Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

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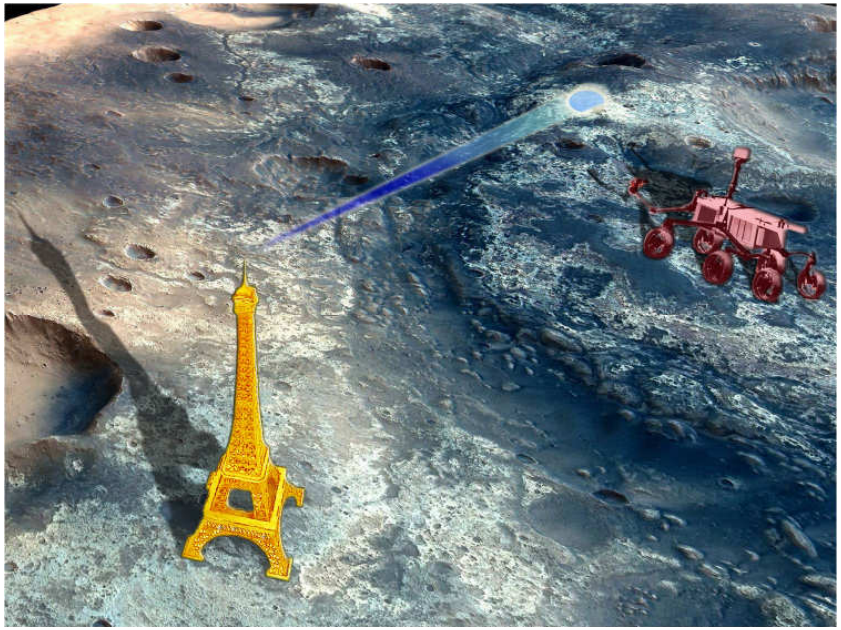
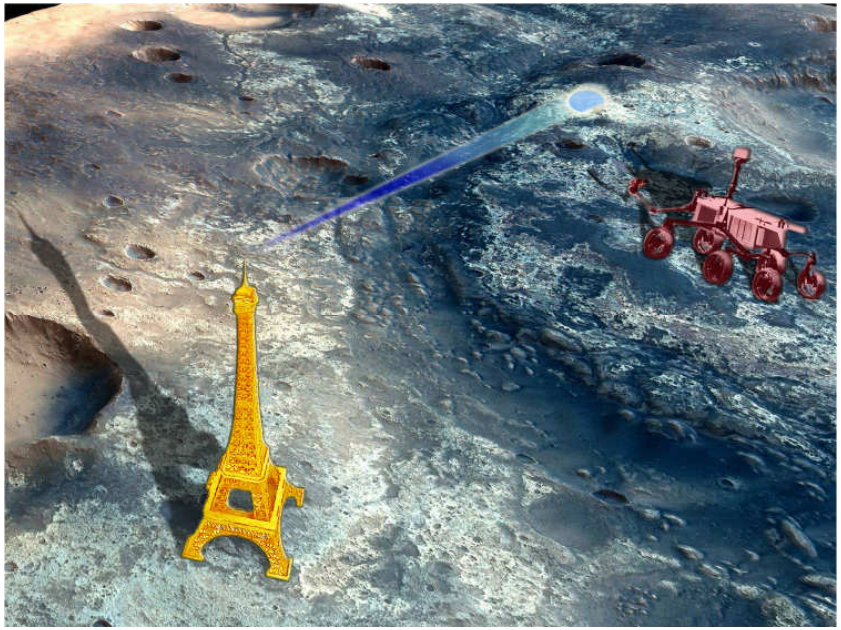


MEPAG, March 4, 2009

Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

CNES, Paris, October 21-23, 2008



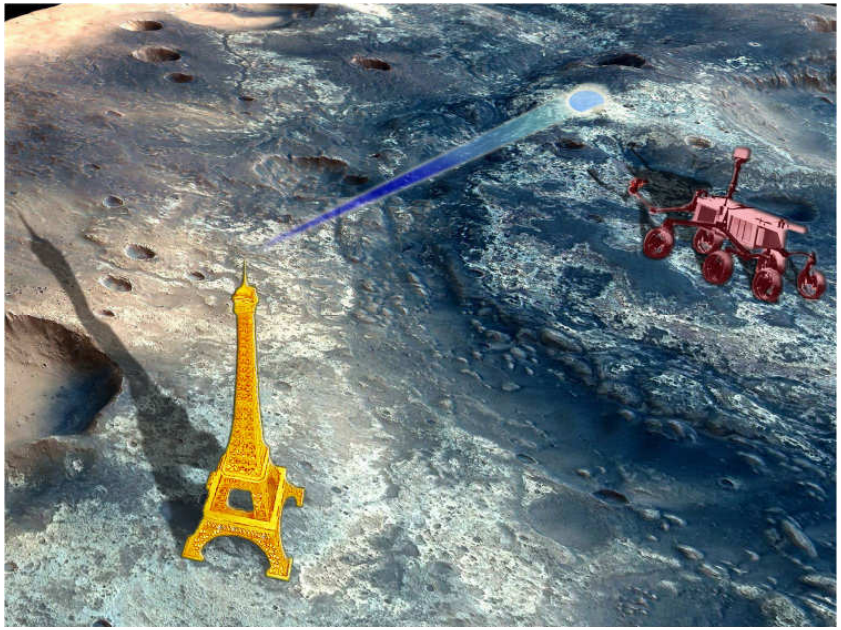
http://www.ias.u-psud.fr/Mars_Phyllosilicates/

