

Monstrous wildfires burn twice the size of Luxembourg at west of Canada

Sentinel-3 SLSTR LST acquired on 05 May 2023 from 04:15:36 to 05:56:35 UTC
Sentinel-5P TROPOMI CO & AER_AI acquired on 05 May 2023 from 19:24:17 to 19:29:17 UTC

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Sentinel-3 OLCI FR & SLSTR RBT acquired on 14 May 2023 at 18:29:40 UTC
Sentinel-2 MSI acquired on 14 May 2023 from 18:49:19 to 19:39:01 UTC

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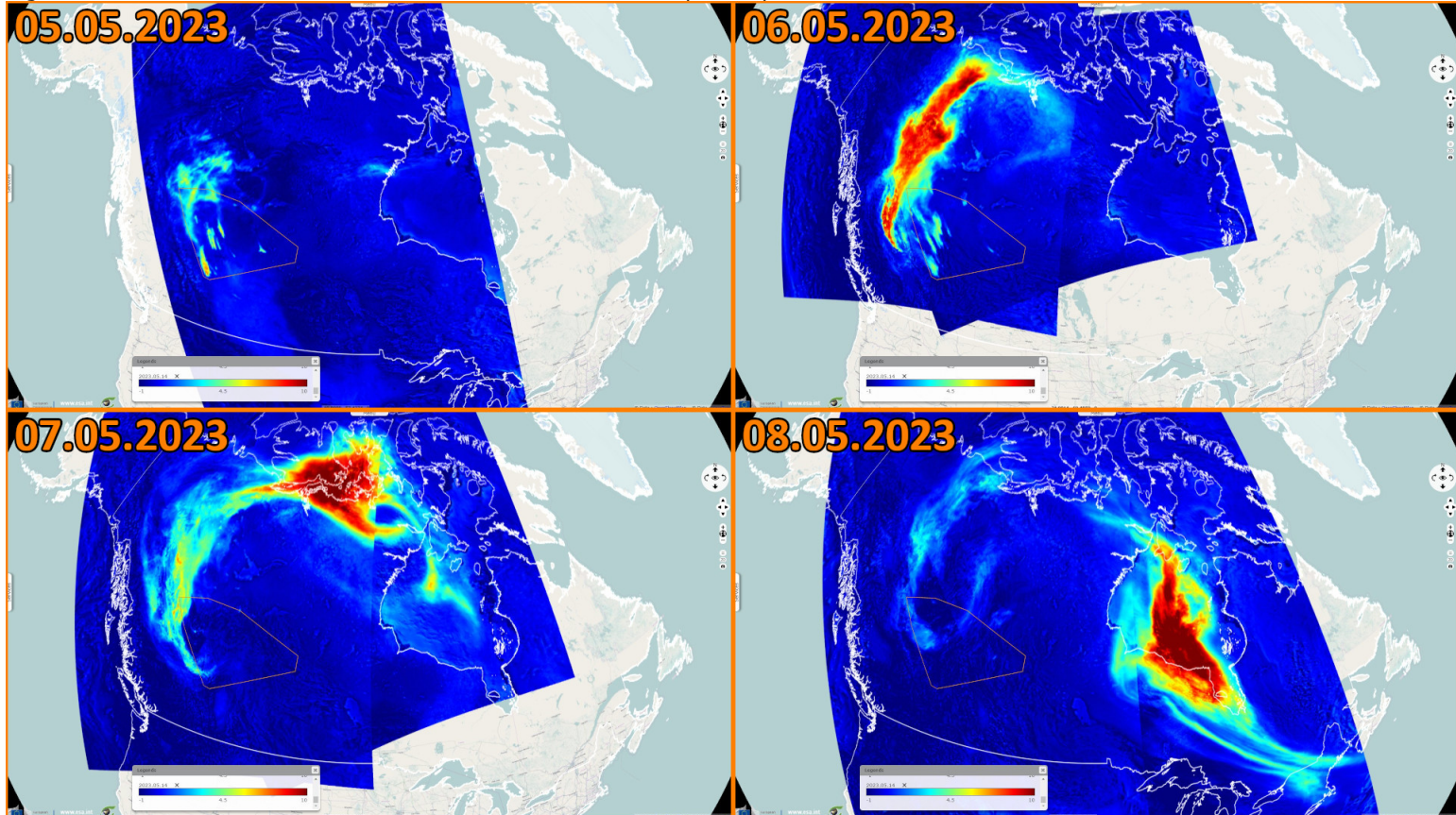
Keyword(s): Land, emergency, wildfires, atmosphere, pollution, climate change, weather, drought, Canada



[2D Layerstack](#)

Fig. 1 - S5P TROPOMI (05, 06, 07, 08.05.2023) - Aerosol Index - The plume spread above Canada.

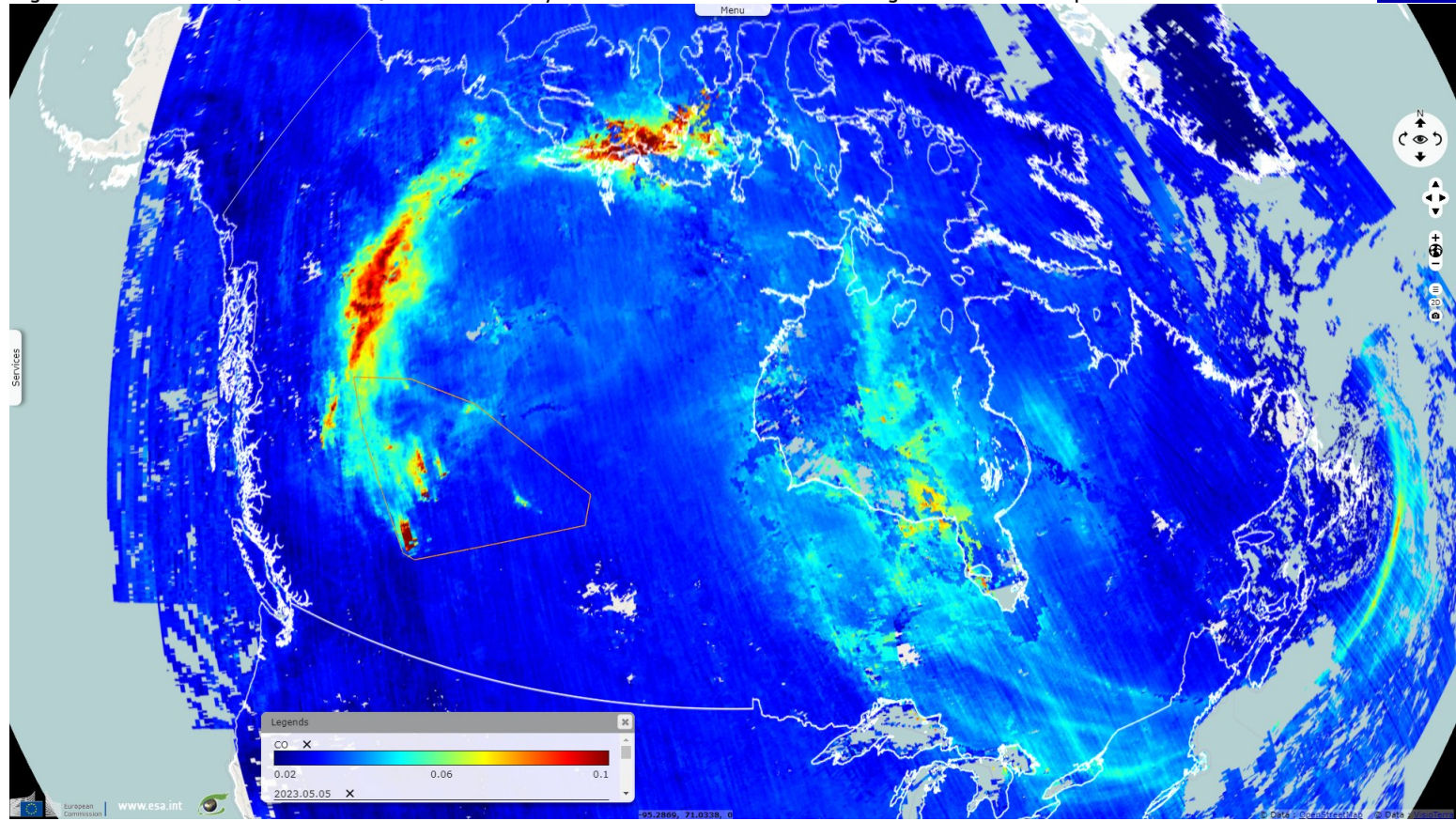
[3D view](#) [3D view](#) [3D view](#) [3D view](#)



