Transient Surveys in China: TNTS, PTSS and TMTS

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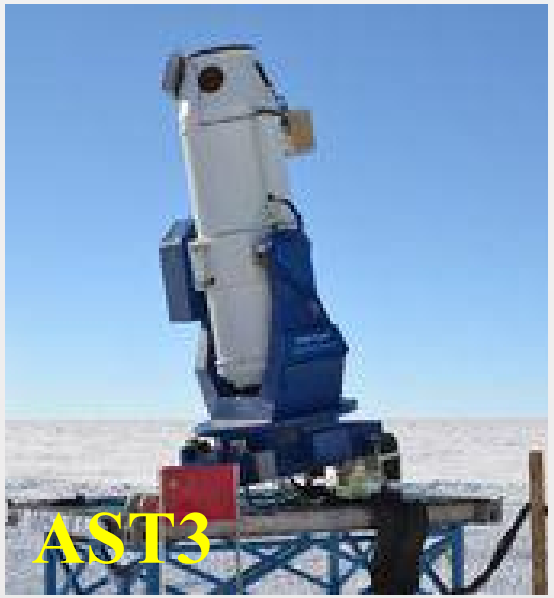
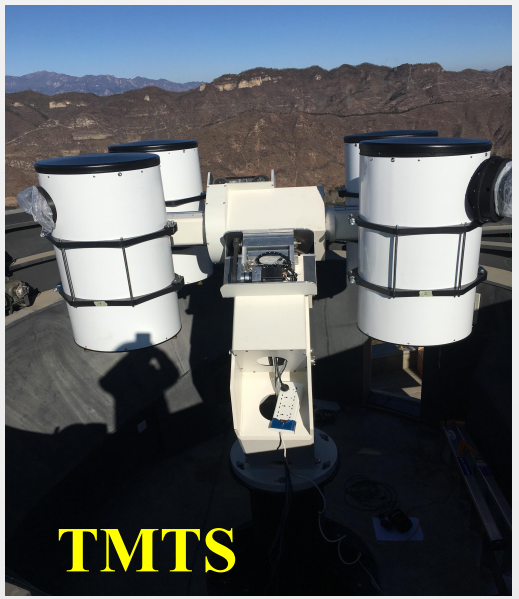
Tinghua-NAOC Transient Survey (TNTS)
Purple Mountain Observatory-Tsinghua Supernova Survey (PTSS)
Tsinghua Multitube Survey Telescopes (TMTS)





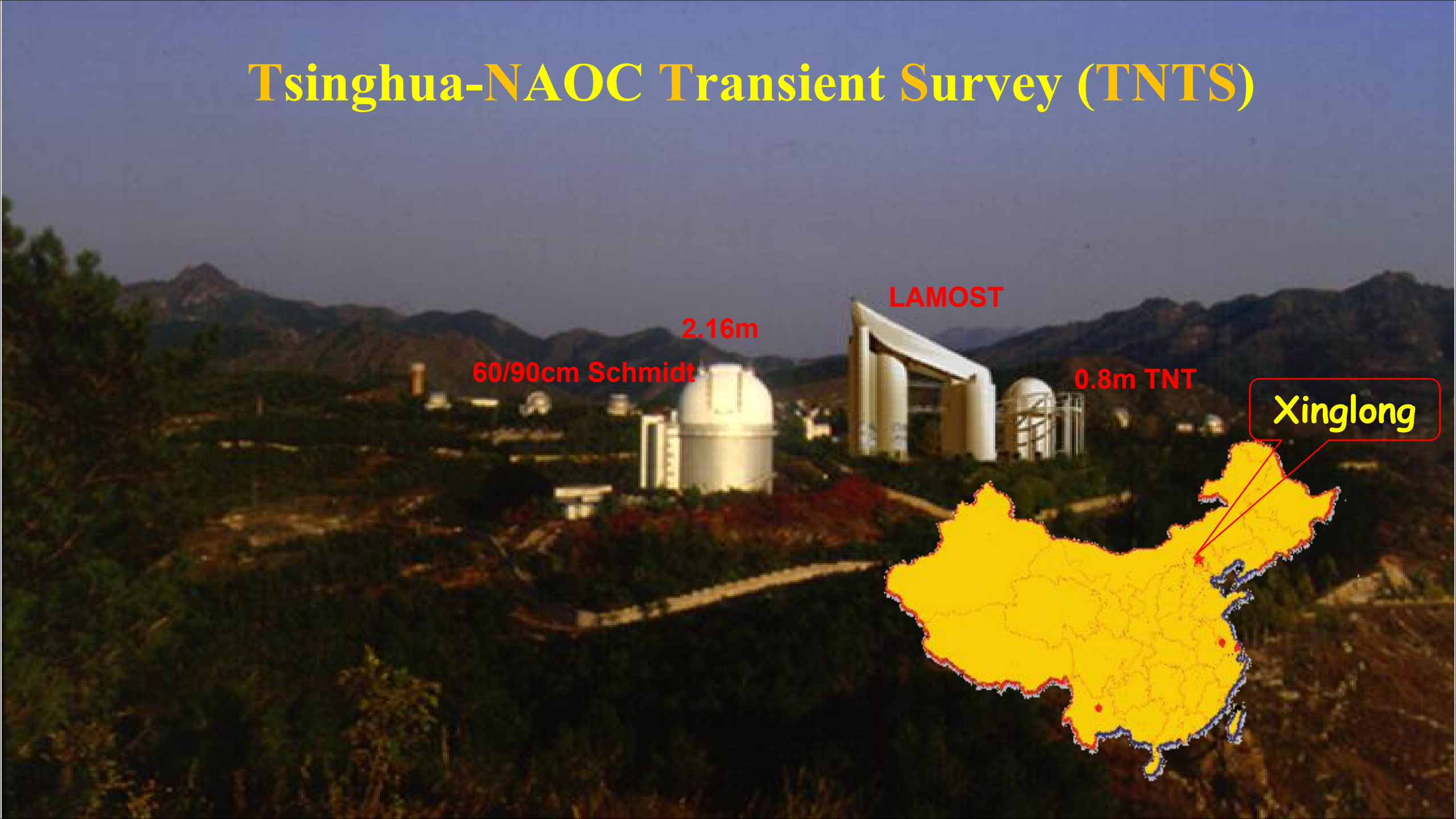
- 60/90cm schmidt
- 2.25 square degrees
- 4kx4k CCD
- 1.3 arcsec/pixel
- 20.0 mag (60s-exposure)
- unfilter

