

Welcome to the Saturn Science Conference Saturn in the 21st Century

August 4-7, 2014

Pyle Center, UW-Madison, Madison, Wisconsin

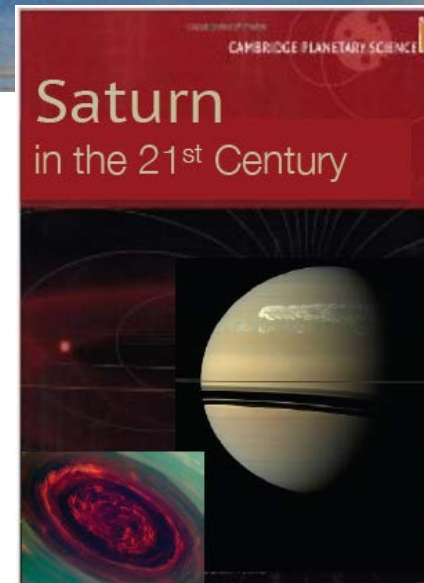


Sponsored by:

The Space Science and
Engineering Center (SSEC) ,
UW-Madison

and

NASA/The Cassini-Huygens
Project



Meeting Registrants



!!!!!!Name!	!!Organization
Richard Achterberg	University of Maryland
Sushil Atreya	University of Michigan
Kevin Baines	SSEC/UW-Madison and JPL/CalTech
Gordon Bjoraker	NASA/GSFC
James Carbary	Johns Hopkins Univ./Applied Physics Lab
Ulrich Christensen	Max Planck Institute for Solar System Research
Frank Crary	University of Colorado
Michele Dougherty	Imperial College London
Scott Edgington	Jet Propulsion Laboratory
F. Michael Flasar	NASA/GSFC
Leigh Fletcher	University of Oxford
Jonathan Fortney	University of California, Santa Cruz
Patrick Fry	SSEC/UW-Madison
Enrique Garcia-Melendo	Universidad Pais Vasco
Matthew Hedman	University of Idaho
Brigitte Hesman	Univ. of Maryland / NASA/GSFC
Luciano Iess	Sapienza Universita' di Roma
Tommi Koskinen	University of Arizona
Norbert Krupp	MPI for Solar System Research
William Kurth	University of Iowa
Luke Moore	Boston University
Olivier Mousis	Institut UTINAM, Universite de Franche-Comte
James O'Donoghue	Boston University
Glenn Orton	JPL/CalTech
Wayne Pryor	Central Arizona College and Space Environment Technology
Kunio Sayanagi	Atmospheric and Planetary Sciences, Hampton University
Adam Showman	LUNAR & PLANETARY LABORATORY
Larry Sromovsky	SSEC/Univ. of Wisconsin-Madison
Tom Stallard	University of Leicester
Darrell Strobel	Johns Hopkins University
Paul Strycker	Concordia University Wisconsin
Melody Sylvestre	LMD / LESIA Obs. de Paris
Anthony Wesley	Astronomical Society of Australia
Robert West	JPL/Caltech



Welcome From

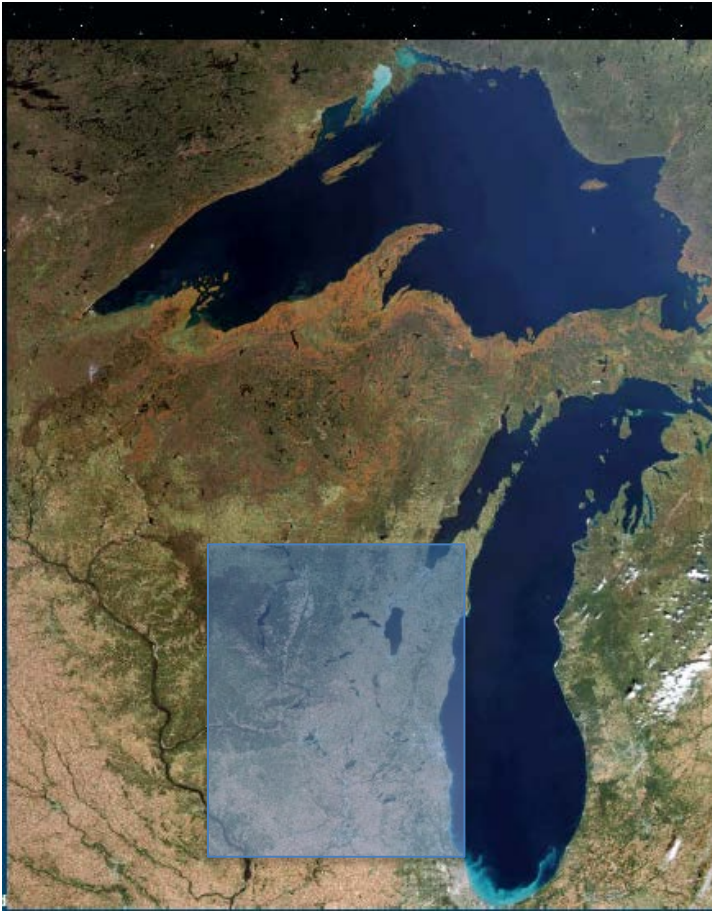
Dr. Hank Revercomb
Director, Space Science and
Engineering Center,
University of Wisconsin-Madison



