IDS Contribution to the second update of the ITRF2020

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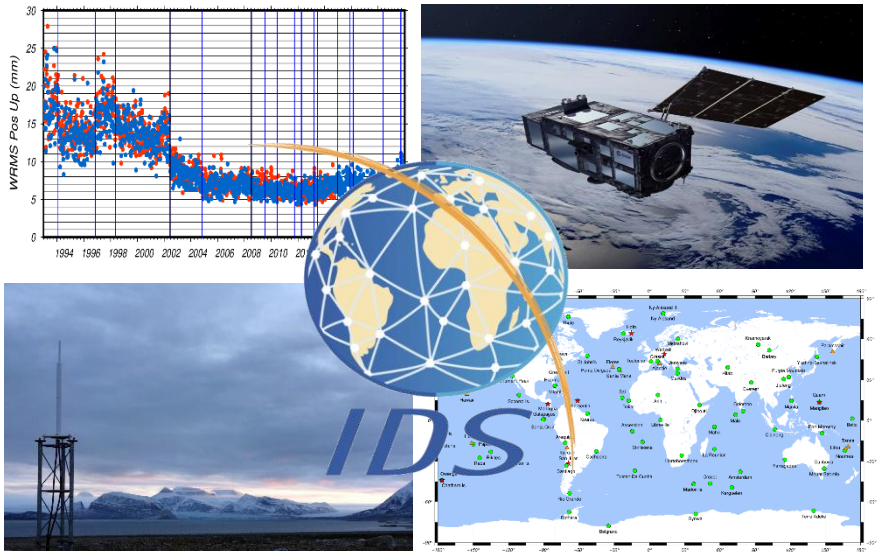


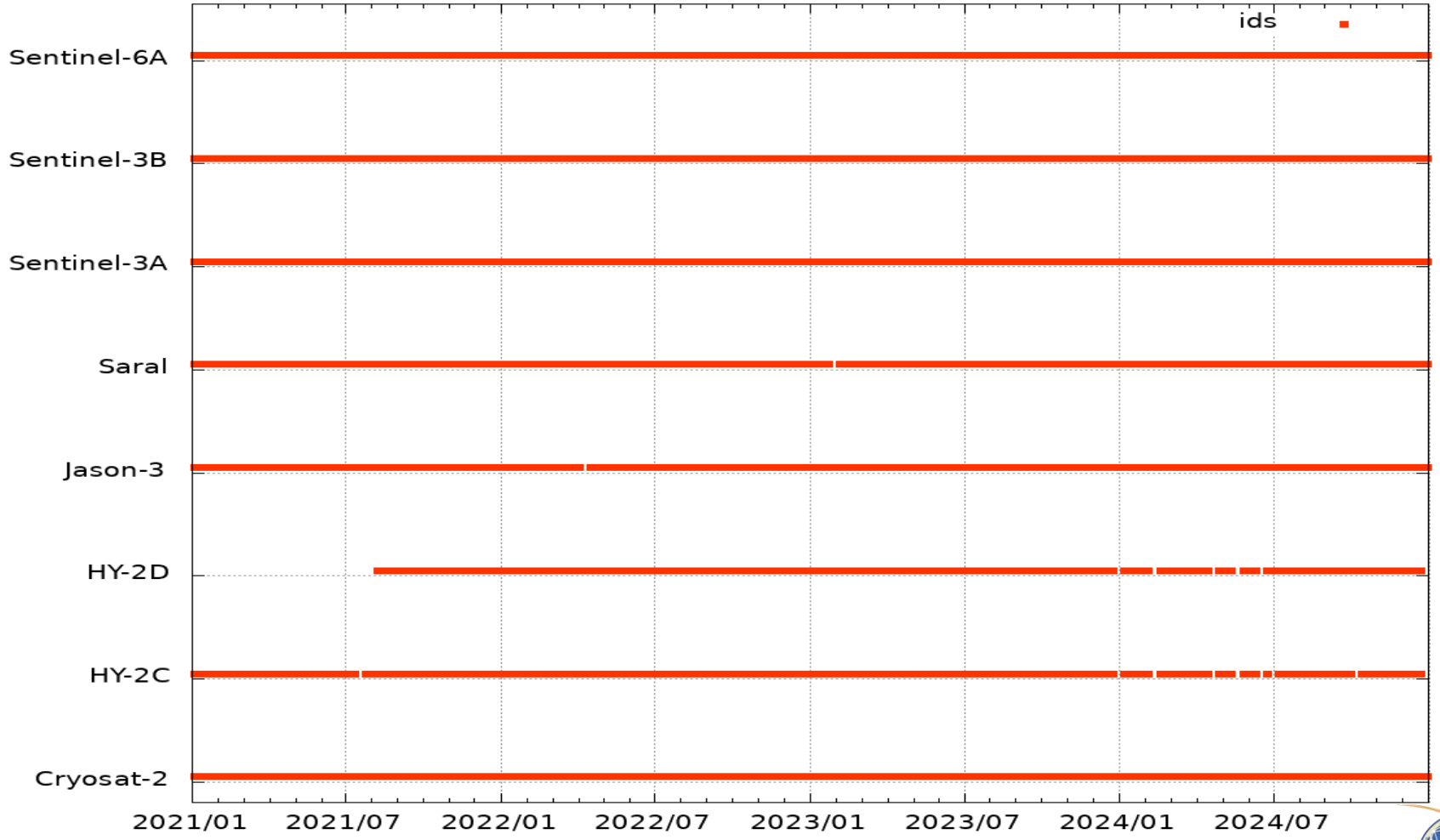
The IDS contribution to the second ITRF2020 update is based on 5 solutions from 5 different software packages.

