

UAE Space Agency Space Debris Management R&D Activities

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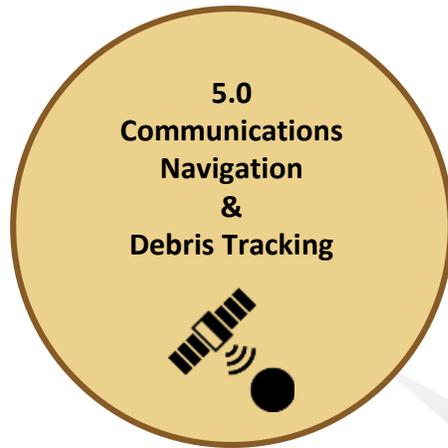
Science Technology & Innovation Areas

 <p>1.0 Launch Propulsion Systems</p>	 <p>6.0 Human Health, Life Support, and Habitation Systems</p>	 <p>11.0 Modeling, Simulation, IT & Processing</p>	 <p>16.0 Life and Physical Sciences</p>
 <p>2.0 In-Space Propulsion Technologies</p>	 <p>7.0 Human Exploration Destination Systems</p>	<p>12.0 Materials, Structures, Mechanical Systems, and Manufacturing</p>	 <p>17.0 Satellite Technologies and Techniques</p>
 <p>3.0 Space Power and Energy Storage</p>	 <p>8.0 Science Instruments, Observatories & Sensor Systems</p>	 <p>13.0 Ground and Launch Systems Processing</p>	 <p>18.0 Ground Station Systems and Networks</p>
 <p>4.0 Robotics and Autonomous Systems</p>	 <p>9.0 Entry, Descent, and Landing</p>	 <p>14.0 Thermal Management Systems</p>	
 <p>5.0 Communications, Navigation, and Debris Tracking</p>	 <p>10.0 Nanotechnology</p>	 <p>15.0 Software and Applications</p>	



Science Technology & Innovation Areas

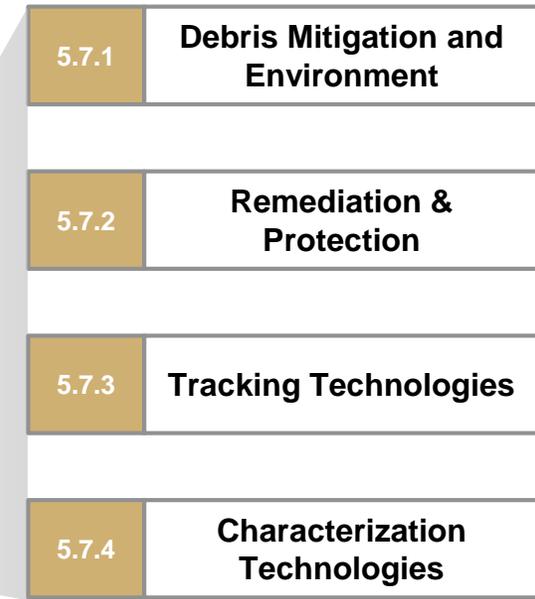
ST&I Area (Level 1)



ST&I Components (Level 2)

5.1	Optical Communication & Navigation
5.2	RF Communications
5.3	Internetworking
5.4	Position, Navigation, & Timing
5.5	Integrated Technologies
5.6	Revolutionary Concepts
5.7	Orbital Debris Tracking & Characterization

ST&I Sub-Component (Level 3)



The diagram shows a grey arrow pointing from the Level 2 component '5.7 Orbital Debris Tracking & Characterization' to a vertical stack of four sub-components.