MEPAG, March 4, 2009

Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

Scientific Organizing Committee

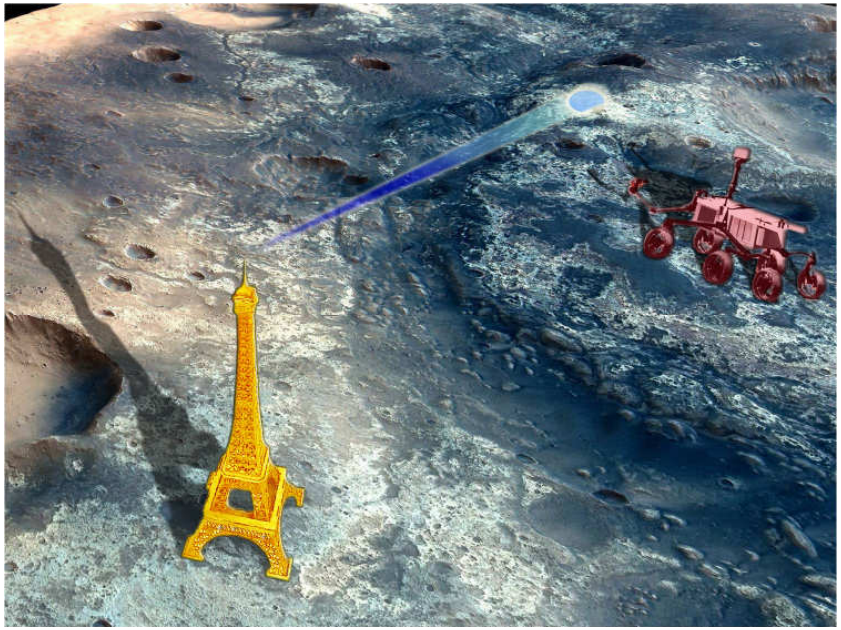
J-Pierre Bibring
David Bish
Janice Bishop
Eldar Noe Dobrea
Jack Mustard
François Poulet
Sabine Petit
David Beaty



Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

1. Where and what types of phyllosilicates have been identified at Mars?
2. How these relate to our knowledge from terrestrial studies and experimental results?
3. What does this imply for Martian phyllosilicate formation processes?
4. What record of Mars surface environment?
5. What should we achieve with upcoming missions and lab simulation studies?

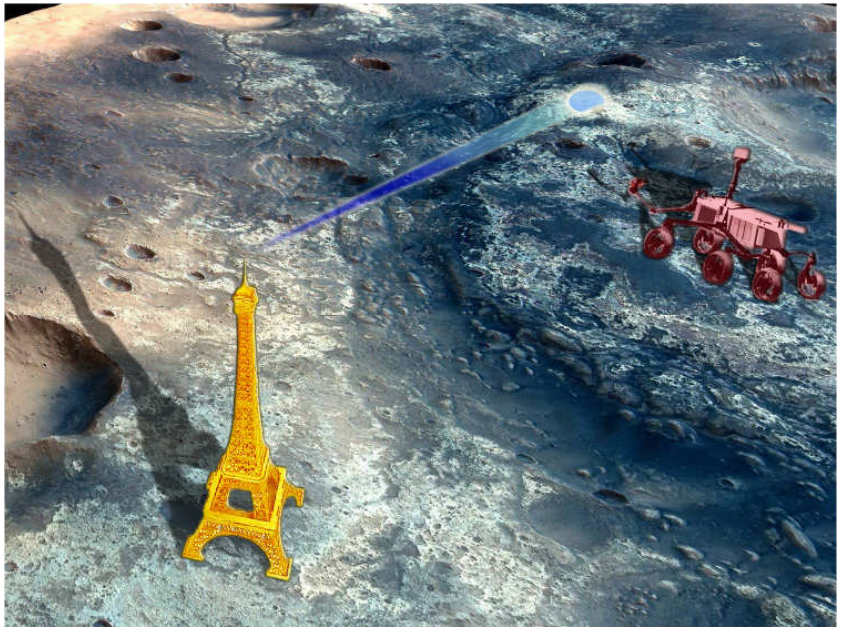
Objectives



Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

1. Mineralogy and Geology of Phyllosilicate Deposits
2. Characteristics of Hydrated Mineral Deposits and Detection Limits
3. Capabilities of Current and Future Missions to constrain Phyllosilicates and Habitability on Mars
4. Formation Conditions of Phyllosilicates on Mars
5. Analog Sites for Formation of Phyllosilicates on Mars

