Steward Observatory
36-inch Telescope
Log Book
1967 June 3 - 1986 May 30
6/3/67 Label scanning stepper on photometric stand. WSP.

6/5/67 North set & guide motions out; field mirror in offset guide slipped off follower. RWP.

6/12/67 Not out-of-limit reversing operation! However North slew is out — RAM.

6/12/67 Slow North now O.K. RAM/

6/12/67 String returned to follow guide OK RAM/

6/17/67 Windscreen cable off windup drum RAM/

6/17/67 Windscreen cable repaired — RAM

6/19/67 Tracking poorly in R.A., out of balance?

9/8/67 Clock too slow at 0, 5 F10 P; too fast at 25 F; about right at 15 F. Minimum guiding motion in S, set in about 15. smallest in sphere is too big for satisfactory setting. Declination in S Guide is also too big for setting正常使用 R.A.

9/9/67 Clock stopped after 2 hrs running & stayed stopped no matter when telescope slew E-W thereafter. Square arms were gees too tight, but didn't adjust arms. Clouded over anyway. RAM/

9/11/67 Set of guide in dec. (S) often not operating with +50°. S. object; even with 8 deg. over-balanced told ways! (ie N, the dec.). RAM/

9/14/67 After doing trial EW + ES during daytimes, clock does fine during night. WSP.
11/2/67: Working at (FE-6) when RA clamp started slipping. Had to remove preload to hold steady on 135' at 15F, could take little force. Sept 13F, v RAM.

9/10/67: Greetings! (2:30AM) Cable from pier to fork upset sufficient tension on fork at 2-3 hrs West to slow down drive by a few percent. v RAM.

11/10/67: RA blew stepped working at 0:2000A. Tapergradened a few degrees W quite suddenly at 3:30 am. Accordingly then I found the steel did not work. Earlier in the evening I had got a sharp attack from the head control box. v RAM. Ordered drive does not work, although it generates turning sound. v RAM.

10/27/67: 24V DC Supply on Pneumatic valve blow out. v WSP. Failure due to bad brake on fan bridge. Slowed stopper down to cure moisture. Pulled string on variable condenser and tuning dial on tuning knob on shortwave radio broken and off its track. v RAM.
Wednesday 29th November

Here is part of the declination
cline.

Dec 5
Shaft on Dec. Pulley loose again -- tighten
double-set screw, but still needs fixing! RJW

12/1/67 The large pulley nearest the S slow motor (and pulley
in turn) on old drive shaft) came loose twice tonight,
at beginning fast and of night. PLEASE

Please do not leave cover on Newtonian flat
when flat is in telescope.

12/7/67 Query: When will head balance be installed on fork? [ANS
when we pipe balance to head, how will the
0230 -- Dec. pulley again!!!

2/15/67 Heard a terrible noise but couldn't find anything wrong.
Later noticed preload weight had fallen to bottom of well.

Connection?

2/22/68 [W] new spring pre-load tone loose, looks pretty
flimsy, so, forwarding. Would be nice if brace off
Dec. slow worked.

2/24/68 -- 0230 One spring is not strong enough pre-load in RA.
3/26/68  Cork flooring on Newtonian Platform
needs repair — can trip on edges in dock if wet. VRAM

3/26/68  Aperture illumination light in photometer
is erratic — seems detached contact
problem (not bulb) VRAM

3/27/68  Aperture illumination shield replaced on photom.
(find down inside system)

4/5/68  Label photometer scanning stepper

4-6-68  1) Washer from photometer pendulum fell
off down to bottom of pit; replaced

2) An ominous "give" in the gear in R.A. slow
better inspected.

4/10/68  Slowed photometer chopper to about 0.5 step/sec. Scanning
stepper would function properly. Took H-P DVM to
Hewlett-Packard for repair.

4/19/68  Returned H-P DVM to photometer room. No longer has
extreme temperature dependence in absolute sensitivity.

4/20/68  Pre-loads stuck, but slipped away easy; no problem
when about 2K east. Rotated back to near normal
position.
5/20/68 Refrigerator at coast has sprung a leak.

According to Waymann, telescope tracked eccentrically E-W on 5/19/68, at both large & large W Hrs.

After 25° pre-load inadequate at 10°E, -6°Dec. added additional 25° (175°E, 2-25° + white weight)

Doors are slowly, should be fixed. Cold water line in kitchen & in 2-bath runs very hot for long time before it will cool down.

5/30/68 Replaced micro-switch in chronology digital clock

June 2, 3-68 a) first difficulties with slowing motors, horn angle - which wellcorrected

b) Telescope drive too fast. Tried to use E. Slow Motion Button all night in spite of drive being at lowest speed.
21 June 68  East-West set shorted out on Newtonian

cannot paddle; trouble appears to be in
directional buttons rather than in SLEW-SET
toggle switch. (Note: taken into campus
by Dr. Bok on 23 June.)

28 June  Done rotation "RIGHT" button on Newtonian
control paddle static—dirty contact?

25 Sept  Clock running slow at 6:00 a.m. at 9:00 a.m.

replaced sector/realigned secondary mirror in behind-
the-dio-
scope mirror carrying photometer.

27 Sept 68hubbed stepping switch in photometer shaft

22 Sept 68 Pre-load does not work with photometer on S. side of

tube. Telescope at +32°, 4.5 hours E. Telescope slags
back & forth between two points. Could be some internal

10/21/68  Insufficient pre-load @ -19.5, 2.15", E. Height
extra weight on SW post of tube.

11/18/68 Removed North Bearing Housing & Inspected
& greased North Bearings.

Felt seal 1/4"

Radial Bearing 2 1/4"

Thrust Bearing
1/20/68 Greased sidereal ring, HR, Angle Ring, Dome truck assy. and platform + 1/21/68 Assy. for oiled pulley on wind screen

12/16/68 Printed Dec Gear white + J.L.

12/21/68 Wire on mirror in offset guide - broke now on hand - replaced with jubwin string R.A.

12/22/68 Electronic tube in photonics (1021) burned out

12/22/68 Mirror in photometer - that looks at diaphragm - loose - tightened R.A.

1/3/69 Wire on mirror in offset guide replaced - also now have a spare R.A.

1/3/69 Collar on gear on west side of tertiary is loose - this was pinned - however pin must have enlarged its hole in shaft - needs to be replaced with another shaft & larger gears - R.A.

1/9/69 Gearbox - tracking sometimes jerks. Very bad guiding - WHO?

1/10/69 Newtonian secondary - very difficult to center - R.A.

1/19/69 Tracking Jump 22° North 1 1/2 hrs east

1/20/69 Raiser scan on automatic guider out of phase - Scan looked ellipsoidal R.A.
1/21/69 Red Leak Filter Loose in UBV Filter Holder - SOL

3/4/69 No stuck East - Found wire broken off Pin E in tube End of North Fork to tube cable - SOL

3/12/69 Primary mirror needs washing. Something is sticking on primary just inside cassette port opening. Mirror and offset guider needs washing. The mirror in offset guider mirror was((((networked)))) as blemished as it is now. Mirror was washed. 36" Telescope optics & offset guider pierced mirror - also reglued 4 of the 8 optical primary support pads. Some were bent - mirror had shifted in cell - Internal source (photometer) does not work - Pot came loose & broke ground wire - RA/MH

4/20/69 Dome rotation erratic - Resoldered loose wire - Joe Latta.

5/16/69 Digital clock on photometer back would not run. Replaced micro switch on 6300 motor - Joe Latta.

5/24/69
5/27/69 Replaced Primary Mirror support with old support. Joe.

5/28/69 Re-balanced telescope to compensate for mirror support change added 1-16 lb wt. to each of four corners at bottom of telescope. Total 64 lbs. Joe.


6/10/69 Digital Clock on Photometer Rock ran erratically. Cleaned contacts, seems to run all right. Joe.

6/14/69 1900 - Digital clock not working correctly. Found 4 microswitch contacts on the microswitch removed so that blue for 5 seconds & 1/2 for 1/20. The inspection mirror slide assembly in photometer is broken & doesn't slide right. WF.

6/15/69 The cold box is notproperly seated on the photometer. Someone shifted it away from best position as indicated by fiducial marks. Repositioned cold box. Cleaned, lubricated, and adjusted inspection mirror slide assembly. Labled trigging switches in
6/16/69

Photometer broke down. Would integrate on calibration
But not on a star, once it started up but quit
After 3 seconds. J.T.S.

8/14

Complete lubrication of 36" Telescope
+ Building - completed

8/16

Clock runs at F20:47 fast at F25. Tracker OK at
F23. Paper tape punch behaves erratically - sometimes
Drops character at beginning of record, sometimes OK.
Taking control unit off for check out. Slow
control box at S. Newtonian prism gave out a good
Shock once tonight. Recorder not behaving properly.
The self-balancing wheel does not adjust itself.

9/9/69

Only the flashlight in 36" building.

9/11/69

Received Scanner unit on P.E. Phot. so no external
controls left. Paper tape punch OK. This P.E. unit
used now only for P.E. photometry.

9/12/69

Replaced ground wire on slow paddle.

9/12/69

2" Motion Focus

9/12/69

Added 1-16 lb wt. to 12 X 60 scope
4 Corners of Bottom of Telescope
TOTAL 64 LBS.
9/24/69 Backed off 5. Thrust take-up on P.A. Worm 1/4 turn counter clockwise.

9/26/69 With auto guider + image tube, telescope is badly out of balance. Please balance.

9/26/69 Rebalanced telescope for image tube.

TOP

Foot weight holders are S. South + put them on the North

Bottom

Add 60 lbs to ENE

Add 1/28
16 N
16 S
16 W

9/28/69 Repaired integrator lock on photometer. Adjusted strip chart recorder. Recorder, tape punch, photometer OK.
9/30/69 Cable to Newtonian platform became fouled - platform is not to be used -戴safe

10/7/69 0100 - Telescope continues to track without incident

0200 - Still sight on east. Mid n.d. from 1st to 2nd to 3rd mirror, 4th mirror at 715. Change to 730 - 0300 after 23:40. No difficulty now.

10/24/69 Coudé 2nd + 3rd mirrors realuminized and installed. Toe

10/31/69 Found that pedestal drogues telescope thru clamps when at 4th East, -18°; had to remove steel ring + ~30° from bottom of tube to obtain proper blocking of this object; took “ok” for 6 hours. Chill.

PS. Must admit that tracking was almost flawless w/ cheat notes on near the zenith, eq ± 2° for 6 hours.

11/16/69 Roof leaks over south Newtonian position. - WFS
12/5/69  One finder crosshair failed and stand of run. Location of field center not affected.


12/20/69  Fixed brake light on drive gear

12/31/69  Telescope tracking irregular (fast and slow) when south of B-25. Stucked OK north at all RA. Ask.

1/7/70  Needs rear focus limiter - CAUTION. Dec. 40, 132.8
150 w bulb to balance for dimmer.

1/14/70  Knife-Edge on Plate Holder still doesn't work—It just blocks out the out of focus star image no matter where the focus is set. Ask. (See comment #3 by CW). Work

1/15/70  Total Pointing Photometric values 25 Tucson locals. Mag. range work well for 3.6. Photometry
standard cone is used.
1/22/70 Am still having tracking difficulties south of -20°. Am certain now that the problem is balance.

Also the dome and pier must be in contact, moving dome often causes violent oscillation of image; and in one case actually shifted the image according to the direction of dome rotation; nothing was touching the telescope.

2/14/70 36" optics cleaned – RV

2/22/70 Short in slew paddles at Cass station.

No. smelled when pressed one of the buttons

2/23/70 Repaired one paddle at station

7/6/70 1) E. set motion uncertain – either sticky contact on paddle or sluggish relay (Newtonian stator)

2) Apparent drift E.–w. – looks like long motion in E. – W. scan !1! Had no trouble with drift during only after always making long set motions against direction.

3) Difficulty in focusing photographs – tailpiece
or Newtonian port due to Newt. second law being to dead stops extremely out of
alignment. Focus via knife edge is possible, but plate results probably no good. Focus on a focus plate
until secondary stops are adjusted properly.

4) Still need new funnel for ice cold box: also, new thermos jug for holding spare crushed dry ice for middle-of-night replenishment. (What happened to the one we had?)

20 March 1970

Enclosed slide clamp is broken from power cable to telescopic port outlet box. (Note: it was taped the cable up to keep it from falling out due to clarity.)

JH1

3/23/70

There is a hint of a bird in Dec. snow resembling that which we need to get when the worm was engaged to the worm which improperly (or too tightly)
To: Only one more roll of chart paper left in electronics cabinet—none in p.e. electronics rack, except for the roll in use. Resupply needed.

Rev.

28/19 July 70 Fix automatic guides immediately! Clean all bottles out of darkroom! F. Carter

7/21/70 Removed 25th from N.W. post Tube
Added 16th to each of 3 post

7/23/70 Added 9th to west of W.T. post on S. Nat. Port.

7/24/70 Added 16th to N.W. & S.E. posts.
Added 32nd to S.W. & N.E. posts.

8/14/70 Fuse blown on P.E. Photometer power supply—liberated one from 'sound' room supply

Tom Kunze

8/18/70 Set controls do not work. Also, motor which lifts weight for drive is not working when the weight gets to the bottom.
3/28/70
No audio on Ch.1 Phot. 3/29/70 Obtained audio on Ch.1 by gently hitting the Ch.1 selector.

