

May 29 2009

MR, AK, JL, TG, MM, PZ

operator Dave

Zen = 1.3
Telescope collimation EW = 0.0, NS = -0.5
Temp = 2.8 C

First night

PUP.1000 Image of the Aurail.

Setting up at 12265cm⁻¹ C₄H₂ ~~try~~ CUF at 100.98

~~Leo.1001~~
Went to imaging mode to find R Leo

108,128 center of Ael

focus = -1.95

R Leo.1001 good after pair 9

going to Ceres

Cer.1002

8.15 Cer.1003 good at pair 9

Titan

tjt.1004

8 mjd - can't see in a diff region well
try here then shift E in & try to
offset finding

tjt.1005

moved 14" E from where we took data ~~no~~ 1009
ended after 6 pairs no signal

tjt.1006

moved 1.4" W from tjt.1004
Auto barely no signal

8.55 tjt.1007

~~at~~ same offset at 1004 good file

May 29 2009

MR, AK, JL, TG, MM, PZ

operator Dave

Raw = 1.3

0.4 = 1mm

Telescope collimation

EW = 0.0, NS = -0.5

Temp = 2.8°C

First night

PUP. 1000

Image of the pupil.

Setting up at 18265cm⁻¹C₄H₂ ~~try~~

CVF at 100.98

~~Leo. 1001~~

Went to imaging mode to find R Leo

108,128

center of Ael

focus = -1.95

R Leo. 1001

good after pair 9

going to Ceres

Cer. 1002

Cer. 1003

good at pair 9

Titan

Tit. 1004

+3 in oscurum

8 mod - can't see in a diff way well
try here then shift EW + try to
pick up that way.
offset finding

Tit. 1005

moved 14" E from where we took data
ended after 6 pairs no signal
1009

Tit. 1006

moved 1.4" W from Tit. 1004
quite badly no signal

Tit. 1007

~~same offset as~~ 1004

good file

t.it, 1008

Arrows at 1008

t.it, 1009

Pair 14/15 very variation

t.it, 1010

t.it, 1011

Change wavelength 1222 cm⁻¹

t.it, 1012

t.it, 1013

clouds increasing

t.it, 1014

cloudy - bad

t.it, 1015

"

t.it, 1016

Still cloudy

4

Cones

try to get a complete clean pair

cen, 1017

clouds

pair good = 2, 4, 5

cer, 1018

good pairs 9-10

Vega

al yr, 1019

clouds

Moved to 2 when to focus - changed it to -2.05
moved back to al yr

al yr, 1020
re probably garbage (skip)

al yr, 1021

ended early guide look died

al yr, 1022

pair 3 on one good

2149, 1023

strong variation

NGC 5506

- Galaxy in STV at 945 cm^{-1}
medium mode

n 5506, 1024

AScan - clouds
subject was wrong in height
couldn't see the source

Alpha 600

$\lambda = 4.2 \text{ mm}$ Temp = 2.5

aboo, 1025

med mode 5 cm

aboo, 1026

aboo, 1027

Engineering because of clouds

try going to HD R(4) at 434.2

5 orders

try going to HD R(5) at 514.8

(2 orders)

" " to C₂HP

518.7

(3 orders)

changed to 2148 cm^{-1}

~~at~~ going to zenith
testing bias at med mode at 5 um

bias, 1028

to see integ, bias 50 V-dot-4.4

black $\approx 30,000$ to

1029

V-dot-4.0

prob. about better
S/N but

not by much

10:25. 1030
bias. 1031

we're around CUF
6 sec, 50 gain, V-dot = -4.0
11 11 -3.6
I think both the
same 5/4N

NML Cyg

NML Cyg . 1032

Change wavelength 1288.05 CH on C-C₃H₃⁺
2.0" red

NML Cyg . 1033

Changed focus to -2.12 looks better

Temp = 1.5

NML Cyg . 1034 good - was in slave mode
ended only

. 1035

waiting for Jupiter to rise

. 1036

Jupiter South pole

Jup. 1037 cloudy ended early
to start over - I think I like my current
position - There is signal in
1037, but I was guiding a lot
& sky is terrible

Jup. 1038 no guiding - just left the telescope alone

. 1039 really good

10:05, 1030

vis on ground COF
6 sec, 50 grains, V. det = 40,

6:05, 1031

" " -3.6

2 stars together
seen 3/4

NML Cyg

NML Cyg, 1032

Change wavelength

1288.05 CH on c-C₂H₃⁺
1.5" red

NML Cyg, 1033

Changed focus to 2.02 Lick 100mm

Group = 1.5

NML Cyg, 1034 good - weak in 25mm mode
small only

.1035

waiting for Jupiter to rise

.1036

Jupiter South pole

Sup. 1037

Clearly small only
to start over - I think I like my current
position - There is signal in
1037, but I was guiding a bit
→ sky too thin

Sup. 1038

no guiding - just left the telescope alone

.1039

usually good

we've moved CUF
 6 dec, 50 gain, v-dot = -4.0
 11 11 -3.6
 } there's both the
 same 5/4N

NML Cyg
 NML Cyg, 1032

Change wavelength to 1288.05 CH on c-C₃H₃⁺
 2.0" not

NML Cyg, 1033
 Changed focus to -2.12 looks better

Temp = 1.5
 NML Cyg, 1034 good - was in stare mode
 ended early

.1035
 .1036 waiting for Jupiter to rise

Jupiter South Pole

Jup, 1037 cloudy ended early I like my current
 to start over - I think I think I like my current
 position - There is signal in
 1037, but I was guiding a lot
 & sky is terrible

Jup, 1038 no guiding - just left the telescope alone
 .1039 really good

Jupiter North Pole

Sup. 1040 I think it was to far E + South
put in mirror + repositioned

Sup. 1041 guided lance west pair 11

Temp 25.5 cm

Sup. 1042 Pound hot spot
= -36 1/8 off spot

Sup. 1043 Packed up by pair 4 ~~at~~

Sup. 1044 Really good - best so far
changed water from 0.0021 E to 0.0011 E
moved 1" south in pair 3
Moved back north in pair 5
Reduce dry ship = 1-5

Sup. 1046

Sup. 1047 seeing is pretty poor

Sup. 1048

Sup. 1049 sky is getting poor again

Sup. 1050

Sup. 1051 bad leads - still good but
going to move several inches North
to try + get limb + hot spot 30" N

Sup. 1052

bounce in foot two pairs

Sup. 1053

bounce!

May 30, 2009 (UT) Shift 1: TG, AK, MR

Thick clouds. Start with array/instrument data for Dr. McKevey,

Echelle at 518.5 cm^{-1} in case we open,
 Filter at 340° - between 1" filter and CVF
 slit at 330° - between 4i-10 slits.

Looking at tub.

tub. 2001	10 sec	see glow and faint spectrum.
black, 2002	10 sec	Repeat with black so Bill can look for
. 2003	5 sec	a star.
, 2004	2 sec	
. 2005	1 sec	

Go to shiny

shiny. 2006	1 sec
. 2007	2 sec
. 2008	5 sec
2009	10 sec

Really tough to find anything through clouds. Tried optical and IR from β Gem to R Leo. Tried

What worked was med mode scan on IAC⁺ 10216 at 1246 cm^{-1} ,
 Focused (-1.75) then went to ~~Saturn~~ 587 cm^{-1} (Focus -1.9).
 Then went to Saturn. Don't see anything.

