2010 Workshop on Climate Data Records from Satellite Microwave Radiometry
March 22-24, 2010 at the NOAA Science Center in Silver Spring, MD

Welcome Packet

INSIDE

Welcome

On behalf of the Center for Satellite Applications and Research, it is with great pleasure that we welcome you to the 2010 Workshop on Climate Data Records from Satellite Microwave Radiometry.

We look forward to meeting you, sharing ideas, and working together to engage our values, our work, and our environment.

Sincerely,

Mitch Goldberg, Fuzheng Weng, and Cheng-Zhi Zou

NON-US NATIONALS

For access to NOAA facilities, all non-U.S. participants must fill out the "Foreign National Visitor Information" form attached separately and email it to Danette.Warren@noaa.gov or fax to +1-301-763-8580 no later than February 26, 2010. A photo identification (passport) will be required upon entry to the NOAA facilities – the location of the workshop.

VISAS

Any participant requiring a visa letter, please contact Danette.Warren@noaa.gov as soon as possible.

Conference Location

NOAA Science Center
1301 East-West Hwy, Silver Spring, MD 20910
(Next to SSMC4 or Building 4)
Map of NOAA Complex on page 3

It is highly recommended that all visitors utilize the METRO system when visiting NOAA's Silver Spring Campus due to parking constraints and traffic congestion.

For questions or concerns, please contact:
Danette.Warren@noaa.gov or Cheng-Zhi.Zou@noaa.gov

Directions

Conference Location (Map on page 3)

Direction to the NOAA Science Center
1301 East-west Hwy, Silver Spring, MD 20910

By Metro (Highly Recommended)

Take the Metrorail red line to Silver Spring Metro Station. www.wmata.com

- Take the **Red Line** to **Silver Spring**.
- Go down the elevator or south escalator only (north escalator exits across the street on Colesville Road.)
- Exit station, go left and walk under railroad bridge.
- Continue up to NOAA Science Center (next to Building 4 on East West Highway