3/29/70
Wire cable on #11 Photonometer main view mirror broke. Digital Clock noted to be quite erratic (+ hours!) WFS

4/5/70
Slow set hand paddle at newtonian erratic with East button. I replaced it with the guest's hand paddle, so defective one is now at east.

-paddle checked out O.K. -no shorts

/George

4/6/70
Platform paddle needs new cable. Swapping with one on old one.

4/22/70
Focus stopped working. Motor runs but mirror doesn't move. - Dork

4/25/70
Cable used to raise & lower mirror cover on coude' spectograph snapped. - R. Dork

7/13/70
5/13/70
5/16/70
One wheel snapped off observatory lathe - Dork
At. sec. drive needs to be adjusted. - R. Taylor
Signal lead on P.E. Photometer is loose at coupling on Cold box and need re-wired. - R. Taylor
8/24/70 The sidereal clock needs to be reset.

9/19/70 The jury-rigged third mirror seems to be working. I had no trouble finding program (6mag) stars.

9/19/70 Although stars visible in finder, I found 2 shadows in field and could not get stars in focus on slit. Removing the spectrograph I found that it was receiving light from way off axis. The collimated light beam is apparently being focused by the third mirror on the upper edge of the cassegrain opening. In this condition, I cannot get sufficient light to the spectrograph.

9/23/70 Shaft 1. Initiate batch replication on 9/19. Needs some more work but in order. Need some precision work. Recheck for potential N10+4° - 4-5°, list 0.15. Notice and 1970 wear very good.

9/29/70 Got some non-recording effect in recorder mode 2 as previous report, for mode 1: 5-10° to get white...
audio channel 2. Finder telescope does not seem to be aligned properly.

10/15/70 Cable on crane paddle is beginning to break away at pt. A (entry into paddle). Wind up motor for clock weight sounds bad. Do it in the coupling, gearbox or what. lubricate motor & gearbox and see if noise changes (maybe wrong).

Rh

11/8/70 Focus motor out. It brakes but won’t rotate the shaft. - George

11/20/70 Cannot rotate third mirror far enough to align case focus. Put in

12/1/70 N-slow does not always engage—even w/ telescope in far south of the northern limit.
12/4/70

Had an accident and broke the plastic cap on the "panic" button on the slew paddle and the plastic cap on the "north" button on the guide paddle at case 0 station 3. Have found exact position for third mirror and have sketched position with felt pen on lever arm. If you could find something more permanent to stabilize the trace over these marks so they won't rub off, it would be greatly appreciated.

Pitt

12/10/70

The slew control for the Lee is out. I had just taken off the spectrograph about 4:00 and was slewing the telescope back to quid when the Lee travel began jerking then it quit. The red control still works and I could hear the relay: working. It is probably the red speed control on the motor itself. I cranked the telescope by hand to last 40° into storage position. Pitt

C.B. 37 Out: Slew OK 12-11-70
12/13/70 There is a loud squeak when the telescope is slewed in Dec. Seems to only happen when it is cold. — Ed. Schmidt

12/16/70 Dropped worm gear to clean & relubricate and realigned with wing gear—also balanced Telescope in Dec.

N E weight post = 2-32° 1-50° 1-25°
N W " " = 2-50° 1-32° 1-16° 1-25°
S W " " = 2-50° 1-32° 1-16°
S E " " = 1-50° 1-32° 1-16° 1-25°

Bob Miller & Joe Gutter

1/1/71 Primary 34" Mirror washed — RA

2/4/71 6V handy light on pharoscope not working — Dukes

2/5/71 Tape recorder door will not stay closed — Dukes

2/27/71 Remove two small butterfly weights added two large in their place

Moved 20 lbs from S.E. post on top to NE post on top

Moved 21 lbs from SW post on top to NW post on top

M. G.

3/1/71 Reticle light on finder out — Dukes

Telescope unusable at large Ht. RA clamps would not hold, even with some preload removed. Tilted balance to N-S & upper case balance to right. Pointed at pole, removed preload, checked polar axis balance. Telescope unstable (Es
when unclamped 2-3 hours off meridian either side. Removed two lead weights from polar axis, verified. Displaced the first one on the west meridian by 4'. When testing balance found that the 5'amp breaks #7 & #9 molongia, replaced them with 2 new ones. Telescope moved off in balance and function. Replaced & balanced "swing" (NE & SW) on both, whole weights. 1st day, 2nd day, tube came out, post, arm, 3 inch mount, replaced preload.

3/28/71
When slowing in Dec. say northward, if release south, & post reused, scope stops moving scope continues to turn. Use power. Concernwise. Telescopic-

3/29/71
When slowing telescope make sure it is stopped before it is reversed. The above comment is a normal operation of the telescope.

3/22/71
- Weight - Balance for Newtonian
  1 big butterfly - 120 lb on both
  2 machined weight 100 lb on pole axis.
  1 large at 205° (±) + 1 round at 110°
  1 machined with birch in center at 24°
  on top of east fork.
  3 large + small on east sliding post
  center post - 1, 35° + 1, 17°
  - NE = 2, 35°
  - SE = 1, 35° + 1, 5°
  - SW = 1, 50°
4/16/71
Left dome control button on Cassegrain.
Bette 4/16/71
Repaired left dome drive control.
Bottom

Butch 4/17/71

4/21/71
4/3 placeholder dots not
lock stable and has
considerable light leak.

5/27
Bal., T.T. at Cass. - Butterfly - no
change - Top no change - NE & NW
weight posts - nothing - SE & SW weight
posts - 50" each

6/5
Greased & oiled Dome & Telescope RAW

7/15
Official weights
Bottom 6 big butterflies 120" ea at bottom
Polar Axis 4-100" 1-50"
East Fork Top 1-200" 1-15" 7-12" oblong flate
East Fork Weight post 3 large 2 smaller
Weight posts NW 1-50" 1-15" 1-25"
NE 3-50" 1-25"
SE 1-50"
SW 2-50" 1-25" 1-25"
1/30 The telescope seems to drift slowly north much of the time when working at cond. Also, it jumps to the north.

E.S.

Aug 24 Washed primary mirror, McCallister & Vaughn

10/16/71 wind direction indicator, McCallister & Vaughn

11/12/71 Work

11/12/71 The R.A. unclamp switch - on the Newtonian control box - when activated - sleeve telescope west - R.A.

11/18/71 VIGNETTING OF BEAM BENDS ARE DUE TO MISALIGNMENT OF NEWTONIAN (FLAT) SECONDARY, K.E.B.S.

1/26/71 Illumination is coming off of cause, switch

12/13/71 Telescope moving against clamps up toward meridian. In checking balance, discovered that slip gear pin is loose. Added 2-25 lb weights to stop telecope over camera port.

George
Squawk
Micro switch for coude limit is broken. Butch

12/10/71
Shutter will not close, motion will not operate.
S.P. Worden.

12/16/71
Mirror cover would not open. Joe

12/17/71
Opened 81/2 AHC windscren to check clouds. Windscreen stuck 1/4 way down. Tried to raise it and it broke bolt holding one of the top lenses. B. Eicher

2/1/72
Washed Tertiary. But the coating doesn't look too good. Ray

Repairs
Replaced switch butch
Reset button on shutter box. Joe
Used chain wrench to move shift gears slightly. The look
17 FEB 72 LOGIC DRAWER DOES NOT WORK RIGHT. NIXIE TUBES LIGHT UP W/ FV22 OR ZERO. "START" "reset", etc., buttons get no response.
MEASURED VOLTAGE BETWEEN +5" and -5" ON bottom of power supply box on right side of drawer. Result: 1.35 volts in right direction.

Mar 72 I think telescope is in good balance for control. Tolsaday weight about 1.57 from Boller. Slide weight 87 oz and 7 1/2 lbs.

4/30/72 Push button paddle control for swinging platform. Not working (control on scope OK so platform self moves)

May 8 Trouble with the mag, receiver box OK. All OK except

April 8 When checking to see if at Cass focus found Cass secondary installed without the secondary spider struts bolted into place.

MACALLISTER 6-12 LOGIC DRAWER REPLACED.
20/4/72 Line Printer and Tape not working / Double switch to avoid not working

Also stepped switch
I won't try it today.

21/4/72 Repairs needed: brake-down, take to Green for service (£3.20) Part OK

22/4/72 Hit an electrical shock from large adjusting paddle

Also, some sort of gauge fell down from gradient

23/4/72 One of the push buttons (coast) on guide-rest paddle broke

26/4/72 Washed pencil (sp?) diagonal flat in PE. P испытали; hanger okay; balance good; track rate okay; but weights in opposite hold steady @ +12° 45" W. Added a weight to improve stick.

4/27/72 Printer failed, light went out on occasion of large escape on the photometer; also -

The lever that controls the foot of mirror on the
photometer - broke.
4/26/22 Co-ax cable is broken. One of the small cables from Rock to photometer is fixed by others.

4/29/22 Photometer mirror control broke today.

5/2/22 Washed primary mirror. Both + McCallister.

5/12/22 Repaired H.V. Cable, but it should be replaced with a single length.

5/2/22 Photometer not properly adjusted. 5 mm of arc field badly misaligned on one side (otherwise 2" but not by offset manner. K. McAllister.

5/16/22 Greased and oiled dome except dome shutter drive reducer. Also greased oiled telescope rotating.

6/20/22 Pulley is broken on lower shutter cover.
6/11/72

1. Replaced cable on movable mirror in offset guider (photometer)

2. Why does the EAST set control not function when the telescope is rotated low in the west??

D. Haxie

6/10/72 - When starting:

1. HV cable connection piece was broken (fixed)
2. Set motion control "east" does not work (repaired)

Robert Hattan

6/14/72 - Please change new paper in printer.

Replaced paper 6/15/72.

6/15/72 - Please clean telescope mirror.

G. Gilbert
1972 Oct 7 HV cord repair connector repaired, fixed on the spot. AK Dewal should make proper repair of coax connectors.

1972 Oct 8 Scribed on printer separated from tally. Channel 1 on IF box doesn't appear to be operating. No offset signals displayed in this channel. Used Channel 2 exclusively for camera observing run. Few > Channel card in ITOF box - RAF

1972 Oct 9 We would like to have the visual guider available for the night of Oct 9th in case we become totally dissatisfied with the auto-guider. E. Welde

1972 Oct 10 Can the Switch at the platform be fixed. We have to run down stairs and turn them on using the switch at the bottom of the telescope.

OK
Oct 10, 1972

Auto Guide worked reasonably well on faint star - some drift in R.A. Please leave optical guide out on table. I may use it tonight. Thanks!

E. Miller & A. Ferguson.

Oct 11, 1972

Washed Primary + Tertiary 30" optics. Primary has been wet since last washing (5/31/72) and there is an outline of a puddle on the surface. Tertiary needs new coating.

E. Miller.

Oct 11-12, 1972

The R.A. drive move the telescope too fast towards the east. Can it be adjusted?

E. Miller.

P.S. Could use more strip clear in desk room. Thanks.

Oct 12-13, 1972

Could use a new guide telescope - but then I could use a million dollars. (Come to think of it, the latter would probably be easier to get). Thanks Bob for all your help. I appreciate it very much.

E. Miller.
Oct 13-14 1972

Need light bulbs in desk lamps + control panel lamp on floor of house.
Auto-guider drifts a little in Dec and a lot in RA 30 min exposure looks like this:
(Replaced light bulbs)  A. Ferguson

Oct 14-15
Need light bulbs in one desk lamp + clock lamp on platform.
I will return transmission galley to KPNO.
I am keeping the adapter until I find out what to do with it, (Replaced light bulbs)
A. Ferguson

Oct 20 1972
Ellis Miller have taken the camera, the probe for the auto-guider and the optical probe to Steward Observatories.
Tucson for testing and alterations.
We have placed one weight on the camera side of the Telescope to help maintain proper balance.

10/25 Lacked telescope +00034 A. Ferguson
3/Nov 72
1. Ch. 2 on 36-in. photometer (complete 5)
not operational (no signal with load off or with offset on with dark current).
2. Printer erratic printing, too much ink on stylogs. Printer from 90-in. installed.
   R.W. [signature]
   by B. Vaughn

4/Nov 72
1. Printer from 90-in. shorted out, fixed up.
   Printer that went out last night (B. Vaughn cleaned and 3M-40'd with 0.1, string broke,
   replaced some of string from 90-in. printer; he installed and expects it to be working OK).
   R.W.

5/Nov 72
1. Out of dry ice after this night.
2. The "4"'s often drop to "0" in the
   print-out of the ID number, causing
   wrong with the time assisted vs.
   or the digitized time. The drop of "4"
   noticed with the 10 in 12 100's and
   i.e. "1411" → "1011" → "0011" → "0001" → "0000" → "0000"
   correct?
   R.W.

3. Logic draw for plant. Handled out error
   at 8:00pm. One operator printing new work.
   adjusted (marked error). When the logic
   logic drawer and defective printer removed to
   Campanile.

6/7 Nov

Two well-potted Comets are not supplying power. They are labeled with marking tape. Heaters stay on 2 hours only. Auto-guiding turned on and new paddle (for widening transmission gating spectra) added tonight by Bill Reed. Auto-guiding works well.

