

**NATIONAL
CLEANUP WORKSHOP**



September 2015

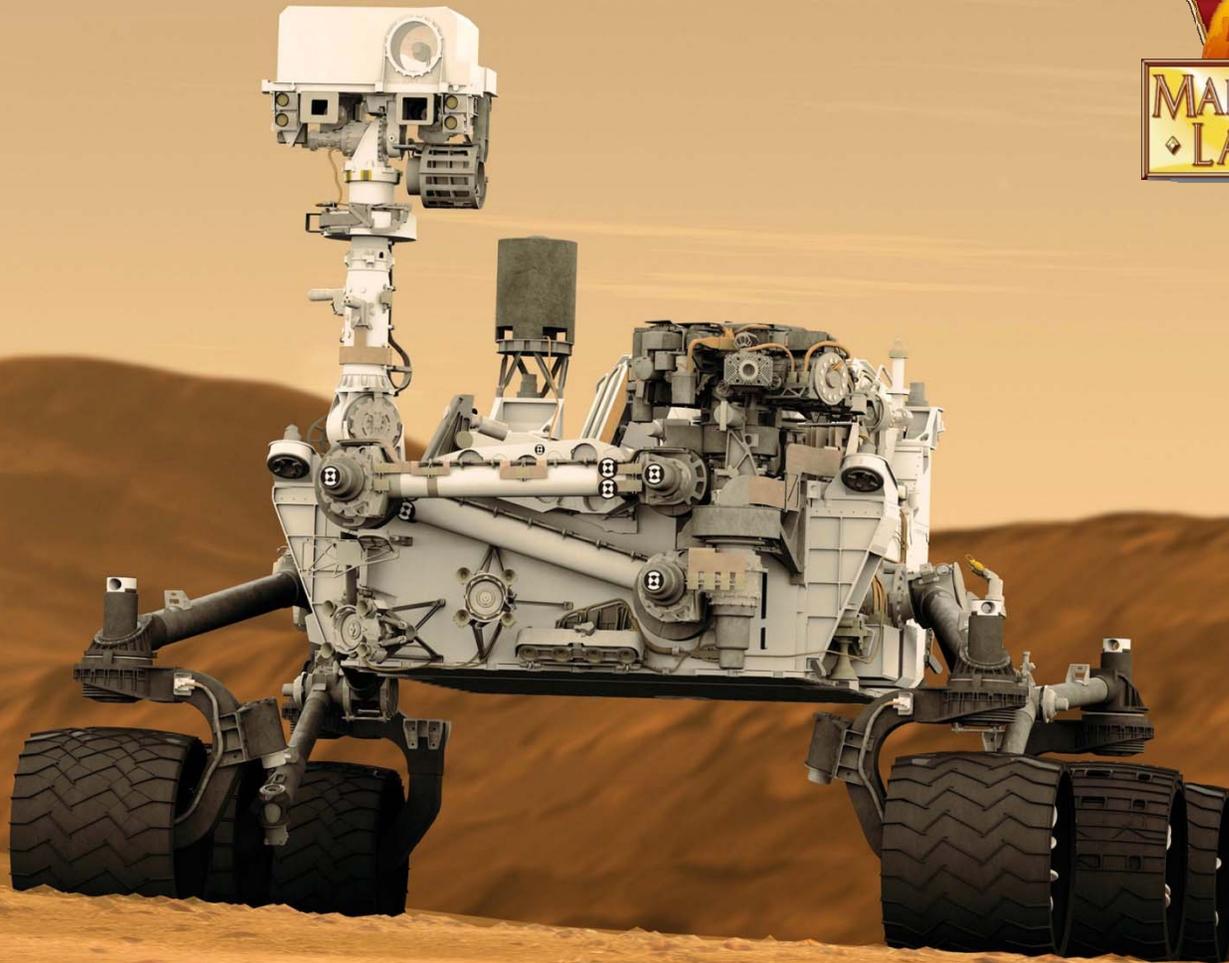
Closing



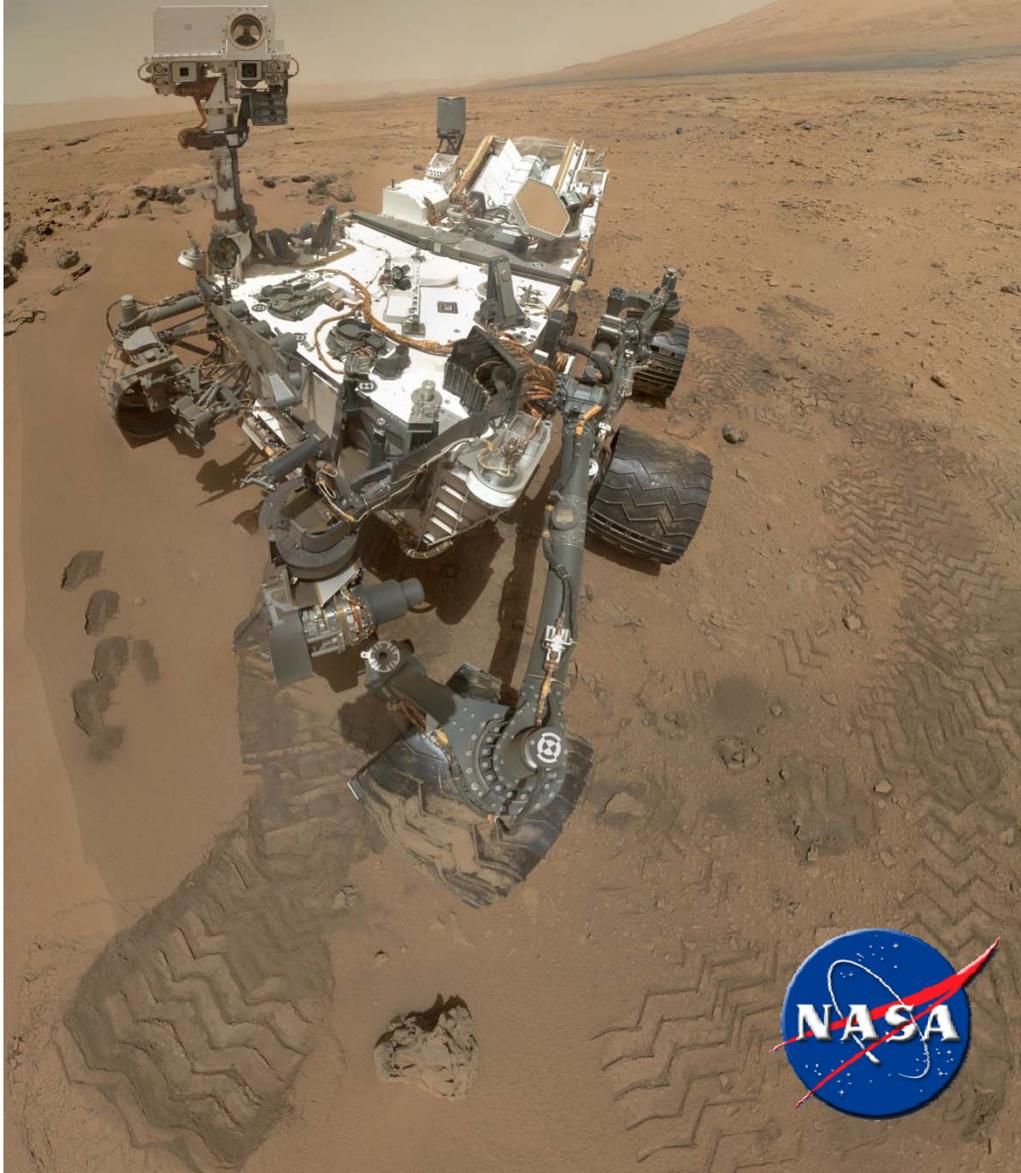
**U.S. DEPARTMENT OF
ENERGY**

Office of Environmental Management

MARS SCIENCE LABORATORY CURIOSITY ROVER

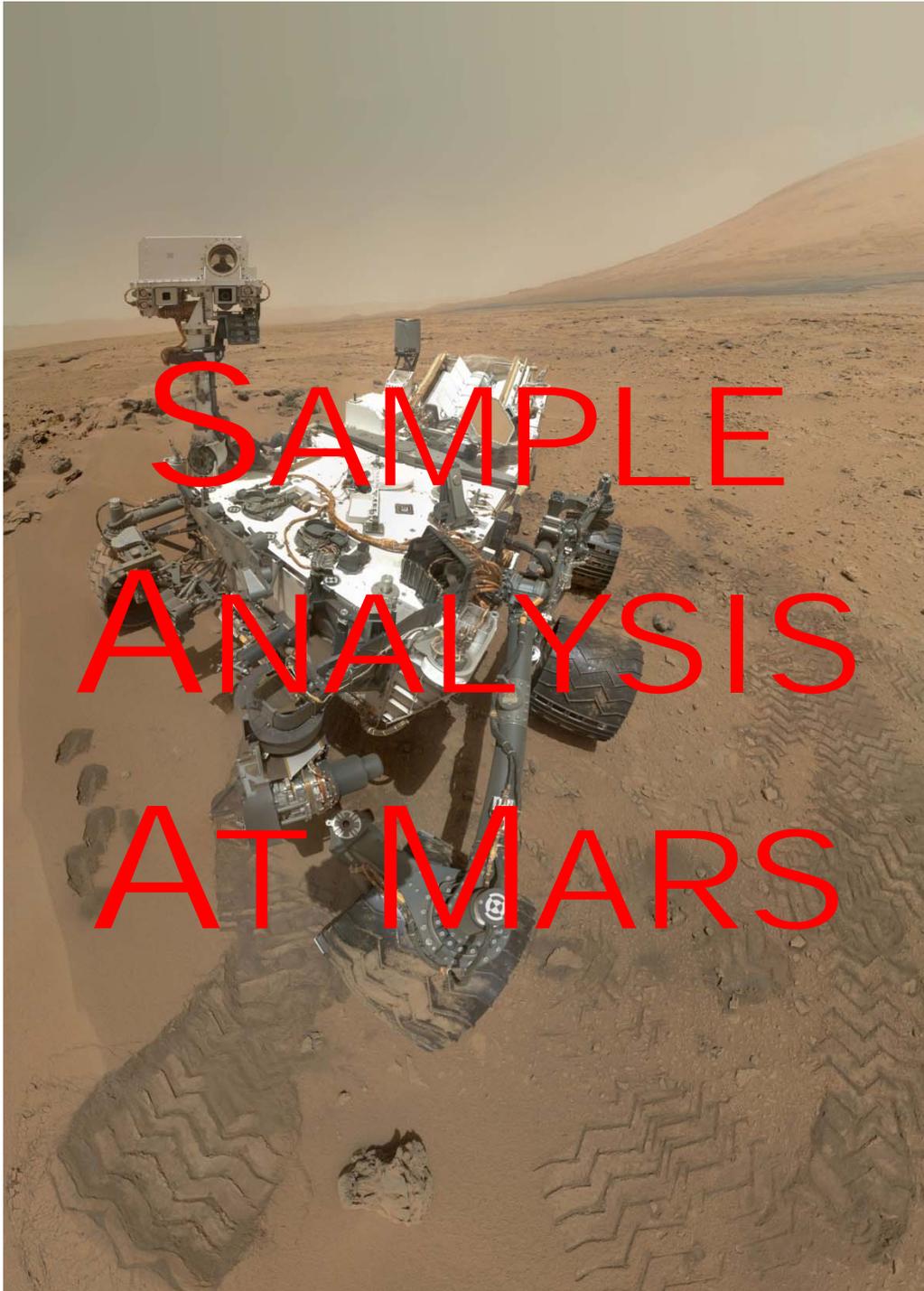


MARS SCIENCE LABORATORY CURIOSITY ROVER