- 104/120cm schmidt
- 9.0 square degrees
- 10kx10k CCD
- 1.0 arcsec/pixel
- 20.5 mag (60s-i/r)

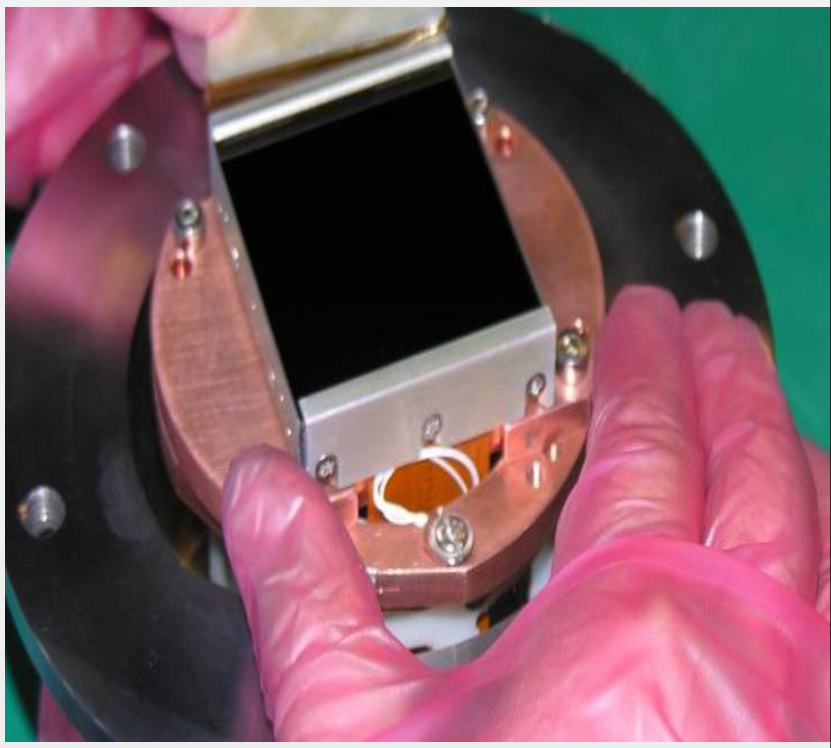
- 50/68cm schmidt
- 4.5 square degrees
- 10kx10k CCD
- 1.0 arcsec/pixel
- 18.5 mag (60s-i/r)

- Aperture: 4x40cm
- 20 square degrees
- Resolution: 1.8”/pixel
- Limited magnitude: 19.0 mag(30s白光)

Tsinghua-NAOC Transient Survey (TNTS)