6/7 Nov

No special problems. E. Miller will be up tomorrow night about 9:30 P.M. Need to find higher power eyepiece for optical guide. New optical guide works fine. New dense system installed by Hollard, but 18mm eyepiece is not powerful enough. E. Miller.

6/7 Nov

No problems. Oh, Beth, there is a large plastic container in my truck with 16W P2 for the 90°. The key is in the truck so just drive it over to the 90°.
8–9 Nov.

Butch, I was moving the telescope and caught the high voltage indicator with one of the dogs on the tube. Although the indicator still registers 500 and 2000 volts, I get no dither motion. Apparently I took out some connecting wires. If Al or Mike come up tomorrow, you might have them look at it. In any case, we need to get it fixed as soon as possible. Thanks.

E. Miller

P.S. If you have time tomorrow will you bring me a pint of HWPZ? Thanks.

9–10 Nov 1972

No problem during the night—I had all I needed last night.

E. Miller

13 Nov

2) Channel 2 loudspeaker in p.e. rack has to be started with a sharp rap to the grill, not a very proper way to drive a loudspeaker. Plus

4) Numark 15" speaker handles lightly burned out on Logic Driver-42, Channel 2 buffer outputs (fellow owning digital multimeter?)
Nov 15-72 - Offset guide guides left right motion is loose - need new spring - AM

Repaired both

Nov 18-72 - Cool room ceiling leaks near center - Afternoon - AM

Notes

Printer - string puller loose - about 1/2 hour before I finished, so I kept it.

Red

Fixed it myself!

See Red

Oct 5-6

Joe - Can telescope drive be adjusted so that scope (yes) will shift east or west by 1° per minute. It would make my job of widening spectra easier.

E.W.H.

The clock drive cos booths is same by the rotation of the 5.20 but I don't know how much it
Dec 21, 1972

No problem - I could have some more W172 & printed stuff. I have enough N-Copy Clear.

Thank you,

Ellie Miller

No problems except for clouds - worked from 1AM to 5AM when the clouds came in again.

3 pictures

1/16/73 - T.V. connector (splice) between rack. Repaired. Telescope Apart - Fixed. Just needs to be checked.

1/16/73 - loud internal noise in photometer rack. Found - loud internal noise in the photometer rack. (Power supply near the speakers) - this noise is with and without power. 1/16/73 - pen in printer, for photometer notes, will not stay in contact with paper. Her last attention.

1/23/73 - printer (photometer rack) doesn't work. All the time I won't print all the way across, like it should - every time. 1/23/73
26/1 Jan 73
Rheostat doesn't work on South Newtonian control station; lower of 2 6V plugs: a light plugged in here, lights only at one position of rheostat.

Elbow finder, coronar, & coronar light are level up now, at least for finder position near camera. This makes it possible to set telescope from platform.

Light on eyepiece head, anyway. Finder needs cleaning & cover.

A Ferguson

Light for drive switch is out, also darkness indicator light outside the airlock.

Wind speed indicator not working - close up when platform shakes.

27/8 Jan 73
Darkroom heater puts out cool air from top & right grills; darkroom at 60°F!

Drive rate 24.35 F; use 105 for widening spectra (14.5°/2 minutes)

Guide motion "drift rates": RA 0.1, Dec 0.1

A Ferguson

28 Jan 73
I am taking downtown the eyepiece & whole light of the optical pier, to see if a better coronar can be found.

A Ferguson

31 Jan 73
Electrical problems with photometer: Printer which would not advance its printing head was replaced by a printer which would not record data properly. Two other problems: (1) signal cable between cold box & integrator box produced erratic noise when bumped, (2) illuminator for rear diaphragm not working.
31 JAN 73 (cont.) Telescope poorly aligned; faint of focus star image had
the following appearance:

![Telescope image]

Laird Thompson

1 FEB 73 Photometer printing had stopped about mid-night; applied EC-44 lubricant
to shaft. That fixed it until 3:30 am when it stuck again, and this time
the oil didn't help. Sticking probably caused by cold weather.

Laird Thompson

May be "Kemp" - the next afternoon it did
not work. {Note: Kemp removed}

2/5/73 The cable from rack to photometer needs to be strapped
up to the strain relief hook. It no longer has any safety
against yanking out. The H.V. cable from the cold box was

2/28/73 Red circle light on photometer, diaphragm doesn't
Seem to work. Eric Jensen

6 MARCH 73 Photometer integrating trunnion is not working properly.

Integration code 2" gives a 6 sec integration (should be 10 sec)
3" 12 sec
4" 24 sec
5" 40 sec

Laird Thompson

3-7-73 Replaced and C7 -
Integration time OK now.
3-20-73 Washed Primary mirror has been out since last washing (10-11-72) Jan

3-21-73 Washed New Secondary mirror Jan

3-31-73 P.e. Photon diaphragm viewed tight
meganebe, tried trouble to fit mount by eyepiece. Bypassed pot, still leaves much to be desired but same eyes are still can diaphragm not. Voice, be pot!

Pot is removed p.e. Reis

4-3-73 Little amber light on cord, attached to reticle outlet, doesn't work very well. R. Rydgren

Replaced light + switch assembly.
Works beautifully! Thanks, Rethel

4/9/73 Eye for hanging guide paddle came off.

It is on desk on platform. MKeys


Interface cable disconnected.

Case replaced with New K-V.

Cox 4-11-73 AD
4/12/73  TYPEWRITER OCCASIONAL ACTS UP. GEORGE
          -cleaned lubricated runner for stylus on printer

4/15/73  CABLE RUNNING BETWEEN COLD BOX &
           I-P BOX IS LOOSE. ARD/1344
           replaced 4/16/73

4/23/73  Filter slide is very hard to move... it sticks. WHITE

4/27/73  Typewriter acts up quite often - it stays up
           near the right hand side of the page and chatters
           every so often, and the lid has to be opened to stop it.
           R. Rydgren

4/30/73  Drive brake release light doesn't work.
           Filter slide is very stiff - is rod bent?

5-1-73   RD LAMPS FIXT.

5-6-73  20-in. type punch grinding badly
           type motion erratic. CLUTCH
           skipping? R. W. White
           punch oiled & belt was ordered
           2/ 5/7/73
7/8/73  Belt that operates the photometer viewer broke. - Very important to fix. Also printer sticks on right side.

[Signature]

Replaced strings for mirror - cleaned lubricated mirror ways - AKD/KM4
lubricated printer - AKD
put cable guard on see weight post - AKD

5/9/73  Neither Newtonian paddle moves west when in "Set" mode.
① Printer frequently gets hung up on right side and does not automatically return.

① - fixed set west - AKD/KM4

5/11/73  ① Printer still doesn't work right, it doesn't return and gets at the right side of the carriage and chatters,
③ The string that moves the mirror in the offset guide slipped off the pully.
③ The filter tray is difficult to work, it is still. This makes the detente hard to find. (P. Steffy)
5/12/73

1. Filter slides in binding (from 6/29) are binding. Can be fixed by covering up small holes in the carrying tape (the tape that carries the print head) with piece of black tape. Otherwise, the optical sensor will think the print head is still all the way over and the print will stick. Replace the tape completely.

2. Replaced printer head belt check operation.

5/14/73 Well, I don't know what I'm supposed to tell, but there is only one night worth of ice left, will replenish later. Nothing.

PS. West button on platform paddle does it work.

5/25/73 (AM) Had trouble with print last night but it worked OK tonight except for a dozen times so I think it begins to stick when it gets real warm. West set motor is intermittent worked OK last night but not tonight - Jensen.
Both printer and West set on slow motion. Paddle action sporadic. Printer probably just needs oil, but I didn't get around to trying any. - Sue Jensen

Unable to reproduce either of the above - R4M - 5/27/73

5/27/73 Printer didn't work. (When record was read, it just sat there and chattered at itself until I turned it off.)

After 1:00 West set on paddle at Newtonian wouldn't work. It worked on slow (which wasn't very useful) and the Cassegraen paddles worked on set (but that didn't help either). Hintze: set west - found broken wire in conneter at west. 'J' box repaired - unable to fix printer - brought 90" print to 30".

5/29/73 Replaced roll of paper in print.
5/30/73  "East" button on set/Guide paddle at photometer (Newtonian platform) is broken.

R. Rydgren

Fixed - 7/4 w 5/31/73

6/1/73  Something slipped in the offset guider (it suddenly jumped away from the telescope). Could not find position of big eyepiece such that star on crosshairs puts star in diaphragm.

R. Rydgren

I don't understand above complaint. Alignment checks OK. - George

6/2/73  Sounds LIKE WWV RECEIVER ON DOME FLOOR COULD USE A NEW AUDIO OUTPUT TUBE (THE VOLUME IS MUCH TOO LOW)

S. Gravo

6/1/73  Installation of tape box power cord is gouged.

P. Hertz

Taped gouged place. Sen.
June 19/20 MECHANISM TO MOVE (AND
HOLD IN PLACE) THE PHOTOMETER
VIEWING MIRROR IS BROKEN.
PLEASE FIX. (I WAS STILL
ABLE TO OBSERVE BY USING AN
EMERGENCY PAPER CLIP REPAIR, AND
BY HOLDING IT IN PLACE WITH MY
FINGER. BUT IT WAS NO FUN.)
STEVE GRANDI

June 23/24 Everything works perfectly.
I need dry ice for tonight.
Jansen

30.00 PM Newtonian star stop for direct camera
should be backed off to allow slightly
more travel in the counter-clockwise
direction. Mirror is not quite squared-on
with the camera.
R. H. Turner, T. A. Sargents

* checked-out by Rens.
July 22-23. It's nice to have the radio working. I have traded stools between the Newtonian platform and workbench on concrete floor, since cross-supports on Newtonian stool have become broken. I guess I must have broken them last night or the night before, although I have no idea how I managed to do it, or any recollection of the event.

Eric Jensen

July 23/24. THE PHOTOMETER VIEW MIRROR IS OUT OF WHACK (AGAIN). THERE WAS A LOT OF PLAY IN THE CONTROL SO I TRIED TO BE ESPECIALLY GENTLE BUT TO NO AVAIL. THE MECHANISM BROKE ANYWAY.

STEVE GRANDI

Also -- PHOTOMETER PRINTER NEEDS A NEW ROLL OF PAPER.

There is enough paper in printer to last for months.

BECK
7/3  Aug 73
TIA. SARGENT: Cloud till 2:00 AM.

OK after that.

Aug 8/73
SARGENT: Cloud till 3:00 AM - to late to start surveying.

Aug 9/73
SARGENT: fundraiser camp on #2 drive; switch burned out. (Replaced lamp 8/11)

8/10/73
SARGENT: Cloud out 11/30 AM.

8/13/73
Replaced old torn plastic with new cover. Joe

8/19/73
T.A. SARGENT: Direct camera.
Disconnected photometer. [Marked out; illegible]
"EAST" button on the control paddle at the bottom of the telescope stopped working.

8/21/73
SARGENT: Control paddle doesn't work at all anymore except for west view.
"CH 2" Drive screw on plate camera has either jammed or come to the end of its travel - Stripped drive screw - sent camel to town.

8/25/73
ONE control paddle doesn't work in either east or north direction buttons. The broken paddle has been placed under this book. The other paddle works equally well at both.
What's going on with the photometer electronics vack? The (mag) tape drive is no longer working like it used to, and seems to use about 1/2 inch of tape to write each record. I suspect a malfunction. Also, the tape deck is not firmly screwed to electronics vack.

The god-damned "#?@ printer froze solid on me after about 5 minutes of use. I couldn't get it going again at all. It would serve me right if we could have the 90" printer back again. After all, we use it more than they do.

Trusting neither tape nor printer (which wasn't even working), I ended up recording my data by hand. This gets a little tedious after awhile and slows one up.

The telescope bearings begin to slip quite badly. When one is working more than 5 hours over 5 hours over, they slipped about 10° in one tonight, a couple of times.

ERIC JENSEN
12/173 SARGENT
least connection in reticle illumina-
for camera GUIDE PROBE. Problem appears
not to be right at the eyepiece connection.
It is not very serious yet - pulling in the
right direction makes contact.

12/173 SARGENT
Guiding more difficult than usual.
Drive seemed to stop dead for a few seconds
on 3 different occasions during a 3 hour
exposure. Even normal behavior of drive
is rather erratic - it requires correction
throughout the west very often, usually every
5 seconds or so.

9/4/73

Regarding Eric Jensen's complaint
on 8/3/73. 12/73. The equipment is
being modified. For the paper
punch, instead of the mag. tape.
So the tape recorder will
run slower if also the printer
will run slower. I could not
confirm Eric's complaint about
the printer. The 36" telescope
balance is a compromise. It is
balanced to operate best at a small
 zenith angles.
is a bit excessive.  

9-6-73  
Heard from John and with Morgo  
(dry lab) all RA clamps gone.

9-8-73  
Sargent (2nd half). Had to stop  
because weird vibrating telescope table  
but clock drive appears to track considerably  
better than before.

9-9-73  
Meggio & Muller - No Problems. Can use

9-10-73  
Meggio & Muller - No Problem. Can use

9-13-73  
Took over after Hunter gave me.  
Re-aligned Finder Scope.

9-14  
Everything working beautifully - tracking seems better  
than before even at 5" - Jensen

9-16  
Ditto. The work people have been doing on this  
telescope makes observing on the 36" almost nice.

