

# ISWI Steering Committee Meeting: Annotated Agenda

2016 February 19

VIC, Vienna, Austria

Chair: Nat Gopalswamy

# Agenda

- 1. Introduction & Report (chair)
- 2. Secretariat update
- 3. Steering Committee update
  - - Replacement for Debbie Scherrer (retired)
- 4. ISWI National Coordinators (Discussion by Christine Amory)
- 5. ISWI Instruments update, new network (Christian, Americo, ....)
- 6. Discussion and approval of the Data Subcommittee Report
- 7,8. ISWI – UNOOSA Collaboration (Shafa, Werner)
- 9. Expert Committee on Space Weather – summary of the workshop Ian Mann
- 10. ISWI/NASA report: Elsayed Talaat
- 11. ISWI School Nov 7-17 2016, Sangli, India
- 12. ISWI Workshop 2017 in the US
- 13. VarSITI Report Katya Georgieva
- 14. Any other matter

# 1. Intro & Report

- Main event in 2016 UN/Japan Workshop in Fukuoka (March 2-6); collocated with AOSWA
- Science: 14 papers published in Sun & Geosphere (founded during IHY)  
<http://sungeosphere.org/> click on “Journal Online”
- Panel Discussion on ISWI data: open data policy, Rules of the Road
- Popular demand for the next workshop in the US
- 2016 Nov 7-17 SCOSTEP/ISWI School in Sangli, Maharashtra India:  
[http://www.iiap.res.in/meet/school\\_meet/index.php](http://www.iiap.res.in/meet/school_meet/index.php)
- Instrument update: All responded but AWESOME and CIDR
- Presentations on ISWI Instruments, national activities, and UNOOSA summary of the Fukuoka workshop at the COSPAR-ILWS meeting (Feb 15-17)
- Summary of the Expert Group deliberations (later in the day)
- Initial meeting for UN/US workshop on ISWI (Feb 17)
- Christine received ESWW 2015 award for ISWI work in Africa

## 2. Secretariat Update

### Secretariat

- Nat Gopalswamy Executive Director
- George Maeda Newsletter Editor
- Mitko Danov Webmaster
- Sharafat Gadimova UN Liaison
- Pat Doherty Meeting Coordination (2/2015)
- Shing Fung Data Coordination



### 3. Steering Committee Update

- Christine Amory-Mazaudier France GPS
- Jean Lilensten France J Space Weather& Space Climate
- Sharafat Gadimova Austria UNOOSA
- Katya Georgieva Bulgaria SCOSTEP/VarSITI
- Nat Gopalswamy US Chair
- Keith Groves US Scintillation Networks
- Lika Guhathakurta US NASA HQ
- Norbert Jakowski Germany SOFIE and GIFDS
- Ian Mann Canada U. Alberta
- Christian Monstein Switzerland CALLISTO
- Terry Onsager US ISES
- Babatunde Rabiou Nigeria NASRDA
- Jean-Pierre Raulin Brazil SAVNET
- Deborah Scherrer US SID Monitor Network
- Kazunari Shibata Japan CHAIN project
- Chi Wang China Space Weather Meridian
- Akimasa Yoshikawa Japan MAGDAS

Action: The Steering Committee thanked Deborah Scherrer for the ten years of great service to ISWI

Richard Marshall (Australia) and J. Americo Gonzalez-Esparza (Mexico) have been unanimously elected by the Steering Committee as new Steering committee members

# Thanks for the 10 years of great service!



From Deborah Scherrer★

Reply Reply All Forward Archive Junk Delete More

Subject **Re: ISWI instrument update**

11/24/2015 1:21 P

To Me <nat.gopalswamy@nasa.gov>★, president@ku.edu.tr★, morris.cohen@ece.gatech.edu★

Cc supersid <superSID@radio-astronomy.org>★, George Maeda (Kyutech)★

Gopal, I officially retired from Stanford last Friday (after having lost NASA EPO funding). But the SIDs are still being distributed by the SARA folks (Society of Amateur Radio Astronomers). You can contact them through [supersid@radio-astronomy.org](mailto:supersid@radio-astronomy.org), as above.

Also, you should probably remove my name from the ISWI lists. I am fully intent on getting my life back -- hope to ride my horse, drive my ponies, play the piano, get to know my family and friends again, read a non-technical book, sip wine by the fireside, and watch the Sun go down and the stars come out at night. A glorious future!

Thanks for all you have done for the SID community and for me personally. 'tis been a GREAT pleasure to work with you!

Debbie



## 4. ISWI National Coordinators

- Membership – Need a subcommittee to
- Touch base with the National Coordinators
- Inform and take the help of National Coordinators in instrument deployments
- Update national web sites
- Recommend replacements if the national coordinator resigns or unable to continue

**Action:** The Steering committee appointed the following membership subcommittee:

**Chair:** Christine Amory

**Members:**

Mitko Danov (webmaster)

Babatunde Rabiou (Nigeria)

Christian Monstein (Switzerland)

Richard Marshall (Australia)