60/90cm schmidt



Telescope: 60/90 cm f/3 Schmidt

CCD: E2V 4096x4096

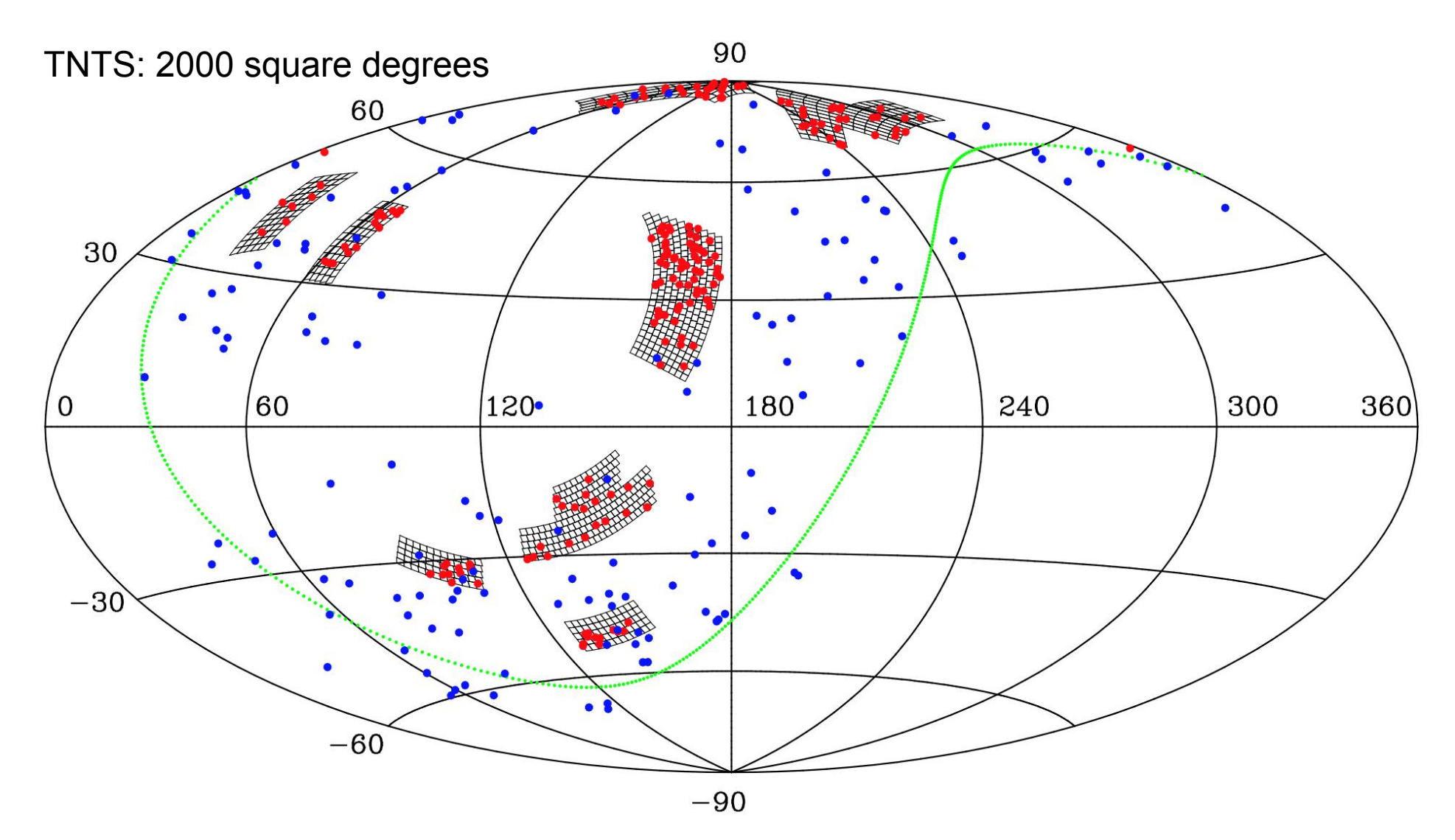
Blue sensitive 12um/pixel

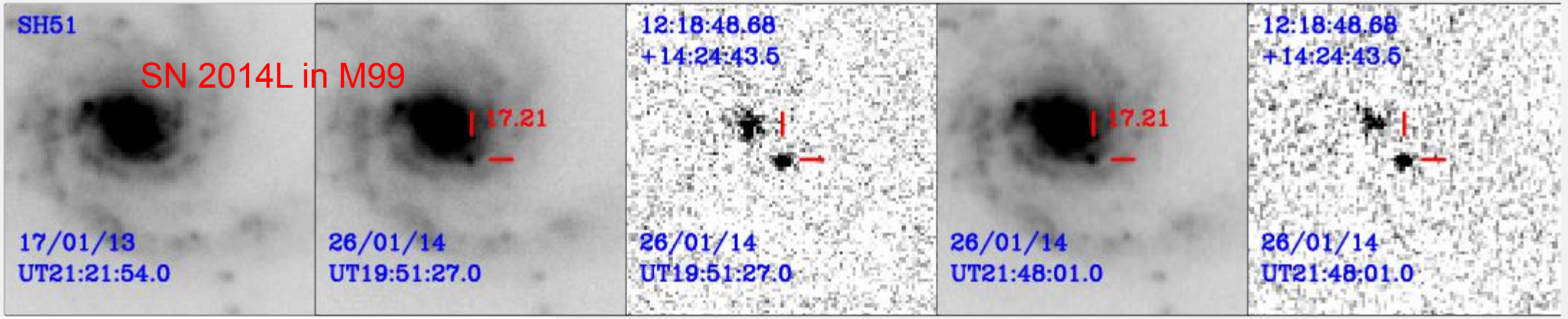
Filters: 15 intermediate bands

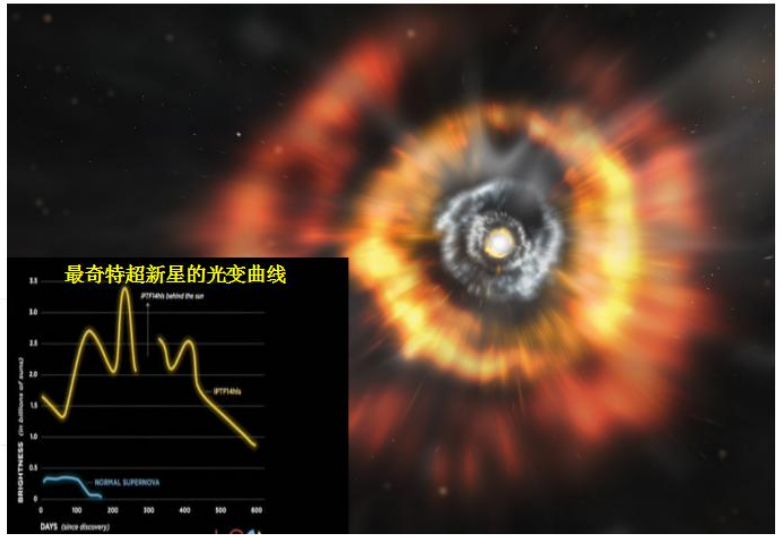
The field of view: 2.45 square degrees

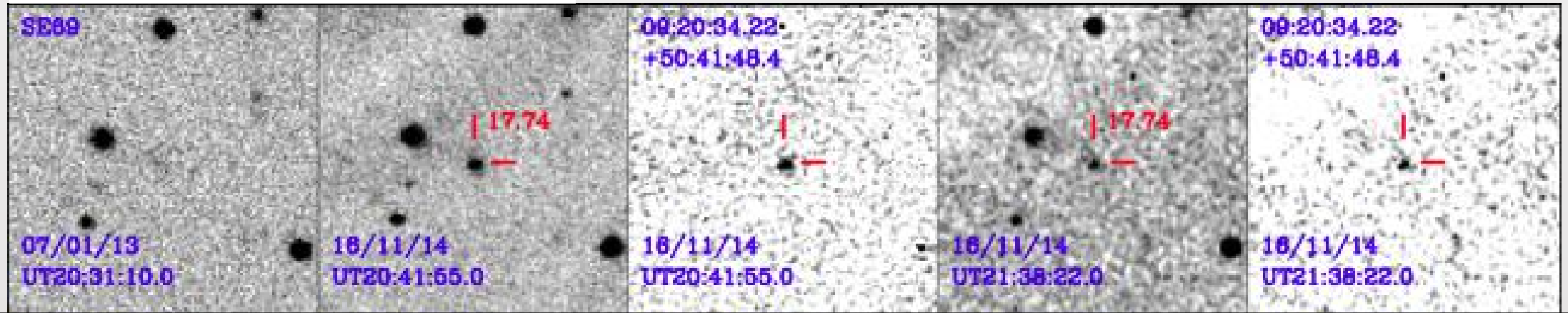
can be upgraded to 20 square degrees

Supernovae discovered by TNTS




SH51
SN 2014L in M99
17.21
17/01/13
UT21:21:54.0
26/01/14
UT19:51:27.0
12:18:48.68
+14:24:43.5
26/01/14
UT19:51:27.0
17.21
26/01/14
UT21:48:01.0
12:18:48.68
+14:24:43.5
26/01/14
UT21:48:01.0