9-24  
Movement of the pierced mirrion of the  
photometer went out of order. Apparently  
one of the screws which move it went  
out. Meggio & Eppley

9-25  
REPLACED CABLE - Eppley
25/26 Sept 1973 - Rydgren
2. Signal cables severed between I-F Box and Electronics Rack while rotating telescope head. Emergency repairs made. Bob McCallister has made a note about this for Al Duval. Also, there is no plastic cap for the channel 1 zero offset pot on the I-F Box.

27/28 Sept 73 - Jensen-Grandi
The "S" in the hundreds' column of the counts recorded "counter of channel two of the photometer has burned out (lower left-hand counter on electronics rack).

The lower resistor on the camera control box - the one that is normally connected to the reticle lamp of the elbow finder telescope - is faulty - the reticle lamp only works while the resistor is being turned.

Noted 9/28/73 - RJH
No new pot available - however, the pot will now work, like a switch, in one position - almost all the way clockwise.
Sept. 30
Need new flashlight, some batteries.

Oct 1
Drive slipped twice during 45 minute exposure at 11° a 20 km. west.

Brake slipped at end of night when setting telescope on hill.

Focusing:
Loose connection on guide probe while I light was on. No longer a switch near eyepiece.

Oct 7;
Drive is somewhat improved since Oct 1 still tends to run slow and has periods of 4000 rpm.

Oct 13; The drive is tracking decidedly slow. The reticle light on the of fortifier occasionally comes out.

Oct 15; Wrong book.

Oct 19; No problems.

Oct 19; There is nothing tracking or declination.

Oct 20; The reticle light on the companion guide turns off occasionally. (Probably bad contacts or... ?

Oct 21;
22/23 Oct 73  Rydgren
1. Still no black plastic cap
   for one of the zero offset pots
   on I-F box (Ref. 25/26 Sep 73)
2. No audio signal on
   channel 2
3. Drive rate is badly off
   (too slow)

[Butch showed me how to fix it]
1. If we had a black
   plastic cap, or could buy
   one, it would be on the
   I to F box. However, the
   36" system can only
   use one channel at a time,
   so lacking one cap should
   be no problem.
2. The speaker system in
   the photometer racks were
   put in for convenience —
   only — and does not
   affect the operation of the
   system. The amplifiers
   for the 90" rack systems
   have been replaced — and
   when there is time and money
the 36" will be done.
3. The drive rate for the telescope was too slow—
because the last observer
needed it this way—

R A M

23/24 Oct 73 Rydgren
Ch. 1 signal cable broken
between I-F box and electronics
rack. Emergency repair made.
I think the culprit is the top
rod of the balancing weight on the
west side of the telescope.

Noted

R A M

10/25 Note to Newt, Camera
Observers — The intermittent
particle light on the camera
is not due to an electrical
short—but the observer
moving the light away from
the pin hole into the
eyepiece—

R A M

10/25 Done guessed M D
A careful inspection of the telescope tube will reveal about 1 sq. inch of paint has been chipped away from the tube on the SW side about one foot above the balance weight slide yoke. I would like to acknowledge responsibility for this due to an error in judgement on my part this evening. When setting the telescope south in Dec. I had the platform too high, so although I let up on the drive a moment before, the telescope coasted & rather gently into the platform. I do not think the paint would have been chipped except that the point of contact was the metal guard rail on the side of the platform.

-Eric Jensen

PS—Steve requests me to mention that the reticle light on the lug rod finder telescope is completely inoperative.

Thanks for mentioning damage plus the reticle light for finder is ok.

Procedure for reticle light operation

1. Turn on top 6V pot & close other holes pot all way counter clockwise.
2. Use pot next to finder to adjust brightness.
3. Make sure light is shining through small hole in finder neck.
27/28 October
Filter slide very hard to move for first three positions. No other problems.
D. Mesley
Cleaned filter slide + straightened housing and slightly sanded filter slide itself.
It is working as good as it will. Better.

28/29 October
Everything worked fine - no problems
D. Mesley

30 October
Everything O.K. but still training in declination. J. Maggio - received Dec. 30th 04

30/31 October
Clock drive is rather slow; no other problems
Solved by clock tuning J. Maggio

31 Oct 1000
Clock drive is definitely very slow; training in declination seems to have improved greatly

Nov 2 No problems; everything worked fine
Nov 8/9 - Dome part way open - took out rest -
the dome 400 under the attention
observer sign - OK - but
 coupling is coming apart - in dome
shut under strain

Nov 8/9 Everything O.K. except clock drive is too fast!
Honest! It was consistently driving my stars out
of the field and at the diaphragm in about 3 or
4 minutes tonight. Eric Jensen (i.e. I had to
drive the telescope most to correct it...)
Reduced speed of clock drive

Nov 8/10. - OK. No problems.

Nov 11 Rate a little slow tonight. If you can note
the difference between tonight's and Nov 9's
settings, that should do it - EBEE

Nov 14. No problems; everything worked fine. Aj

Nov 15. Although yesterday I used all the time
channel 1 of the photometer without any ap-
Parent problem today it did not work from the beginning. No record could be obtain from Channel 1. After some inspection I found that one of the cables connecting the photometer with the rack had been severed and some emergency repair done. After I put some more insulating tape on that zone I could get a few records from Channel 1, but soon went out of order again. I placed a piece of white tape over the severed part of the cable to help you to locate it. Apparently if it is properly repaired there will be no problem with Channel 1. I used Channel 2 during the whole night and I had no other trouble.

This particular mistake is happening far too often. The only solution may be to retrain the observers who commit this and similar mistakes — R.A.N.

Not 16, Channel 1 does not work; apparently it works in gains 1, 2 and 3 but not in gains 4 and 5. Early in the night some light noise came from the rack and the partial power.
Nov 17 - The audio signal of channel 2 does not work sometimes. Since the night was useless for photometry, I devoted some time to adjust the clock drive which was rather slow. It seems to be OK now, limited until 4:10 AM but the weather did not improve.

Nov 18 - I opened the dome only briefly and closed it due to gusty winds exceeding 60 mph every few minutes. I kept on waiting, but when it about 10:30 PM it began to rain I quit.
Nov 19

Not a photometric night after 22h30 pm. I waited until 3 AM but did not improve. When opening the dry ice container I found that the insulating material had partly come apart from the cover. I fixed it provisionally but needs repair. Once the tape recorder failed to record and remain with the lights on (the ones that usually twinkled when the tape is punched), all the controls of the photometer were then inoperative. I turned off the high-voltage, unplugged the rack and plugged it again, and it continued working OK thereafter.

Nov.

Checked out photometer rack and it operated normally on both ch 1 & ch 2. 7th kl - UV/IR switch must be in UV/IR pos. for normal

20 Nov

Received check out auto guider from Mike Read. About we have after M. Read left new power fuse blew (18A 250V). Obtained replacement (12A 250V) from 1st Rack but could not get auto guider to go to Fred. After considerable work M. Read decided to shut down at 0055 MST on 21 Nov.

No plate, still first moving in great frustration. M. Read

[Signature]
Fine delay relay on gate is shifted causing blown fuse and interlock problem. Put in temporary jumper until replacement relay can be obtained. Check out operation and replace with takes in display scope. 11/21/73 Birth

21Nov

Combined circuit ground wire won't hold, but barely able to hold ~7 mamp. star on oscilloscope — would not hold — increased within slightly, still would not track. Took test plate using ~5x mag. star 15 min exposure — looks good overall — front end wire at 0.45 — shut down.

Nov 24/25 The tape drive several times became stuck when it wouldn't advance properly. The switch on the handheld light doesn't make good contact and just flickers

Nov 27 Tape drive quit again sometimes during the night.

Nov 29 Managed to trip the dry cathode off the back of the cathodestem's, destroying it.
Dec 7: Wind screen seems to be sticking more than usual. No sign and starts - went more smoothly.

The Sargent

Dec 8: Wind screen rollers wheels re-aligned - OK
However - starting winding on thermal relay may give trouble if windscreen is run too often - OK

Dec 14: Dragged lower control box and broke off "West" plastic button. Controls still work OK.

Dec 17: Unable to raise the 90° on the intercom - I wonder if it is working properly.

Rydberg

Also, telescope was slipping in RA when pointed in 4h west (I don't think it was a preload problem, but I could be wrong - need a method.)
DEC 18
Both 6 volt outlets (for diagram lights) aren't working; they worked fine for the first few hours. Also, the meter indicator for the variable guide rate on the R.A. side seems to be dead. The guide rate changes alright but the meter doesn't indicate.

L. Thompson

2/28/73 Dome shutter would not open for any reason.

DEC 20
Noticed intermittent short in Cassegrain paddle for dome & dec. controls. I also noticed quite a spark when the 6 volt "handy light" was grounded on the telescope. L. Thompson

Dec 21 - Broken wires in paddle cable. Exchanged paddles. I believe I fixed the handy light - at least I can't make it malfunction. The wires, for the light, were taped together with masking tape.

Ritty

Dec 22
Open for only about 12 h - scattered clouds humidity around - shut down due to problems.

O. Stoll

Dec 25
No problems with the equipment, not a photometric night, shut down at 10 P.M. Wynn
Dec 26  Everything worked fine, but at the end of the observing run, when I tried to take out the tape, I noticed that it did not run; I do not know how much tape was not punched because of this problem. I left the tape loaded and apparently working well, but better check.

12/27  - Activated Tape several different ways - seems ok - threw out data.

Dec 27  - Clouds - so close, early. Everything worked fine (including tape drive) for short while I used it.

D. Mosley

Dec 28  - I encountered two problems:
1) Typewriter became stuck in the middle of a line and would not return. I keyed it off and reset it manually. After two or three attempts, it started normally. I had no more problems with it the rest of the night.
2) When raising the advance button on the paper tape - the dependably check would not turn on - seem to be loose.
tape causing the tape to stop advancing. After rethreading the tape, I found that by using the advance button in short bursts, this problem could be overcome. I had no trouble when punching on observation.

D. Mosley

Dec 29 High Winds + Clouds. Did Not Open

D. Mosley

Dec 30 No Problems other than the weather

D. Mosley

1974

1/18/74 Washed Primary mirror
Washed Newtonian Secondary — Secondary has some scratches & many finger prints — RHW

1/24/74 More pages are needed for the Newtonian plate log book, which we are returning to its location just inside the Cold library closet. Pages are in file cabinet. 

Sign Name please — RHW
Photometer diaphragm viewing light appeared to short out system (i.e., other lights didn't work when this one did). Wasn't illuminated when it was on. Makes in usable. Wire for viewing mirror broke again. Sorry.

1 Feb 74 The printer is acting up again. Tonight it printed half lines and skipped lines much of the time. E. Jensen

2 Feb 74 Printer worked perfectly. Thanks. E. B. J.

3 Feb 74 Wire for viewer broken again. (Honest, I didn't do it.) Plus wire on cable to rack appears pulled out. Printer is paper junk. Hope others.

R.M.
6 Feb 74  Printer stuck after about 8 lines. This is just for the record; don’t fix it for me as I’ve given up on it completely. Everything else worked well - telescope tracks now better than it ever has since I started using it. 

- Eric Jensen

7 Feb  The paper tape punch is out of paper - Jensen

19 Feb  There used to be a darling little pencil-beam light in the darkroom that you could use in conjunction with the microscope to examine your plates. Does anyone know what has happened to it? 

Eric Jensen  it is in the 90° box

20 Feb  high thin clouds all night; no photometry in this weather. 

L. Thompson

23 Feb  1) Mirror cover motor sounds labored when opening cover;  
2) Other guide difficulties: a) limit switch for travel of plate holder failed erratic but mainly involuntary b) dither when in "AUTO" mode not function until GUIDE button engaged; dither on box when on

Destroyed by fire Mar 84
"Manual" mode.

General summary: a non-WR11
non-Skrömgren-HP filter slide was
found in the photometer. The
suspicion is that it belongs to
Watiff (left behind by L.
Thompson). We are returning
the filter set to town.

P. White.

14 March

PHOTOMETER. AND TEST OF GAIA
PHILL. DOES THE TELESCOPE GOES
AWAY WHEN R.A. CLAMP IS RELEASED?
OUT OF BALANCE OR NORMAL?
LET PHOTOMETER AND RACK ON
ALL DAY PLEASE

L. SMITH AND S. TAPIA.

15 March.

Telescope punch is jammed.
Noise generator comes & goes, can be induced
to stop going by gentle thumping.

Smith & S. Tapias
16Mad. Please rotate upper section of telescope tube (with instrument) 50°. Workers have been stuck to telescope.
Need more dry ice.
Please leave instrument rack switched on.
L Smith
S Teper

17
17Mad
Please rotate telescope as yesterday.
Please leave instrument rack switched on.
L Smith

18Mad
Sorry about telescope chair yesterday. I'll be up in time to see you today.
L Smith

21Mad
Problems!
1) RA slow smooth funny intermittently. Betch says 'madbad?' It's pitch changes.
2) Paper tape punch is sticking repeatedly!! Can be unstuck by pulling out its plug or lack of such - sometimes.
3) Tape shade on white light on desk or floor came loose.
IF you turn off rack to work on please turn off HV & leave off.
4) Please rotate.
L Smith
22 March. No problems. Do you know already that audio
monitor "turns" on + off if you thumb it? It has
been that way all along.
Please rotate.
L.F. Smith

PS. What is this I found on floor under act
screw drive motor?*

23 March. RA wet out does not always work on small paddle.
Please rotate. (At vent or under cast)
L.F. Smith

24 March. No RA wet on small paddle anywhere East + Smith (Vent)
Please rotate.
L.F. Smith

25 March. No reaction! More degree needed. Four bolts.
Can help on dry. Can
L.F. Smith but not on clowns. Butch

26 March. Installed two crane cable hangers
and put 4 bolts in board on top
of crane.
27 March
This grey of cable makes poor connection with the IF box - just touching the socket would make IF turn off! The other one (which Joe gave me) is better. Things were still very variable but it might have been clouds where the band.

