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Co-optical Path kHz SLR at Kunming Station

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Background Introduction

Co-optical high repeat frequency SLR technique is very difficult!!!

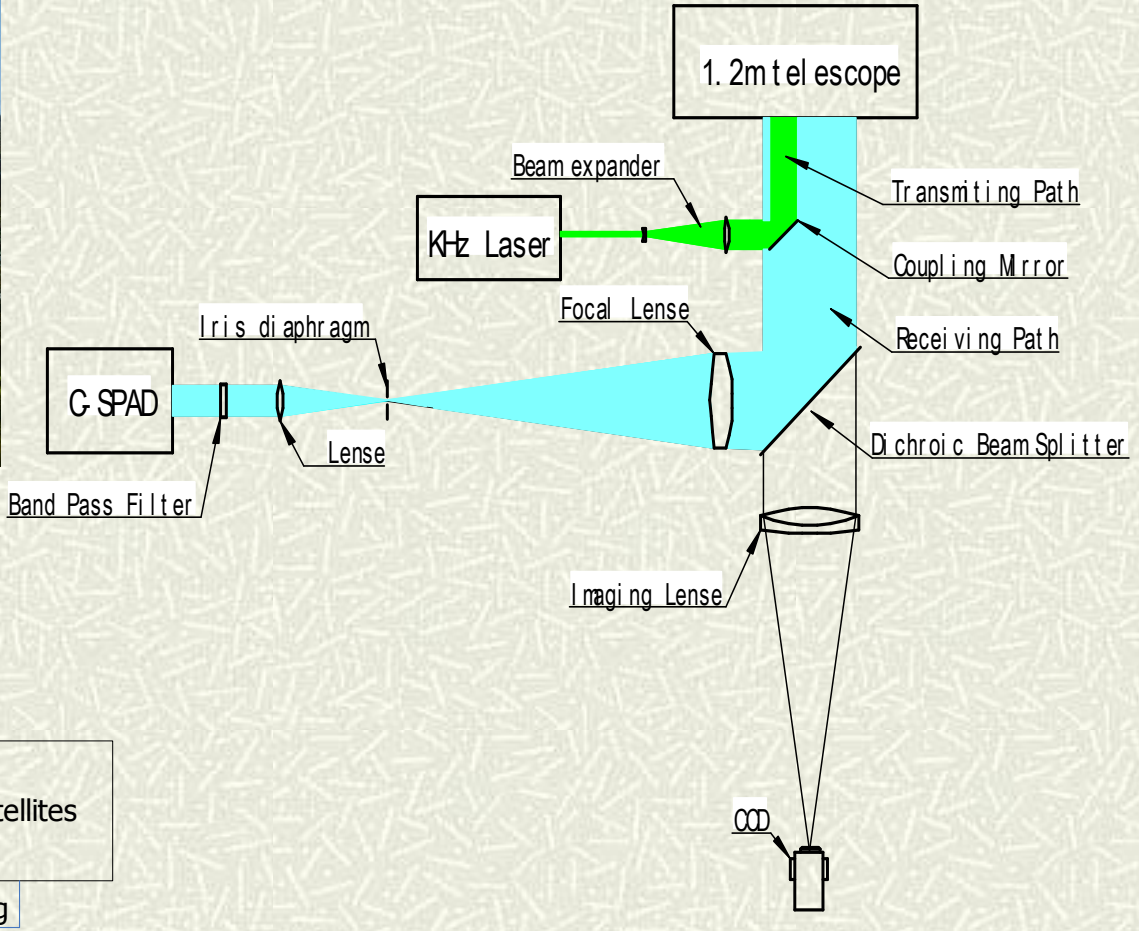
So we planed to do 20Hz SLR before 2009 and ordered the laser from Continus Company, but the order was denied by their government.

