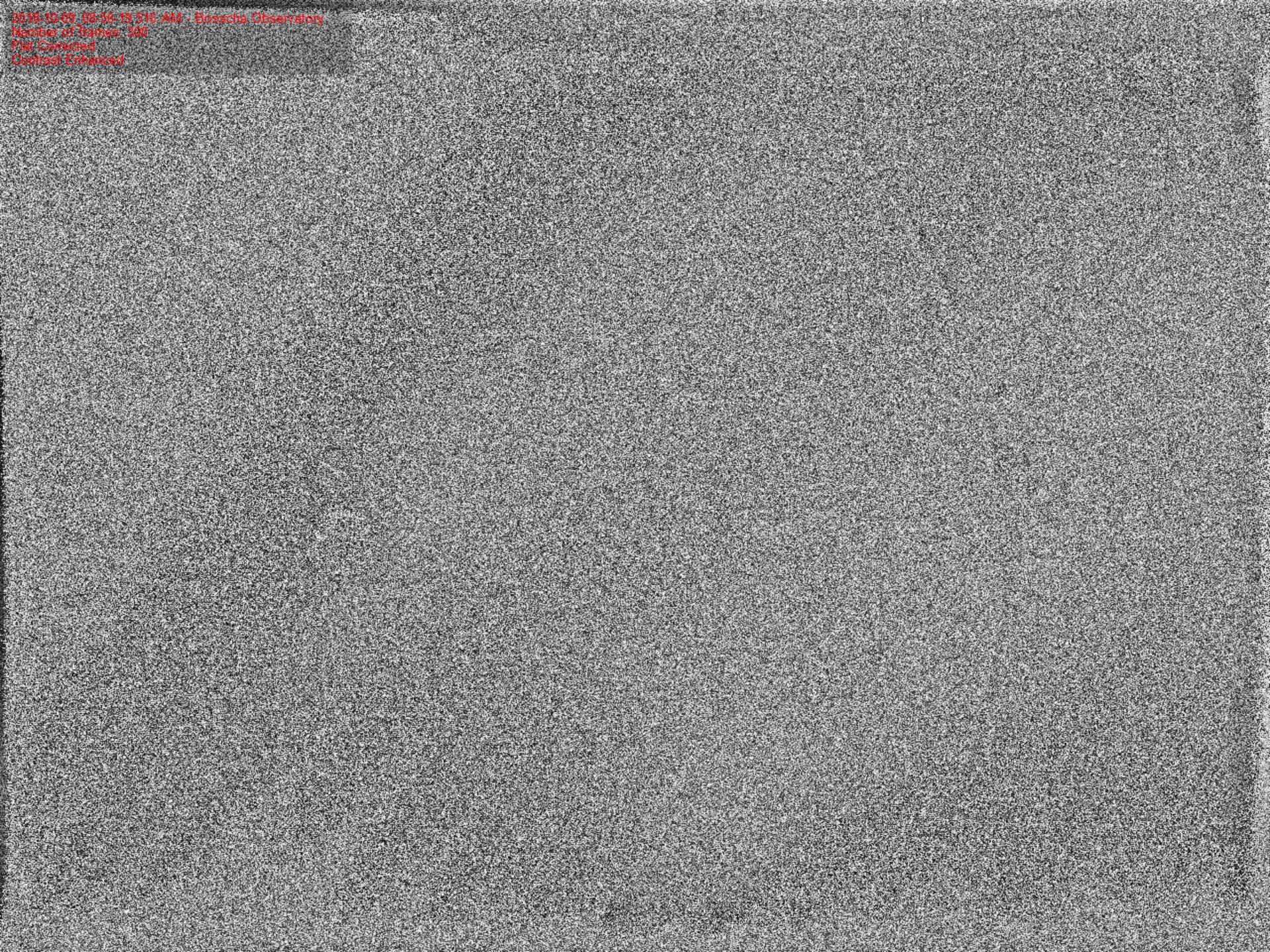


Pengamatan Hilal

Karakterisasi Baffle dan Pengamatan multi panjang gelombang

2016-10-09_08:56:18.516 AM - Bosscha Observatory
Number of frames: 300
Flat Corrected
Contrast Enhanced



Tujuan 2021

- Data pengamatan (berbagai jarak zenith)
→ limit pengamatan
- Karakterisasi baffle
- Pengamatan multi panjang gelombang
- Eksperimen penggunaan filter Sloan
- Pengamatan spektroskopi untuk daerah horizon dan multi jarak zenith
- Metode pengamatan lain



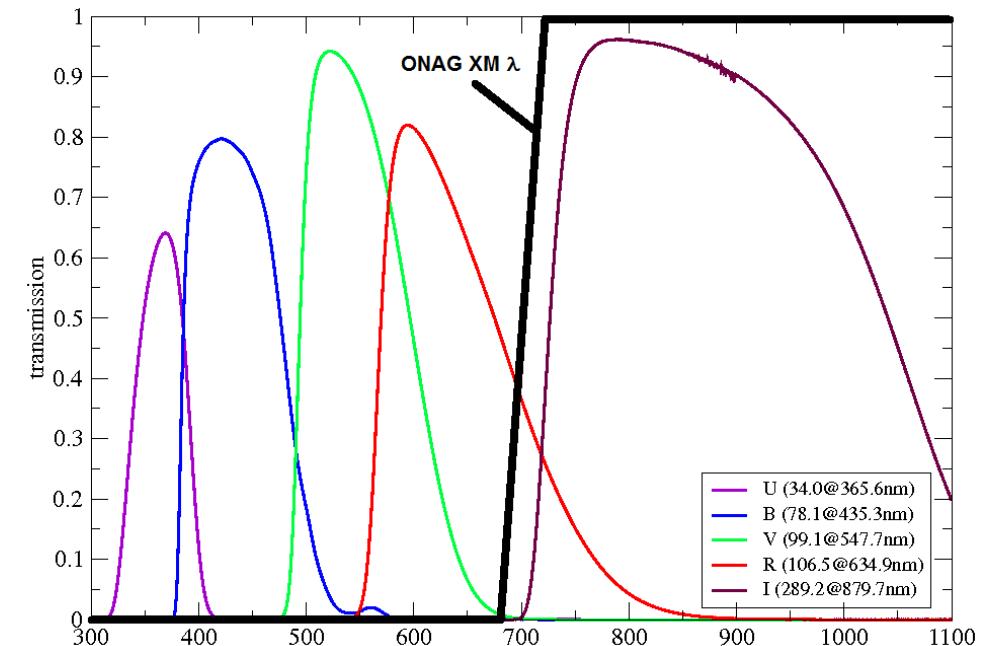
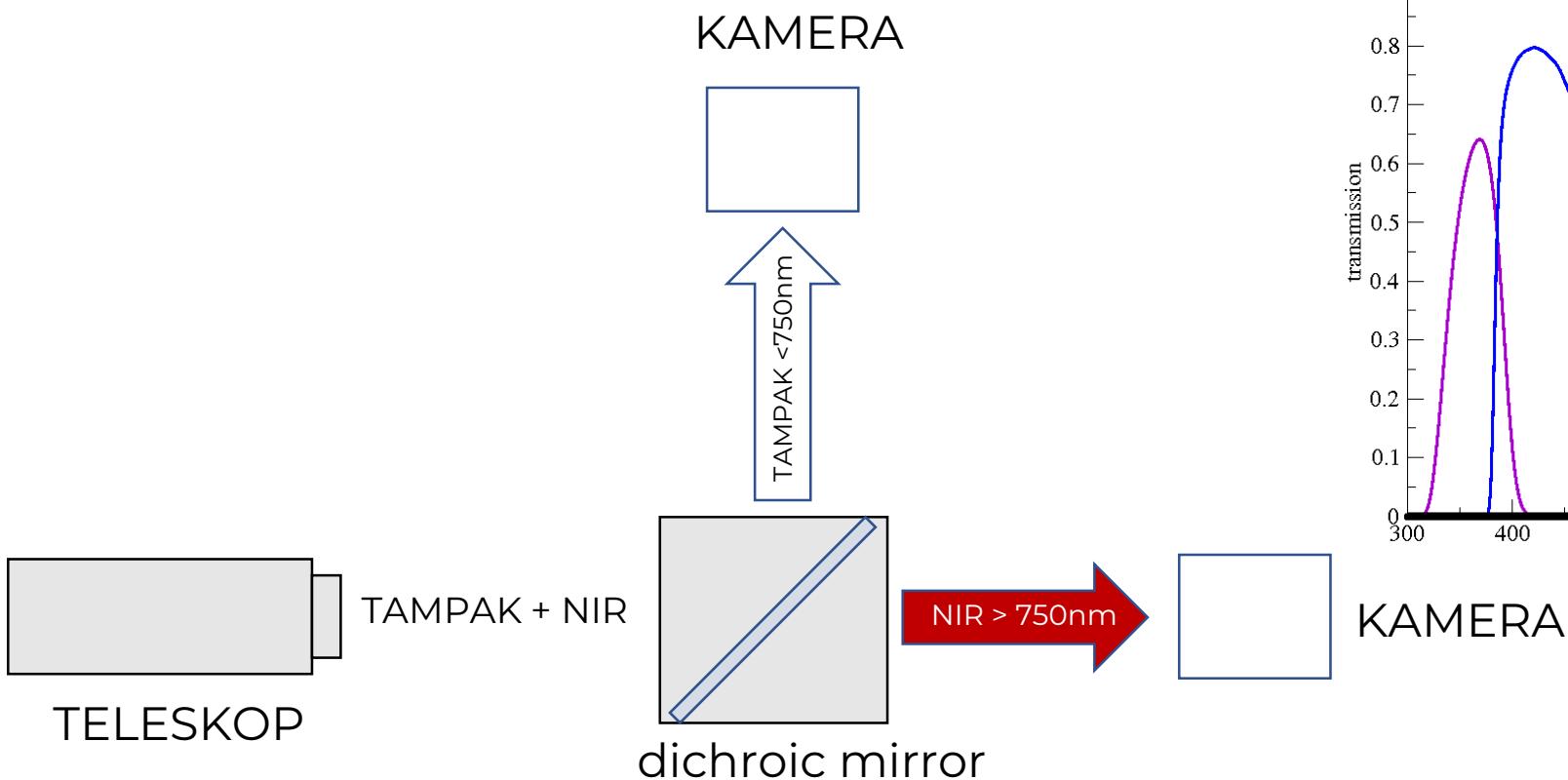
PEMBUATAN BAFFLE V2020



