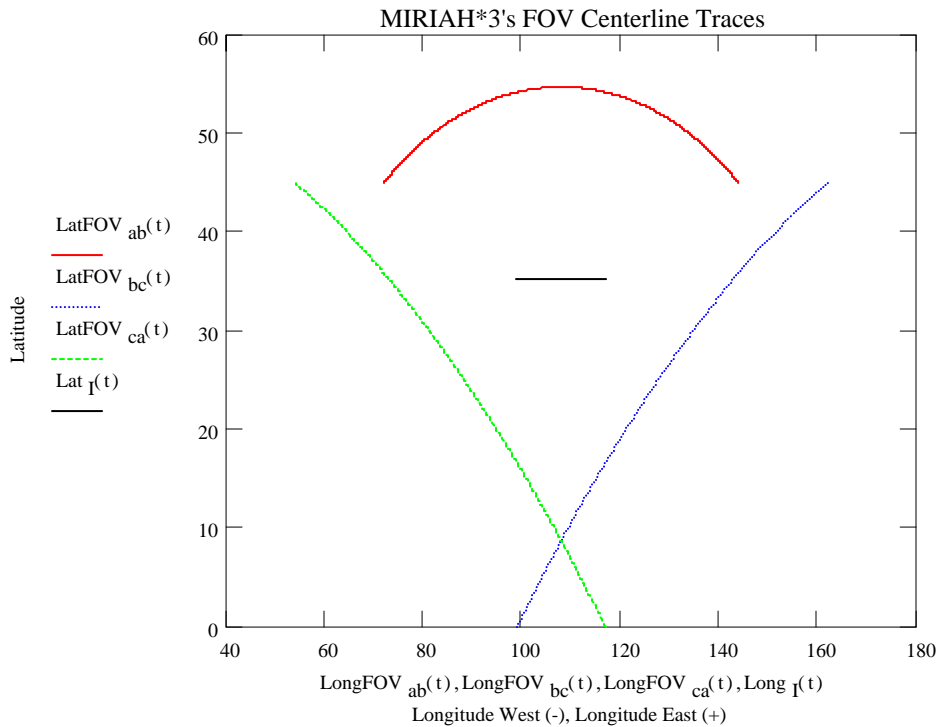


Graph of the Latitude and Longitudes of the centerlines of MIRIAH*3's three FOV's

It shows the three traces over a 90 degree VLA "face" in the northern hemisphere when N_{sw} is an integer "n" (0, 1, 2, etc.), and in the southern hemisphere when $N_{sw} = "n.5"$ (0.5, 1.5, etc). Hence the matched filter on the disc (i.e., the hologram) would be "fully filled", i.e., the 2-D Matchd Filter of the VLA will be "fully filled" in 12 Sidereal hours. Therefore, this coverage analysis reinforces the feasibility of MIRIAH's signal parametric analysis math model.

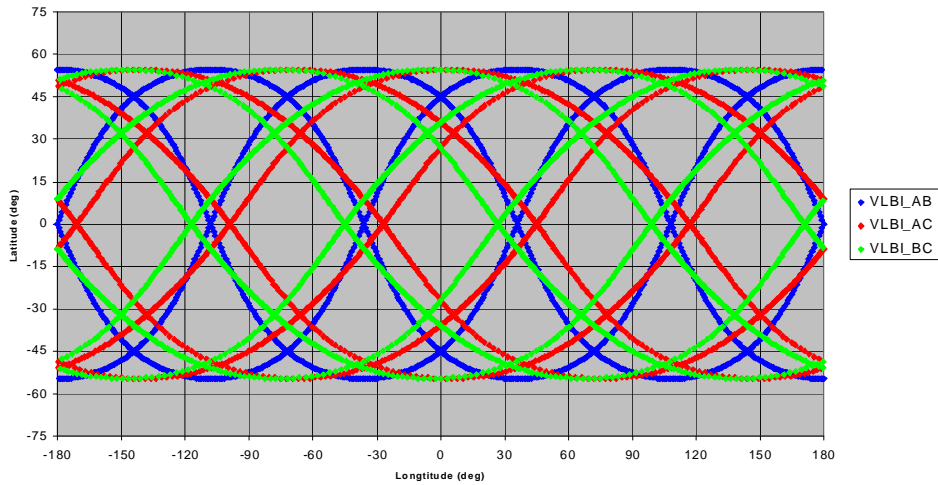


This graph is for $N_{sw} = 0$

The short horizontal black line in the graph is the trace of the isometric center during the sampling time of the figure, which is 1/4 orbit. So this figure's center moves west 18 degrees, or 1,080 nautical miles during the sector's Synthesis Imaging "fill time" on a Matched Filter disc (MF). Of course the three phase center traces are arcs of a circle, but their plots are distorted by the 2-D rectilinear form of the graph. The actual circular trace of the continuum of the millions of "look" samples on the recording disc surface is why the Matched Filter takes on the circular shape of a "Zone Plate" (see Fig 4 in the Signal Analysis Model, and Fig. 7c in "Introduction to MIRIAH"), rather than the linear diffraction pattern form of a SAR, which is more like the diffraction pattern shown in Figure 7a in the "Introduction to MIRIAH".

These FOV centerline traces over 12 Sidereal Hours for MIRIAH*3 will have this coverage density:

VLBI Center Traces



Note there appear to be gaps in the coverage. But this coverage diagram displays only the centerline traces, not the illuminated area. Hence, for MIRIAH*3, these thinner coverage areas will be completely "filled" in (at the hologram) by the illumination beam width's coverage area. But these thinner areas will not be present for MIRIAH*6 and ROSAE. And, their hologram fill time will be much faster (60 min. for MIRIAH*6, and 15 min. for ROSAE).

NOTE: The coverage rate depends on the number of satellites, and also the number of swaths per satellite (2 for MIRIAH*3, 4 for MIRIAH*6, 8 for ROSAE).

These coverage rates will be cut in half for man made objects, like cars and buildings, which are symmetrical about one axis. For objects which are symmetrical about two axes, like missiles, the time will be cut in half again.