AC	Software	Series number	Solution Type	EOPs	Time Span	Comments
ESA	NAPEOS	16	NEQ	offset+rate+LOD	2021.0-	
GOP	BERNESE	70	COV	offset+rate+LOD	2021.0-	
GRG	GINS-DYNAMO	56	COV	offset	2021.6-	New series
GSC	GEODYN	60	NEQ	offset	2021.0-	New series
IGN	GIPSY-X	22	NEQ	offset	2021.0-	New series
IDS	**CATREF**	**25**	**COV**	**Motion**	**2021.0-**	**New series**

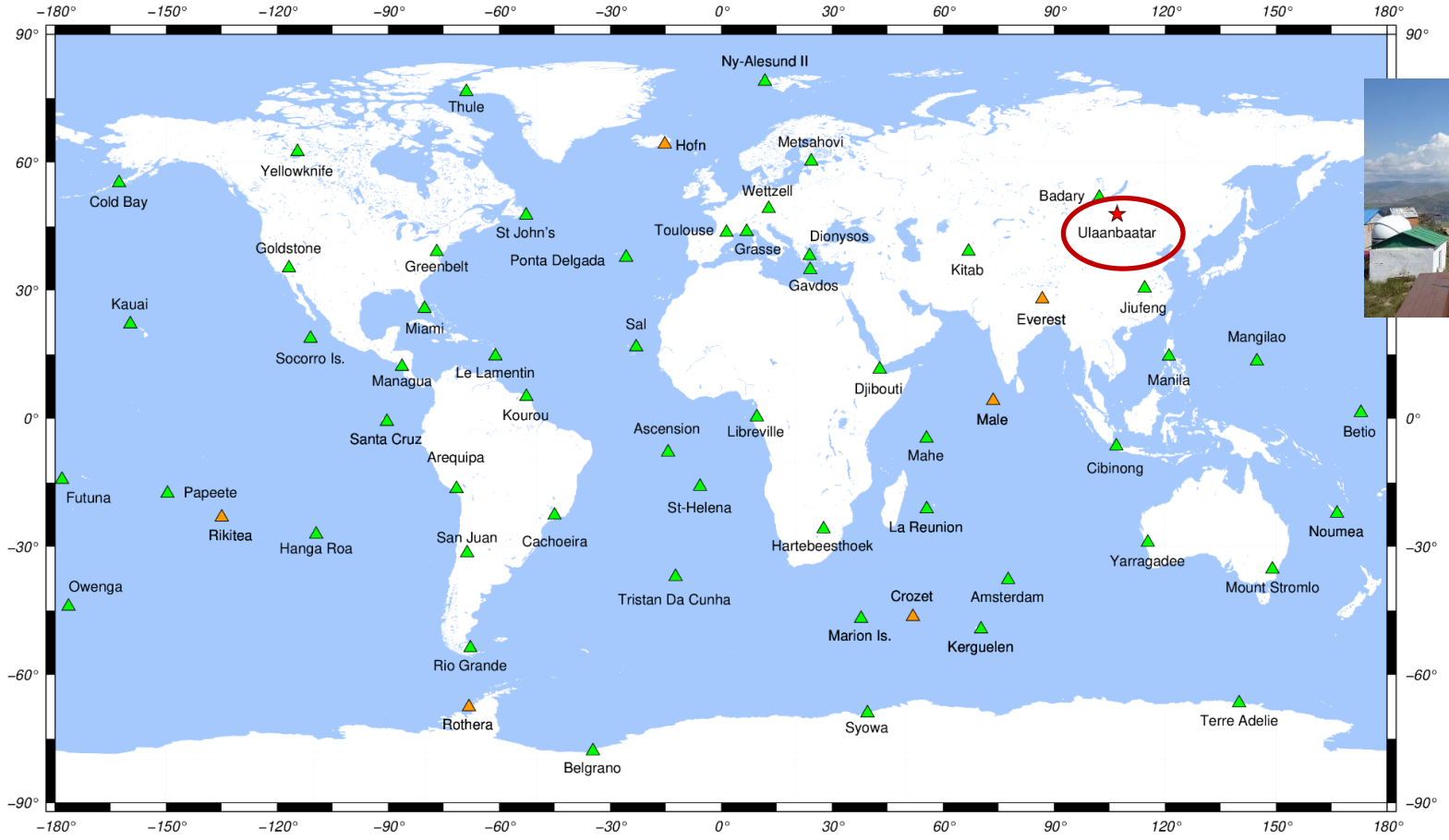
Main IDS AC evolutions since ITRF2020-u2023 processing:

- **GRG-GSC:** Sentinel-6A Conrad et al. (2023) macromodel.
- **GOP:** LOD estimation since 2024doy098.
- **IGN:** Station positioning improvement.

The 2021-2025 IDS constellation includes 8 satellites equipped with the latest generation of DORIS receivers enable to track 7 beacons simultaneously.

