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SIS Bullets

- 260-320 GHz LO plate using fixed-tuned tripler complete.

- 4-12 GHz IF plate (room temperature section with digitally tunable YIG filter) complete.

- Improvement of w/g to suspended stripline transition used in current SIS mixer designs. A resonance excited by an off-center substrate was discovered and eliminated by a slight modification to the mount dimensions.

- Unsolicited proposals received from JPL and SUNY. Discussions with both.

- Visits from prospective job applicants (Belitsky, Kooi).

- Continued work with UCLA on development of a waveguide coupling structure for their VMDP LO source (VMDP = Velocity Matched Distributed Photomixer). A new Yagi-in-waveguide design looks promising; it couples directly from the waveguide mode to the coplanar strip transmission line in which the VMDP is situated.

- Dewar vacuum windows: The three layer PTFE/Xtal-Quartz/PTFE window has low loss, but with quartz thick enough to support atmospheric pressure the bandwidth is less than the waveguide bandwidth. A five layer D1/D2/Quartz/D2/D1 window can cover the w/g band with low loss. We are working on fabrication procedures for the five layer window.