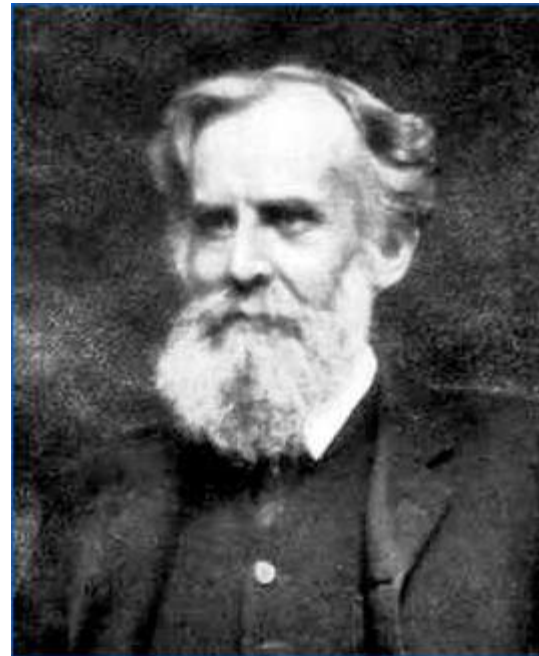


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# Cosmic Frontier

Paths Forward and  
Summer Meeting  
Agenda  
DISCUSSION

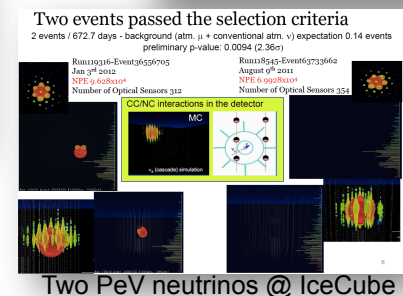
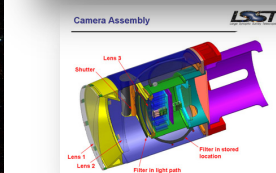
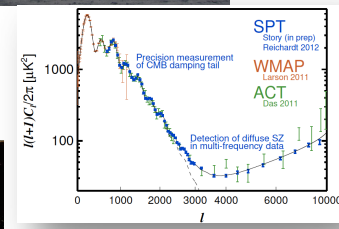
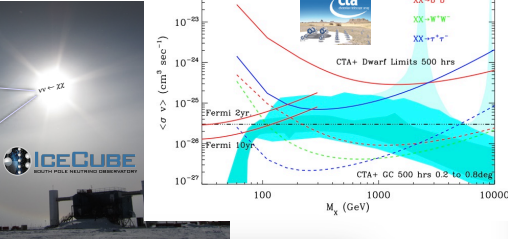
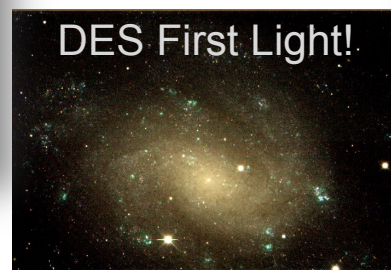
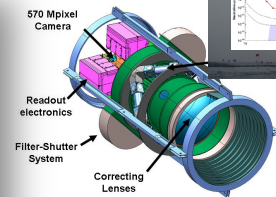
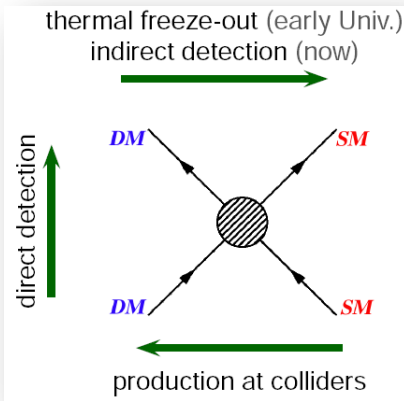
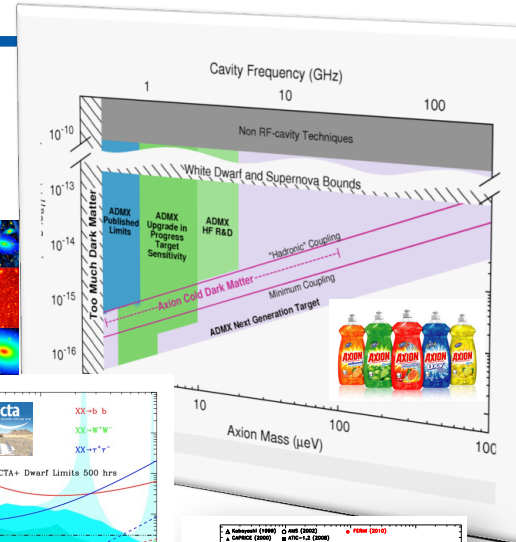
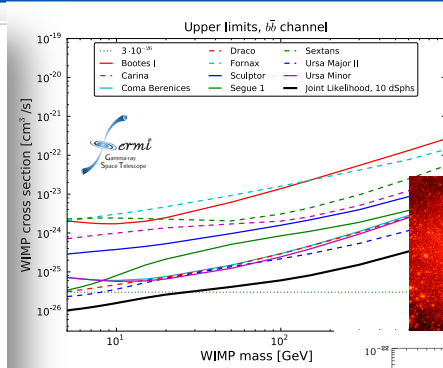
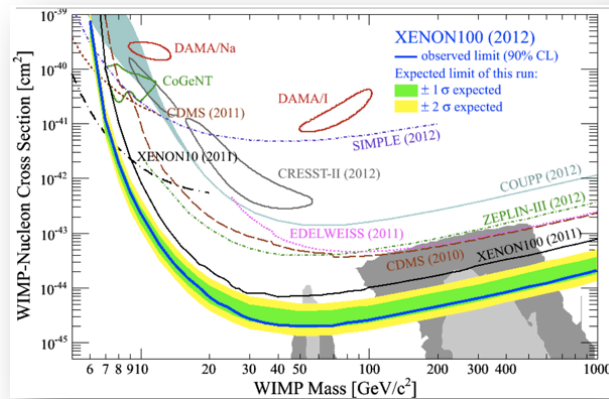
S. Ritz, J. Feng