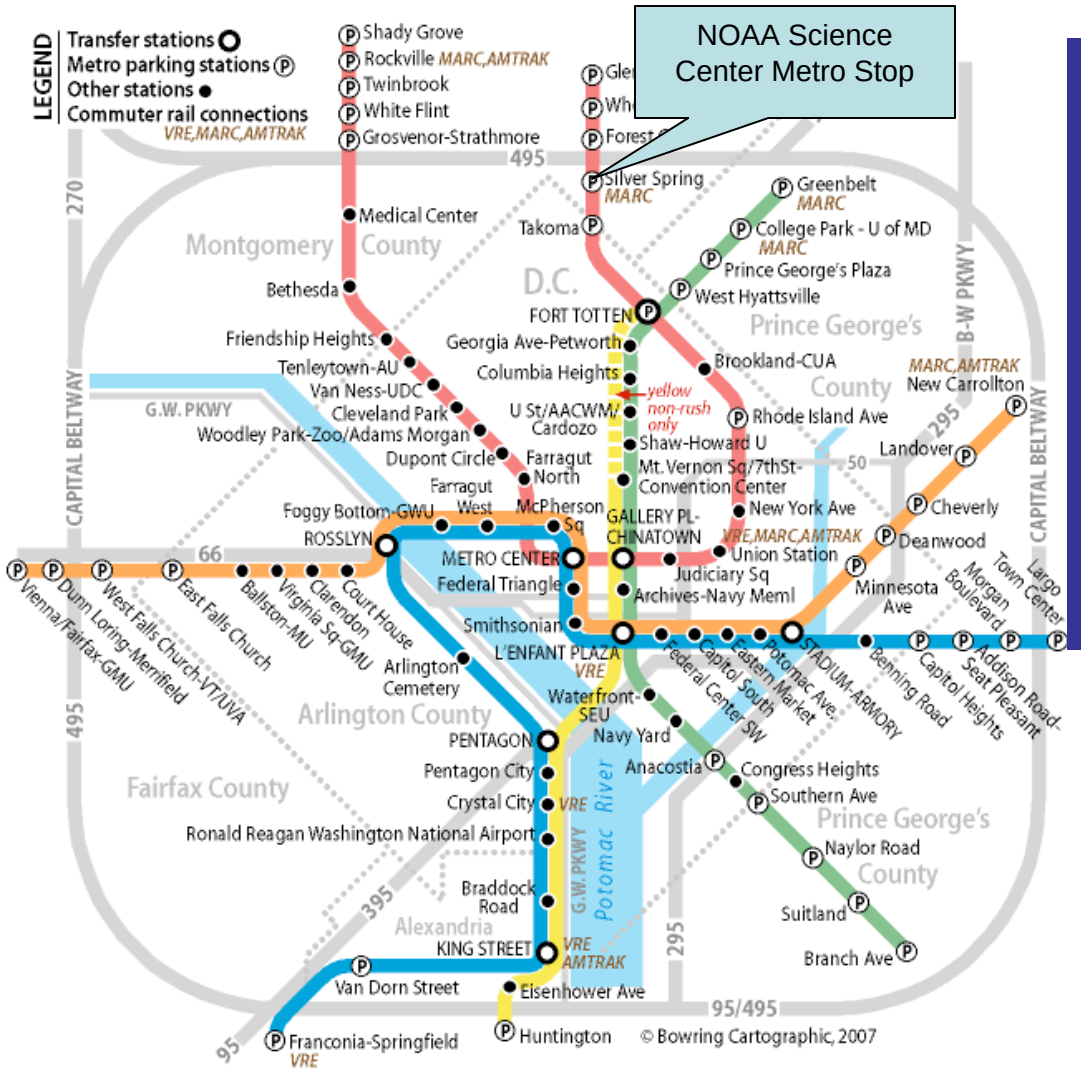
Driving Directions

A. Take Georgia Ave.(or 13th St.) NW., north.

- At East-West Highway (410), turn left.
- Pass next light at Blair Mill Rd.; NOAA Buildings are on right.
- Turn right into the garage (next 2 entrances).

B. Take 16th Street, NW., north

- Take 16th Street NW, north to Silver Spring.
- At Colesville Road traffic circle, turn right.
- At East-West Highway (410), turn right. NOAA buildings are on your left.
- Turn left into 2nd garage entrance only.



Parking at NOAA Science Center

NOAA in Silver Spring has public fee parking in Parking Garage #58. This is a public parking garage under 1315 East-West Highway, (known as SSMC3, or Bldg. 3). The garage often fills by 8:30 a.m., so plan on arriving a little early to have a better chance of finding a parking place. Before leaving your vehicle, note the number of the parking space.

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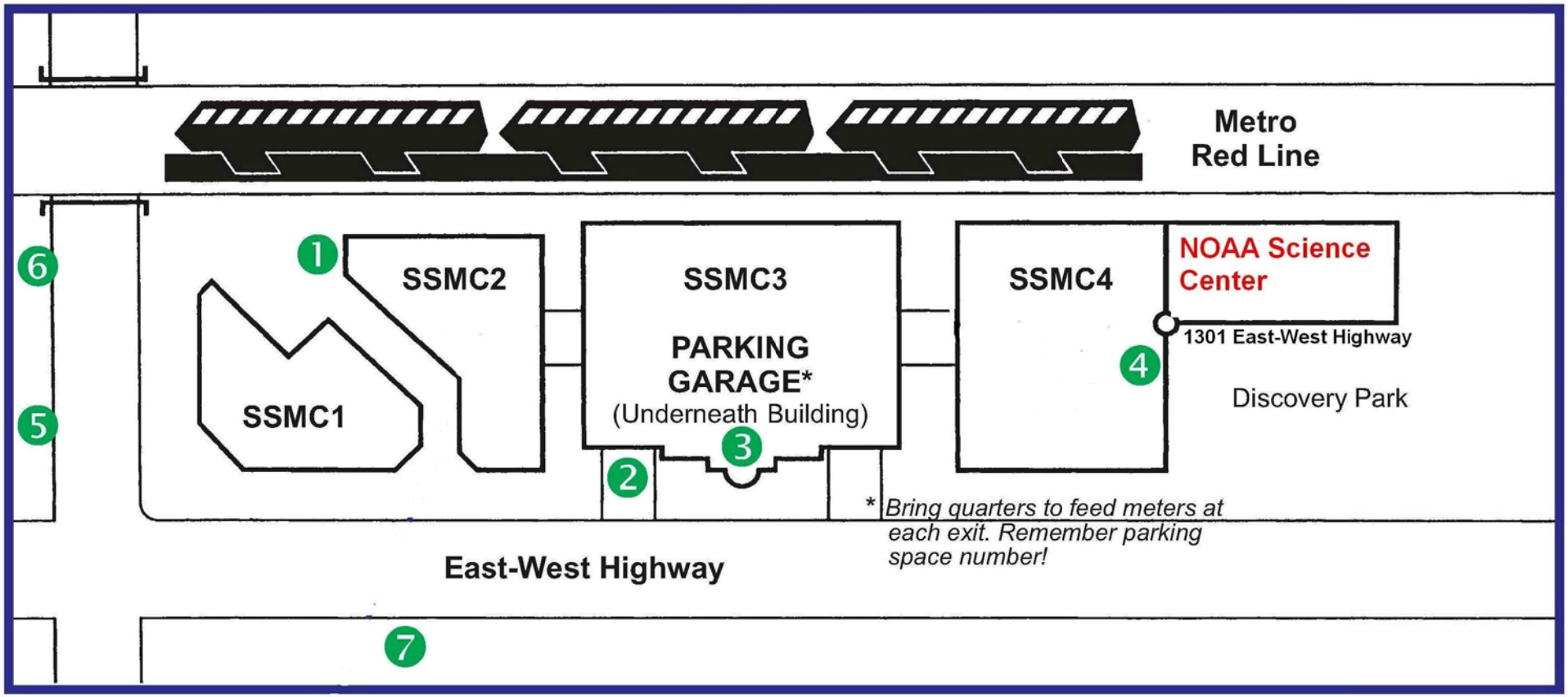
NOAA Complex
Silver Spring Metro Center