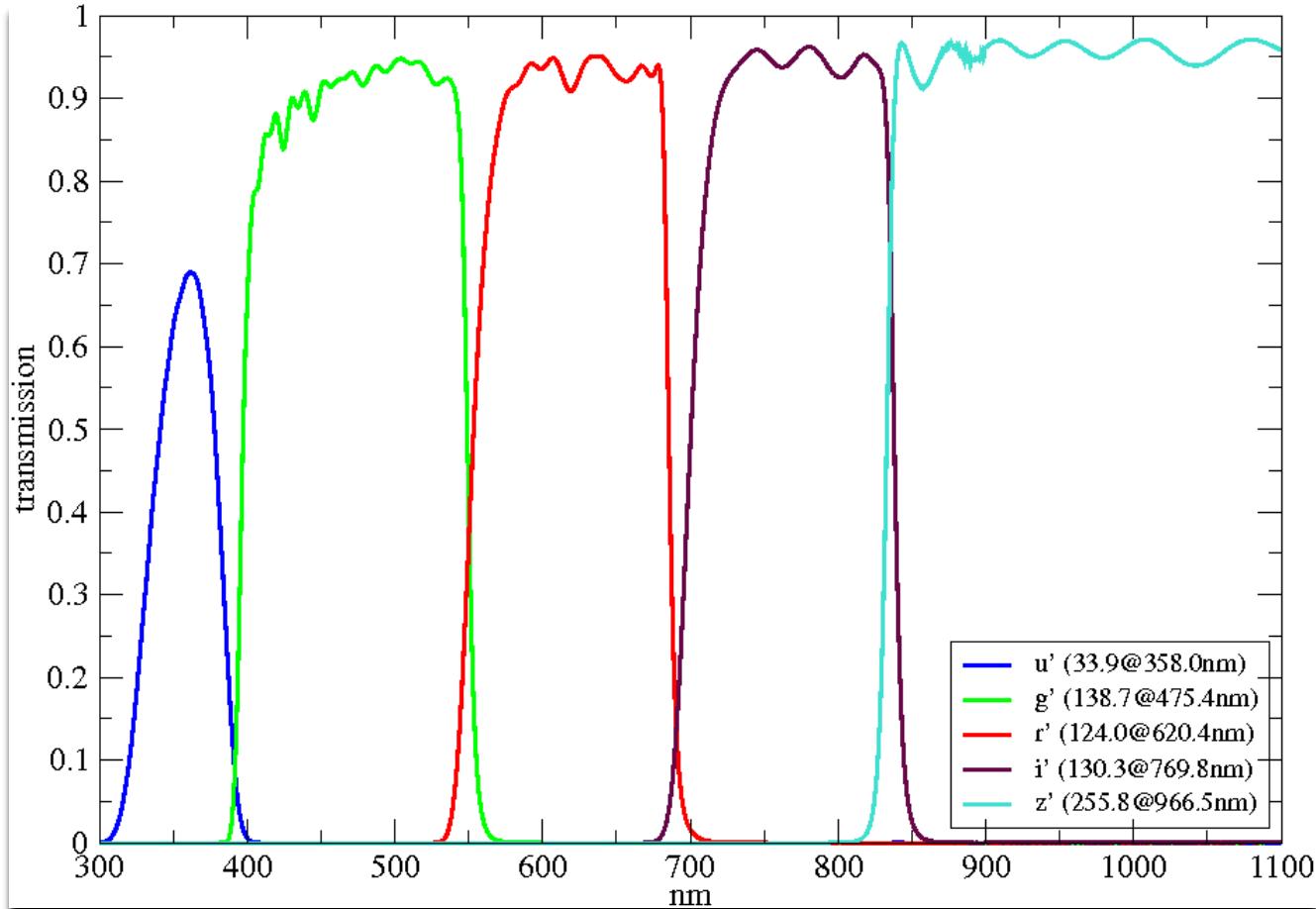
KARAKTERISASI BAFFLE



PENGAMATAN MULTI PANJANG GELOMBANG



Filter fotometrik Sloan



Aktivitas dan Partisipasi

- Pengamatan setiap bulan pada sekitar tanggal 1 Hijriah (Maret-Oktober)
- Karakterisasi instrumen
- Metode pengamatan
- Metode olah data
- 4 orang mahasiswa

