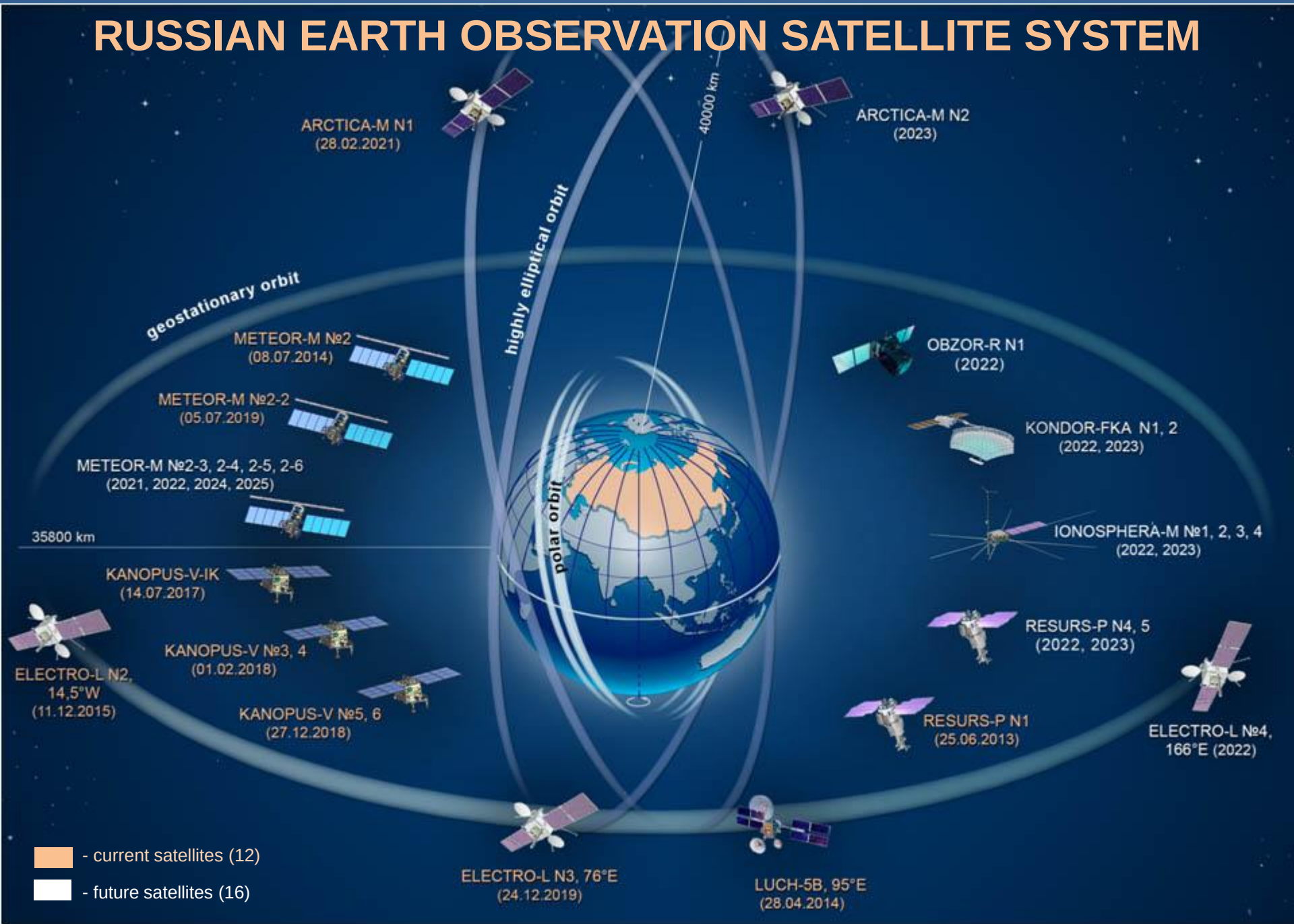
STATUS OF CURRENT AND FUTURE RUSSIAN METEOROLOGICAL SATELLITE SYSTEMS

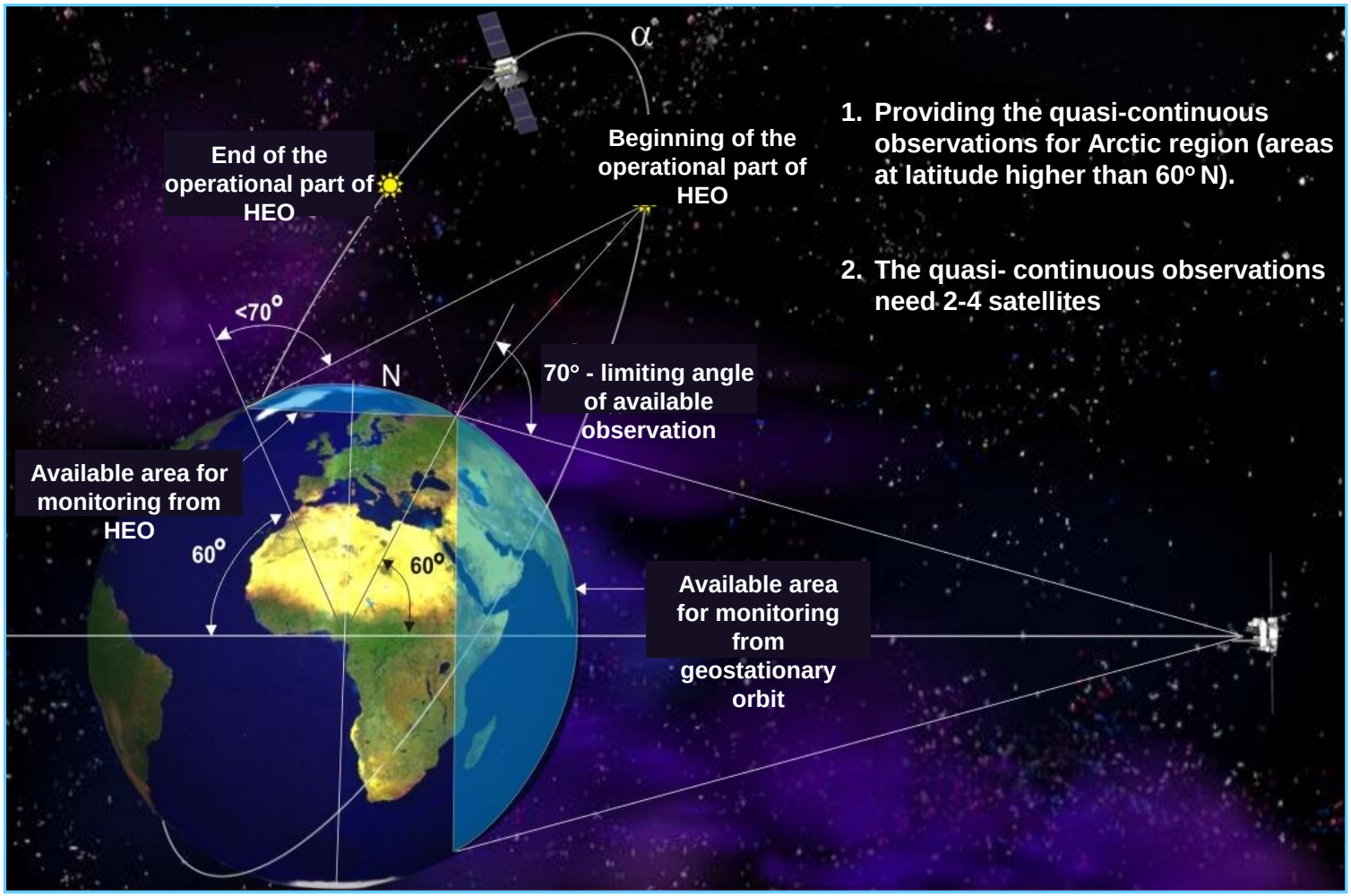
by Roscosmos / Roshydromet

Presented to CGMS-49 plenary session