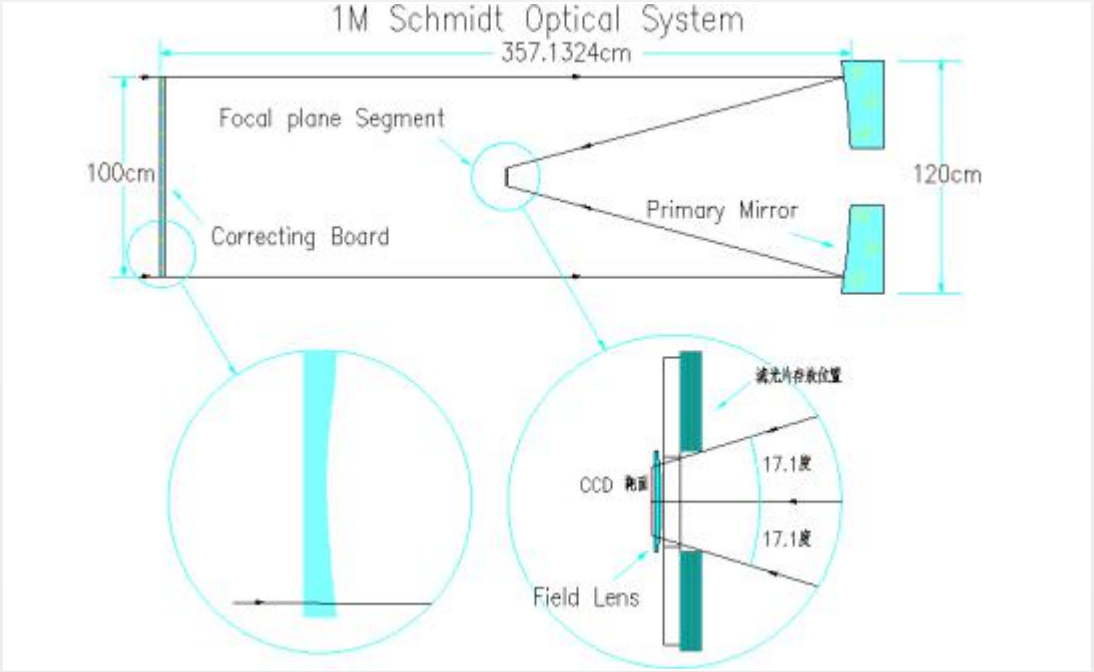

最奇特超新星的光变曲线
NORMAL SUPERNOVA
DAYS (since discovery)

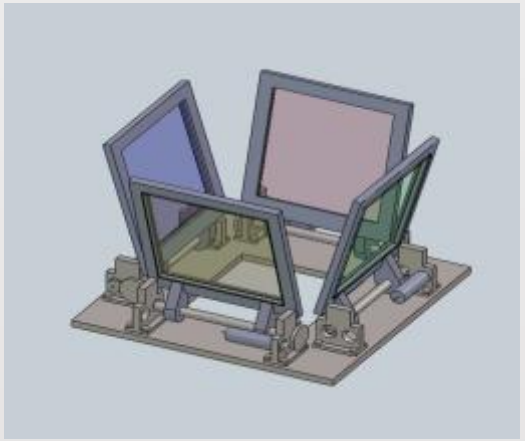

SE89
17.74
07/01/13
UT20:31:10.0
16/11/14
UT20:41:55.0
09:20:34.22
+50:41:48.4
16/11/14
UT20:41:55.0
17.74
16/11/14
UT21:38:22.0
09:20:34.22
+50:41:48.4
16/11/14
UT21:38:22.0

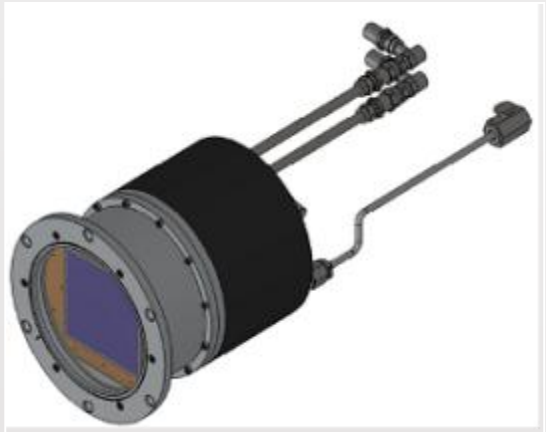
PMO-Tsinghua Supernova Survey (PTSS)

- Location: 118.465° E, 32.737° N
- Sea level: 219m
- Observable night: 194
- Average seeing: θ ~ 2″
- Night Sky Brightness: 22.1 (g), 21.2 (r), 20.4(i)
- Temperature: -20o— +40o
- Wind Velocity: <20 m/s
- Good seeing and sky background