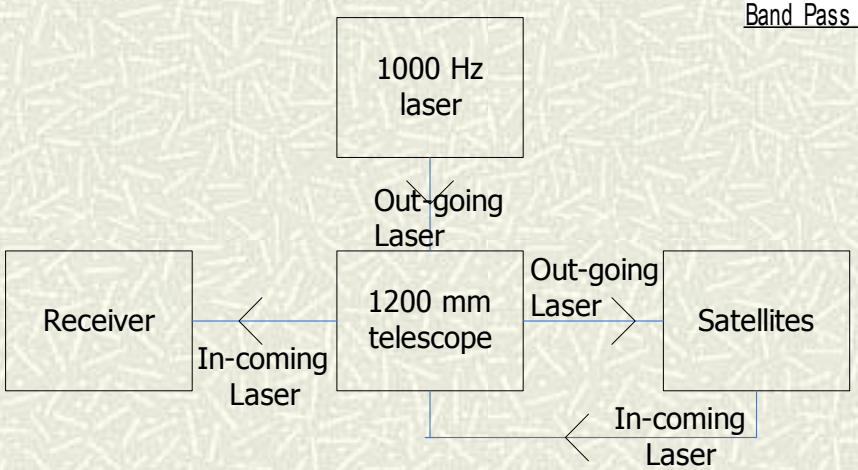
The Laser part of parameters:

20Hz,110mJ/pulse,100ps width

=>Work was delayed several years…

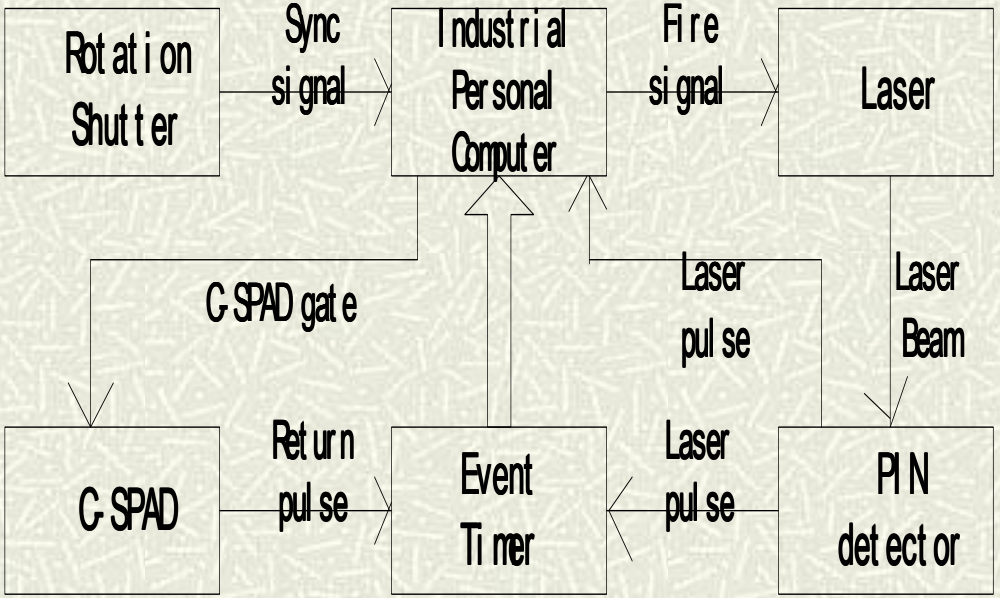
kHz System---Co-optical Path



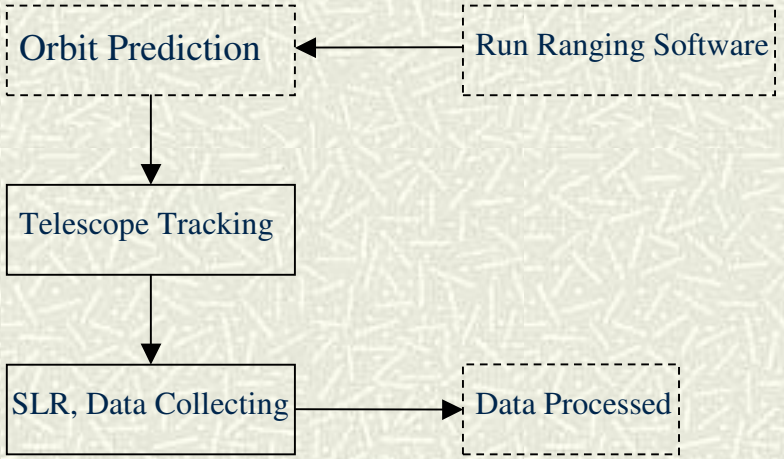


1.2m telescope is used as both transmit and receive instrument.