L. Smith  Noted but

28 March
PHOTOMETER DIAPHRAGM LIGHT NOT WORKING PROPERLY. ADJUSTMENT IS EITHER TOTALLY DARK OR TOTALLY LIGHT.

Also, the night sky count with the photometer is 5 times higher now, as compared to the counts obtained before the phototube was removed: V filter, 3MV diaphragm, 10# illumination; 369 counts before, 470 counts now.

Replaced Rheostat 3-28-73

L. Thompson

29 March
LOWER TRANSFER REGISTER ON CHANNEL 2, has a burned out "5" in Nix tube in the 100's column, not too bothering though.

Again, night sky count 1.5 - 2.0X higher as compared to counts obtained before phototube was removed & replaced.

L. Thompson

3/30/74 No sound for photometer count coming from rack.

S. Teubner  Could not confirm.
4/10/74
Paper punch unit put the tape. Not used.
S. TAPIA, M.D.

4/18/74
*Sorry about mix-up about instruments - I wanted photometer tonight & direct camera/reed clipper tonight or 4/19-20

4/20/74 - Photometer - channel "1" fixed - sound restored to channel "2" - AKD/RAM

4/25/74 - Ball bearing in photometer filter slide detent is missing. Rydgeren. Query

4/28/74 The R.A. Slow East was straining and at times fell altogether.
C. Sheldon
Clamp was pulled into two.
Fried - AKD/RAM

5/3/74 Newtonian-guide east - not working
fixed - AKD/RAM

5/3/74 Newtonian - unclamped
disconnected - AKD/RAM
May troubles —

1) Channel 2 is loading somehow: counts of ~ 24,000 in 10^5 on gain 1 (Channel 1 is counting ~ 18-20 in the same interval), with zero adjust full CCW.

2) Printer erratic — although cleaning the slide-bar probably would take care of most problems, as numerical characters show a variety of widths.

3) Punch erratic in early part of reading: hang-up in the middle of a punch-out numerous occasions (1/2 hour to get offsets and calibrations); see print-out record — such as it is (very incomplete).

4) New wide-field viewer push-through is a great improvement; it's reticle is screwy — central circle comes on out much after orthogonal set of fiducials, and field is pretty

I to F box is not working correctly — will be repaired.

Slidé Bar cleaned — however trouble may be a gate in some E 800 card RAM.

Reported to R. Hilliard — he says that the — probably were scratched too deep.
bright by then time.

5) New eyepair for through-
the-drapery viewing is GREAT
The slide-lens for use in Foucault
focussing is OK — not great,
but environmentally usable.
R. White

5/17/74 Still troubles —
1) Tally punch still hangs
up in mid-cycle at irregular
intervals. Clearing procedure:
turning off—on—off—on the
main AC power-strip in the back
room of the rack, requiring then
a re-set on the digital clock
and error flag on the
following observation. It is
very wasteful of observing
time.

2) Drapery illumination
is poor, diffuse glow throughout
entire field rather than light
only on edge of drapery.

I'll bet the little plastic
(opaque black) "light pipe" has
been lost — it provided me
diaph. illumination to fall only on the diaph. edge rather than sprawling around the whole visible field.

3) Although the new push-pull field viewer is handy, there is too resounding of a metal-to-metal contact when using it even at moderate (~2°-E) beam angles. It needs a soft stopper installed.

4) Printer is making strange looking numerals — some are squeezed up, others are wide open.

Request to Day Men: please bring back Tally punch from 90-m so that I can use it on Sat night. The other printer might be useful as well. Also, please find plastic black-taker-upper from existing Tally punch which broke off upper s-t-u — whilst I was fumbling around in the midst of a hang-up — I broke it off trying to free the jam in the dark. Dammit! Piss
More troubles —

5) The reason the filter slide is so hard to move in-and-out is because the brass rod (square cross-section), which goes thru filter tray to the digitizer, is BADLY bent — in numerous places. Can we get the brass rod straightened out??

6) The latest IIIand modification to the offset guider has a hidden difficulty — the first sign of the new problem is a very compressed out-of-focus image of a star ...

\[
\begin{aligned}
\text{(○)} & \quad \text{it looks like} \quad \text{(□)} \\
\text{The cause of the squeezed appearance is that the diagonal slot in the offset guider — the one with the hole in it — slides in the direction of motion of the pushrod. When that guider begins in the body of the guider (very easy to do as rule no. 3, p. 78), the mirror slides and the perforation becomes misaligned with the optical axis of the diaphragm slide/focusing lens — photocell aperture. The vignetting must be fierce. One must realign the mirror table with use of a...}
\end{aligned}
\]
judicious finger and a gentle twisting in the appropriate direction. It would be much better to fix the mirror so that it doesn't move. I suggest the standard Hilland treatment: a modest amount of RTV silicone to bind the edge of the defocusing mirror to the edge of its carriage. A few dots would do it — and could be easily cut through if the mirror should have to be removed at some later time.

7) Printer is nearly out of paper; why does it print so strangely?? See print-out on Newtonian Platform control panel by observing desk. Also, the printer slides often — and at irregular intervals — choices not to slide, thereby not printing. — Why??

3  Last message: I'm going to RAM Ind. Day Man Quiz at 12 noon, 18 May. Pw.
1974 May 18/19

No equipment problems —

Well done, RAM! Round 2

1974 May 20

The (explosive deleted) data logging system is inoperative. Gave up at midnight. Note: telescope itself is beautiful. I can see much fainter than I expected.

1974 May 21

Data logger locked up. I unplugged paper tape unit. No more problems. Seems to be tape unit problem!

I also suggest that the comparison source power unit (in 2nd drawer on mezzanine) either have a new reostat or new a resistor removed. The source is so delicately adjusted that small vibrations make it vary. This is not good.

S. A. G.
Clouded out. A. Duval installed a pot in series with comparison source. I suggest this be permanently incorporated in order to help assure consistency of source.

S. A. 6.

May 25-26

Contrary to my offhand comment to RAM this afternoon, I have had some trouble with the automatic guider, both tonight and last night. I have had 3 difficulties:

1) On the bright star (V=1.3) 21 Leo, the thing displayed a tendency to go into an oscillating mode, where in the 'Final' position the display would flick off and on about once a second and in the 'Track' position a surge of power with the same frequency would hit the same, making tracking impossible. I would finally get it to stop by unplugging the unit for a minute or so.

2) On several occasions the device tracked into the limits. No warning buzzer sounded.

3) I have the impression that the thing is less sensitive than it was several months ago - last night it drifted off 2 objects that it appeared to be tracking, albeit weakly, at the start of the exposure. Both were
subjects that it tracked well enough during my last run in February. I'll try and mention these problems to Mike Reed myself. I think it would be nice if possible for him to have a look at his creation before my next run.

Thanks, Erik Jensen

27/28 May cover over Newtonian camera port keeps falling off. Is that important? Also need a little pressure relief on the nice new cold box cork. Replaced cover and drilled hole in cork.

28/29 May There is a not insignificant light leak in the photometer, possibly near the filter slide. Observers should be very careful of stray red light such as from the red desk light.

R. Rydgren

(29/30 May primary light leaks seem to be around filter slide assembly and dark slide)
21/22 Jun 74

There is a minor balance problem when working in south. Telescope sometimes behaves as if there is no preload in dec - it is apparently wobbling between gear teeth or something - drives star to edge of diaphragm, which is bad.

R. Rydgren

There is no effective preload in Dec - However - Telescope top was out of balance. Sh. Be. OK now.

15/16 July  PAPER TAPE TEARING IN PUNCH - TORE TWICE IN 5 MINUTES GAVE UP AND LEFT IT TORN

16/17 July UNPLUGGED TAPE PUNCH

GRAND

Tape punch replaced AKD
July

Channel 1 was not working at the beginning of the nite. About 1 am it came on. I didn't see it, but the effect seemed to check out OK.

Extremes noise, e.g., paddle controls, trigger print to print, and advance one line. Also, columns on printout are not lining up. Is this caused by dirt on the band? Can you clean it? I expect to be using the printer the next 2 nites.

Tape punch seems to be working OK.

Is there a 3 way plug around so that SW Resp can remain plugged in all the time?

L. Corrado
23/24 July

All went well today, especially after I started the drive.

h. Corrado

PS. The piece of printer paper in the back of the book showed the kind of spurious printing the thing was doing last nite. It happened several times today. I think moving the platform is the main cause.

h.

24/25 July

Printer worked fine today, with one small quirk. Channel 1 consistently printed exactly 800 counts higher, i.e., 800 counts higher than the nixie. A Duracell read, for about the first hour.
I used channel 2 so it didn't bother me. No spurious print signals.

h. Corrado

Crandi

16. Aug Need some flashlight batteries.

Crandi

18. Aug Data rack seemed to work perfectly. Hooray!

The pierced mirror in the offset guider is crooked so the hole leading to the cold box is not lined up. Can see vignetting when looking at out of focus star image.

Reponite.

Crandi
19 Aug. Paper tape unit seems jammed, wouldn't forward space tape (luckily, it messed up at end of data)

22 Aug. Everything OK. J. Schim
   Clouds till 11:00

26 Aug. Filter position not printed out. It is always printed as end 2.
   Nothing wrong with filter read-out. Just with the observer!
   Printer out of order, though.
   Focused reticle on offset guides, but now
   the reticle is turned at an odd angle.
   Either new holes will have to be tapped
   in the reticle mount, or what set screws
   will have to be used to lock the reticle
   in place so that the lamp can be put in
   the proper position.
   Sudden change in sensitivity to W/100
   Must have been my fault, after focusing. Transformation ceased at 12:00 PM.
   Slept.

J. Schim
28 Aug 8/30 - Printer quitting

8/30 - Starting winding out an

Cass/coudé Focus moto - moto went to town for repair. - Ah.

Telescope too far out of balance

with focus motor gone. Won't hold

in R.A. at more than about 2 hours and

Finished with spectograph.

R. Kramer

Broke red button on case, flew out. Required

fix.

9/11-12/74 No real problems. Telescope tracking very

well. Didn't try to use paper tape on printer.

Wrote down numbers by hand. Offset guider

illumination superior to before (i.e., last year),

but not too good because of scratches on

plate, scattered light. Offset guider

appears to be broken on axis parallel to

photometer axis. Eyepiece clamps too tight,

but metal tube slips freely - I

don't think itâ€™s supposed to. Also, should

it ever be convenient, it would be nice to

do something about focus of offset guider

Eyepiece - Focus is moved accurately without cor.
1/3, and I can't focus it to my eyesight with my glasses off, which would be a handicap for transit work. More play would be very helpful. I noticed no vignetting by diagonal mirror. New diaphragm-viewing eyepiece works well, but diaphragm illumination is a joke. Pointing one's flashlight down the tube at the primary works pretty well, as long as no flashlights are directed onto the primary. The light clone noted by Rydgren (28/29 May) is spectacular. I'm inclined to wonder if any work I've done here with the moon up has been meaningful.

Thanks.

ERIC JENSEN

Field in 1st eyepiece (filled with hole in it) bears no resemblance whatsoever to that in behind-the-diaphragm eyepiece. Vega centered in 1st is nowhere to be seen in 2nd, even with diaphragm wide open.

---

See entry of 9/14/74.

by Rydgren for Eric - 14414
9/14/74  No problems. I aligned the offset guider with the diaphragm. The new numbers on the RA and HA circles are nice!
R. Rydgren

22 Sep 74  Dayman:
Two observers are still occupying the Dorn Annex, even though they are not presently on site. They (Beshore and Norden) will be back Monday for Mon. & Tues.
Night scheduled observing.
R. White.

6 Oct 74  Dayman:
Need another roll of paper for the line printer on photometric work.

E. Beshore.

10-10-74  The diaphragm mirror on the plot is not aligned properly. I found a loose nut & 2 loose Allen screws but could not get to the other side to align the mirror properly.
without taking the test all apart.

I do not have time today.
The test is usable this way.
it is as if it does not change.

10-10-74 (Dayman)
The diagram has not changed.
All site positions, but is still misaligned.

H. Smith

10-12-74 (Dayman)
The buffer test readout for the
Channel 2 on the PEP: one of the
indicators does not work (kinds of place)
It works periodically.

This network.

E. Bahm
Works periodically.

Re-continued
But, may have found signal to take.

I am not sure.
If it stays out or
Works periodically.
Will replace.
Replacement is not good.
One number.
But the whole set.
Rain.
10-14-74

Bob's modification to diaphragm assembly seems to have solved that problem. Telescope is not driving at the sidereal rate; a star drifts to the edge of the smallest diaphragm in about 2 minutes. Also the printer began to stick, so I turned it off.