RUSSIAN EARTH OBSERVATION SATELLITE SYSTEM

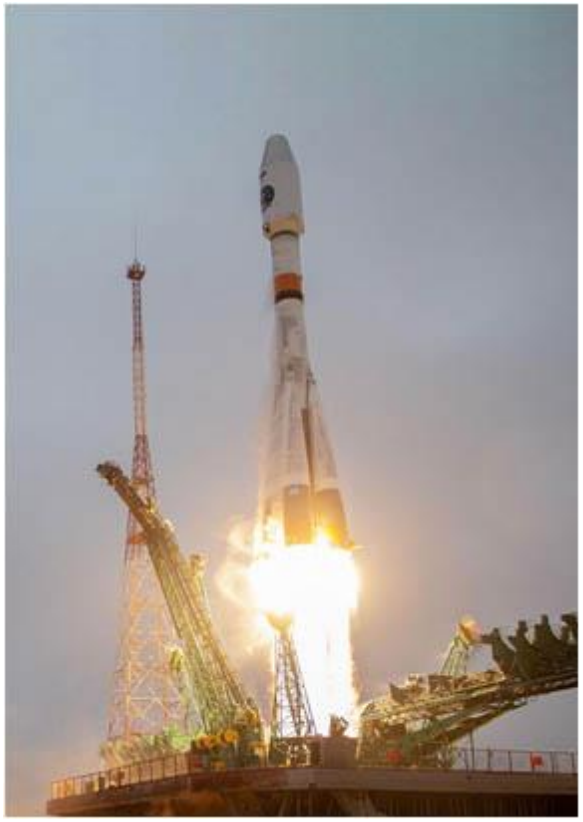


Highly Elliptical Orbits (HEO) for Arctic Observations



1. Providing the quasi-continuous observations for Arctic