Super - LOTIS: A Robotic Telescope

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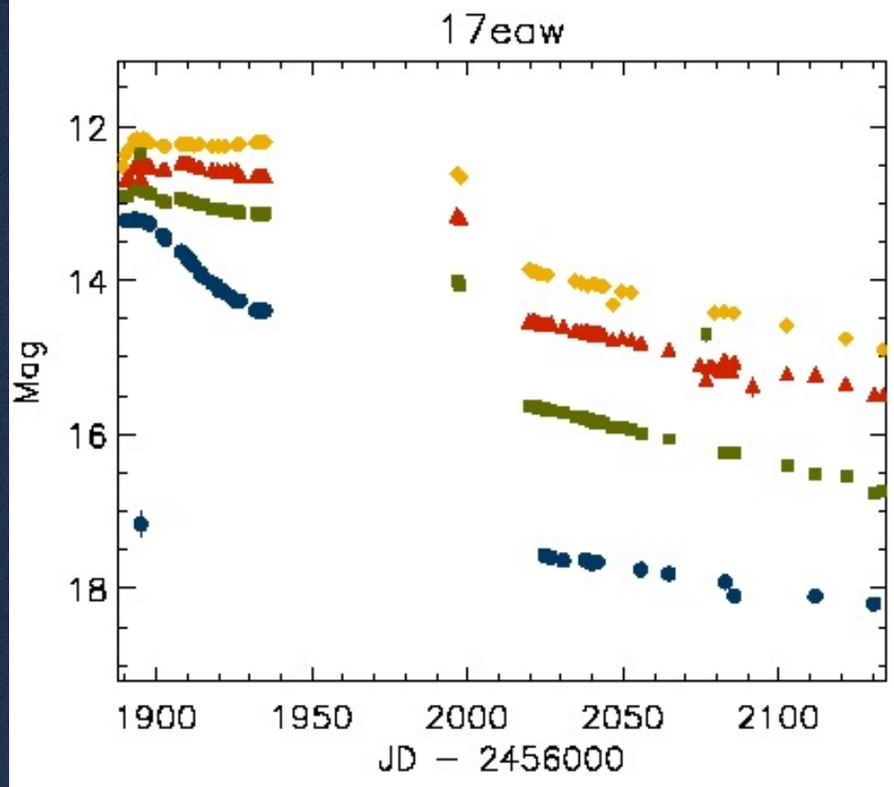
Currently in use to follow supernovae and other transients in support of the AzTEC, SNSPOL and Swift/ASASSN programs

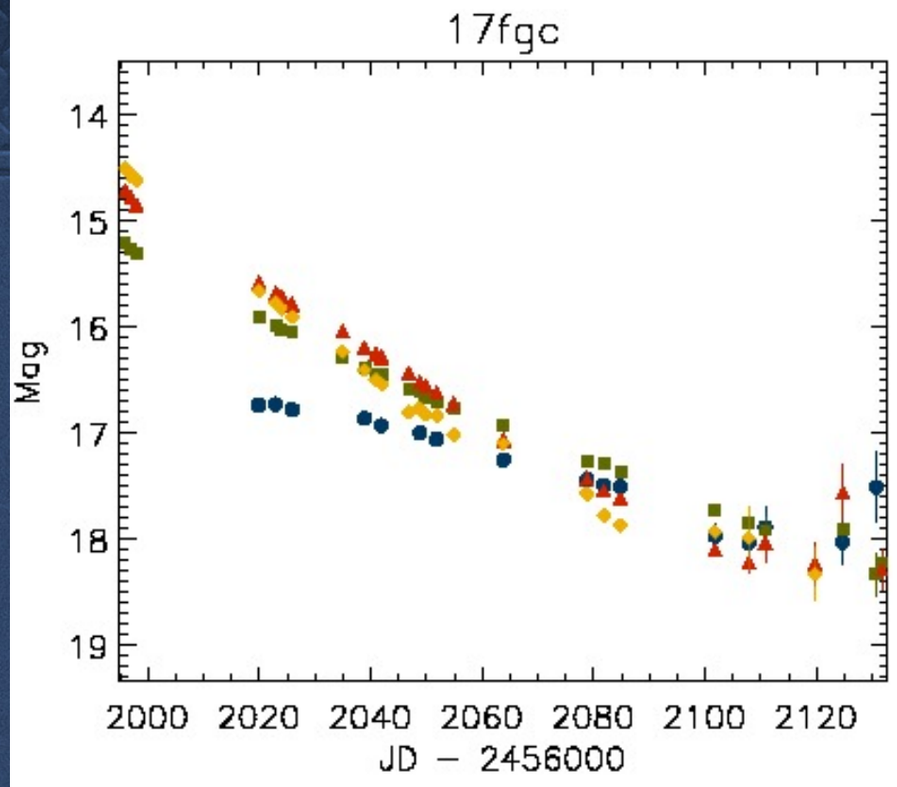
System:

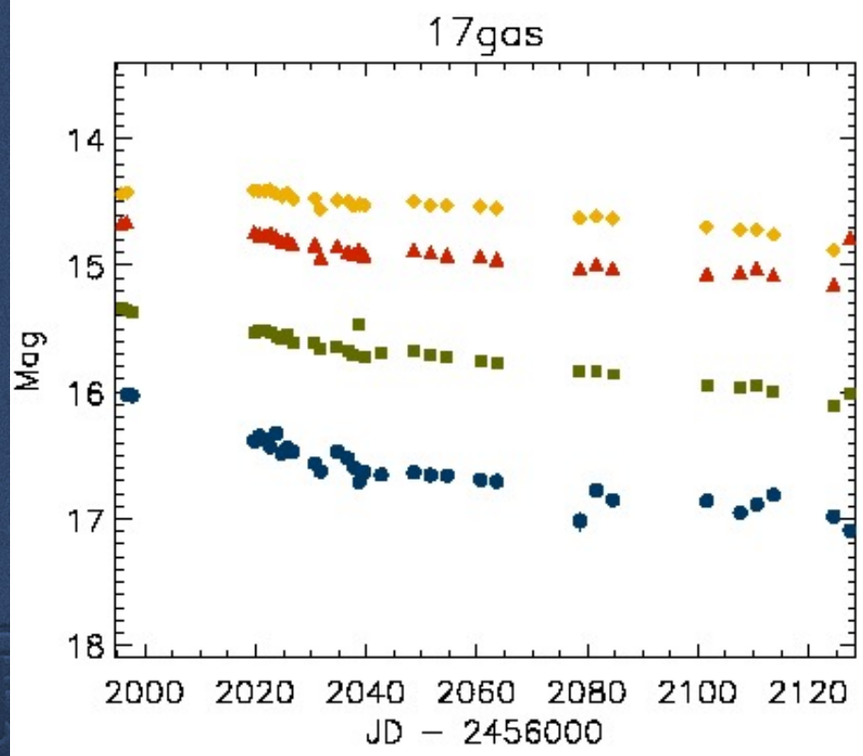
- *60 cm aperture telescope at Kitt Peak*
- *Spectral Instruments 800 series optical camera*
- *BVRI filters*
- *2048 x 2048 CCD*
- *0.5 arcsec pixels*
- *17' x 17' FoV*
- *TE cooler & chiller (CCD -35C/Backplate 20C)*
- *operating with this equipment since 2005*
- *VRI better than B. A red-sensitive complement to M4K.*

