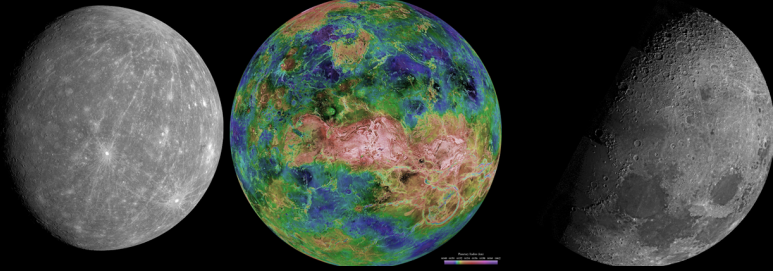


# Decadal Survey: Inner Planets Panel

Ellen Stofan

VEXAG

10/28/09



# Panel Members

## **Chair:**

Ellen Stofan (Proxemy Research) *Venus, Mars, Earth, Titan*

## **Vice Chair:**

Steve Mackwell (LPI) *Venus, Moon*

## **Panel Members:**

Barb Cohen (MSFC) *Moon*

Steve Hauck (Case Western) *Mercury, Moon, Venus*

Allan Treiman (LPI) *Venus, Moon, Mars*

Marty Gilmore (Wesleyan) *Venus, Earth, Mars*

Lori Glaze (GSFC) *Venus, Mars, Earth, Io*

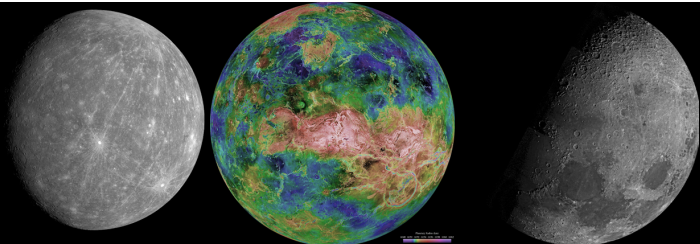
Chip Shearer (UNM) *Moon, Mars*

Ed Stolper (Caltech) *Terrestrial Planets*

David Grinspoon (Denver Museum) *Venus atmospheres, Astrobiologist*

Ayanna Howard (Georgia Institute of Technology) *Technology / Engineer*

Douglas Stetson (consultant, ex-JPL) *Technology / Engineer*



# Schedule

2008

4<sup>th</sup> Quarter Informal request received, NRC approves initiation,  
Formal request received, Proposal to NASA.

2009

1<sup>st</sup> Quarter Funding received, Chair identified,  
Chair and vice chair appointed

2<sup>nd</sup> Quarter Steering Group appointed, Panels Appointed

3<sup>rd</sup> Quarter Meetings of the Steering Group and Panels begin

4<sup>th</sup> Quarter Panels' period of peak activity

2010

1<sup>st</sup>- 2<sup>nd</sup> Quarter Final Panel meetings, Panel reports finalized

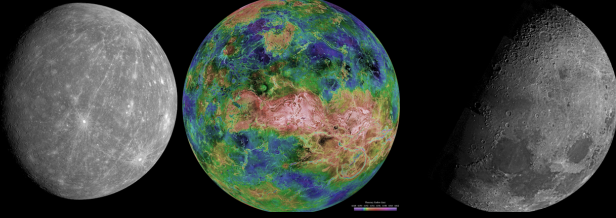
2<sup>nd</sup>-3<sup>rd</sup> Quarter Prioritization and drafting of survey report

4<sup>th</sup> Quarter Draft survey report to reviewers, Report revised

2011

1<sup>st</sup> Quarter Report approved, NASA briefed  
and report released ( prepublication-format)

3<sup>rd</sup> Quarter Printed report released



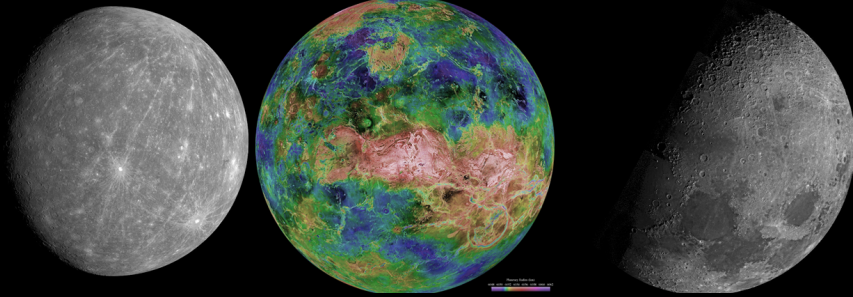
# What will the Report Address?