7:05 p.m.
 set up at 1246 cm^{-1}
 pointed towards south pole of Saturn

Set. 2010
 Crafty clouds - nothing
 best values was 2000 and DC
 just out and see if we can see anything

Giving up on Saturn → switch to Alpha Boo

at Alpha Boo ~~Revised~~ -2.05
at 780 ne II

also, 2012 not ~~at~~ about 780
good on pair 4

Galactic Center

9c, 2013

quick look did

mid = 4
middle of scan 1 off by $\approx -1, 0$
 $-1.1^E, 0^N$ was when star came across the
crosshair

scan 2 star crossed crosshair at
 $-2.6^E, 0^N$

scan 3 $-3.3^E, 0^N$

scan 4 $-5.4^E, 0^N$

To move the crosshair back to our starting position
we had to move $-5.9^E, 0.9^N$

9c, 2014 I had to check flats - sky, shiny, dry, black
off by $-0.5^E, 0^N$ when crossed center

at end moved telescope $-2.3^E, 0.6$

9c, 2015 Now we have a star at first position of scan
I will adjust the pointing at beginning of each frame

end of scan 1 / beginning of scan 2 - moved telescope moved $1.4^E, 0$
in wrong way or well

begin scan 3 - " $-3.5^E, 0$

begin scan 4 " $-2^E, 0^N$

Grand total offset after the entire file $-7.4^E, 1.6^N$

gc. 2016 4mud

beginning scan 2 moved telescope
3
4
ground total after entire file 11

didn't (was distracted)
-3E, ON
can't see my pointing object
can't see these stars
any more - cloudy

Callisto 529.5 cm⁻¹ 802

when did Jupiter go?
going to NML Cyg

changed focus to -2.25

nmlcyg. 2017

Callisto

cal. 2018

cal. 2019 pair 2 bad

IO

io. 2020

io. 2021 64 nodes
clouds eclipses

io. 2022 ended up with 49 nodes (condensation)
more clouds - but evenly so io

io. 2023

Callisto

cal. 2024

ed. 2020
2020 2021

back to i0 for i0 replace into Top shadow

i0.2025

i0.2026

i0.2027

pair 9+10 big level change

i0.2028

i0.2029

i0.2030

i0.2031

possibly capture in first half - stop good out

i0.2032

i0.2033

i0.2034

i0.2035

Calculate

cal.2036

mod 10

cal.2037

mod 8

pair 4 big winging or something
ship = 4

May 31

TG, MR, AK, JL, GB

B. 11/Dave

rotated ALT Eto Electronics rack in West of Deenan

Beta beam

setup at Aa 5(1) line 587

To have to set up on Beta beam at 17 micron
try 1246 cm^{-1} - need to be brought with rotated
Deenan

had to offset mirror by 25" North so that we can make
be brought (pick off mirror when on)
have to remember to remove that offset when they pull it out

Switch the above. Setup wrong. No offsetting needed

rotating 6" east

guiding East moves object down in med mode

Leaving ~~off~~ cross hair A

Leaving no bad

Leena

Cor. 3001

major guiding in middle - shift

Saturn

Sat. 3002

2 scans

Sat. 3003

2 scans

at 587

variable sky

Leena was
poor

Leena

Cor. 3004

Focus at -2.15

Seeing is terrible

Saturn

Sat. 3005

H2 S(1) scans

Sat. 3006

Sat looks good - b, N adjusted value

Sat. 3007

offset 3, -13

why variation

Why riding us because Sat has cent everywhere
can't

went to lower set up at 820 cm⁻¹

ESMs

cen. 3008

Focus -2.0

~~looks good~~ - guiding a lot - not great

cen. 3009

good - seeing pretty poor

Saturn

Sat. 3010

offset 3, -13

looks really

made

why variation

period 1

guiding ended early

Sat. 3012

4 mod

Sat. 3013

offset 4, -11

better position

Sat. 3014

often - reported to center of Saturn

Sat. 3015

Sat. 3016

Sat. 3017

offset 2, -9

rotated the downer back to N/S - electronics to south

going to ~~the~~ Ceres at 12475 cm⁻¹

going to try map mode when we go to Saturn

Ceres

cer. 3018

pair 10 moved north
Poor seeing (align 10)

Saturn

Map mode

Sat. 3019

Japan van - no such file just disappeared

Sat. 3020

moved SW, 15 after this file

Sat. 3021

moved 1.2W, 1.7 S ''

Sat. 3022

2nd den beam
moved #1W, #2.5 S ''

Sat. 3023

moved 3.8W, 1.1 S ''

Sat. 3024

moved 7.3W, 3.6 S

last pair in last same little odd
removed the three bad rates

Sat. 3025

moved 2.8W, 1.2N

Sat. 3026

AT 6:57 moved
way off West

NO

Sat. 3027

~~Marked~~ moved 0.5W 1.5N

Sat. 3028

moved 0W 0N

Sat. 3029

moved 8.9W 3N

78000 E

Cena

Cer, 3030 alt-out of
Arip =

twoek focus

Len, 3031

Alpha hgt

algr, 3032

peaking 4

Going to 2 Sec

u5cc, 3033

not

.3034

Set boreight to c

Scanmode

u5cc, 3035

.3036

u5cc, 3037

v

Galactic Center

Offset -20E, -20N

gc, 3038

align

after scan 1 dn

shift in dispersion

after scan 2 dn

after scan 3

atend moved total

Repeat from last page
 Total shift for entire scan - moved telescope by -6E, 1.7N

gc. 3039
 moved Telescope after scan 1 = -2.9E, 0N
 scan 2 = -4.9E, 0N
 scan 3 = -6.2E, 1.4N
 scan 4 = -8.0E, 2N

next would ~~7~~ moved Telescope after scan 1
 rather give offset each time as total offset from beginning of first scan.
 previous offsets were offset from previous scan then a second offset at the very end of the observation

offset -70E 0N

gc. 3040
 moved Telescope after scan 1 = -0.3E, 0.6N
 scan 2 = -2.4E, 0.6N
 scan 3 = -2.4E, 0.6N

in scan 4 around total frame # 600 got an error
 message - Multispanned on sum
 getting shift around 640 scan 4 = -1.8E 0.6N

offset -60E 0N

gc. 3041
 moved Telescope after scan 1 = 0, 0
 seeing parallel shift in chapters + scan 2 = 0.9E, 0.5N
 cross dispersion. scan 3 = 0.9E, 2.3N
 scan 4 = 1.8E, 2.5N

Coming to Iris Asteroid #7

Iris. 3042

Iris. 3043 10" south of 3042

change wavelength Ob ranch C₂H₂ 730

~~1215-3044~~

going to nm1cyg

nm1cyg, 3044 nod mode

nm1cyg, 3045 scan little bounce

(Eq 2) Going to Jupiter C₂H₂ 730 cm⁻¹ (SCAN)

jup. 3046 ended scan early - going to move the echelle

jup. 3047 accidentally a stare

jup. 3048 Normal scan

Moving to Callisto (Nod Mode)

cal, 3049

cal, 3050

changing C₂H₂ ~~uv#~~ to 819 cm⁻¹
seeing ~~seeing~~ is bad.

