

DSS-25 monopulse enabled 190332

Noisy Ka-band

1005 Checked weather. Stations said wind 14 km/h

1007 DSS-25 reported gusts to 28-29 km/hr

1914 Told station we're seeing fluctuations in Ka-band power. Asked if they're seeing the same. Station reported 2 dB fluctuations. Asked if monopulse appears to be working fine. They said yes.

191835 Asked DSS-25 to disable monopulse without clearing the offsets

~191858 monopulse disabled without clearing offsets

DSS-25 fluctuations continue at Ka-band

192750 DSS-25 re-enabled monopulse.

Similar behavior with monopulse. David suspects it's a combination of wind and servo

DSS-34 monopulse enables at 193226

1943 Changed FFTNA at 16K Hz to 480

1946 Asked DSS-14 for wind speed and direction

Direction 225 degrees and speed 25 mph

1950 changed FFTNA for all to 160

1957 asked DSS-25 for update on wind speed and direction. 25 kph from ssw

Going through Ring C

2101 DSS-34 reporting monopulse dropped or of lock at 205814, re-enabled at 205853, Due to low SNR.

David suggesting plan for beginning of Ring B is to clear offsets at DSS-34, and leave offsets at DSS-25. Reason is that it's clear skies at DSS-34, and windy at DSS-25. Wind putting more uncertainty.

215320 DSS-34 reporting monopulse out of lock at 214949, re-enabled at 215112, due to low SNR.

2158 scattered signal observed at all frequencies

2201 DSS-34 reporting 215752 monopulse out, 215952 re-enabled due to low SNR

2202 DSS-25 reporting 215904 monopulse out, 220123 re-enabled

2213 Asked DSS-25 for update on wind speed and direction. 26 kph from SW

2220 Asked DSS-14 for update on wind speed and direction. 25 kph from W

223405 DSS-34 and DSS-25 disabled monopulse without clearing the offsets

s/c back to Earth point

Signal around 00:20. Closed-loop not able to acquire (weak signal, Ring B)

Out of ring B.

Asked station to enable monopulse at DSS-34. Station said they'll waiting to get good lock on Ka-band.

DSS-34 enabled monopulse at 020037.

0209 Madrid reported wind 18 mph

DSS-34 monopulse disabled 021427, re-enabled 021452 due to low SNR

0530 wind update: wind speed 24 mph

Went home around 0230. Back 0700

Monopulse enabled 034941

2 dB drop at beginning of IVD file. Either problem with s/c or implementation.

0728 going through atmosphere. Scintillations started.

0747 DSS-55 reporting monopulse was disabled at 074634

After some clarification, they disabled monopulse manually and it did not drop out of lock by itself as was instructed.

0802 Asked DSS-55 for update on wind speed and direction. 20.1 mph, NW

0847 Asked station for update on wind speed and direction. 5-11 mph, 60 deg NW

0854 Asked station for current offsets in monopulse. Large.

Discussion about whether or not to enable monopulse or clear monopulse offsets

0911 DSS-55 monopulse offsets cleared

0915 Asked DSS-55 for update on wind direction 260 deg, speed 4-5 mph

Question to Essam:

Why is this a “beautiful” occultation? For ORS mostly. This occultation gives us long integration times, so with rings being closed, we need the longer integration times.

But Essam would pick a closer occultation to a distant occultation anytime.

It’s diametric rings occultation. Original trajectory we would’ve seen the central flash, but then moved away from center. This occultation is a haven for those who are interested in scintillations, like John Armstrong.

Back at 1400

1405 Asked ACE for weather update, including wind speed

DSS-25 7 mph, from N

DSS-55 10 mph, 320 degrees, clear skies

140903 DSS-65 X-band in-lock

1414 DSS-25 X and Ka-band i/l

142028 DSS-55 Ka-band i/l

141950 monopulse i/l

Intermittent lock

Ka-band lower at DSS-25

DSS-25 rcvrs out of lock Ka-band 142209

Monopulse disabled 13 sec later

Asked ace to ask station to clear monopulse offsets

~1425 improvement in SNR (~6-7 dB)

142518 ka-band rcvr i/l

RSSIIVD targeting module cannot handle an IVD file that is separated by more than one second. The old targeting module IVD has resolution of 10 seconds

Essam: Have to cut occultation into many segments. Too many segments (polynomialns) if used for this occultation, even if using the new targeting module.

7OFFSET command 050002 SCET

7offset_end 050024.870

08 43 34

08 44 25

DSS-34 monopulse enabled

Region of ionosphere we've not seen before.

Because of latitude.

Fantastic ionospheric occultation.

Magnificent ionospheric data

Fluctuations are signature of plasma in ionosphere

Done 12 occultations in the past, but none of them stood out like that

Because of geometry

0311 DSS-34 slight degradation in Ka-band power. Told station know it's low elevation angles, but wondered if also something else .. cloud or wind?

Station reported cloud coming in.

Most beautiful ionospheric occultation ever witnessed

0341 DSS-65 has X and S band in lock

We collected good data set from rev 28 occultations and it was a success

034817 DSS-55 monopulse enabled. Jump from 25 to 42 dBs.

045200 DSS-55 Monopules disabled. Going 2-way

045501 DSS-55 monopulse enabled 3-way

065500 DSS-55 monopulse disabled going 2-way

070015 DSS-55 monopulse enabled 2-way