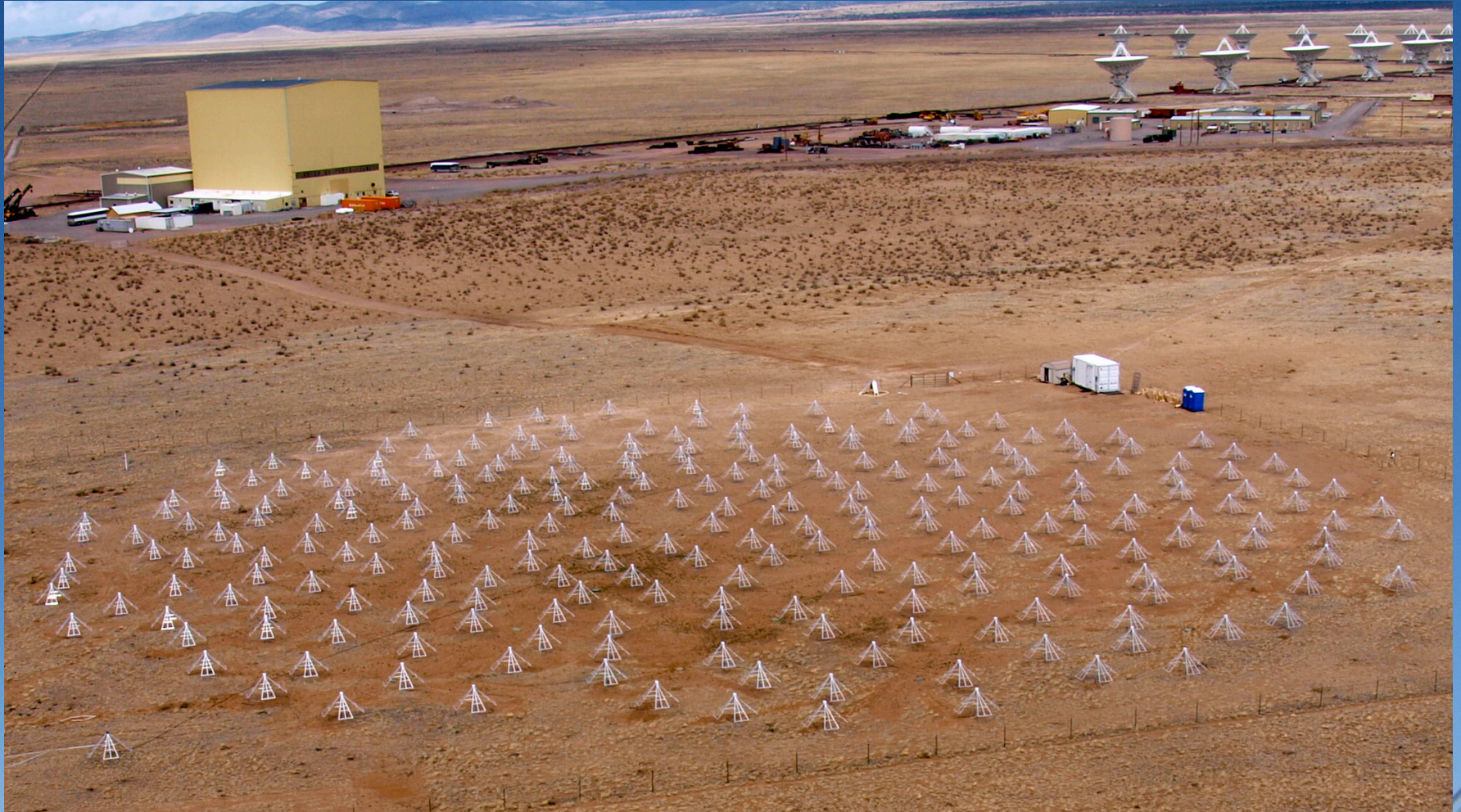