Communicating the NRAO Mission and Science

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National Radio Astronomy Observatory
Overview

NRAO Education & Public Outreach (EPO) Mission

NRAO Program Elements
- Visitor & Science Centers
- Legacy Imagery Project
- Astronomical Community
- World Wide Web
- Science Museum Outreach
- Education
- Press Office
- Publications
- Community Relations
- ALMA / EVLA / SKA EPO

Summary
NRAO EPO Mission

- Stimulate Public Interest in Science
- Communicate NRAO mission & science to the Widest Possible Audience

- General Public
- Astronomical Community
- Teachers & Students
- Electronic & Print Media
- Science Museums & Planetariums

- Increase awareness of the NRAO & Radio Astronomy
Green Bank Science Center

- Began Operations May 2003
- Open Daily: Summer
- Open Wed-Sun: Fall-Spring
- Guided Tours, Exhibit Hall
- Café & Gift Shop
VLA Visitors Center

- Facility Opened 1983
  - 2,400 Sq Ft Total
  - 900 Sq Ft Exhibit Hall
  - 400 Sq Ft Theater
- Cooperative Venture with State of New Mexico
- Guided tours twice per year (Apr, Oct)
- Self-Guided Exhibits & Tours
- Gift Shop added 2003
New VLA Visitors Center

Seeking Funding for New VLA Visitor & Education Center: 15,500 Sq Ft

Key Spaces

- Exhibit Hall: 5,000 Sq Ft
- Classrooms (2): 1,300 Sq Ft
- Theater: 900 Sq Ft

Total Cost ~ $7M USD, Including Exhibits

Funds for new Interactive Exhibit Suite to be Sought Via Grants Programs

Preferred Site SE of Array Center: Ample Parking & Outdoor Exhibit Space
Legend
A. Lobby
B. Exhibit Space
C. Entry Ramp
D. Gift Shop
E. Theater
F. Classroom
G. Washrooms
H. Office
I. Custodian Room
J. Mechanical Room
K. Storage
L. Loading Dock
M. Dish Courtyard
N. Viewing Platform
O. Open to Below
P. Service Road
Legacy Imagery Project

- **Improve Capability To**
  Process Radio astronomy Data Into Visually Compelling Images

- **Provide Images for NRAO Brochures, Posters, Press Releases, WWW, DVD Releases, etc.**

- **Maintain / Improve on-line Image Gallery**

- **Project Led by EPO Scientist Juan Uson**
Encourage the Community to Generate & Distribute High-quality Radio Astronomy Images for EPO

Prizes Sponsored by Associated Universities, Inc. (AUI)

- First Prize $1,000 USD
- Second Prize $500
- Third Prize $250
- Honorable Mention $100 Each

Each Image Should Contain and Showcase Radio Emission Observed with a NRAO Telescope
Legacy Imagery Project

NRAO/AUI Radio Astronomy Image Contest

Inaugural Contest: 2005
- 41 submissions from 21 scientists & artists
- First Prize, Second Prize, 7 Honorable Mentions

2nd Annual Contest: 2006
- 13 submissions from 8 scientists & artists
- First Prize, Second Prize, 5 Honorable Mentions

3rd Annual Contest: 2007
- Submission Deadline: 4 September 2007
Legacy Imagery Project

2005 Image Contest

- 1st Prize
  Aeree Chung
  Columbia University

- 2nd Prize
  Michael Bietenholz
  York University
Legacy Imagery Project

2006 Image Contest

- 1st Prize
  Jayanne English
  Univ of Manitoba

- 2nd Prize
  Fabian Walter
  MPIfA, Heidelberg
Community Meeting Participation

- American Astronomical Society
- International Astronomical Union General Assembly
- Exhibits
- Town Halls
- Press Conferences
- Prepare & Distribute Brochures, Posters, etc.
Objective: implement a more effective NRAO web presence, with improved content, structure, navigation, practices, policies, tools.