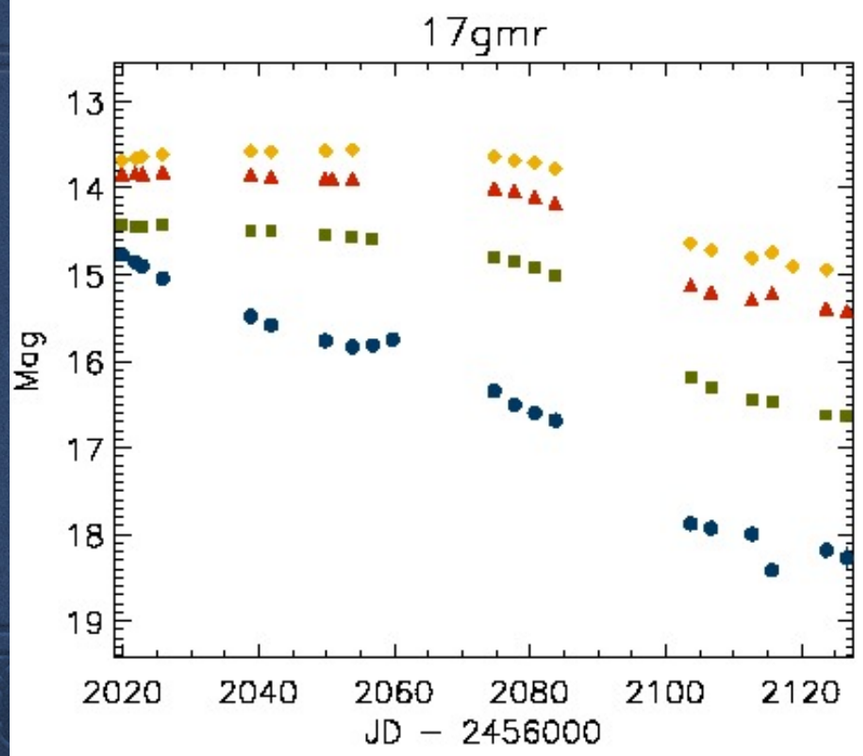
BVRI Light Curves of Transients

12-15 science targets per night









Live Image

Weather Status

Outside T:	48.4° F / 9.1° C
RH:	41.8%
Wind Speed:	1.0 mph
Wind Dir:	0.4
Precip:	Not Raining
Roof:	Open
Safe-to-Open:	Safe
Scott-Safe-to-Open:	

System Temperatures

Inside Dome:	9.9° C
Telescope Tube:	9.6° C
Primary Cell:	12.2° C

Mount Status

Wed Jan 17 18:00:15 2018

Mount Power:	On
UT:	01:00:16.9
LST:	01:23:22
RA:	01:21:28.83
Dec:	+81:41:07.5
Azimuth:	-0.1
Elevation:	39.9
HA:	+00:01:23
Airmass:	1.56
Focus:	413490
JD:	2458136.5
Motion:	0

Camera Status

Camera Power:	On
Status:	idle
Count:	4301
Object:	None
Filter:	B
Filter Motion:	0
Exposure Time:	60
Vacuum:	0.080 Torr
CCD Temp:	-35.7° C
Backplate Temp:	17.4° C

News: Super-LOTIS is imaging supernovae in support of the AzTEC and SNSPOL programs at UA, and of NASA Swift supernovae.

GRB Links

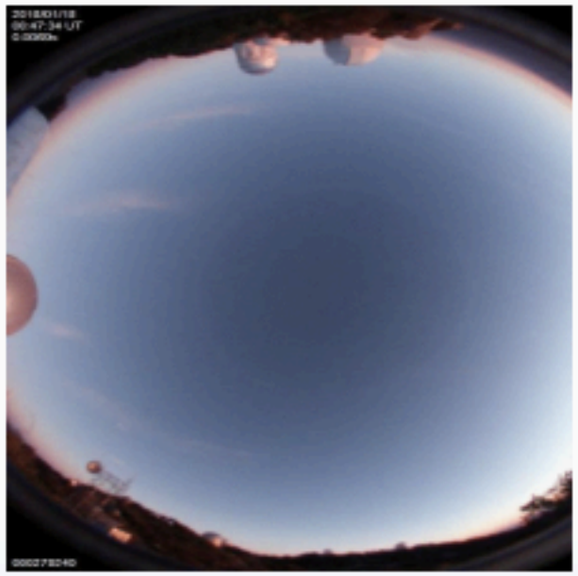
- GCN
- Swift
- GRBlog
- Localized GRBs
- STScI DSS

Site Search

Search Go!

