

REFRACTT Conference Call

April 11, 2006, [Updated 2 May, 2006](#)

The following team members were present: Dave BrunkowChandra, Paco Dekker, Scott Ellis, Frederic Fabry, Dennis Flannigan, David Gochis, Carla Hassler, Pat Kennedy, Jon Lutz, Larry Mooney, Jim Moore, Eric Nelson, Bob Palmer, Nancy Rehak, CSU students (Sharmala and Flavio) for Steve Reising, Bob Rilling, Rita Roberts, and Jenny Sun.

Discussing all the systems that require siting prior to the start of the field season was the top priority for the call.

1. DIAL Lidar – Jim Moore reported that the laser portion is being built in Germany and will not be here in time for the REFRACTT project period. It will arrive July 1 and then undergo testing. Eye safety is a concern and FAA approval will be required. The lidar site could be used by others (proposed location – Eastlake). A lease is needed. Jim Moore and Tammy visited Vaisala to observe their tethersonde that could be leased to be collocated with the lidar or within 500m to maximize sampling in the lidar scanning area.

Action:

1. Jim Moore – FAA, Eastlake lease
2. Rita Roberts - Follow-on meeting with Tammy Weckwerth

2. Two Mini Radiometers, CSU – Two students working with Paul Reising reported that testing has been taking place at NCAR. The two radiometers will need to be located approximately 8 to 10 km apart and pointed away from the Ka-band radar due to frequency interference. One needs to be sited near S-Pol and CHILL. They are portable devices mounted on towers and need 110V power. Jim Moore suggests possible use of a generator for power instead of trying to locate near electrical outlets. The devices need one hour per day for set up and will require overnight storage. Frederic suggested placing one radiometer at FL and the other at ML (or one at Jeffco) in order to avoid daily moving and set up.

Action:

1. Flavio, Chandra, Dave and Pat – Testing
2. Dr. Reising will call Rita at the end of the week.
3. The CSU team needs to resolve siting and power issues soon.

3. GPS Receivers – John Braun was unavailable for the conference call. Ten or 12 receivers will be placed at small airports. Siting still needs to be finalized.

Action: Rita will contact John regarding number of receivers and locations.

4. Corner Reflectors (measure drift of HFCG) – Frederic reported that two polarized corner reflectors (size of an open book) will need to be placed in sight of S-Pol or CHILL. They will be attached to poles (will require permission from utility company). Would like to site 100 km (possibly Cheyenne Hills area), and 40 km from S-Pol.

- Action:**
1. Rita will find out how many reflectors John is planning and where they will be located.
 2. Frederic is looking at topo maps and will work with Pat on locations.

5. NCAR Disdrometer – Ed Brandes was not available for the conference call. Rita reported that this instrument would be placed near Platteville 40 km from CHILL at the same azimuth.

Action: Rita will discuss with Ed offline.

6. CASA X-Band Radar – Bob intends to have the radar in the area for REFRACTT between 1 and 28 July. Starting July 1, Bob Palmer will locate this truck-mounted radar near CHILL half of the time, and near S-Pol the other half for collaborative studies. Software testing will take place at UMASS during May.

Action: Bob will email a photo and talk with Vivek about potential siting with S-Pol

7. Platte River Valley – Paco Dekker will conduct similar studies as Frederic but vertically with the use of satellite (Eurosat SAR/Immarsat ERS2).

Action:

1. Offline meeting to follow on with Bob, Frederic, Pat and Jon.
2. Rita will give Paco the lat/lon corners to correlate orbital data.

8. Rita will organize a sub-group of project participants to meet on the development of REFRACTT specific scan strategies for all participating radars.
9. Paco Dekker described the possibility of using ERS-2 InSAR data to measure refractivity from space. He also sent a image of this measurement made over Paris. There may be a couple of opportunities during the field phase to have satellite overpasses

Action: Paco to provide exact satellite overpass times during the REFRACTT period.

10. EOL will support the development of a simple REFRACTT web page. We will work with RAL and others to focus content and layout over the next weeks. A MapServer GIS interface exists now with basic topographic and aviation chart overlays.

Action:

1. Jim Moore will work with Rita, Nancy and others to add web page functionality and link to other existing sites.
2. All participants need to provide accurate latitude/longitude positions of equipment so a comprehensive instrumentation layout can be produced

Open Discussion:

- Jon Lutz reported that new transmitters will not be put on the Ka-band radar prior to the start of the project. There will be 200 hours of time available (will limit Scott Ellis' scanning

activity to good cases). Ka-band and S-Pol may have to be turned off/on briefly during data collection.

- Rita suggested collecting scans prior to project start and will schedule a follow-on meeting to discuss filters, scanning, calibrations, etc.
- Nancy will conduct data transfer tests with archived files.
- David Gochis and Mike Dixon have budget for QPE products for NEXRAD real time advanced analysis. Will need to know basic scanning strategies.
- Plans are to operate S-Pol and Ka-band radars a couple of times at night during the field season.
- Chandra sent a poster showing an end-to-end test.
- S-Pol hardware will be available by May 22. The software collection system is working fine and ability to collect data beginning May 22 will be no problem. A wireless test between Marshall and ML will be conducted after May 1.
- The MGAUS mobile sounding system will be built with the collaborative efforts of EOL and RAL in the next 6 weeks. Sounding transmissions from the field can be done by cell phone back to EOL create a skew T for display on the web page. A serial interface card needs to be purchased to allow cell modem download to the EOL server. Ned will talk to Jeff Cole about this item.

Action: Ned and Jeff will be required to provide MGAUS launch training for S-Pol operators

- Larry Mooney, DEN-NWS will be working with RAL to feed data over a T1 line back to the ROC at NCAR. Security is an issue. Ground clutter is a problem with open RDA.
- [Sondes have been ordered and are on site at EOL. Helium will be ordered and some balloons are available and others can be ordered on short notice.](#)
- Zdr calcs / solar scans (Scott Ellis)?
- Need to request NSF support for Rapid scan DOW test if it is to be deployed in REFRACTT

Action: Some combination of Rita, Jim Wilson and Vivek needs to approach NSF on the matter