Madison, Wisconsin



Madison, Wisconsin

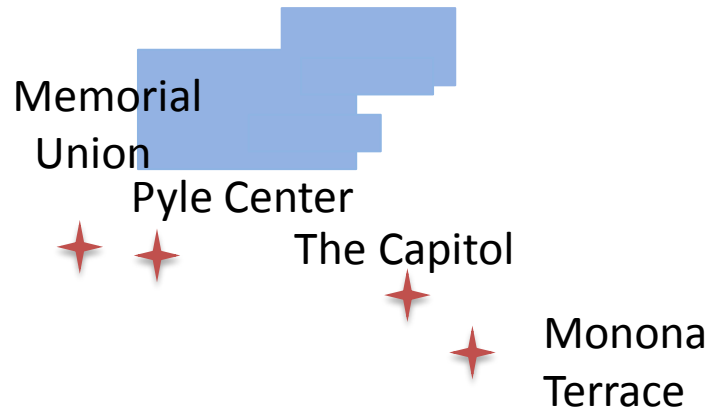


Madison, Wisconsin



Map data ©2013 Google -

Madison, Wisconsin







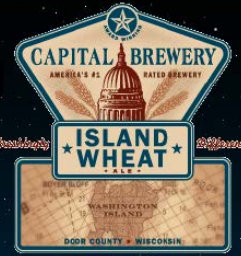
Babcock ice cream – yummmm

Available in the Union

Not brats.....



Not brats.....



WI BEER



Creamy Dark

Available only once and aged slowly, Capital Brewery's Creamy Dark Lager has received 2 awards in national competitions: Lager (2008) and Gold Cup (2009).

Available in 12 oz cans and 16 oz bottles.

Available in 12 oz cans and 16 oz bottles.



Available on draft or in:

Six pack long neck bottles or 12 for the case

12 pack long neck bottles

Not brats.....



WI BEER



Try em fried too!!



Meeting Assistants

Maria Vasys
Meeting Coordinator

Joe Engstrum
Audio-Visual Assistant



Banquet: Tuesday night



Alumni Lounge, Pyle Center
Reception

“Free”: Included in the Meeting Registration for All Participants

Wednesday Afternoon Activity

12:30-3:45

Lake Mendota Lunch Cruise



Assorted Chips and Dips
Jumbo All-Beef Hot Dogs
"Build You Own" Burgers
Chicken Breast Sandwiches
Boca (Vegi-) Burgers
Potato Salad
Pasta Salad
Fruit Salad
Assorted Desserts

