HAARP Exhibit for September 2017 Science Campaign   6/6/2017

Generation of Artificial Periodic Irregularities for measuring aeronomic parameters of the lower thermosphere. A second objective will be to extend API observations into night observations	Complex sequence involving X-mode CW and pulsed heating intervals interspersed with X- and O-mode probe pulses. The record should be on file.
Simultaneous observations of SEE at multiple gyroharmonics (2, 3, 4, 5, 6) to validate or refute recent theoretical/modeling predictions for obtaining new possibilities for aeronomy diagnostics. Second goal is to attempt to observe a two-plasmon decay type instability.	O-mode heating with 30 minutes per gyroharmonic (5 gyroharmonics proposed). Frequency stepping through each gyroharmonic in order to see the full SEE spectral characteristics for pump above and below gyroharmonic. Fixed heating power, and beam angle (perhaps 20kHz step).
Produce F-region irregularities with varying heater on time between 10 seconds and 1 minutes and observe decay times.	O-mode on for DT off for ~2 min, where DT varries between 10 seconds and 1 minute in . Mode will cycle through pulse lengths. Frequency will be just below fof2.
Produce F-region irregularities with varying heater frequency to change altitude and observe decay times.	O-mode on for 30 seconds off for 2 mins. Frequency will be stepped through bands that will heat at altitudes near the F-peak, down to lower F-region. Steps will require retuning.

Produce F-region irregularities and observe their effects on satellite to ground propagation paths	CW o-mode heating at a frequency chosen to optimally produce F-region irregularities, with a few antennas dedicated to generate a probe signal.
Sea Scatter - HAARP will run in conjunction with satellite overflights. The objective is to observe HAARP transmissions that scatter from the sea up to the satellites. Transmissions to generate SEE will fill in gaps between satellite overpasses	
Generation of air glow	

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