2nd NOAA User Workshop on the Global Precipitation Measurement (GPM) Mission

November 29 – December 1, 2011
College Park, MD

Ralph Ferraro (NESDIS)
David Kitzmiller (NWS)

Co-chairs,
NOAA's Steering Group on Precipitation Measurement from Space

Welcome!

- Opening remarks
  - Thanks for coming!
  - Workshop organizing committee
  - Prof. Antonio Busalacchi, Director, Univ. of Maryland's Earth System Science Interdisciplinary Center (ESSIC)
- Workshop format
  - Keynote speakers
  - Panel discussions
    - Centered on overarching themes from first workshop
    - Set the stage for working groups
  - Working groups (wear "work" clothes!)
    - Imbedded plenary sessions

Goals and Expectations

- We need your participation and help!
  - Help us shape NOAA's plans for use of GPM-era data and products

- Remember, NOAA's use of GPM-era data will include components that are beyond the scope of NASA/JAXA GPM mission goals
  - Real-time use
    - e.g., Weather forecasting and warning, NWP assimilation, etc.
  - Additional products beyond precipitation
    - e.g., Imagery, TPW, etc.
  - Synergy with other existing satellite and ground-based programs
    - e.g., GOES, JPSS, Q2, HMT, etc.

- We want to generate a detailed report that includes
  - Defined **achievable**, short and long term tasks to meet NOAA goals
    - Who, what, where, when, how….a roadmap of sorts
    - Be sensible, but also creative
  - Report to be briefed to NOAA AA's
  - Tasks to be monitored and tracked

Logistics

- Loading your presentations
- Restrooms
- Food & Beverages
  - Breakfast, lunch, snacks provided
  - Vending near restrooms
- Wireless
- My office (Room 3023) is available for telecons, etc.
- Break Out rooms for the Working Groups
- Group Photo
  - before coffee
- Group Dinner
  - 6 pm Monday – Franklin's in Hyattsville (please sign up)
- WG signup sheets
- Thursday pm – develop report draft

1st NOAA User Workshop on GPM

August 18-19, 2010, College Park, MD

- ~50 participants
  - Mostly NOAA program representatives
  - Can GPM help fill in observational gaps to help NOAA mission goals – YES!

- The main workshop recommendations were:

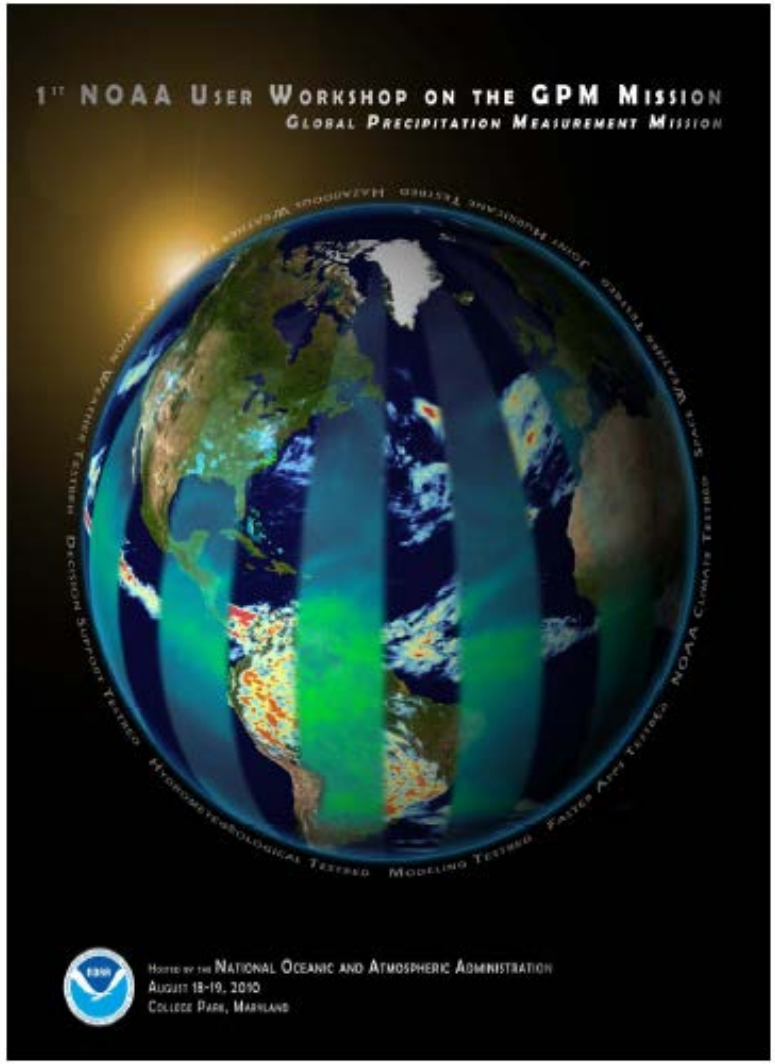
  - Accelerate the use of GPM data at NOAA through the development of a NOAA GPM Proving Ground and use of existing test beds.