Boat-to-Boat
Photos by
Larry Sromovsky

Sign up with Maria Vasys
During Morning Break



Wednesday Afternoon Activity

12:30-5:00

Taliesin East

Tour of Residence and Work Studio of Frank Lloyd Wright



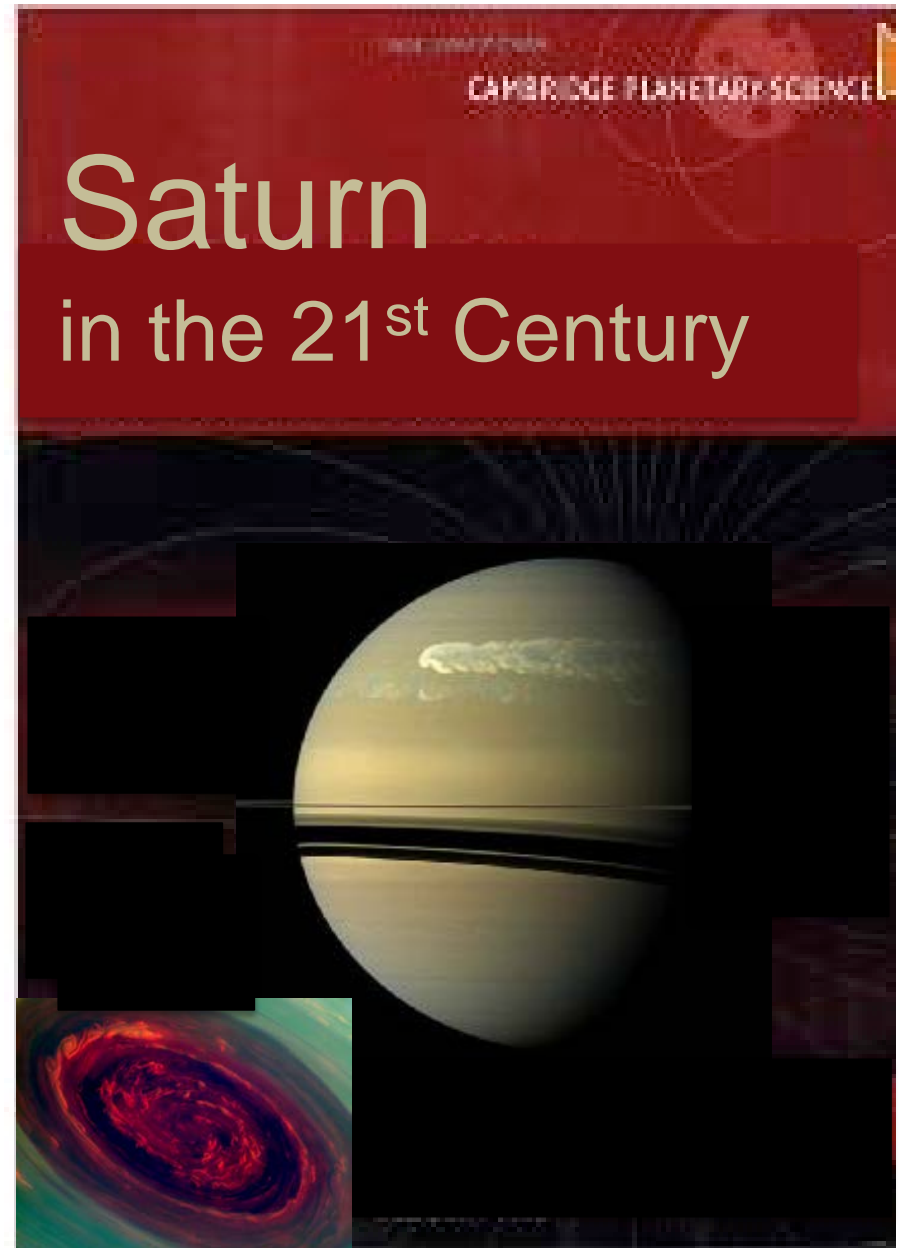
Sign up with Maria Vasys
During Morning Break

Purpose of Conference

- Help Prepare Chapters for New Cambridge University Press Saturn Book
- Opportunity for Lead Authors to
 - Present Current Status of their Reviews
 - Coordinate with their Co-Authors
 - Coordinate with Lead Authors of other Chapters
- Opportunity for Active Researchers to Present Latest Findings about Saturn for, in particular, Possible Inclusion in Book Chapters