J. Americo Gonzalez-Esparza (Mexico)

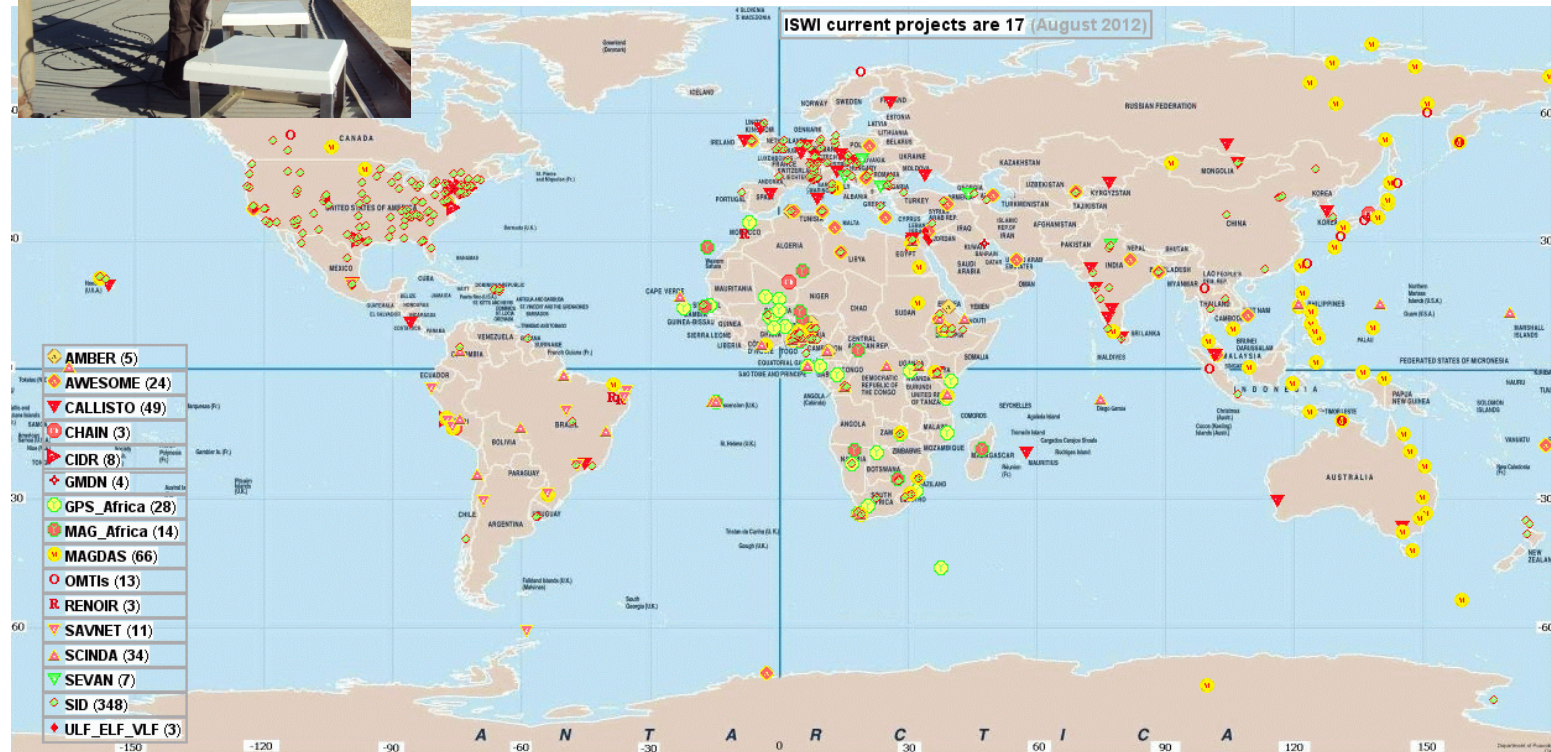
## 5. ISWI Instrument Updates

- Report circulated; please provide feedback
- AWESOME has no more support after Umran's retirement from Stanford
- However, SID will be under the patronage of SARA (Society of Amateur Radio Astronomers)
- Morris Cohen has a faculty position at Georgia Tech. He is starting a new-generation AWSOME. He will rejoin ISWI once he is ready. Ajeet Maurya, who did his PhD with AWESOME data is a Fulbright Scholar at Georgia Tech.
- CHAIN: New deployment in Saudi Arabia
- LISN: New deployment in Columbia next month (3/2016)
- MAGDAS: New deployments in Peru and Srilanka; Abuja magnetometer replaced
- SOFIE, GIFDS in full swing; SOFIE available for serious hosts
- RENOIR has continued to operate in Brazil and in Morocco with good success.