  - Enhance R&D, and encourage scientific and technological innovation to maximize use of GPM-era data at NOAA

  - Develop synergy with other existing and developing programs

  - Provide GPM-era data operationally at NOAA with minimal data latency and in a variety of formats

  - Develop a dedicated NOAA budget for GPM and for mission continuity



What has happened since the workshop…

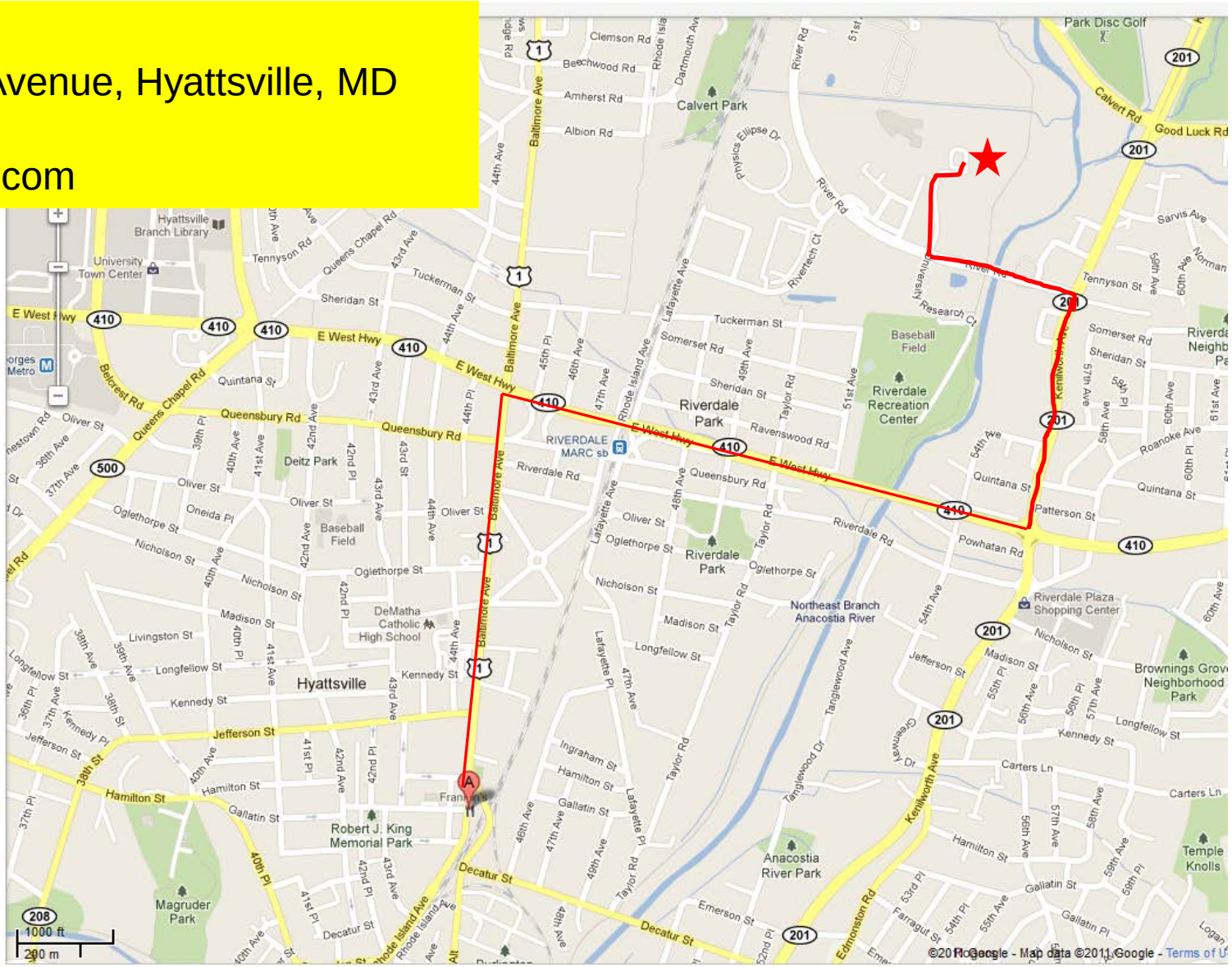
- Accelerating data use
  - Continued evolution of GPM synergy with HMT
  - Discussions regarding potential NOAA GPM Proving Ground
  - GPM “education” via seminars, conferences, white papers, …
- Enhancing R&D
  - Funding for NOAA PI’s on NASA’s PMM Science Team
  - “One NOAA” precipitation product suite being discussed
- Developing synergy with other NOAA programs
  - GOES-R program supporting R&D and cal/val projects
  - Emergence of GCOM/AMSR-2 within JPSS
  - M-T effort supported by NESDIS
- Data formats and latency
  - Requirements being assembled from various NOAA LO’s
- Budgets
  - FY14 initiative – “Satellite Data Enterprise”