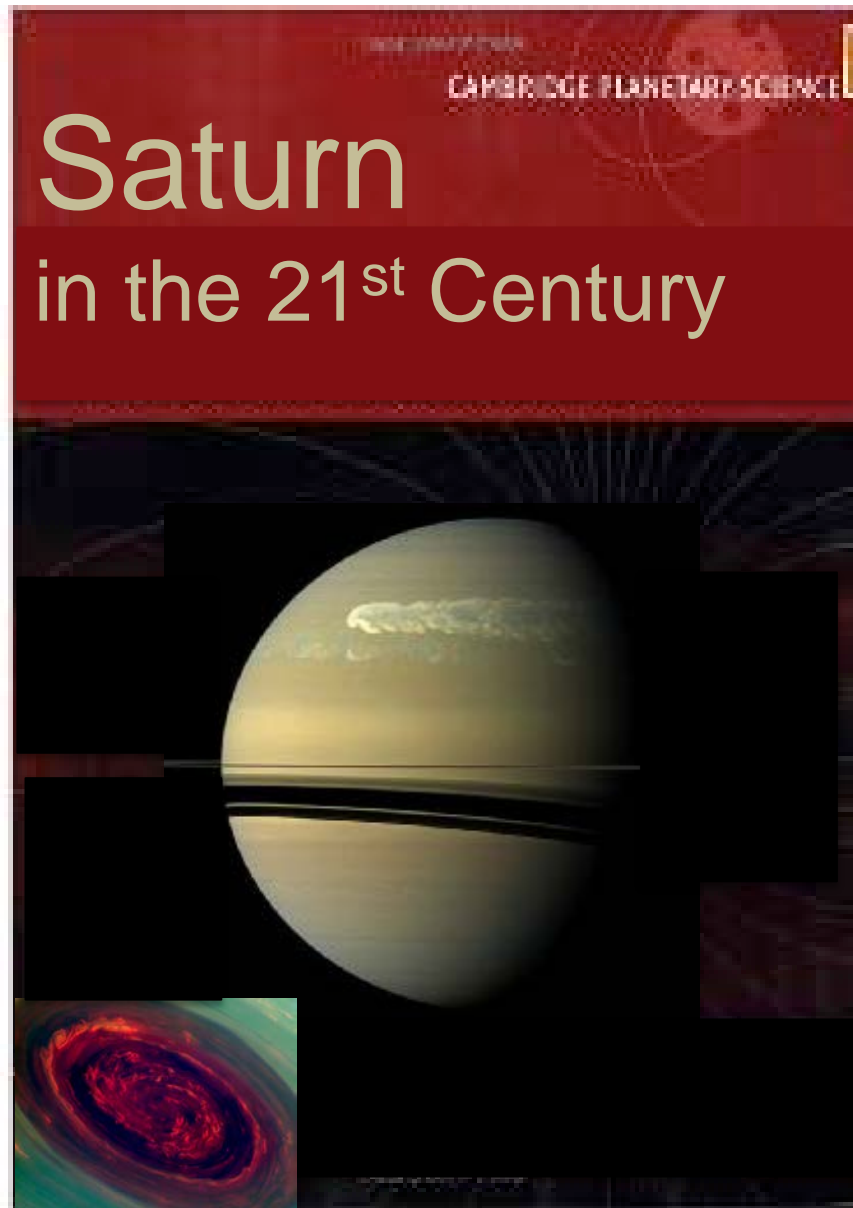
Specific Opportunities for Interactions

- Poster Talks, with 3-minute Previews, Monday/Tuesday
- 1/2-Hr Breaks each Morning
- 2- hr Lunches on Monday, Tuesday, Thursday
- Wednesday Afternoon, during Excursions
- Reception, Banquet and Afterwards, Monday and Tuesday



