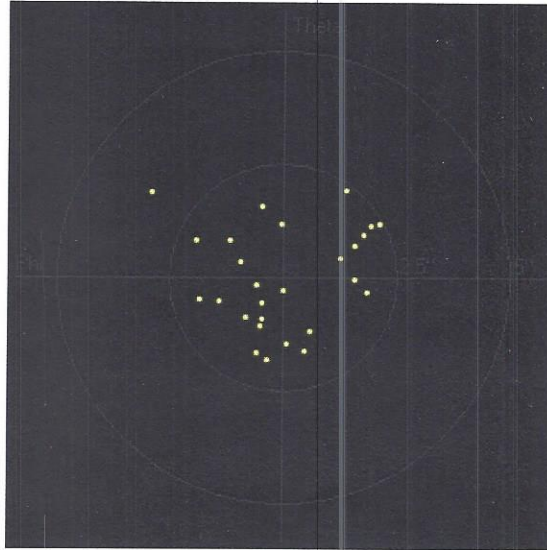


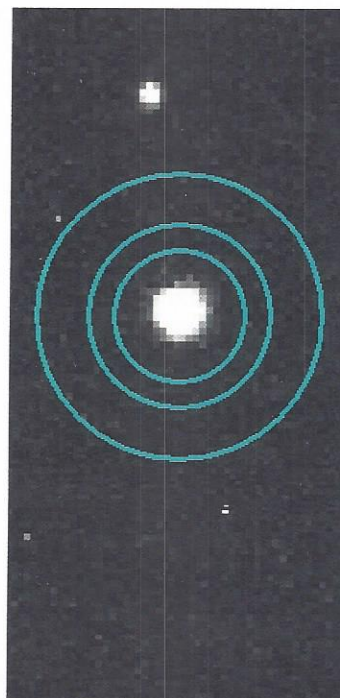
Final Test and Inspection Report for CDK700 Serial Number 027 (University of Hawaii)

Outdoor observing tests using SBIG STL-11000

- ✓ Pointing model residuals: 1.7 arcseconds RMS with 27 points



- ✓ Imaging performance from PlaneWave facility: 0.8 arcsec FWHM in 5 second image
(Note: we were experiencing excellent seeing at the facility during testing)



Information ? X

Cursor	(X= 2217, Y= 1957), Rad= 10, Rad2= 22		
Pixel	15291.000	Magnitude	-1.217
Maximum	20816.000	Intensity	153404.234
Minimum	1317.000	SNR	262.928
Median	1419.000		
Average	1856.653	Bgd Avg	1372.728
Std Dev	1970.156	Bgd Dev	32.770
Centroid	(X= 2216.615, Y= 1956.203)		
FWHM	0.795"	Flatness	0.009