Rick Rydgren

10-17-74

Please check coaxial cables on calibration box + step switch. Also, it is possible to put a spring in the off axis viewer for motion across the optical axis? The eyepiece would slip at certain orientations of the telescope, causing the reticle + diaphragm to be misaligned by 5 min of arc.

Thanks.  

Rod Norden
10/23/74. The plug which attaches the calibration box to the IF box fell off. It is now secured to the coaxial cable by tape so that it does not get lost. It will need repair.

C. Fuller

J. Smith

10/24/74. Channel 1 quit working about 3 hours after turn on of all was sudden. Channel 2 seems OK but printer will only print Channel 1. (In all modes (1, 2, 3, 4, 5, 6) were tried with negative results). Channel 1 came back on about 3 or 4 hours after having quit. Channel 1 going on/off intermittently.

W. Smith

10/25/74 - Cass observing

Ladder Broken

10/25/74 - Newtonian Platform Up/Down cable replaced

11/13/74. Replaced springs in offset guider for photometer.

J. W.
Signal Cable Broken Again - !

11/16/79 - Channel 4 not working
Recorder not recording channel 2
Channel 2 records trace as W. Smith

The South Vise for the Cass Station
Control Box is off. It is broken, and
as in the lower left-hand corner of the
stop, drawn on the platform. Also check dagherog
Set screws.

E. Bedne 1970 Nov.

12-7-79
Electrical cable plug on controls
broken. Works only intermittently.
O. R. Norton

12-18-79
Electrometer is working OK,
recording all right too.

Red LED lights for the dagherog
Eyepiece does not turn off
when the dagherog eyepiece
mirrors is pulled out.

H. Parker

W. Smith
11/25: Although I found no mention of it in the logs, I got the impression that someone has been experimenting. Is this true? In any case, I had some trouble tonight with the scope (horizontal travel) oscillating on moderately bright (~1800) stars. This ruined a couple of my exposures.

Also, if a dog can exist today, it would be nice if he could take the camera off the telescope for me, so I can take it back downtown. (I'm leaving about 11:45.) Otherwise it can go back next week sometime - Hilliard has promised to do some work on it.

ERIC JENSEN

Jan 14/15 -
Channel #1 acting up during calibration, "shakes" and jumps. Doesn't give consistent readings.

1975 Jan 6/14 - Oh, I still on the Fritz, see note for AK Dunn, enclosed. Printer slide-bar probably needs cleaning and re-greasing; many troubles with line spacing. No info lost - just paper wanted.
1975 Feb 6, 75.
The cement plug on the right hand side of the R.E.P. side observing station fell off during the wire. Please don’t look at the rigging we devised to secure it, it won’t work.
E. Redman

1975 Feb 8/9
Just thought it might make a difference if I don’t put wire in pipe. A perfect match. Probably the best selling and transparency I’ve ever experienced together at Kist Peak. Telescope behaves like a chimney, I needed the fly-back settings until the drive was perfect - rock steady. Someone is to be congratulated on an excellent job of coarse balancing the telescope. No centering corrections required - except for differential refraction - for over five minutes! Ch. 1 and 2 both operational, printer OK, too - what happened 2/7/76.

Red Drummond

1975 Feb 9, 75.
Just thought it might make a difference if I don’t put wire in pipe. A perfect match. Probably the best selling and transparency I’ve ever experienced together at Kist Peak. Telescope behaves like a chimney, I needed the fly-back settings until the drive was perfect - rock steady. Someone is to be congratulated on an excellent job of coarse balancing the telescope. No centering corrections required - except for differential refraction - for over five minutes! Ch. 1 and 2 both operational, printer OK, too - what happened 2/7/76.

Red Drummond
1) Printer skipping lines again; not Wholesale, as before, but at random and (so far) only one extra line per slip.

2) Pretty please, put a light pipe in the diaphragm illumination so that the entire field of view of the eyepiece is not bright (and therefore, one cannot see the edges of the diaphragm).

3) Please put some red cellophane in the light bulb with red plastic nail polish, over the petticoat illumination in the offset guides. It's much too bright — make it two or three thicknesses of red cellophane.

4) The windows in the dome annex should be left open as much as possible. It stinks in there without too much help from the occupants. [Signature]

P.S. I left the heater in the cold box on purpose — so that the full change of any ice wouldn't hurt the Golay lens.
3/8/75 - Fixed down/melt RA clamp - 0W/Km
3/8/75 - Re-installed Tertiary - However - missing two retaining clamps, + one side support - 0W/Km
3/8/75 - Panic - on Cass paddle, does not work - KAm

3/9/75 Replaced and fixed Focus motor - Drew Whalen McColister

3/20/75 - Put new paper tape & integrator unit on 36", IF rack on 1st floor 36" bldg.
- Ran test tape - data logging now OK
- Did calibration

"3/20/75 1) Replace fuse in lightning ring protection box, for Intercom and radio, not once if amperage is current. Be done - our fuse good.
2) Microswitch shut-off of diaph. light in dark plate of photo meter operating. Read.
There is no micro-switch shut-off of diaphragm & light in dark plate of photo meter operating. Read"
12/13 Apr 75. I forgot to mention that the wire we came up with (Fred & I) the code was missing from the cold box on the photometer. We have no idea where it is and will likely require a replacement.

Ed Reshuc

5 May 75. **NOTE:** BNC connector for high voltage at cold box needs repair — at H.T. version of the BNC was at waist height so I could climb, but is not the correct connector. Changed connector.

H. Butcher

May 75. **NOTE:** BNC is now wrong for ordinary cold box H.T.

NB.

13 May 75. Before we begin the evening, we found things in pretty sad shape. The light on the cascade upstairs is broken. The coaxial cable from the cold box to the control box was gone. We borrowed one from the old calibration box.
from the old photometer system
(see Donald Fitch's file drawer)

E. Bledsoe

13 May. The lower right hand Allen screw in the cold box is stripped.

E. Bledsoe (as you face the telescope)

15 May. The button for "dome left" on the replaced hex in broken.

E. Bledsoe

May 20, 1975 - Washed Primary mirror - Woolland - McCallister

May 25, 1975 - Washed Newtonian secondary - numerous finger prints & scratches also washed. Placed mirror in offset guides. When this mirror was replaced - plastic was used. - Woolland / McCallister

May 28, 1975 - Upper limit on wind - screen broken - 13 Aug

5-29-75 - lubed dome & clock

checked reducers & added grease to small reducer on ever...
May 6, '75 - Several problems:

1. The strip chart recorder reads a different value from the DVM, which I assume is accurate as it agrees with other observations. It started 15% higher than the DVM reading.

2. I changed the battery (1.5V large) with one in the back of unit after consulting Walt Fitch. NOW it reads 10-20% lower than the DVM signal. PLEASE TRY TO FIX IT. It agrees with DVM as it has always done.

3. If time permits, please check the filter slide - it feels abnormally tight, requiring a hard pull to get past filter 5.

HELP? R. Norden
Problem cleared 6/6/75
June 2, 1978

1) Have a problem in code because of the difference in 5850 vs. 5860. For that reason, we would like to have a software interface between the two machines. It is realized that this is the only way to avoid the problems.

2) The problem above in many difficult situations. The user interface of the compiler without the software interface is not suitable. The compiler is very difficult to use in the 5850 environment.

I am not sure this will work. I will let you know when we get a little further along.

Best regards,

John
August 1, 1975

One complaint at the beginning of the evening. The mirror cover was open on the telescope. Please try and get a weather receiver for WWV. We need it badly.

E. Bestor

August 2nd and 3rd:

Everything is OK. No problems.

Refreshing. I. Norden

August 21, 1975

No problems.

S. Tapia

August 22, 1975

No problems

S. Tapia
August 23, 1975
No problems.
S. Tapiea

August 24, 1975
No problems
S. Tapiea

3 Sept.
THE SHADE ON THE WHITE LIGHT ON THE PLATFORM TABLE IS BROKEN. THE AC WIRES ARE EXPOSED TO FRICTION WITH JAGGED METAL (GRIND)

5 Sept.
The paper end from the Sideral Clock needs a new plug. The present one has an exposed wire and has been giving some mild shocks.

Replacing plug Jan 9-11 75
Complaint

9-19 While calibrating the photometer, the DVM registered a charge when it should have read 0.00. This charge could not be released from the system (DVM) by any method known to Preliterate or myself. I will call Dr. Fitch in the morning.

This probably resulted from the fact that the calibration switch bleed was left on calibration position, and internal source left on. If you need more information to help solve the problem, I'll be up early to take the 10°30 Rd.

R. Norden

Action

Noted

RAM supply

own work

-13.0 VDC

+300 VDC

+200 VDC

Replaced Rectifier Tube AKD
11-8-75

Photometer knocked clock off
post + probe glass. Clock said
8:57. Suggest mounting
Clock by outside clock.
OK

11-9-75

Good night. No Problem 60°F

15-Nov-75

Came all around, but worked
anyway - training session.
Photon electronics box, sensed by
SPN, appears to be working
properly.

16-Nov-75

Suggest removing I-2E box
(Amplifier #4) from p.c. photon
location and then re-balancing.
Query: could small ehler
telescope be relocated from
camera port to prisoner
port? It would be very
efficient in picking up p.c.
students in

P.S. No operational problems
either night; also, the dome
exterior walls are BEAUTIFUL.
12/6 Diaphragm light not working on photometer.

12/25 Diaphragm light burned out; only one (#) diaphragm light bulb working and it is insulated; no spaces left. 2) Cut-out SW on diaphragm light (when dark slide pulled out) would work if it were cammed down a little further (~1/16")

3) A short piece of tubing (~1/8" dia.) is needed between the dark slide and the diaphragm illumination; a piece of "spaghetti" will do.

4) DOME RIGHT on NEAT focus & SLEW/SET paddle is intermittent.

5) We left off the bottom cover plate of the filter/diaphragm module on purpose, so that DAY MAN would not have to take it off again when he fixed the diaphragm light out.

M.K. Stein & R.E. White

27/Dec/45 Murray K. Stein checked out on 36-in. tele. & P.E. photometer.

R.E. White
28 Dec 1975  Dome right on. Newtonian focus
Slewing paddle is intermittent.

M.K. Stein

24 Jan 1976  John, Baker and James ("Odds")
Baker's modified seat on
36-ops. and phototube ops.

R.A. White

25 Jan 1976
1) Mirror-in-the-which was off
diaphragm light when dark side
pulled out fixed - after two key
2) Diaphragm light source baffled
so there was light scattered into
filter & Felting line assembly
in all done by wonderful Ray (Inset)
3) Strip chart recorder again on
Re:arta - seems to be same problem
as before - pan drive to "in" extreme right (1007) +
and makes noise. Ray

27 Jan 1976  All OK

R.A. White
7/5 February '76  Strip chart recorder appears to continually
for no matter what one does. It is possible
that the dry battery is dead. Reset stepper
switch on electronics side tends to stick
also.
M.K. Scan, et al.

13/14 February '76  Replaced strip chart recorder battery (dry cell)
and it now works up to par. There are 3 other
new batteries in rear of strip chart cabinet
and electronics side. (= there were none last week).
Photometer working well.
M.K. Scan, et al.

2/14/76  Strip chart recorder and D.V.M.
readings not in agreement.
J.L. Rod Rims

2/20/76  Photometers and strip chart working
well. I don't understand why any
problems were encounted by previous
group. Had an excellent night.
M. Stue
24/9 February 76

Pholotrons & Strip Chart
working exceedingly well.

M.K. Stein & J. Heasman

5/6 March 76

Del handling, B. Binz, and J.
Heasman. Checked out on 36-in. telescope
and pre-photometer (by R.E. White).
M.K. Stein

6 March 76

Flashlight bulbs to block flashlight
on Newtonian platform requires
replacement.
M.K. Stein

9/5 March 76

Telescope OK, except inferred rate a little
slow, to special 5 cm. Had a little trouble,
but most of night was good - measure-
ments were strong, very poor repetition. Electronics
OK, had terrible sensitivity to position
in diagonal. Cleaned collimator & Fabry Prism
& adjusted collimator position. Cleaned window
in cold box, & adjusted cold box position.
Found photometer slat loose at top—mounting to offset guide and tightened it up. Both upper/lower division marks on right side of saddle block were loose so had 32-1/6 play on saddle block—tightened them up. I don't know whether it improved things or not. I lost mechanical work done after sun rise. The 36-inch photometer gave much better results than here, but I don't remember that the 36-inch system used to be so bad. I shall try again Sunday or my next photometric night, and try to get it in usable condition.

26 March '76 Repetition of readings on photometer seems improved after USF's overhaul. Many readings right on less than 1/2 %. B. Bell

27 March '76 Miserable night! Photometer worked well.

3/28/76 Pivoted diagonal mirror keeps sliding sideways on mounting block. I took guide off & tightened it down some more, but I don't know if it will hold. Used a D.C. amplifier from campus to align cold box after enlarging adjustment holes in back of photometer. Optimum setting is as far left (when looking through telescope) as cold box will move. Now get good solid measures, with repetition accuracy about 0.2-0.3 % on brightest

The take-up speed for the paper tape punch
3/29/76

A 40 mm ITT Image tube mounted on double slide camera.

