The Galileoscope

From IYA 2009 to IYL 2015…and Beyond!

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American Astronomical Society

IAU XXIX General Assembly, Division C Meeting, 7 August 2015, Honolulu, Hawai‘i

Galileoscope Project Goal

For the 2009 International Year of Astronomy,
provide a telescope kit that serves educators and delivers
a “Wow!” experience outdoors under the stars.

INTERNATIONAL YEAR OF LIGHT 2015

GALILEOSCOPE

COSMIC LIGHT

We Evaluated Every Inexpensive Telescope & Telescope Kit on the Market: None Were of Good Optical & Mechanical Quality

- We developed our own product: the Galileoscope
- *Volunteer-managed & executed*
- Optically excellent, inexpensive telescope kit
- Suitable for optics education indoors & celestial observations outdoors
- No tools or adhesives needed for assembly & disassembly
- Instructions, observing guides & standards-based activity guides available for free in multiple languages

- 50-mm (2-inch) f/10 glass achromatic (doublet) objective
- 20-mm (25x) Keplerian eyepiece + 30-mm (17x) Galilean eyepiece, plastic
- Galilean eyepiece doubles as a 2x Barlow for 50x views of Saturn's rings

- Focuser accepts standard 1¼-inch eyepieces and camera adapters
- ¼-20 threaded nut in base fits all standard photo tripods

Educational Goals

- Assembly of kit is important; gives kids a sense of pride & mastery.
- Maximize educational value & utility: Integrate kits into inquiry-based educational material on image formation & telescopes.
- Professional-development program for educators (critical for long-term educational results).
  - Based on NSF-funded Hands-On Optics Project from NOAO, Optical Society of America & SPIE

INTERNATIONAL YEAR OF LIGHT 2015

GALILEOSCOPE

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Students with Galileoscopes at Arizona school

Moon (above) & Jupiter (below) through the Galileoscope

INTERNATIONAL YEAR OF LIGHT 2015

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Galileoscope teacher workshops in Hawaii & Thailand

INTERNATIONAL YEAR OF LIGHT 2015

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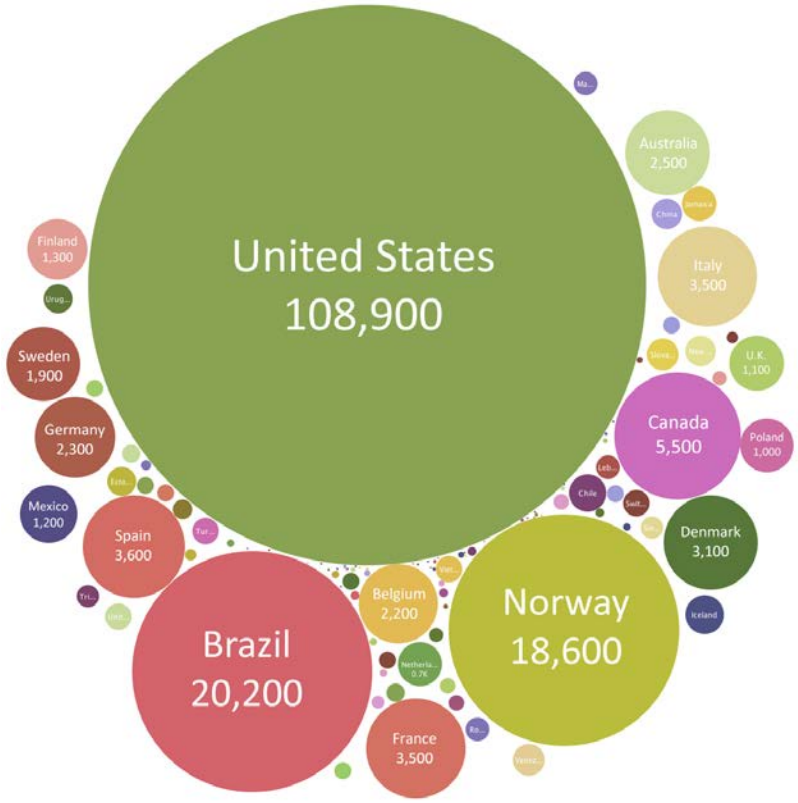
Free Educational Materials, Observing Guides & Instructions in Multiple Languages

Galileoscope Sales 2009–2014

- 225,000 Galileoscopes to 106 countries
- 30,000 small orders from individuals
- 500 large orders from institutions
- More than 30% of institutional sales are *repeat business*



Donation Programs:
25,000 Galileoscopes Around the World

- Over 7,000 kits distributed to US teachers for cost of shipping only
  - Claimed by 1,473 teachers in 6 weeks, in all 50 states
- Project ASTRO and NESTA teachers received 8,000 free Galileoscopes
- UNESCO sponsored 100 kits to each of 20 countries in Africa, Asia, and South America
- Over 7,000 telescopes donated to African nations through buy-one/give-one program

International Year of Light 2015

- Led by European Physical Society with participation by US & international professional physics & optics societies
- Centennial of Einstein's general relativity & 50 years since discovery of cosmic background radiation by Penzias & Wilson
- Galileoscope selected by International Astronomical Union as a "Cosmic Light" Cornerstone Project
  - Large international installed user base
  - Well established, ready to run
  - Extensive, multilingual educational materials & user guides