www Super-LOTIS

System Temperatures



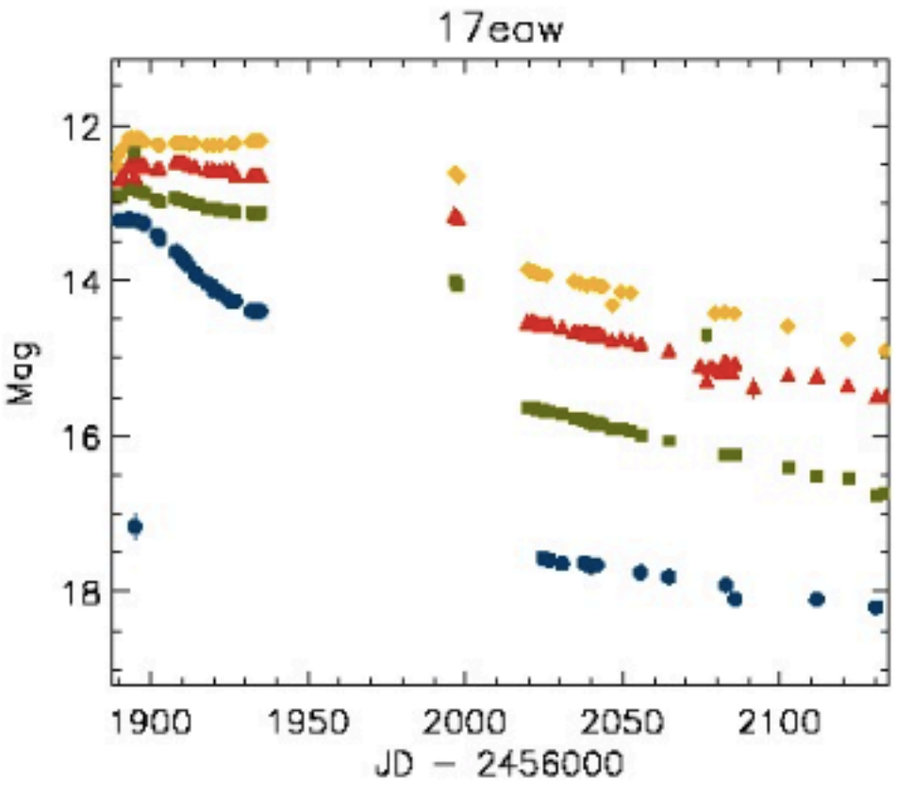
Boltwood Data

Cloud:	Clear (-42.7)
Daylight:	Dark
Wind Speed:	6.6
Humidity:	26
Safe:	Yes
Timestamp:	2018-01-18T01:00:33Z

Automated…meaning:

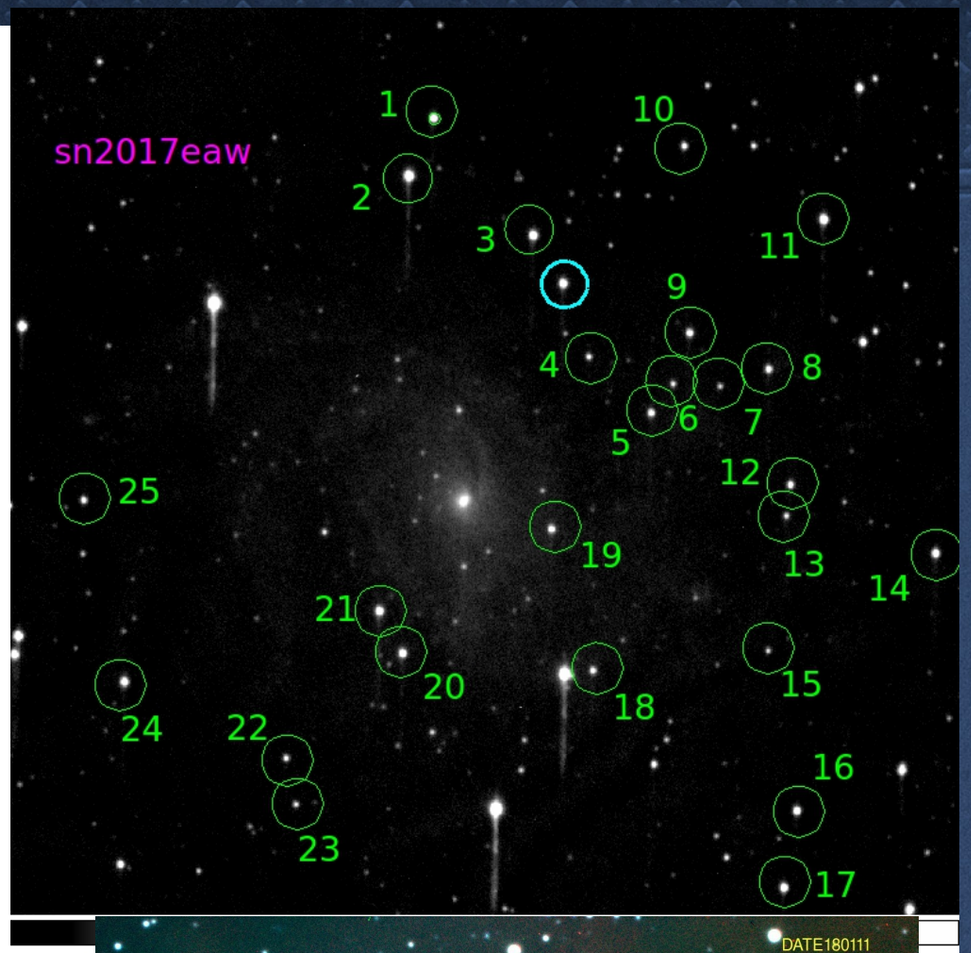
1. *Scheduler: manually updated in blocks. Will run schedule as written until updated. (daily, 2-day & 3-day cadences)*
2. *Calibrations/Open/Observe/Close robotically. Automated ToO capable (built for GRBs). No nightly focus changes.*
3. *Weather Closure: Utilizes 2 weather systems (wind, humidity, rain) and 4meter status (threatening clouds and dust/smoke & above).*
4. *Reductions: Run daily (but not crontab). Flat-field, fringe-correction, astrometry.*
5. *Higher products: Finder with coordinates manually created. Photometric nights manually determined, but all other tasks run via the automated pipeline.*