5.7.1	Debris Mitigation and Environment
5.7.2	Remediation & Protection
5.7.3	Tracking Technologies
5.7.4	Characterization Technologies



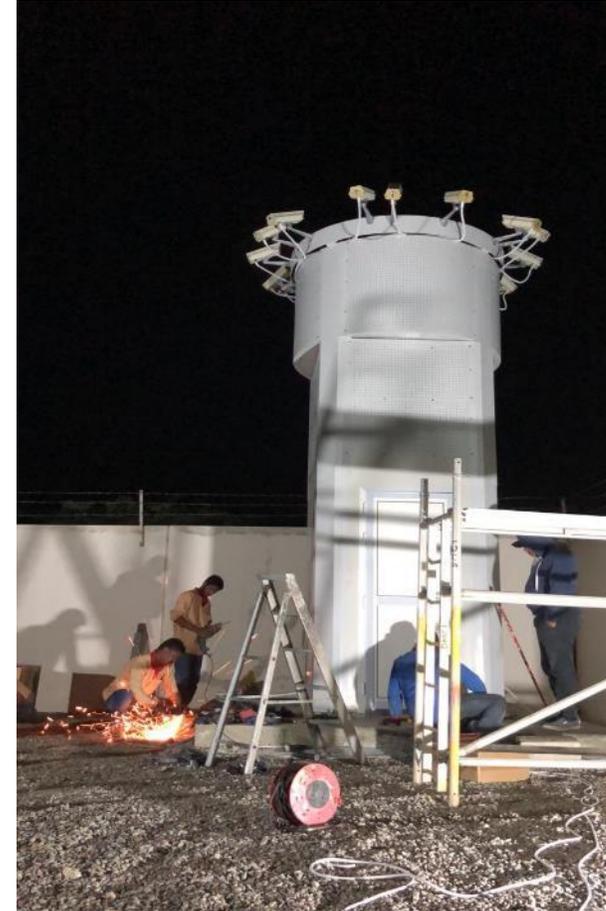
Meteor Monitoring Network



Sharjah



Liwa



Al Ain

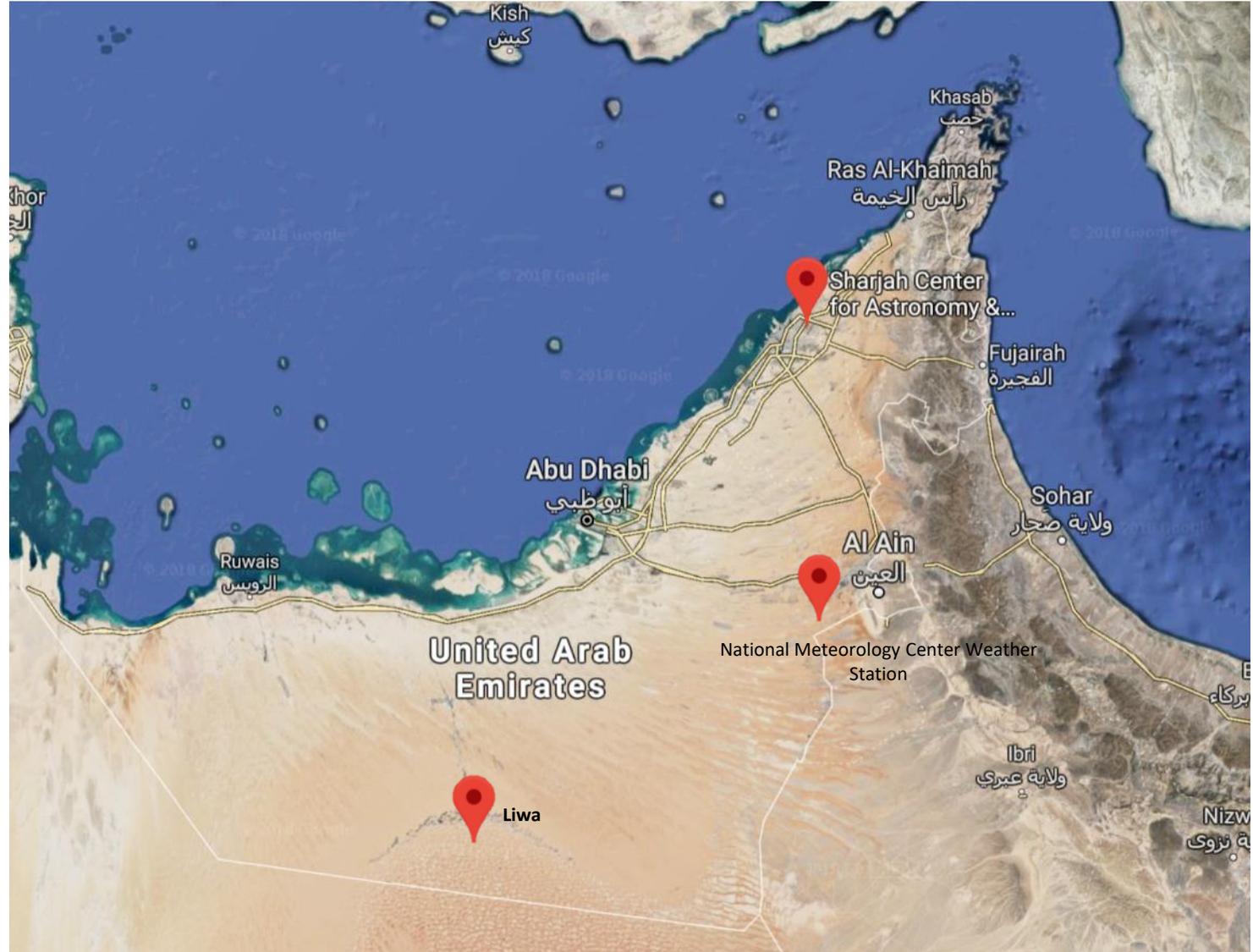




Tower Locations