Focus = -2.2

(Eq 1) Jupiter (SCAN)

jup, 3051

Moved to Callisto (NOD)

cal, 3052

H2S(1) is new feature 587 cm⁻¹

Tonny had NNod=16 → took forever!
We've drifted starting on Jupiter for scan 5+6

(Eq)

Jupiter (SCAN)
jup, 3053

focus: -2.1

Callisto (NOD)

CH₄ 1247.5 cm⁻¹
low on the slit

(Nod)

cal, 3054

NNL cygni (NOD mode)

nm1cyg, 3055

focus = -2.02

1247.5 cm⁻¹

all previous scans have single

offset: -20 E, 0 N

telstep = 0.1 E, 0 N

mpf = 75

Equator

South Pole

North

May 32

TG, MR, AK, SL, GR, B: 11/ Dave

Beta Gemini

Some clouds (thermals) moving in + out

831 cm⁻¹ C₂H₆ for Titan
~~to see 4004~~

go to cerea - clouds right now

Cerea

cen. 4001

poor seeing + clouds
but trying anyway

stuff on windows probably

moved alt. 30° to remove a bright spot seen in all
other s.

cen. 4002

big cloud - use flatmode = old

the Titan
Tit. 4003peaking up, big cloud pairs 11-14
big 11=14
clouds + clouds, clouds

tit, 4004

crap + garbage

.4005

moving along slit in pairs 6 + 11.

Peaking up.

No positive on pair 13.

.4006

stopped early to adjust setting. skip.

Change wavelength setting to see 2 orders lower.

.4007

garbage. in blackbody (for a bit)

.4008

Just no clarity along with most everything else
pair 11 seen on titan, not a good file.
wouldn't put in sum.

4009

4010

good - pair 12-14 bad so skip

4011

first 5 obj then bad news

4012

got good around pair 8
check 4 on

checkout sequencing

t.t. 4013 first five pairs guided off of titar skip 1-5

t.z. 4014 sun is setting and so are the clouds seeing no still just terrible

increase ~~the~~ nsum to 5 from 3

t.it. 4015 good

t.it. 4016 pair 9 no per beam

4017 seeing still really poor skip 1-3

4018

Cona

Len 4019

Wavelength 824.5 cm⁻¹

Len. 4020

Titan

t.it. 4021

.4022

.4023

.4024

.4025 Golden Brouce starting pair 10

.4026

Change focus = -1.90

change wavelength 811.5

Tit. 4027 - also made by mistake

t.t. 4028

tit. 4029 bad water variation around pair 12

t.t. 4030

t.t. 4031 cloud at end last 2 pairs skip 15-16

t.t. 4032 cloudy during last several flut
skip 1-8

t.t. 4033 skip = 1-6

.4034

.4035

Con

Con. 4036

Change wavelength 805 cm⁻¹ DCN

Con. 4037

Titum

tit. 4038 h₂O variation

tit. 4039

t.t. 4040

t.t. 4041

Hum = 9

t.t. 4042

Tit. 4043

4044

4045

4046

change wavelength
 changed from 838 cm^{-1} to -1.95

Tit. 4047

Tit. 4048

Tit. 4049

4050

4051

~~4052~~

Lens

Len. 4052

change wavelength to 868 cm^{-1}

Len. 4053

Titan

Tit. 4054

.4055

.4056

airtel gain = 50

norm = 4

norm = 6

high airmas

Titan Mas set

Notes
~~10:00 AM~~
 10:00 AM

Alpha 600

change to Med mode
No FF at 780 cm⁻¹ redrafted 80knts
280,504 toward right

Ab00.4057

8" mod

Ab00.4058

20" mod
at start warn if at the right place
drown by hand
got them by pair 4
dup 1-3

also switch to -3.6V

adjust mod for slit orientation
mod = 0.5 20

Go to NCC 4102

Galaxy extended by 45° pa
leave slit at 0

ngc4102, 4059

4060

see it

better and broader

4061

2" w

even better

4062

3" w

Printer & blower

4063

4" w

off it

4064

3" w

start walking back

4065

2" w

looking good

4066

1" w

may be falling into H₂O some

4067

0

Am = 1.83

4068

1" E

Go to 7 Iris for comparison

Iris 4069

same setup as for 4102

Iris 4070

Shift to GC setup

18note store

Iris 4071

280,504 in center

some very variations

Colarite Center

offset -65E 20N

points 172 today 0.750N

gc. 4072

after scan 1 moved by -1.7E, 0N

offset quoted just like
last night (cumulative)

- water variation is pretty bad
slight paraboloid shift

after scan 2 moved -3.2E, 0N

after scan 3 moved -5.1E, 0N

after scan 4 moved -5.4 - .6N

gc. 4073

offset -65E 20N

after scan 1 moved 0E, 2N

after scan 2 " 0E, 2.6N

around 35901360 (Frame) something moved
in the instrument?
20 minutes before transit

after scan 3 " 0E, 2.6N

scan 4 " 1.2E, 4.7N

gc. 4074

offset -65E 40N
an odd water drop pattern in first scan

after scan 1 moved through zenith
paraboloid shift

after scan 2 - 0E 0.7N

after scan 3 moved OE, 1.1N
after scan 4 moved 0.9E, 2.3N

gc, 4075

bourne in scan 1.

after scan 1 1E, 9N

cloud? around frame 320

after scan 2 2.3E, 1.7N

after scan 3 1.2E, 2.1N

after scan 4 1.7E 3.9N

Go to NML epg H₃⁺

set @ 1135.5 cm⁻¹ to capture 1134.49 cm⁻¹ 1136.69 cm⁻¹

Ned NML epg = 4076

Focus -2.15
~~offset~~ NMod 4

Jupiter

JUP. 4077 offset -15.0E, 0N Focus -2.15
(SCAN) Npoints 43

telstep: 7 East step, 0 North step

@ 6 East throught we saw hotspot near top of slit

Now scan slightly North

~~top~~
jup. 4078

NMod = 4
offset same

telstep same

- 1st scan saw Jupiter but no hotspot
- 2nd scan 2 south
- 3rd scan 2 south from 2nd scan

jup. 4079 2 south
4080 cam 'x'
clearly
62
green

change to 1231 cm⁻¹

~~the~~ scan

jup. 4081 2nd scan -
~~scan not spot~~

- 1 ansec

jup. 4082 Nod . NMod = 16
Guarding in

Done guiding

in pair 14

jup. 4083 Nod NMod = 16 Done

move

Callisto

cal. 4084 nothing - accident

cal. 4085 (nod) moved south in p

Alpha Lyr

alyr. 4086 NMod = 2 encoder

alyr. 4087 Nothing

alyr. 4088 stare

4089 Nod found
moved

1990 1990-1991

1991 1991-1992

1992 1992-1993

1993 1993-1994

1994 1994-1995

1995 1995-1996

1996 1996-1997

1997 1997-1998

1998

1999

2000

2001 2001-2002

2002 2002-2003

2003 2003-2004

May 33

TG, AR start

3pm open (some afternoon clouds)