Telescope focus has insufficient "in" travel to allow image to be focused on photocathode. Took tube off, and took some direct plates. Telescope tracking well.

W. Romanishin
S. Wilkerson

3/30/76 Direct photography. Telescope tracking very well.

W. Romanishin
S. Wilkerson

4/1/76 Put baffle cylinder back in after guide to prevent mirror shipping sideways. Washed mirrors. Found spring in bottom of guide - don't know where it goes. Please give my thanks to all for fixing the tape punch.
4/2/76 Telescope tracking very well. Photometer readings repeating to 01:37:11.

4/3/76 Good night! Once started south, telescope continues south even after north button pushed.

4/4/76 No problems, except FOUL SEEING.

4/8/76 Lubricated stepping switch in photometer data rack.

4/9/76 All working well but the clouds won! CLOUD WATCH! Recticle light out on Cass. Sta. Finder scope.

4/10/76 The ball point pen on the string doesn't write. Canvas dome skirt looks ratty.

4/11/76 Right dome rotation button on paddle does not rotate dome.

4/21/76 Thanks for fixing but it didn't work before the top was rotating.

B. Bell

4/24/76

O. E. Norton
5/8/76  Paper tape punch as joining holes? is, therefore, prohibited in data tape!
       W.K. Stein
       & K.A. Pack

5/11/76  EX82REPACK NEWS MODIFICATIONS will be up for next few days. 

5/31/76  Direct photography. Everything Fine.
          W. Romanishin

6/3/76  Sorry again for the scheduling problem. You will call a few days before
        next time to confirm. Demo schedule worked fine. My house Visitors
        sometime in week of Aug 10. We'd
        let you know. Thanks!
          D. Richards

O. Beck

I'll find out why you were not notified of
my schedule.
Dec 18, 76

Telescope out of balance (bottom-heavy)
Focus 19" away from its designed place.

Ronanishin & Hazza

Dec 18, 76
At δ = 17° and H.A. = 3° East, the telescope drifts back to the meridian. The secondary spider was moved two steps in and the focus now is between 6 1/4" and 9" above the upper surface. Images in focus look very nice.

Jose Hazza

Dec 19, 76
Secondary spider was moved one step in. The focus is from 0 - 3" above the black upper surface.

Flat moved 0.25" Focus 1/4 - 4 1/4
0.35" Focus 2 3/4 - 5"

Flat left at 0.35. Images in focus are pair to good.

Jose Hazza
Jan 23\textsuperscript{rd} The red pilot light of the driving in RA blew (the one on the second floor, right where the on-off switch for RA drive is). The telescope is not well balanced. The inertia slowing the telescope in Dec. is too much. It needs a pre-load or something. [Note here]

Oct 10\textsuperscript{th} It did not perform well.


Mark Adams & Jose Maza.

Nov 9/10 1977 Photometry of BL Lac objects. Drive's pilot light doesn't work.

Telescope tracks very well except at Dec > 65° & 2w East and at Dec > 20° on the meridian.

Mark Adams & Jose Maza.
Telescope works O.K.
Eyespiece light of the finder is not working.
(Wires disconnected).

J. Maza & Dave Kopriva

Polarimeter of BL Lac's.

O.K. Maza & Kopriva

118

Nov. 10/11 1977

Nov. 11/12 1977

Nov 12/13
13/14
14/15
15/16
16/17
17/18

Polarimeter of BL Lac's.

Telescope needs a pre load in Dec. & balancing.

Colimation should be improved

J. Maza

2/19/78

1. Windscreen fell apart last night - could you fix this please.

2. Bad oil drip.

Otherwise telescope runs very well with the prime focus arrangement.

Roger Angel
Feb 7-8, 1981


- Nice place you've got here, - but COLD! Crock-pot chile won't be ready till 1 a.m. Other munchies got devoured hours ago. No beer !?!

- M 82 was more impressive than M 81. Orion nebula was terrific.

- Dome's restroom works fine - but smells musty!

- Could only get one of the scopes TV cameras to work.

- More clusters & nebulae. Scope is responding well.
Feb. 7-8, 1981 (cont'd.)

- Chile's ready!

- An interesting night w/wonderful weather.

Cheers,

Valerie G. R. Schiano

Fall 81 Bl Lac Obsvns

May 5 72
J. Hill, R. Well
1983

April 15: Gelreys, McConnell, Fricke. Focus and Telescope had been reconfigured into adaptive test.

May 4-5: Various CCD tests by Bornhorst and Goff. Newtonian.

May 6: Scans on two known asteroids.

Sept 3: Various tests. Optics were realigned in August and feder and mirror cleaned by Bornhorst and Goff. Everything works fine. Preload light and Eastward now. Goff's balance is right on.

Sept 4: Cloudy but CCD starsmode works.

5, 6, 8, 9: Fine too. Observed an aster region.

10, 11: Established limiting magnitude.

Oct. 13: CCD scans of Goddard Gamma-Ray Burst fields and other CCD scanning. Note that the drive shut down near 3:00 a.m., started up when we reset to meridian. - Jim, Seth, Neil, Goff, Bob.


Right ascension drive does not read weight automatically. Can be manually done by gently pulling staff toward you with drive.

Called Bob Goff. Gamma-Ray Burst fields.


Successful observations also on Sept 5, 6, 8, 9, 10, 11 by T. Gelreys. Experimented for comet recovery and for asteroid astrometry. Early Oct had

Nov 6. We fixed the drive motor. Experiments with comet recovery. In the daytime Marcus Perry and Bob Boff painted the tube. In the evening, Boff and Belrels took DeeDrive apart and cleaned and balanced. Sunday Nov 6 Perry and Belrels finished painting the tube. Why, P, V, R filters had been installed, but must be careful with iris setting and iris heating.

Nov 7. Goddard — optical counterpart — to spray booster and Comet P/Otoma recovery attempt — too faint probably. Previous two nights had been perfect, but now windy. Telescope works fine. Goddard is oh, but Comet P/Belrels 3 recovery stopped by wind and computer program glitch / power glitch.

Nov 8. In the daytime, Tuesday Nov 8, a lot of cleaning also of office (previously made room). There still is a lot of junk on done room, second floor (including wood working equipment that blows saw dust) and especially dashboards and stairwell. Booted the NOVA with Fletcher's help on the phone.
Nov 21 Visitors Cline, Helen, Olivier in snow and rain. Fabulous night. The clearing up continues. Thanks to Goff. Still good.

Still good. Good nights. Telescope and Dome are fine.

Feb 24 Clear and calm.

Feb 25 Windy.

Feb 26 Telescope needs preloads, especially in Dec, Bottom of curtain is coming loose. There is no limit switch for full stretch.

Feb 27 Stopped by cirrus.

March 1 Perfect.

March 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

April 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

Good weather and observing - Spring winds.

April 28, 29, 30, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

Windy at times. System is really producing. Search for optical counterparts of gamma-Ray Bursters; Geostationary Regions; First Spacewatch Survey of asteroids.

June 20, 21, 22 All's well - Ron Taylor

Dome was painted. Outside walls tuff-taxed.

Inside walls painted. Fire jobs.

Goff fixed upper limit switch on dome shutter, and removed lots of junk from dome.
Sept 3: Open House, in pouring rain.
Sept 19, 20, 22, 29: Good observing.
Oct 18: the only night lost to equipment
trouble, in program loading paper tape.
Oct 22, 23: Stopped by clouds.

Marcus Perry's microtiretive hack is now
coming on, as is Jack Frecker's
drive system in R.A. (Dec next year).

Oct 24, 27: Cirrus, but worked.
Oct 28, 29, 30: Good nights. The Spacewatch
CCD equipment was on the Catalina
61-inch Oct 31, Nov 1, 2, Nov 9, 11, 12, 13, 15.
Both mirrors were realigned.

Nov 20: Perfect night.
Good runs on Nov 21, 27, 28, Dec 24, 30.
Jan 17, 18, 19, 20: We now work mostly
with McMillan's relay lens, at F13.8,
and also have F12.4 and F1.0.

1985
Good runs: Feb 12, 13, 14, 15, 16, 18, 24, 25, 26.
In December, the belt of Dec slow broke,
was replaced by Frecker – quite an
operation, with a spare in place.
Shutter motor oil leak fixed by John Ratje c.s.
April 1, 2, 12, 13, 14, 15; 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 29, May 27, 29, May

Programs now: search for optical gamma-ray bursts with Nest Bevels, is finished; Surveying for intense objects, Hungarians for instance; Astronomy of comets and asteroids with Brian Marsden; reconnaissance of appearance of comets, for Wieslaw Wisniewski; Satellites of Ashen Brown Dwarf. Survey in cooperation with Frank Low and his 1985 results: Parallax of Brown Dwarf candidates.

May 10-12 at 61-inch; back here; May 13 (transfer ~500 lbs of equipment in the daytime); 14, 15, 18, 19, 21, 22, 23, 24, 26.

June 1-4: LPL Doppler accelerometers moved to this site and installed in darkroom on 2nd floor by R.S. McMillan, P.H. Smith, W.J. Merline and M.L. Perry. This instrument has been developed at LPL for a very long term survey of solar-type stars to detect large planets in short-period orbits by observing the reflex oscillatory motion of the stars. Doppler shift is being measured to an accuracy of ±20 meters/sec (night-to-night).
This purpose. The instrument is a Fabry-Perot etalon interferometer, fiber-optically coupled to the north Newtonian telescope focus. A fiber optic waveguide in a steel flexible conduit is routed down the telescope tube and into the polar axis shaft (coude' path) to feed starlight to the instrument which is table-mounted in the darkroom. This interferometer uses a cross-dispersed echelle spectrograph to spatially separate the orders of constructive interferometric transmission and image them on the same CCD detector array used by Gehrels during the dark parts of the month. This telescope is thus now fully subscribed by these two projects (Spacewatch and Doppler accelerimetry) for the indefinite future. Transitions between Spacewatch and Doppler accelerimetry (otherwise known as "radial velocity") will normally occur at first quarter and radial velocity to Spacewatch at 3rd quarter. Each such transition may involve a change of telescope balance depending on whether the idle instrument is removed or left on the telescope. Doppler accelerimetry will normally use the north Newtonian port for an input unit that includes calibration.
Lamps, a guiding microscope and TV camera, and the input end of the fiber optic waveguide.

Reference note: This unit weighs 28 lb.

At the end of "bright" runs the R.V. fiber cable and other cables are stowed against the telescope tube so as not to interfere with its motion. However,

CAUTION NOTE: Do not slew telescope past declination ±85° because fiber condenser would be damaged by the counterweight hardware at the telescope tailpiece.

Other cautions and requests:

→ Please do not disturb the locations or alignments of the optical elements mounted on the table in the darkroom.

→ Some equipment for R.V. needs to be left turned on all the time even between observing runs. These items are so labelled and are safe and unobtrusive; there should never be a need to turn them off.

...
are a heating element controller for the Fabry–Perot etalon and a stepping motor preheater. The former will normally be on the floor north of the pier outside the darkroom and the latter on the optics bench inside the darkroom.

Requests may occasionally be made to SORP personnel to do some minor preparatory tasks some days in advance of an R.V. observing run, to allow things to stabilize. These might include filling the Varian liquid nitrogen adsorption pump and pulling a vacuum with it, tuning on a power supply for a hollow cathode emission line lamp, etc. These favors will be requested only of SORP personnel who are already familiar with the procedures and will be greatly appreciated because they will allow better long-term stability of the observations and will eliminate the need for expensive trips by R.V. personnel before R.V. runs.

Please do not schedule SORP or UAO maintenance or physical plant work on the second floor, observing floor, condole roof,
elevator platform, or alone during R.V. observing runs. Daytime as well as nighttime operations will be undertaken during R.V. runs because the extreme accuracy of our measurements requires daily difficult calibrations on unfocused sunlight and absolute calibrations with a hollow cathode emission line lamp.

Please keep the area on the ground floor at the bottom of the stairwell clear. R.V. requests to use this area as a staging center for accumulation of full and empty liquid nitrogen dewars, bottles of compressed gas, etc.

The north room on the second floor has been populated with benches that are all used for various purposes during R.V. runs. Please clear materials and projects off these benches before first quarter moons.

All the shelves and cabinets in the darkroom have been appropriated for indefinite storage and use by the R.V. project.
Historical note: First use of this telescope by the R.V. project on stars (Vega and Arcturus) on June 6, 1985. Considerable improvement in photometric signal-to-noise compared to similar observations made with a 14-inch telescope in Tucson due to greater guiding stability and light gathering power.

June 6-10: Various R.V. observations of sun, moon, lamps, Arcturus, and Vega.

- R.E. McMillan, P.H. Smith, W.J. Merline, & M.L. Perry

1985 June

Spacewatch observing run:

June 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 26 generally good seeing and clear (with some desert haze)
1985 June 27: Configuration of counterweights for radial velocity runs — by Jack E. Frecker 1-2774

I. On telescope tube:
- Short side, NW and SE: nothing.
- Long rod, NE: Two black 5" long weights: one 6/" from bottom, one 14" from bottom.
- Long rod, SW: Same as long, NE rod.
- South Newtonian post: black aluminum spacer, filter box only. (No relay lens box).