2021-04-12 17:49:23.578012+07:00

RAMADHAN 1442H

G. Conjunction Time : 2021-04-12 09:30:50

Sunset Time : 2021-04-12 17:49:23

Moonset Time : 2021-04-12 18:06:48

G. Moon Age : **08h 18m 32.74s**

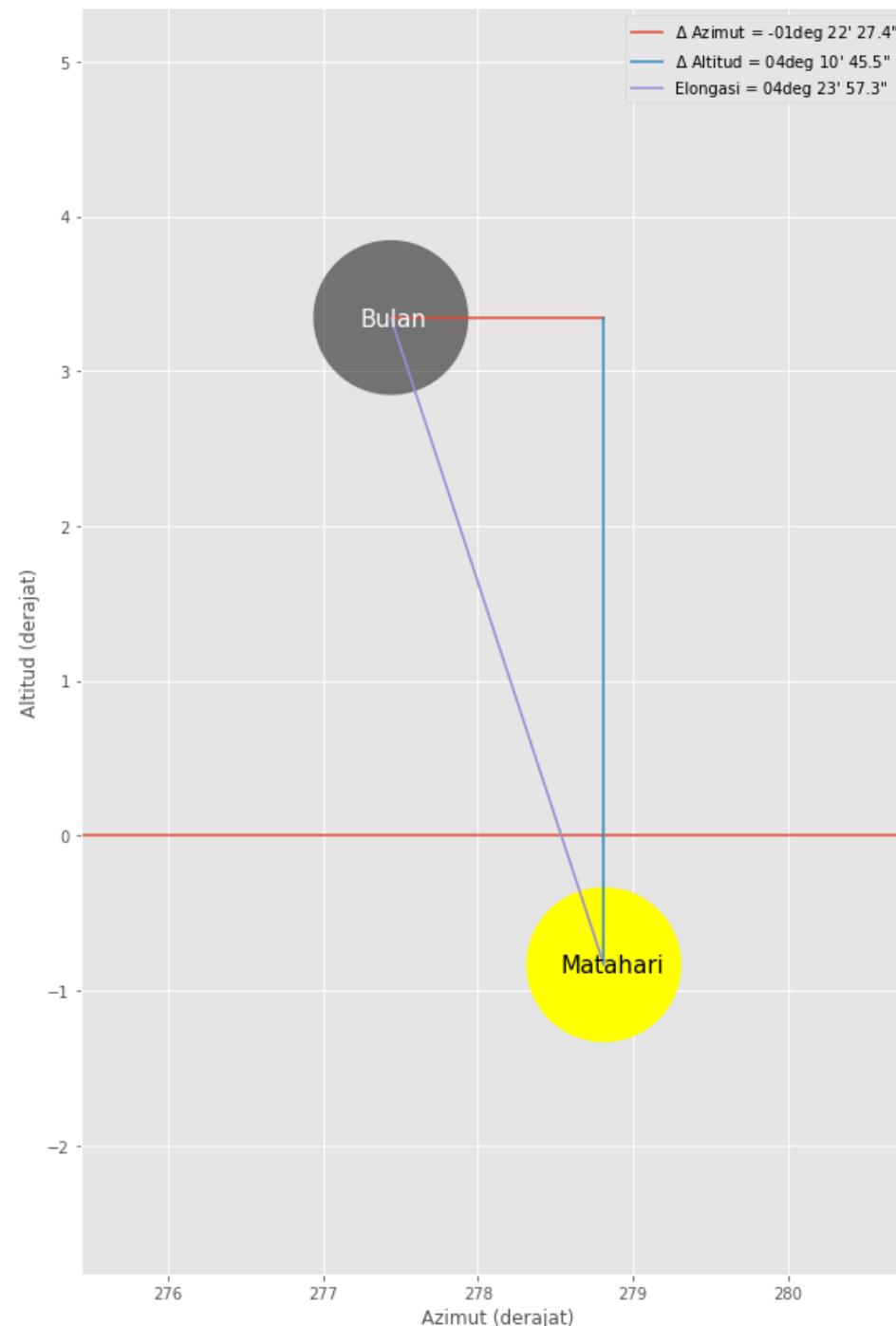
Lag Time : 00h 17m 25.03s

Moon Altitude : **03deg 20' 45.6"**

Relative Azimuth : -01deg 22' 27.4"

Moon Elongation : **04deg 23' 57.3"**

Moon Illumination : 0.14%



2021-05-12 17:40:21.952625+07:00

Δ Azimut = 01deg 38' 31.2"
Δ Altitud = 06deg 03' 54.1"
Elongasi = 06deg 16' 58.2"

SYAWAL 1442H

G. Conjunction Time : 2021-05-12 01:59:47

Sunset Time : 2021-05-12 17:40:21

Moonset Time : 2021-05-12 18:07:02

G. Moon Age : **15h 40m 34.04s**

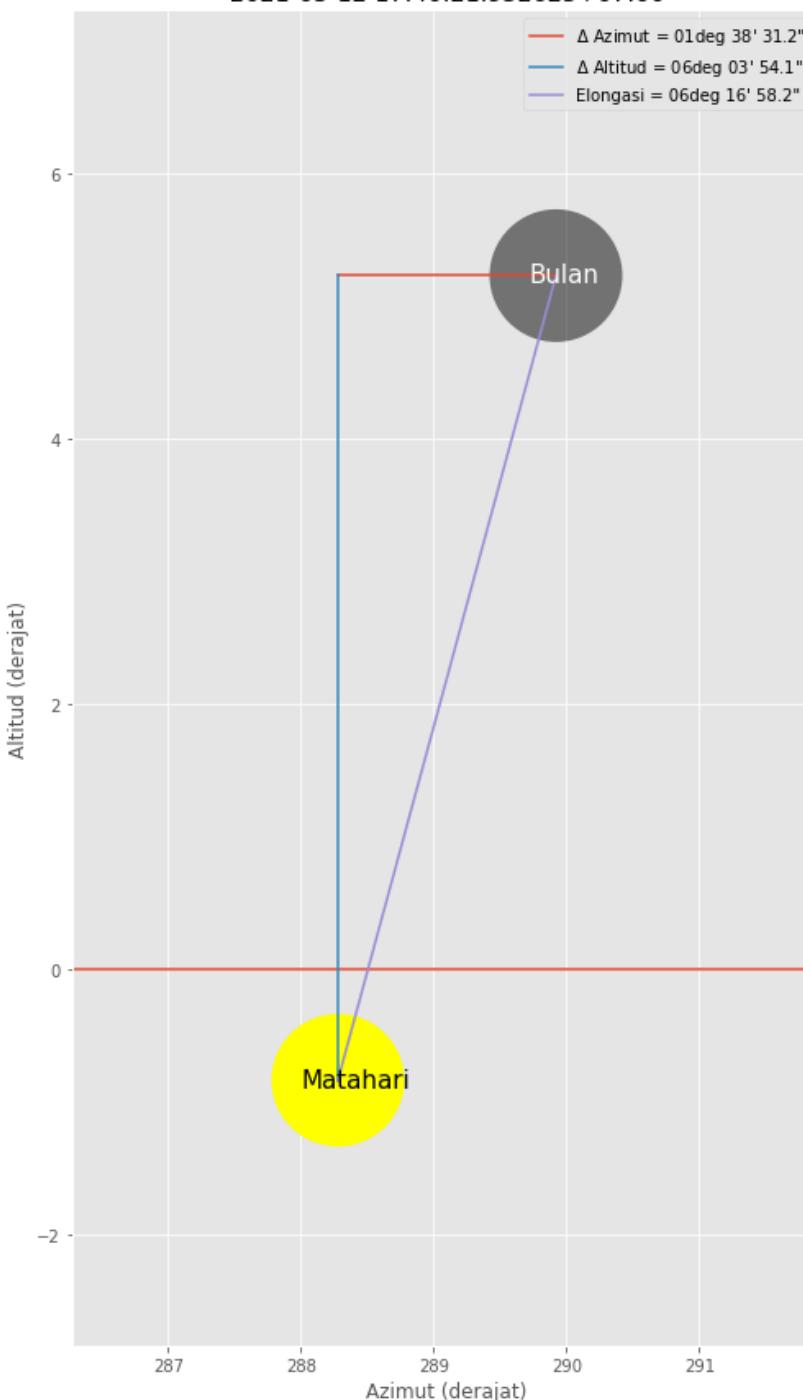
Lag Time : 00h 26m 40.38s

Moon Altitude : **05deg 13' 54.2"**

Relative Azimuth : 01deg 38' 31.2"