"Alberta, Canada, declared a state of emergency last weekend as more than 110 active wildfires burned across the province. Most of the fires are concentrated in Alberta, but nearby provinces have been battling their own flames, with multiple out-of-control wildfires scorching British Columbia and First Nations communities evacuating in Saskatchewan.", introduced Molly Enking in her article [published](#) in Smithsonian Magazine.

Fig. 2 - S5P TROPOMI (05-10.05.2023) - Carbon Monoxide - Multidate combination showing the extent of the plume.

[3D view](#)



In order to protect locals, "more than 19 000 residents have now been ordered to escape the paths of multiple wildfires across central and northern Alberta. That is up from an estimated 16 520 people Saturday but down from last week's peak of about 30 000", wrote Mrinali Anchan in Canadian Broadcasting Corporation on 15 May.

Fig. 3 - S5P TROPOMI (13, 14.05.2023) - Aerosol Index, CO - After calmer days, wildfires started again.

[3D view](#) [3D view](#) [3D view](#) [3D view](#)

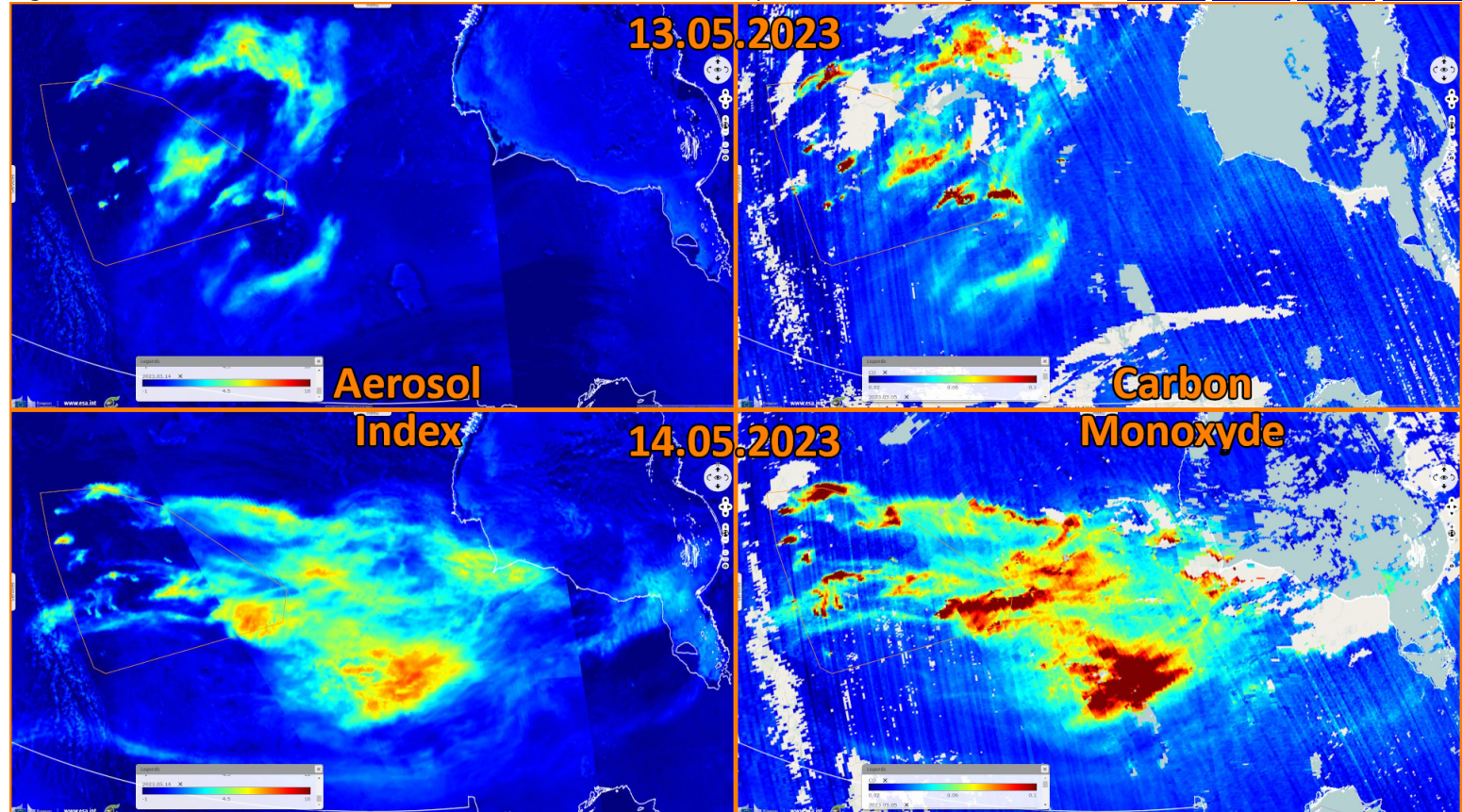
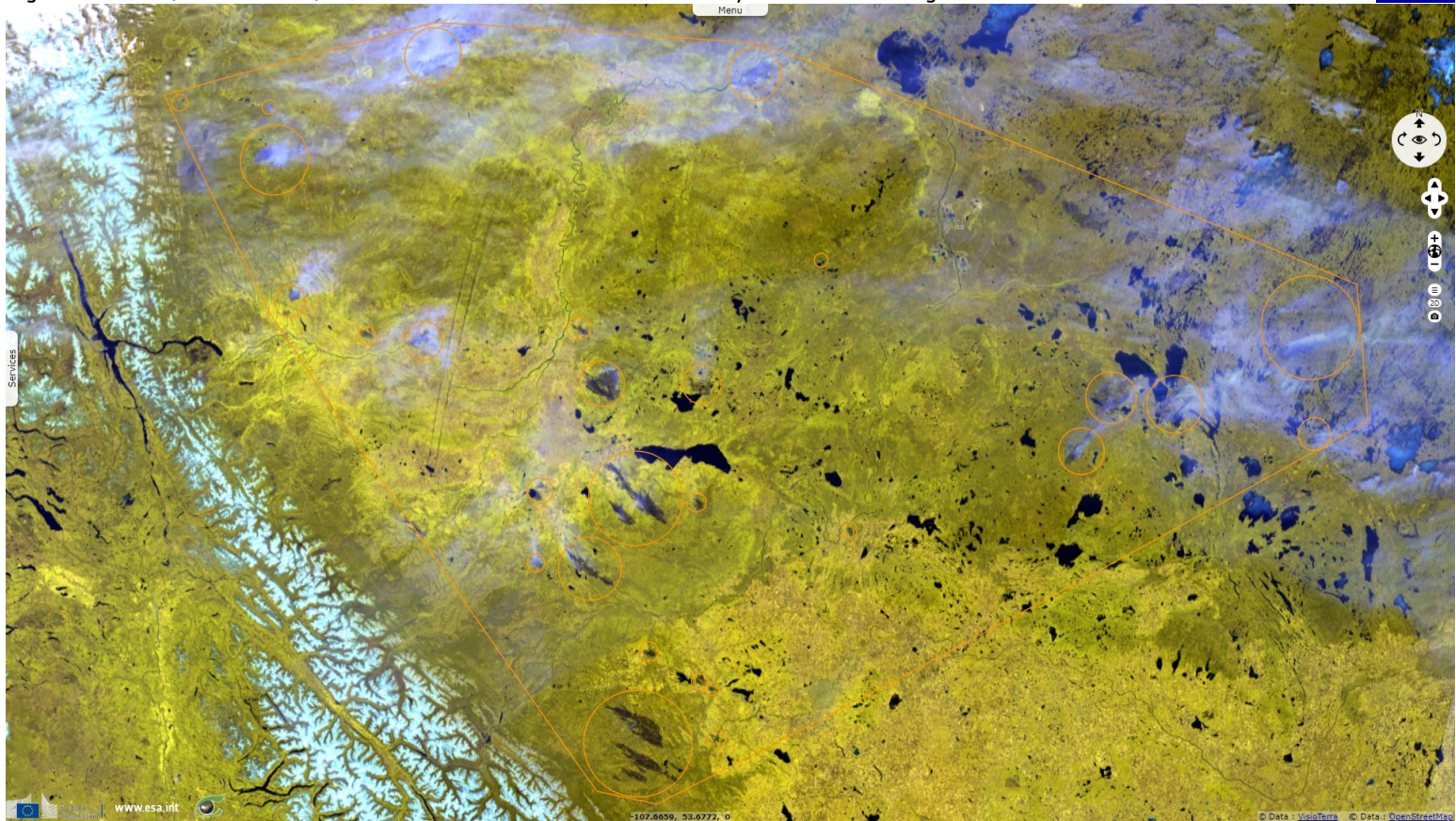


