

FLY-BY support of Hayabusa-2 satellite from USN's Hawaii ground station

Hayabusa-2 is an asteroid sample return mission launched in December 2014. As part of its trajectory to a C-type asteroid landing in 2018 the spacecraft will make a fly-by of earth using earth gravity as a boost. This single event pass occurs on December 3, 2015 from 09:47:00 to 10:47:00 UTC. USN has been contracted to support this fly-by from USN's Hawaii ground station. The total mission duration is 60 minutes. Mission profile for USN is shown in figure 1. USN will only receive telemetry and tracking information from the spacecraft and will not uplink to the spacecraft.

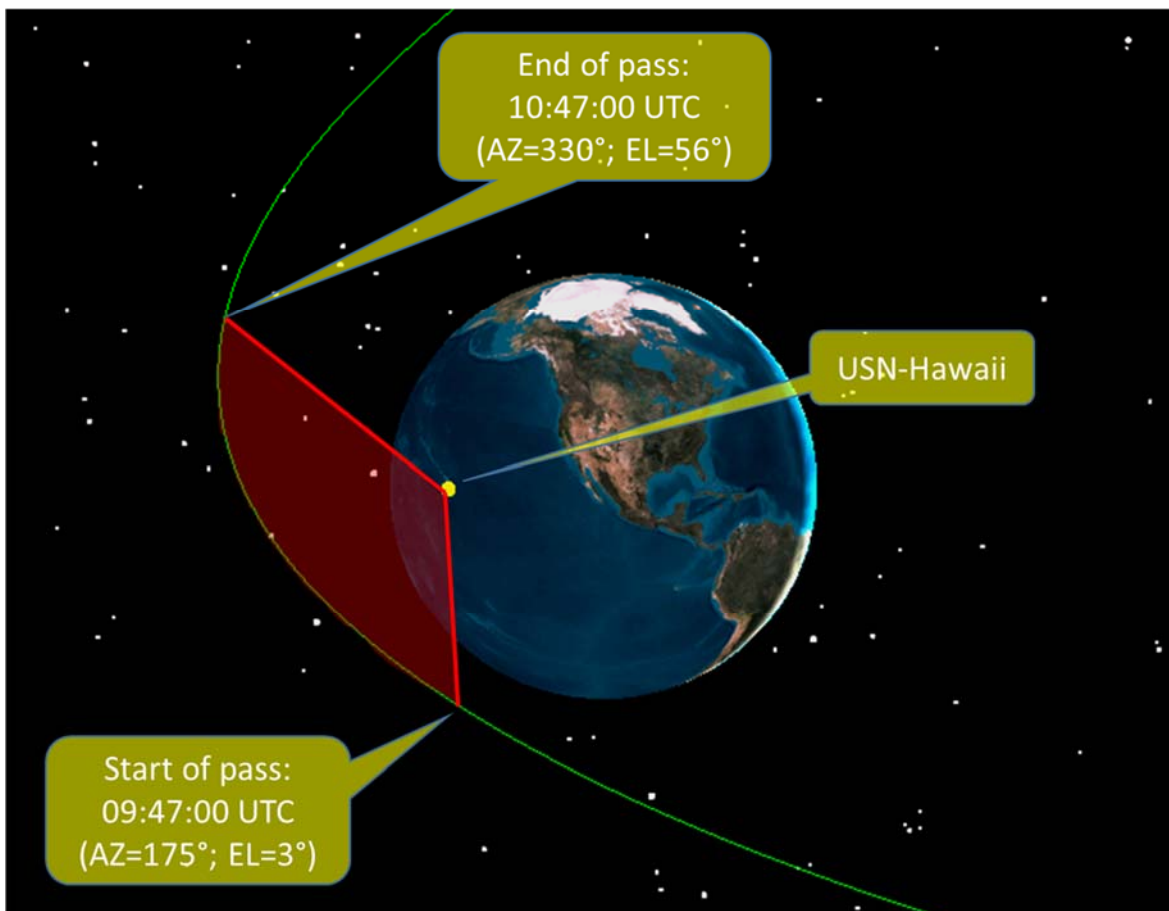


Figure 1 – Hayabusa-2 spacecraft coverage from Hawaii

Hayabusa-2 Satellite pass coverage

USN will track the spacecraft from between the positions shown in table 1 below for a total duration of 60 minutes (also shown in figure 1 above). The tracking frequency is shown in table 2. Data will be collected receive only and forwarded to JAXA in real-time.

	Time	Hawaii look Elevation	Hawaii look Azimuth
Start of Fly-by support	09:47:00 utc	3°	175°
End of Fly-by support	10:47:00 utc	56°	330°

Table 1 – Support times and positions on December 3, 2015

	Downlink	Uplink
Hayabusa-2	8424.860 MHz	N/A

Table 2 – Radio Frequency