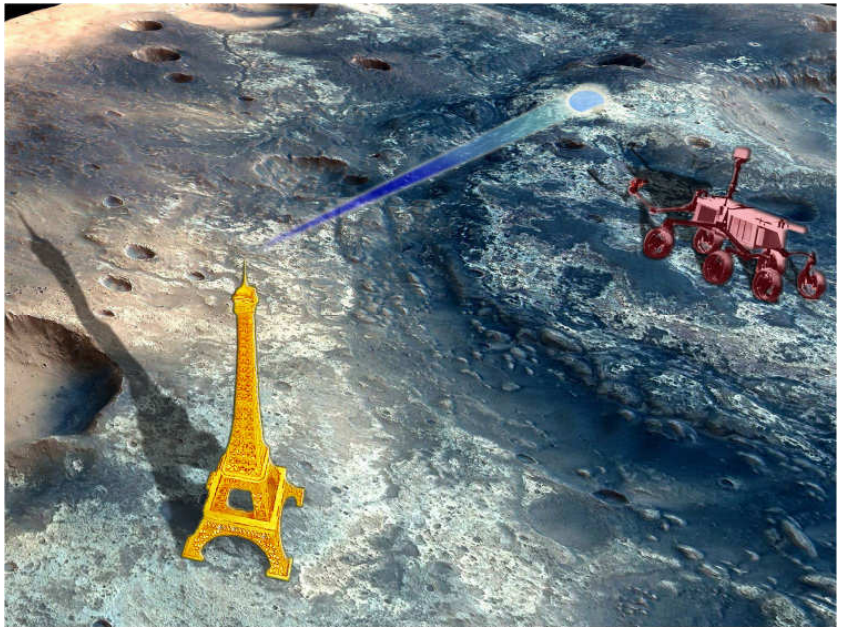
Program items



Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

1. More than 100 scientists
2. From 11 countries
3. From ~ 40 institutes
4. Several MSL PIs/CoIs
5. ~ none from MEx and ExoMars
6. 42 contributions
7. Almost all posted

Participants



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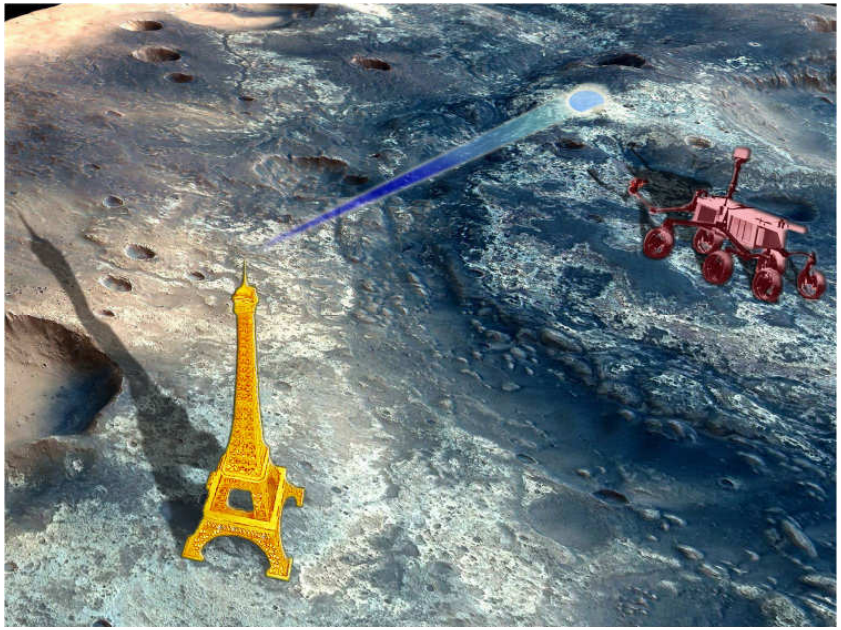