Fig. 4 - S3 OLCI (14-15.05.2023) - Tens of burn scars are visible after 10 days of intense burning.

[3D view](#)



"There are 87 active wildfires with 24 being classified as out of control. That does not include the eight wildfires burning outside those zones. Unrelenting heat and powerful winds have made the fight difficult thus far, officials say."

Fig. 5 - S3 SLSTR (05-14.05.2023) - Processed Land Surface Temperature images show heat sources cause by wildfires.

[3D view](#)

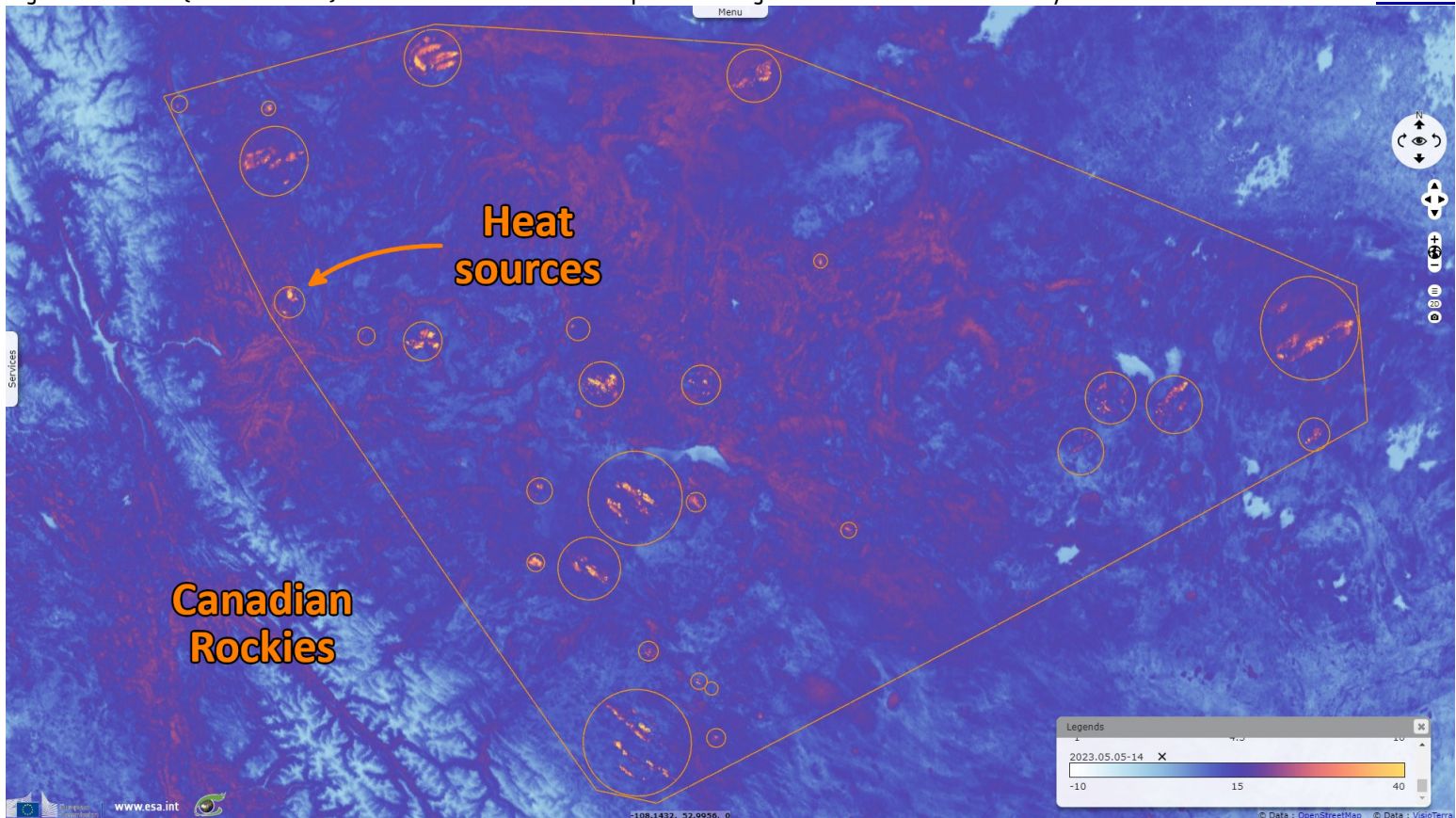
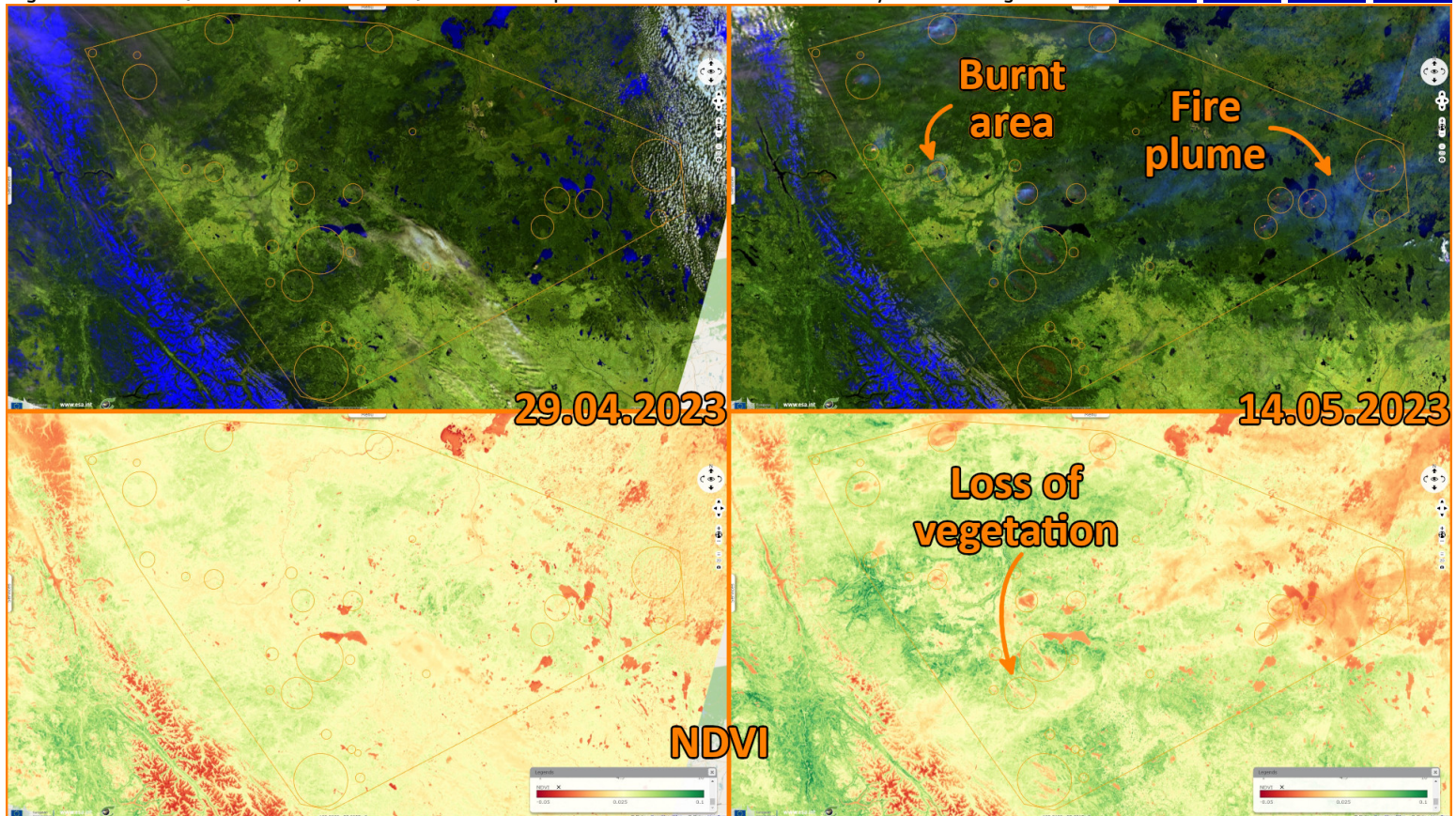


Fig. 6 - S3 SLSTR (29.04.2023; 14.05.2023) - Photo-interpreted burn scars are confirmed by a loss of vegetation. [3D view](#) [3D view](#) [3D view](#) [3D view](#)



"Josee St-Onge, wildfire information officer with the province, cautioned that the worst may be yet to come. 'Our peak burning period, which is when the temperatures are at their highest and the fuels are at their driest is still in front of us. We are using all of the resources at our disposal to fight these wildfires and keep people in communities safe.'"

Fig. 7 - S3 SLSTR (29.04.2023); S2 (14.05.2023) - Large burn scars at south of the monitored area.

[3D view](#) [3D view](#)

