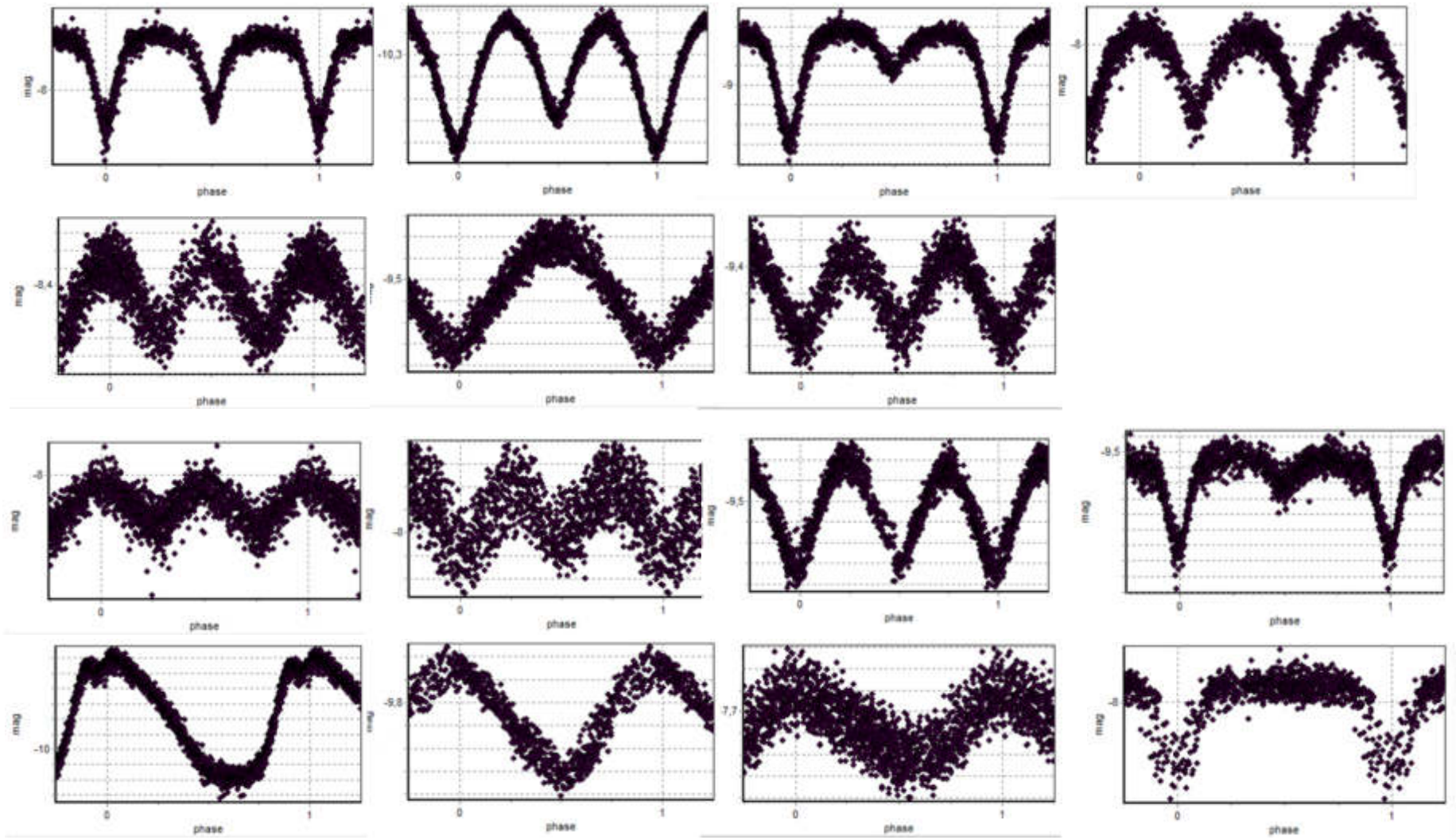


Field-1
RA 20:21:46
DE +26:41:33

Number of images – 1533
Exposure – 90 sec.

Number of variable stars - 15
RR Lyrae type – 4
Eclipsing variables - 9
Probably new variables - 2

Preliminary result, Field-1, Phased light curves



Thank you