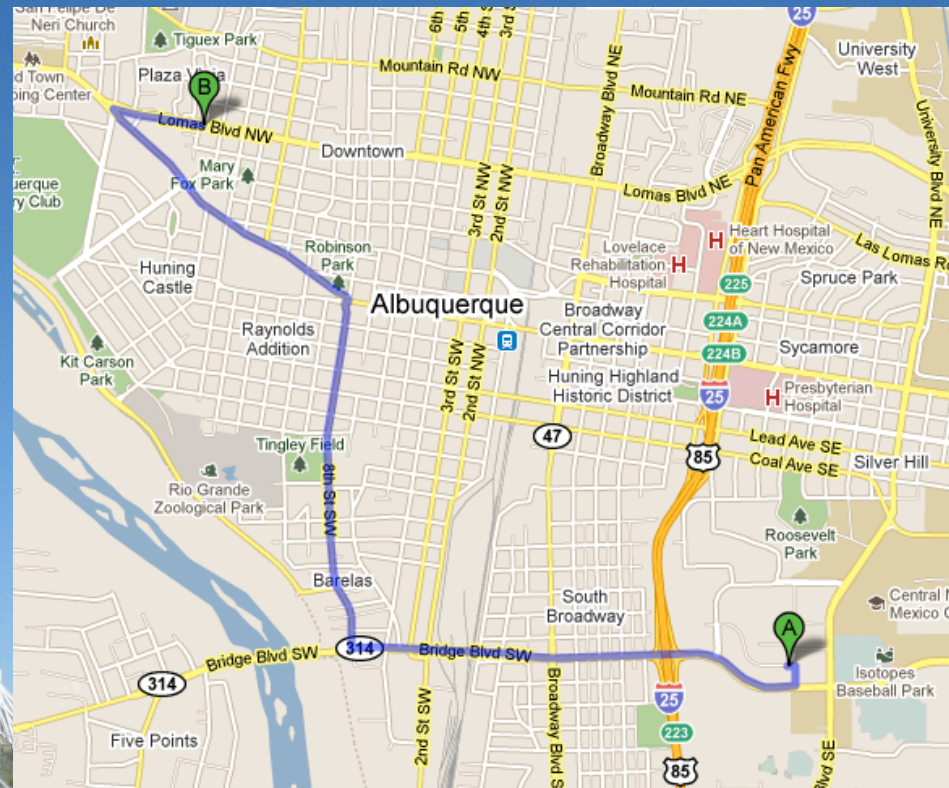# LWA Users Meeting