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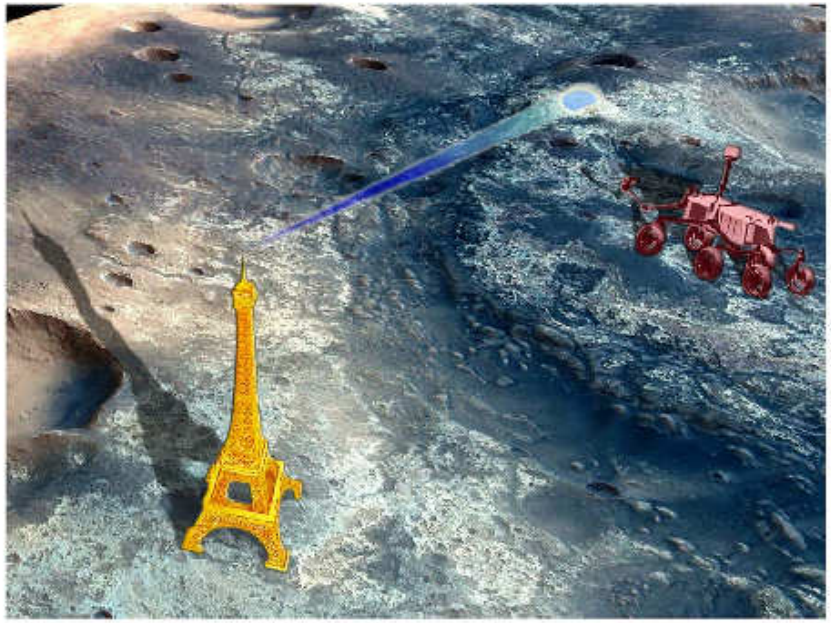

October 21–23, 2008

Paris, France

PROGRAM AND ABSTRACTS

LUNAR AND PLANETARY INSTITUTE

LPI Contribution No. 1441

Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

Key science questions and key investigations from the first international conference on Martian phyllosilicates

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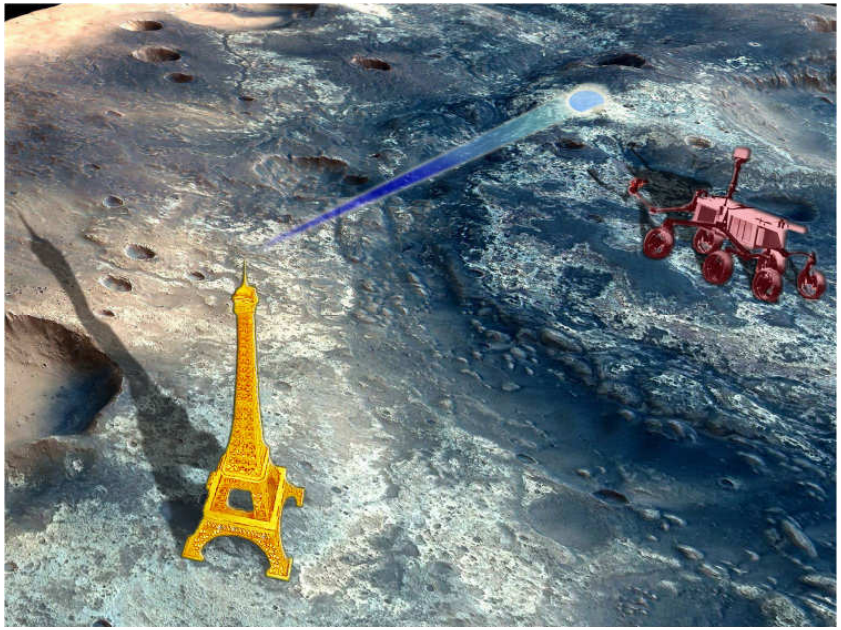


Phyllosilicates on Mars:

Summary of Key Questions

1. What are the basic characteristics of the phyllosilicates on Mars?

- 1A. What is the range of mineralogic diversity?
- 1B. What are the associated non-phyllosilicate mineral assemblages?
- 1C. What is the concentration of phyllosilicate minerals?
- 1D. What is the range of geologic contexts for phyllosilicates on Mars?
- 1E. What is the relationship between the scale of the orbital detections and the inter-crystalline or inter-granular details of the rocks and soils?

2. What are the genetic mechanisms by which phyllosilicates have formed on Mars?

- 2A. What were the original formation and subsequent alteration pathways?
- 2B. Can phyllosilicate-bearing rocks be used to infer past environmental conditions on Mars?

3. What is the relationship between the phyllosilicate minerals observed in martian meteorites and those detected from orbit?

4. What are the implications of phyllosilicate-bearing rocks for the development or preservation of pre-biotic chemistry and/or biosignatures?

