

The following agenda items have been agreed by the Working Group:

Regular Items

- 1) *General exchange of views and introduction of reports submitted on national activities*
- 2) *United Nations Programme on Space Applications*
- 3) *Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)*
- 4) *Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment*
- 5) *Space debris*
- 6) *Space-system-based disaster management support*
- 7) *Recent developments in global navigation satellite systems*

Items to be considered under work plans:

- 8) *Use of nuclear power sources in outer space*
- 9) *Near-Earth objects*
- 10) *International Space Weather Initiative (ISWI)*
 - 2010 *Consider reports on regional and international plans; Encourage continued operation of existing instrument arrays and encourage new instrument deployments;*
 - 2011 *Consider reports on regional and international plans; Identify gaps and synergies in ongoing activities; Encourage continued operation of existing instrument arrays and encourage new instrument deployments;*
 - 2012 *Finalize a report on regional and international plans; Encourage continued operation of existing instrument array, and encourage new instrument deployments.*

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International Space Weather Initiative (ISWI); 2010-2012

2.1) Principles of the Instrument Program

- **The lead scientist** or principle investigator funded by his/her country **provides instrumentation** (or fabrication plans) **and data distribution**
- **The host country provides the workforce, facilities, and operational support** typically at a local university.
- **Host scientists become part of science team**
- **All data and data analysis activity is shared**
- **All scientists participate in publications and scientific meetings** where possible

2.2) ISWI Objectives

- **Develop the scientific insight** necessary to understand the science, and to forecast near-Earth space weather
 - **Instrumentation and data analysis**
 - Expand and continue deployment of new and existing instrument arrays
 - Expand data analysis effort for instrument arrays and existing data bases
 - **Coordinate data products** to provide input for physical modeling (Joint with other more extensive modeling efforts)
 - Input instrument array data into physical models of heliospheric processes
 - **Coordinate data products** to allow predictive relationships to be developed (Joint with Space Weather prediction organizations)
 - Develop data products to allow predictive relationships that enable the forecasting of Space Weather to be established
- **Education**
 - **University and Graduate Schools**
 - Encourage and support space science courses and curricula in Universities that provide instrument support
 - **Public Outreach**
 - Develop public outreach materials unique to the ISWI, and coordinate the distribution

2.3) What is Unique about ISWI?

- **UN Endorsement**
 - Opens new opportunities for collaboration in countries with little/no Space Physics by involving governments and Universities or National Labs
 - Encourages governmental response
 - Allows broad dissemination of information in 6 languages to 192 countries of the UN
- **State Department Involvement**
 - Helps with import/export and technology issues
 - Help with Visas, security, logistics, etc.

2.4) Current US Instruments (Feb 2009)

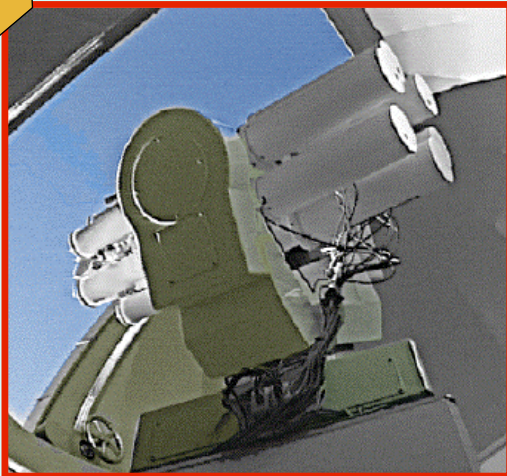
ID	INSTRUMENT	Lead Scientist	Country	Objective
1	Scintillation Network Decision Aid (SCINDA)	K. Groves (Hanscom AFRL)	USA	Study equatorial ionospheric disturbances to aid in the specification and prediction of communications degradation due to ionospheric scintillation in the earth's equatorial region
2	Coherent Ionospheric Doppler Radar (CIDR)	T. Garner (U Tex)	USA	To tomographically reconstruct the ionosphere and to provide input to Data Assimilation models
3	Atmospheric Weather Education System for Observation and Modeling of Effects (AWESOME) and SID (Sudden Ionospheric Disturbance Monitor)	U. Inan and D. Scherrer (Stanford)	USA	Lightning, sprites, Elves, relation to terrestrial Gamma Ray flashes , whistler induced electron precipitation, conjugate studies,
4	Remote Equatorial Nighttime Observatory for Ionospheric Regions (RENOIR)	J. Makela (U Illinois)	USA	Study the equatorial/low-latitude ionosphere/thermosphere system, its response to storms, and the irregularities that can be present on a daily basis.
5	African GPS Receivers for Equatorial Electrodynamics Studies (AGREES)	M. Moldwin and E. Yizengaw (UCLA)	USA	Understand unique structures in equatorial ionosphere, low/mid latitude plasma production, effect of ionospheric and plasmaspheric irregularities on communications
6	African Meridian B-field Education and Research (AMBER)	M. Moldwin and E. Yizengaw (UCLA)	USA	Understand low latitude electrodynamics, ULF pulsations, effect of Pc5 ULF on MeV electron population in inner radiation belts