Greg Taylor (UNM) on behalf of the LWA Project

Meeting Logistics

- **Internet access: see instructions on board**
- **Lunch – at local restaurants. Please return by 1:30pm.**
- **Dinner – at Monroe's, 1520 Lomas Blvd**
- **NRL by video**

LWA1 Status

- Shelter and Site – UNM – Completed 2009 Sept

- Antennas – NRL – Completed 2009 Dec

- Analog Signal Processor – UNM – Completed 2011 Mar

- Digital Signal Processor – JPL – Completed 2011 Apr

- Monitoring & Control

System – VT – Done

- Initial Operating Capability

- Soon

April 21 TBN/PASI
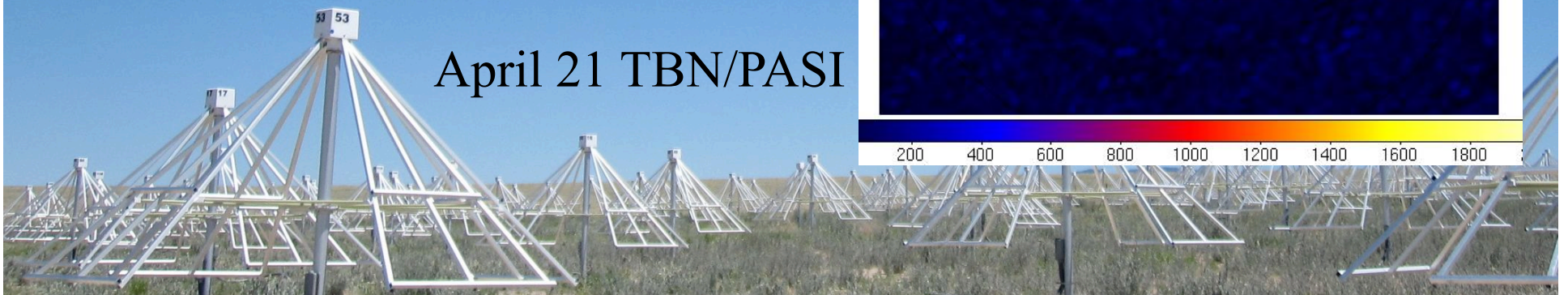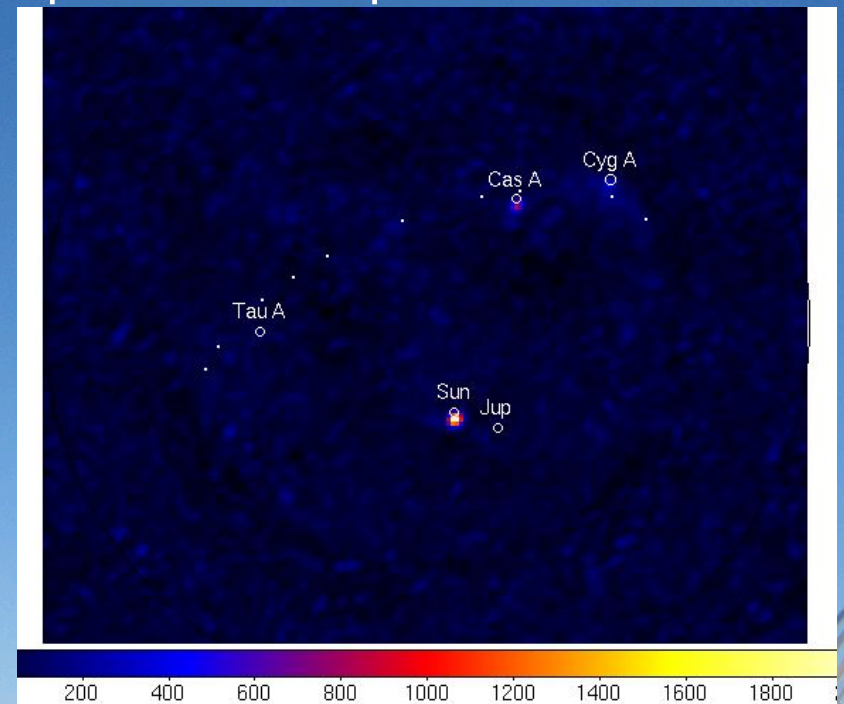
Current Support

- **ONR – extended through 9/30/2012**
  - **Power, communications, travel to site**
  - **System Engineer (Joe Craig)**
  - **User Programs (Ylva Pihlstrom)**
  - **Technical Assistance (Steve Tremblay & Ken Obenberger)**
- **DTRA program – ends 1/20/2012**
  - **System Engineer (Joe Craig)**
  - **Research faculty (Lee Rickard)**
  - **Software (Jayce Dowell)**
- **LUNAR program – ends 5/1/2013**
 - **Director (Greg Taylor) and Software (Jayce Dowell)**

Current Staffing

- **NRL – spent out, consultation and minor assistance only**
- **JPL – nearly out, bug fixes, consultation and minor assistance**
- **VT – spending runs out ~October 2011**
- **UNM – running at minimum staffing levels through 9/30/2012**
  - **System Engineer (Joe Craig)**
  - **Software (Jayce Dowell)**
  - **User Programs (Ylva Pihlstrom)**
  - **Director (Greg Taylor)**
  - **Technical Assistance (Steve Tremblay & Ken Obenberger)**