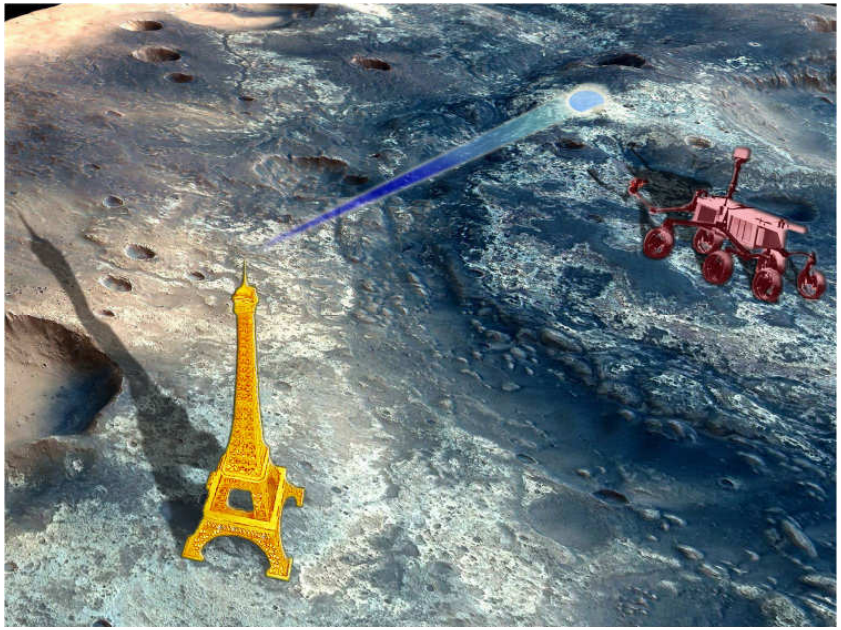
Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

There will be a second workshop, planned but not scheduled yet

Meanwhile, there will be

1. one focused meeting (on modeling) at LPI, June 1-2, 2009
2. On focused session on extraterrestrial clays at the ICC, Italy, June 14-20, 2009