region (areas at latitude higher than 60° N).
2. The quasi- continuous observations need 2-4 satellites

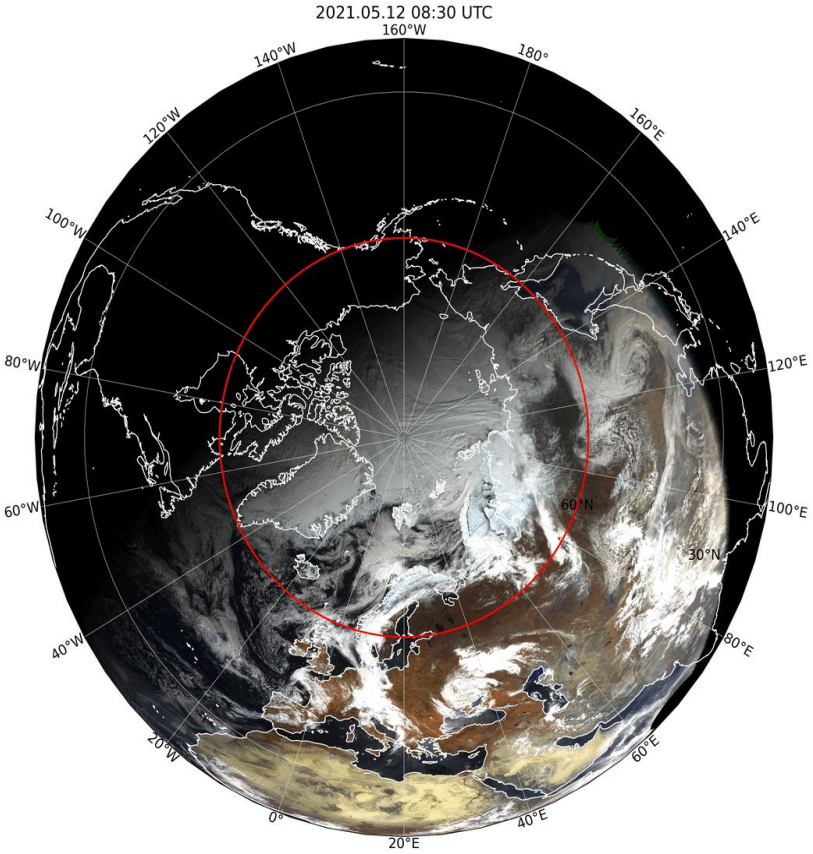
Arctica-M N1: Meteorological Satellite in HEO ("Molniya" orbit)



