



A G E N D A

PRE-FORUM SCIENCE DAY

22 September 2025 Monday (8:30 AM – 4:45 PM);
UML Wannalancit Building Room 305, 600 Suffolk St, Lowell, MA 01854, USA

08:30 Science Day participant registrations

09:00 100 Years of Imaging the Ionosphere with Ionosondes: Historical perspective and prospective insight

Ivan Galkin et al.

09:25 Investigation of the relationship between earthquakes and ionosonde data - a framework and workflow for analysis

Karl Kappler et al. (online)

09:50 Research activities in Cyprus relevant to the Digisonde community

Haris Haralambous et al.

Coffee Break 15 min

10:30 AI-powered Forecast of TID Activity

Claudio Cesaroni et al.

10:55 Ionosphere nowcast in collaboration of GIRO and COSMIC GNSS RO sensor networks

Iurii Cherniak et al. (online)

11:20 F2 layer Peak Density Thickness Measurements via Incoherent Scatter Radars

Mohamed Osman et al.

Lunch Break

14:00 Radio-quiet ionosonde observations for HF absorption monitoring

Tobias Verhulst et al.

14:25 Modeling ionospheric peak density NmF2 with science applications

Larisa Goncharenko, Dupinter Singh, et al.

14:50 Storm-Time Dynamics of Equatorial Plasma Bubbles During the January 2025 Geomagnetic Storms over the American Sector

Giorgio Picanço et al.

Coffee Break 15 min

15:30 Global sporadic-E observations from ionosondes and GNSS radio occultation

Daniel Emmons et al.

15:55 Reconstruction of the D-region from ionosonde traces using GPSII assimilative model

Sergey Fridman et al.

16:20 Deep Learning the Ionospheric Weather

Maria Graciela Molina et al. (online)

DAY TWO: International GIRO Forum (1)

**23 September 2025 Tuesday (8:30 AM – 3:00 PM);
UML Wannalancit Building Room 305, 600 Suffolk St, Lowell, MA 01854, USA**

SECTION 1 FORUM REGISTRATION AND OPENING PRESENTATIONS

Time	Topic	Presenter
0830	GIRO Forum Registration at UML Wannalancit Building, 600 Suffolk Street, Room 305	Attendees
0845	Digisonde then and now: Announcing Digisonde 25	Ryan Hamel
0915	Global Ionosonde Observation/Operation Network (GION), a United Nations multi-agency advisory committee	Ivan Galkin
0930	GIRO member roundtable	Attendees
0945	Realistic Ionosphere (RION): review of science data products and associated services	Ivan Galkin
1015	Coffee Break	

SECTION 2 UNDER THE HOOD OF DIGISONDE

Time	Topic	Presenter
1030	Built-in Test capability in 4D and 25	Ryan Hamel
1050	Troubleshooting Digisonde: where to look	Ryan Hamel
1120	Common mistakes of Digisonde programming	Ryan Hamel
1140	Protecting your Digi from harm: grounding and lightning fuses	Ryan Hamel
1200	Lunch	

1300	System security, use of Containers, software configurations	Ryan Hamel
1320	Tools for manual and automated monitoring of digisonde data quality	Ivan Galkin
1340	Scheduling Digisonde Operations	Ryan Hamel
1400	Synchronizing DPS4D for oblique-incidence (IO) sounding, including OI ionograms and “D2D for TID”	Ryan Hamel
1415	Enabling ADRES in SAO Explorer	Ivan Galkin

SECTION 3

INTELLIGENT SYSTEMS SOFTWARE

Time	Topic	Presenter
1430	ARTIST 5 and plans for 6	Ivan Galkin
1445	Let’s welcome LOIA to the family!	Ivan Galkin
1515	Coffee break	
1530	HF signal raytracing on GPU: RayTRIX-CQP for LOIA and beyond	Matthew Petrin

Social Event from 1900 at LaBelle Winery

DAY THREE: International GIRO Forum (2)

**24 September 2025 Wednesday (8:30AM – 5:00PM);
UML WAN Room 305, 600 Suffolk St, Lowell, MA 01854, USA and
LDI 175 Cabot St (Suite 200) Lowell, MA 01854, USA**