Goals

- **Review LWA1 Hardware and as built capabilities**
- **Learn How to Use LWA1**
- **Preliminary results with LWA1**
- **New Instrumentation**
- **Inform you about many related projects & proposals**
- **Exchange ideas**
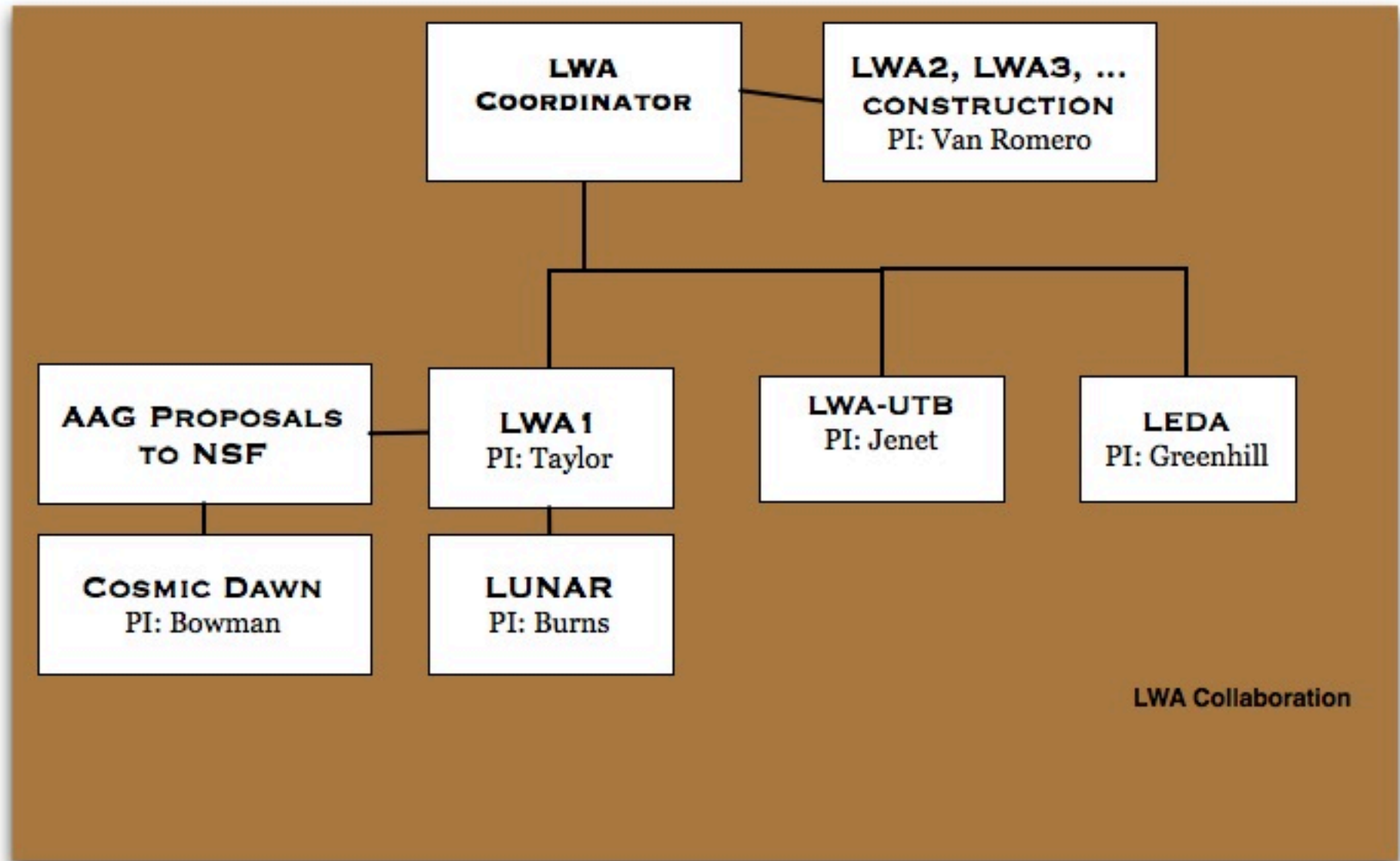- **URO Proposal and other Funding Avenues**
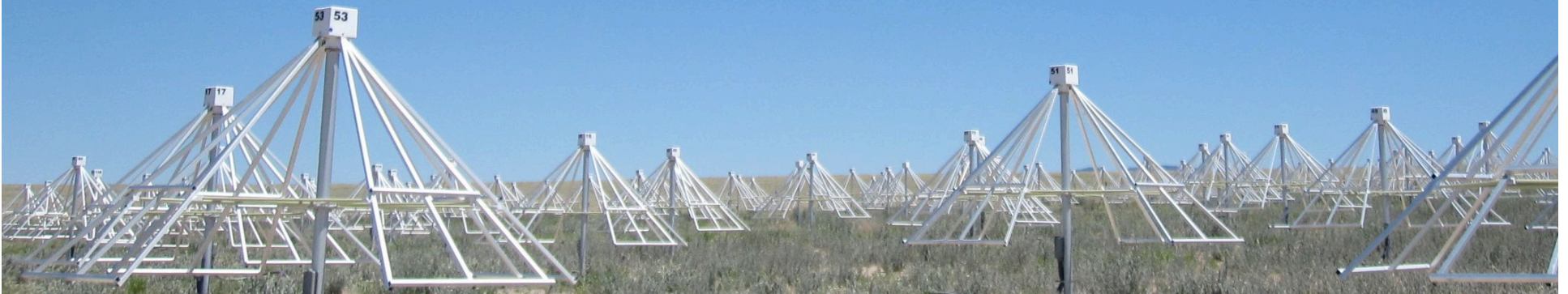
Publication Policy