- 6 Café June
- 2 Chesapeake Bagel Bakery
- 6 NOAA Cafeteria
- 4 Wave Pond Café
- 5 Einstein Bros. Bagels
- 6 Starbucks
- 7 Caribou Coffee

SSMC1—1335 East-West Highway
SSMC2—1325 East-West Highway
SSMC3—1315 East-West Highway
SSMC4—1305 East-West Highway
NOAA Science Center—1301 East-West Highway

Accommodation

The following is a listing of nearby accommodations to NOAA's Silver Spring offices, listed in order of (walking) proximity.

Crowne Plaza Hotel Washington DC-Silver Spring
8777 Georgia Avenue
Silver Spring, MD 20910
Tel: 1-301-589-0800
Fax: 1-301-587-4791
http://www.ichotelsgroup.com/h/d/cp/1/en/hotel/wasss
Distance from NOAA: 0.4 mi N

Courtyard Silver Spring Downtown
8506 Fenton Street
Silver Spring, Maryland 20910
Tel: 1-301-589-4899
Fax: 1-301-589-4898
http://www.marriott.com/hotels/travel/wassv-courtyard-silver-spring downtown/
Distance from NOAA: 0.4 mi NE

Hilton Washington DC/Silver Spring
8727 Colesville Road
Silver Spring, Maryland 20910
Tel: (301) 589-5200
Fax: (301) 588-1841
www.washingtondcsilverspring.hilton.com
Distance from NOAA: 0.5 mi NE

Each hotel has a limited number of rooms available at the current U.S. government per diem rate of USD$226.00/night.

When making your reservations, request the government per diem if possible.

Learn about Silver Spring area for entertainment, restaurants, and events at http://www.silverspringdowntown.com/

Nearby Restaurants & Dining (NOAA Science Center)
- Sun Spot Cafe & Del. *(103 feet NW)*
- Pomegranate Cafe *(164 feet SW)*
- Atrium Cafe *(505 feet NW)*
- Golden House *(669 feet E)*
- Cafe June *(801 feet NW)*

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TRAVEL INFORMATION

Airports

Traveling to Silver Spring is easy and offers a number of airport options.