SECTION 4

SCIENCE MEGA-PROJECTS WITH DIGISONDE

Time	Topic	Presenter
0830	TechTIDE: multi-instrument TID detection, evaluation, and mitigation	Ivan Galkin
0845	T-FORS: using Deep Learning to forecast TID activity	Ivan Galkin
0900	DISPEC: high-quality ionosonde data products	Ivan Galkin
0915	PITHIA-NRF: mega-scale data infrastructure at EGI	Ivan Galkin
0930	GI-FORS: Forecasting the Ionosphere by Historical Analogy	Ivan Galkin
0945	Coffee Break	

SECTION 5

LOWELL GIRO DATA CENTER

1000	Advanced data analysis: Fleet of Explorer Workstations	Ivan Galkin
1030	Maximizing “Experience Index” of GIRO services, web pages, and APIs	Ivan Galkin
1045	Facilitating OI sounding by automated scheduling of Digisonde operations	Ryan Hamel
1100	Data Dissemination: Rules of the Road	Ivan Galkin

1115 Next Generation DIDBase Ivan Galkin

1130 Ionosonde Data Acquisition for Rescue (IDAR) to AWS cloud Ivan Galkin

1200 Lunch

*Change of location to Lowell Digisonde International,
Wannalancit Building, 175 Cabot Street, Suite 200*

1330	Site visit to Lowell Digisonde International (Wannalancit building on 175 Cabot Street) including wine and cheese reception	Lowell Digisonde International
1400	Working Group Session 1 (see Appendix A)	Lowell Digisonde International
1500	Working Group Session 2	Lowell Digisonde International
1600	Working Group Session 3	Lowell Digisonde International

1700 Adjourn

DAY FOUR: International GIRO Forum (3)

**25 September 2025 Thursday (8:30 AM – 5:00 PM);
UML WAN Room 305, 600 Suffolk St, Lowell, MA 01854, USA and
LDI 175 Cabot St (Suite 200) Lowell, MA 01854, USA**

Time	Topic	Presenter
0830	Upgrade Path to Digisonde 25	Ryan Hamel
0835	Receive-only Digisonde 25R	Ryan Hamel
0845	SAO 6 standard for ionosonde data dissemination	Ivan Galkin
0900	Ionospheric Disturbance Indicator (IDI) from ionograms and skymaps	Ivan Galkin
0915	Reserved for additional topics TBD	

1015	Path Forward: What additional features/products/services would you like to get from Digisonde and GIRO?	Participants
1100	Closing Remarks and Certificates of Completion	Ivan Galkin

1300	Working Group Session 4	Lowell Digisonde International
1400	Working Group Session 5	Lowell Digisonde International
1500	Working Group Session 6	Lowell Digisonde International
1600	Working Group Session 7	Lowell Digisonde International

DAY FIVE: International GIRO Forum (4)

**26 September 2025 Friday (8:30 AM – 12:00 PM);
LDI, 175 Cabot St (Suite 200) Lowell, MA 01854, USA**

0900	Working Group Session 8	Lowell Digisonde International
1000	Working Group Session 9	Lowell Digisonde International
1100	Working Group Session 10	Lowell Digisonde International

Appendix A: Working Group Offerings

TOPIC	CURATOR
Digisonde 25	Ryan Hamel
Observatory Site Preparation	Ryan Hamel
DPS Troubleshooting and Maintenance	Ryan Hamel
Signal Processing	Ryan Hamel
Digisonde 25 Feature Request 1	Ryan Hamel
Digisonde 25 Feature Request 2	Matthew Petrin
Use of GPU for HF signal propagation modeling	Matthew Petrin
SAO Explorer 1	Ivan Galkin
SAO Explorer 2	Steve Mendonca
ARTIST 5	Ivan Galkin

TOPIC	CURATOR
VI+OI ionogramming with ARTIST and LOIA	Ivan Galkin
DIDBase with ADRES	Ivan Galkin
Drift Explorer	Ivan Galkin
LGDC Data Services via Web Portal	Ivan Galkin
GAMBIT Explorer	Ivan Galkin
DCART Operation	Ryan Hamel
Oblique sounding setup	Ryan Hamel
Oscillator Tuning Demo	Ryan Hamel