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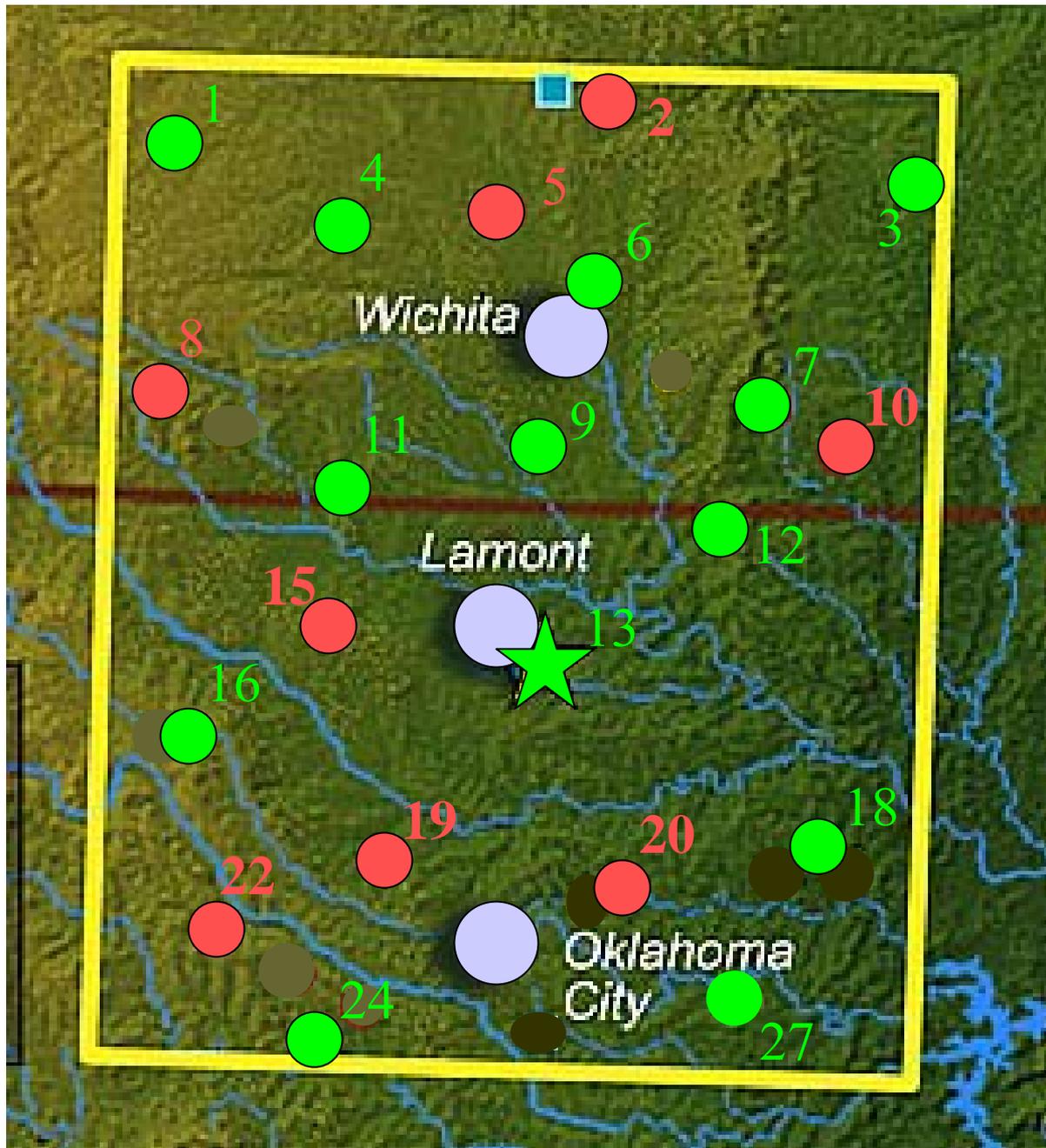
# **MFRSR Status**

## **Southern Great Plains**

- 21 Sites w/MFRSR
- 13 Operational Instrument
- 8 Pulled from Service

## **NSA, TWP and AMF**

- 7 Sites w/MFRSR
- 7 Operational Instrument



# Status of Head Refurbishing

- Samples met spec and order was placed
- Currently 50+ complete filter-detector sets in hand
- ~40 Heads are partially refurbished (new connectors and internal wiring).
- 56 Completed cubes built (~35 waiting for filter-detectors)
- 6 Heads built and need characterization (lamp cals, cosine, filter function and blocking filters)

# Converting to Campbell Data Loggers

- Currently two functioning systems at PNNL
- Comparisons w/Yankee are being done
- Available components to build ~30 systems on hand
- 1<sup>st</sup> operational system (w/refurbished head) will be installed soon
- SGP C1 will likely be first site upgraded

# **Science Benefit**

(of Campbell loggers)

- Operational flexibility, e.g....
- Programmed for fine stepping approaching diffuser
- Can provide size distribution information

# Preparing for the Upgrades

- New ingest software has been written and is currently in use.
- MFRSRs have been reconfigured to collect alltime data to assess nighttime offsets

# Calibrated Data

- b1 data going forward are nominally calibrated
- c1 data will be Langley calibrated
- Historical data will be reprocessed

# Shading Issues

- More shading issues than expected
- Bubble levels indicate movement at two sites
- Visited six EF sites (Oct 16-20)
- Found instrument configuration issues
- Requested a fundamental change in the way shading DQPRs are addressed

# NIMFR Update

## NSA

- C2 Atqasuk channel 940 is dead. Decision was made to leave in place and repair this winter.
- Otherwise, NSA NIMFRs have operated well.

## SGP

- Head amplifier and channel 840 failed in April. Was repaired and operating again in May.
- Cable hung in June and disconnected the Head and Tube heaters.

# MFR Update

## NSA

- Early problems with Cal files. Resolved.
- No major operational problems

## SGP

- Operated continuously without problems

# NFOV Update

## **2 Channel:**

- Recently developed offset problem with channel 870.
- Is currently with Christine Chiu to be calibrated. Will need repair first.

## **1 Channel:**

- Has operated this year without trouble
- Is anyone using this instrument? Sunset?



# **Cessna Mounted MFR**

(ECR/ECO-00584)

Purpose: For albedo measurements over the SGP

- The ECR review has been completed and the ECO is in progress.

# Mounting Location

- MFR will be mounted on wingtip extenders
- Bottom of fuselage  $\sim 15^\circ$  below MFR
- Will install artificial horizon providing  $150^\circ$  FOV
- Small correction will be applied (1.067)





# Data Acquisition

- The MFR will be connected to a CR1000 acting as an analog→serial converter.
- Serial stream will be recorded with aerosol and ozone instruments using Ogren's data acquisition software.



## **Lost MFRSRs and related instruments per year since 2000**

- 2000            0
- 2001            1
- 2002            0
- 2003            3
- 2004            1
- 2005            2
- 2006            2

# **MFRSR DQR Overview (All Sites)**

## **20040101 to Current**

Shading/Alignment	33
Weather Related	12
Logger Failure	4
Ch 415 Problems	4
Questionable Data	4
Missing Data	2
Head Temp	2
Instrument Failure	2
Ch 500 Problems	1