Tues. November 29

11/29/11	Topic	Speaker(s)	Organization
800 - 830 am	Registration/Sign In/Continental Breakfast		
SESSION 1 - OVERVIEW (Chair - K. Carey)**			
830 - 835 am	Introductions, Welcome, Logistics, Goals, Format, etc.	R. Ferraro; A. Busalacchi	NESDIS & UMD
835 - 845 am	1st Workshop Summary and Progress	R.Ferraro	NESDIS
845 - 900 am	Importance of GPM from NESDIS Perspective	C. Baker	NESDIS
900 - 930 am	NOAA Keynote Speaker - GPM's Role at NCEP	B. Lapenta	NWS
915 - 930 am	GPM Status	G. Skofronick-Jackson	NASA
930 - 945 am	GPM Applications	D. Kirschbaum	NASA
945 - 1000 am	Q&A Session for keynote speakers		
1000 - 1030 am	**COFFEE BREAK + GROUP PHOTO**		
SESSION 2 - Enhancing R&D and Innovation of GPM-era Data at NOAA**			
PANELISTS	**B. Ferrier (NWS); C. Kummerow (Colo. St. Univ.); P. Xie (NWS); M. Kim (JCSDA); D. Kiztmiller (NWS)**		
1030 - 1035 am	Session Introduction	R. Cifelli/A. White	OAR
1035 - 1100 am	Panelist Presentations (1-3 slides; 5 minutes each)		
1100 - 1200 pm	Panel Discussion and Q&A from participants		
1200 - 100 pm	**LUNCH**		
SESSION 3 - Accelerating GPM Data Use at NOAA**			
PANELISTS	**J. Huang (NWS); T. Schott (NESDIS); R. Cifelli (OAR); G. White (NWS); B. Motta (NWS); B. Zadvosky (NASA)**		
100 - 105 pm	Session Introduction	T. Schneider/P. Xie	OAR & NWS
105 - 130 pm	Panelist Presentations (1-3 slides; 5 minutes each)		
130 - 230 pm	Panel Discussion and Q&A from participants		
230 - 245 pm	**COFFEE BREAK**		
SESSION 4 - Data Fusion**			
PANELISTS	**K. Howard (OAR); V. Chandrasekar (Colo. State. Univ.);G. Huffman (NASA);Yu Zhang (NWS); B. Kuligowski (NESDIS)**		
245 - 250 pm	Session Introduction	R. Cifelli/C. Kondragunta	OAR & NESDIS
250 - 315 pm	Panelist Presentations (1-3 slides; 5 minutes each)		
315 - 415 pm	Panel Discussion and Q&A from participants		
SESSION 5 - Data delivery and formats**			
PANELISTS	**E. Stocker (NASA); G. Serafino (NESDIS); B. Gockel (NWS); B. Nelson (NESDIS); L. Zhao (NESDIS)**		
415 - 420 pm	Session Introduction	R. Ferraro/C. Kondragunta	NESDIS
420 - 445 pm	Panelist Presentations (1-3 slides; 5 minutes each)		
445 - 530 pm	Panel Discussion and Q&A from participants		
530 pm	**WORKSHOP ENDS FOR THE DAY**		
600 pm	**Group Dinner (TBD)**		

Group Dinner (pay on your own) – 6 pm TUES. (right after meeting)

Franklin's
5121 Baltimore Avenue, Hyattsville, MD
(301) 927-2740
franklinsbrewery.com