- **Opt-in policy is in effect**
  - **First author posts draft for two week "sign-up"**
  - **First author decides order of authorship**
  - acknowledgements: "Construction of the LWA has been supported by the Office of Naval Research under Contract N00014-07-C-0147."

LWA Projects

LWA Collaboration

Pending Support

- **LEDA (Large aperture Experiment to detect the Dark Ages/Greenhill)**
    - **System Engineer (Joe Craig)**
    - **Software (Jayce Dowell)**
    - **Technical Assistance (Ken Obenberger)**
- **AAG Proposal (Cosmic Dawn/Bowman)**
    - **System Engineer (Joe Craig)**
    - **Software (Jayce Dowell)**
    - **Contribution to power and communications**
- **AFRL Proposals (waiting on RFP)**
- **URO Proposal (due May 23) Taylor**
- **DOD Proposal (due May 25) Jenet**

Backup Slides

Technical Specifications:

	Required	Achieved
Frequency Range:	20 MHz to 80 MHz	10 MHz to 88 MHz
Angular resolution:	$\theta \leq [8,2]$"	$\theta \leq [7,1.4]$"
LAS at [20,80] MHz	$\geq [8,2]°$	$\geq [16,4]°$
Baseline range:	100 m to 400 km	50 m to 600 km
Sensitivity [20,80 MHz]:	$\sigma \leq [1.0,0.5]$	$\sigma \leq [0.5,0.1]$
Collecting Area (m^2)	$A_e = 1 \times 10^6$	$A_e = 4 \times 10^6$
Dynamic range:	$DR \geq [1 \times 10^3, 2 \times 10^3]$	$DR \geq [2 \times 10^3, 8 \times 10^3]$
$\Delta\nu_{max}$ (per beam)	$\Delta\nu \geq 4$ MHz	$\Delta\nu = 20$ MHz
$\Delta\nu_{min}$	$\Delta\nu \leq 100$ Hz	$\Delta\nu \leq 10$ Hz
Temporal Res	$\Delta\tau = 10$ msec	$\Delta\tau \leq 0.1$ msec
Polarization:	1 circular	Full
Sky Coverage:	$z \geq 40°$	$z \geq 15°$
FoV [20,80] MHz	$[8,2]°$	$\leq [16,4]°$
# of beams:	4 single pol.	4 single pol.
Configuration:	2D array, N = 53 stations	2D array, N$\geq$53