

International Public Science Programs as Grassroots Science Diplomacy

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Definition: Public science projects are free, open-source science communications programs conducted outdoors or in another type of public or accessible space such as a park, metro stop, library, college campus, airport, etc. to help engage non-science-identifying publics, with community support & grassroots involvement.

Introduction:

Science diplomacy encompasses a range of themes from building capacity in developing nations to building, improving, or repairing international relations between nations. One aspect of science diplomacy that requires greater definition and attention is the ability of international science communications programs to encourage peaceful interactions between nations and help empower individual members of society worldwide.

Such projects, which often include "International Years of," can create a grassroots network of science activators or "volunpeers," while providing high-quality cutting edge science content - adapted by the needs of the region/locale - directly for citizens in member states. Science topics from astronomy to climate change to health epidemics are already international in scope and scale, but can international participation trickle down beyond scientists to the citizens who must increasingly be able to access such knowledge bases?

Public Science Short-term Outcomes:

- High** visibility programs with **low** overhead costs
- Many **millions** of participants served
- Increase in individual & volunteer/host **learning** gains
- New **networks & partnerships** between organizations and individuals, across nations, created

Public Science Long-term Outcomes:

- Increases transparency & more **equitable** distribution of scientific knowledge
- Improves **communications** between involved members of participant nations
- Develop long-term, community-based **working relations** that go beyond the benefits of the individual research
- Networks & partnerships between organizations & individuals have been **sustained**



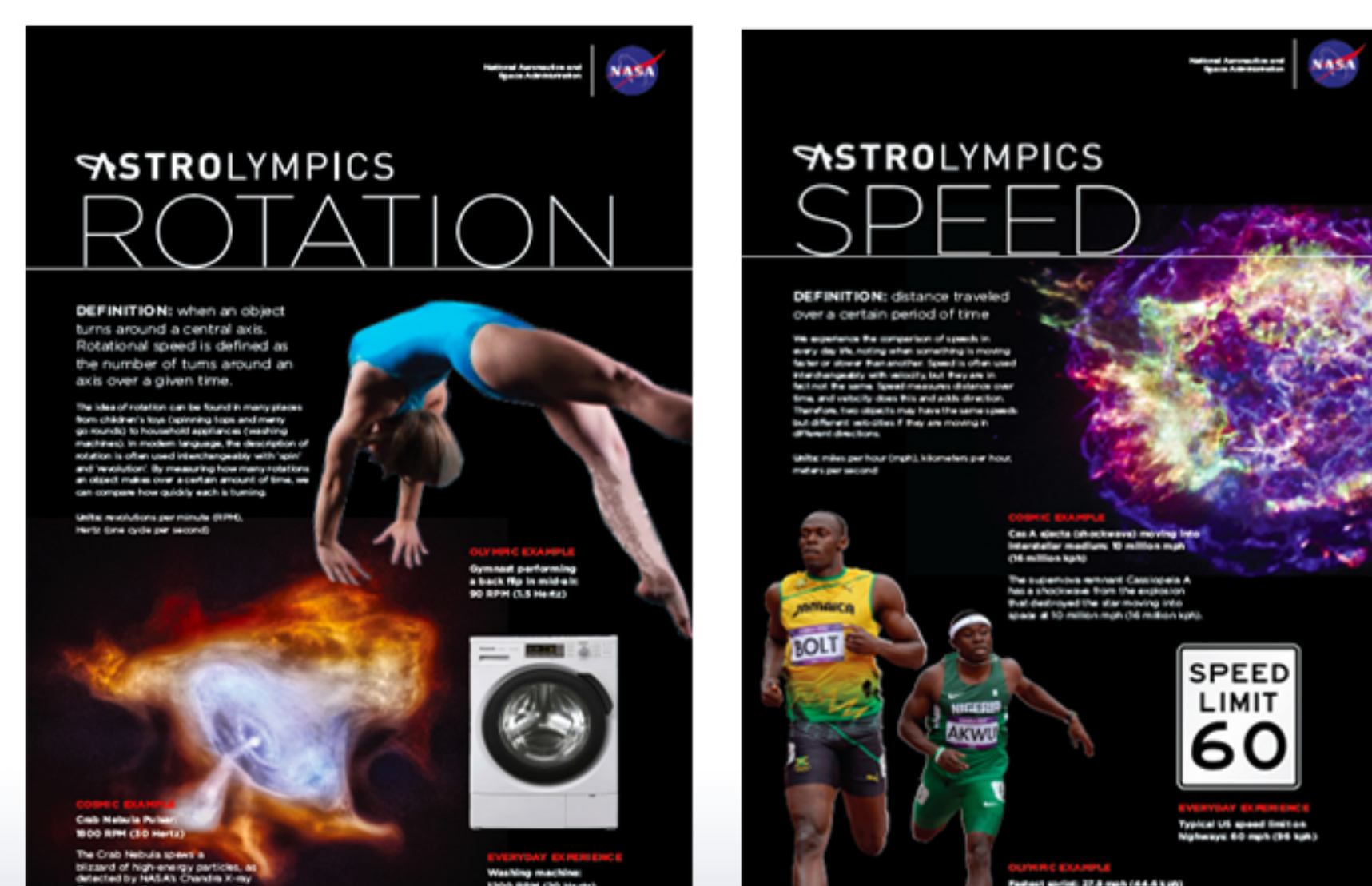
National Garden of Shiraz, Abgineh Exhibition, Iran
Exhibition of FETTU in May 2009 at the Art Exhibition gallery.
This is 1 out of almost 1,000 exhibits worldwide across 70 countries and 40 languages for IYA2009



University at Mangalore, Karnataka India
More than 2500 students visited the Light exhibit in Dec. 2015, as 1 out of 685 exhibits worldwide for IYL2015.



Main Library, University of Puerto Rico, San Juan, Puerto Rico
Exhibits and free materials for HTE were hosted at numerous libraries, schools, community centers and American Spaces.



Case Studies:

International Year of Astronomy 2009 (IYA2009)

- "From Earth to the Universe" for IYA2009 led to creation of **1,000** free science exhibits across 70 countries, in 40 languages in parks, hospitals, airports, & a prison, etc. with many millions of visitors overall
- Participant evaluations showed learning gains, increased interest in science & astronomy, increased interest in **attending** future science events
- Created worldwide **network** of volunpeer organizers

International Year of Light 2015 (IYL2015)

- "Light: Beyond the Bulb" for IYL2015 led to creation of **685** free science exhibits on light, photonics & optics across 40 countries & multiple languages in parks, libraries, cafes, schools, airports, etc. serving a few million visitors overall
- Sustained** network from IYA2009 reactivated for IYL2015
- 100%** of volunpeers surveyed expressed interest in hosting future science communications projects

Here, There & Everywhere: American Spaces & Beyond

- Open source comparative science communications program on physics, geology, astronomy, atmospheric & related sciences created for 100s of **smaller scale** public locations (schools, libraries, community centers, etc.) as well as Dept. of State's American Spaces centers
- Added many more hosts & volunpeers to expanding IYA2009 network for improving public engagement

AstrOlympics with the U.S. Department of State

- Open-source project connects the physics of Olympic sports with cutting-edge science results in astrophysics
- Dept. of State American Spaces are including it in their Olympics programming to help expand visitor base
- Launches May 15, 2016
(sample topics shown at left)

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