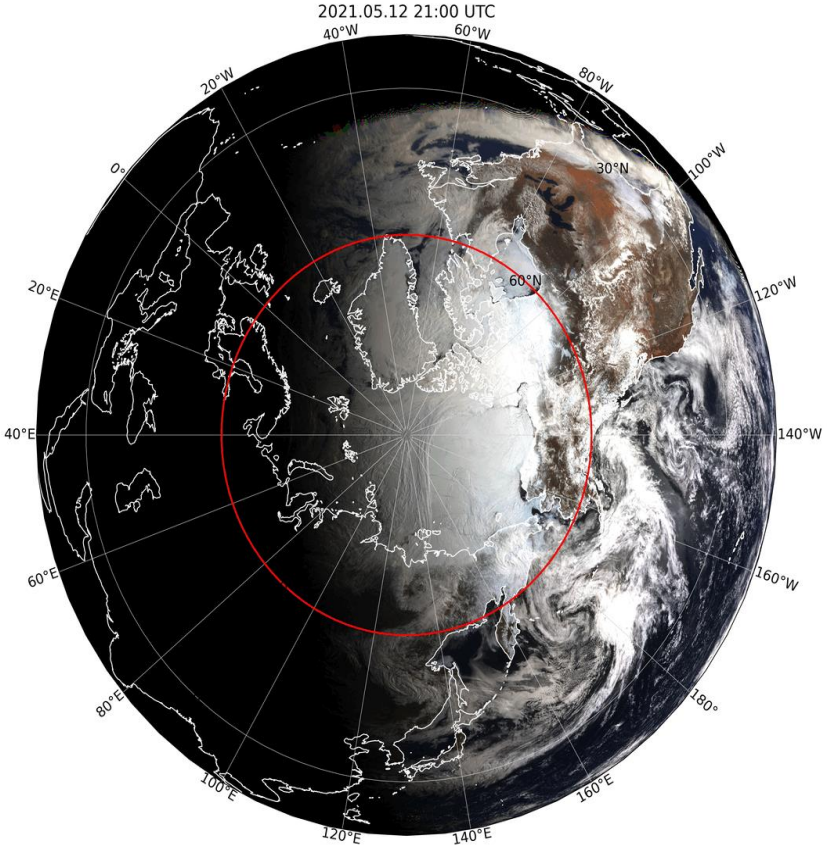
The launch of Arctica-M N1
28 February 2021

Parameter	*Value*
Orbit:	
Apogee, km	**40 000**
Perigee, km	**1 000**
Inclination, deg	**63,4**
Period, h	**12**
1st apogee longitude, deg	**25 W**
2nd apogee longitude, deg	**155 E**
Full number of MSU-GS/A spectral channel	**10**
Spectral range, μm	from **0,5** to **12,5**
Resolution (at nadir):	
- VIS-channel, km	**1**
- IR-channel, km	**4**
Frequency of Arctic region' observation, min:	
- regular mode	**30**
- frequent mode	**15**