Moon Elongation : **06deg 16' 58.2"**

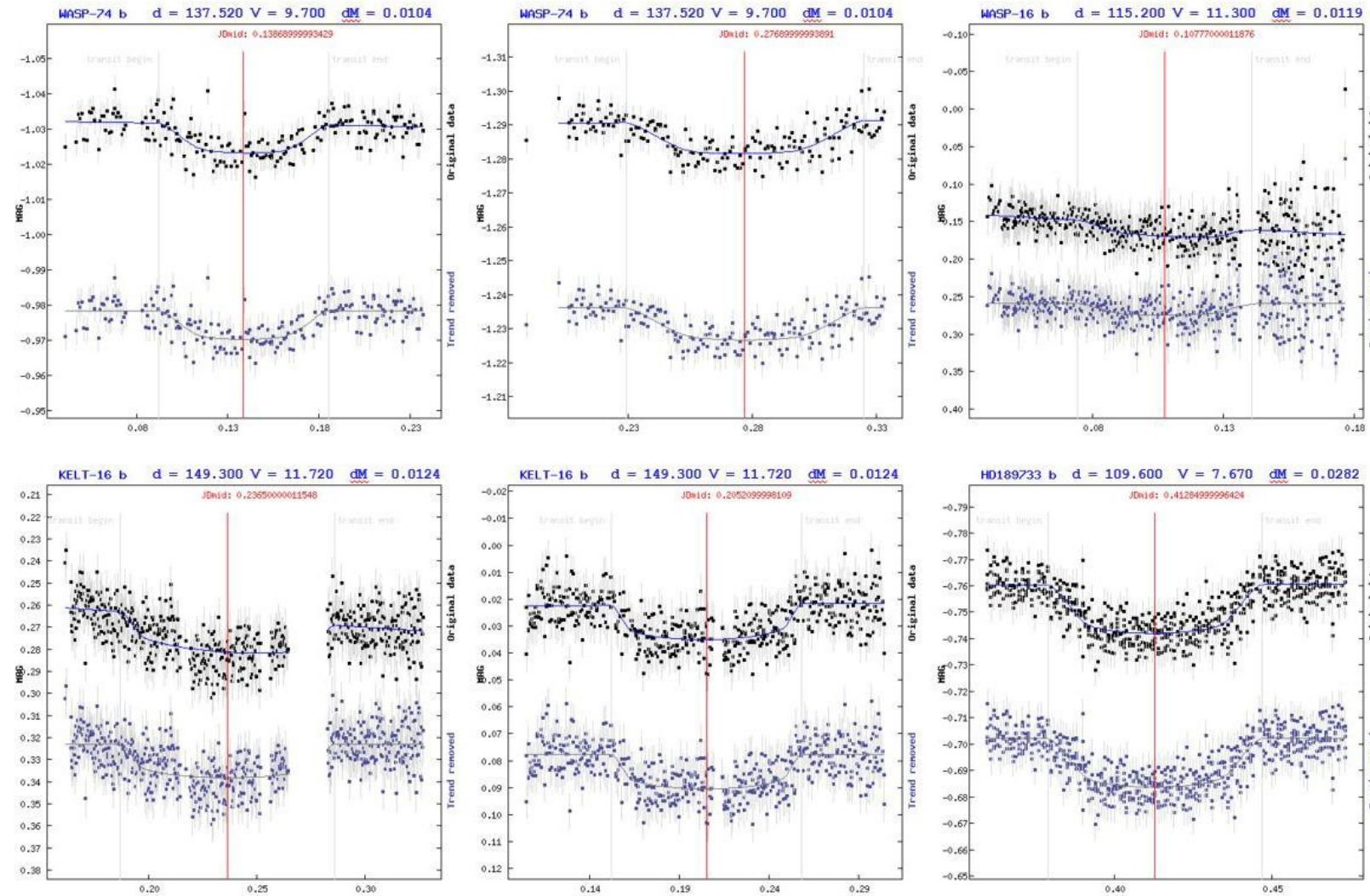
Moon Illumination : 0.3%



Pengamatan Exoplanet

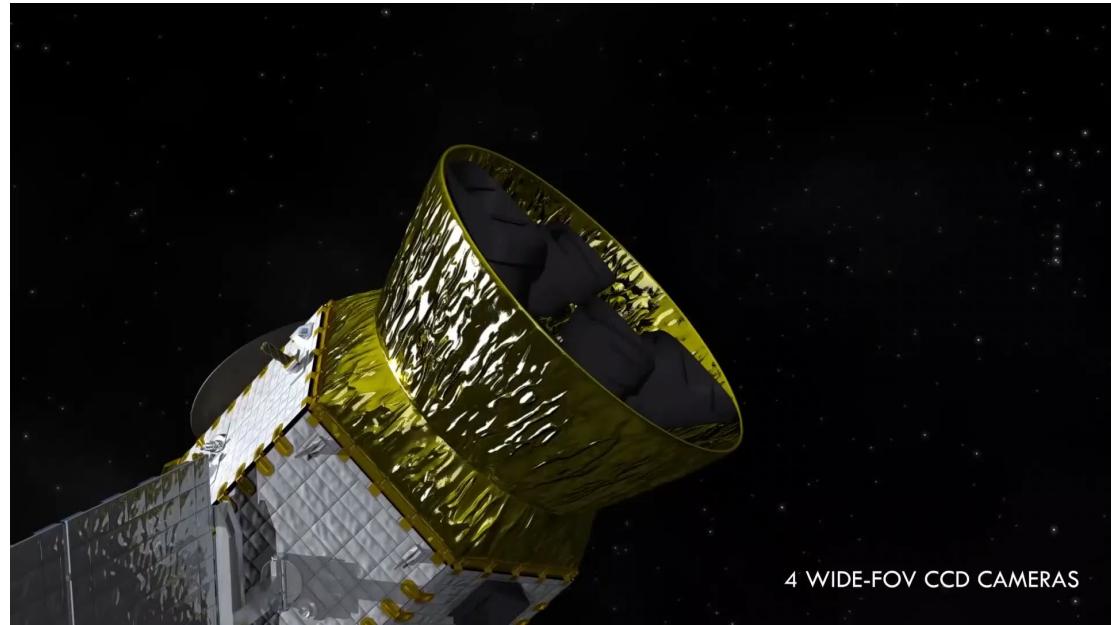
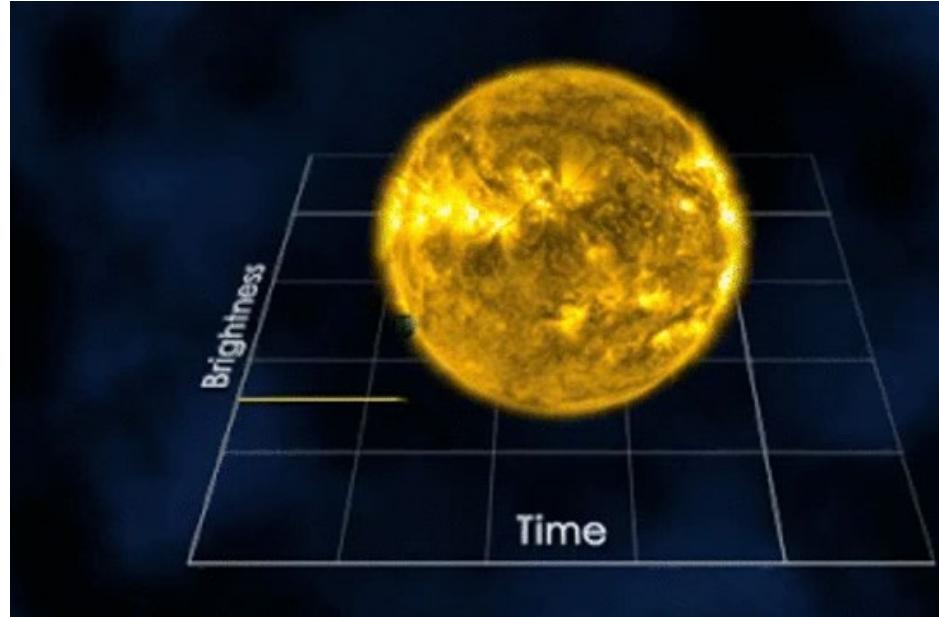
TESS Follow Up