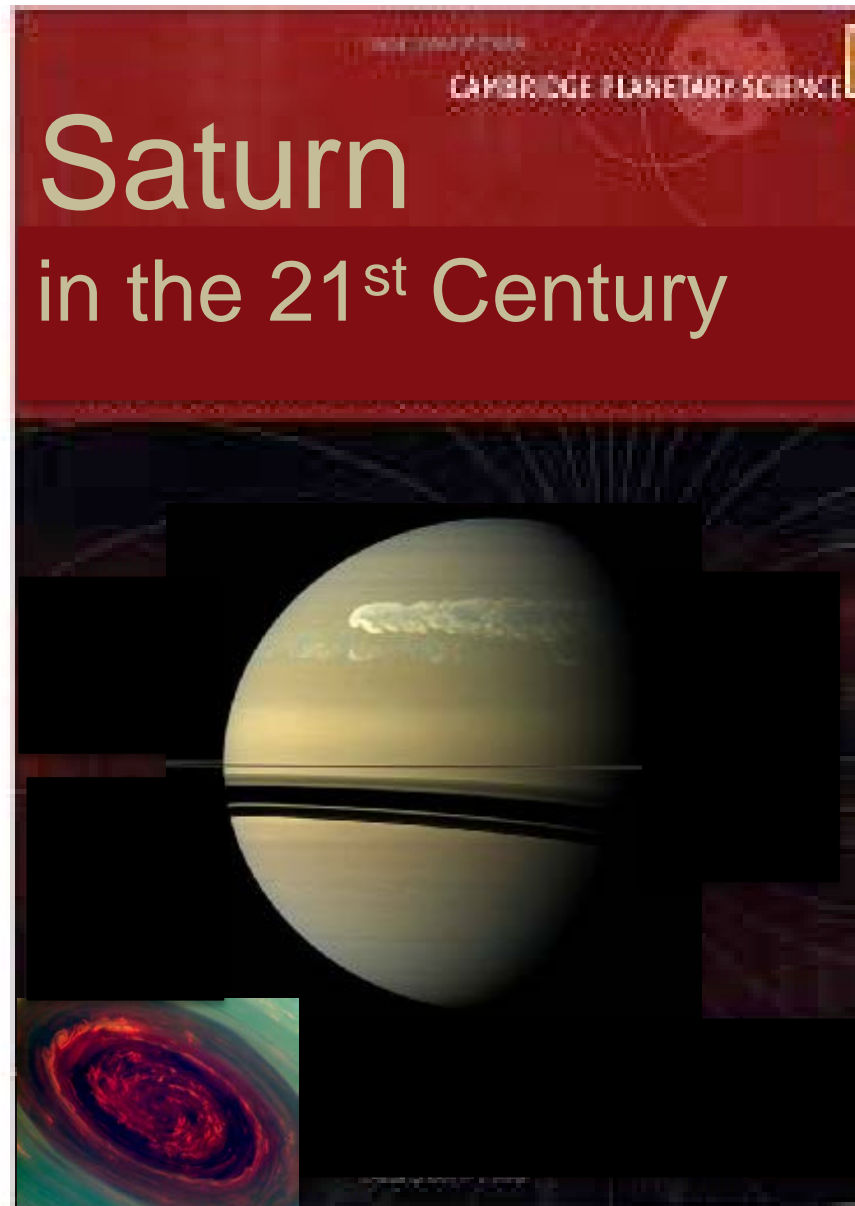
Conference Program

Monday	TIMES	TOPICS	PRESENTER
	8:00	Registration opens	
	9:00	Welcome/Introduction/Purpose of Meeting	Kevin Baines
	9:30	Origin of Saturn and its Atmosphere, and an Exoplanet Perspective	Sushil Atreya
	10:30	Break	
	11:00	Saturn's Interior Structure	Jonathan Fortney
	12:00	Lunch on own	
	2:00	Saturn's Magnetic Field and Dynamo	Ulrich Christensen
	3:00	Saturn's Erratic Clocks - Searching for the Rotation Rate of a Planet	James Carbary
	4:00	Poster Summaries: Evolution, Internal Structure, and the Thermosphere and Above	Poster Abstracts for Monday (PDF)
	1	Interpretation of the $^{14}\text{N}/^{15}\text{N}$ Ratio Measured in Saturn's Ammonia	Olivier Mousis
	2	Saturn's Shape from Cassini Radio Occultations	F. Michael Flasar
	3	Saturn Kilometric Radiation Periodicity after Equinox	W. S. Kurth
	4	Kronoseismology with Rings, New Clues to Saturn's Interior	Matthew Hedman
	5	Joule Heating of the Mid-Latitude Thermosphere: Saturn's other Ring Current	Frank Cray
	6	Cassini Ultraviolet Images of Saturn's Aurorae	Wayne Pryor
	7	On Saturn's 'Ring Rain', Comparison of Results from Years 2011, 2013 and 2014	James O'Donoghue
	8	Temporal and Meridional Trends in Saturn's Thermosphere from Cassini UVIS occultations	Tommi Koskinen
	4:30	Poster Reception/Cash bar	
Tuesday	9:00	Global Configuration and Seasonal Variations of Saturn's Magnetosphere	Norbert Krupp
	10:00	Saturn's Aurorae	Tom Stallard
	11:00	Break	
	11:30	Saturn's Ionosphere: Ring Rain and Other Drivers	Luke Moore
	12:30	Lunch on own	
	2:00	Saturn's Thermosphere	Darrell Strobel
	3:00	Saturn's Seasonally Changing Atmosphere: Thermal Structure, Composition, and Chemistry	Leigh Fletcher
	4:00	Poster Summaries: The Stratosphere and Below and Future Missions	Poster Abstracts for Tuesday (PDF)