II. On fork:
- East side: Rusty iron block 6" x 6" x 14"
  - 4 lead blocks 2" x 13".
  - 2 iron disks 1 1/2" x 11"
  - 2 lead disks 1 3/4" x 7 1/2"

- West side: 1 iron disk 3 1/2" x 11".
- 2 iron disks 1 3/4" x 8".
- 1 lead disk 1 3/4" x 7 1/2"

Balanced by Frecker with Newtonian secondary facing the north Newtonian post and the primary mirror cover open. (R.V. instr. mounted on north post.) R.V. dial indic

Focus = 170.8 & mm 960 better than 546.
June 28. Certain problems from the last run have been corrected. Moved equipment to mountain for start of next run. McMillan, Perry, Melvin.

June 29

General organization of the lot. Brought up and tested all systems, aligned run instrument. Did various lab tests.

W. F. McMillan

June 30

Various lab tests with radial velocity meter.

W. J. Melvin

July 1

Various lab test with radial velocity meter. New heliostat was installed on dome shutter. It is a flat mirror (adjustable) to be used to obtain integrated disk solar observations.

Melvin & Perry

July 3  Observed Arcturus and Altair with Doppler accelerometer. Sky hazy, scattered clouds, little wind, stable seeing.

McMillan, Merline, + S.K. Pope

July 4  Radial velocity observations of stars Arcturus + Altair. Bad clouds but got several good exposures of Altair just before sunrise. No fireworks visible.

Merline + Pope

July 5  Various lab tests with radial velocity meter.

Merline + Pope

Dee guide motion is too slow to quickly take up the large amount of backlash in the gears.

Also, Frecker's RA paddle on observing floor has one dead switch.

(above problems are scheduled to be fixed by Jack Frecker)

- ASM
July 7/8: R.E. McMillan and W.J. Melville
Thunderstorms all around in evening, short-lived power outages. Observed Affair thin clouds:
0100 - 0200 MST. Closed ~0230 MST.
— McMillan + Melville
1985 July 15. Frecker's balance configuration for R.V. instrument removed from north port and both optics boxes on Spacewatch (south port).

I. On telescope tube:
   Short pole, NW and SE: nothing.
   Long pole, NE & SW: 2 black weights, one at each end.

II. On fork: Same as on page 135 for east side.
   West side: 1 iron disk, 3 1/2" x 1/16".
   1 iron disk, 1 3/4" x 8".
   Note: A weight less than when R.V. instrument is on north port (p.135).


1985 Sept 22 (day). RMS Mt. PHS observed under sunlight with radial accelerometer; looks like good test data.
1985 Sept. 23-26: R.S. McMillan, P.H. Smith, W.J. Merkel: Good radial velocity data on ζ Cyg and α Tau. Observed all night every night.


Sept 30/Oct 1: RSM + S.K. Pope: Observed ζ Cyg and α Tau then broken cirrus overcast.

Oct 1/2: RSM + SKP: ζ Cyg, α Tau and half, after clouds.

Oct 2/3 RSM + SKP: Clear all night, ζ Cyg and α Tau.

Oct 3/4 WSM + M.L. Perry: Plenty of cirrus; equipment problems; no observations.

Oct 5-19: Spacewatch (Gehrels)

Oct 21/22: PH5, RSM: Radial velocities, high winds, clouds.
Oct 22/23  cirrus, wind, bad seeing  RSM, PHS

Oct 23/24  Radial velocity obs. of E Cyg, η Cas, α Tau, β Gem
PHS, WJM

Oct 24/25  some on Oct 23  PHS, WJM
Oct 25/26  some on Oct 23  WJM

Oct 26/27  RVs

Oct 27/28  RVs: of α Lyr, η Cyg, η Cas, α Tau, β Gem, α CMa
WJM

Oct 28/29  RV obs. of E Cyg, η Cas, α Tau — RSM
SKy clear after 9 PM.

Oct 29/30  RV obs. of E Cyg, η Cas, β Gem, clean — RSM
Oct 30/31  R.V. obs. of E Cyg, η Cas, β Gem, some clouds — RSM
Oct 31/Nov 1  R.V. obs. of E Cyg, η Cas, β Gem, α Tau, clouds early, WJM
Nov 1/2  R.V. obs. of E Cyg, η Cas, β Gem, α Tau, clean — WJM
Nov 2/3  R.V. obs. of E Cyg, η Cas, β Gem, α Tau, clean all night — WJM
Nov 3/4  R.V. obs. of E Cyg, η Cas, β Gem, α Tau — WJM

Nov 4/5  RV obs. of E Cyg, α Tau, plus calibration; poor observations
due to thick clouds all night. LAST NIGHT of
RV work for this session — WJM + RSM

1985 Nov 6  Spacewatch, new instrument setup in Conrad room.
Survey scanning, testing, some clouds, G/L in.
JVA

1985 Nov 7  Spacewatch, scanning, weather not good! VJD

1985 Nov 8  Lower limit switch on Newtonian platform failed
To work! MLP: New focus mechanism installed
Who limit switches or readout, MLP (Spacewatch BRT)
1985 Nov 15 Spacewatch Observing - Clear, Cold.  J. V. Schutt
1985 Nov 16-20 Spacewatch Observing. (Topic 16-19)
1985 Nov. 20 Radial velocity obs.  WJM, PHS
22, 23
Nov. 24 - Dec. 3 MST
1985 Dec 5-7 Spacewatch Observing. Clear ~ 48°F, some high thin
clouds at times. Humidity ~35% - 10% - 27%. J. V. Schutt
6 MST
1985 Dec 10-11 Clear, Calm, too warm for a December
night. Recovery/Survey Spacewatch. J. V. Schutt
7 MST
1985 Dec 10 High thin clouds to begin with, cleared off, very nice
at end of night. Lots of Gemino Meteors. Survey scanning suite.
8 MST
1985 Dec 14-15 Clouds around, Wind ~ 30 MPH, power dropouts
4 times since mid afternoon - twice causing re-boots and
restarts during night.
13 MST
1985 Dec 14/15 Very good night. Clear & Calm. Lots of Gemino
Meteors. In one 10 minute period I counted 16 Geminos
and 1 sporadic, for a rate of 96 per hour! Lots of snow
in the dome as well as around it.
1985 Dec 17 UT Tapin 140 observed.
1985 Dec 18  Clear, light wind all night. Spacewatch  J.V. Scott
1985 Dec 19  Clear, 50% all night. Spacewatch  J.V. Scott

1985 Dec 20  Clear, new Boulder lens installed removing our previous chromatic aberration. Now we can use MPS, SV as focus mechanism. We find over a magnitude improvement in sensitivity! Guiding is much easier and the exposure meter gives 35K counts on Aldebaran W7 no piston. A very encouraging night. P.H. Smith & R.S. McMillan

1985 Dec 21-22  Radial velocity obs. of α Tau - WJ Merline
1985 Dec 27/28  "    "    "    "    "  - Menlove & Milh
28/29  "    "    "    "    "  - α Tau, G6em - WJ
29/30  "    "    "    "    "  - WJ
30/31  "    "    "    "    "  - Only cloudy - R5

1986 Jan 21/22   testing new Frechen Nova program to do automatic observations for stellar oscillation studies
Radial velocity observations of β Gem, α Boo
W.J. Mertens + R.S. McMillan

1986 Jan 22/23   Radial velocity observations of β Gem, α Boo; WJM
      β Gem, α Boo; WJM
      β Gem, α Boo
      and initial exposure tests on
      Lunar crater Mösting A; WJM
Jan 25/26   Radial velocity observations of β Gem, α Boo; WJM
      of β Gem;
Jan 26/27   lab calibrations; cloudy late in night; WJM
Jan 27/28  Radial Velocity observations of β Gem, α Tau
            moon crater, missing A
            - WJM

Jan 28/29  We were saddened by the terrible tragedy
            of the Space Shuttle today. This only
            serves to renew our commitment to the study &
            exploration of the universe.

            Attempts at observation of β Gem, but several
            long power outages made this difficult; also
            R.V. obs. of α Boo.
            - WJM

Jan 29/30  Radial Velocity observations of β Gem, α Boo - WJM

Jan 30/31  Overcast, rain & lab tests only
            End of R.V. run
            - WJM
1986 Feb 22 UT
Start of another R.V. obs. run
observed β Gem + α Boo
- R.J. McMillan
- P.H. Smith

Feb 23 UT
R.V. obs. of moon, β Gem, α Boo
- W.J. Merline

Feb 24 UT
R.V. obs of moon, β Gem, α Boo - WJM

Feb 25 UT
R.V. obs. of moon, β Gem, α Boo - RSM + W2W

Feb 26 UT
as above - V. warm night
4R2W
W2W

Feb 27 UT
as above - warm night
WZW

Feb 28 UT
as above

Mar 1 UT
as above - variable clouds
WJM

Mar 2 UT
cloudy early in evening; R.V. obs. of α Boo only; moon obs. were clouded out; also instrument calibration END OF OBSERVING RUN (R.V.)
1986 Mar 3-17 UT: Spacewatch scheduled (TG, AHM) but little observing except 15th + 16th because of bad weather.


86 Mar 18/19 UT: RSM, PHS radial velocity obs. of β Gem + α Boo.

Mar 19/20 UT: RSM RV obs. of α Boo (oscillation time seen.)

Mar 20/21 UT: RSM RV obs of β Gem and α Boo, sky clear.


86 Mar 24 UT: RV of α Boo; instrument calibration; clouds - WJM.

86 Mar 25 UT: RV obs of β Gem, Moon, α Boo. WJM.

86 Mar 26 UT: RV obs of β Gem, Moon, α Boo. WJM.

86 Mar 27 UT: RV obs of β Gem, α Boo; tests with color conversion filters on β Gem. WJM.

86 Mar 28 UT: rain, clouds; open dome very late - RV obs. of α Boo - high wind. WJM.

86 Mar 29 UT: rain, clouds; no observations. WJM.

86 Mar 30 UT: late start coming from town. RV obs of α Boo. WJM.

86 Mar 31 UT: obs. of β Gem, α Boo; clouded out at 11:30 UT. WJM.

86 Apr 1 UT: thick clouds; terminated RV run. WJM.


Apr 17 UT: RV radial velocity run. McMillan + PHS ext. β Gem, α Boo. Time series, 1 Lyra time ever.

Apr 19 UT: RV obs. of β Gem, α Boo, Lyra. WJM.

Apr 20 UT: RV obs. of β Gem, α Boo. WJM.
86 Apr 21 UT  RV obs. of β Gem, α Boo; Telescope drive failed. - RSM
86 Apr 22 UT  Telescope drive down; no RV obs. - WJ, Merlin
86 Apr 23 UT  Telescope drive still down; no stellar obs., but did instrument calibrations. - WJM
86 Apr 24 UT  Drive fixed now; high winds;
               RV obs. of α Boo, α Lyr. - WJM
86 Apr 25 UT  Very high winds; clouds; can't open until 11:30 UT. RV obs. of α Lyr. - WJM
86 Apr 26 UT  Two RV obs. of β Gem early in evening; but severe wind forces closing of dome. For rest of night:
               mostly clear. - WJM
86 Apr 27 UT  RV obs. of β Gem, α Boo, α Lyr; clear. - WJM
86 Apr 28 + 29 RV run continued & finished. Some clouds. - RSM
86 May 1 UT  Spacewatch. Follow-up 3 new objects.
86 May 2 UT  Spacewatch. Clouds continue around. Observed through clear patches.

Removal of the 75th dec. preload. Still have to use manual setting to zero jitters which knock out dec. digitizer calibration.

The GRO readout of the CCD is very simple, A/M not halted by cooling drift through the door.
86 May 3 UT Spacewatch. Phoenix satellite last night (none). Present setting technique; must turn motor but not with hand paddle, allow to minimum jerk on digitizer. Present the console to desired & S, then with hand control move telescope in S to the indicated pointing; then punched automatic for the pointing. It's slow but preserve digitizer calibration. Requires thinking. Telescope jerks mainly going S, and the routine moving at N, against the decl. wear threat. Still no Spacewatch. As above. Windy shifts.

86 May 4 UT
86 May 5 UT
86 May 6 UT
86 May 7 UT
86 May 8 UT

May 8 Cleared at 4:30 UT. A good night. Bikes.

May 9, 10, 11, 12, 13, 14, 15, 16, 17, 18. A lot of fine observing.

86 May 19 UT Start of new R.V. observing run - duration 784
R.V. obs. of λ Boo + η Cep. R.S. McMillan + W.J. Merline

86 May 19/20 UT (Daytime) Tested new solar observing method; excellent sky conditions. W.J. Reng

86 May 20 UT R.V. obs. of λ Boo - quit early to get rest for solar obs. tomorrow; clean sky. W.J. Merline

Daytime (May 20/21) Solar observing test + short
Solar Time Sounds W.J. Merline + MLP
86 May 21 UT: RV obs. of \( \alpha \) Boo, \( \eta \) Cep, windy, bad seeing - WJM

86 May 22 UT: cloudy, windy - no observations, instrument calibrations - WJM

86 May 23 UT: mostly cloudy; instrument calibration tests; some r.v. obs. of \( \alpha \) Boo; turning telescope over to spaawatch; project until May 28 UT - WJM

86 May 24-28 UT: Genrels recovered 1986 JK in bright moonlight

86 May 29-30: R.v. obs. of \( \alpha \) Boo - RSM

Continue log entries in new (dark brown 9x12'') book.