Light Curves of 17eaw



[Magnitudes of each Local]
[Checking Photometric Nights]
[sncatalog.nlandolt]
[sncatalog.BVRI]

[SN 17eaw light curve data]



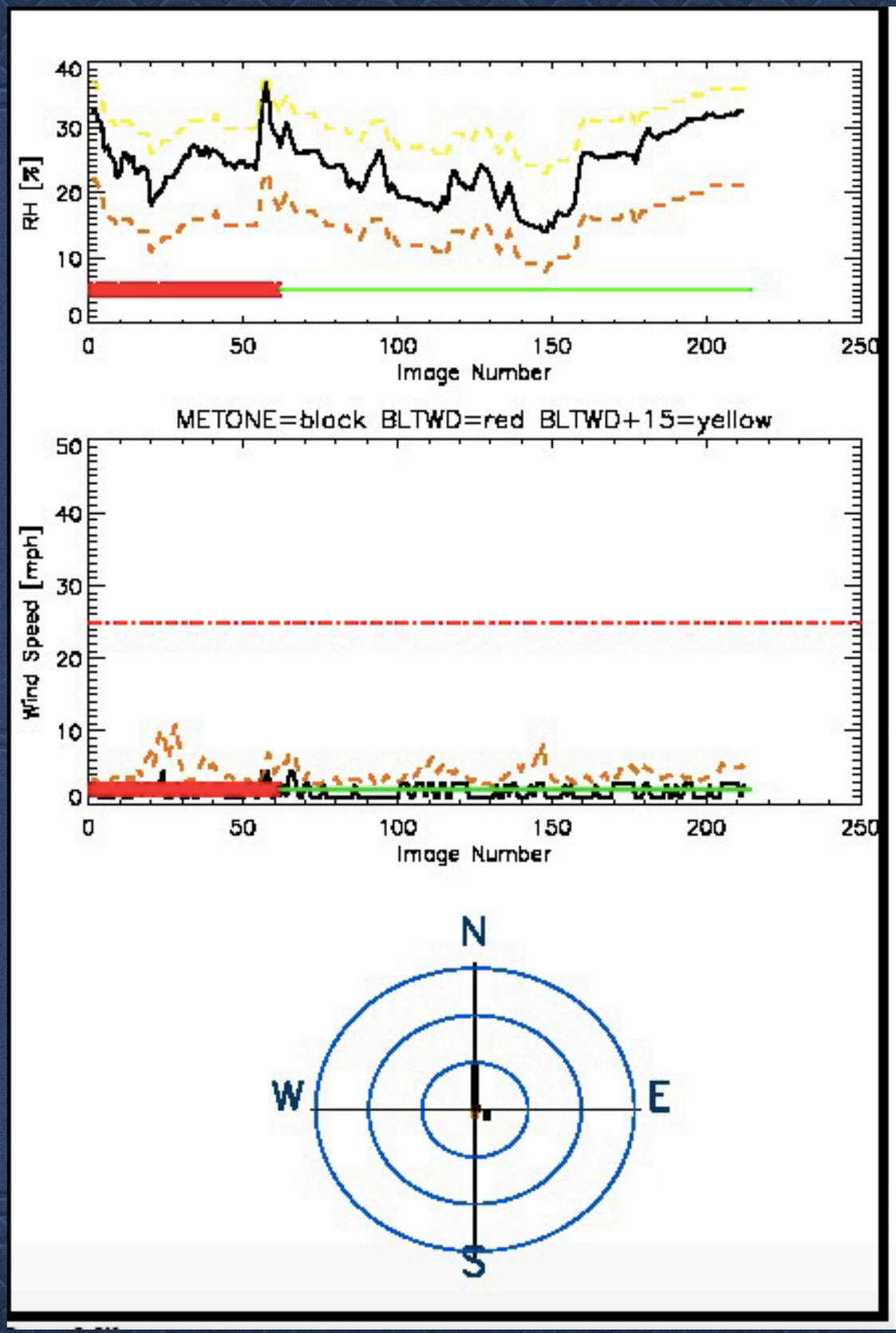
[Coordinates for locals - degrees]
[Coordinates for locals - Sexagesimal]