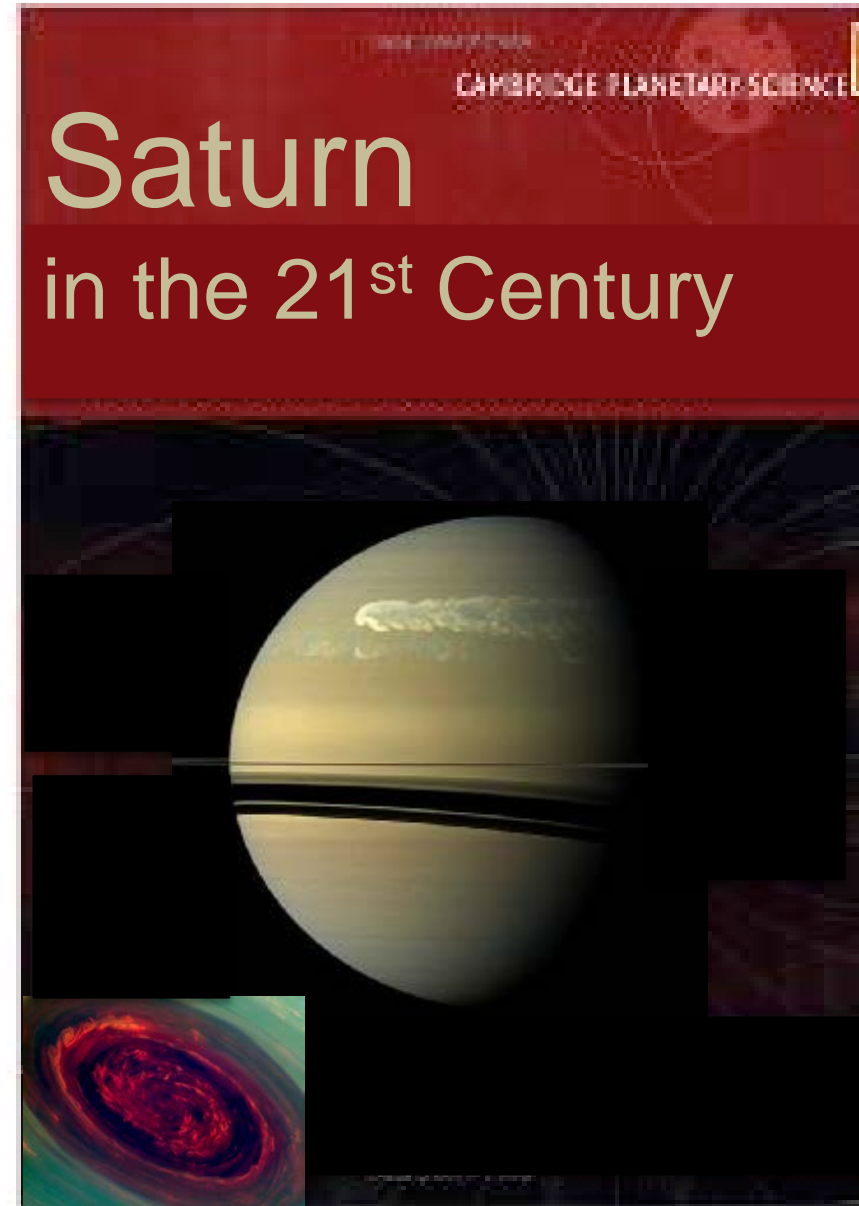
Conference Program

4:00		Poster Summaries: The Stratosphere and Below and Future Missions	Poster Abstracts for Tuesday (PDF)
	1	Long-Term Variability of Temperatures and Clouds in Saturn from Ground-Based Observations of Thermal Emission	Glenn Orton
	2	Seasonal Variations in Saturn's Stratosphere from Cassini/CIRS limb Observations	Melody Sylvestre
	3	Oxygen Compounds in Saturn's Stratosphere During the 2010 Northern Storm	Gordon Bjoraker
	4	The Evolution of Hydrocarbon Compounds in Saturn's Stratosphere During the 2010 Northern Storm	Brigette Hesman
	5	Changes to Saturn's Zonal-mean Tropospheric Thermal Structure After the 2010-2011 Storm	Richard Achterberg
	6	The Composition of Saturn's Storm Clouds: The Great Storm of 2010-2011 and beyond	Larry Smromovsky
	7	Scientific Rationale and Concepts for an In Situ Saturn Probe	Olivier Mouis
	8	Applying PCA Filtering to Bolide Detection in Video Observations of Saturn and Jupiter	Paul Strycker
4:30		Poster Session for Days 3-4	
5:30		Cash bar	
6:00		Banquet in the Alumni Lounge	



Conference Program

Wednesday	9:00	Clouds and Aerosols in Saturn's Atmosphere	Robert West
	10:00	Saturn's Global Atmospheric Circulation	Adam Showman
	11:00	Break	
	11:30	Saturn's Polar Atmosphere	Kunio Sayanagi
	12:30	Free time/Excursion to Taliesin/ Lake Mendota Boat Tour	
Thursday	9:00	The Great Storm of 2010–2011	Enrique Garcia-Melendo
	10:00	The Great Storm – Panel Discussion	
	11:00	Break	
	11:30	The Future Exploration of Saturn	Kevin Baines
	12:30	Lunch on own	
	2:30	The Future of Amateur Observations of Saturn	Anthony Wesley
	3:30	Break	
	4:00	Wrap-up Panel and Discussion	
	5:00	Conference concludes	



Saturn Book: Saturn in the 21st Century

Table of Contents

Editors: Kevin Baines, Mike Flasar, Norbert Krupp, Tom Stallard