Last WWW Renovation in 1997

Minor Renovation in 2000

Improve the Operations & Maintenance Model

- Hire dedicated WWW staff
- Webmaster, content mgmt

Sub-divide www.nrao.edu into separate URLs for science, EPO, and staff.
Science Museum Outreach

- **Design & produce multi-media programming for ViewSpace Distribution**
  1. NRAO press releases
  2. Radio astronomy / NRAO
  3. ALMA
  4. EVLA
  5. GBT
  6. VLBA
  7. CDL / Technology

- **ViewSpace Managed by STScI**

- **Currently 127 Subscribing Museums & Planetariums**
Radio Astronomy for Teachers

- 2 week class thru NM Tech MS Teaching program
- Pilot program funded by a NASA Ideas grant

West Virginia Governor’s School for Math & Science

- Research Experience for gifted WV 8th grade students
- WV Experimental Program to Stimulate Competitive Research (EPSCOR) funding
# Education

## Major Summer Educational Programs at NRAO–Green Bank

<table>
<thead>
<tr>
<th>Audience</th>
<th>Summer Program</th>
<th>Duration</th>
<th>Funded By</th>
<th>Number Served 2006</th>
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<tr>
<td>College Professors</td>
<td>Chautauqua Short Courses</td>
<td>3 days</td>
<td>NSF, colleges</td>
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<td></td>
<td>CLEA</td>
<td>2 days</td>
<td>NSF</td>
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<td>K-12 Teachers</td>
<td>Astronomy Institute</td>
<td>6 days</td>
<td>NASA</td>
<td>18</td>
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<td></td>
<td>Quiet Skys Workshop</td>
<td>4 days</td>
<td>NASA IDEAS</td>
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<tr>
<td></td>
<td>RET Program</td>
<td>8 weeks</td>
<td>NSF</td>
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<td>Student Camps</td>
<td>GEAR UP Camp</td>
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<tr>
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<td>GSMS</td>
<td>2 weeks</td>
<td>WV EPSCoR</td>
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<td></td>
<td>ERIRA</td>
<td>6 days</td>
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<td>Amateur</td>
<td>Star Quest Star Party</td>
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<td>Fees</td>
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<td>SARA Conference</td>
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<td>Free</td>
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**Press Office**

- **Prepare & Distribute Press Releases**
  Describing Research with NRAO Telescopes
- **Collaborate with non-NRAO Press Offices on Joint or Simultaneous Releases**
- **Organize Press Conferences & Interviews**
- **Develop Graphics To Illustrate Releases**
- **Assist Authors in Navigating Journal Embargo Policies**

- **NRAO Press Officer: Dave Finley (NM)**
- **Graphic Design / Art: Bill Saxton (WV)**
Publications

♦ **NRAO Newsletter**
  ♦ **Primary Audience ~ Astronomers**
  ♦ **Published Jan, Apr, Jul, Oct**
  ♦ **Each Issue Includes Science, Project Status (ALMA, EVLA), Telescope & Instrument News, EPO, Opportunities**

♦ **Observatory-wide Brochure**
  ♦ **Primary Audience ~ General Public**
  ♦ **Published Dec 06**

♦ **Telescope / Instrument Brochures**
  ♦ **Primary Audience ~ Astronomers**
  ♦ **ALMA, EVLA, GBT, VLBA**
Community Relations

Host Annual Community Open House at NRAO HQ

Initiate NRAO Navigators Program

Host Tech Tours at NRAO Technology Center
ALMA EPO Working Group

ALMA EPO WG Established as a forum for Execs & JAO To Collaborate & Provide ALMA EPO Oversight

- Long-term vision
- Annual Program Plan
- Policies & Procedures
- Program effectiveness / metrics

Inaugural Meeting at Prague IAU: Aug 06

Periodic Tele-cons, Annual face-to-face Meeting
**AUI / NRAO**

**ALMA EPO in Chile**

- **Sister Cities**
  - Chile/US Cultural & Educational Exchange
  - Chile ➔ US: Jan 07
  - US ➔ Chile: Jun 07

- **Scientific Outreach**
  - Scientist visits / exchanges

- **AUI/NRAO Chile EPO position**
  - Spanish translation
  - Chilean Distribution of AUI/NRAO Publications & Press Releases
  - March 2007
Square Kilometre Array
Astronomy Readily Engages the Minds & Imaginations of the Public, Educators, and the Media

Research Performed Using NRAO Facilities Offers Excellent Opportunities To Stimulate Public Interest in Science

EPO Division Has Implemented a Range of Programs That Communicate the NRAO Mission & Science to a Broad Audience