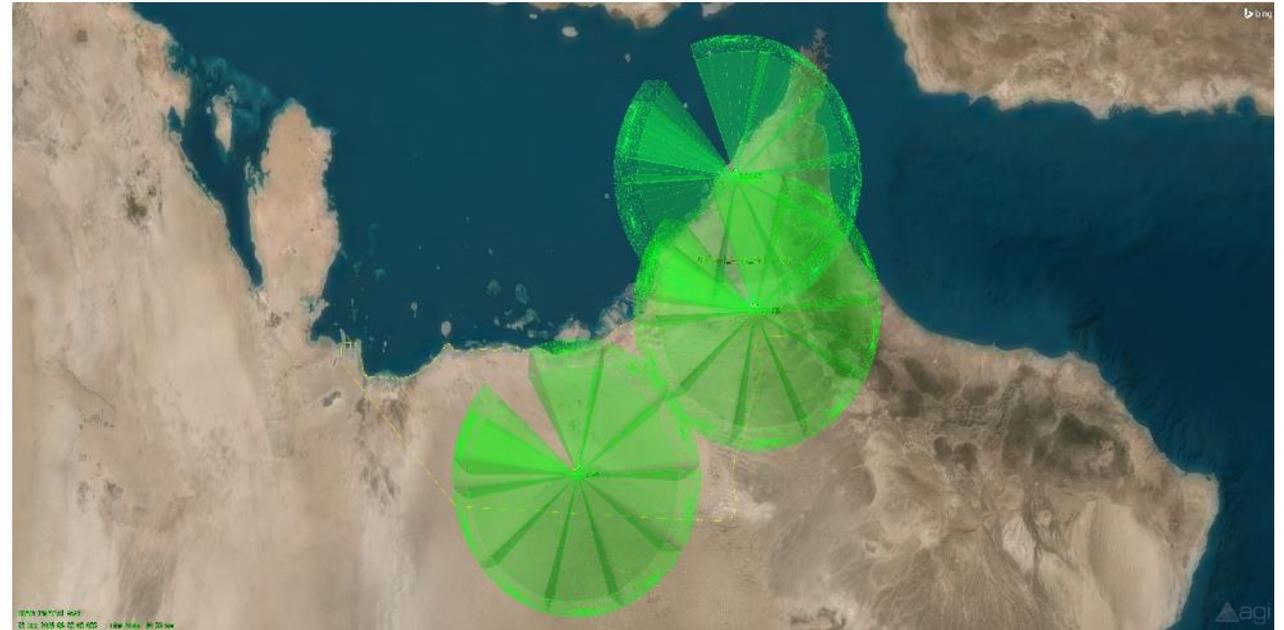


جامعة الشارقة
UNIVERSITY OF SHARJAH



Primary Objectives

- Capture images & video of debris or meteors entering the atmosphere
- Predict possible impact location
- Collect, analyze & classify meteorites
- Train students in analytical techniques & planetary science
- Educate the public