Wed. November 30

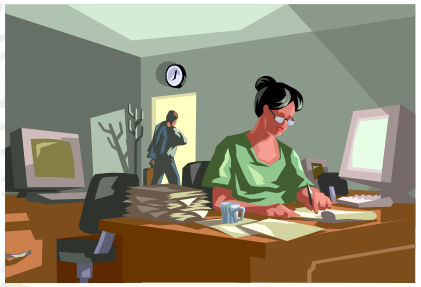
11/30/11	Topic	Speaker	Organization
SESSION 6 - WORKING GROUP PLENARY**			
800 - 830 am	Continental Breakfast		
830 - 845 am	GPM Status - Precipitation Processing Systems	E. Stocker	NASA
845 - 930 am	Working Group Formation, Format, Rules of engagement, Background Information	Ken Carey, Ralph Ferraro	Noblis; NESDIS
930 - 1000 am	Move to Working Groups and initail organization		
1000 - 1030 am	**COFFEE BREAK**		
1030 - 1200 pm	Working Groups Meet		
1200 - 100 pm	**LUNCH and engage other working groups**		
WORKING GROUP SESSION 1			
100 - 300 pm	WORKING GROUPS MEET		
300 - 315 pm	**COFFEE BREAK**		
315 - 400 pm	Group Plenary - Are there common themes? Any reorganzation?		
400 - 500 pm	WORKING GROUPS MEET		
500 pm	**WORKSHOP ENDS FOR THE DAY**		

Thur. December 1

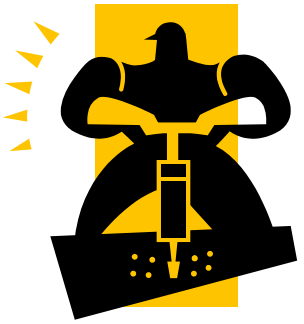
12/01/11	Topic	Speaker	Organization
WORKING GROUP SESSION 2			
800 - 830 am	Continental Breakfast		
830 - 900 am	Group Plenary/Updates from WG Chairs (5 min each)	Ken Carey	Noblis Corp.
900 - 1200 pm	WORKING GROUPS MEET		
1200 - 100 pm	**LUNCH**		
SESSION 7 - FINAL GROUP PLENARY**			
100 - 120 pm	WG 1 Report		
120 - 140 pm	WG 2 Report		
140 - 200 pm	WG 3 Report		
200 - 220 pm	WG 4 Report		
220 - 300 pm	Final Discussions/Wrap Up		
300 pm	**WORKSHOP ENDS**		
330 - 600 pm	Working Group Leads Develop Draft reports 3 - 5 pages		

Working Groups

- Think in terms of achievable goals
  - What can be done with existing resources?
  - What extra resources are needed?
  - Need "champions" for each action
- But also think out of the box
  - Yes, we want actions that are closely tied to NOAA goal feel locked to this, be innovative
    - Cross line office efforts
      - R20 and 02R
    - Do things "differently" from in the past
      - Radars, gauges and satellites do mix!



- Look over Workshop Report 1 and address recommendations
- Ken's set of questions for short and long term goal



Topic 1 – Enhancing R&D and Innovation of GPM-era Data at NOAA (WG Chair – R. Bennartz)

1. What new products using GPM data are needed to enhance NOAA science and services?

2. Where in NOAA is the greatest need for GPM data?

3. What GPM products are anticipated to have the greatest impact on NOAA precipitation products?

4. Is GPM data needed for validation, assimilation, or both purposes in NOAA forecast models?

5. What steps are needed prior to the GPM launch to ensure optimal use of the data?

6. In what areas should NOAA partner with GPM science community to achieve maximum benefit from GPM?

Topic 2 – Accelerating GPM Data use at NOAA (WG Chair – Chris Miller)

1. What are the current uses of satellite, especially TRMM products in your organizations / projects?

2. What are the requirements for GPM products?

3. What do you think are the key requirements for the GPM products / services you need?

4. What are the potential obstacles against accelerating the use of GPM products for your organizations / projects?

5. How we may accelerate the GPM infusion? How should we take advantage of the existing testbeds? Or do we need a new infrastructure (e.g. proving ground) for the GPM products transition?

Topic 3 – Data Fusion (WG Chair – D. Kitzmiller)

1. What lessons can NOAA learn from the outside research community in terms of multi-sensor QPE/data fusion techniques?

2. What GPM data are anticipated to have the greatest impact on NOAA data fusion products (precipitation, SST, TPW, etc.)?

