

## **SMA Next Generation Instrumentation**

- **Instrument Lifetime**
  - \* **Current Instrument is 10+ years old. Needs renewal**
  - \* **MK Lease & SAO/ASIAA MOU on SMA has 10+ year horizon**
- **SMA Wideband Upgrade since 2011 has opened up new science and should take further advantage of the wider band offering to do niche science in the era of ALMA**
- **New Instrumentation should target higher reliability, and reduced complexity, while offering further bandwidth**
- **Signal Transmission Upgrade can be done at modest cost and without interference to current operation**
- **SWARM is gearing up to displace the ASIC correlator. SAO/ASIAA is continuing to be leader with wideband digital backend. Should watch further developments in commercial & SKA before committing to build a even simpler and faster digital system**

## **Timeline and Schedule**

- **Optics, Cryostat and mixer block designs are ongoing. More details will be worked out in the next few months**
- **2016 will be the year of prototyping**
- **Technical design should be over before end of Fy16, and the design team should come up with a funding profile at the next board meeting. Expected project to be completed before 2020**
- **ASIAA participation would involve new SIS chip development with Ming-Jye Wang. Johnson Han, their receiver person, should also come to Cambridge next year to identify subsystems that they can participate in building.**
- **There are parts that may be more cost effective to build in Taiwan that we should explore**