Ceres focus \rightarrow 870 cm^{-1} S order
water line @ 871.2537 cm^{-1}

Cer. 5001 seeing poor

Titam
Hgt. 5002 sky & water varying

Lit. 5003

Lit. 5004

Lit. 5005

came in really nice
bounce starting in pair 11
1st half for sure - really good
not so good

found it again pair 5 -
good file

Lit. 5007

bk's varying

~~net~~ 875 cm^{-1}

raining to catch small $\frac{1}{2}$ v line
in highest cm^{-1} order)

try shorter 1/2

order from ~12/14 - 12/19.5

wind = 12/16 cm^{-1}

~~Ht. 5008~~ go to Ceres for focus
 \rightarrow -1.75

~~Cer. 5008~~ Cer. 5009 big cloud in pair 12

Titam Ht. 5010 go to β -gem to remark bore sight

only best at for a couple hours
lms are weak
not refines Titam found right even

Ht. 5011
5012
5013

shagging to find Titam (but only
if it's dark there sometimes but rarely)

SN 799 \rightarrow size up on 12/16 cm^{-1}
 took while to find 717 cm^{-1}

was 7" ~~off~~ seeing bed & variable
 paynes beam bouncing around
 after for & probably canceled out
 the some of the fine

t.t. 5015 peaked up run 10

t.t. 5016 - very nice

t.t. 5017

fit. 5018

cer. 5019

\rightarrow 793.5 cm^{-1}

focus \rightarrow -1.95

cer. 5020

fit. 5021

good

t.t. 5022

good

t.t. 5023

fit. 5024

beautiful! Finally, everything's settling down

\rightarrow 787.5 cm^{-1}

fit. 5025

(some dust on filter showing up in run?)
 \rightarrow absorbed because of quadrupole issues

fit. 5026

Many have some dust
 first pair ok
 background levels a little odd - maybe maybe

t.t. 5027

t.t. 5028

cer. 5029 \rightarrow order early @ 13 pairs
 (BE 50 much beautiful signal)

→ 782 cm^{-1} (Ceres) 8 orders

hit, 5031

Lit, 5032

Lit, 5033

→ ~~775 cm^{-1}~~ → 776.5 cm^{-1} 8 orders

hit, 5034 ← ordered early due to guide hole failure

hit, 5035

hit, 5036

hit, 5037

cer, 5038

← (Ceres) ordered early b/c data are beautiful

→ 761 cm^{-1} on blaze 7 orders

cer, 5039

hit, 5040 moved north in pair 1072

Lit, 5041

guided off pair 7+8

hit, 5042 end early pair 9 no good again

→ 873.5 cm^{-1} after 10 pairs 6 orders

hit, 5043

hit, 5044

cer, 5045

hit, 5046

End of T12m

Go to [N2E] at z = 2133 km/s

for NGC 4385 224.67 long slit

nod 0.5 20 224.2X near middle

aboo, 5047 nodwait = 3.0 appears to wait 3.65 = 4x0.9
5048 1.5 1.8 = 2x0.9

Can't do 4385 without a guide star

Go to z = 0 for GC 780.504 in center

Start 70" W, 40" S of *S
Scan 172X 0.7"E

gc. 5049 1 scan - guide star died came back nicely

gc. 5050 started 1 arcsec East

gc. 5051 move 2 arcsec W and 1 arcsec N
NMod = 3

For 3 scans, then move 20 arcsec South
and do 2 groups of 4

at end of scan 1 moved 1 arcsec West

gc. 5052 -70E -60W S

at end of each scan have to move 1" N + 1" W

gc. 5053

^{irss} .5054 Nod .offset -13E, -10N
npoints 1 NMod = 16

Move to ~~NML~~ Cyg Focus -2.3

nm1cyy, 5055 NMod = 6

nm1cyy, 5056 NMod = 2, offset -10E, 10N
NMod 0E, 5N

Moving to Callisto and Io

Callisto
cal. 5057

SO₂ 530 cm⁻¹
 N.Nod = R₁ offset = -13 E, -10 N, nod 0 E, 10 N
 focus = -2.3

- guided North on pair 4

cal. 5058

Io
io. 5059

io. 5060

io. 5061

io. 5062

io. 5063

io. 5064

io. 5065

io. 5066

Callisto

cal. 5067

moved South in pair 3

Io

io. 5069

io. 5070

io. 5071

io. 5072

io. 5073

io. 5074

io. 5075

Callisto

cal. 5076

skip pairs 1 through 3 guiding

~~Callisto~~
cal. 5077

Europa

eu. 5078

changed to 1350 cm⁻¹

NML 419

ANML 419, 5079

upper three file

focus = -2.0

F0

10. 5080

2 vit 50 gain

norm = 4
16 rods

end file early

redding off source
2 vit 6 norm
50 gain
ended early

10. 5081

Stygnoise pair 4

2009 May 31 TG, HR
3pm start (found one ~1" @ (+) of pairs)

→ 844 cm
focus → ~~1.85~~ - 1.85

Seeing is short & some pairs will be blanked

cen. 6001 pairs blanking around - lot due to seeing

fil. 6002 - ~~found~~ ~~between~~ ~~pairs~~ ~~11~~ ~~112~~
long by ~~UTIR~~ time check but times at
(Day crew are here & were probably messing around w/ network)

fil. 6003 - pair 12 cancelled end of the out

fil. 6004 - better file

fil. 6005

fil. 6006 - good file

fil. 6007 → 950 cm⁻¹ (ethylene) (9 orders)

fil. 6008 - not seeing if immediately but let digest should
found at in middle of pile
glued with in pair 12

naum = 4
2 use vid 501000
naum = 3

fil. 6010 best so far

fil. 6011 naum = 4

fil. 6012

fil. 6013

fil. 6014

cen. 6015 skip first 4-5 pairs

→ 944.5 on -1 (9 or less)

cen. 6016 found → -1.82 entered early after 8 pairs

hit. 6017 → start out on Titan & have to go find it

hit. 6018 → New found it found a little low on 51.6

hit. 6019

hit. 6020 assum = 4

hit. 6021 miles ~ 0.7" N in pair 5

hit. 6022

hit. 6023

hit. 6024

humidity & bkgd are varying

→ 938.5

hit. 6025

got it @ pair 11, think isn't there in any other pair

hit. 6026

never had it

hit. 6027

haven't found it. See if we can find it on scanner

hit. 6028

try re-pair's after check star (still cannot see Titan on guide) got it @ pair 13

hit. 6029

hit. 6030

hit. 6031

hit. 6032

hit. 6033

hit. 6034

sum
may need to pipe
the residuals
and subtract the
background
for moving on

cer, 6035

good pair 4
and early bc
order have enough.

→ 932 cm⁻¹

highest on order
so, ~ 93075 → 9348 cm⁻¹

CO₂ line

cer. 6036

cut off after 4 good pairs

ht, 6037

setting it @ pair 10

ht, 6038

ht, 6039

struggling to find it
try re-pairing
getting it @ pair 10

ht, 6040

ht, 6041

ht, 6042

ht, 6043

ht, 6044

→ 927.5 cm⁻¹

ht, 6045

ht, 6046

ht, 6047

ht, 6048

ht, 6049

ht, 6050

cer, 6051

cut early

Some other
Some noise... hair
from Gemini
machine follows
blowing

→ 852 cm^{-1} (11 orders!)