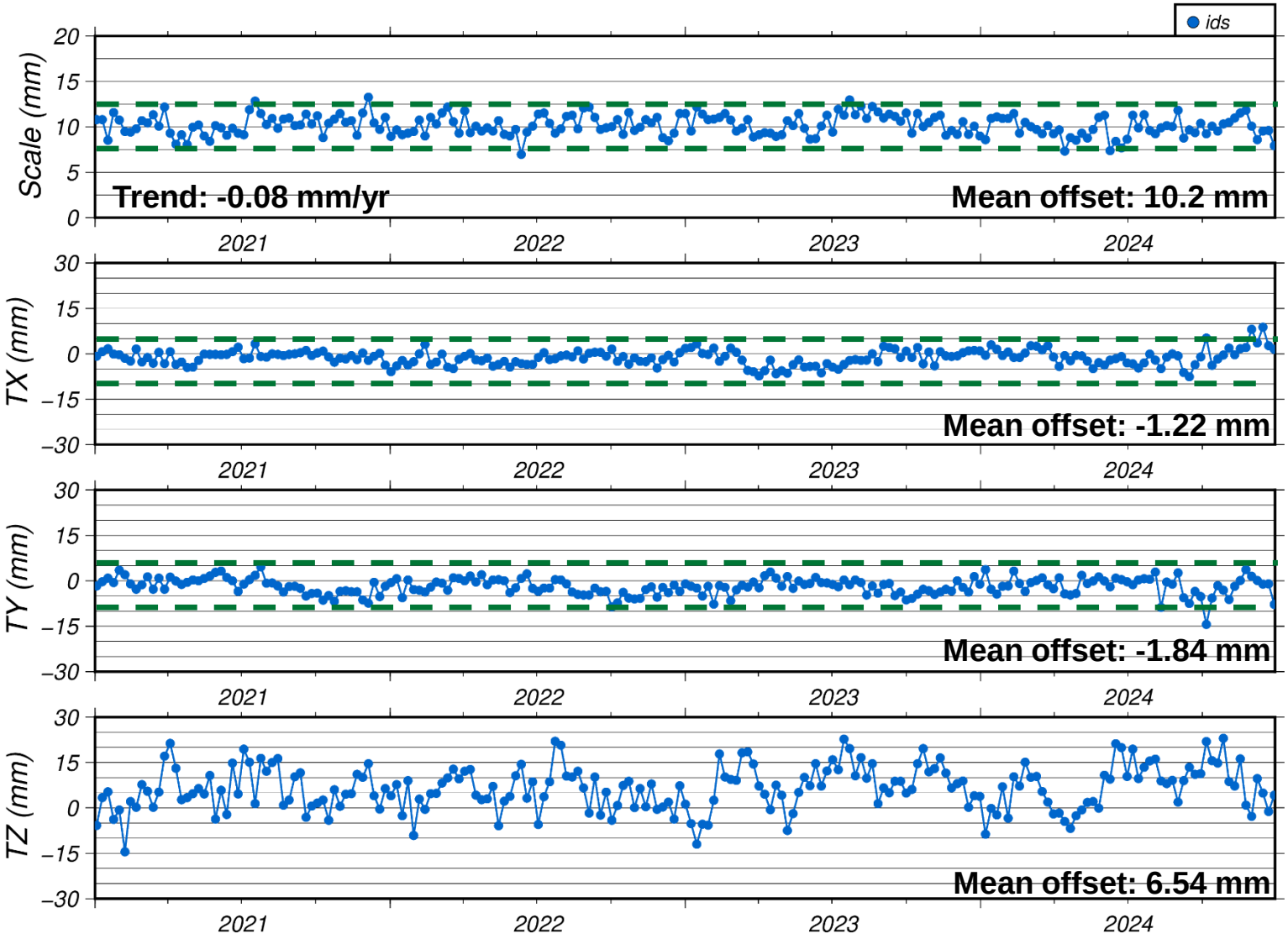


The 2021-2025 IDS Station Network



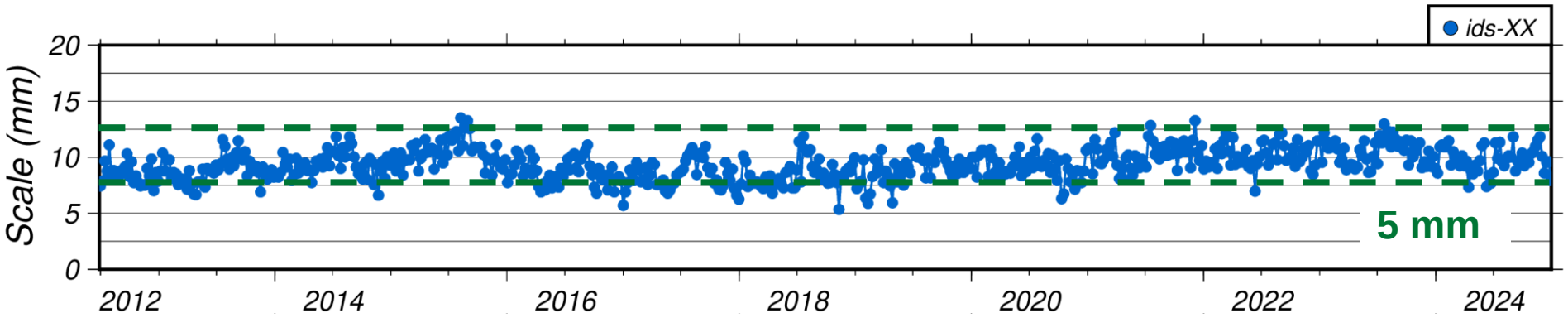
Contains 75 stations@61 sites with 5 four-technique sites.
Since ITRF2020-u2023:
1 new site (Ulaanbaatar) and 6 new stations.