(the venerable Venn)



# The Cosmic Frontier



Activities at the Cosmic Frontier are marked by rapid, surprising, and exciting developments

11 October 2012

Cosmic Frontier – S. Ritz

2

8 March 2013

Cosmic Frontier

2

# Toward Minnesota

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- Main objectives of the summer meeting:
  - communicate excitement, opportunities, and issues to our colleagues beyond the Cosmic Frontier
  - complete the work
    - remaining open issues to address for the subgroup summaries
    - write remaining sections
    - complete the draft of the CF-level summary
  - keep open time for additional ideas not yet discussed
- First day and final 1.5 days programmed with grand plenaries. We have the middle ~6 days to define.
- [Beyond MN: there will be summary presentations at the 13-17 August DPF meeting]

# Deliverables Reminder

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## DELIVERABLES: LONG TERM SNOWMASS SUMMARIES

Contributed Papers from collaborations, groups, individuals

- Send to Subgroup Conveners
- Submit to <https://www-public.slac.stanford.edu/snowmass2013> to be included in Snowmass e-proceedings (harvested from arxiv.org on September 30, but post long before then to have impact)



~30-page CF Subgroup Summaries (written by CF Working Group participants, due Summer 2013)



~30-page CF Summary (written by all CF Conveners with broad input, due by Snowmass in Minnesota)



~30-page Snowmass-wide Summary (written by Frontier Conveners with broad input, presented in bullet form at DPF 2013 in Santa Cruz)

# The Summary Documents

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- **Consider carefully how the summaries will be used, particularly by P5.**
  - we do not have a mandate to prioritize, but we should enable a good prioritization process using these results.
- Different subgroups have different issues, however there is value in uniformity at some level across groups
  - summaries can address a standard set of questions (see draft, following slide), suitably adapted as needed.
- Organization of the subgroup summaries and author lists are decided within the subgroups.
  - we can help resolve issues, if needed.
- Page allocations are guidelines, not strict requirements.

