Aquarius / SAC-D Education and Public Outreach (EPO):
Current Status & Future Plans

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Overview

• To prepare for next year’s launch, the Aquarius/SAC-D EPO teams have been:
  – Developing *key messages*
  – Coordinating *media opportunities*
  – Creating *EPO products* and
  – *Engaging scientists* to broaden the impact of the mission’s goals
“Key” Messages

• Aquarius “Mission Themes”
  – To be emphasized in all NASA public affairs products, interviews and other channels of public communication
  – Communications products*:
    • Communications Plan
    • Science Writers Guide
    • Tri-fold brochure
    • 12-page brochure

*Nominally done in time for 2010 Fall AGU Meeting
“Key” Messages

• Aquarius “Mission Themes” (continued)
  – Aquarius will map the salinity—the concentration of salt—at the ocean surface, information critical to improving our understanding of Earth’s water cycle and ocean circulation.
  – Aquarius’ measurements of ocean salinity will provide a new perspective on the ocean and its links to climate, greatly expanding upon extremely limited past measurements.
• Aquarius “Mission Themes” (continued)
  – Aquarius will provide information that will help improve predictions of future climate trends and short-term climate events such as El Nino and La Nina.
  – Aquarius employs new technologies to enable NASA’s first space-based measurements of ocean salinity across the globe.
“Key” Messages

• Themes are mirrored in logo
  – Will be used on products that can be ordered by team members such as:
    • Shirts
    • Hats
    • Pins
  – Details will follow…
“Key” Messages

SAC-D/ Aquarius Mission Logo
“Key” Messages

MWR “Mission Themes”

– Wind speed at the ocean surface
  Predicting changes in climate
  Main factor in waves formation

– Precipitation
  Predicting the availability of freshwater resources
  Understanding the water cycle and climate change
“Key” Messages

MWR “Mission Themes” (continued)

– Cloud Liquid water

• Controls the amount of solar energy that reaches Earth’s surface and the amount that the Earth radiates back into space

• Understanding this energy balance is key to addressing the questions posed by climate change
MWR “Mission Themes” (continued)

• Ice concentration in the ocean
  • Sea ice influences the entire global climate, although it occurs mainly in the polar regions
  • Affects navigation in polar regions
“Key” Messages

NIRST “Mission Themes”

– Monitoring of high temperature events
  • Focus on biomass combustion
– Evaluate fire radiated power to estimate the emission rate of aerosols
– Early warning of fires and volcanic eruptions
– Monitoring of volcanic ash
– Determining sea surface temperature
  • Monitoring ocean currents, algal blooms & pollution
HSC and DCS “Mission Themes”

• Instrument: HSC
  - Urban lighting
    – Snow cover
    – Ship detection
    – Thunderstorms and Auroras

• Instrument: DCS
  – Meteorological and environmental data
Media Opportunities

• Press Releases
Media Opportunities

• Visit by President Fernandez (20 Jan 2010)
• Presented to the Government (19 Mar 2010)
  — Considerable media coverage
Media Opportunities

• Conceptual visualizations:
  – “Beauty Shot”
  – Satellite Collecting Data
  – Brief Science Overviews
**EPO Products**

- Aquarius EPO products support student outcomes and follow “Key Message” themes:

<table>
<thead>
<tr>
<th></th>
<th>Grades K-4</th>
<th>Grades 5-8</th>
<th>Grades 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Cycle</strong></td>
<td>Compare the basic properties of fresh &amp; salt water</td>
<td>Explain the effect of temperature on density</td>
<td>Explain relationships between fresh water &amp; ocean dynamics</td>
</tr>
<tr>
<td><strong>Ocean Circulation</strong></td>
<td>Describe connections between ocean salt water &amp; fresh water in water cycle</td>
<td>Explain the effect of density on ocean circulation</td>
<td>Explain the influence of ocean salinity on the thermohaline circulation</td>
</tr>
<tr>
<td><strong>Climate</strong></td>
<td>Compare climates based on precipitation, temperature &amp; distance from ocean</td>
<td>Explain the ocean holds a large amount of heat &amp; its effect on climate</td>
<td>Describe how changes in ocean circulation can produce changes in climate</td>
</tr>
<tr>
<td><strong>21st Century Technology</strong></td>
<td>Explain that satellites can make measurements at a distance</td>
<td>Gather, analyze &amp; interpret data about the ocean’s effects on climate</td>
<td>Explain how technology can enhance the gathering &amp; use of oceanic data</td>
</tr>
</tbody>
</table>
• Database of EPO products is searchable by theme, resource type & grade levels:

- Water Cycle (Ties to Aquarius)
  1. Explain that evaporation can separate the water from the salt in salt water. (NSSE:127; NAAEE:16; OLS:13) (search)
  2. Compare the basic properties of fresh and salt water (e.g., density, ability to dissolve salt, freezing point). (NSSE:134;100; OLS:10) (search)

- Ocean Circulation (Ties to Aquarius)
  3. Describe the connections between the salt water found in the ocean and the fresh water in the water cycle. (NSSE:160; NAAEE:12,16; OLS:10) (search)

- Climate (Ties to Aquarius)
  4. Compare climates considering factors such as precipitation, temperature, and distance from an ocean. (NAAEE:16; OLS:13) (search)

- 21st Century Technology (Ties to Aquarius)
  5. Explain that satellites can be used to make measurements at a distance. (NSSE:123,138; NAAEE:14) (search)
  6. Design a simple experiment to answer a question they have about the ocean or saltwater. (NSSE:122; NAAEE:13) (search)
EPO Products

• Fun products under consideration
  – “Family Activity” Book
  – Lenticular bookmark (2-3 images)
    • SSS, SST, SS Density?
    • SSS, Precipitation, Evaporation?
SAC-D/ Aquarius Observatory Brochures

• One per instrument
• 8 instruments
• Essentials

and ..........

• Interactive brochures
Satellite Training Program for Children and Young People: 2MP

Two million children and young people using satellite images

Building knowledge with this program:

- Free software
- Thematic units: using satellite images and information from other sources
- Aquarius/SAC-D contribution: Ocean, Global Change, Ocean and Atmosphere interaction.
Arriba. La merluza austral (Merluccius hubbsi) es una especie de crucial importancia económica, pescándose grandes cantidades anualmente. Constituye una de las principales exportaciones pesqueras de la Argentina.

Izquierda. La merluza austral habita la costa oriental del Cono sur, desde los 34° de latitud sur hasta la zona de las Islas Malvinas.
EPO Products

Módulo Océanos: Actividad pesquera
Arriba. Fotografía aérea de la Dirección Nacional del Antártico durante el rompimiento de la barrera

Derecha. Serie de imágenes MODIS del Satélite Terra del rompimiento de la Barrera Larsen “B” en la Península Antártica en febrero de 2002
• Engage the Science Team to broaden impact of the mission
  – Support outreach in their own communities through partnerships
    • NASA Museum Alliance – Work with a cadre of museums, Digital Learning Network broadcast from VAFB, Educator conference on NASA TV
    • Centers for Ocean Sciences Education Excellence (COSEE)
  – EPO provide background materials on reaching audiences effectively, etc.
Conclusions

• We look forward to working together to:
  – Develop *key messages*
  – Coordinate *media opportunities*
  – Create *EPO products* and
  – *Engage scientists* to broaden the mission’s impact

THANK YOU!