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# Mexican Space Weather Service (SCIESMEX)

J. Americo González-Esparza

UNAM, Mexico

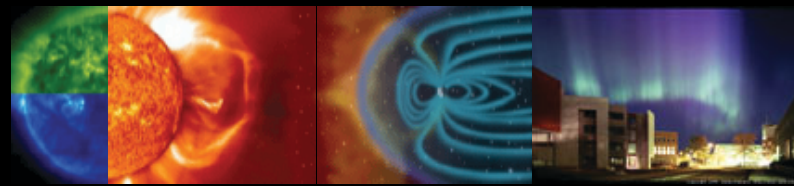


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# Talk Outline

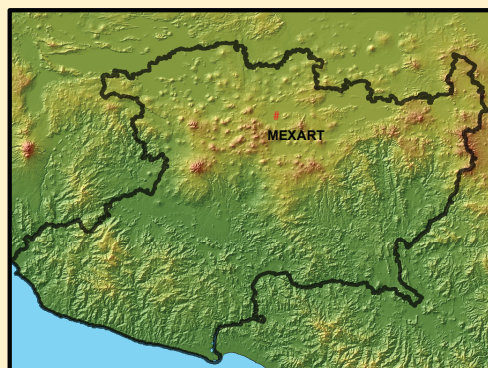
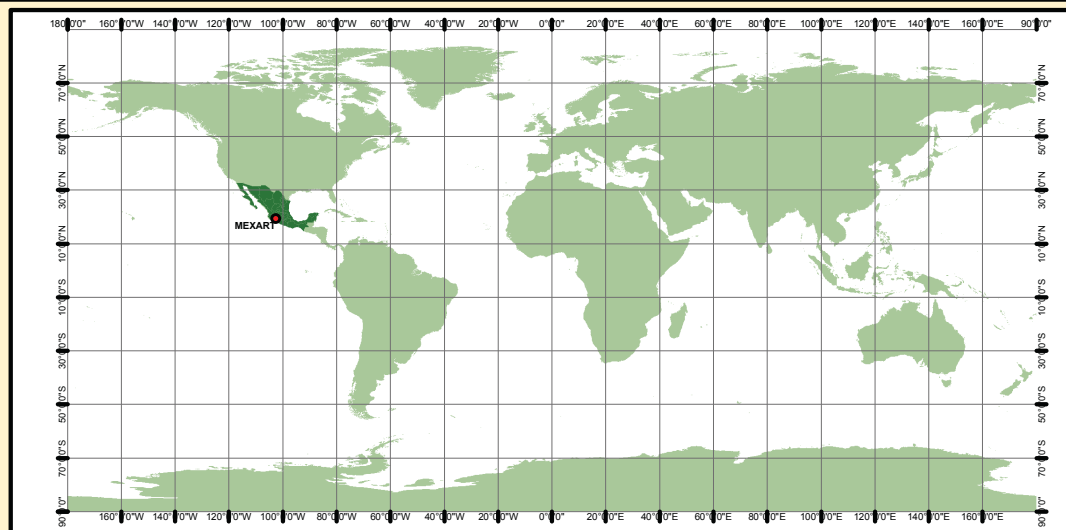
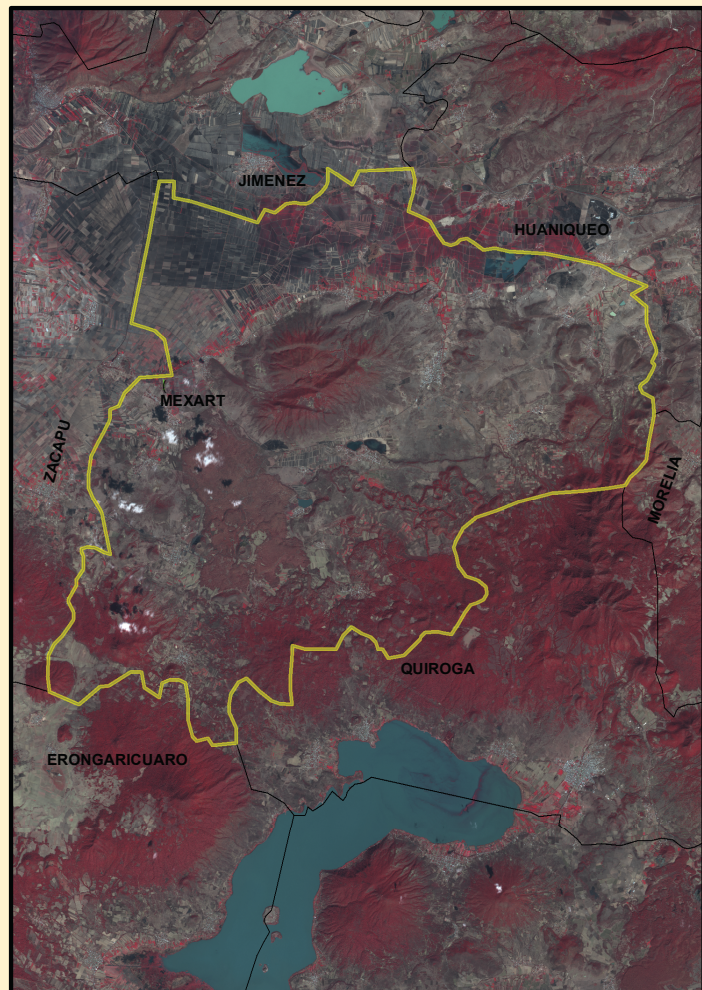
1. Motivation
2. Geographic location
3. Organization chart
4. Aims and products
5. Observatories and ground instruments
6. Social networks
7. Workshop on Space Weather and Remote Sensing of the Inner Heliosphere, October 2015.