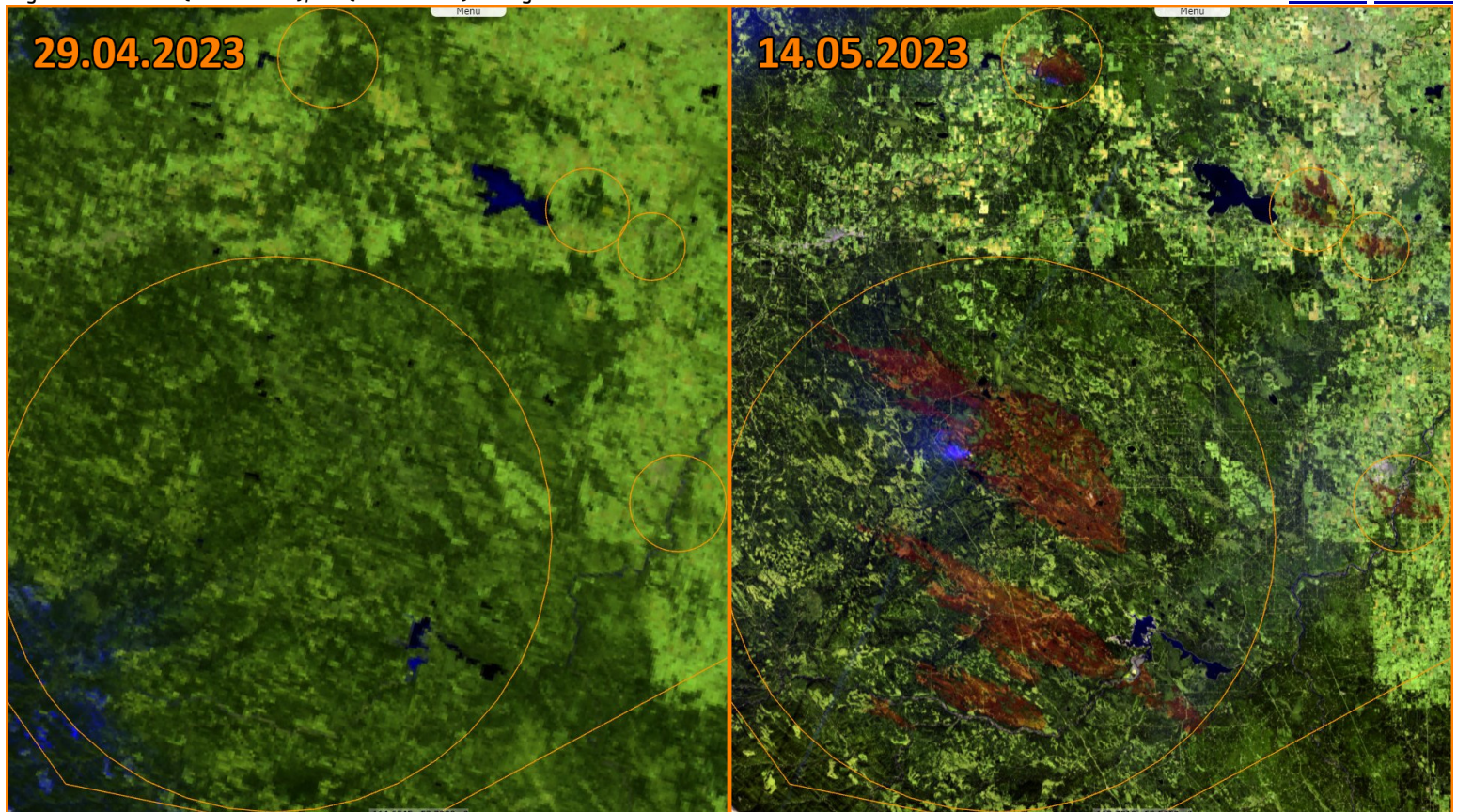
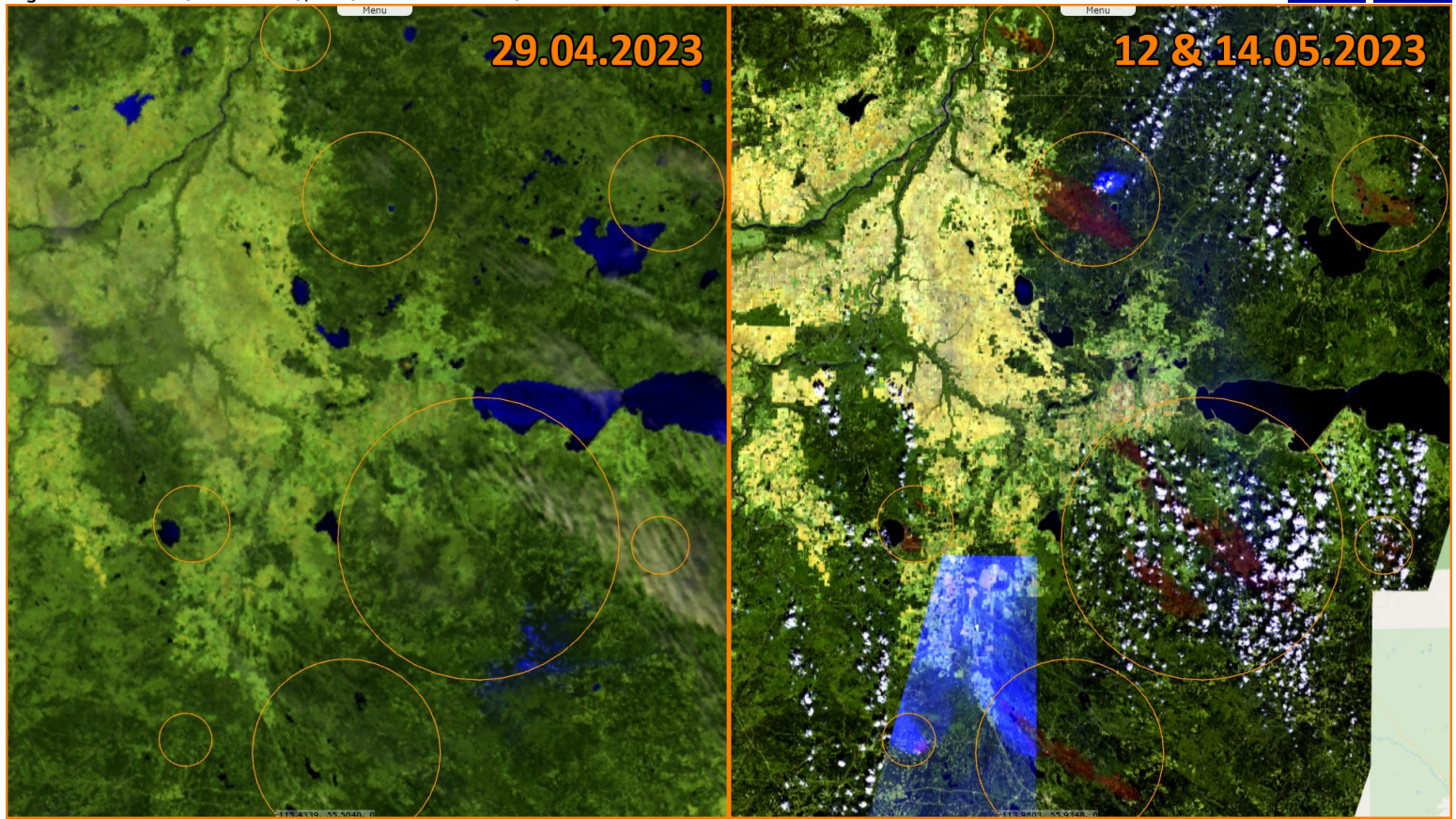


Fig. 8 - S3 SLSTR (29.04.2023); S2 (12 & 14.05.2023) - Wildfires visible at the centre of the area of interest.

[3D view](#) [3D view](#)



"Alberta currently has more than 1500 wildland firefighters, heavy equipment and airtankers responding to wildfires." [adds](#) Mrinali Anchan. "Deployment of 300 members of the Canadian Armed Forces began Saturday. Close to 250 firefighters are also expected to arrive from the U.S." on 13-14 May.

Fig. 9 - S3 SLSTR (29.04.2023); S2 (13.05.2023) - Several fires also occurred in neighbouring British Colombia.