~~pan best~~ focus ~~to~~ -1.97
cen, 6052 ordered after 6 pairs

fit, 6053

fit, 6054

fit, 6055

Titan set

Go to 408.76 for [No II] at $z = .006$

also, 6056

also, 6057 had 20" along slit flat 409.504 on right focus - 2.4

Found a guide star (essentially) for NCC 5506

N5506, 6058 enter image on TV

6059

6060 1" W

6061 2" W

6062 3" W

6063 1" E

6064 2" E

right see it

Switched to [No II] for S_{gr}A E III

Alpha 54
Also, 606155 had of 0, 4 to big ended early

Asc. 60666 had of 0, 3 good ~~ended~~ ended early though

gc. 60667 scan -15, 0 offset move 2.4" W 0.1" W
0.7, 0 step after 6067

gc. 60668 start -15 to 5 move 0.5" W to get back to 4
43 points

gc. 60669 start -15, 0 move 0.5E 0"

gc. 6070 offset -15E, -5N
 move 1E, -1N

gc. 6071 15W, 10S lost our sticky note - no guiding

gc. 6072 *15W, 15S ~~15W~~
 15N, 20S

gc. 6073 moved a tiny bit West

gc. 6074 15W, 25S
 moved 1/2" South

gc. 6075 ~~15W~~, ~~30S~~
 moved a touch West

gc. 6076 → ~~15W~~, ~~35S~~
 15W, 40S
 moved a bit East

gc. 6078 → 15W, 45S
 moved 1/2" South

gc. 6079 15W, 55S

NML Cyg changed wave 1247.5

NML Cyg - 6080 not
 focus = -2.0
 ended early.

JUP. 6081 scan

JUP. 6082

jup. 4083 hotspot found -2.4E of our setup point

jup. 4084 doing a manual step scan from the east by .1" steps

step scanned by hand from hotspot about 18" E didn't see a second peak

jup. 4085

jup. 4086 need to reduce each pair by 2 bands

jup. 4087 nod .NWD-2 ended after 3 scans

alpha ag1

ag1. 6088

offset guiding

change wavelength to 1189 cm⁻¹

ag1. 6088 ended early - to noisy mirror

ag1. 6090

mirror = 9 seeing seems a little poor focus = -1.9

move focus back to -2.0 after the other looked bit soft, ~~th~~ than it should

Back to Jupiter

jup. 6091

scan and scan South -1.83
inverted w east after scan?

Moved 2 more "South" scans

Try. 6092 need also where I think the hotspot is
 moved around a lot but found something
 a little bright

Try. 6093 looks good to me
~~however~~ and doesn't seem so hot optically
 need to reduce one pair at a time

Try. 6094

pair 5 moved 2" E

pair 6 moved 2" E

pair 9 moved 2" E

pair 12 11 2" E

Try. 6095

try this last position for a while

Try. 6096 scan made because I don't have a
 better idea
 burner
 ended early / try again

Try. 6097

after 5 scan
 1 - scan 2 move E 3 2"
 scan 3 - 2 N 1"
 - 2 N, 2 E

Try. 6098

2 south of previous 5 scan value
 increased up north to

Try. 6099

South 2 more scans E

Try. 6100

Moved 4 north & started scan

May 35

Notated the down 354 East of North

Focus on ~~RT~~ A Leo

= -1.65

Tamp = 3.5C

As H3

Setup at 2084

4 sec int time

5 min

6 sec not wait

good pair 1

moved off pair 2

none in pair 5

rod = -1.50 E 20 N for file 7001

A Leo. 7002 changed rod to -0.75 10

guiding in pair 1

pair 4 is perfect

A Leo. 7003

Coming to Saturn

5:24 Sat. 7004

after file moved -3.3 E, ~~0.6~~ 0.6 N

5:36 Sat. 7005

Moved -3.6 E, -1.5 S

5:51 Sat. 7006

try to not allow alt

offset from center of alt by 0.5 E -8 N

rod -1.5 E 23 N

Moved -2.1 E 0 N

This ended

need to
remember

Oct. 7007

Oct. 7008

0.5 - 8 offset
-1.5 23" mark

Boards to Alpha

also. 7009

also. 7010

see the
in reg beam to
guide in

guiding

also. 7011

Saturn

Oct. 7012

object name is

Oct. 7013

a

object name wrong

Oct. 7014

object name is

2 Leo

also. 7015

also. 7016

Ship = ~~5~~

ends

Saturn

SAT. 7017

after file moved by 1.5E ON

Sat. 7018

after file moved by 2.9E ON

sat. 7019

after file moved by 0.9" W ON

sat. 7020

Alpha Vir

avir. 7021

avir. 7022

~~Alpha~~Alpha 600 at 532.87 cm⁻¹

S III

Measurement

~~alpha 7023~~

Alpha 600 at new T setting

.814.4 cm⁻¹

abog. 7023

focus -2.0 is pretty good
NMod: 8
and early

Galactic Center

CND-N

gc. 7024

offset ~~0E, 20N~~ 0E, 20N
telstep .70E, 0N
npoints 87

After scan 2 moved N 1.3"

gc. 7025

nmod = 8

moved by 0E -1N after scan 4
after scan 6 moved 0N -1E

(Probably wrong direction)

We are currently writing the offset
present program offset not
total unprogrammed offset

after scan 7 moved 1.4" E

gc. 7026

moved x 0.5" E ON

after scan 3 moved 1" E

after scan 5 moved .7" E ON

gc. 7027

moved 0.3" E after scan 7

bit of water restriction

moved .5" E after scan 4

moved -0.4" N after scan 5

moved -0.7" N after scan 6

in scan 8 see the water drop bumping

gc. 7028

parabola shift in first 5 scan towards end

moved 0.6" E after scan 3

moved 0.5" E, ON after scan 4

moved 0" E, -0.4" N after scan 5

moved 1" E, ON after scan 6

Callisto

~~gc. 7029~~

same x

cal. 7029

NWod = 8

cal. 7030

NWod = 10

cal. 7031

messed up end of pile
created i1.7031

Ex

1. 2007

2. 2008

3. 2009

4. 2010

5. 2011

6. 2012

7. 2013

8. 2014

Calculation

1. 2007

2. 2008



May 30

TG, JL, GR, TN

Eric

Alpha Leo

NMod = 8 2084 cm⁻¹

seeing is poor right now

also 8001

slit is too wide per file - 2" slit rather than 1.4" slit

also 8002

may be crappy - found also on last pair

also 8003

nothing - autosave accidentally ON

also 8004

Saturn

offset -5E, 8N Nod 1.5E, -2.3N

Sat. 8005

after file moved -2.7E, 0N

Sat. 8006

after file moved -2.1E, 0N
offset -4E, 7N
nod 1.5, 2.2

Alpha Leo

also 8007

checked focus and left at -1.75
offset -4E, 7N
nod -0.75 E, 10N

Saturn

Sat. 8008

offset -2E, 6N
nod 1.5E, 6N
NMod = 8

Sat. 8009

after file moved 0.9E, 0N
~~offset -2E, 6N~~
after file moved -0.1E, 0N

Sat. 8010

~~after file moved~~ No move

Alpha Leo

aleo. 8011 ~~offset~~ offset -0.4E, 1EN
nod -0.75E, 10N

didn't see it - ended early

aleo. 8012 ~~the~~ Focus -1.8S
pair to good

aleo. 8013 a good file - 1 pair missing

Saturn

sat. 8013 garbage

sat. 8014 after file moved by 0.6E, 0N

sat. 8015 after file moved by -0.6E, 18N

going as still copy moving by atleast 0.5" not more

sat. 8016 after file moved by 2.1E, 0.6N

Alpha Leo

aleo. 8017 pair 7 spay

going to try to go continuous to ship flat
try to get a couple more nod pairs

aleo. 8018 ~~wept~~ ~~to get~~ ~~set~~

didn't work ~~Redhead~~ - stop this reduction

one decent pair
ugh. tough with poor value
ended early as camera through 2 mirrors

Saturne

Sat. 8019

had didn't adjust the rates
so first ~~at~~ pair looks blurred
also slight at end won't give
any real info since we were not tracking
correctly during plot.