kHz System---Ranging Control

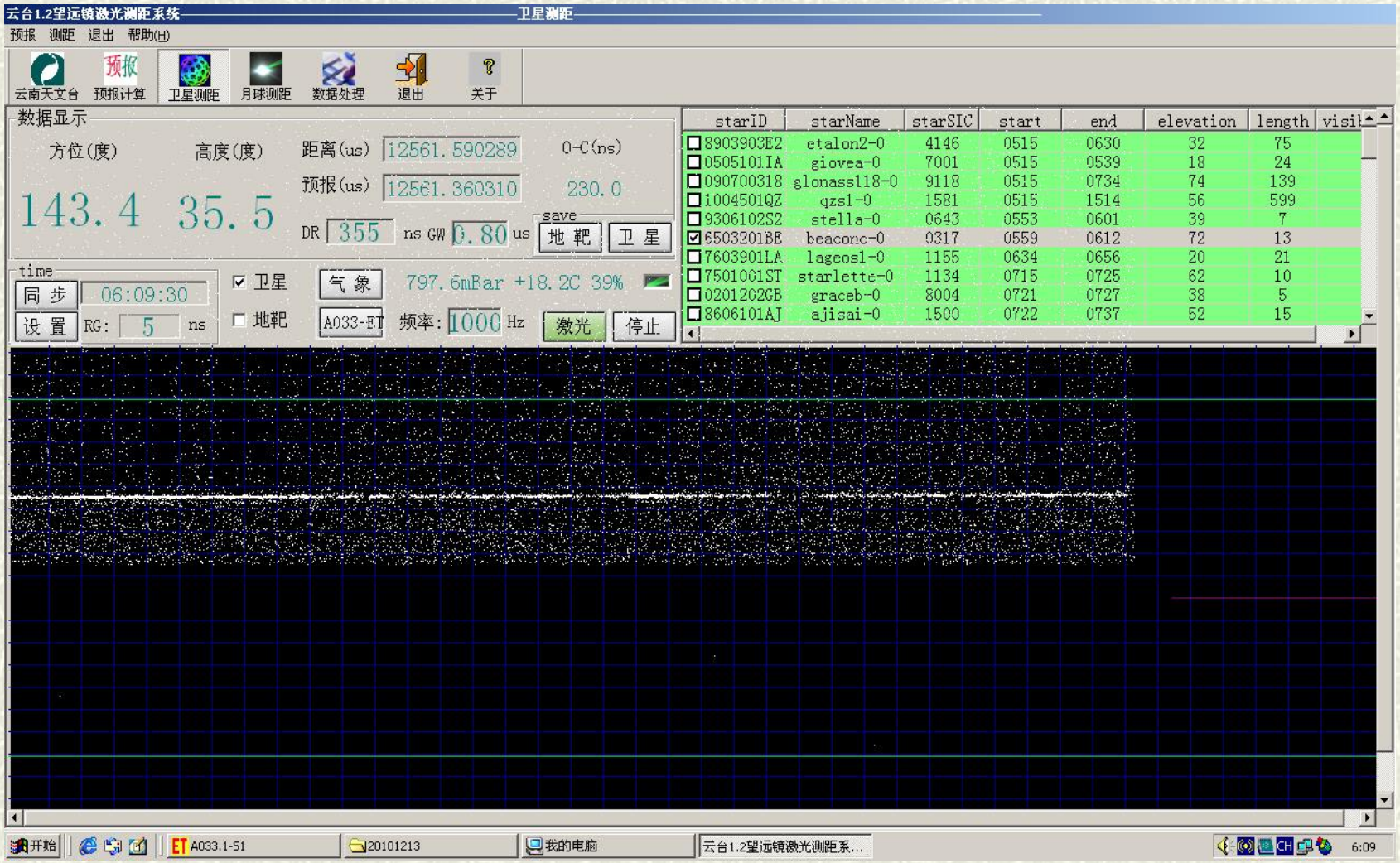


SDMI:
Single Document Multi Interview