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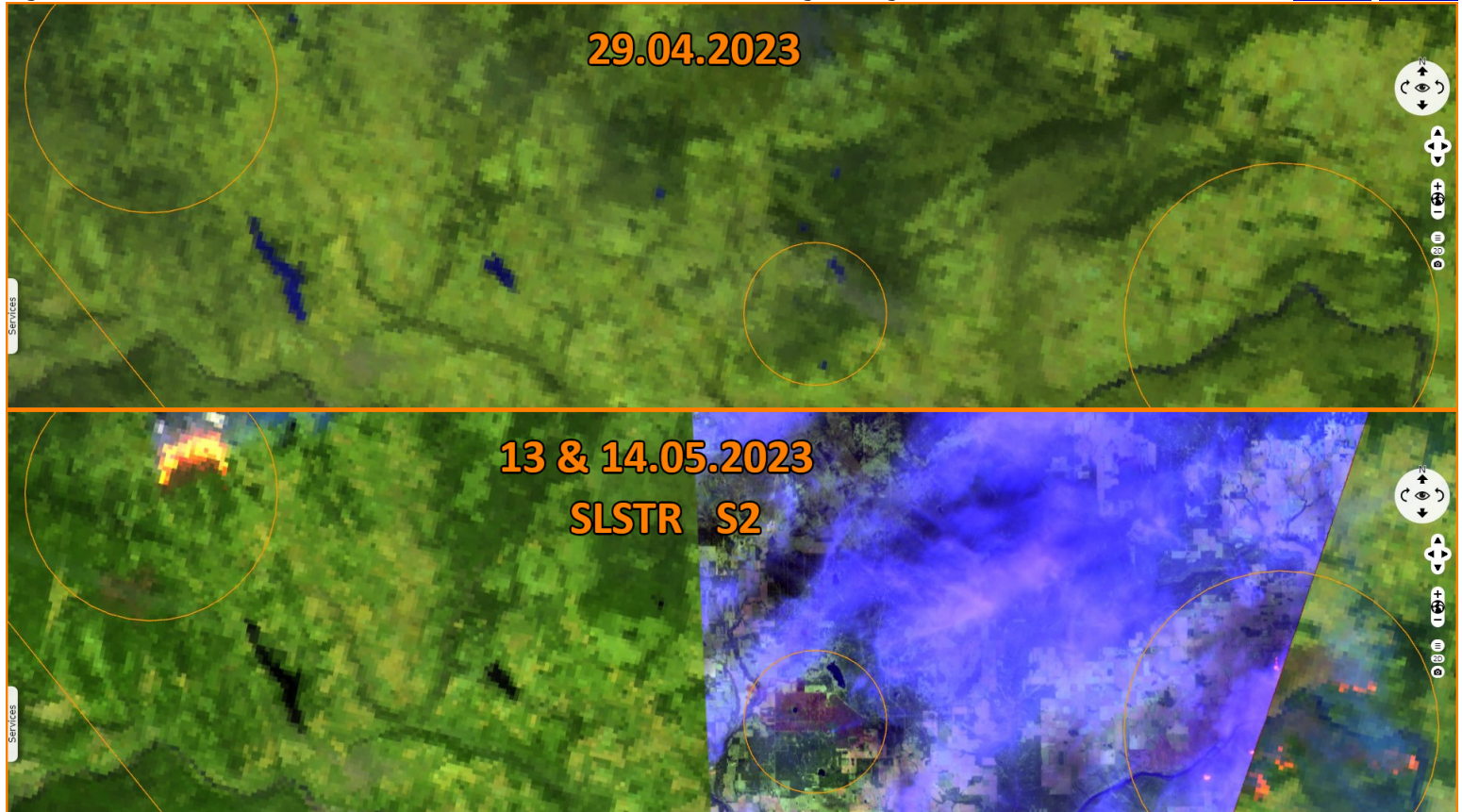


Fig. 10 - S3 SLSTR (29.04.2023); S3 SLSTR (14.05.2023) & S2 (14.05.2023) - North-west of the region of interest.

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As of May 15, 2023, 5318 km² have burned in Alberta wildfires, as against 8834 km² for the whole year 2019, the worst of the last ten years. A record that may be beaten in the context [reminds](#) by Molly Enking. "This fire season, which typically runs from March through October, is off to a devastating start—more than 400 fires have already been documented, an unusually high number for this early in the year".

Fig. 11 - S3 SLSTR (03.05.2023; 14.05.2023) - At east, fires also happened in the Saskatchewan Province.

[3D view](#) [3D view](#)