# Motivation

- Recent modifications to the General Civil Protection Law (June, 2014)
- Creation of the Mexican Space Agency (AEM) (2013)
- UNOOSA recommendations on Space Weather observations and studies
- Expertise of the Geophysics Institute UNAM operating critical national services (e.g. Seismological National Service, National Marine Condition Service, Geomagnetic Service)

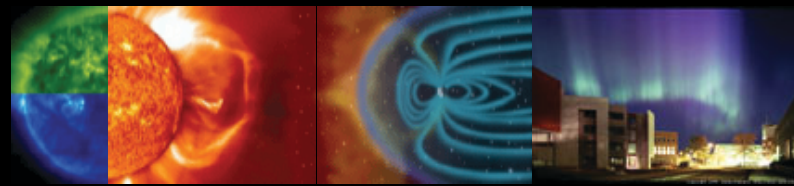
# Geographic location: Servicio de Clima Espacial Mexico (SCiESMEX) Mexican Space Weather Service



Mapa de ubicación Geográfica del MEXART.



# Organization Chart



National Autonomous University of Mexico (UNAM)

Institute of Geophysics

National Seismological Service

Magnetic Service

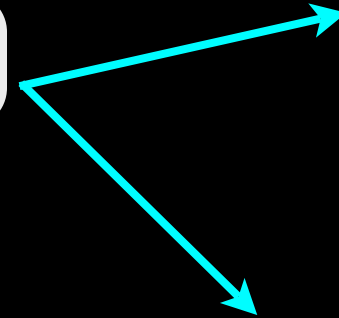
National Marine Conditions Service

Space Weather Service SCIESMEX

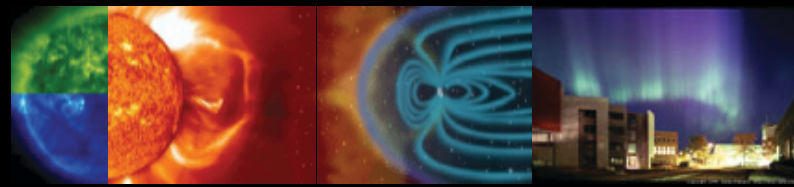
Ministry of Interior Affairs

National Service of Civil Protection

Mexican Space Agency (AEM)



# Aims



- To unify and combine data of the UNAM network of ground based instruments studying different aspects of the solar-terrestrial relations
- To incorporate our instruments to international networks sharing data in near real time
- To participate in international organizations: ISES and ISWI
- To emit alerts in social networks to inform to the general public, governmental, private and military dependencies of possible effects on the Earth's environment due to solar activity
- Space weather studies within the Mexican territory
- Observations and research in space physics
- Outreach and educational activities



<http://www.mexart.unam.mx>

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sciesmex.unam.mx

Universidad Nacional Autónoma de México

**SCIESMEX**  
Servicio de Clima Espacial - MX

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Inicio Tiempo Real Alertas Significado de Alertas Observatorio Virtual (VESO) Reportes Modelos Divulgación

Galería

**SCIESMEX**

**Servicio de Clima Espacial - México**

El Servicio de Clima Espacial - México [SCIESMEX] es uno de los servicios que brinda la Universidad Nacional Autónoma de México (UNAM) para coordinar el intercambio de información entre las redes internacionales de Clima Espacial (ISES) y

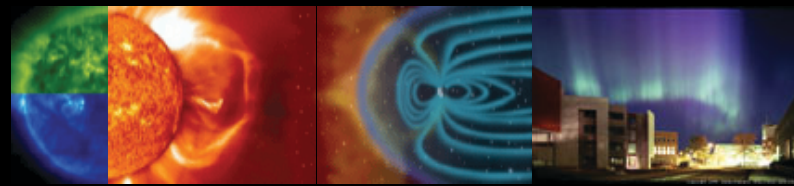
**Tweets**

**SCIESMEX / UNAM MX** @SCIESMEX  
Información de la reunión de la @UNOOSA se puede encontrar Follow #COPUOS + #STSC bit.ly/1LyZPTW

**SCIESMEX / UNAM MX** @SCIESMEX  
Está iniciando la sesión del comité científico técnico de la @UNOOSA en Viena  
[pic.twitter.com/08avRBkHDL](http://pic.twitter.com/08avRBkHDL)



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## UNAM Current Ground Based Instruments