Reagan National Airport (DCA) is located approximately 12.6 miles from the NOAA offices in Silver Spring. If renting a car,

- Take the ramp to George Washington Memorial Parkway N/GW Pkwy N
- Merge onto GW Parkkway traffic and stay on the right hand lane
- Take exit for I-395 N toward Washington
- Turn right at New York Ave NW
- Turn right at N Capitol Street NW
- Make a U-turn at L Street NW
- Make a slight left at Hawaii Avenue NE
- Make a right at N Capitol Street NE/N Capitol Str. NW
- Continue on Blair Road NW (entering Maryland)
- Turn right at Georgia Avenue/US-29
- Make a left at East-West Highway/MD-410
- NOAA-SSMC3 will be on the left hand side on East-West Highway (there is a sculpture of a hand at the entrance to the building)

Washington-Dulles International Airport (IAD) is located approximately 30 miles from the NOAA offices in Silver Spring. If renting a car,

- Take the Dulles Airport Access Road (signs for Washington)
- Take the exit toward Richmond/exit18-19/I-495/Baltimore/VA-123.
- Merge onto VA-267 E (Toll Road)
- Take exit 18 to merge onto Capital Beltway/I-495 N toward Baltimore
- Take exit 31B for MD-97 S/Georgia Avenue toward Silver Spring
- Merge onto Georgia Ave/MD-97 and stay on the right hand lane
- Make a slight right at 16th Street
- Turn left at East-West Highway/MD-410
- NOAA-SSMC3 will be on the left hand side on East-West Highway (there is a sculpture of a hand at the entrance to the building)

Baltimore-Washington International Airport (BWI) is located approximately 32 miles from the NOAA offices in Silver Spring. If renting a car,

- Take I-95 S towards Washington
- Take exit 27 and merge onto the Capital Beltway/I-495W towards Silver Spring
- Take exit 30 and merge onto Colesville Road/US-29 S toward Silver Spring and continue to follow Colesville Road.
- Turn left at East-West Highway/MD-410
- NOAA-SSMC3 will be on the left hand side on East-West Highway (there is a sculpture of a hand at the entrance to the building)

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Workshop on Climate Data Records from Satellite Microwave Radiometry

March 22-24 2010
NOAA Science Center
1301 East-West Hwy, Silver Spring, MD 20910
Call In Number: 1-800-857-0642
Passcode: 69185

Workshop Purposes and Goals

- NOAA's CDR Product Development Teams responding to and getting input from users and other CDR developers on all key concepts and concerns to ensure NOAA CDRs are both highly useful and appropriately up-to-date
- Running transparent program to gain community acceptance and credibility by formally and openly describing the approaches
- Providing a formal mechanism for input by external parties
- Defining community consensus best practice approaches for NOAA CDRs
- Enhancing community collaboration, management support, and scientist engagement
- Enhancing community awareness of major international and national programs related to CDR

Day 1 || March 22, 2010

8:30 AM - 11:45 AM	Plenary Session: Community requirements for CDR for climate change monitoring	
	Chair: Mitch Goldberg	
8:30 - 8:40	Welcome Remarks	Dr. Al Powell Director, STAR
8:40-9:00	The Role of CDRs in NOAA Climate Service	Dr. John Bates Chief, NCDC/RSD
9:00-9:20	WMO GSICS	Dr. Mitch Goldberg Chief, STAR/SMCD
9:20-9:40	SDS Program Overview	Dr. Jeff Privette NCDC
9:40-10:05	Atmospheric Temperature CDRs from Satellites: Science Overview & Current Challenges	Dr. Dian Seidel OAR/ARL
10:05 – 10:20	Coffee Break	
10:20-10:55	Progress report on microwave brightness temperature standards at NIST	Dr. David Walker NIST
10:55-11:20	NOAA Operational Microwave Calibration Activities in support of CDR Program	Dr. Fuzhong Weng, STAR

Session II: Satellite Microwave Sounder CDR

Chair: Cheng-Zhi Zou

11:20-11:45	Recent issues in satellite and radiosonde temperatures	Dr. John Christy UAH

11:45-12:10	Status of radiance homogenization of humidity sounders	Dr. Viju Oommen John UK MetOffice

12:10 to 1:30 PM LUNCH Break

1:30 - 4:30 Session II: Satellite Microwave Sounder CDR--continue

Chair: Cheng-Zhi Zou

1:30-2:30	The NOAA MSU/AMSU/SSU CDR project: team, methods, current status, and future plans (focus on MSU/AMSU)	Dr. Cheng-Zhi Zou STAR
2:30-2:55	Estimating uncertainties in RSS MSU/AMSU datasets	Dr. Carl Mears RSS
2:55-3:20	Construction of a consistent Microwave Sensor temperature record in the lower stratosphere using GPSRO data and Microwave Sounding Measurement	Dr. Shu-peng Ben Ho UCAR