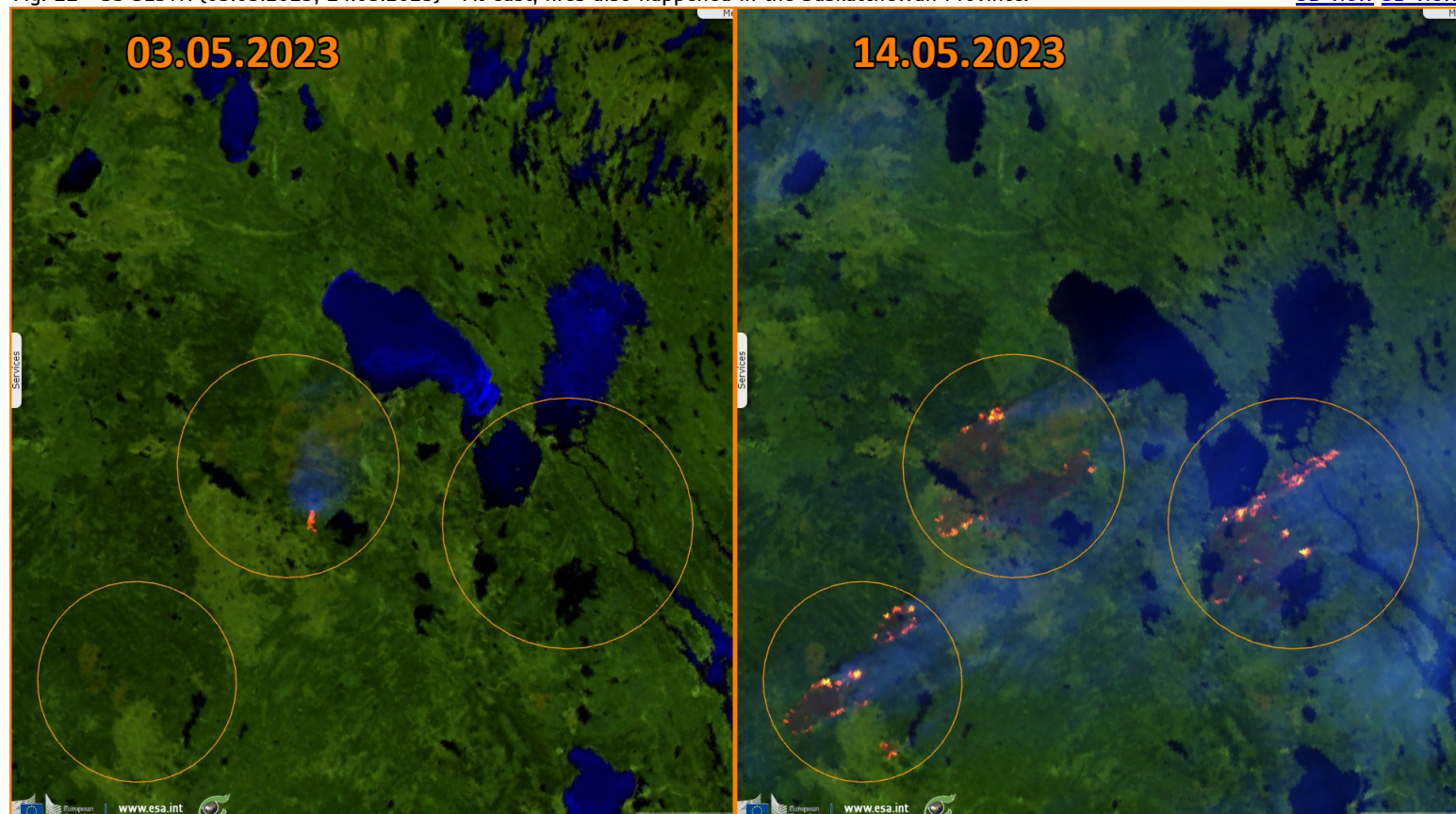
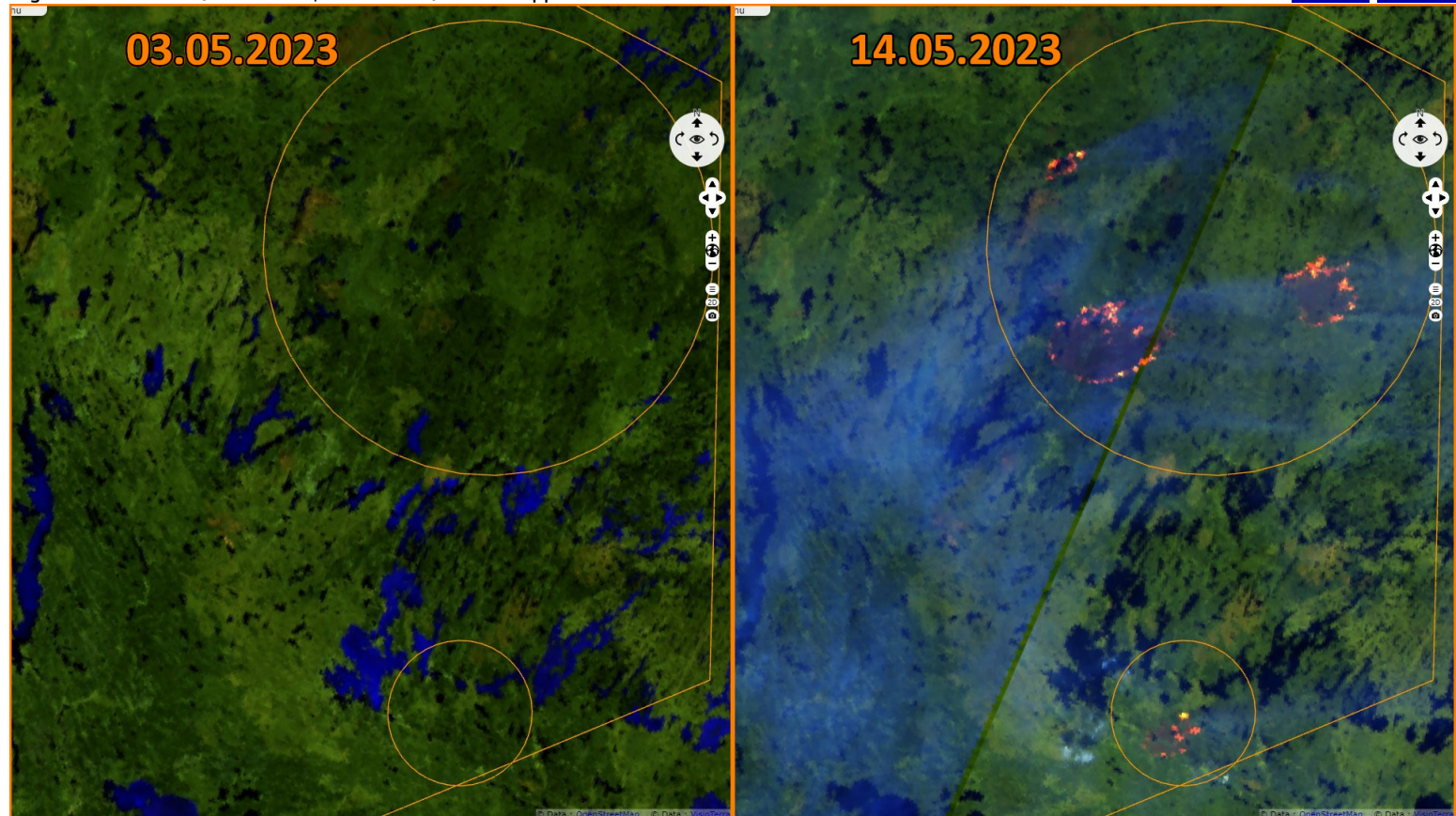


Fig. 12 - S3 SLSTR (03.05.2023; 14.05.2023) - This happens even close to frozen lakes.

[3D view](#) [3D view](#)



"Research has shown that a rising number of droughts and heat waves due to global warming have been a 'key driver in increasing the risk and extent of wildfires,' according to the National Oceanic and Atmospheric Administration, leading to longer and more active fire seasons."

Fig. 13 - S3 SLSTR (29.04.2023); S2 (09.05.2023; 14.05.2023) - A large fire that had been contained and started again.

[3D view](#) [3D view](#) [3D view](#)

