

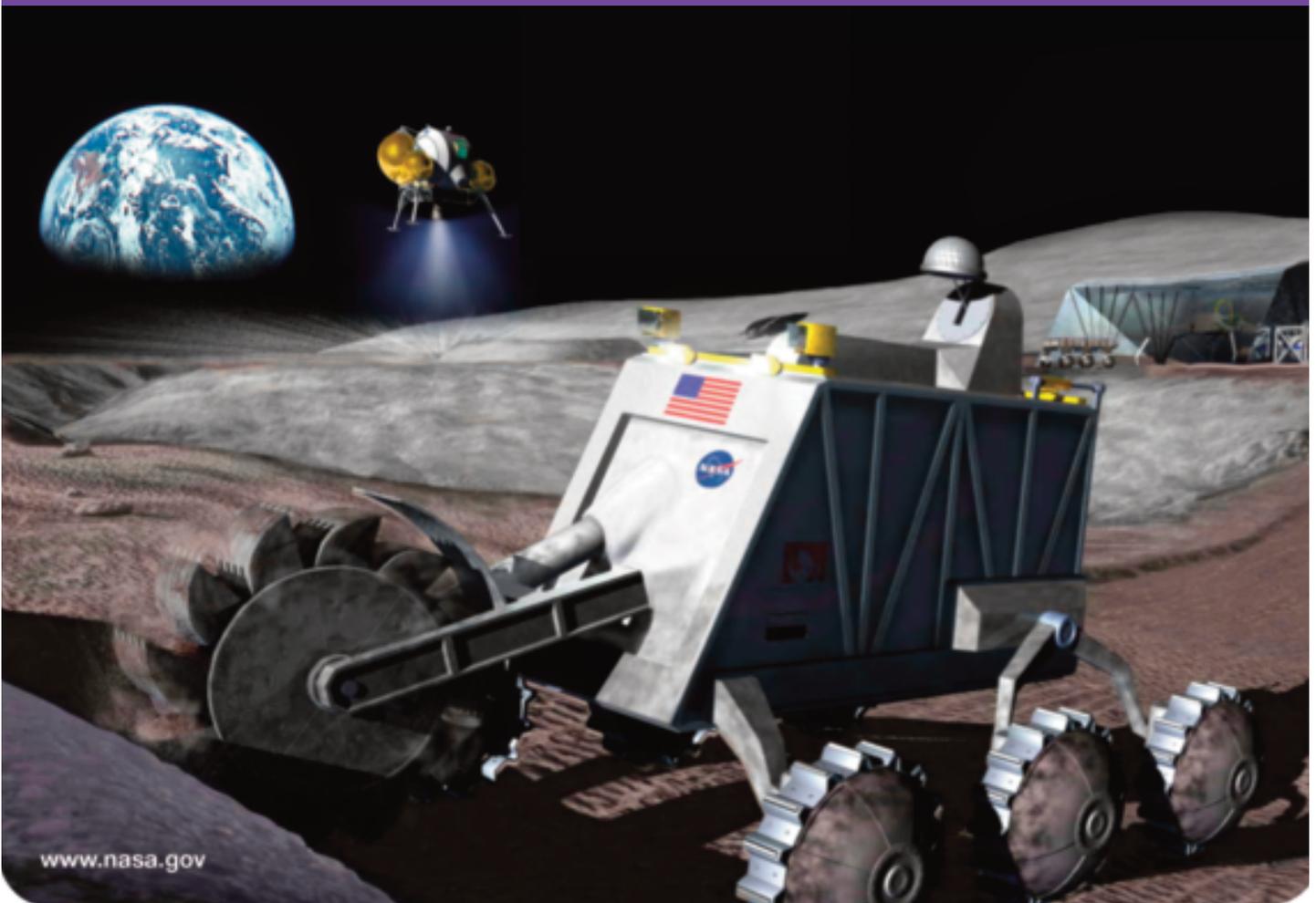
National Aeronautics and Space Administration



Design it. Build it. Dig it.

Lunabotics Mining Competition

PRESS INFORMATION



www.nasa.gov



What is the Lunabotics Mining Competition?

The Lunabotics Mining Competition is a university-level competition designed to engage and retain students in science, technology, engineering and mathematics (STEM). There is particular relevance to NASA's recently announced mission to find an asteroid by 2016 and then bring it to Cis-Lunar space, the technology concepts developed by the university teams for this competition conceivably could be used to mine resources on Asteroids as well as Mars. Robotic miners, just like these, will allow us to take samples at the returned Asteroid and give us valuable information to prepare for other deep space missions. The challenge is for students to design and build a remote controlled or autonomous excavator that can collect and deposit a minimum of 10 kilograms of regolith simulant (aggregate) within 10 minutes. Regolith exists not only on Earth's moon, but also on most planetary bodies such as Asteroids, Moons of Mars and Mars itself. The complexities of the challenge include the abrasive characteristics of the simulant, the weight and size limitations of the robot, and the ability to control it from a remote control center. The scoring for the mining category will require teams to consider a number of design operation factors such as dust tolerance and projection, communications, vehicle mass, energy/power required, and full autonomy.

Who is eligible to compete?

Undergraduate and graduate student teams enrolled in a U.S. or international college or university are eligible to compete in NASA's Lunabotics Mining Competition. Design teams must include: at least one faculty member with a college or university and at least two undergraduate or graduate students. NASA has not set an upper limit on team members. A team should have a sufficient number of members to successfully operate its Lunabot. Registration is limited to the first 50 approved teams. Registration is limited to one team per university campus. Internationally, registration is limited to five teams per country.