KURVA CAHAYA TRANSIT EKSOPLANET

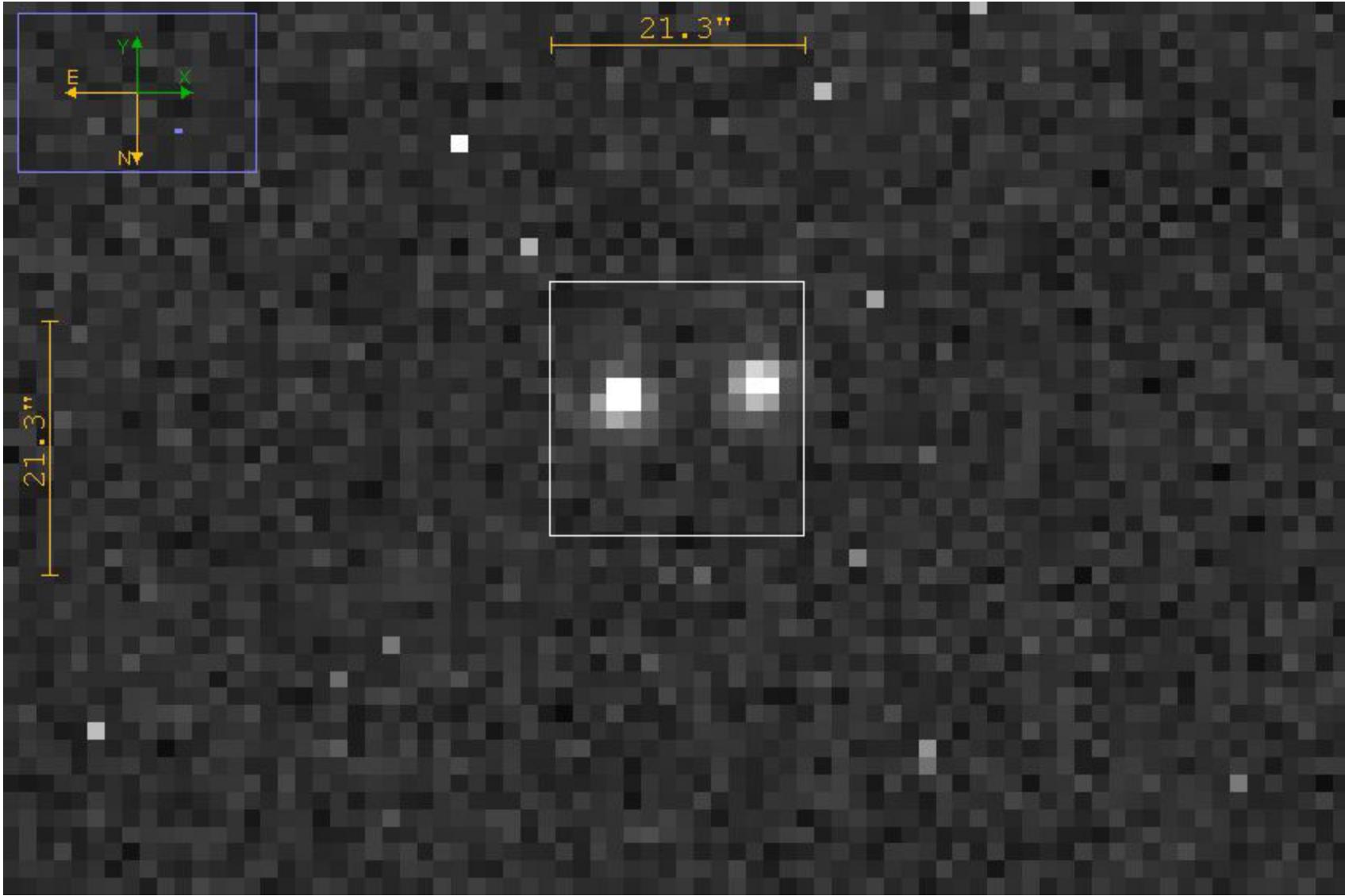


Tujuan

- Follow-up TESS
 - TESS Follow-up Observing Program (TFOP) Working Group (WG)
 - **SG1: Seeing-limited Photometry** to identify false positives due to nearby eclipsing binaries that contaminate the TESS image of a candidate transiting planet. Provide better inventory and better photometry of scene than is provided by the TIC. For some cases, provide improved light curves, ephemerides, and/or measure transit timing variations (TTVs).
- Studi jangka Panjang eksoplanet:
 - Ketinggian $\geq 35^\circ$ dari horizon.
 - Durasi transit ≤ 2 jam.
 - Kecerlangan magnitudo $V \leq 12$.
 - $dm \geq 0.005$
 - Jarak Bulan $\geq 50^\circ$