Science Advisory Committee: Sushil Atreya, Fran Bagenal, Scott Edgington, Tamas Gambosi, Bill Hubbard, Andy Ingersoll, Ingo Müller-Wodarg, Darryl Strobel

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6. Saturn's Variable Magnetosphere
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7. Saturn's Aurorae
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Showman, R. Achterberg, A. P. Ingersoll, Y. Kaspi
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K. Sayanagi, K. H. Baines, U. Dyudina, L. Fletcher, P. Read, A. Sanchez-Lavega, R. West
13. The Great Storm of 2010-2011 Saturn's Ionosphere: Ring Rain and other drivers
A. Sanchez-Lavega, G. Fischer, L. Fletcher, E. Garcia-Melendo, B. Hesman, S. Perez-Hoyos, K. Sayanagi, L. Sromovsky
14. The Future Exploration of Saturn
K. H. Baines, S. Atreya, F. Crary, T. Greathouse, H. Melin, O. Mousis, G. Orton, T. Spilker, A. Wesley

Summary: 14 Chapters, 77 Authors from 37 Institutions, 9 Countries, and 3 Continents

Saturn Book Schedule

- Schedule
 - Science Conference: August 4-7, 2014 in Madison, WI
 - Chapters due December 31, 2014
 - Reviewers Review for 2 months (~ End of Feb 2015)
 - Authors revise for 3 months (~ End of May 2015)
 - Re-review and re-revised 2 months (~ End of July 2015)
 - Revised version sent in by June 30, 2015
 - Chapters accepted for publication by July 31, 2015
 - Published ~ June 2016
 - Updated version (2nd Edition) including F-Ring/Proximal Results Published Winter 2019-2020.
 - Cassini Spacecraft demise: September 15, 2017
 - Data Analysis and archiving until March, 2018
 - Updated chapters submitted December 2018
 - Chapters reviewed Jan-Feb 2019
 - Revised versions submitted April 2019
 - Accepted end of May 2019
 - Book Published Winter 2019-2020