2015 INTERNATIONAL YEAR OF LIGHT AND LIGHT-BASED TECHNOLOGIES

UNESCO
United Nations Educational, Scientific and Cultural Organization

International Year of Light 2015

INTERNATIONAL YEAR OF LIGHT 2015

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Redesigned Box for IYL 2015


EDELMAN
FINANCIAL SERVICES
Jean & Ric Edelman donated 10,000 kits to US K-12 teachers

Custom Edelman Box for IYL 2015

Galileoscope Workshop at ‘Imiloa Astronomy Center, Aug. 2015

INTERNATIONAL YEAR OF LIGHT 2015

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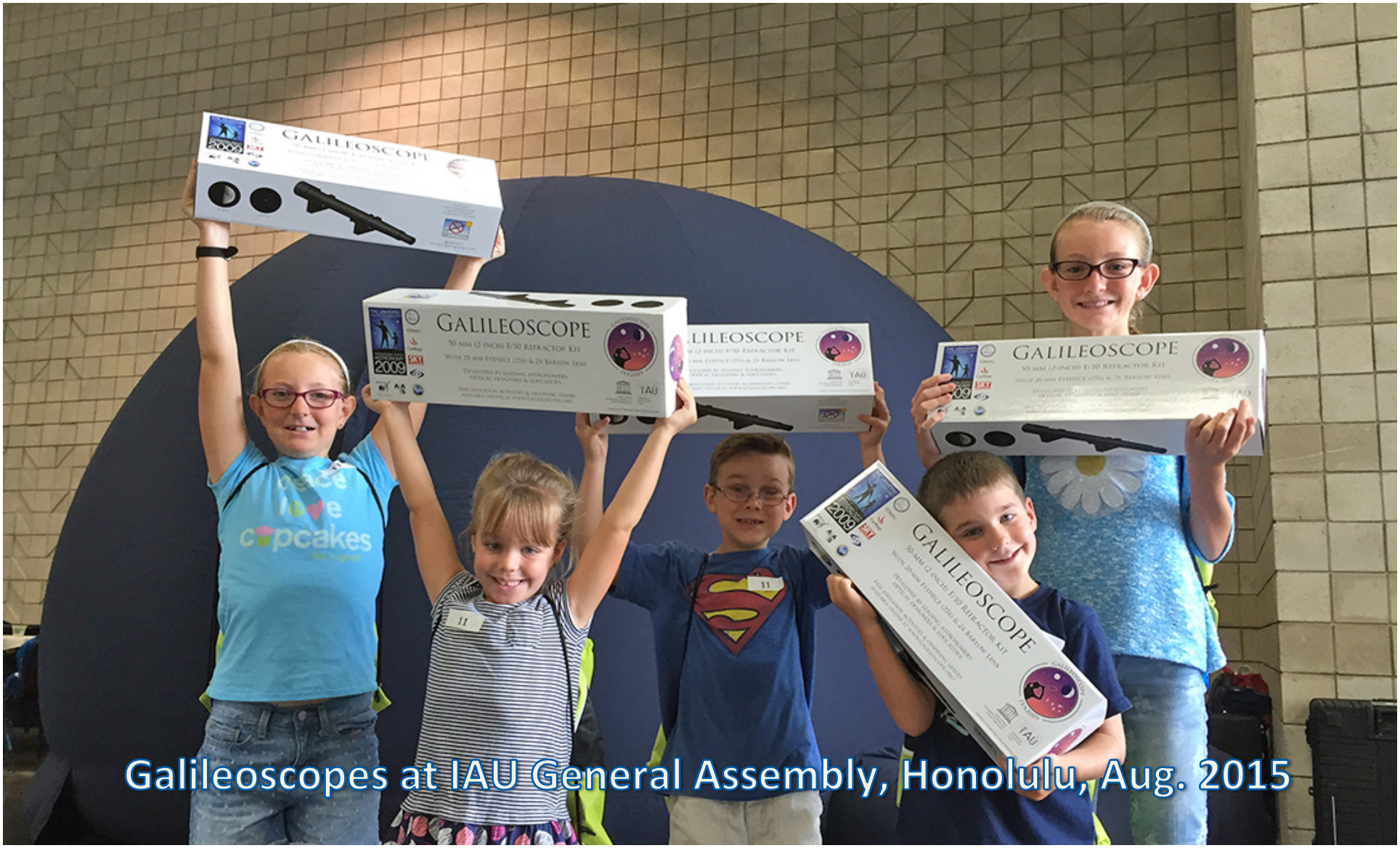

Galileoscopes at IAU General Assembly, Honolulu, Aug. 2015

This Project Almost Didn't Happen

- Trademark dispute over Galileoscope name.
- Very little funding; economic meltdown meant no large donations, no loans.
- Had to spend personal funds to produce tooling and replenish inventory.
- Had to collect order revenue in advance to pay for first manufacturing run.
- Took many months to get kits manufactured and delivered (mid-2009).
- Customer-service nightmare! Added volunteers and (minimally) paid staff.

Subsequent problems:

- Intellectual-property dispute with manufacturer of Galileoscope clone.
- Manufacturing partner went out of business; had to renegotiate with factory.

Beyond IYL 2015

- Possible very big EPO program
- Possible very big distribution deals

Watch for announcements!

Mahalo Nui Loa!

http://galileoscope.org