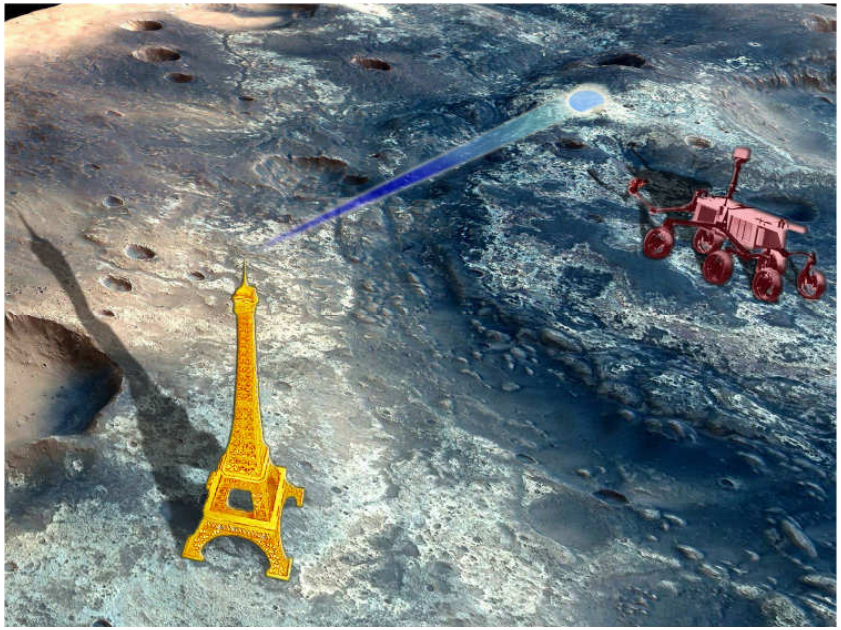
Follow - on

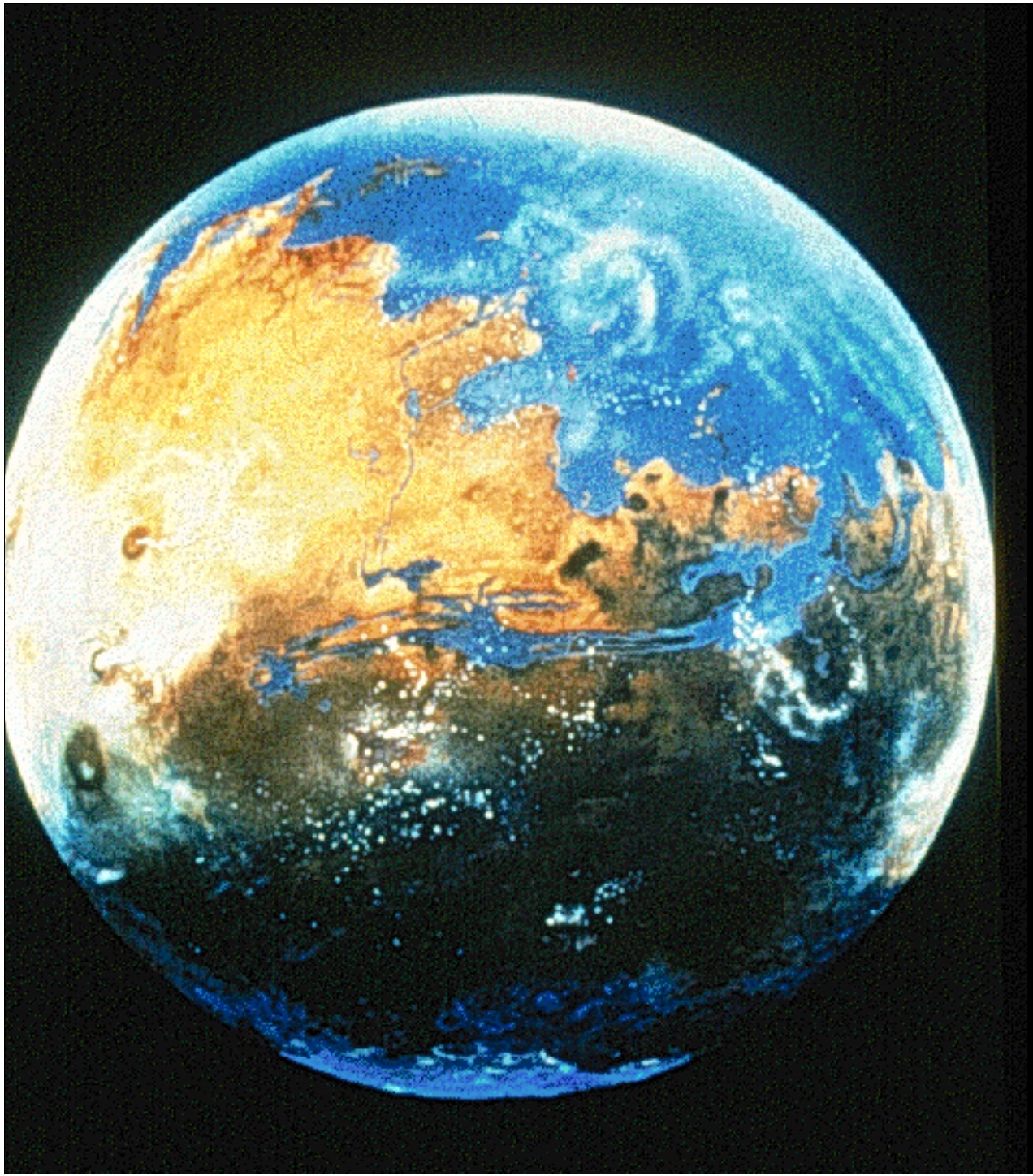


Workshop on Martian Phyllosilicates: Recorders of Aqueous Processes?

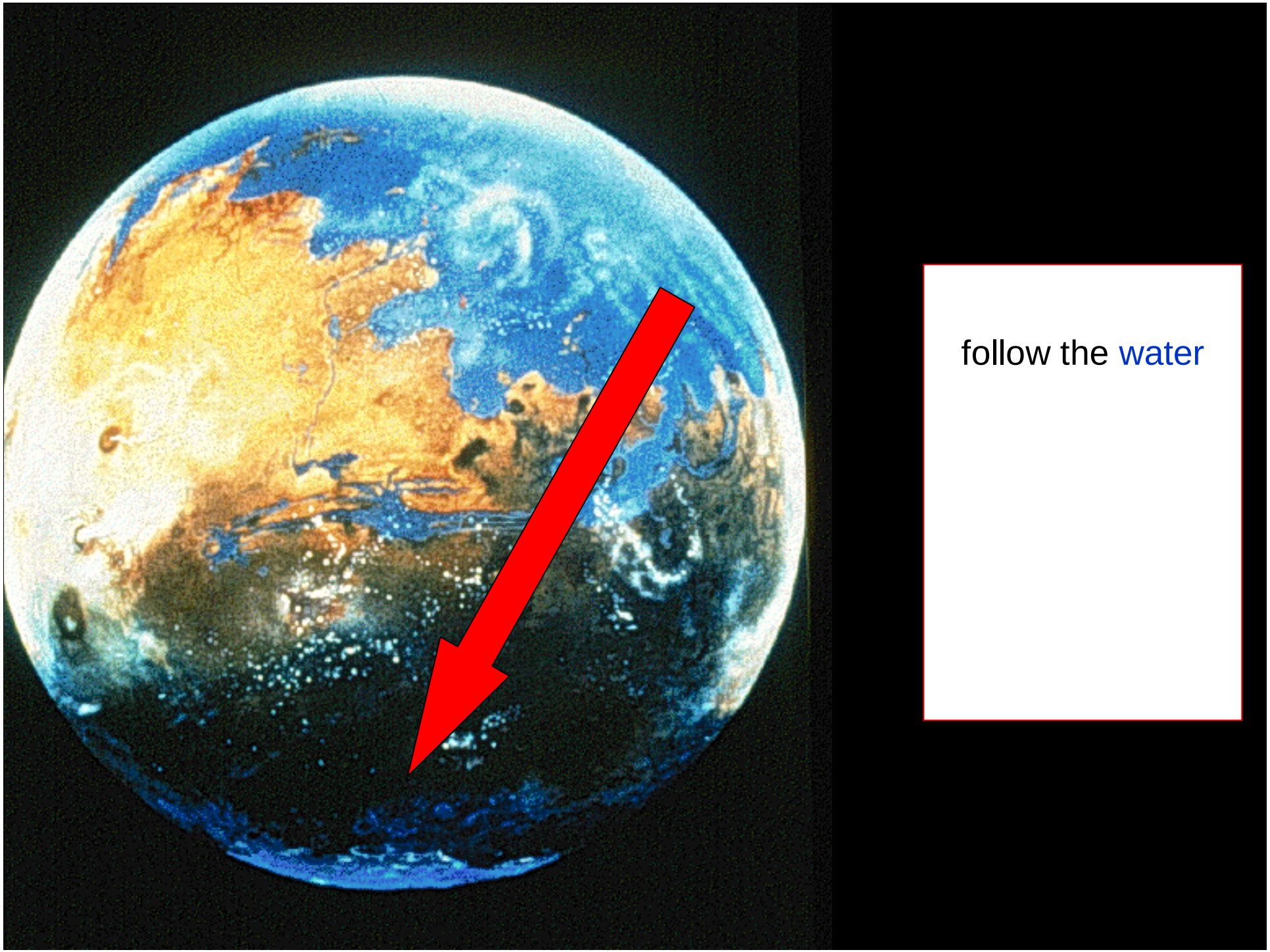
1. Major recent discovery, opens wide avenues for studying the concept of habitability within the solar system. Mars: unique window to explore this critical era (< LHB).
2. Ascertain composition
3. What does the compositional diversity tell (record)?
4. Do the phyllos we detect require standing water or are transient (impact) processes sufficient?
5. A diversity of new teams are entering the game (terrestrial, modeling, simulation): it is our responsibility to maintain the momentum.