# ISWI Instrument Sites

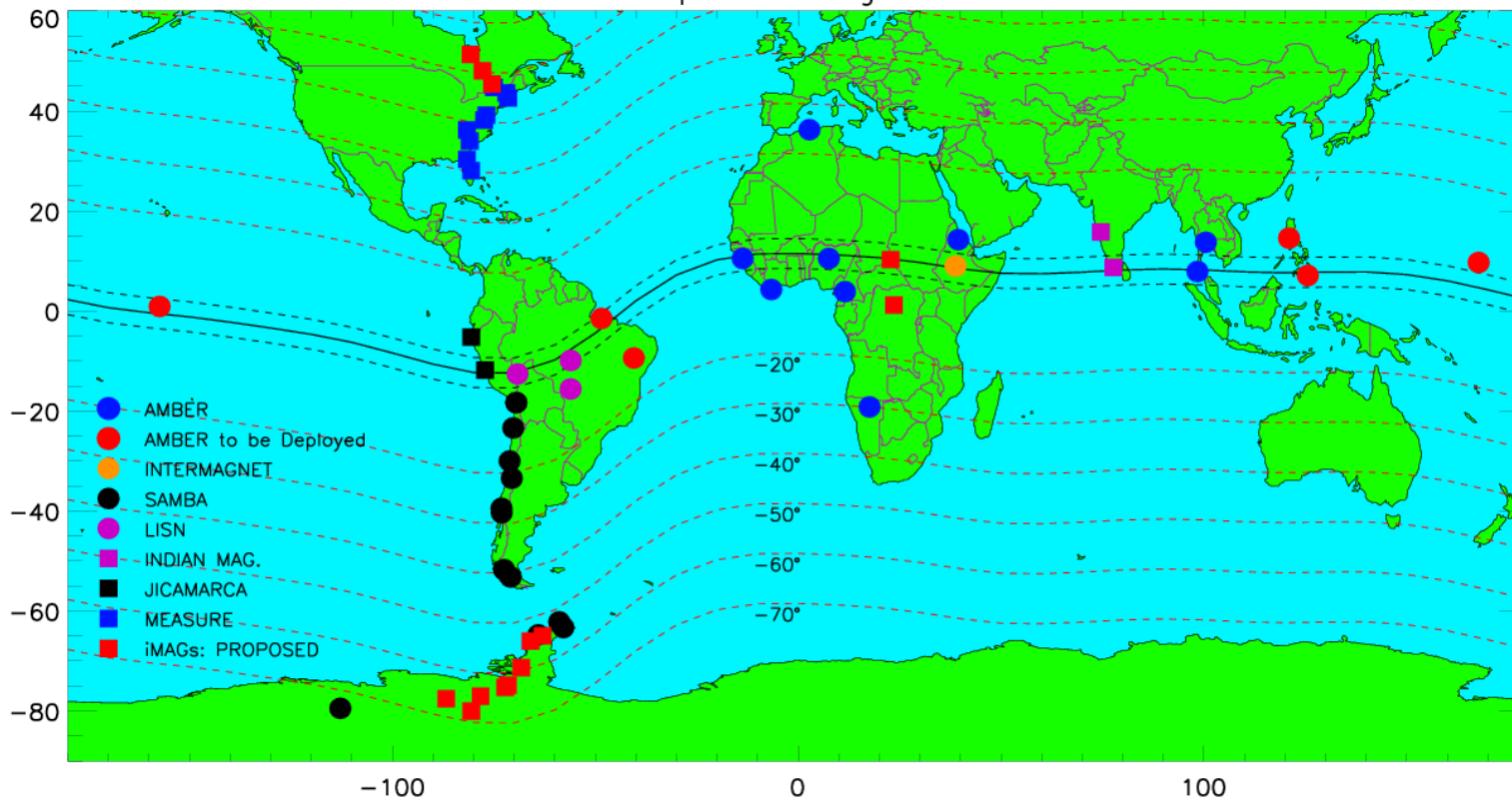


Scientists from developing and developed nations work together  
 Students and faculty participate at all levels of the instrument project and science  
 Data gaps closed due to deployment in crucial locations  
 Heavy focus on Africa, with added schools and workshops

# iMAGs (SAMBA-AMBER-MEASURE)

**Team Members:** M. Moldwin (UM); E. Yizengaw (BC); E. Zesta (NASA); A. Boudouridis (SSI); M. Magoun (BC); K. Hector (UCLA)

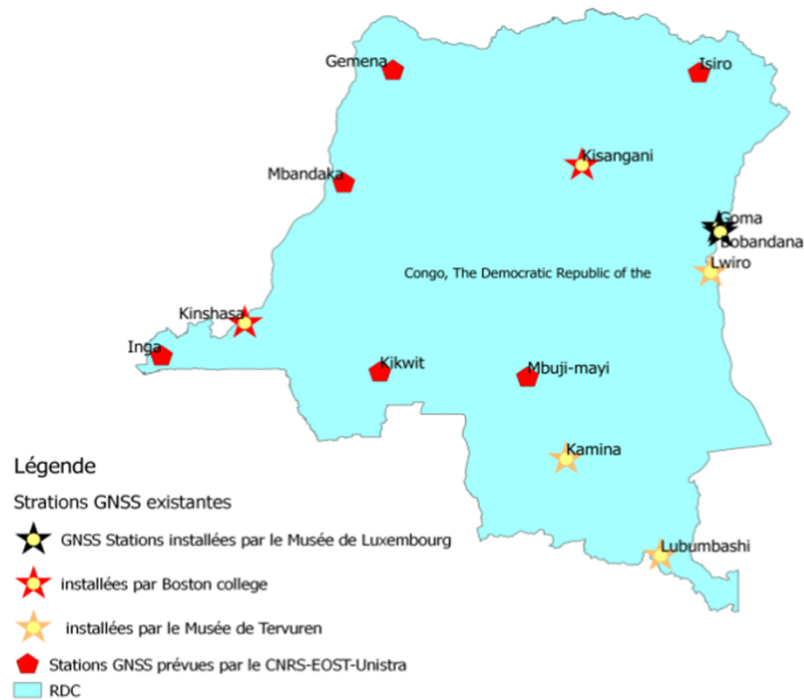
iMAGs & other Equatorial Magnetometers Network



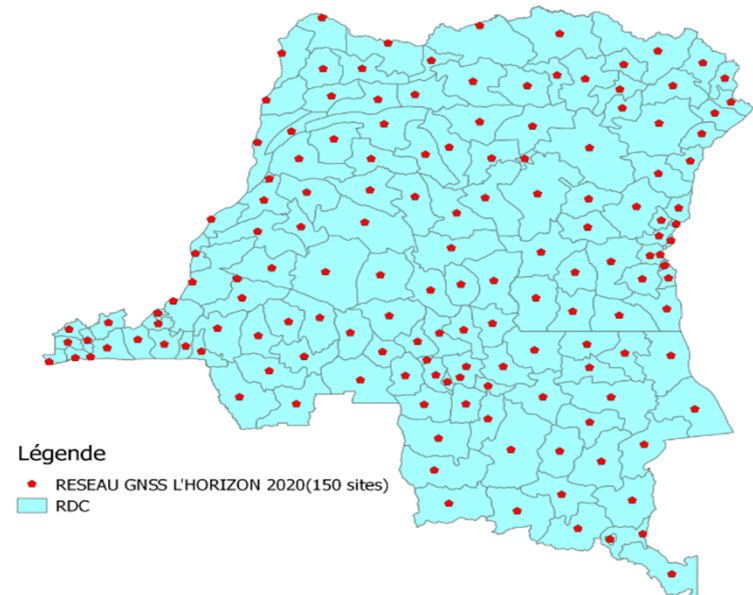
A new alliance has been formed as a network of networks