3:20 – 3:40 Coffee Break

3:40-4:05	CRTM's SSU module that accounts for spectral response function variations	Dr. Yong Han STAR
4:05-4:30	NOAA's SSU CDR development	Dr. Likun Wang Dr. Cheng-Zhi Zou STAR

4:30 - 5:10 Session III: Microwave Imager Calibration

Chair: Chris Kummerow

4:30 – 4:55	Overview of SSM/I CDR	Chris Kummerow
4:55 – 5:20	GPM XCal Activity	Tom Wilheit

Adjourn Day 1 Dinner (Restaurants in Downtown, Washington DC)

Day 2 || March 23, 2010

8:00 - 11:30 Session III: Microwave Imager Calibration--continue

Chair: Chris Kummerow

8:00 – 8:25	History of SSMI & SSMI Cal/Val Activities	Dave Kunkee or Gene Poe
8:25- 8:50	Lessons from WindSat Cal/Val activities	Mike Bettenhousen, NRL
8:50- 9:10	Vicarious Calibration	Chris Ruf, U Michigan
9:10-9:35	Ocean wind and other near-surface properties from SSMI	Carol Anne Clayson FSU
9:35-10:00	SSMI for GPCP	Adler/Huffman NASA

10:00 – 10:15 Coffee Break

10:15-10:30	The Baseline files	J. Hnilo
10:30 – 10:45	Quality Control procedures	W. Berg
10:45 – 11:00.	Xcal: Polar crossovers	F. Weng
11:00 – 11:15	Xcal: crossovers w. TRMM	M. Sapiano
11:15 – 11:30	Xcal: Monitoring retrievals against in-situ parameters	- M. Sapiano
11:30- 11:50	Documentation	- W. Berg

11:50 to 1:30 PM LUNCH Break

1:30 - 5:00 Session IV: Applications of Satellite Microwave Radiometry in Climate

Chair: Jeff Privette

1:30-1:55	Performance of RTOVS and ATOVS radiances in the NCEP CFSR	Mr. Jack Woollen NCEP
1:55-2:15	ECMWF ERA-Interim Bias correction algorithm: Performance and its limitations	Dr. Paul Poli ECMWF
2:15-2:35	AMSU Bias correction analysis in ECMWF ERA-Interim and its implications for reliability of reanalysis climate trend	Dr. Cheng-Zhi Zou Dr. Paul Poli STAR and ECMWF
2:35 -3:00	Comparing climate signals in satellite and radiosonde datasets	Dr. Melissa Free OAR/ARL

3:00 – 3:20 Coffee Break

3:20-3:45	Brewer-Dobson Circulation: A Perspective from MSU/AMSU/SSU Observations	Dr. Qiang Fu UW
3:45-4:10	MSU/AMSU versus GCMS: land and ocean differences	Dr. Celeste Johnson UW
4:10-4:35	Utility of Historical Collocations of Radiosonde, Rocketsonde and TOVS and preliminary comparison to SNO	Mr. Tony Reale STAR
4:35-5:00	Validation and Application of the WindSat Soil Moisture and Vegetation Data	Li Li NAVY NRL

Adjourn Day 2 Dinner (Restaurant in Downtown, Washington DC)

Day 3 || March 24, 2010

9:00 - 12:00 Session V: Separate Group Discussions

MSU/AMSU/SSU group Chair: Cheng-Zhi Zou

Discussion Topics:

- Are all the instrument and sampling related issues well understood?
- Are the approaches planned for the SDS project technically sound or innovative?
- Can consensus best practice approaches be established for related calibration and bias correction issues?
- Is the community well engaged in the SDS project area?
- Can consensus climate trends be obtained from the CDR for decision making support? How to reconcile the differences? What are the key issues for differences?
- How well do satellite CDRs compare with other observations such as RAOB and GPSRO?
- How well do satellite CDRs compare with climate model simulations and reanalyses?