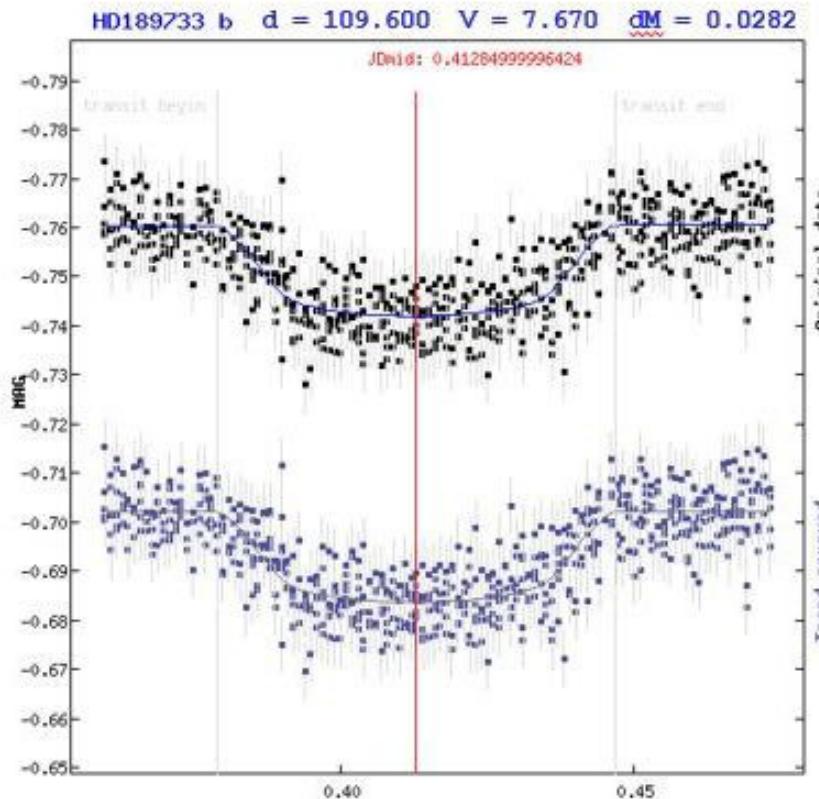


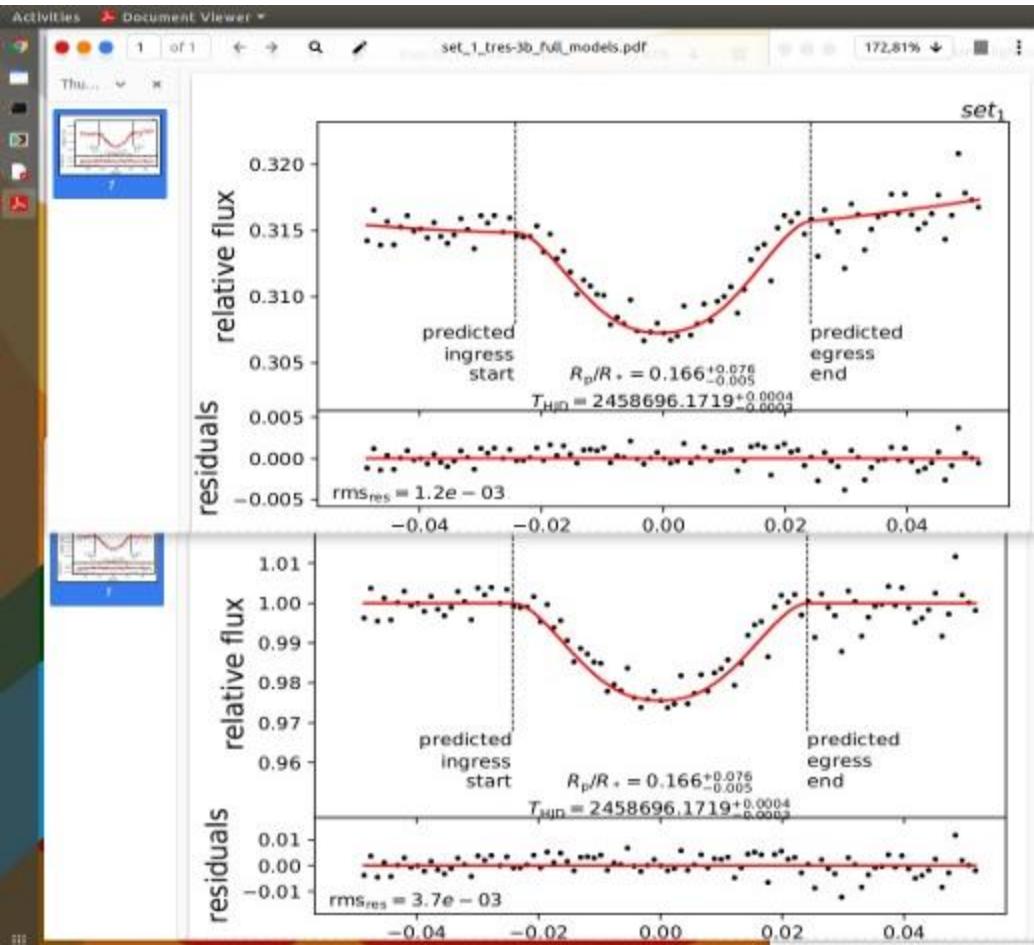
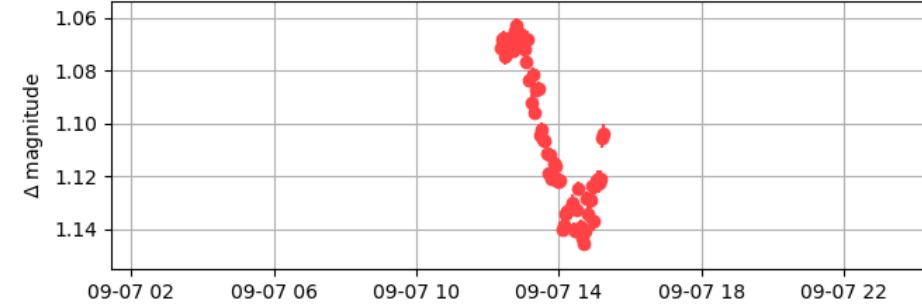
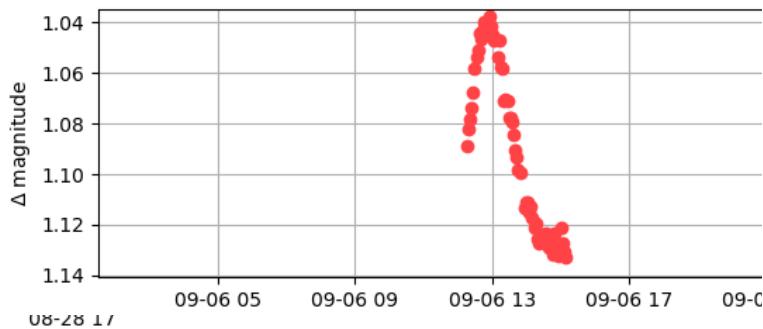
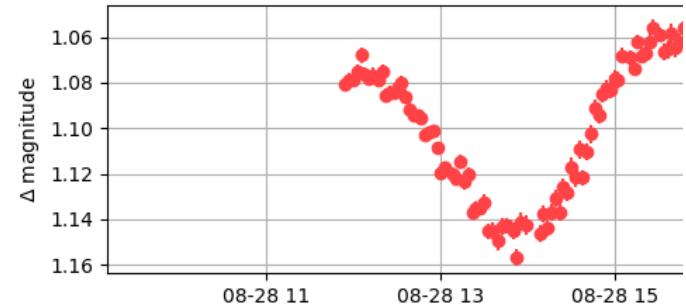
4 WIDE-FOV CCD CAMERAS