Summary Highlights





follow the water



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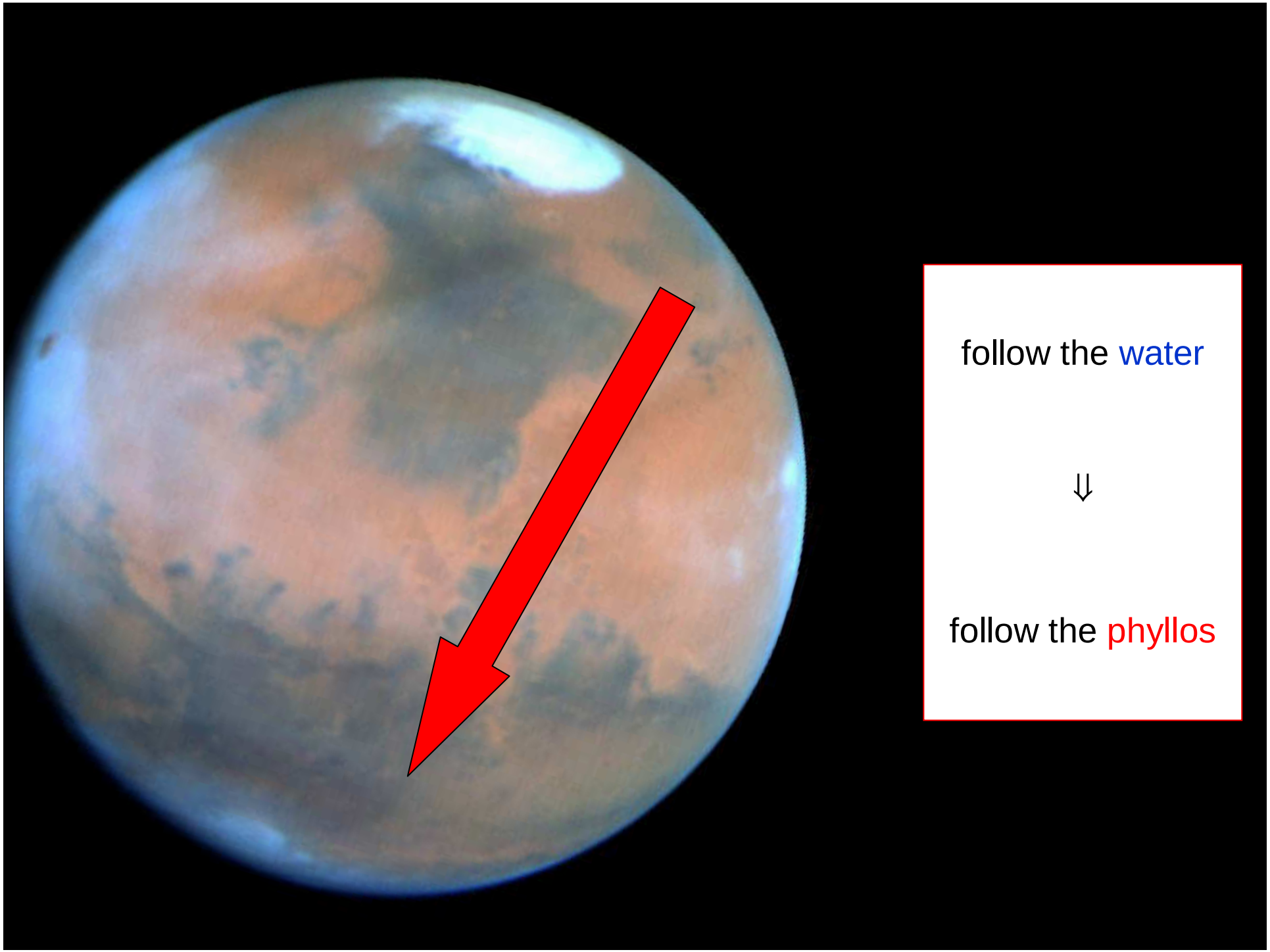