2.4)-2 Current Non-US Instruments (Feb 2009)

ID	INSTRUMENT	Lead Scientist	Country	Objective
7	Compound Astronomical Low-cost Low-frequency Instrument for Spectroscopy and Transportable Observatory (CALLISTO)	A. Benz and C. Monstein (ETH-Zentrum)	Switz	Study the magnetic activity of a wide range of astrophysical objects with emphasis on the Sun and cool stars
8	South Atlantic Very Low frequency Network (SAVNET)	J.-P. Raulin (U Presbiteriana)	Brazil	Study of the SAMA region at low ionospheric altitudes and its structure and dynamics during geomagnetic perturbations
9	Magnetic Data Acquisition System (MAGDAS)	K. Yumoto (Kyushu U)	Japan	Study of dynamics of geospace plasma changes during magnetic storms and auroral substorms, the electro-magnetic response of iono-magnetosphere to various solar wind changes, and the penetration and propagation mechanisms of DP2-ULF range disturbances
10	African Dual Frequency GPS Network	C. Amory-Mazaudier (CETP/CNRS)	France	To increase the number of real-time dual-frequency GPS stations worldwide for the study of ionospheric variability, response of the ionospheric total electron content (TEC) during geomagnetic storms over the African sector.
11	Space Environment Viewing and Analysis Network (SEVAN)	A. Chillingarian (Aragats)	Armenia	To improve short and long-term forecasts of dangerous consequences of space storms
12	Global Muon Detector Network (GMDN)	K. Munakata (Shinsu U)	Japan	To identify the precursory decrease of cosmic ray intensity that takes place more than one day prior to the Earth-arrival of shock driven by an interplanetary coronal mass ejection
13	Continuous H-alpha Imaging Network (CHAIN)	K. Shibata, S. Ueno (Kyoto U)	Japan	Solar activity, flares, filaments, filament eruptions
14	Optical Mesosphere Thermosphere Imager (OMTIs)	K. Shiokawa (Nagoya U)	Japan	Dynamics of the upper atmosphere through nocturnal airglow emissions