Optical System of CNEOST



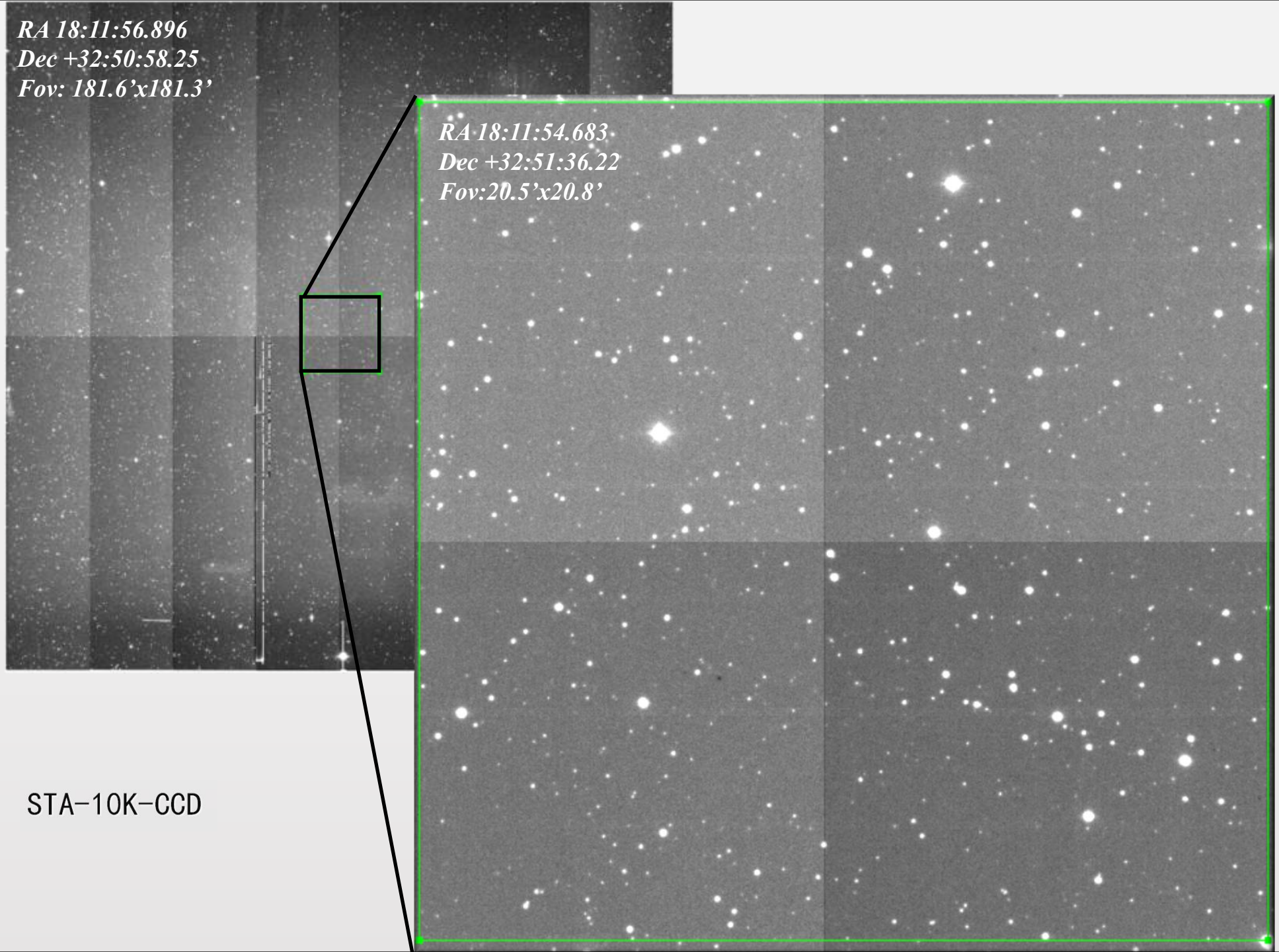




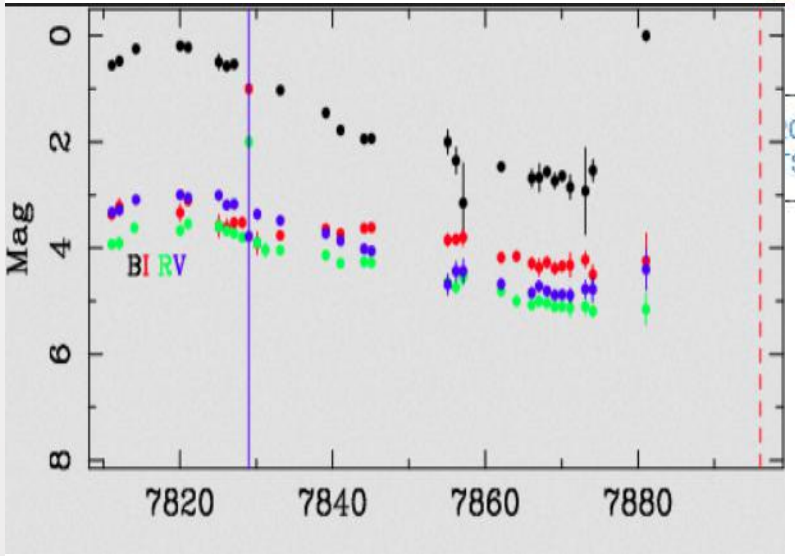
- Telescope Parameters
  - Corrector: 1.0m
  - Primary Mirror: 1.2m
  - Focal length: 1.8m
- CCD Camera 1(STA-10K-CCD)
  - CCD像元:10Kx10K
  - pixel size: 9ux9u
  - FOV: 9 Sq.d
  - resolution:1.03"/pxl
- Limited magnitude(3sigma)
  - r~20.5 mag @ 60s
- Filters
  - SDSS: g/r/i/z
  - Bessel: B/V/R/I/V+R
  - Narrow Band: SII/OIII/H_α

CNEOST观测系统

- 望远镜参数
  - 改正镜：1.0米
  - 主　镜：1.2米
  - 焦　距：1.8米
- CCD相机1(STA-10K-CCD)
  - CCD像元：　10Kx10K
  - 像元尺寸：9ux9u
  - 单帧视场：9 Sq.d
  - 分辨率：　1.03"/pxl
- CCD相机2(SI-4K-CCD)
- Limited magnitude(3sigma)
  - r~20.5 mag @ 60s
- 滤光片系统
  - SDSS：g/r/i/z
  - Bessel：B/V/R/I/V+R
  - 窄带：SII/OIII/H_α


RA 18:11:56.896
Dec +32:50:58.25
Fov: 181.6'x181.3'
RA 18:11:54.683
Dec +32:51:36.22
Fov:20.5'x20.8'
STA-10K-CCD