MISSION

**INVESTIGATE WHETHER
CONDITIONS HAVE
BEEN FAVORABLE FOR
MICROBIAL LIFE AND
FOR PRESERVING CLUES
IN THE ROCKS ABOUT
POSSIBLE PAST LIFE.**



- GAS CHROMATOGRAPH
- MASS SPECTROMETER
- TUNABLE LASER SPECTROMETER

PRINCIPAL INVESTIGATOR:

NASA'S GODDARD SPACE
FLIGHT CENTER

GREENBELT, MD



- **X-RAY DIFFRACTION
AND FLUORESCENCE
INSTRUMENT**

PRINCIPAL INVESTIGATOR:

**NASA'S AMES RESEARCH
CENTER**

MOFFETT FIELD, CA



- GAS CHROMATOGRAPH
- MASS SPECTROMETER
- TUNABLE LASER SPECTROMETER

PRINCIPAL INVESTIGATOR:

MALIN SPACE SCIENCE
SYSTEMS

SAN DIEGO, CA



- **ELEMENT IDENTIFICATION**

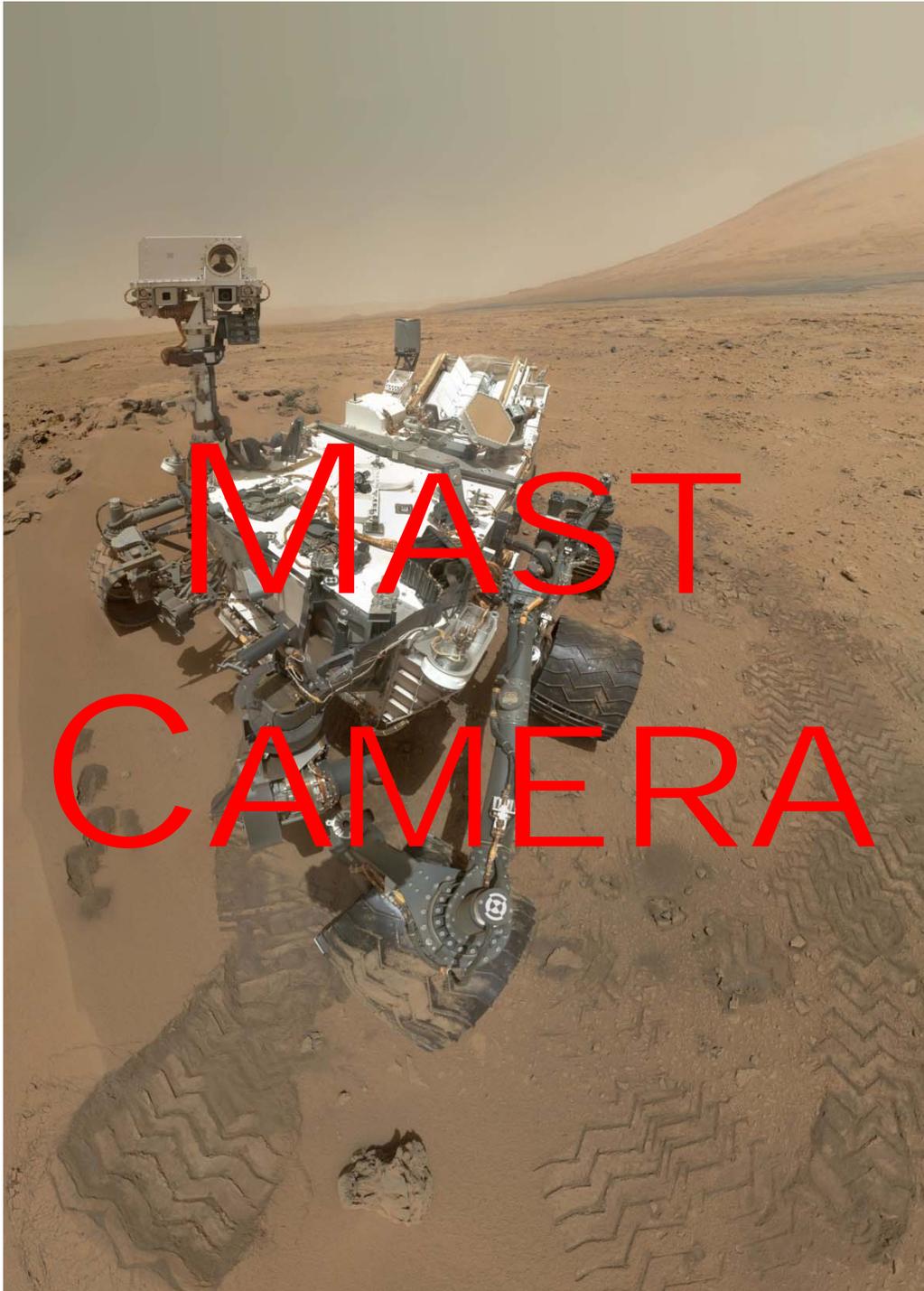
PRINCIPAL INVESTIGATOR:

UNIVERSITY OF GUELPH

ONTARIO, CANADA

AND

CANADIAN SPACE AGENCY



- **HIGH-RESOLUTION STEREO AND COLOR PHOTOGRAPHS**
- **HIGH-DEFINITION VIDEO**

PRINCIPAL INVESTIGATOR:

**MALIN SPACE SCIENCE
SYSTEMS**

SAN DIEGO, CA

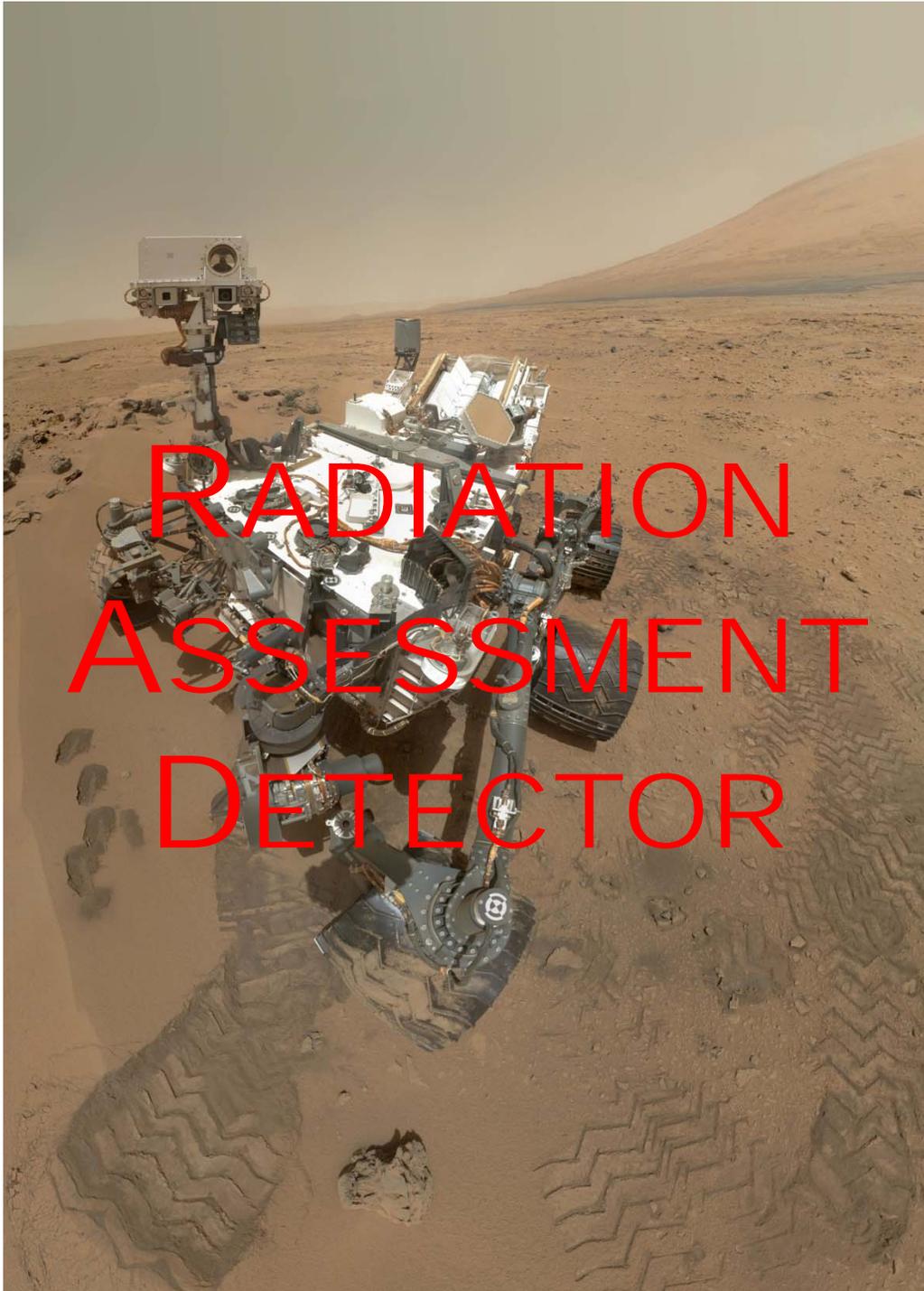