follow the water

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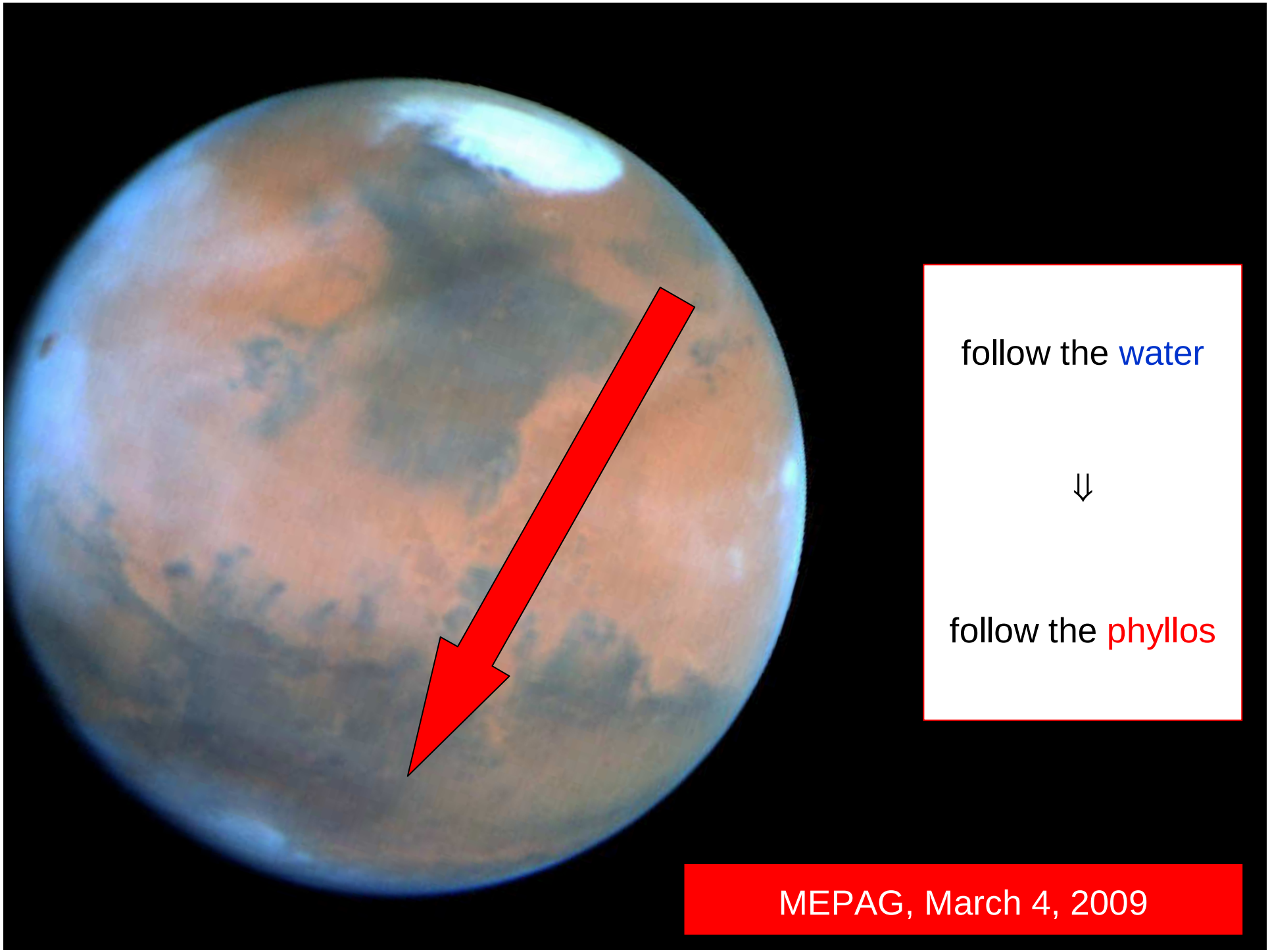
follow the phyllos



follow the water

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follow the phyllos

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