Database system of PTSS



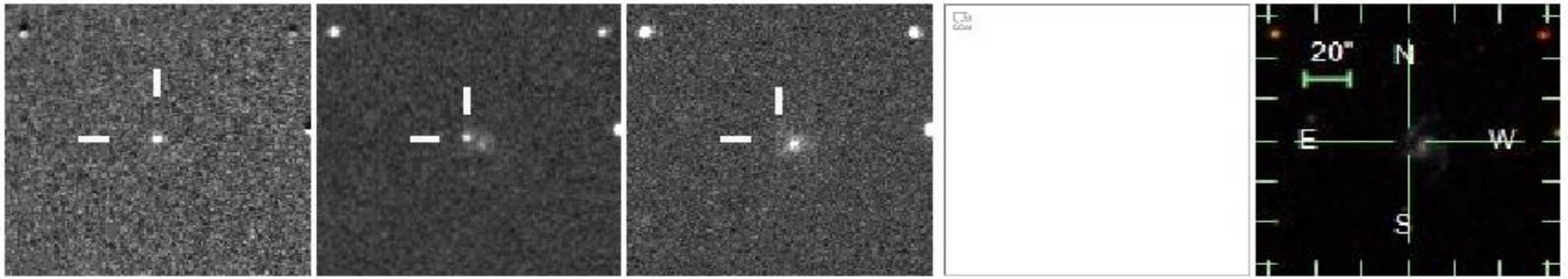
PTSS Name : PTSS-18kce
Robey Yes Prob: 0.995831
OBS-DATE : 2018-10-26 19:55:14
RA : 09:02:00.40
DEC : +12:21:22.65
Mag : 18.472 +/- 0.067
VIP label : sn
Near source (PPMXL) : 3.8595 arcsec.
Identified by: hanjie

--other PTSS NAME ----------
018-11-09T20:13:49.470 18.3732
TSS-18kce @ 2018-10-26 18.4727

Check: SDSS
Check : MPC
Check : Simbad
Check : NED
Check: AAVSO
Check : Vizier
Check : TNS
Check : PanSTARRS
link : OSC
link : Latest SN

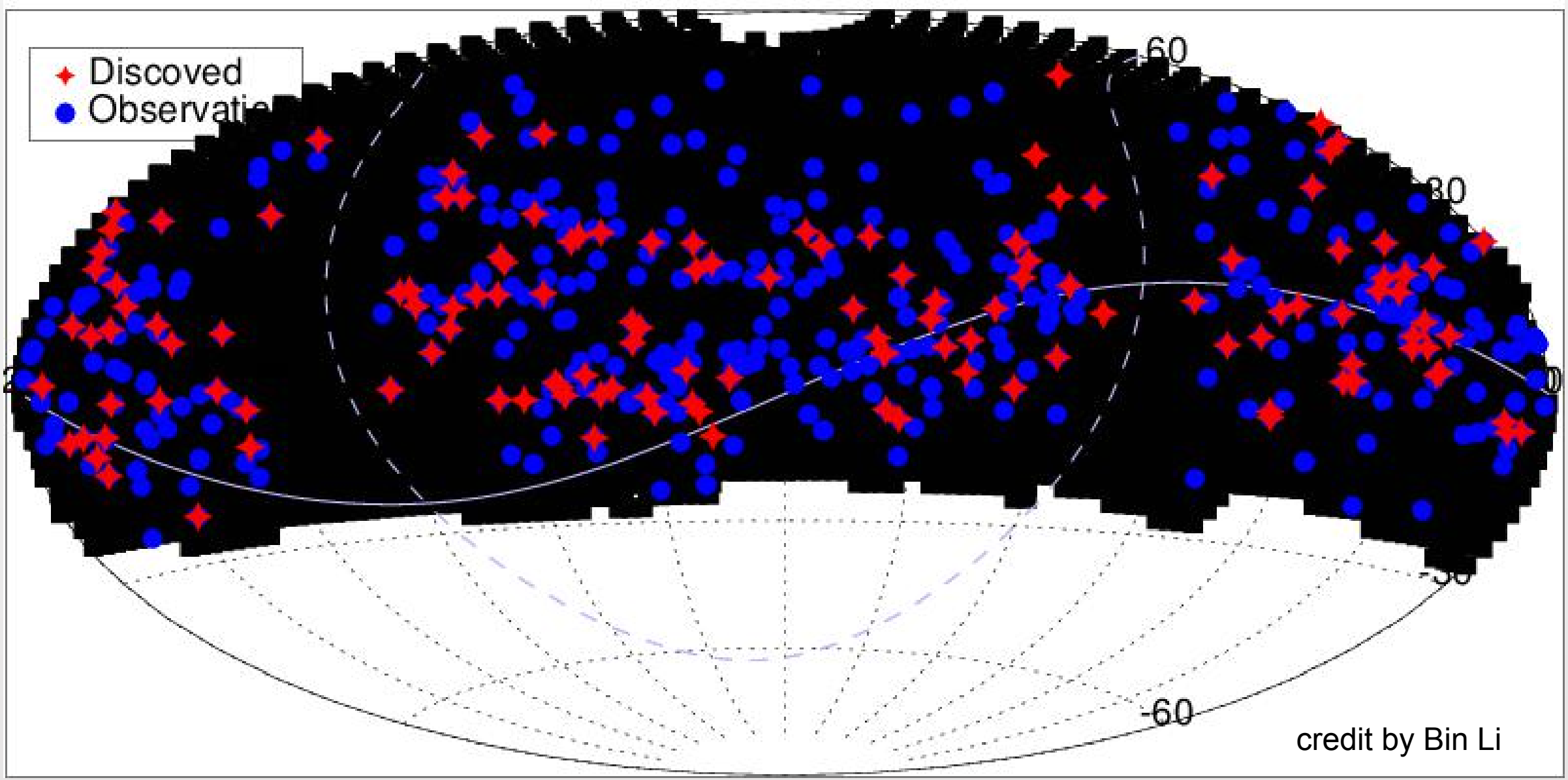
Comments (Time in UT)