3.1) CHAIN Network

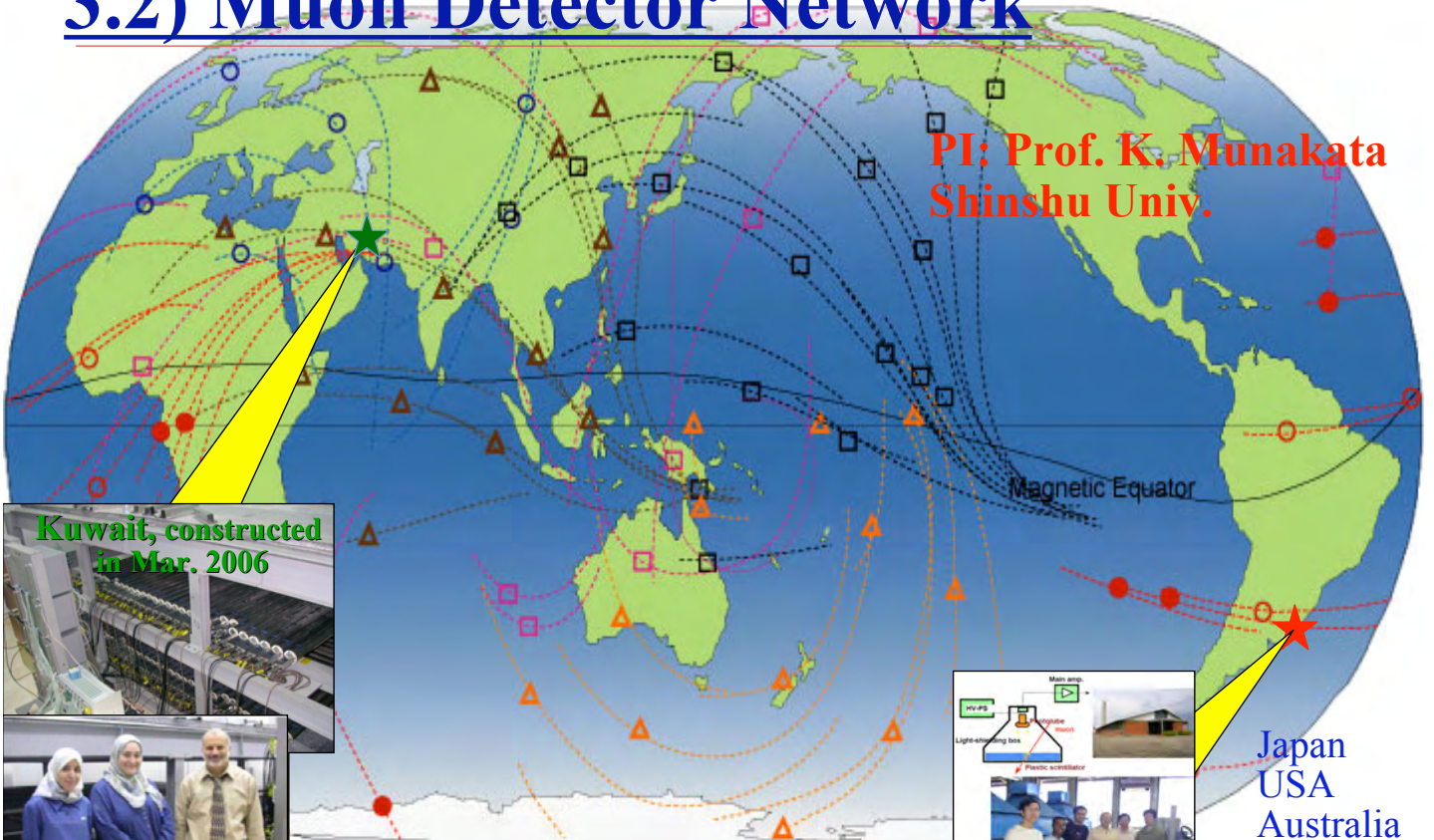
(Ground-based H-alpha imaging observation)



PI: **Dr. S. Ueno and Prof. K. Shibata**
 Kwasan and Hida Observatories,
 Kyoto University, Japan

Continuous H-alpha Imaging Network (CHAIN) project was planned to monitor solar flares and erupting filaments continuously by using several of characteristic telescopes. As part of CHAIN project, Peru is selected as the country where the 1st overseas Flare Monitoring Telescope (FMT) will be installed.

3.2) Muon Detector Network



PI: **Prof. K. Munakata**
 Shinshu Univ.



Consisting of 9 institutes from 7 countries.