Alpha Vi

arriv. 8020

num = 4

forgot to do an edge

med = 14

~~then~~ R skip 1-7

arriv. 8021

Pen 7 got good skip 1-3

strong in trouble

Abso

Go to SSTP at z = .0607 945.69

abso. 8023

had abso

Checked pointing on SVs Good w/in (loosy) Seeing

N6C 5506

at SV 945.69
focus = -1.9

N5506.8023

we have guide star middle pos

,8024

middle

,8025

moved -1'' E

,8026

moved -2'' E of middle

.8027

moved -3'' E of middle
not obvious here

N5506, 8028

-2" E of middle

N5506, 8029

-1" E of middle

, 8030

middle

Alpha 5c0

Ne II 780.3

a 5c0, 8031

Focus = -2.05"
offset - did edge twice

a 5c0, 8032

good file - got peaked up
by ~~an~~ end

Galactic center

gc. 8033

offset -20, 0
tel step 0.7, 0

npoints = 58

after scan 1: -.5E, 0N

water in fluctuating

gc. 8034

after scan 2: -.1E, 0N

after scan 4: -.5E, 0N

after scan 5: -1E, 0N

gc. 8035

after scan 1: -1E, 0N

after scan 2: ~~0E, +1.1N~~

after scan 3: -.5E, 0N

after scan 4: -1.5E, 0N

after scan 5: -.5E, 0N

after scan 6: -.8E, 0N

after scan 7: 0E, 1N

The block (near MT-1411)

gc. 8036

scan 2	-1.5E, ON
scan 3	-0.5E, 1.5N
scan 4	-1E, ON
scan 5	-1.5E, 1N
scan 6	0E, -1N
scan 7	-1E, ON

→ moved ~~two~~ bar N

Callisto 502

found = 2.45

cal. 8037

cal. 8038 Arip Pair 3

being so really poor

To

io. 8039

0

Do. 8040

pending 1-3

io. 8041

io. 8042

io. 8043

io. 8044

io. 8045

changed from To -2, 4 in pair 12
slightly better

io. 8046

ratio - 0.0050 E

io. 8047

0.0005 South

Callisto

cal. 8048

cal. 8049

[Io]

io. 8050
io. 8051
io. 8052

moved 15' south

io. 8053
io. 8054
io. 8055
io. 8056
io. 8057
io. 8058

same bounce

Calviato

cal. 8059
cal. 8060

[Io]

io. 8061
io. 8062
io. 8063
io. 8064
io. 8065
io. 8066
io. 8067
io. 8068
io. 8069

seems to get better

same bounce

(Calviato)

cal. 8070
cal. 8071

Game Over

(May 37) TG, GB, JL, Dave

H₂ 5(1,0) 586 cm⁻¹ rotated alt 4h

form up using Rlee + make receipt

temp alt at -21 Temp 3.4°C
low receipt at center of orbit

~~area~~

~~sun~~
~~sat. 9001~~

getting slight
after file moved by -2.1E 1.1N

sat. 9002 after file moved -2.1E 0N

sat. 9003 after file moved -1.8E 1.1N

sat. 9004 after file -.6E 0.3N

sat. 9005 after file -1.9E 1.2N

odds in team? out
shouldn't hunt the data
didn't check - close was fine

moved after 0E, 3N

area
sat. 9007
cen. 9008

Moved ~~sat~~ down in alt pair 4

strip 1-4

sat. 9009 Changed 7 to 730 cm⁻¹ Mod Obs.
bad bounce pair 7

Saturn

Sat. 9010
 after file moved by
 offset -2E, -13N
 telstep OE, .7N
 NNval = 4
 npoints 42
 1.2E, 2.1N
 Focus = -2

Sat. 9011
 after file moved
 offset -1E, -13N
 1.5E, 1.5N

Sat. 9012
 NNval = 6
 after file moved OE, .6N
 after file moved -0.9E, 0N

Sat. 9013
 Non sidereal rate \rightarrow -0.0035"/s, -0.0005"/s is working well at this point

Sat. 9014
 after file moved
 offset -0.9E, 0N
 NNval = 8
 after file moved OE, 1.5E, 1.2N

Sat. 9015
~~after file moved~~
~~offset -0.9E, 0N~~
~~NNval = 8~~
 after file moved
 change λ to 519.3 cm^{-1}
 C2HD not a branch
 Focus = -2.4
 3.3E, -0.9N

~~Non sidereal~~
Wave

Sat. 9017
 after file moved
 offset file moved -1.5E, 0N

Sat. 9018
 after file moved
 offset 3.6E, 1.5N
 Saturated seeing third
 ended early after scan 3
 didn't check pointing

Sat. 9019

ast. 90200 *brance*
 ended after 9's ans
 after file moved 1.5E ON

Ceres

cer. 90210 garbage
 cer. 90220 NMed = no sky navigation

Alpha Sco

asc0. 90240 INCONTINUOUS but taking data
 ended early w/ 1 good pair

changed wave to 780.3 cm^{-1} ~~set elsewhere~~

sampled
 w/ N/S

asc0. 90250 NMed = 8 → 0E, 0N
 needed east - ended early
 w/ N/S slit

asc10. 90260 NMed = 8 → 0E, 0N

Galactic Center

telstep 7E, 0N npoints = 93
 offset 0E, 20N

gc. 90280 offset 0, 20N
 after scan 1 -1.3E, 0N
 3 -1.5E, 0N
 -1.8E, 1N

Starting on N arm
 will have to take sky
 from end of scan

gc. 90290 scan 1 -1.5E, 0N
 2 -1E, 0N
 4 -1E, 1.5N
 5 -1E, 0N
 6 -1E, 0N

gc. 9030 ~~offset~~ moved to .0E, 40N offset

scan 2 -1.5E, 0N
scan 5 -2E, 0N
scan 6 -1.5E, 0N
scan 7 -.5E, 0N

gc. 9031 offset 0E, 40N

~~scan~~
scan 2 -1E, 0N
scan 5 -1E, 0N
scan 7 -1E, 0N

gc. 9032

new offset
npoints 58

~~scan 7~~ → -70E, -45N

ended early - wrong offset

gc. 9033

offset

~~scan 7~~ -70E, -25N

scan 3 0E, -.6E
scan 5 0, 1N

gc. 9034

scan 3 0E, 7N

gc. 9035

scan 1 0E, 1N
scan 5 0E, .5N
scan 7 0E, .5N

Alpha Agl.