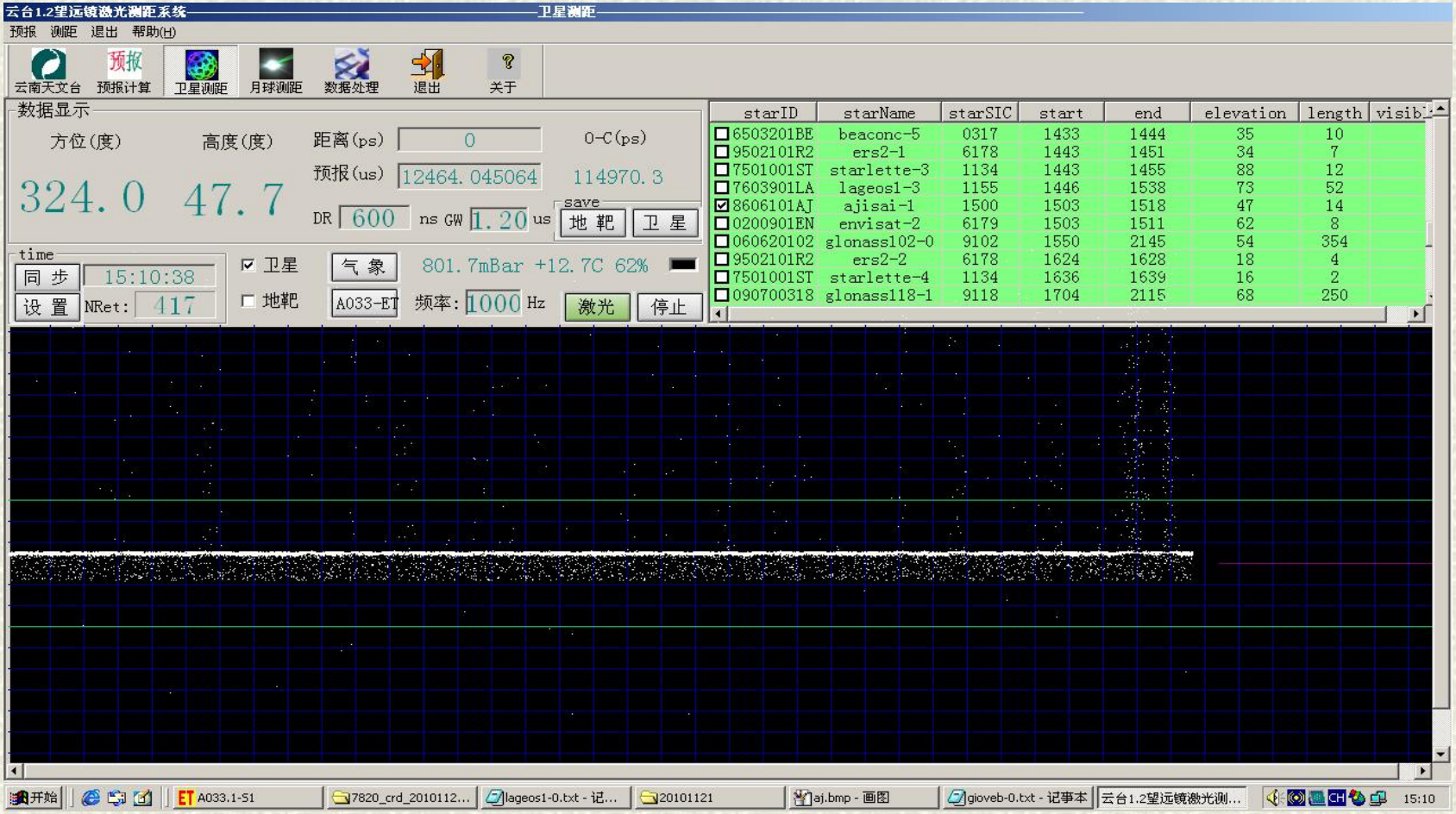
Observation Status

1,Daylight ranging capability (Beaconc)