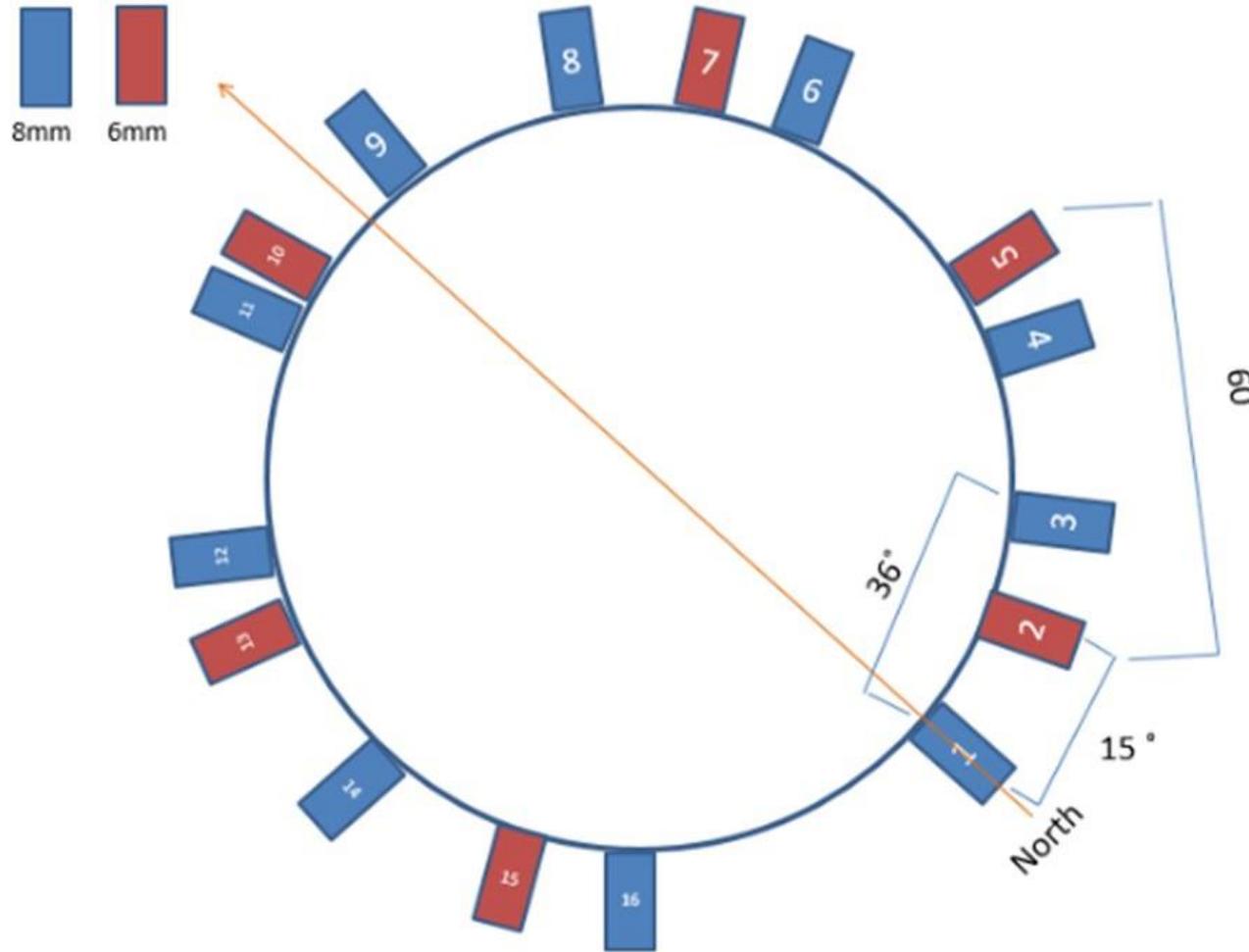
Camera Equipment



- 6mm
- 8mm
- Wide-Field



Tower Configurations



Camera No.	ALT	AZ	Lens
1	35	0	8mm
2	50	345	6mm
3	35	300	8mm
4	35	288	8mm
5	50	285	6mm
6	35	252	8mm
7	50	225	6mm
8	35	216	8mm
9	35	180	8mm
10	50	165	6mm
11	35	144	8mm
12	35	108	8mm
13	50	105	6mm
14	35	72	8mm
15	50	45	6mm
16	35	36	8mm
17	90	0	2.2mm