1288, 5
focus = -2.12

gc. 9036

Dypter

gc. 9037

5 scan
after scan 1 moved 2.5N

after scan 2 moved 2N

after scan 3 moved 1.5N

Nod

Jup. 9038

NSum = 1

ended early

NNod = 11a
nod 0E, 25N

Jup. 9039

Jup. 9040

Jup. 9041

Jup. 9042

Scan

adjust -15E, 0N, telstep .13E, 0N, nprints 45

Jup. 9043

after scan 2 moved -1.5N
0E

back to Nod mode

NNod = 1e Nsum = 1e nod = 0f, 25N

Jup. 9044

Jup. 9045

Jup. 9046

Jup. 9047

sky noise in pair 10E, 11

Scan

NNod ~~11a~~ Nsum = 1

Jup. 9048

after scan 2 moved 0E, 1N

Nod
Jup. 9049

Jup. 9050

Jup. 9051 pair 5 - Very BIG BOUNCE

Jup. 9052

seems to be brighter to the East

Jup. 9053

sky variation pair 11+12

Scan

Jup. 9054

adjust -5E, 0N
telstep 0f, 20E, 0N
ended early - did 2 scans

* scans were
mostly
off

Jup. 9055 NSum=2
made about 2" N after scan 2

Middle of Jupiter

offset . -20E, 0N telstep . 7E, 0N

Jup. 9056

Jup. 9057 offset -20E, -4N
two red ~~scans~~ in middle of scan 3

Tell. rate

bounce

Jup. 9058 offset -20E, 4N

May 28 2009 T6, T7, Dave

Ca H4 950 cm⁻¹ focus = -1.97

Saturn notes - .0035 -0.0005

6:30

Sat. 1501

offset 0, -12
mod 0, -45
norm = 6

moved 2" N after pair 5

moved 2" N after pair 11

after file moved by -2.4E -0.6N

Sat. 1502

offset 0, -7
notes -0.0045 0

~~after pair 11 moved -2E~~

after file moved by -0.9E 0N

Sat. 1503

offset 0, -4
notes -0.0051 0

~~0.0005~~

after file moved by 1.8E, 0N

Sat. 1504

offset 0, -1
notes -0.0061 0

after file moved by -0.3E -0.6N

Sat. 1505

offset 0 2
notes -0.0061 0.0002

after 0E -0.9N

Sat. 1506

offset 0 5
notes -0.0061 0.0008

after file moved by 0E -0.6N

Water variation

Sat. 1507
 offset 0, 8N
 notes -0.0061 0, 00112
 after file moved by 0.6E, -0.9N

Sat. 1508
 offset 0, ~~8~~8
 notes -0.0061 0, 0020
 after file moved by 2.1E, -1.2N

Leves
 Cen. 1509
 mid 0, 3

peer seeing
 ended after pair 12

Saturn

Sat. 1510
 offset 0, -7
 notes -0.0050 0, 0000

Sat. 1511
 offset 0, -6
 notes -0.0045 1 0N
 after file moved by 1.2E 0N
~~1.2E 0N~~

Sat. 1512
 offset 0, -6
 notes -0.0035 0 N
 after file moved by 1.2E 1.2N

Sat. 1513
 offset 0, -3
 notes -0.0025 -0, 0010
 after file moved by -1.2E, 2.1N

Sat. 1514
 offset 0, -3
 notes -0.0030E 0, 0005 N
 after file moved by -1.6E, 0N

Sat. 1515
 offset 0, 0
 notes -0.0030E 0, 0005 N
 after file moved by -1.3E 0.6N

after file moved alt by +0.3° to remove bright spot

Sat. 1516 offset 0, 0
rate - 0.0030 E 0.0008 N
moved after file by 1.8 E 1.2 N

Sat. 1517 offset 0, 3
rate - 0.0025 E 0 N
after file moved by 1.5 E 0 W

Sat. 1518 offset 0, 3
rate - 0.0020 E 0 N
after file moved -1.8 0.9 N

Sat. 1519 offset 0, 6
rate - 0.0025 E 0 N
moved 0 E 0.6 N

Sat. 1520 offset 0, 6
rate same
moved 1.8 E 0 N

Sat. 1521 offset 0, 9
rate same
moved 0 0.6 N

Cen

Cen. 1522
twisted focus to -2.05 - focus was soft
pair 13 good
only 13-16 before

Change wavelength 7:30 am - 1 C 2 H₂ observed
Cen. 1523 focus = -2.15

IRAS 17441 - S. 1K

~~alt. 1524~~

~~not made 9/11/75~~

Went to see to check bearing M focus = -2.2

guiding with guide camera

IRAS 17441-244

alk 1524 mod 0,4
lost of sky variation pair 5

alk 1525 -0.5E of center pos.

ended after 8 pairs - no signal

alk 1526 0.5E of center pos

better than center

alk 1527 1E of center

alk 1528 1.5E of center

ended after 8 pairs - see it but very weak

alk 1529 0.5E of center (should be peak)

alk 1530 ditto

alk 1531 "

alk 1532 "

1533 "

1534 "

1535 "

1536 "

sky variation

Other Sunday Nebula IRAS 17150-3224

cn 1537

looped pretty good

center pos.

cn 1538 moved -0.5E - 0.5N

ended early after 8 pairs - didn't see it (actually some very weak out)

cn 1539 +0.5E, -0.5N from center

cn 1540 +1E best so far from center

almost as good as good at 1539

cmn. 1541 0.7E - 0.5N from center
1542 "

did a middle to put the beam in center of slit
nod off slit

cmn. 1543 some sky variation
1544

back to nodding along the slit like 1541 + 42

cmn. 1545 source

cmn. 1546

1547
1548

Change wavelength to H₂ SIC 814.4 cm⁻¹
may need to focus

cmn. 1549

starting to peak pair 10
clear on it - small shift with slight weight

1550

Changed nod to 0, 3.5N

1551

pair 11 two peak focus

1552

still focusing
finished focusing pair 15 left it at -2.2
couldn't tell difference between focus = -2.14 - 2.3 seeing
is terrible

move -1.5'' E 1.5'' N

cmn. 1553 hopefully on a lot

1554

1555

1556

Can, 1557 Moved 1.5E, -1.5N of the peak of center position
Can, 1558

Calisto

Cal, 1559 H₂ S(a)

502 setting

Cal, 1560

guiding and focusing forward to -2.95 at very end of file

Cal, 1561

rate 70080, +0.0000

Cal, 1562

1:50

[I0]

io, 1563 Peaked up a bunch

1564

1565

Water variation

1566

1567

1568

1569

1570

1571

rate -0.0055 ON

Calisto

Cal, 1572

Cal, 1573

rate -0.0040 ON

[I0]

io, 1574

io, 1575

i0,1576

depreciation

i0,1577

i0,1578

~~1578~~ 1579

.1580

.1581

.1582

rates - .00075

Calculate

cal.1583

cal.1584

cal.1585

Shifted ~~is~~ parallel towards red

ending early ~~every way~~ parallel

(I0)

i0,1586

couldn't see I0 due to forgotten / reminder

no either behind or in front of paper

We all agree it's time for red!