# Possible Questions to Answer in Summary Documents

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- **What are the main scientific opportunities foreseen in this subfield over the next 5, 10, 20 years?**
  - how do they connect with other areas?
  - what inputs are needed, and are possible branch points using the inputs?
  - what are the exciting big-risk – big-payoff topics that may not be getting sufficient attention?
- **What technical breakthroughs and/or facilities are required, and on what timescale?**
- **What are the major issues facing this subfield, and how may they be addressed?**
  - what scales of resources are required and when?
  - is there redundancy that must be addressed?
- **What criteria might be used to set priorities?**

# Subgroup Summary Report Logistics

- email is fine for some things, but not optimal for discussions
  - email for news, information
- the twiki supports discussion forums
  - shall we use them?
- different groups will likely work differently

## USEFUL LINKS

- Cosmic Frontier-related Pre-Meetings and Meetings of Interest
  - CETUP\* Dark Matter Workshop, Lead/Deadwood, South Dakota, June 24-July 5, 2013
  - Snowmass Theory Meeting, KITP Santa Barbara, May 29-31, 2013
  - SnowDARK 2013: Non-WIMP Dark Matter, March 22-25, 2013
  - Cosmic Frontier Workshop, March 6-8, 2013
  - Closing in on Dark Matter, Aspen Winter Conference, January 28, - 3 February 3, 2013
  - Community Planning Meeting, Fermilab, October 11-13, 2012
- Previous Prioritization Studies and Studies of Specific Topics
  - DOE Community Dark Energy Task Force Report 2012
  - NSF Astronomy Portfolio Review 2012
  - Particle Physics Project Prioritization Panels (P5 2008, 2010)
  - New Worlds, New Horizons and CFP and PAG Panels (Astro2010)
  - Particle Astrophysics Scientific Assessment Group (PASAG 2009)
  - Dark Matter Scientific Assessment Group (DMSAG 2007)
  - Dark Energy Task Force (DETF 2006)
  - NASA Physics of the Cosmos (PCOS) Program
  - Task Force on Cosmic Microwave Background Research (TFCR 2005)
- Cosmic Frontier Forum
- Archive of announcements and community inputs

# “Outreach” (Beyond CF) Activities in MN

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- Efforts being made to enable grand plenaries in the middle 6 days
  - panels, colloquia, town halls...
  - representative of all the frontiers. best topics are cross-cutting.
  - Ideas welcome! (An example: DM Complementarity)
- Other ideas:
  - Joint sessions
  - Engaging in the big questions for the field
  - ...
- Messages:
  - Together with the other Frontier areas, Cosmic Frontier an important part of the story for strengthening support of HEP:
    - Best evidence for physics Beyond the Standard Model
    - Many surprises. Profound questions of popular interest.
    - Frequent new results, with broad impacts.
    - Large discovery space.
    - Full range of project scales, providing flexible programmatic options.