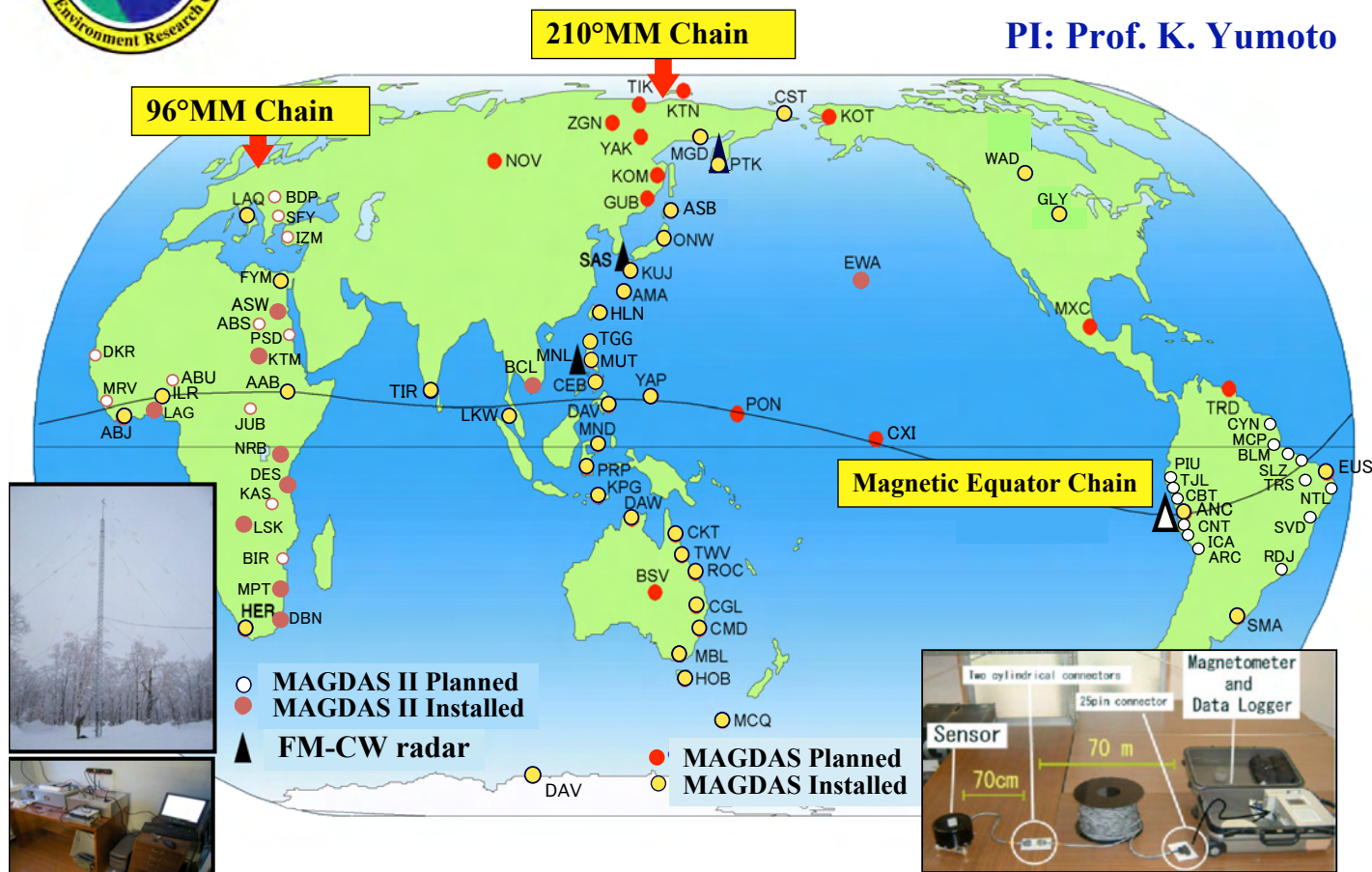
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- Aragats
- △ Kuwait
- Greifswald