# Filling DRC with GPS Receivers!

**Network 2016**



**Project of future network**

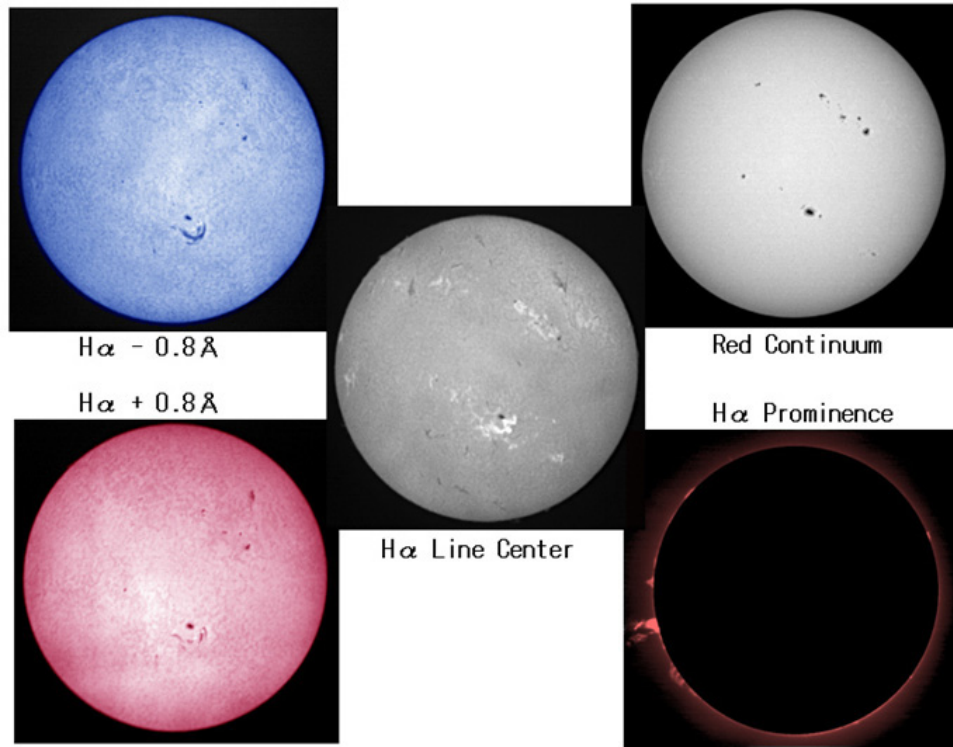
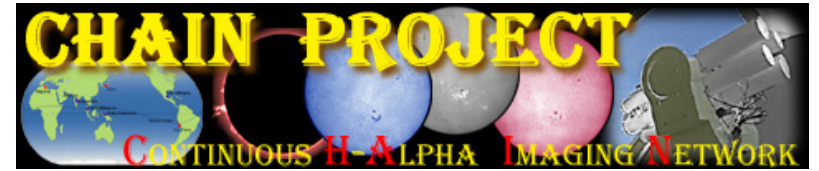


The plan is to deploy a GPS receiver in each district of the democrtatic Republic of Congo

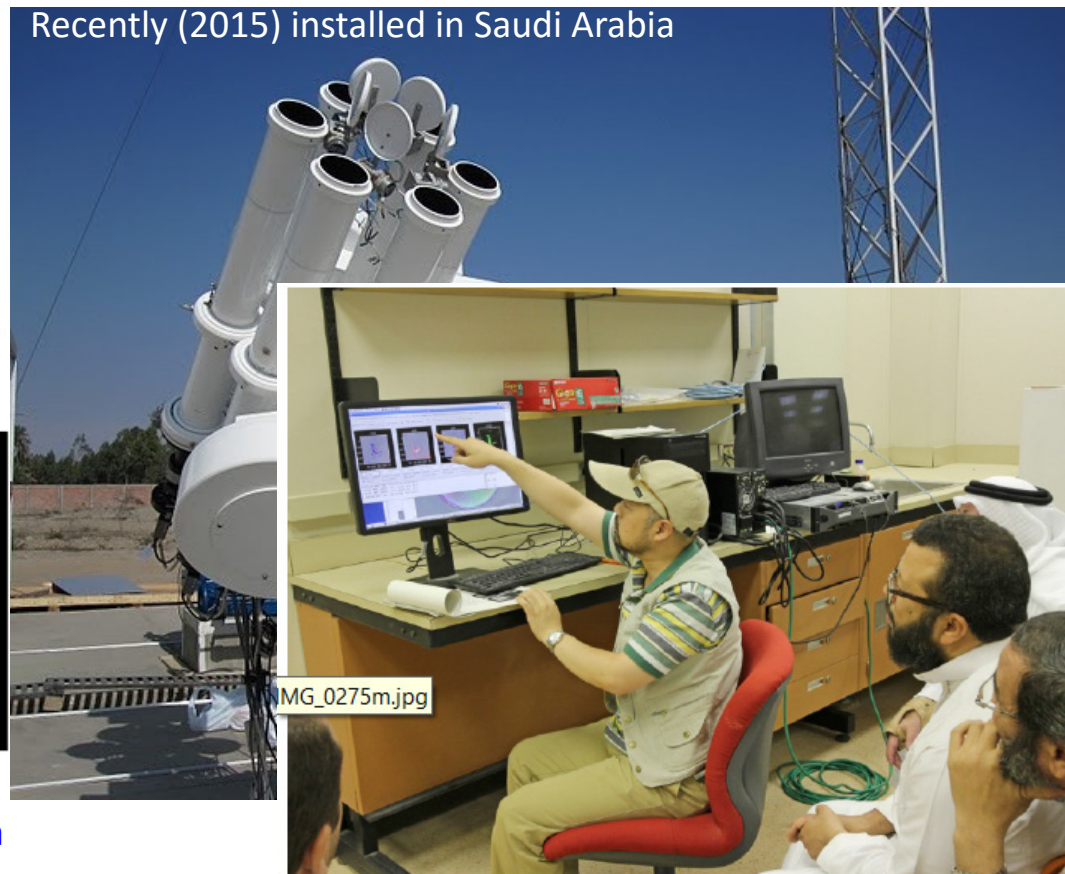


# H-alpha Telescope Network

PI: S. UeNo Kyoto U.