3. Where and when will GPM data be most effective for blended NOAA products?

4. What steps are needed to achieve a one NOAA suite of precipitation products?

5. In what areas should NOAA partner with the PMM science community to achieve maximum benefit for data fusion?

6. How can the PMM community and other researchers best engage with NOAA to develop optimal multi-sensor QPE products?

Topic 4 – Data Delivery/Formats (WG Chair – J. Mani)

1. What is the expected data latency of GPM core and constellation member L1 and L2 data? How do these compare to TRMM? Are there ways to improve on these nominal values (i.e., enhance com lines between NASA and NOAA, direct downlink, etc.) and at what cost?

2. How might NOAA improve its product processing and delivery to users through the elimination of "stove pipes"? What are the benefits and obstacles to this approach?

3. What are the expected data formats for the GPM data from NASA and what are the data format plans at NOAA?

4. What are the most important aspects of the PPS transition to NOAA: L1? L2? L3?

5. How can NASA and NOAA operate the PPS in a synergistic manner?

6. How can GPM be leveraged to generate NOAA-Unique Products?

WG Room Assignments

- WG 1 – Room 4102 (stay in this room)
- WG 2 – Room 4056
- WG 3 – Room 4046
- WG 4 – Room 3002

Working Group _____

Working Group Lead _____

Working Group Scribe _____

Working Group Members _____

Instructions: Please use the table below as you develop tasks/milestones within your working group. We are aiming to identify both short term (1-3 years) as well as long term (beyond 3 years) actions that can advance the working group goals. Please rank in order of priority as best as you can and try to identify a champion for each task – attaching someone's name to an action helps ensure that the task does not "slip through the cracks". Please also think in terms of achievable tasks that are realistic, given everyone's busy schedules; some tasks can probably be done without any dedicated resources (aside from NOAA FTE hours; those costs do not need to be included in the table). Guidance on potential funding sources will be provided in the plenary sessions. The better you populate this matrix, the easier it will be to write a summary

Task/Milestone	Champion(s)	Steps to accomplish (include who, what, where and when)	Funding Source or Targets	Cost Estimate ($ K)

Backup

Chronology - NOAA and GPM

Nov 1997 – TRMM Launch

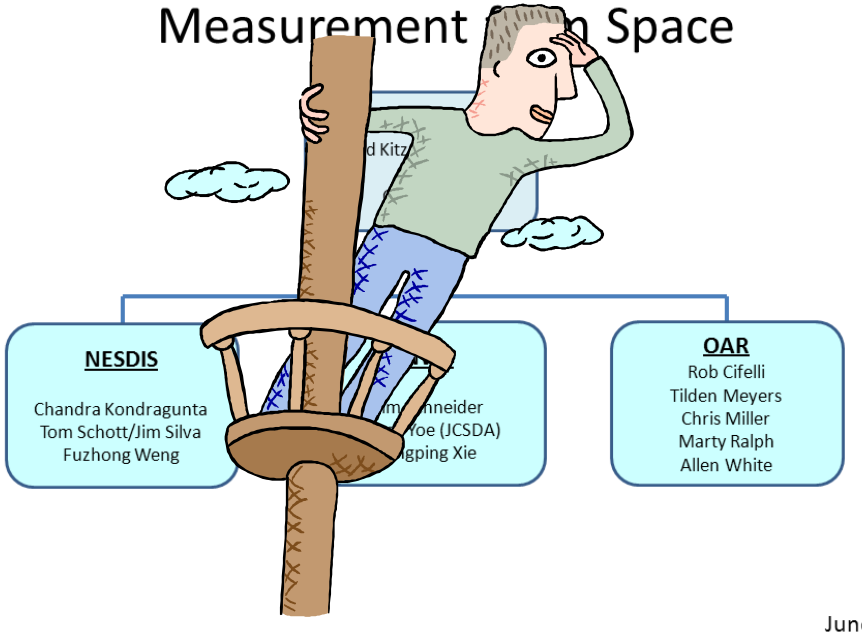
TRMM data used at NOAA

Jul 2004 – TRMM may get turned off

2006

2007

NOAA's Steering Group on Precipitation Measurement [illegible] Space



June 2011

NOAA's Participation on PMM Science Team

Engagement with NASA – R2O, GPM reviews, GPM GV, etc.

Interface to NOAA Management

Planning, Workshops, Budgeting