- Japan
- USA
- Australia
- Brazil
- Kuwait
- Armenia
- Germany



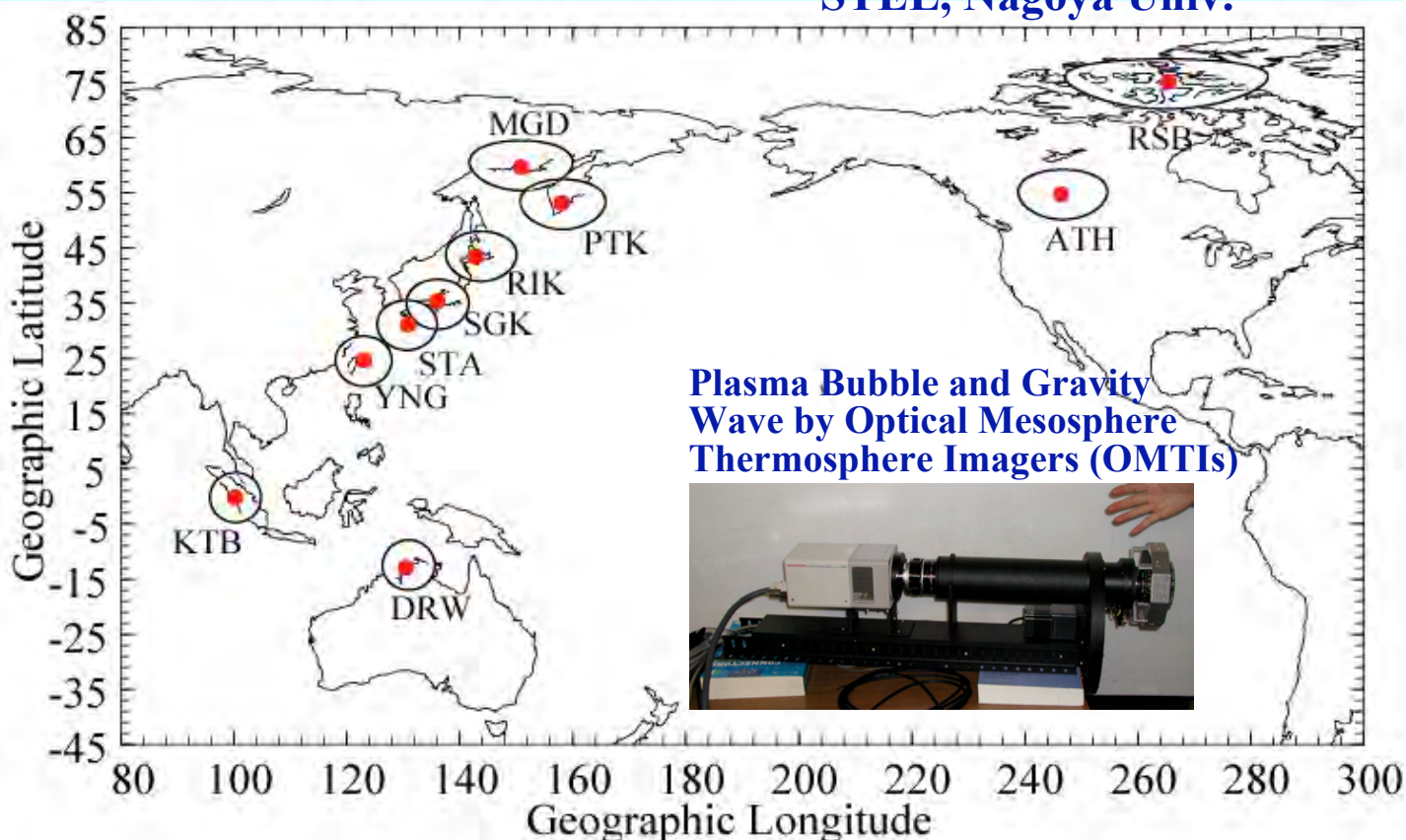
3.3) MAGDAS (MAGnetic Data Acquisition System) Network at SERC, Kyushu Univ.

PI: Prof. K. Yumoto



3.4) OMITs Network

PI: Dr. K. Shiokawa
STEL, Nagoya Univ.



homepage: <http://stdb2.stelab.nagoya-u.ac.jp/omti/index.html>