Pipeline fotometri

- Reduksi standar
- Kurva cahaya
- *Machine learning* deteksi variabilitas

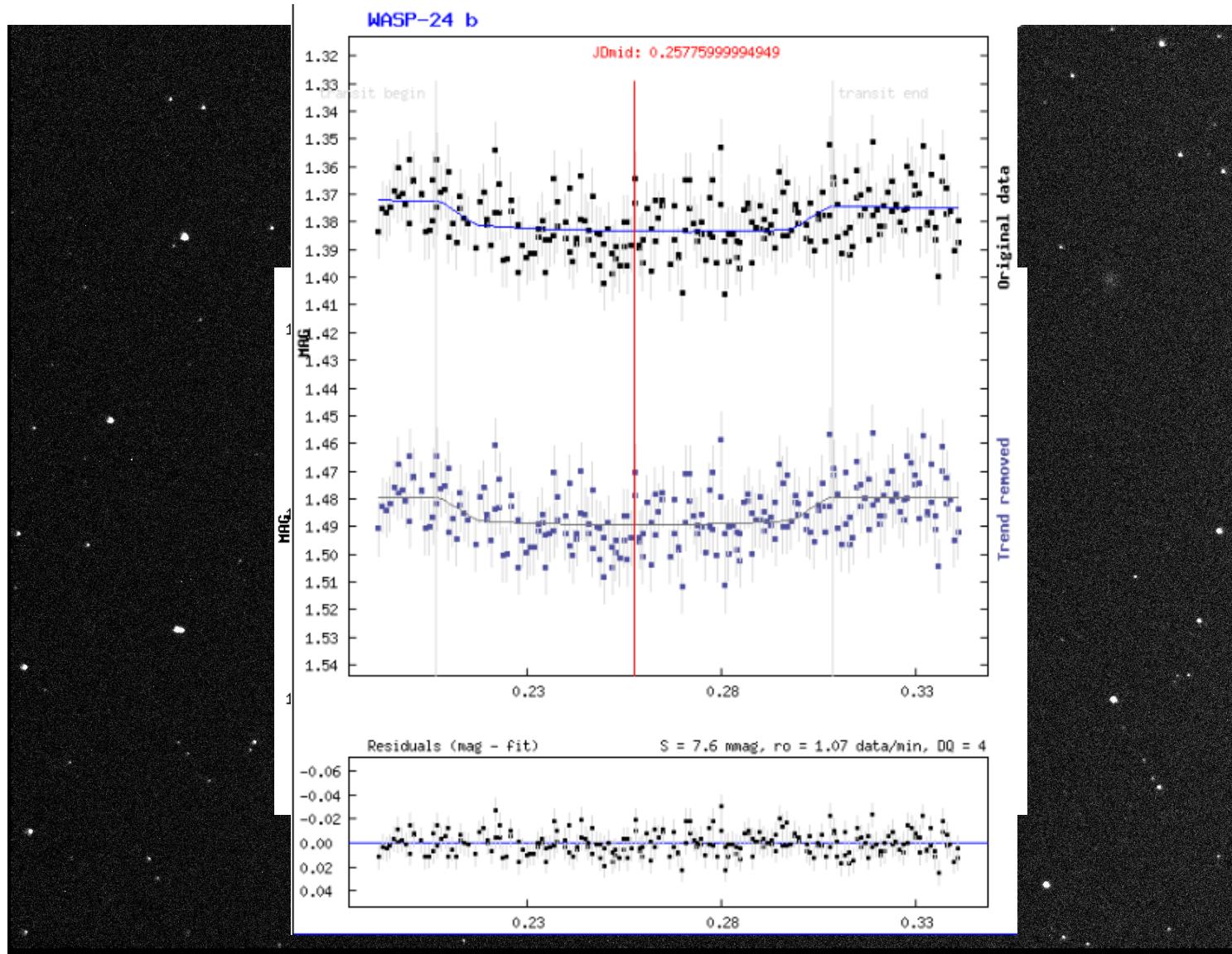




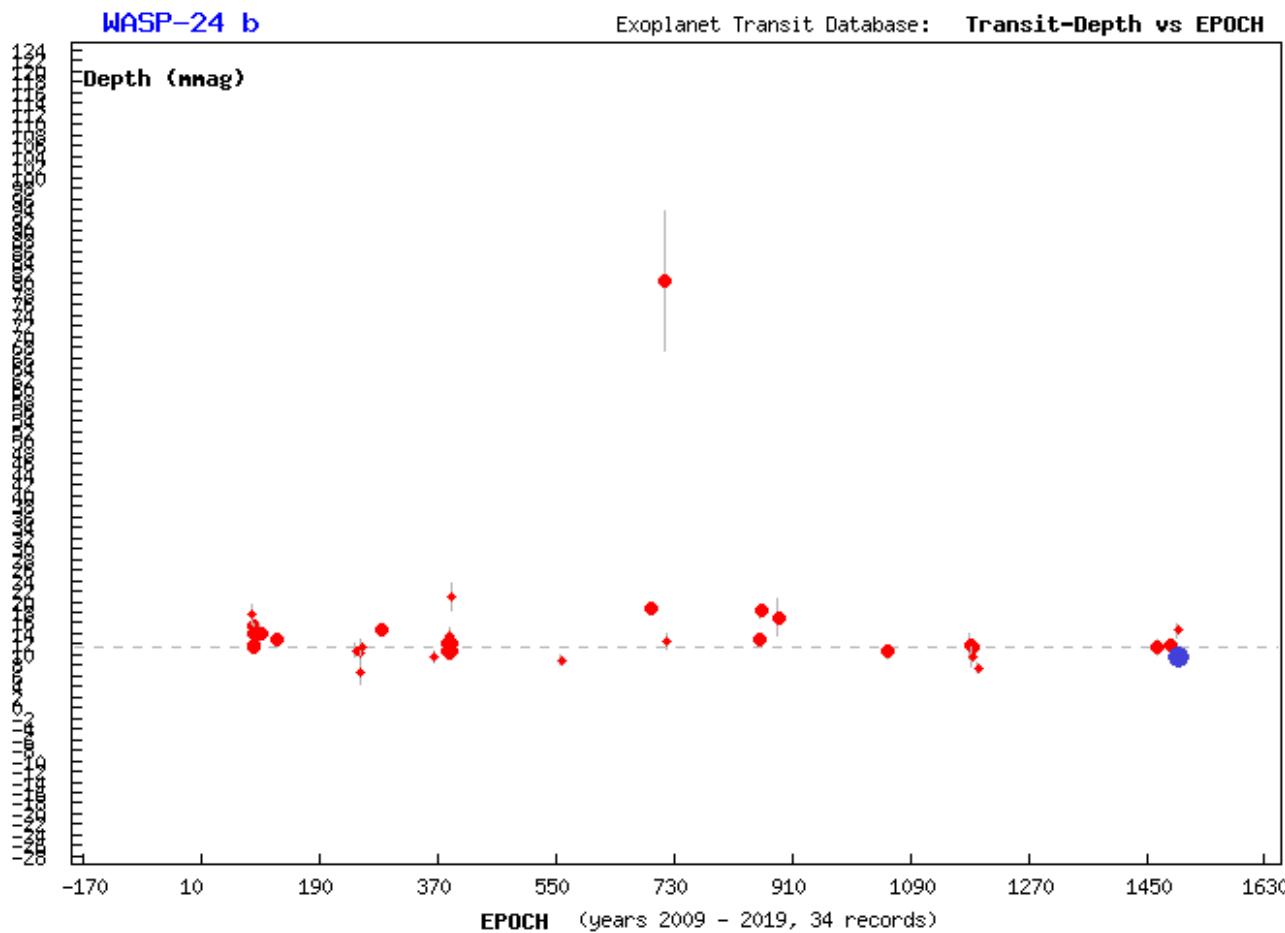
Parameters	Observation	Reference
Planet radius (R_J)	$1.38 (\pm 0.08)$	$1.305 (\pm 0.09)$
Inclination (deg)	$81.3 (\pm 0.9)$	$81.93 (\pm 0.13)$
Midtransit (HJD)	2458696.1718	2458696.1718

Out[53]: $1.3132977 R_J$

In [53]:



WASP-24 b: 3 Mei 2019



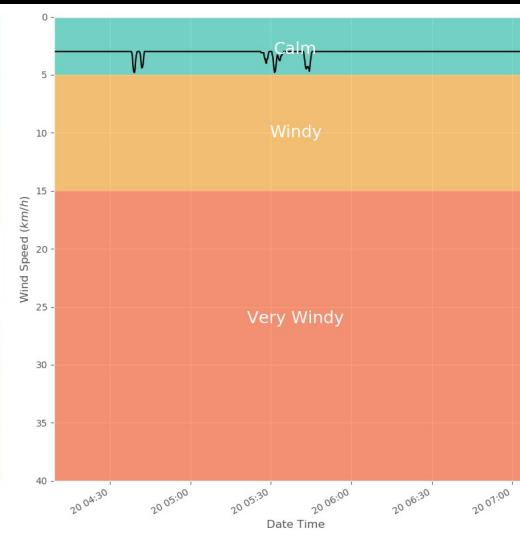
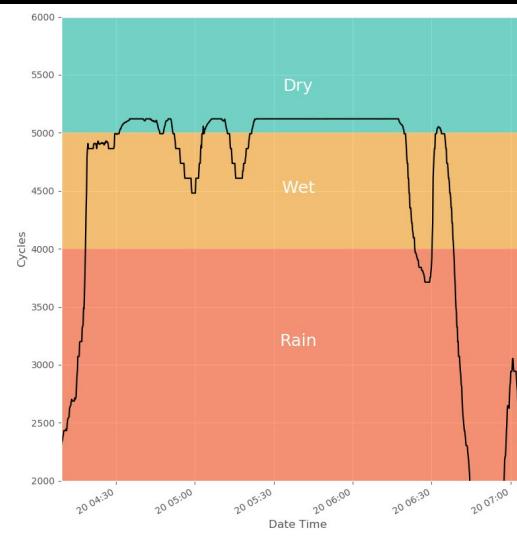
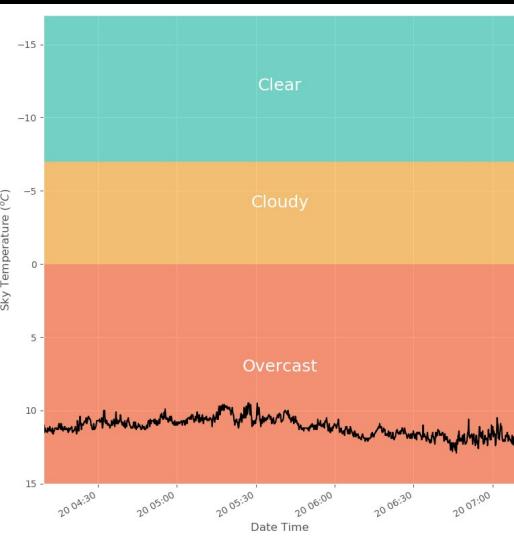
Aktivitas dan Partisipasi

- Pengamatan rutin Maret-Oktober
- Metode pengamatan
- Metode olah data
- Programming
- 3 orang mahasiswa