- UFO Capture
- UFO Analyzer
 - Video & Photo Analysis
 - Area of Possible Landing
- UFO Orbit
 - Orbit computation of meteors that were observed by multiple stations



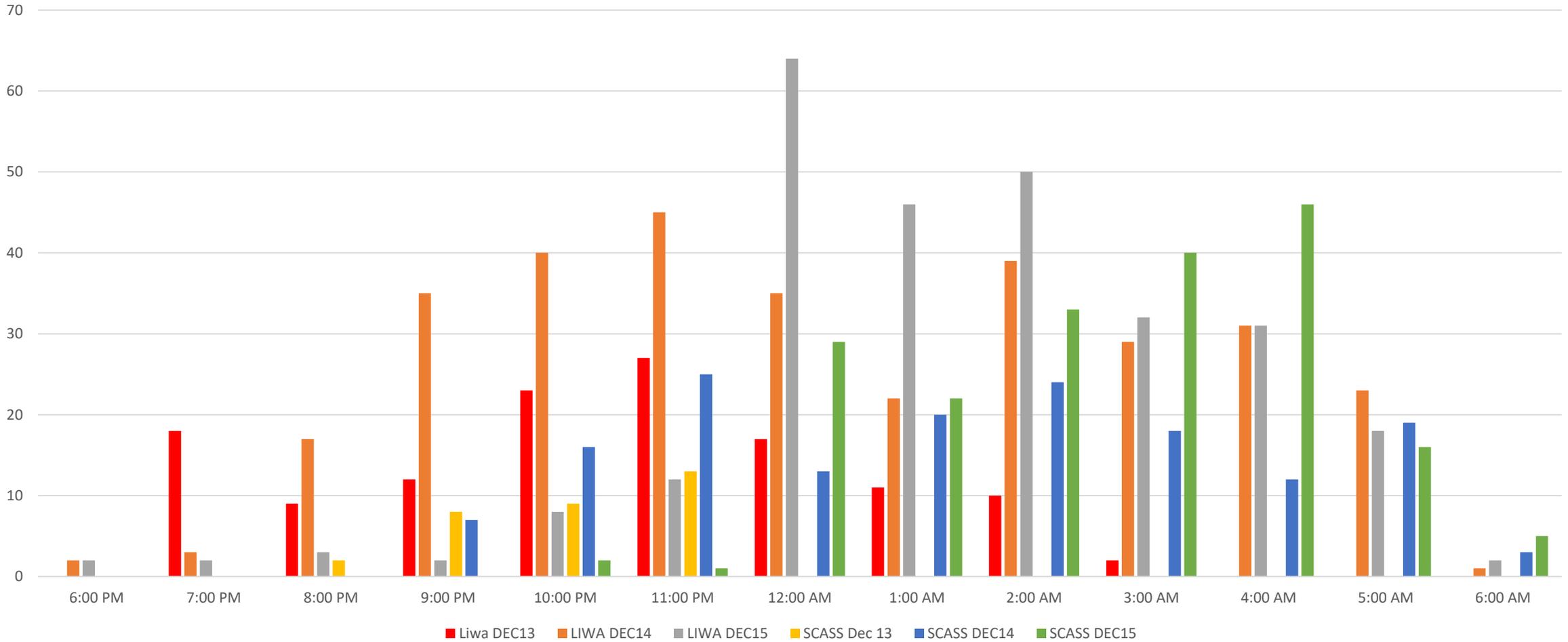
Meteor Detection Images





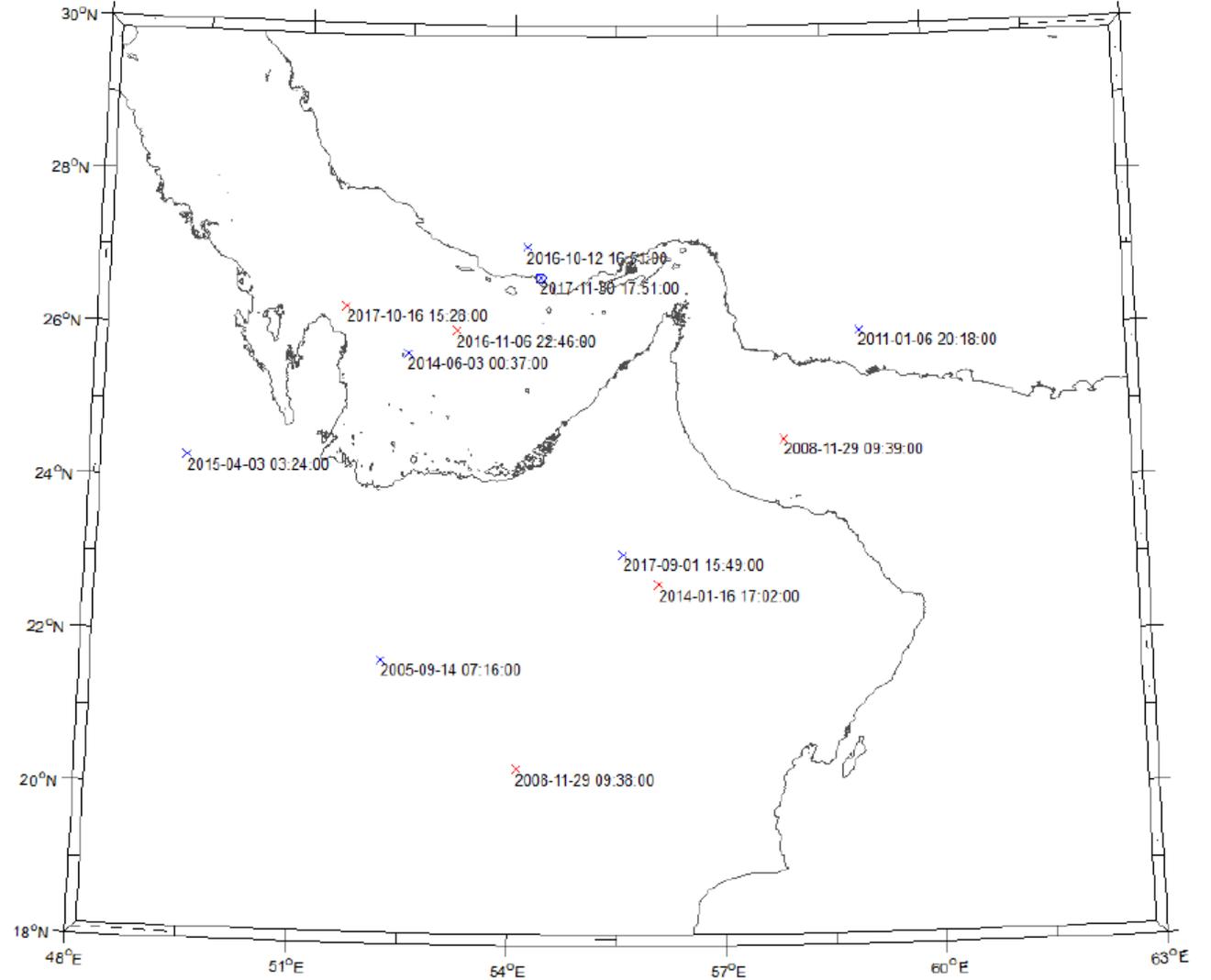
Meteor Shower - Geminids

Number of meters per hour - By location



Astronomy Center Related Activities

- Identification
- Tracking
- Searching with Drones
- Analysis



Team Members



- **UAESA Project Coordinator:** Mubarak Al Ahbabi
- **Supervisor:** Dr.Ilias Fernini
- Mohamed Talafha
- Ridwan Fernini
- Aisha AlOwais
- Issam Abu Jami
- Shahab Zarafshan
- Masa AlAaser
- Maryam AlSharif
- Akhmad Hassan Ahmad
- Yousef Eisa Yousef



وكالة الإمارات للفضاء
UAE SPACE AGENCY



Thank You