comment Push

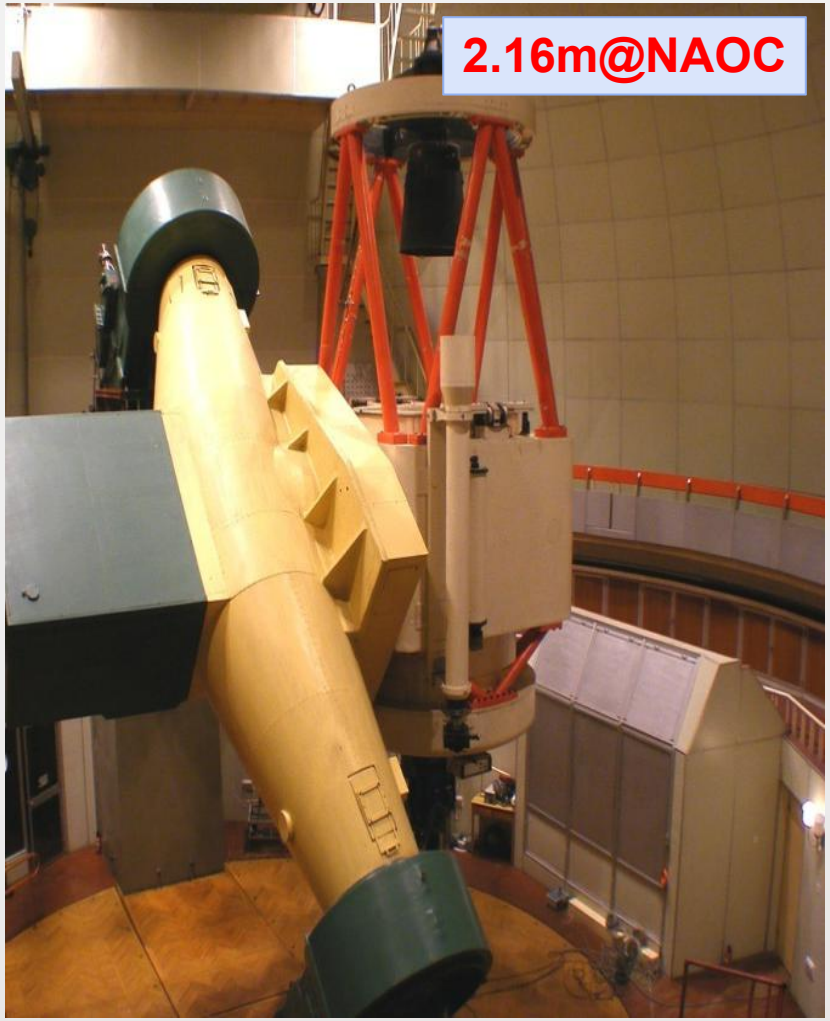


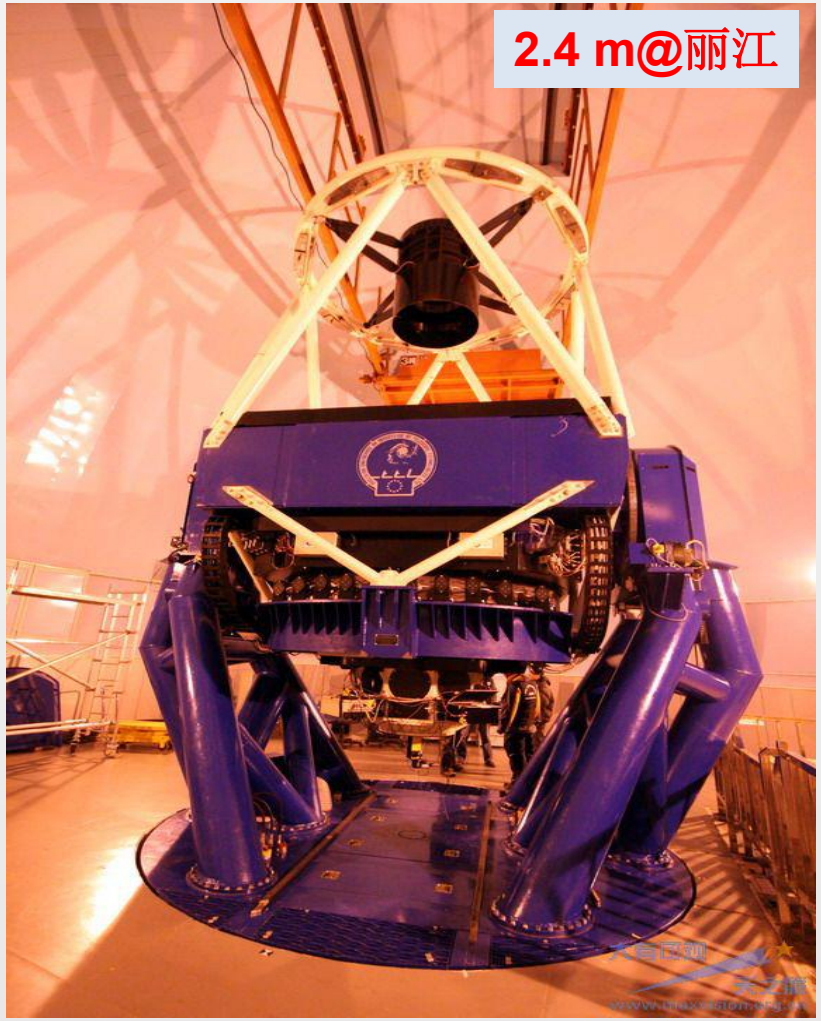
Tempfilename: L20151220_03420_085923+1235_60S_VR_109824.FITS
Fitsname:L20181026_09418_085926+1235_60s_VR_311126.fits
get sub fits get obs fits get temp fits