Teleskop Robotik

Sub-arcsec tracking dan intergasi sistem cuaca

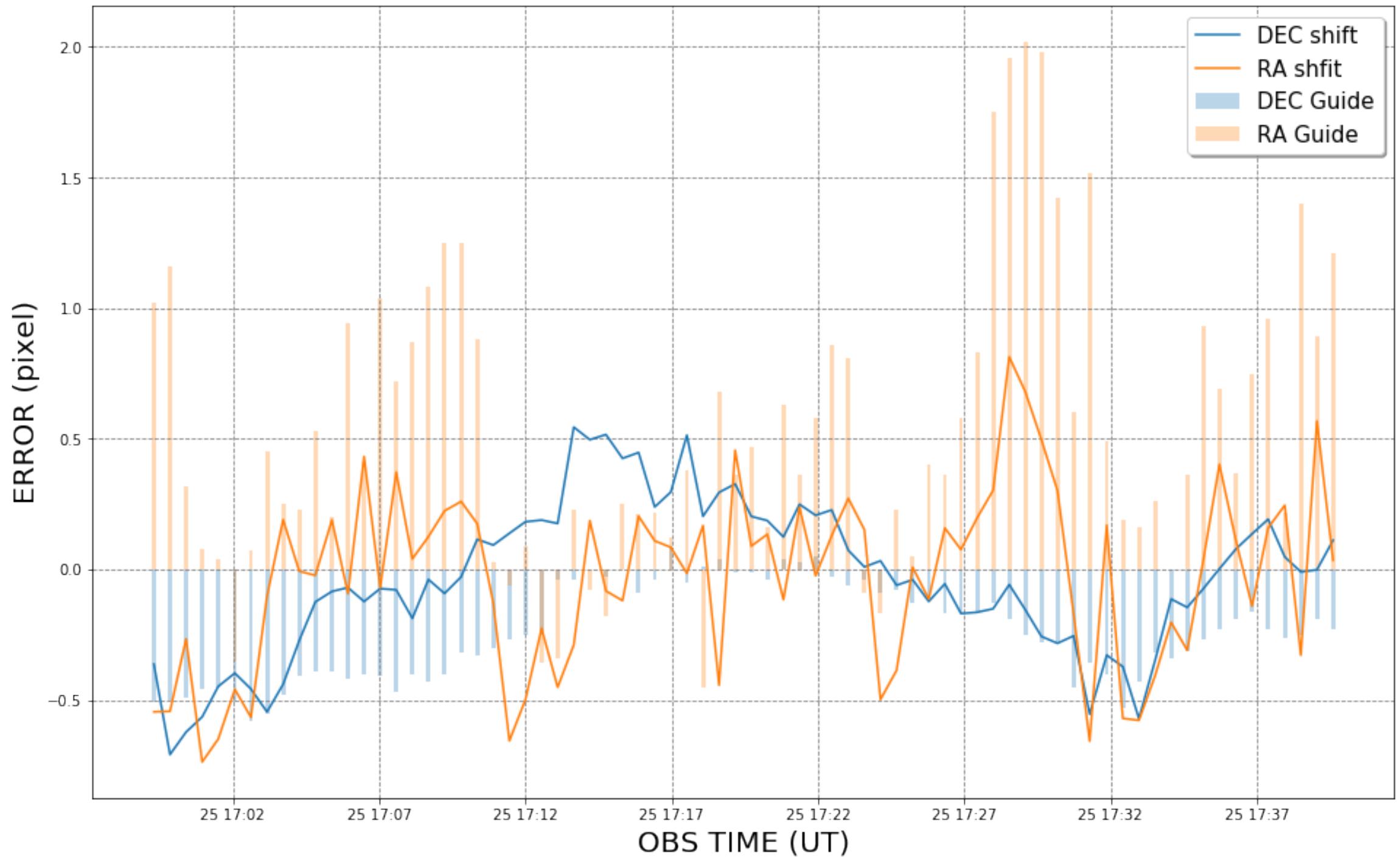


A black and white astronomical photograph capturing a vast, luminous nebula against a dark background of space. The nebula exhibits intricate, swirling patterns of light and shadow, with a particularly intense central region. Numerous small, white stars of varying brightness are scattered throughout the field, some appearing as sharp points while others are partially obscured by the nebula's glow.

CITRA MENTAH TANPA KOREKSI GUIDING
@20 MENIT



CITRA MENTAH TANPA KOREKSI GUIDING
@20 MENIT (1:1)



Aktivitas dan Partisipasi

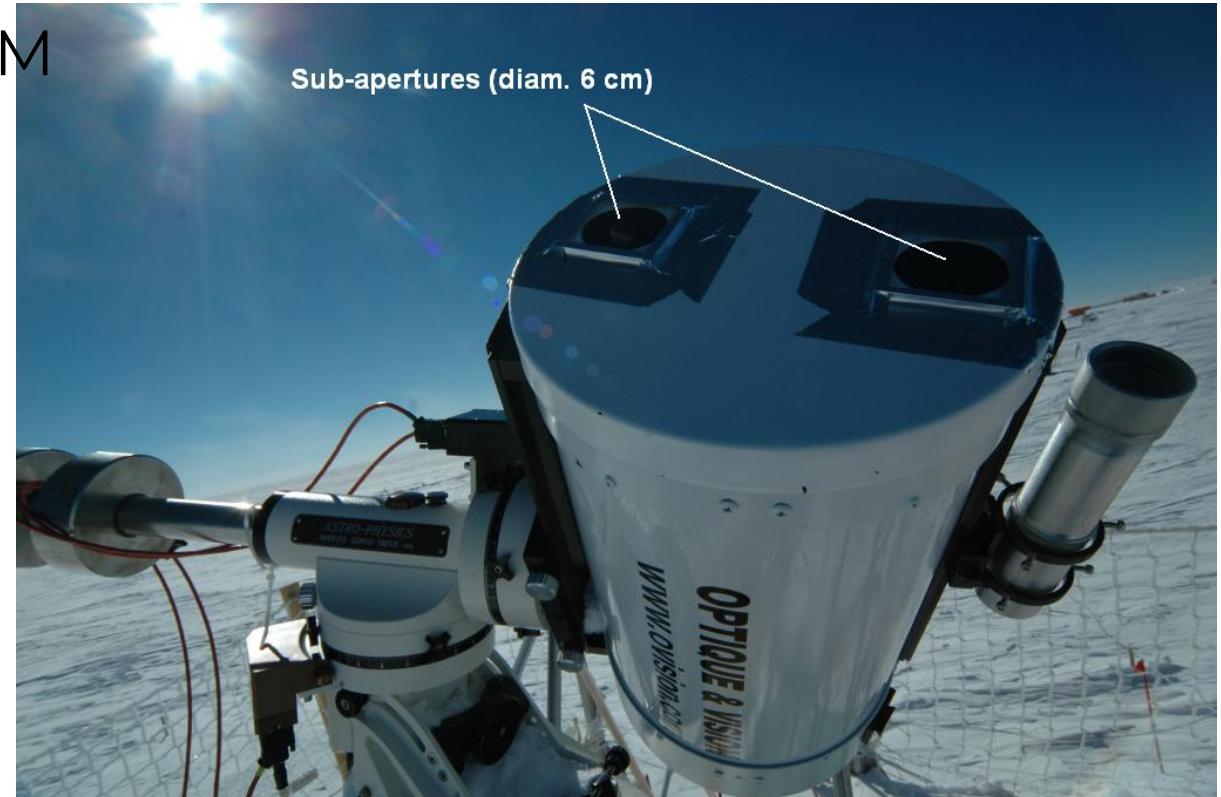
- Programming
- Pengamatan
- 2 orang mahasiswa

Kondisi Langit

Pengukuran seeing dan kecerlangan langit

Automated DIMM Seeing Monitor

- Pengamatan dengan metode DIMM
- Uji coba instrumen
- Programming



Automated Sky Brightness Monitor

- Sistem otomasi untuk pengukuran sky brightness → absolut fotometri
- Sistem penjadwalan Bosscha Robotic Telescope

Aktivitas dan Partisipasi

- Pengamatan
- Uji coba instrumen
- Programming
- 2 orang mahasiswa