- MEXART observatory / IPS radiotelescope
- Geomagnetic Observatory (Teoloyucan and MEXART site)
- GPS stations (Juriquilla, MEXART, etc.)
- Schumann resonance station (MEXART site)
- Callisto antenna (MEXART site)
- Cosmic Rays Observatory (Mexico City and Sierra Negra)



CA



## MEXART

IPS Radiotelescope to track solar wind disturbances within 1 AU

location: Michoacan

electromagnetic flux at 140 MHz

24 hours operation

16 channels sampling 100 times

per second

size per channel: 14 Mbytes

VESO data:

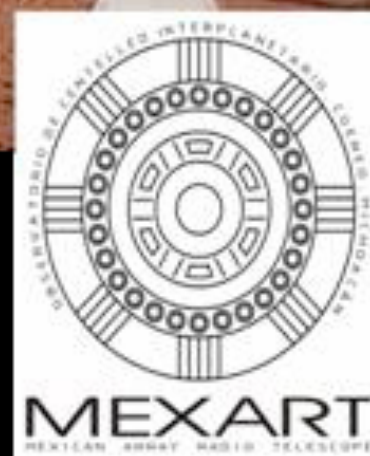
radiation flux versus time

g-maps (solar wind density variations)

solar wind velocity-maps

platform: Linux

MEXICAN ARRAY  
RADIO TELESCOPE



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## Cosmic Rays Observatory

Forbush decreases associated with interplanetary disturbances

location: Mexico City

flux of high energetic particles

24 hours operation

sampling:

1 channel 1 sample every 5 min

size per channel: 15 Kbytes

VESO data:

particle flux versus time

platform: Linux



Observatorio de Rayos C3smicos-UNAM



## SciCRT (Scintillator Cosmic Ray Telescope)

location: Sierra Negra





## TEO: Teoloyucan Geomagnetic Observatory INTERMAGNET station

location: Teoloyucan, Edo. de México

data: vector geomagnetic field

operation: 24 hours

sampling 7 channels 12 times  
per minute

size per channel: 100 Kbytes

VESO data:

geomagnetic field magnitude

versus time

platform: WinXP/Linux

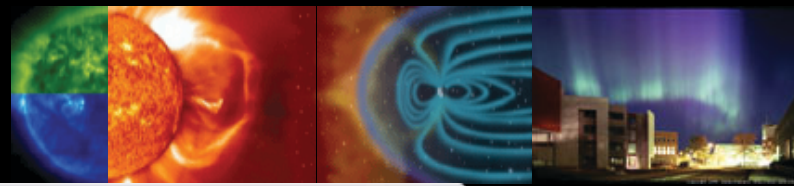
United Nations Committee on the Peace  
Technical Subcommittee (STSC), Febr





SCI  
Servicio

# Facebook: SCIESMEX



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PERSONAS

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405 Me gusta

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Invita a tus amigos a que indiquen que les gusta S...

Ana Claudia Nepote Invitar

Blanca Ramirez Invitar

Estado Foto/video Oferta, evento +

¿Qué estuviste haciendo?

SCIESMEX hace 7 horas

Retweeted GalileoMobile (@galileomobile):

Getting ready! RT@UNOOSA Schedule of work for today #STSC #COPUOS & general exchange of views + COSPAR Symposium on 'Measuring the universe'

8 personas alcanzadas

Reciente

2015

Fundación

Ve tu anuncio aquí

SCIESMEX  
Servicio de Clima Espacial MX  
/ IGEOF-UNAM (mexican space weather service)

Me gusta · A 405 personas les gusta esta página

Promocionar página



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Twitter @sciesmex



SCiESMEX Twitter profile page. The header shows the profile picture, name, and bio. The bio includes the organization's name, location, and website. The page displays a list of tweets, including a retweet from GalileoMobile and a tweet from Remco Timmermans about the STSC meeting.

**SCiESMEX**  
Servicio de Clima Espacial - MX

**SCiESMEX / UNAM MX**  
@SCiESMEX

Servicio de Clima Espacial-MX / Space Weather Service-MX / SCiESMEX, Instituto de Geofísica, Unidad Michoacán, Universidad Nacional Autónoma de México

IGEF, UNAM, México  
[facebook.com/sciesmex/](https://facebook.com/sciesmex/)

58 fotos y videos

**Tweets**   Tweets y respuestas   Fotos y videos

SCiESMEX / UNAM MX ha retwitteado  
**GalileoMobile** @galileomobile · 8 h  
Getting ready! RT@UNOOSA Schedule of work for today #STSC #COPUOS & general exchange of views + COSPAR Symposium on 'Measuring the universe'

SCiESMEX / UNAM MX ha retwitteado  
**Remco Timmermans** @timmermansr · 8 h  
The @unoosa #COPUOS #STSC meeting has started. Full house!



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## Next steps:

- We will upgrade the VESO server to improve the virtual observatory to conserve and distribute our observations
- We will improve the URL Space Weather Service
- We will establish international collaborations





# Workshop on Space Weather and Remote Sensing of the Inner Heliosphere / October 2015 / Morelia, Mexico