Animations of VIS channels based on Arctica-M N1

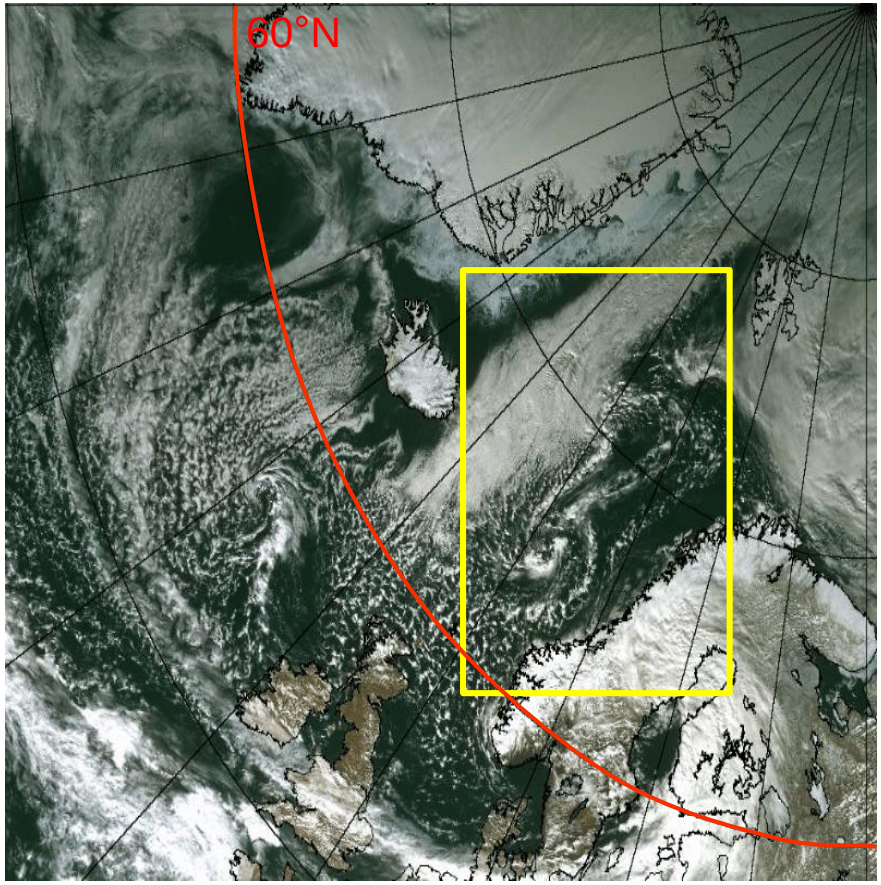


MSU-GS/A
12 May 2021 08:30 – 13:30 UTC
Western pass

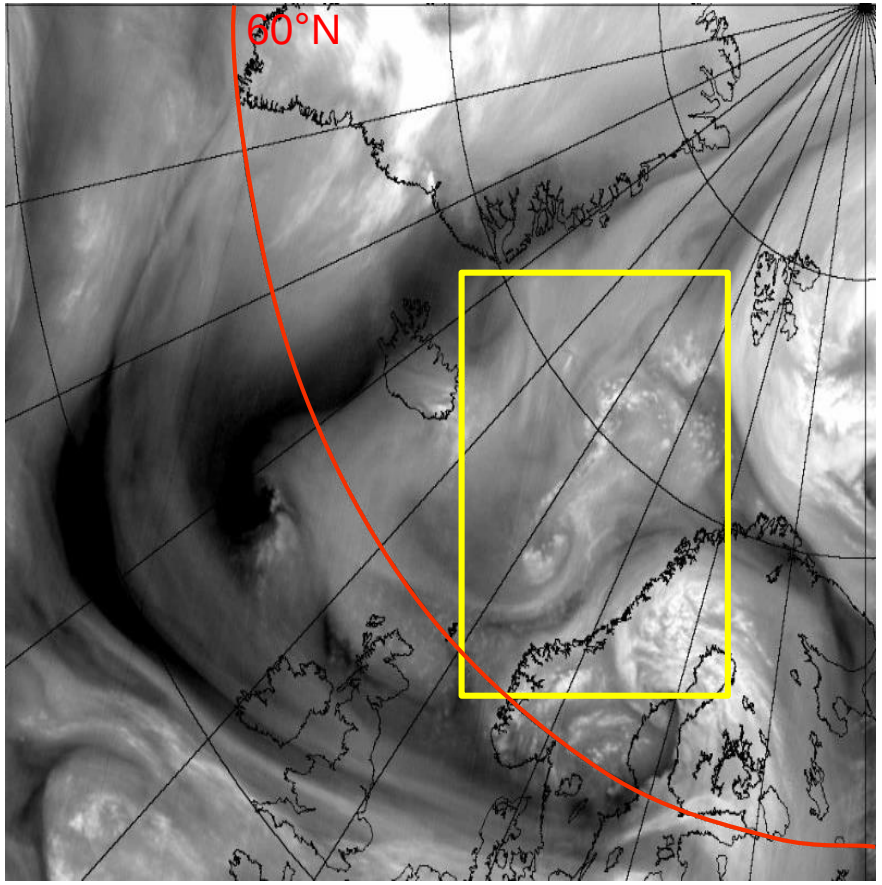


MSU-GS/A
12-13 May 2021 21:30 – 01:30 UTC
Eastern pass

Polar Mesoscale Cyclone Animation based on Arctica-M N1 images



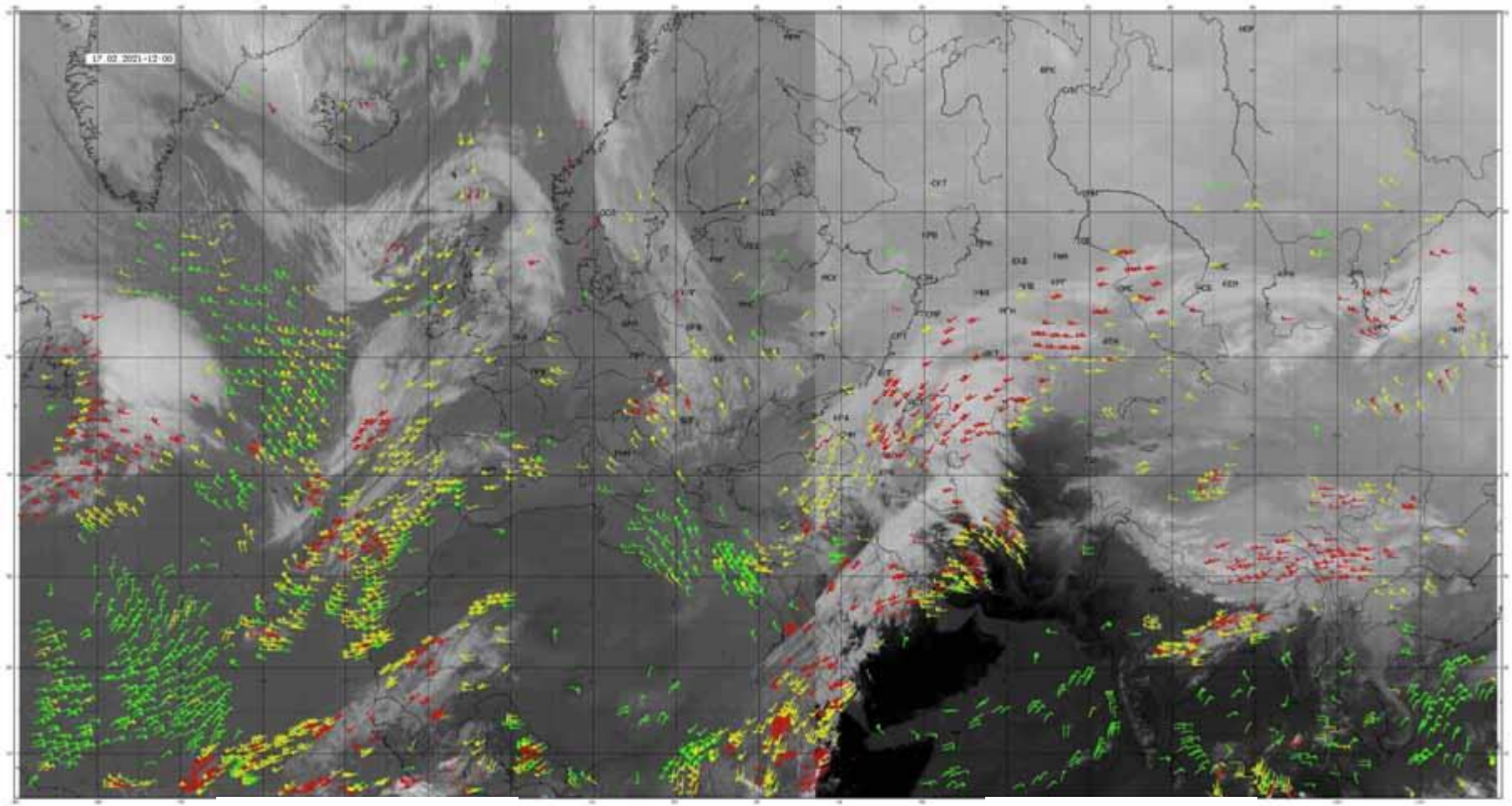
MSU-GS/A
RGB images (0,5 - 0,9 μm)
09 April 2021 11:00 - 16:00 UTC



MSU-GS/A
Water vapour channel (5,7 - 7,0 μm)
09 April 2021 11:00 - 16:00 UTC

- area of generation and evolution of polar mesoscale cyclones

Global Map of Atmospheric Motion Vectors based on Electro-L N2 & N3



Electro-L N2 (14.5 W)

Electro-L N3 (76 E)

color	height	speed value
	< 4 km	2-3 m/s
	4 - 7 km	5 m/s
	> 7 km	25 m/s

17 February 2021 12:00 UTC

Thanks for attention!