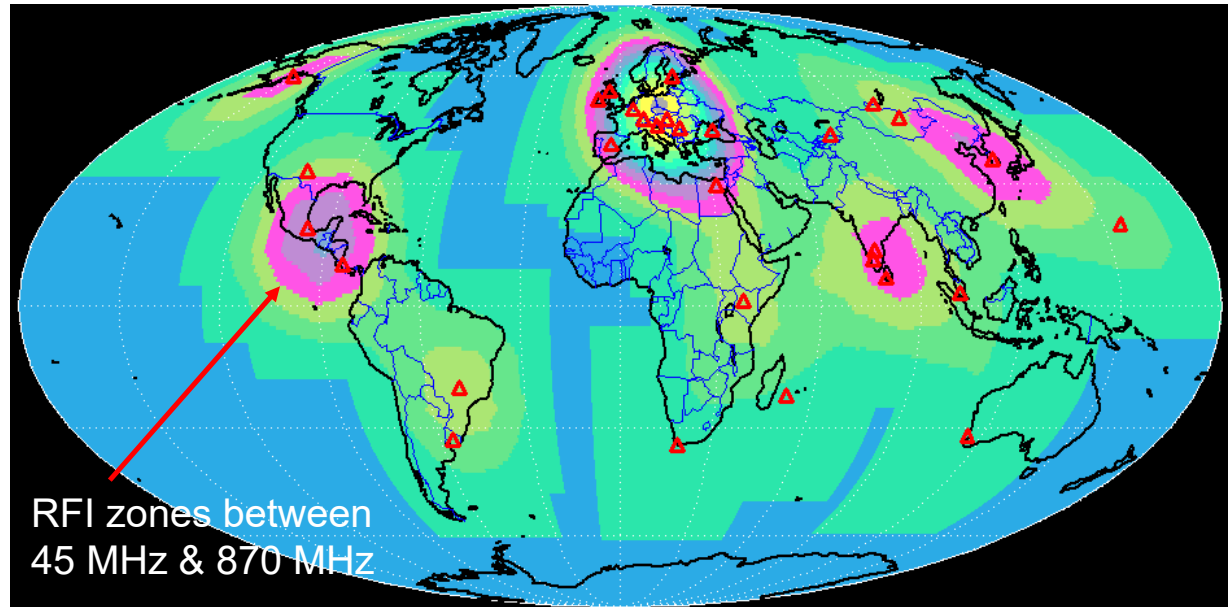
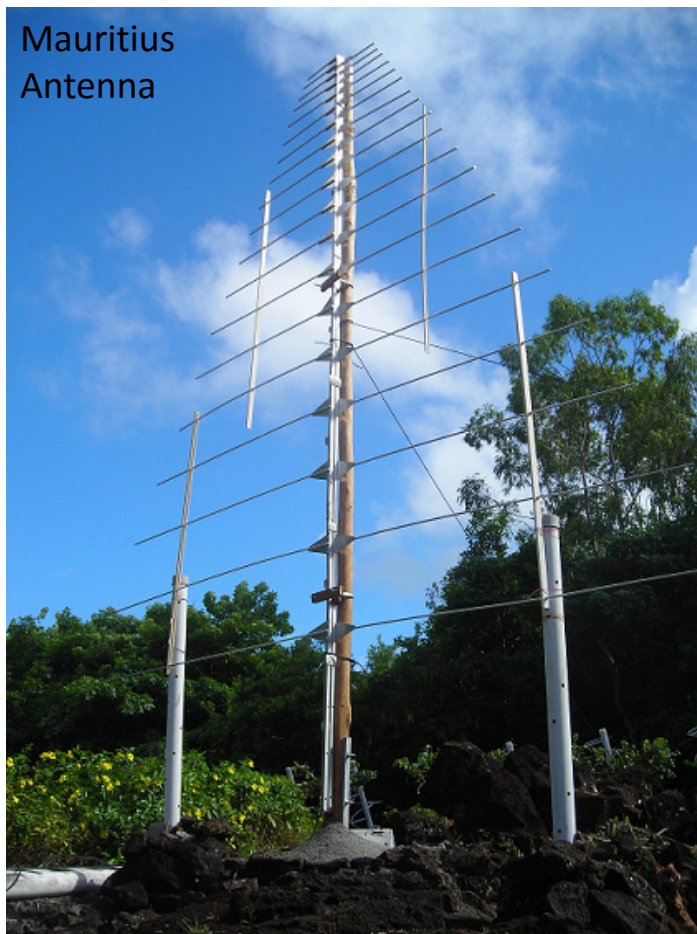
Observes flares, shock waves, and parts of CMEs  
Good coverage even with three: Japan, Peru, Saudi Arabia  
Supports Graduate level education and outreach