## ■ Major Tasks:

- Overview of planetary science and current state of knowledge
- Inventory of the key scientific questions
- Assessment of NSF-funded infrastructure
- Recommendations on program balance:
  - Mix of mission targets
  - Mix of mission sizes
  - Research activities
- Prioritized recommendations for New Frontiers and flagship missions for the next decade
- Recommendations for NASA-funded research activities
- Recommendations for technology development

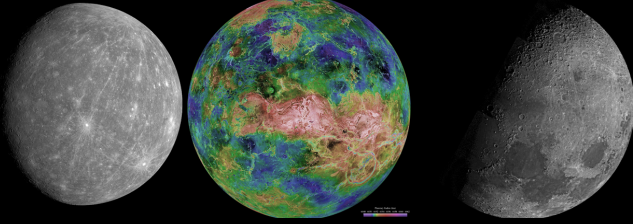
## ■ Scope

- Ground- and space-based planetary science
- Astrobiology



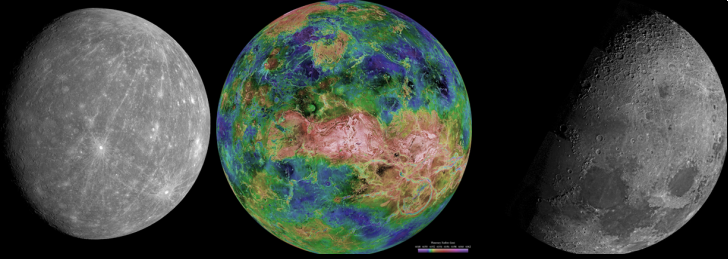
## Draft Science Themes

- Understand the origin and diversity of terrestrial planets.
- Understand how the evolution of terrestrial planets enables and limits the origin and evolution of life.
- Understand the processes that control climate on Earth-like planets.



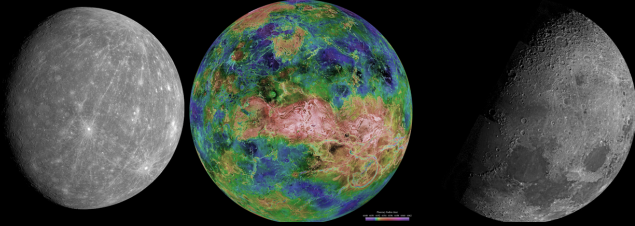
# Evaluation of Candidate Missions 2009-2011

- Compared to previous decadal surveys, this one will place much greater emphasis on evaluation of the technical maturity and probable costs of candidate missions.
- The Panels and the Steering Committee include members who are expert in engineering, project management, and cost estimation.
- Resources are available to do moderate-fidelity (and conservative!) cost estimates for a limited number of high-priority candidate missions.
- The objective is to produce a realistic (i.e., not heavily over-subscribed) set of candidate missions for NASA to carry out in the coming decade.



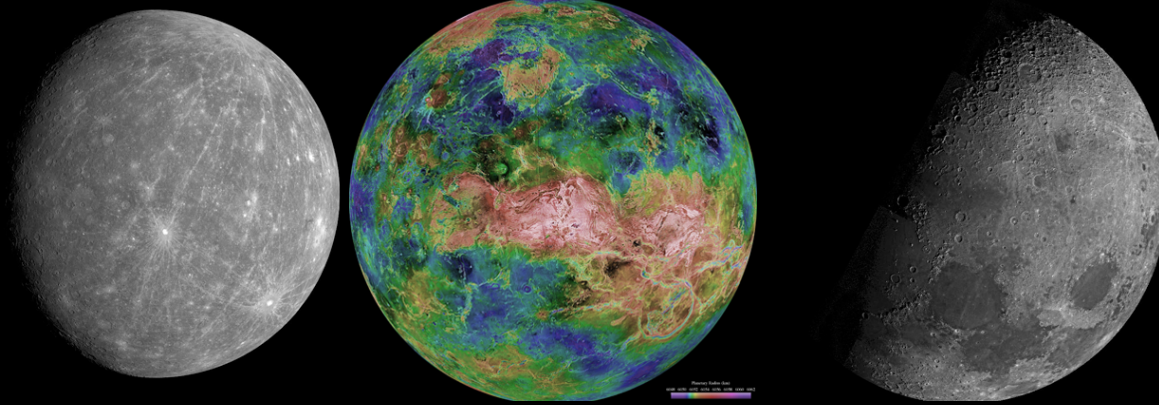
## Initial Mission Studies

- We have two existing NF concepts that have not yet been selected: SPA and VISE
- First concepts sent for study (NO PRIORITIES ASSIGNED):
  - Mercury Lander
  - Venus Mobile Explorer
- We are likely to send several additional concepts in for further study
- Update at AGU, LPSC



# Meeting Schedule

Steering Group	Inner Planets	Mars	Primitive Bodies	Giant Planets	Satellites
6-8 July Washington D.C.					
16-18 November Irvine California	26-28 August Washington D.C.	9-11 September Tempe Arizona	9-11 September Washington D.C.	24-26 August Washington D.C.	24-26 August Washington D.C.
22-24 February Irvine California	26-28 October Irvine California	4-6 November Pasadena California	28-30 October Irvine California	26-28 October Irvine California	21-23 September Irvine California
25-27 May Washington D.C.	21-23 April Boulder CO	14-16 April Boulder, CO	16-18 April Knoxville, TN	5-7 May Boston? Massachusetts	12-14 April Boulder, CO



- The decadal survey process is aimed at articulating a program for the coming decade that represents as fully as possible the true consensus view of the US planetary science community.
- The distinguishing features of the decadal survey process are inclusiveness and transparency.
- In contrast to past decadal surveys, this one will place a strong emphasis on cost realism.