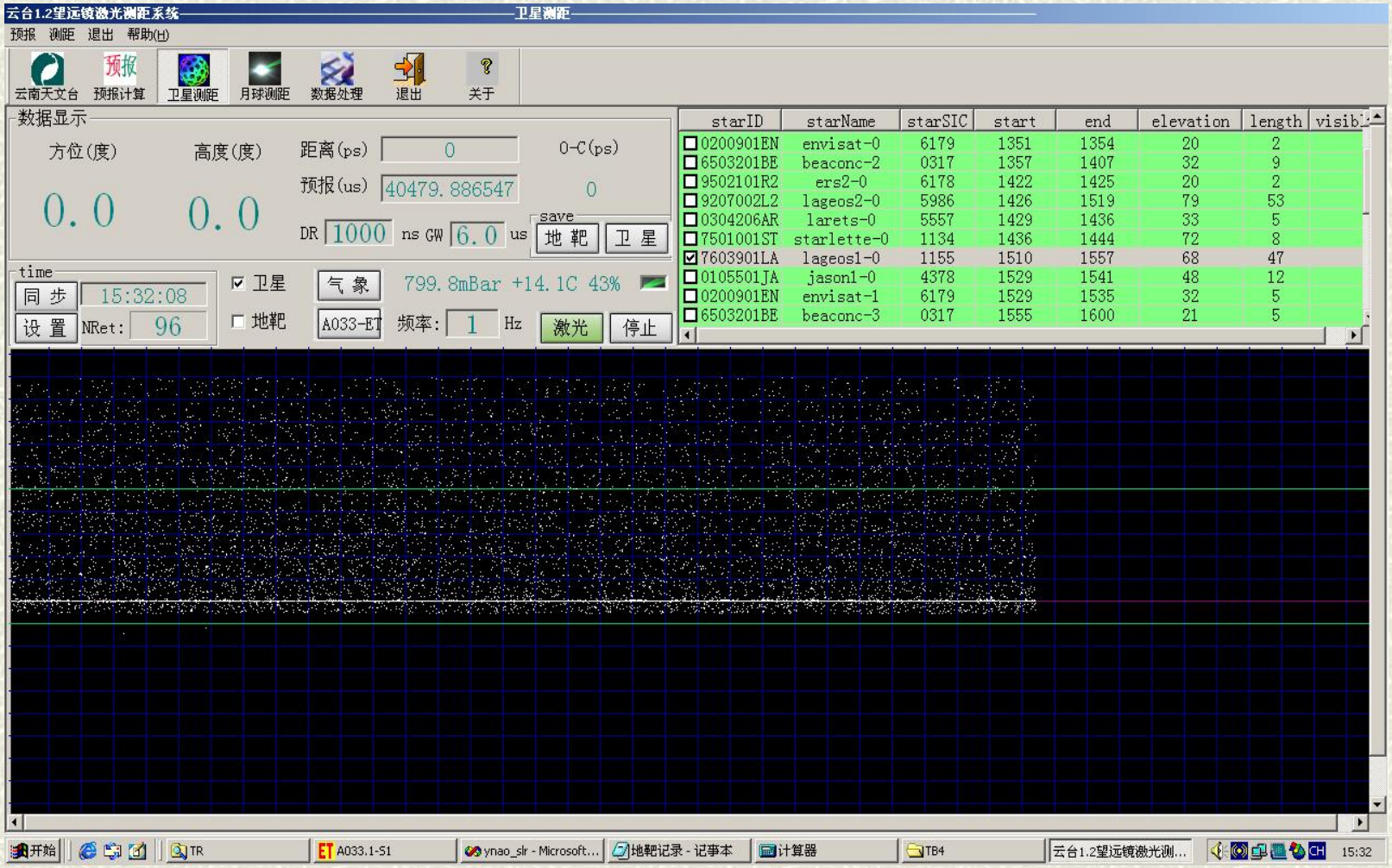
Observation Status

2, Routinely night ranging (Ajisai)