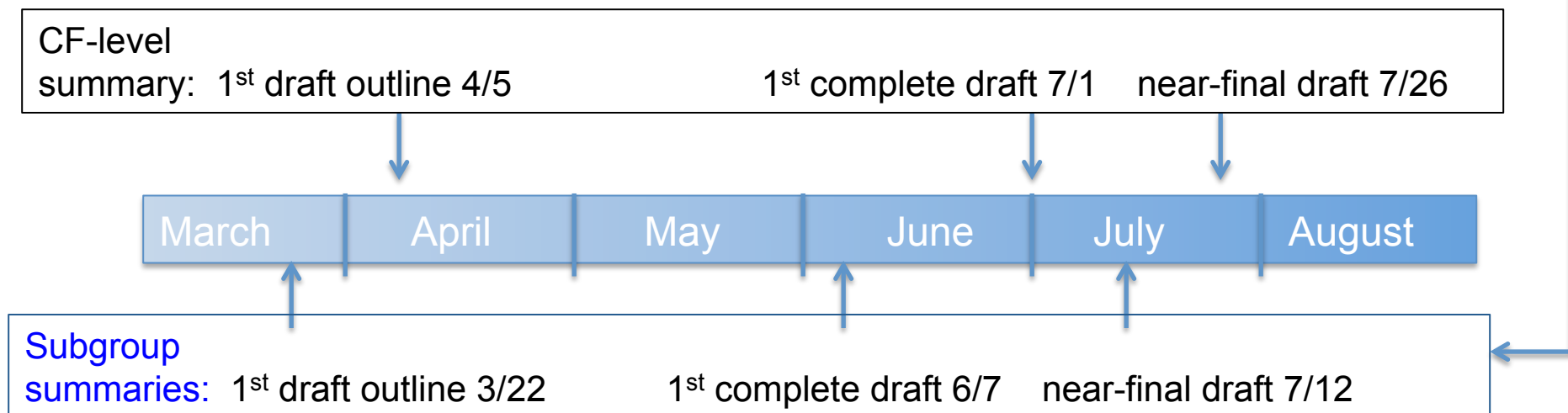


# Block Program Boundary Conditions DRAFT

Time	29 July	30 July	31 July	1 Aug	2 Aug	3 Aug	4 Aug	5 Aug	6 Aug
morning	Grand Plenaries	Subgroup Parallel Sessions and Joint Parallel Sessions						Grand Plenaries	
early afternoon		Subgroup Parallel Sessions and Joint Parallel Sessions							
late afternoon		Grand Plenary Sessions and Discussions							
evening		Parallel DISCUSSIONS							

# A DRAFT Timeline

- **Dark Matter Complementarity Document submit: 29 March**
- **White paper inputs best by: 5 April**
- Subgroup summaries 1<sup>st</sup> draft outline: 22 March
- Subgroup summaries first complete draft: 7 June
- Subgroup summaries near-final draft: 12 July
- CF-level summary outline: 5 April
- CF-level summary first complete draft: 1 July
- CF-level summary near-final draft: 26 July
- Outreach talks defined: pending central org.



# Finally...

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- A stimulating, FUN workshop
  - many thanks all participants
  - many thanks to the subgroup conveners
  - many thanks to KIPAC and SLAC
- Plenty of work to do over the next 5 months.
- Snowmass is necessarily inward looking, but international context and collaboration are in most cases essential.
- What's missing??
  - suggestions welcome
- A message from Snowmass Young:
  - please support your students and post-docs who want to engage in this process
- DISCUSSION:

# DPF2013

**AUGUST 13–17**  
**UC SANTA CRUZ**

Hosted by the **SANTA CRUZ INSTITUTE**  
**FOR PARTICLE PHYSICS**

Meeting of the  
**DIVISION**  
of **PARTICLES**  
& **FIELDS**  
of the American  
Physical Society



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## PROGRAM

Results of U.S. community planning for:  
Energy, Intensity, and Cosmic Frontiers  
and  
Innovations in Accelerators, Detectors,  
and Computing

Parallel Sessions Include:

EWSB and the Higgs Sector  
New Physics Searches at the LHC  
Physics using B, Bs and Charm  
Top Quark Physics  
Electroweak Physics  
Neutrino Physics  
Progress at the Cosmic Frontier  
Accelerators, Detectors, and Computing  
Theoretical Physics

## LOCAL ORGANIZING COMMITTEE

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Marco Battaglia  
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Terry Schalk  
Bruce Schumm  
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