- LASER ABLATION
- TELESCOPE
- PASSIVE SPECTROMETER

PRINCIPAL INVESTIGATOR:

LOS ALAMOS NATIONAL
LABORATORY

LOS ALAMOS, NM

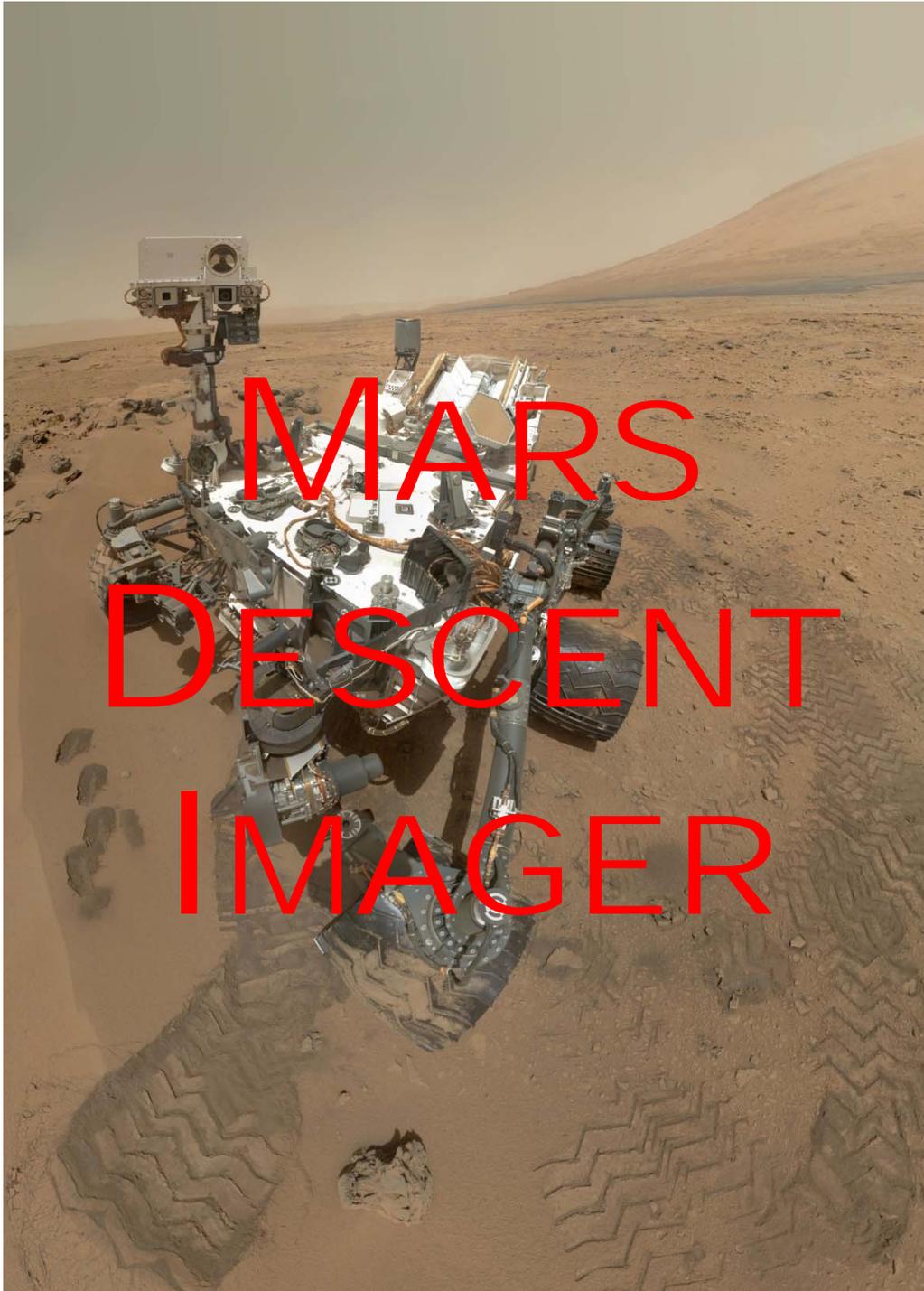


- CHARACTERIZATION OF THE RADIATION ENVIRONMENT

PRINCIPAL INVESTIGATOR:

SOUTHWEST RESEARCH
INSTITUTE

BOULDER, CO



**MARS
DESCENT
IMAGER**

- **COLOR, HIGH-
DEFINITION VIDEO OF
THE LANDING REGION**

PRINCIPAL INVESTIGATOR:

**MALIN SPACE SCIENCE
SYSTEMS**

SAN DIEGO, CA

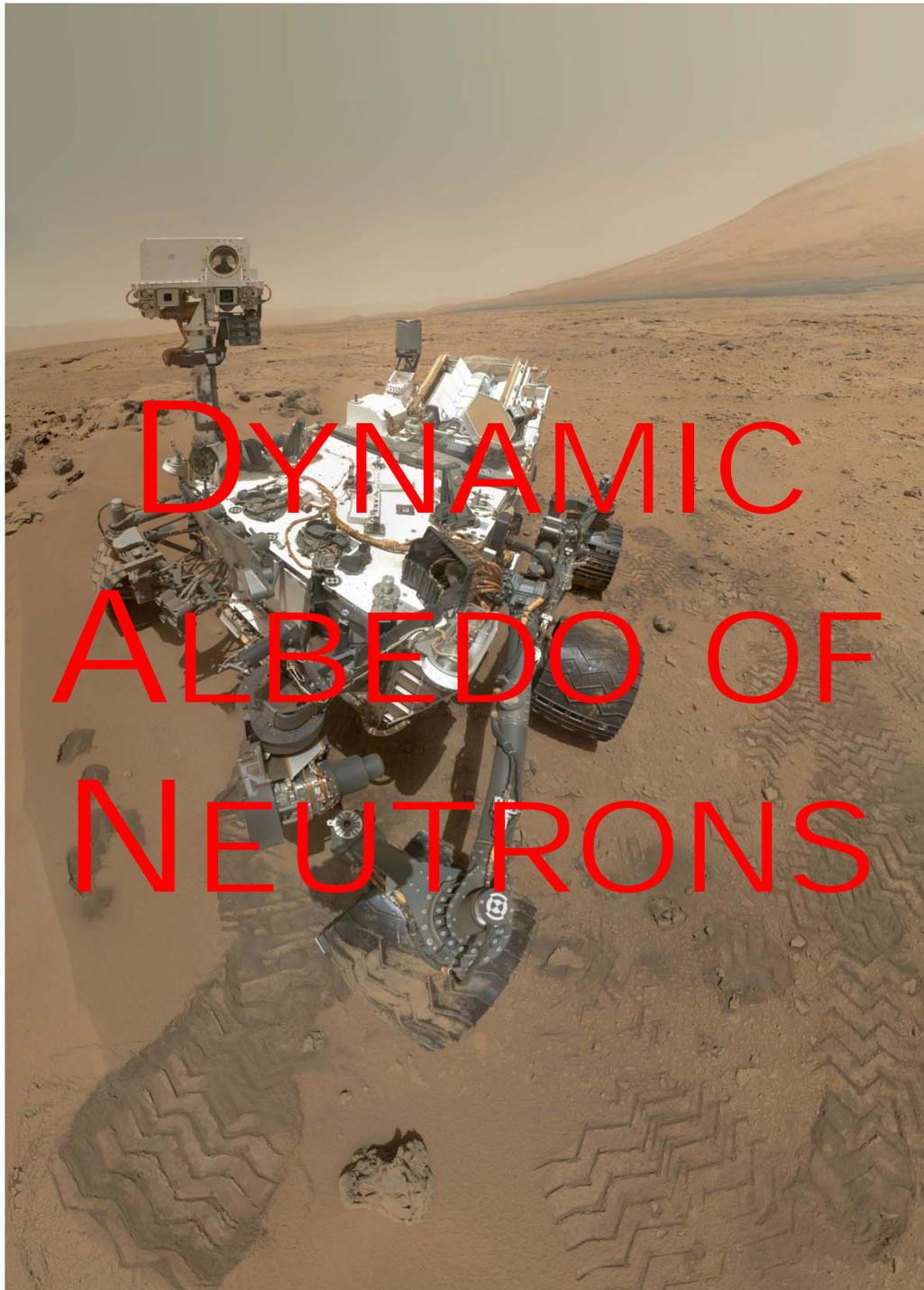


- **ATMOSPHERIC PRESSURE**
- **TEMPERATURE**
- **HUMIDITY**
- **WINDS**
- **ULTRAVIOLET RADIATION LEVELS**

PRINCIPAL INVESTIGATOR:

**CENTER FOR
ASTROBIOLOGY**

MADRID, SPAIN

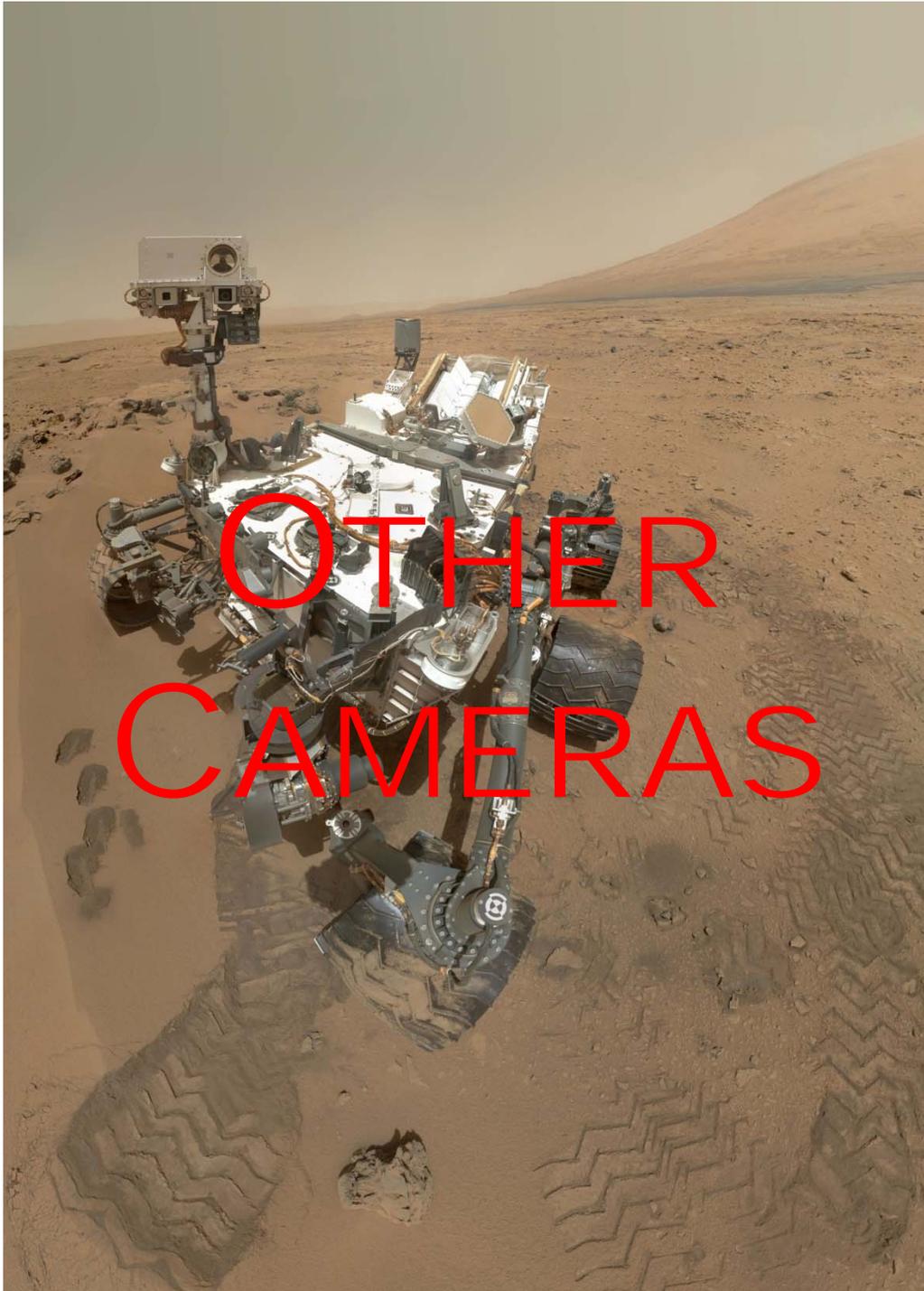


- **SUBSURFACE HYDROGEN**

PRINCIPAL INVESTIGATOR:

SPACE RESEARCH
INSTITUTE

MOSCOW, RUSSIA

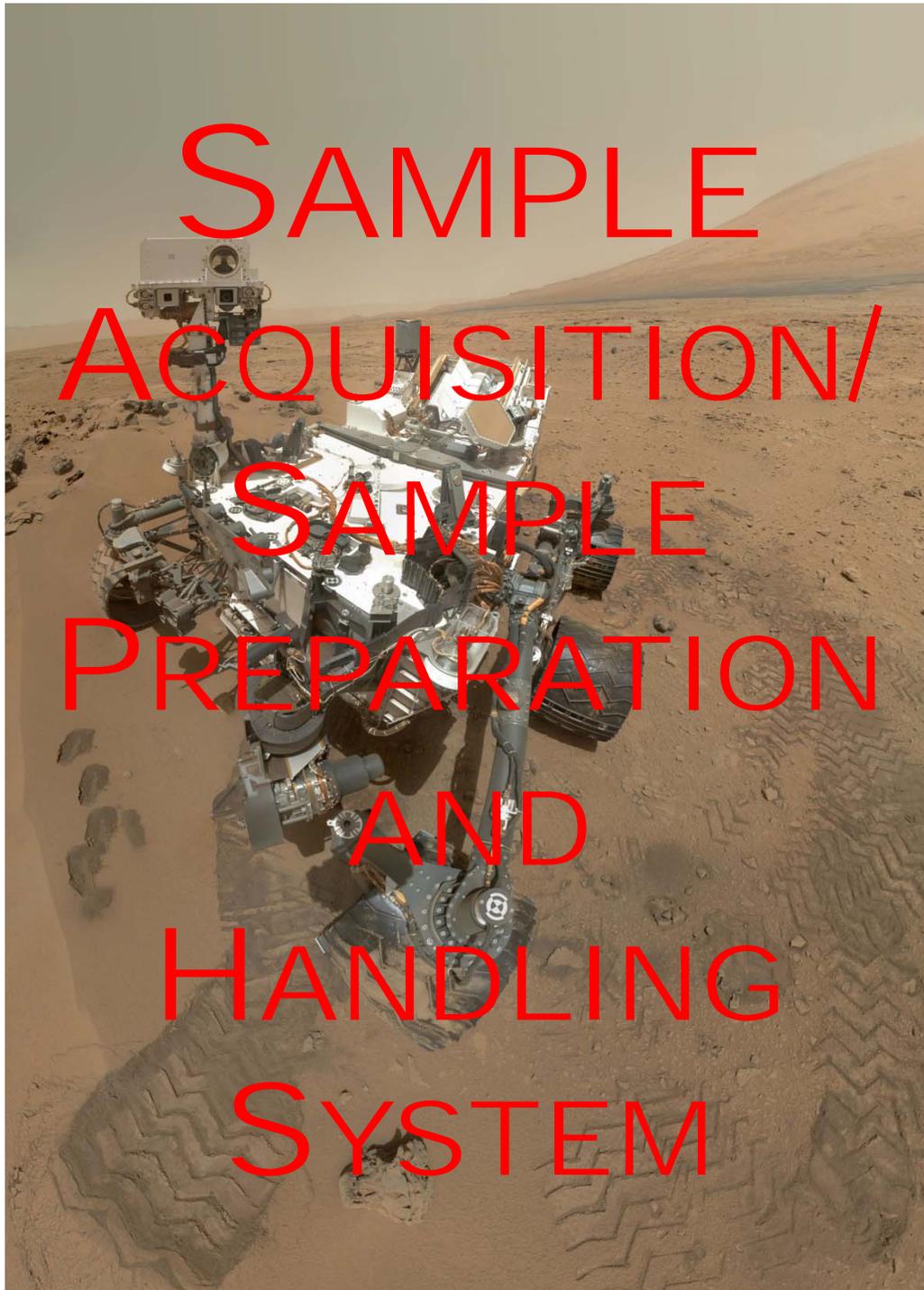


- STEREO NAVIGATION CAMERA
- STEREO HAZARD-AVOIDANCE CAMERAS

PRINCIPAL INVESTIGATOR:

SPACE RESEARCH
INSTITUTE

MOSCOW, RUSSIA



- TOOLS TO REMOVE DUST FROM ROCK SURFACES, SCOOP SOIL, AUGER, SAMPLE SORTER AND SIEVE, PACKAGING, AND TRANSPORTER

PRINCIPAL INVESTIGATOR:

SPACE RESEARCH
INSTITUTE

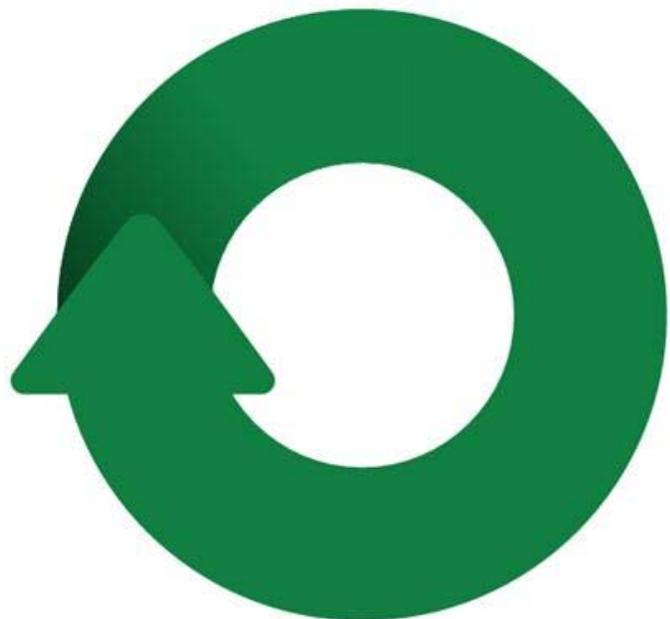
MOSCOW, RUSSIA

Curiosity's Own Selfie





**HOW DO WE
ENABLE
INNOVATION
AND EXPLOIT
THE STATE-OF-
THE-ART?**



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September 2015

Thank You



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