Expected outcomes:

- A good understanding of the satellite CDR algorithms and their differences between different CDR developers
- A consensus on best practice approaches for CDR development
- Establish a strategy/working plan to reconcile differences between different CDR developers
- A good understanding on the current status of homogenization effort of RAOB datasets and its capability in climate trend detection and/or validation of satellite CDRs.
- A good understanding of the differences between climate model simulations and satellite observations and CDR requirements from the climate modeling perspectives
- A good understanding of the reanalysis requirements for inter-calibrated satellite radiance CDRs for reanalysis bias correction and climate improvement
- Establish communication channels and working relationship between satellite CDR developers and RAOB, reanalysis, and climate modeling communities
- Outline inter-comparison plans for NOAA satellite CDR and RAOB datasets, GPSRO, reanalyses, and climate modeling simulations

SSMI/SSMIS group, Chairs: Chris Kummerow, Fuzhong Weng

Discussion Topics:

1) Are all the instrument and sampling related issues well understood?
2) Are the approaches planned for the SDS project technically sound or innovative?
3) Can consensus best practice approaches be established for related calibration and bias correction issues?

4) Is the community well engaged in the SDS project area

Expected outcomes:

- A good understanding of the satellite CDR algorithms and their differences between different CDR developers
- A consensus on best practice approaches for CDR development
- Establish a strategy/working plan to reconcile differences between different CDR developers

10:00 – 10:15 Coffee Break

12:00 – 1:30 Lunch Break

1:30 – 3:00 Group Reports

3:00 Adjourn

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NOAA Science Center
1301 East-West Hwy, Silver Spring, MD 20910

March 22-24, 2010

Preliminary list of attendees

Al Powell	NOAA/NESDIS/STAR
Mitch Goldberg	NOAA/NESDIS/STAR
Cheng-Zhi Zou	NOAA/NESDIS/STAR
Fuzhong Weng	NOAA/NESDIS/STAR
Sid Boukabara	NOAA/NESDIS/STAR
Thomas Kleespies	NOAA/NESDIS/STAR
Tony Reale	NOAA/NESDIS/STAR
Huan Meng	NOAA/NESDIS/STAR
Likun Wang	NOAA/NESDIS/STAR
Yong Han	NOAA/NESDIS/STAR
Haifeng Qian	NOAA/NESDIS/STAR
Wenghui Wang	NOAA/NESDIS/STAR
Changyong Cao	NOAA/NESDIS/STAR
Andrew Heidinger	NOAA/NESDIS/STAR
Lidia Cucurull	NOAA/NESDIS/STAR
Bomin Sun	NOAA/NESDIS/STAR
Bob Iacovazzi	NOAA/NESDIS/STAR
Ivan Csiszar	NOAA/NESDIS/STAR
Ralph Ferraro	NOAA/NESDIS/STAR
Kevin Garrett	NOAA/NESDIS/STAR
Yong Chen	NOAA/NESDIS/STAR
Jeff Privette	NOAA/NESDIS/NCDC
John Bates	NOAA/NESDIS/NCDC
Tom Karl	NOAA/NESDIS/NCDC
Terry Mcpherson	NOAA/NESDIS/NCDC
Bob Kistler	NOAA/NWS/NCEP
Jack Woollen	NOAA/NWS/NCEP
Craig Long	NOAA/NWS/NCEP
Haixia Liu	NOAA/NWS/NCEP
Suranjana Saha	NOAA/NWS/NCEP
Melissa Free	NOAA/OAR/ARL
Dian Seidel	NOAA/OAR/ARL
Gang Fu	NESDIS/ORA/CRAD

David Walker	NIST
Raju Datla	NIST
Amanda Cox	NIST
Ben Santer	LLNL
Paul Poli	ECMWF
Viju Oommen John	UK MetOffice
John Christy	UAH
Chris Kummerow	CSU
Wes Berg	CSU
Carl Mears	Remote Sensing Systems
Qiang Fu	U. of Washington
Celeste Johanson	U. of Washington
Ben Ho	NCAR/UCAR
Mei Gao	CMA
Dong L. Wu	JPL
Dave Kunkee	Aerospace
Gene Poe	NRL
George Huffman	NASA
Bob Adler	UMD/ESSIC
Tom Wilheit	MIT
Mike Bettenhousen	NRL
Christopher Ruf	UM
Carol Anne Clayson	FSU
Justin Hnilo	CSU
M. Sapiano	CSU

Wenze Yang University of Maryland

Li Li Navy