Mode Aperture Display in Arcsec Calibrate <<

Magnitude Calibration

Intensity 1

Exposure 1

Magnitude 10

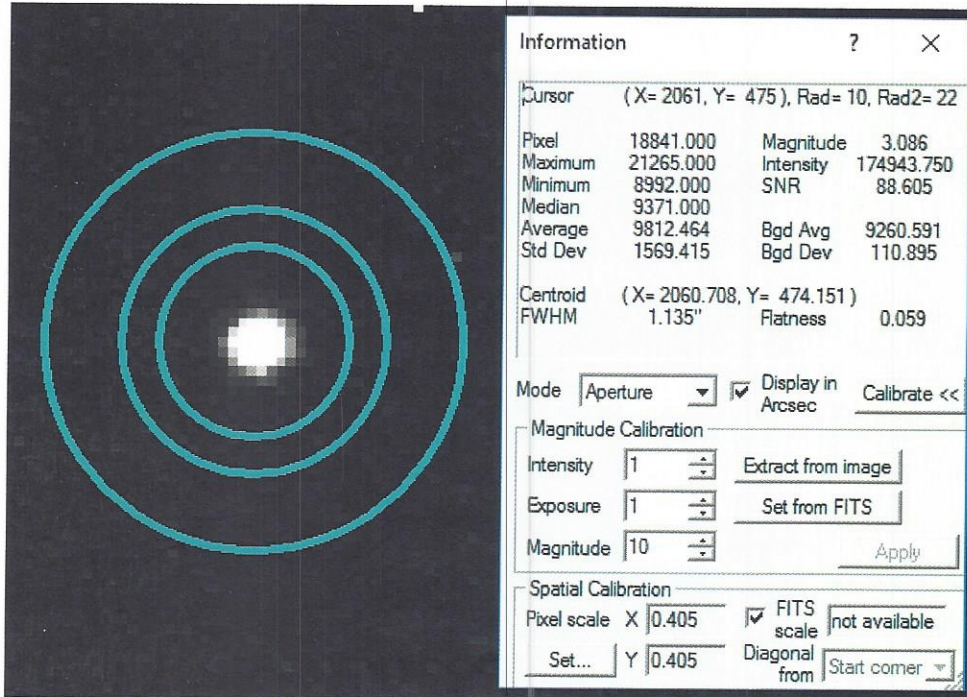
Spatial Calibration

Pixel scale X 0.405 FITS scale not available

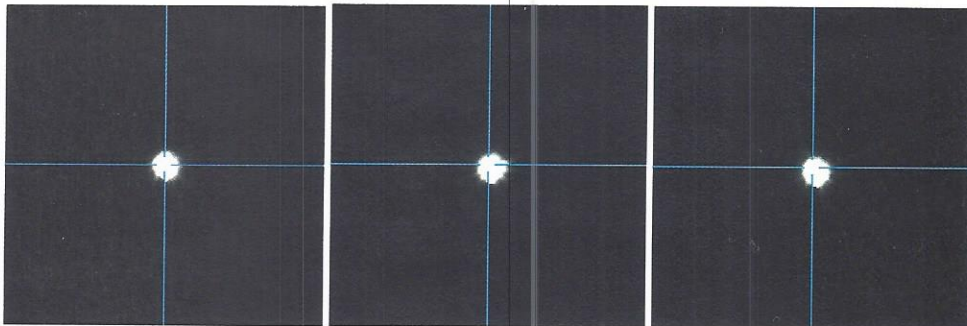
Set... Y 0.405 Diagonal from Start corner

- Tracking performance: 1.1 arcsec FWHM in 300 second image

(Note: we were experiencing good seeing at the facility during testing)



- M3 repeatability (Port selector moved away from and back to Port 1) measured to better than 1 arcsecond (seeing limited)



ACR motion controller and Compax3 drives

- Azimuth encoder DB9 connector screwed in place on Compax3
- Altitude encoder DB9 connector screwed in place on Compax3
- CANOpen DB9 connector screwed in place on ACR controller
- All wires securely fastened in screw terminals (Compax3 and ACR power/enable)
- All screw terminals screwed in place on Compax3 and ACR boxes
- M3 port selector moves after cycling power and starting PWI
- M3 port-to-port travel time: 4.7 seconds

Inside bottom of fork

- All unused ports on USB hubs function correctly
- Azimuth encoder cover installed
- Azimuth and altitude encoder DB9 connectors secured with nuts
- CANOpen I/O input pins roughly 0V when low, 23-24V when high

Azimuth axis

- Motor commutates reliably in multiple starting positions & different OTA altitudes
- Encoder reads green through full range of motion
- Encoder counts increase as Azm is moved clockwise (viewed from above)
- Clockwise region sensor reads reliably
- Counterclockwise region sensor reads reliably
- Clockwise limit sensor reads reliably
- Counterclockwise limit sensor reads reliably
- Home sensor reads reliably and ONLY transitions at two points 180° apart
- Hardstop engages correctly at both ends of range of motion
- Indicator arrow attached below OTA when pointed down
- No Wrap label attached in correct place (near north/south pier bolt)
- Home label attached in correct place
- Azimuth torque constant measured, $K_t = \underline{22.2}$ Nm/Arms

Altitude axis

- Motor commutates reliably at multiple positions
- Encoder counts increase as axis is moved towards zenith
- Upper limit sensor reads reliably
- Lower limit sensor reads reliably
- Home sensor reads reliably and transitions only once at around 45° altitude
- Spring stops engage correctly at upper and lower ranges of motion
- Axis is nearly balanced when fully assembled.
Weights used: 2 x 3lb , 2 x 0.5lb
- Black caps installed on counterweights
- Encoder reads green through full range of motion
- Read head optical window notch is well aligned with etched part of encoder ring
- Altitude torque constant measured, $K_t = \underline{25.6}$ Nm/Arms
- Adequate clearance between white shrouds and spring stop blocks

OTA

- All mirrors installed
- All temperature sensors read correctly
 - Ambient
 - Primary
 - Secondary
 - Backplate
 - M3
- All heating pads function correctly: Primary Secondary M3
- All fans function correctly
 - (4x) side fans pull air in
 - (6x) rear fans blow air out
- Top dovetail installed
- Bottom dovetail installed
- Collimation locking screws installed (9 total)

Port 1

- 2x USB plugs are functional
- 2x DC jacks are functional
- Lenses installed
- Baffle ring securely installed in lens cell

Port 1 EFA

- EFA bracket and box installed
- EFA firmware updated to version 30.94 to support 5 temp sensors
- Computer successfully communicates with EFA
- Hand controller successfully communicates with EFA
- EFA successfully controls IRF90

Port 2

- 2x USB plugs are functional
- 2x DC jacks are functional
- Lenses installed
- Baffle ring securely installed in lens cell

Port 2 EFA (IF APPLICABLE)

- EFA bracket and box installed
- Computer successfully communicates with EFA
- Hand controller successfully communicates with EFA
- EFA successfully controls IRF90

M3

- Motor drives correctly through full range of motion without slipping
- Clockwise limit reads reliably
- Counterclockwise limit reads reliably
- "Port 1" button goes to Port 1 position
- "Port 2" button goes to Port 2 position
- Mirror swings downward (when OTA is pointed down) during transition

Compax3 parameters

- Azm I²t protections in effect (motor shuts down if pushed out of position for 3 seconds)
- Alt I²t protections in effect (motor shuts down if pushed out of position for 3 seconds)

Inspector: _____



Date: _____

8/15/10