What are the requirements to compete?

In accordance with the rules, teams will compete in up to five major competition categories including: on-site mining, systems engineering paper, outreach project, slide presentation (optional), and team spirit (optional). Additionally, teams can earn bonus points for mined and deposited BP-1 in the competition attempts, having multidisciplinary teams, and collaborating between a majority institution and a U.S. Minority Serving Institution (MSI).

What can teams win?

The team with the most points from all categories will win the grand prize, the Joe Kosmo Award for Excellence, and will receive a trophy, team certificates for each member, and a \$5,000 team scholarship. Awards for other categories include monetary team scholarships, a school trophy or plaque, team certificates, and Kennedy Space Center launch invitations.



How are the teams chosen?

The teams are selected on a first come basis. Once registration is open, the first 50 teams who submit a valid registration are the teams who are allowed to compete. However, our international competitors are limited to five teams per country.

Why do we do it?

The competition is a breeding ground for collaboration and innovation for students. NASA technical experts, sponsors and students engage in unique discussions about lunar mining. One faculty member stated that “my students learn more about engineering in this week [of competition] than four years of college. A NASA researcher remarked that “my budget allows one prototype per year; Lunabotics provides 50 prototypes in one week.”

LunaStats

In 2012, eight countries participated in Lunabotics; Bangladesh, Canada, Colombia, India, Mexico, Romania, South Korea and the United States.

Of the 72 teams registered in the 2012 competition; 57 teams participated, 55 teams competed, 791 students participated as did 118 faculty advisors.

During the 2012 Lunabotics Mining Competition 613 kg of BP-1 was mined by the 13 qualifying teams. That translates to 1,351 lbs of swiss cheese.

It took 399 Volunteers and staff, 69 judges, 14 corporate sponsors and two contributing sponsors to make last year's competition possible.

The word is spreading...As of October 2, 2012, googling “Lunabotics” returned 83,600 results.



2013 Lunabotics Mining Competition U.S. Teams

ASU Lunabotics

Arizona State University

Case Lunabotics Team

Case Western Reserve University

Blasterbotica

Colorado School of Mines

Moon II

Embry-Riddle Aeronautical University

Persistence

Florida Institute of Technology

Team LunaCY

Iowa State University

Golden Eagles

John Brown University

Miami University Lunabotics

Miami University

Raider Robotics

Middle Tennessee State University

MnM GoBotics

Milwaukee School of Engineering

MSU WASP

Montana State University

ITRER

Morgan State University

Oakton Community College

Oakton Community College

Atlas

Polytechnic Institute of NYU

Purdue Lunabotics

Purdue University

Lunateers

Temple University

TAMU-CC Sandpipers

Texas A&M University Corpus Christi

S.T.A.C.E.E.

The University of Akron

The Lunar Tide

The University of Alabama

UNCC Miner Niners

The University of North Carolina at Charlotte

UTPA Broncs

The University of Texas-Pan American

LUnAH

University of Alabama in Huntsville

LunAlaska

University of Alaska Fairbanks

Space Hawgs

University of Arkansas

Illinois Robotics in Space (IRIS)

University of Illinois at Urbana-Champaign

Red Rover

University of Nebraska-Lincoln

UNH LunaCats

University of New Hampshire

Team Raptor

University of North Dakota

University of Portland

University of Portland

USU Lunabot Team

Utah State University (RCDE Campus)

Virginia Technomaniacs

Virginia Tech

Moutaineers

West Virginia University



2013 Lunabotics Mining Competition International Teams

Australia:

Sydney Lunabotics

University of Sydney

Bangladesh:

BUET MechaTrons

*Bangladesh University of
Engineering & Technology*

CUET Terminators

*Chittagong University of Engineering
& Technology*

Lunatian -G2

Islamic University of Technology

MIST Lunabotics EKUSH

*Military Institute of Science and
Technology*

Team NSU-NASA Lunabotics '13

North South University

Canada:

McGill LunarEx

McGill University

Queen's Space Engineering Team

Queen's University

York University Rover Team

York University

Colombia:

SPIICA Trinum

Instituto de Astrobiologia Colombia

Robocol

Universidad de los Andes

India:

KMC Lunabotics

Kirori Mal College

RoboManipal

Manipal University

TEAM STEER

Saveetha University

Team Screwdrivers

*SVKM's NMIMS Mukesh Patel
School of Tech. Mgmt. & Engg.*

KU MOONBOTICS

*University Institute of Engineering
and Technology, Kurukshetra
University*

Mexico:

LUNAMbotics

*Universidad Nacional Autónoma de
México*

Poland:

HUSAR

Warsaw University of Technology



2013 Sponsors

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NASA Florida Space Grant Consortium

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South African Space Resources Association (SASRA)

SpaceX

Copper Sponsors

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The Google Lunar X PRIZE Foundation, Inc./MoonBots

Ocean Potion Suncare

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Contact Information

For media inquiries, please contact:

Tracy Young, Public Affairs Officer, NASA

Phone: 321-867-9284

Email: tracy.g.young@nasa.gov

All other inquiries must be emailed to:

Gloria Murphy, NASA

Project Manager

Email: gloria.a.murphy@nasa.gov

Susan Sawyer, REDE/Critique, JV

Lunabotics Mining Competition Project Coordinator

Email: susan.g.sawyer@nasa.gov

Bethanne Hull, REDE/Critique, JV

Lunabotics Mining Competition Project Coordinator

Email: bethanne.hull@nasa.gov