

## Assessment of Options - Shri Kulkarni

SKA is program based approach. I fundamentally do not subscribe to this approach. In astronomy, there are very parallels to such an approach. Usually the growth in sub fields is organic: new discoveries and new technologies motivate next generation instruments. [There have been a number of government mandated programs e.g. the Manhattan project]. Optical astronomers could have made the pitch that AO lies at the heart of next generation telescopes and that NSF should thus fund a very plush program. There is an AO Development Program (AODP) but it is quite modest compared to the nearly \$500M SKA vision that we are discussing in this meeting.

Presently and into the foreseeable future the area of meter wave astronomy is and will continue to flourish. It is in a similar state of flux and excitement as CMB studies were say a decade ago. I say that we need to do nothing here. Let astronomers propose and go about business as usual. It is wonderful that our Australian and South African colleagues are investing heavily into site infrastructure. Clearly, US initiatives should take advantage of this investment and these programs will be necessarily bi-lateral in the makeup.

The area of high frequency astronomy is in excellent shape. CARMA has just come on line. SMA is now in routine operation and GBT will soon have highly multiplexed detectors. ALMA AND eVLA will soon be available for all of us to use. This plethora of instruments will take us about 10 years to fully digest (cf. Rick Perley observation about the first decade of the VLA).

The area of GHz astronomy has interesting potential. In the US we have a genuine effort in technology areas at Berkeley (ATA), the one-man army of Sandy Weinreb and others.

We need to come up with a specific project. The options are two: an HI telescope or RSST. There are still a very large number of technological advances and inventions that need to be made before an affordable RSST or HI telescope can be built. Equally importantly, we need clear champions within the US. For the first time I felt that RSST has some champions. Personally I favor RSST since it fits in very well with other projects (e.g. LSST).

We need to ramp up US expertise for RSST based around our extensive investment with the ATA and eVLA and other advances in signal processing. Only then we should approach the international SKA on an equal basis.