Offsets in arcsec

Star # 2 RA = 86.89 W DEC = 104.40 S
Star # 3 RA = 101.76 W DEC = 66.74 S
Star # 4 RA = 20.39 W DEC = 30.56 S
Star # 5 RA = 17.72 E DEC = 46.87 N
Star # 6 RA = 59.09 E DEC = 81.94 N
Star # 7 RA = 72.69 E DEC = 62.96 N
Star # 8 RA = 103.13 E DEC = 63.58 N
Star # 9 RA = 134.27 E DEC = 51.73 N
Star #10 RA = 82.51 E DEC = 29.70 N
Star #11 RA = 75.81 E DEC = 91.04 S
Star #12 RA = 167.43 E DEC = 45.94 S
Star #13 RA = 150.48 E DEC = 126.04 N
Star #14 RA = 148.35 E DEC = 146.09 N
Star #15 RA = 245.68 E DEC = 167.90 N
Star #16 RA = 138.96 E DEC = 233.57 N
Star #17 RA = 160.43 E DEC = 336.64 N
Star #18 RA = 153.32 E DEC = 386.53 N
Star #19 RA = 26.00 E DEC = 249.48 N
Star #20 RA = 3.40 W DEC = 158.87 N
Star #21 RA = 97.55 W DEC = 241.78 N
Star #22 RA = 113.30 W DEC = 214.88 N
Star #23 RA = 164.03 W DEC = 341.32 N
Star #24 RA = 170.99 W DEC = 311.65 N
Star #25 RA = 276.91 W DEC = 265.46 N
Star #26 RA = 306.56 W DEC = 148.86 N

Data files:

[/ccdreddata2/170514/sn17eawI.fits]
[/ccdreddata2/170515/sn17eawB.fits]
[/ccdreddata2/170515/sn17eawI.fits]


RH [%]
Image Number
METONE=black BLTWD=red BLTWD+15=yellow
Wind Speed [mph]
Image Number
N
W
E
S

	SL Exposing	Bok Open	UKIRT	
2015	614	1700	1700	2 month closure
2016	625	1580	1880	vacuum leak 3 months
2017	985		1275	
	SL	CSS-60”	CSS-SCH	
DEC 2017	89	170	180	

Manpower for the robotic telescope:

Operator: 10 hours a week = 500 per year (me)

Mtnops: 270 hours per year total (5 people)

Software/Hardware support: 520 hours (2 people)

Some of this time is arguably in support of ARTN as much as Super-LOTIS.

ARTN & Super - LOTIS:

A. *Testing ground for weather stations controlling open/close while keeping the telescope safe.*

B. *Adapt the automated pipeline to M4K data, primary issue is astrometry.*

C. *Once thought of as RTS2 testing ground, but that is probably not current.*

D. *Eventually can be used in combination with Kuiper, concentrating on fainter targets and where U band is not important.*