1 May 39 | TG, JL, S

Dave

Saturny spot 749 cm⁻¹ C₃H₈ on Saturn

Slit is rotated East West,
can't see Titan yet, point to Saturn.
later will try observing from Titan
bearing set at center of slit

notes - 0.0055 ON ~~ON~~
focused set bearing on R Leo

Saturn
sat. 2501. beam offset 0, -13
quartz or paraboloid dupt
after file moved by -1.2E 0.2N

Sat. 2502 offset 0, -13
notes - 0.0060 0.0003
paraboloid dupt in deep direction
after file moved by -0.3E -0.9N

Sat. 2503 offset -1.5, -13
notes - 0.0060 ON
after file moved by -0.3E 1.5N

Sat. 2504 offset same
notes - 0.0060E -0.0003N
after file moved by ~~0.6E 1.2N~~
less than above E & S

Sat. 2505 offset + notes same
moved after file 0.6E 1.2N

Sat. 2506 offset + notes same
moved after file; looks good

Change offset to -1.5 -11 ~~11~~ opposite 36

sat. 2507 ratea -0.0060 -0.0003N
offset -1.5 -11
moved after file 0.9E 0N

sat. 2508 -0.0055 -0.0003N
~~moved~~
moved after file looks

at
Ceres

sat. 2509

Saturn

sat. 2570 ratea -0.0055 -0.0003
offset -1.5 -11

I'm pretty sure we drifted ~~west~~ East
moved after 3.3E 0N

sat. 2511 ratea -0.0035 -0.0003
offset -1.5 -11

from they variation seen!
after seen moved by 2.7E 0N

sat. 2512 ratea -0.0020 -0.0003
offset -1.5 -11
moved after -0.6E 0.9N

sat. 2513 Same ratea + offset
moved after -1.2 2.4N

sat. 2514 ratea -0.0015 0.0003N
moved after 0.3E -0.6N

sat. 2515 ratea + offset the same
moved after 2.1E 1.8N

Sat. 2516

rates -0.0005 0.0002N
offset -1.5711

during scan two changed N rate to 0.0003
moved after 0.3E

Sat. 2517

same rates ~~offset~~
moved after -0.60N

Sat. 2518

rates + offset the same
seem to poor

Sun

Cent 2519

skip 1-~~2~~7

Cent. 2520

focused on Alpha bcs -1.95

NGC 5506

got a guide star

~~N~~ 5506.2521

5506.2522 mod = 32

5506.2523

moved North 0.5 from center
looks like more pos than neg

.2524 moved ~0.5N from center

.2525 middle position

.2526 "

.2527 "

.2528 "

N 5506, 2529

.2530

Changed to 758.6 Ar I

N 5506, 2531

.2532 moved 0.5N from initial pos

.2533 sawdust pos not in reg.

.2533 moved -0.5N ''

nothing

.2534 moved 0.2N from initial position

.2535 ended early need to raise shutter

.2536

.2537

Nothing the beam broke to N15 going to Ne II

focus = -2.05 galactic center focused on A star

offset ~~or~~ -20, 0 up 58 telescope 0.7, 0

something odd happened in scan 1 - change in DC level $\approx 1\%$

gc, 2538

gc, 2539

gc, 2540 offset -33, -30

gc, 2541 offset -28, -30 up to 29 telescope 0.7, 0

IRIS Asteroid #7

iris, 2542

Change wavelength to 926.5 cm⁻¹

traced from to -2.10

DN's, 2543
2544

Jupiter

Jup. 2545
scanning
moved 1" N after scan

Jup. 2546
scanning

Jup. 2547
redband

Jup. 2548

Jup. 2549

Jup. 2550
scan
ended after 2

Jup. 2551
~~red~~ red mode

2552
2553
2554
2555
2556

scan
moved W 1.5" after scan 1
ended after

at ~ -5.5 that no where a

wave

2558 red
ended early
red was small
ignore

gwp 2559 nest

.2560
.2561
.2562
~~.2563~~

gwp .2564

about 1.5" N after ocean

peaks seem to be at ≈ -1.5 so moved ≈ 1.5 " N after ocean?

maybe -2 " E

of was at -3.8

.2565 nest

.2566
.2567
.2568

gone pair 5
8/2/2008

okay 5

May 40) TG, JL, SA Teachers Dave

1230 cm⁻¹ CH₄ on Saturn
focus A-1.9 seeing is bad
beamright is in center of slit
slit is E/W

Saturn

nat. 3501 rater -0.0060E ON
offset 0, -11
aperture moved by -2.1E ~~ON~~ ON

nat. 3502 -0.0065E ON
offset 0, -11
ended early, just not
sensitive enough

Change wavelength to 1246
noted slit N/S
couldn't see anything in the scan data
at 1230 cm⁻¹

nat. 3503 offset 0, -7
rater -0.0065, ON
good south position
moved aptn file by -1.2E -0.6W

nat. 3504 Same rater
offset 0, -4
moved aptn file by -1.2E, ON

nat. 3505 offset 0, -1
rater same
moved aptn file by 0, 0

nat. 3506 offset 0, 2
rater same
moved by -0.9E, 0

act. 3507

offset 0, 5
rates same
moved by

-1.2E ON

act. 3508

offset 0, 7
rates same
moved by

+0.9E

area

act. 3509

Saturn

act. 3510

rates -0.0060 ON
offset 0, -7
moved by 0.9E 1.2N

act. 3511

offset 0, -4
rates same
moved by

0.9E ON

act. 3512

offset 0, -1
rates same
moved by

-0.3E 1.2N

act. 3513

offset 0, 2
rates same
moved by

0.9E 0.6N

act. 3514

offset 0, 5
rates same
moved by

2.7E 0.9

act. 3515

rates -0.00050 ON
offset 0, 5
moved by

2.4E 0.6N

act. 3516

rates -0.0035 ON
offset 0, 0
moved by -2.1E ON

was going to do 0, 7 but
forgot new

Lat. 3517

Notes - 0.0040, 0N

offset 0, +7
moved 0.9E 0.3N

Lat. 3518

Notes same

offset 0, -7
moved 0E -2.7N

Lat. 3519

offset 0, -4
Notes same

moved -1.2E 0N

Lat. 3520

offset 0, -4

Notes
moved -3.6E .3N
a little bounce

Case

Lat. 3521 mirror went in garbage bin

Lat. 3522

Tweaked focus = pair ~~8~~ 8

Change name to 780.4 No II
gets Alpha Sec for focus. Low magnifying the middle
of the slit focus = -2.05

(W33)

W33, 3523

ended early

slight paraboloid to move No II up or down
& changed scan params

W33, 3524

scan 50" E striding 30" W at DR51

3525

start 30" W 5" S

3526

30" W 10" S

needed 2" W + 1" S

6033, 3527	30' W 0"N	needed 2" W
3528	5"N	
3529	10"N	
3530	15"N	
3531	20"N	
3532	40" W 20"N	1.7" W 0.8" N start on it
3533	40" W 25"N	1" W 1" N
3534	40" W 30"N	
3535	40" W 35" W	
3536	40" W 40" W	
3537	40" W 45" N	
3538	40" W 80" W	

needed 2" W

← a bit of N

for most need 1" N 1" E

needing more E rate

Seeing 1st burrow source

several bounce jumps

lost guide star

bed source

probably need N

IRISI

iris, 3539

ins. 3540

got one after a while

Calculate

cal, 3541

3542

focus = -2.4

$\lambda \pm 300$ due to 4mm water + 16mm

normal is about ± 500

Area - .0080 .0013N

FO

10, 3543

10, 3544

10, 3545

10, 3546

10, 3547

10, 3548

water variation

io, 3549
.3550
.3551

- 0.0065 1-16

Calisto

Cal. 3552
Cal. 3553

IO

io, 3554

bounce

.3555
.3556
.3557
.3558
.3559
.3560
.3561
.3562

randomly
through out

notes to 0075 - 0.0013

Calisto

cal. 3563
cal. 3564

IO

io, 3565

bad bounce

.3566
.3567
.3568
.3569
.3570
.3571

Calisto

cal. 3572
.3573

Finished!!