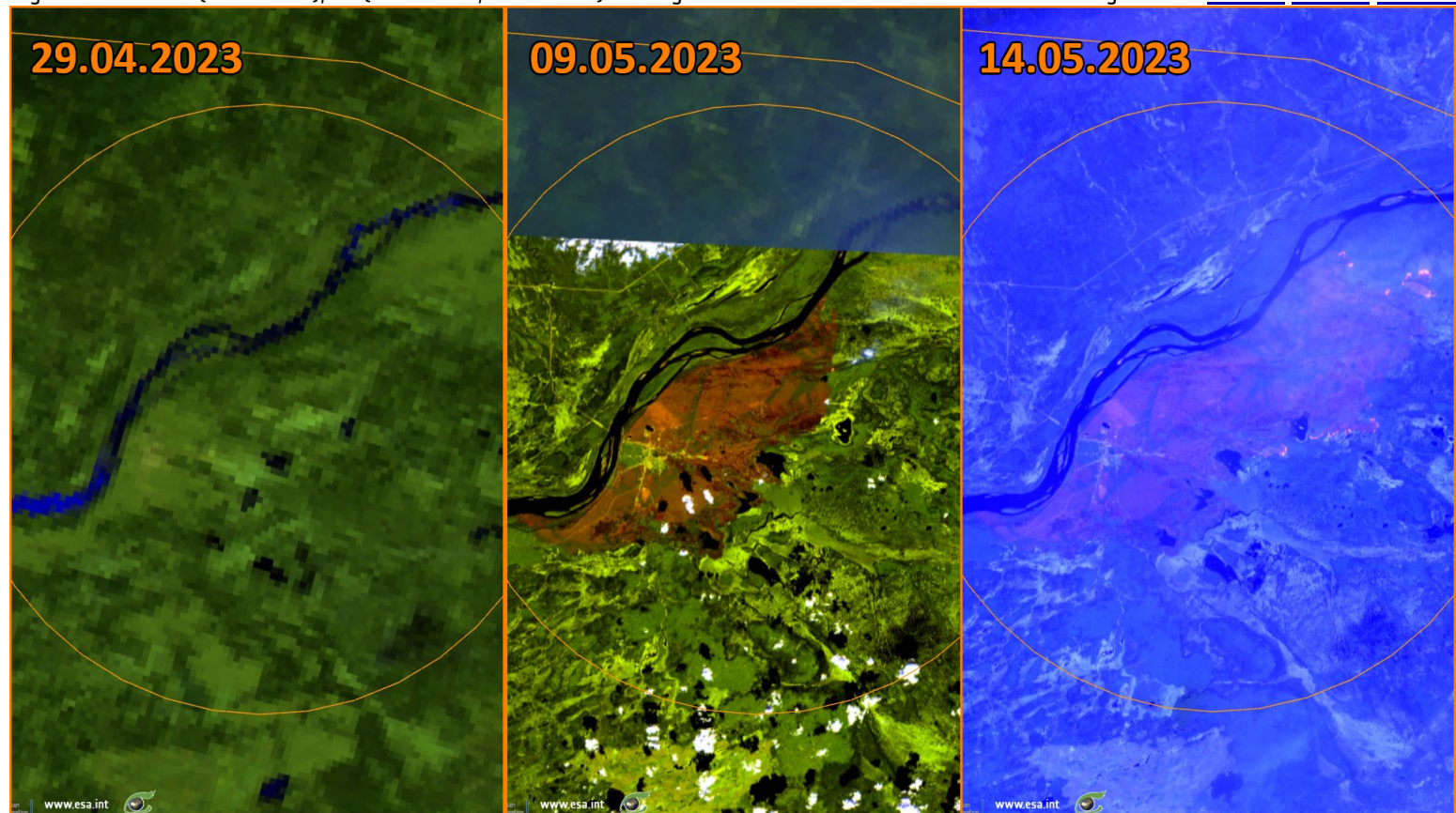
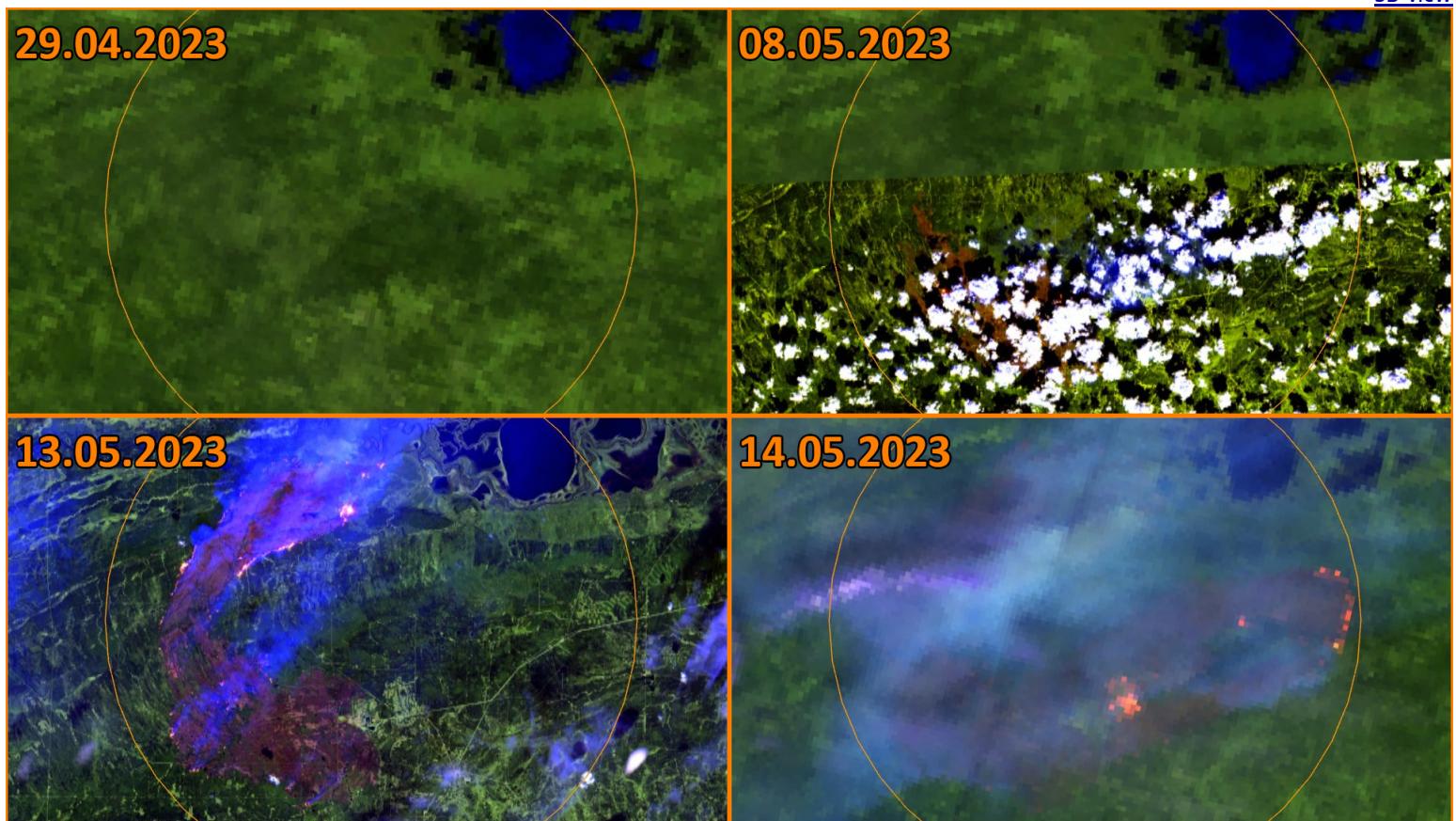


Fig. 14 - S3 SLSTR (29.04.2023; 14.05.2023); S2 (08.05.2023; 13.05.2023) - Progression of a large fire at north of the AOI. [3D view](#) [3D view](#) [3D view](#) [3D view](#)



"The smoke from Alberta's wildfires has reached for thousands of miles, spreading above parts of Northern Canada and the Eastern United States. Cities as far as New York and Washington, D.C., experienced hazy, smoky skies on Wednesday morning." [concludes](#) Molly Enking in Smithsonian Magazine.

*The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.
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