# e-CALLISTO PI: C. Monstein

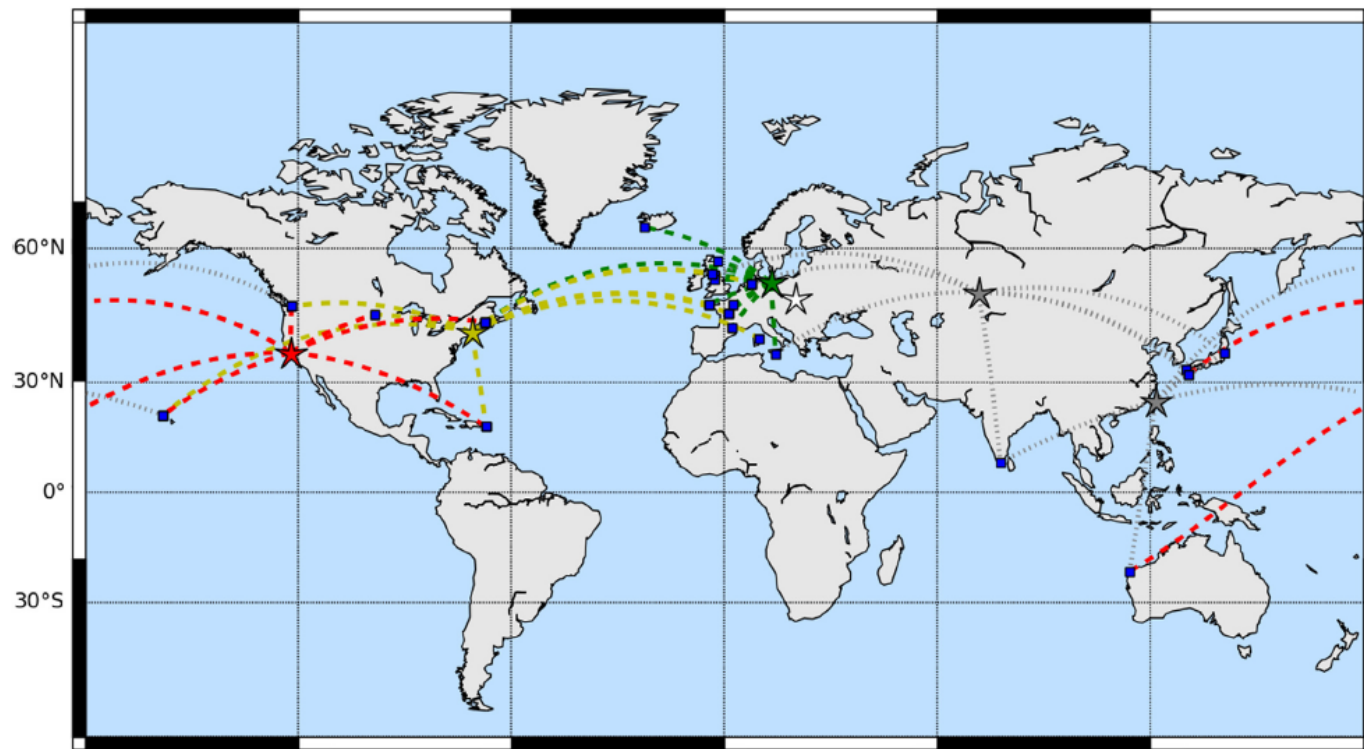


<http://www.e-callisto.org/>



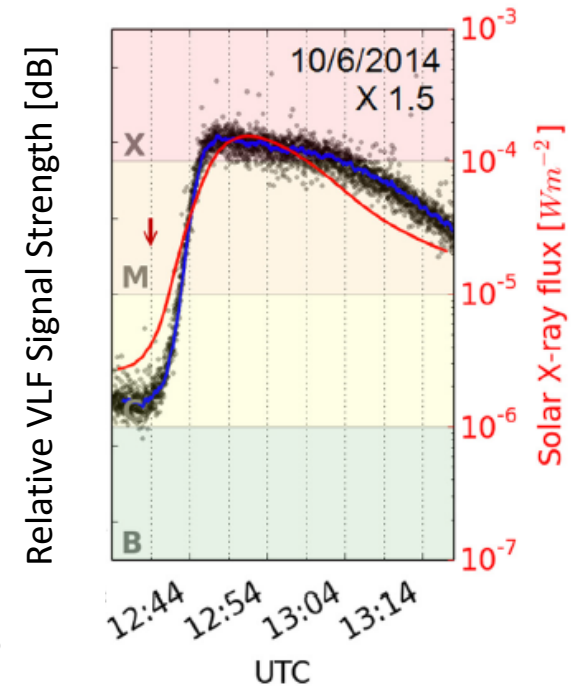
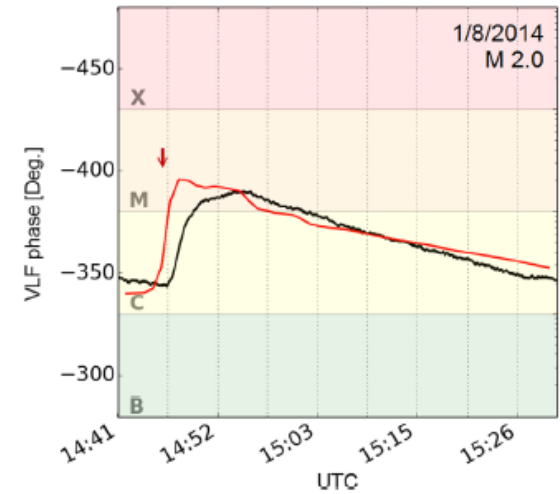
- Shocks and electron beams from the Sun
- Full coverage of the Sun with high redundancy
- Opportunity for hands-on experience

# Global Ionospheric Flare Detection System(GIFDS) PI: N. Jakowski



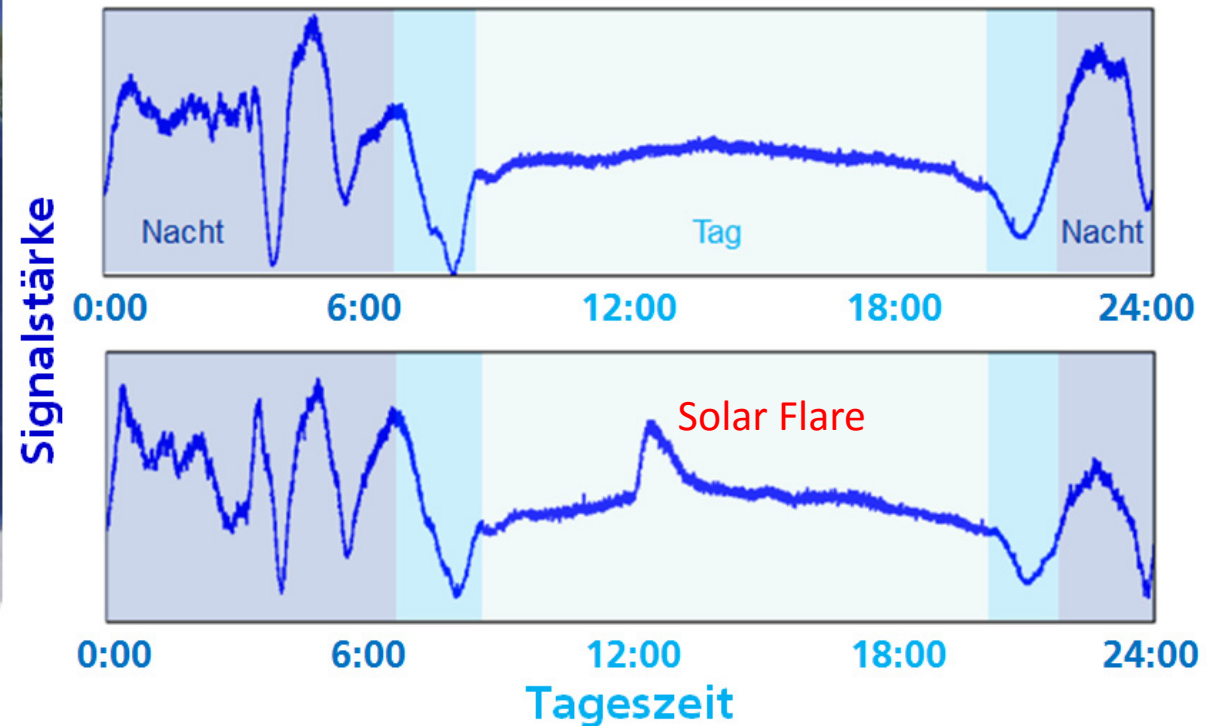
VLF receivers continuously monitoring the dayside ionosphere  
Soft X-ray flare flux correlated with the phase and amplitude of VLF waves.