Supernovae discovered and observed by PTSS



Follow Up Facilities





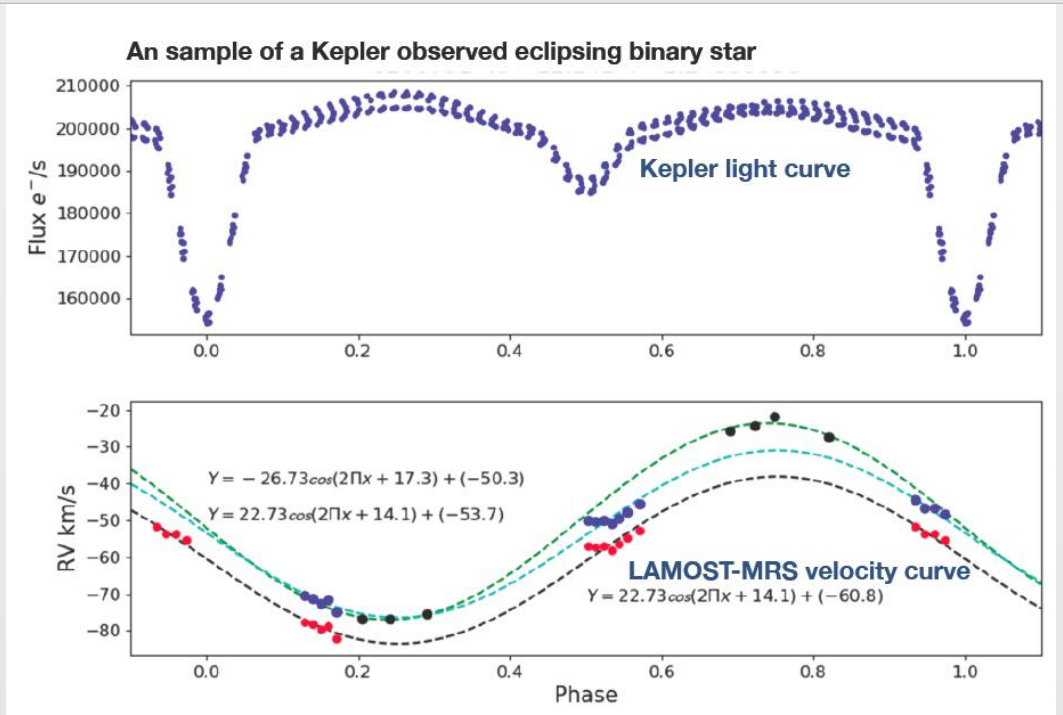
Tsinghua Multi-tube Survey Telescope

- Aperture: 40cm
- FOV: 4x5 square degrees:
- Resolution: 1.8”/pixel
- 4x4K CMOS
- Limited magnitude: 19.0 mag(30s)

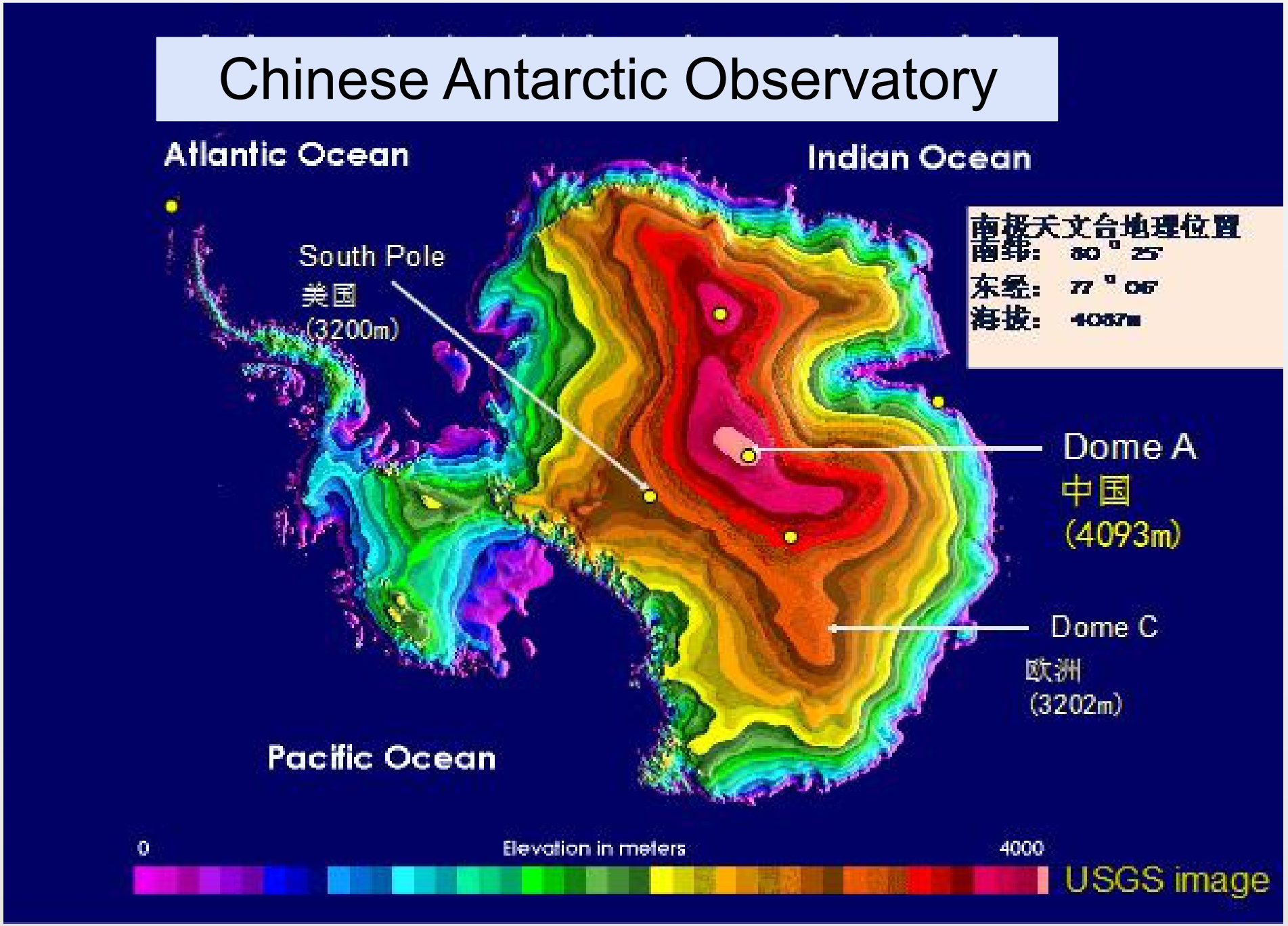
Sciences:
- Supernovae, GRB
- flare stars,compact binary
- AGN, TDE,
- EM counterparts of Gravitational wave

~2500 square degrees/10 hours（4 bands）
~10000 square degrees/10 hours (1 band)

Synergy with Lamost II for Time-domain Sciences



Chinese Antarctic Observatory



Telescopes at Dome A:
Antarctic Survey Telescopes (AST1, AST2, AST-3)

Site: Dome A, Antarctic
Telescope: 50/68cm Schmidt
Detector: 10k*10k STA1600-FT, 9micron/pixel, 1arcsec/pixel,
FOV: 1.46x2.93
No shutter: Frame Transfer CCD.