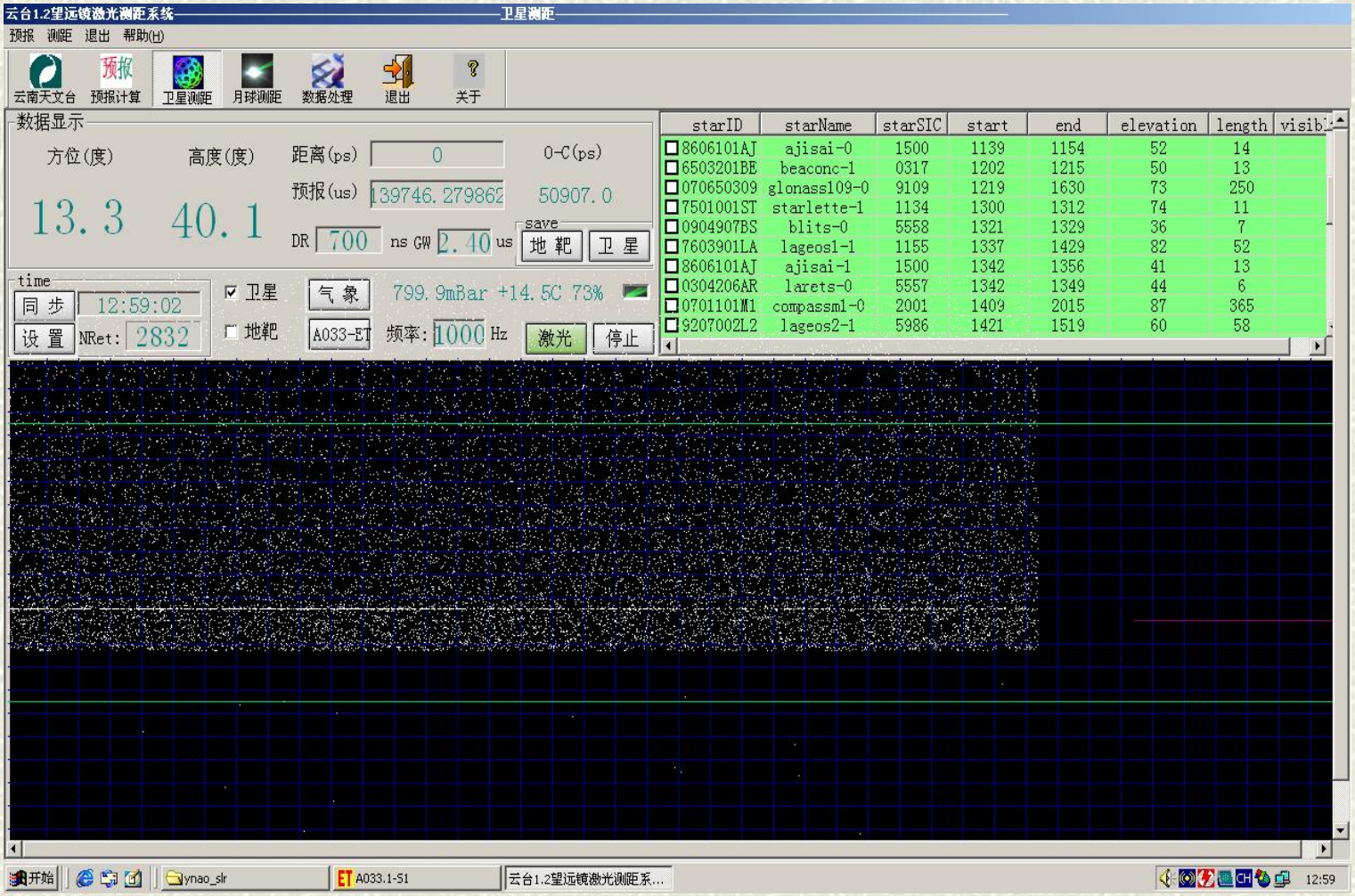
Observation Status

2, Routinely night ranging(Lageos)



Observation Status

2, Routinely night ranging(115)



Key Technique

epoch(s)	frequency (Hz)
52167.74765	1003.209371
52167.74865	1003.309512
52167.74964	1001.911749
52167.75064	1002.198528
52167.75164	1003.209664
52167.75264	1003.3217
52167.75363	1001.090285
52167.75463	1003.921925
52167.75563	1003.709411
52167.75663	1001.911844
52167.75762	1003.109543
52167.75862	1004.00971
52167.75962	1002.310725
52167.76061	1002.198425
52167.76161	1002.80987
52167.76261	1003.109543
52167.76361	1003.409387

Rotation Shutter:

1, to generate fire signal's synchronization pulse(1002.8±1.5Hz)

2, to reduce backscatter noise of transmit laser to SPAD

3, let return photon to receiver,…

Looking into the future

1, to pass the “OC Validated ” procedure as soon as posibble.

Single CRD format observation data sent by more than 6 months. Both CRD format and NP format have been sent for 1 month, but NP format data hasn’t been taken away.

Looking into the future

2, to carry out LLR experiment.

Though LLR is very difficult, we would do a series of experiments for LLR in order to completely utilize our 1.2m telescope advantage.

3, to research the application of SLR data.

Thanks:

CRUSTAL MOVEMENT OBSERVATION NETWORK OF CHINA !

Thanks for your attention!