Wenzel et al. 2016





# SOLar Flares detected by Ionospheric Effects (SOFIE) Network



(Alexander Kasten – Project Leader at DLR)

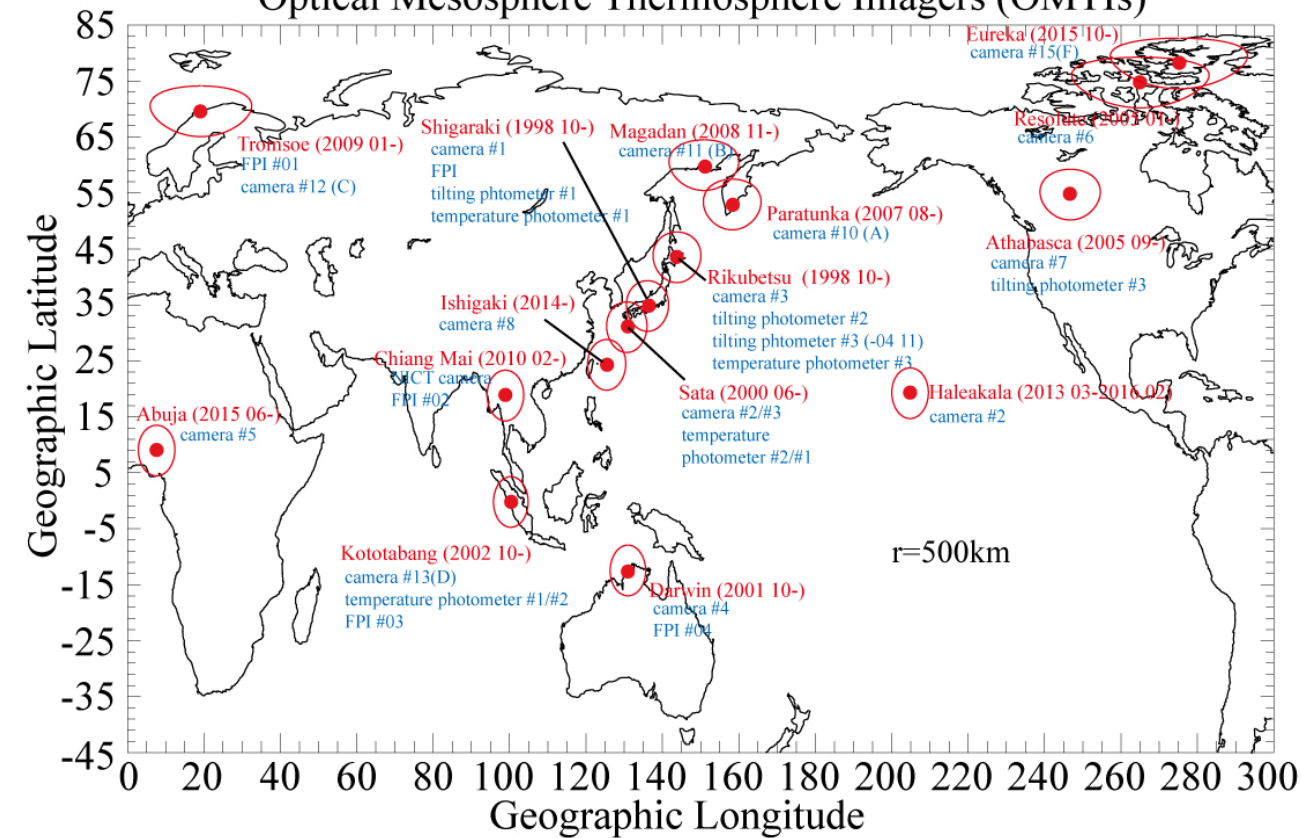
Target: School Students

<http://www.projectlab-neustrelitz.de/sofie/eng/network.html>

# OMTI

PI: K. Shiokawa Nagoya U.

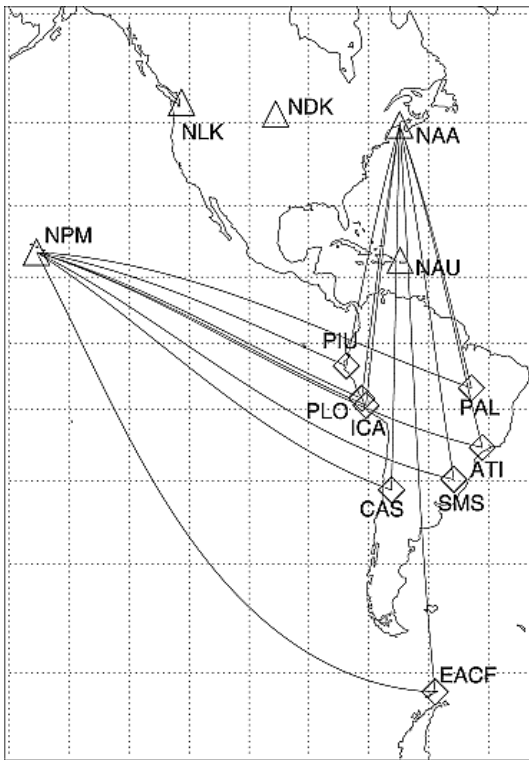
## Optical Mesosphere Thermosphere Imagers (OMTIs)



New Deployments in Canada & Nigeria



# SAVNET



- The network continues to operate with reduced number of substations
- Currently SAVNET has at least one receiver working Argentina, Peru and Brazil
- Collaborators and students maintain the systems operational
- All data are available upon request
- Two masters and on PhD completed
- New students enrolled (one Masters and one PhD)

# SAVNET update

- 1) we have detected an evidence (the first as far as I know) of the effects of the Magnetic Anomaly on the lower daytime ionosphere. This may be important to diagnose SEP events
- 2) using the VLF remote sensing technique, we have reproduced the long-term variation of the nighttime ionospheric height between 2006 and 2014. Two time variations are clearly seen: (i) annual probably related to the regime occurrence of lightning; (ii) solar cycle
- 3) our Atmospheric Electric Field network is well developed now, and we have got further extra money to extend it. One of the main objective is the study of the GAEC (Global Atmospheric Electric Circuit) and its variations with solar and geophysical long-term and transient behavior. GAEC may be the (missing) link for the coupling between upper and lower (troposphere) atmosphere, and therefore it may help in understanding the Solar/Geophysical --> Magnetosphere --> Earth surface relation.
- It may be a good time to begin discussing how we could include this new network in the ISWI instrumental program. José Tacza Anaya who is working with me could act as the PI of this new network. Let us know.

