



Cassini Scientist for a Day: Encouraging Science Research and Writing for Students on National and International Scales

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Abstract

The outreach team for the Cassini mission to Saturn at NASA's Jet Propulsion Laboratory (JPL) runs an international essay contest called "Cassini Scientist for a Day." Students write essays about Saturn and its rings and moons. The program has been run nine times, increasing in scope with each contest. Students in grades 5 to 12 (ages 10 to 18) gain skills in critical thinking, decision-making, researching, asking good questions, and communicating their ideas to scientists. Winners and their classes participate in teleconferencing question-and-answer sessions with Cassini scientists so students can ask questions to professional scientists. Videos of young Cassini scientists are included in the contest reference materials to provide role models for the students. Thousands of students in 50 countries on 6 continents have participated in the essay contest. Volunteers run the international contests outside of the United States, with their own rules, languages, and prizes.

1. Introduction

Cassini Scientist for a Day is an essay contest for students organized each year by the Cassini Outreach Team at NASA's Jet Propulsion Laboratory (JPL). From a pilot program with NASA Explorer Schools in 2006 to a Special Project of the International Year of Astronomy in 2009, the contest has expanded to reach students on six continents.

The contest is designed to simulate the way NASA scientists select imaging targets in a real mission.

Students are given a choice of three potential targets that the Cassini spacecraft will image during time dedicated for education. Students are to assume that the spacecraft could only take one of the three images. Students conduct research and select which target they think would yield the best science. They then argue their case in a 500-word essay.

This is similar to how the real Cassini science team works, discussing and debating which images Cassini should take using the limited resources at hand.

To date, more than 3,000 U.S. students from 40 states have entered the contest. Worldwide, about 3,500 students from 50 countries have participated in the essay contest.

2. Contest co-ordination

U.S. contests are run by Cassini outreach staff at JPL. International participation is facilitated by a network of volunteers who represent their own countries and run parallel contests independently. Winning essays from all participating countries are posted on the Cassini mission website.

3. International Participation

To date, we have received essays from students in many countries, including: Canada, United States, Panama, Argentina, Brazil, Colombia, Peru, Venezuela, Belgium, Bulgaria, Greece, Ireland, the Netherlands, Poland, Portugal, Romania, United Kingdom, Nigeria, Zambia, Bangladesh, China, India, Malaysia, Nepal, Bahrain, Iran, Kuwait, Oman, Qatar, Saudi Arabia, Turkey, Australia, and New Zealand.

Essays may be submitted in any language(s) the national coordinators can read. The Cassini Scientist for a Day greetings on the Cassini website were translated into French, Spanish, Portuguese, German, Chinese, and Italian to facilitate participation from many countries worldwide. Several national coordinators have created websites in their own languages, making the contest more accessible to international students.

4. Rewarding Participants

All students who write essays for the contest receive certificates of recognition. Cassini team members judge the U.S. essay contest entries. National coordinators judge the international essays.

Winning essays by U.S. and international students are posted on the Cassini website, along with photos of the winners. In the U.S., winners and their classes are invited to participate in a teleconference, videoconference or webcast question-and-answer session with Cassini scientists so students can have their Saturn questions answered by experts. Winners in other countries have won telescopes, trips, opportunities to meet astronauts, and other prizes.

5. Why does Cassini Outreach hold essay contests?

Written communication skills and the ability to conduct independent research and incorporate original thoughts are vital tools for all scientists.

It increases the amount of class time during which science can be taught, and expands the diversity of teachers who can use the essay contest in their classrooms. Both English and science teachers made writing the essay either an in-class or extra-credit assignment.

The number of teachers who have had their students enter the contest year after year demonstrates the merit and value these teachers place on this contest. A significant number of contest participants are underserved or underrepresented students. Students who enter the contest come from all socioeconomic and cultural back-

grounds, from both public and private schools. Short videos featuring young and diverse Cassini team members introduce the essay topics for the students. This shows students that anyone can become a scientist, and enables the students to envision themselves in these roles.



Figure 1: Young and diverse Cassini scientists enable students to picture themselves as future scientists.

6. Summary and Conclusions

The Cassini Scientist for a Day essay contest has reached students in 50 countries who might not otherwise have had an opportunity to participate in a real planetary science mission. Hopefully, some of the students who entered the contest will be inspired to pursue careers in planetary science.

Acknowledgements

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