**Action:** The Steering Committee unanimously approved the inclusion of the GAEC (Global Atmospheric Electric Circuit) instruments to the ISWI Instrument network

# Space Environment Viewing and Analysis Network (SEVAN) PI: A. Chilingarian Armenia

- Deployments in Slovakia, Bulgaria, Croatia and India.
- Croatia is very active
- Focus shifted to High Energy Physics in Atmosphere
- The Slovakian SEVAN group has detected large particle enhancements during thunderstorms.

## Nominal SCINDA Sites

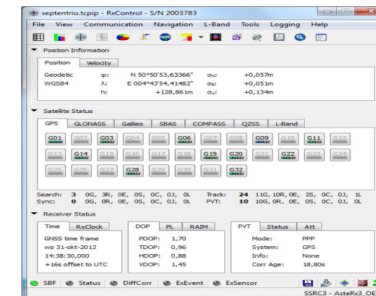
- The present SCINDA site map still contains more than 70 sites (contributing LISN sites show in blue), but after 18 months without support approximately one-half the sites are unhealthy
- No plan to recall sensors; the Boston College group is optimistic emphasizing restoration of neglected productive sites and expanding into new regions with new improved technology



K. Groves, C. Carrano, C. Bridgwood, P. Doherty (Boston College)

# SCINDA: Next Generation GNSS receivers

- Septentrio PolaRxS Pro Multi-Frequency, Multi-Constellation Receivers and PolaNt-x MF Multi-Frequency Antennas
  - Supports GPS, GLONASS, Galileo, Beidou, etc. ; up to 30 satellites visible simultaneously!
  - High quality oscillator greatly improves phase scintillation sensitivity
  - Improved satellite tracking, TEC & scintillation observations
  - Windows and Linux-based solutions with advanced user-friendly software interface
- Hope is to begin upgrading and expanding sites with new technology soon



# CALLISTO Update

- Talk presented by C. Monstein
- Available separately

# IPS Network (J. A. Gonzalez-Esparza)

- Japan, India, Russia, Korea, Mexico, LOFAR have IPS capabilities
- Need an international umbrella – ISWI to coordinate and share data
- Request to become a part of ISWI instrument network
- Open access data policy is attractive for the IPS data users
- Space weather tools and products will be developed

**Action:** The Steering Committee unanimously approved the inclusion of the Interplanetary Scintillation (IPS) instruments to the ISWI network

## 6/10. Discussion and approval of the Data Subcommittee Report

- Subcommittee report summarized by Elsayed Talaat (NASA HQ)
- Open Data Policy
- Rules of the Road
- Collaboration with the PIs encouraged
- Standard Acknowledgment to Instrument PI and ISWI
- Instrument PIs to take the policy and rules to the users
- Data policy and rules to be on ISWI website, CRP, newsletters

**Action:** The Steering Committee approved the report from the Data Policy Subcommittee without any change



## 7,8. ISWI – UNOOSA Collaboration (Shafa, Werner)

- Shafa presented the close connection between GNSS activities and their space weather relevance
- Increased cooperation between GNSS and ISWI communities proposed
- Werner presented the Quito (2012) and Fukuoka (2015) resolutions on the continued ISWI activities as part of the UNCOPUOS permanent Space Weather agenda
- The two talks are available separately

## 9. Expert Committee on Space Weather – Summary of the workshop Ian Mann

- Solar Source, Heliospheric propagation, GLC working groups during COSPAR – ILWS Roadmap workshop
- A summary of the work of the Expert Group with a statement to the STSC under the Space Weather agenda item
- Conference room paper (CRP) generated as part of the 53<sup>rd</sup> session of UNCOPUOS/STSC; available as CRP17

11. ISWI School Nov 7-17 2016, Sangli, India



- Advanced lectures by international experts on all aspects of the chain connecting the solar interior to Earth's interior
- Hands-on activities (instruments, data analysis)
- Instrument workshops for potential new ISWI instrument deployments
- Sixty students (40 national, 20 international planned)
- Cosponsored by ISWI, SCOSTEP, ISEE in Japan, Indian educational institutions
- Along the footsteps of many successful schools in Indonesia, Kenya, Peru
- First time to be conducted in a rural area

## 12. ISWI Workshop 2017 – under Discussion

- Kevin Canole, Werner Balogh, Pat Doherty, Elsayed Talaat, and Nat Gopalswamy had a preliminary meeting on Feb 17 in Vienna
- Sep 12-17 2017 seems to be a good period for the workshop
- Albuquerque, New Mexico is a potential venue
- Pat Doherty, as LOC chair, will start exploring the venue and potential cosponsors

## 13. VarSITI Report Katya Georgieva

- Importance of ISWI/SCOSTEP Synergy
- VarSITI general symposium during June 6-10, 2016 in Albena, Bulgaria
- Will feature results of the four VarSITI projects: ROSMIC, SPeCIMEN, SEE, and ISEST/MiniMax24
- VarSITI report available as a separate talk

## 14. Any Other Matter

- Babatunde Rabi presented the inauguration of a new center for atmospheric studies in Nigeria
- The Steering committee meeting will always be held during the first week of the February UNCOPUOS/STSC session
- Thanks to Ms. Sharafat Gadimova for the Steering Committee meeting arrangements
- Thanks to Shing Fung and the Data Policy Subcommittee for the job well done in creating the ISWI open data policy and the Rules of the Road for the data usage from ISWI instruments
- The data policy document will be available as a UNCOUOS/STSC conference room paper, available on ISWI website; publicized via various newsletters