Scale and Origin wrt ITRF2020-u2023



IDS 19-25 scale wrt ITRF2020-u2023

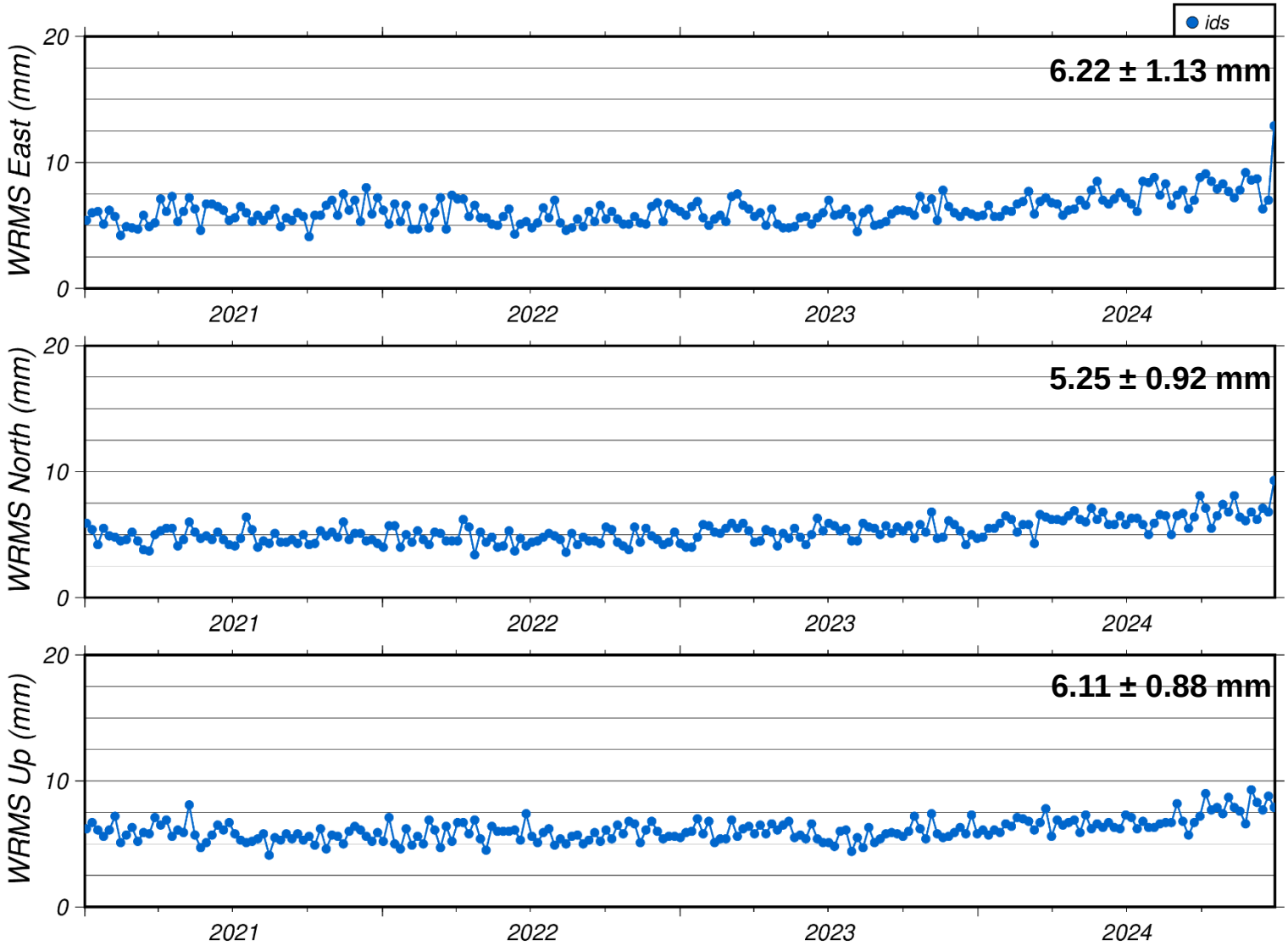
Time period: 2012.5-2025.0



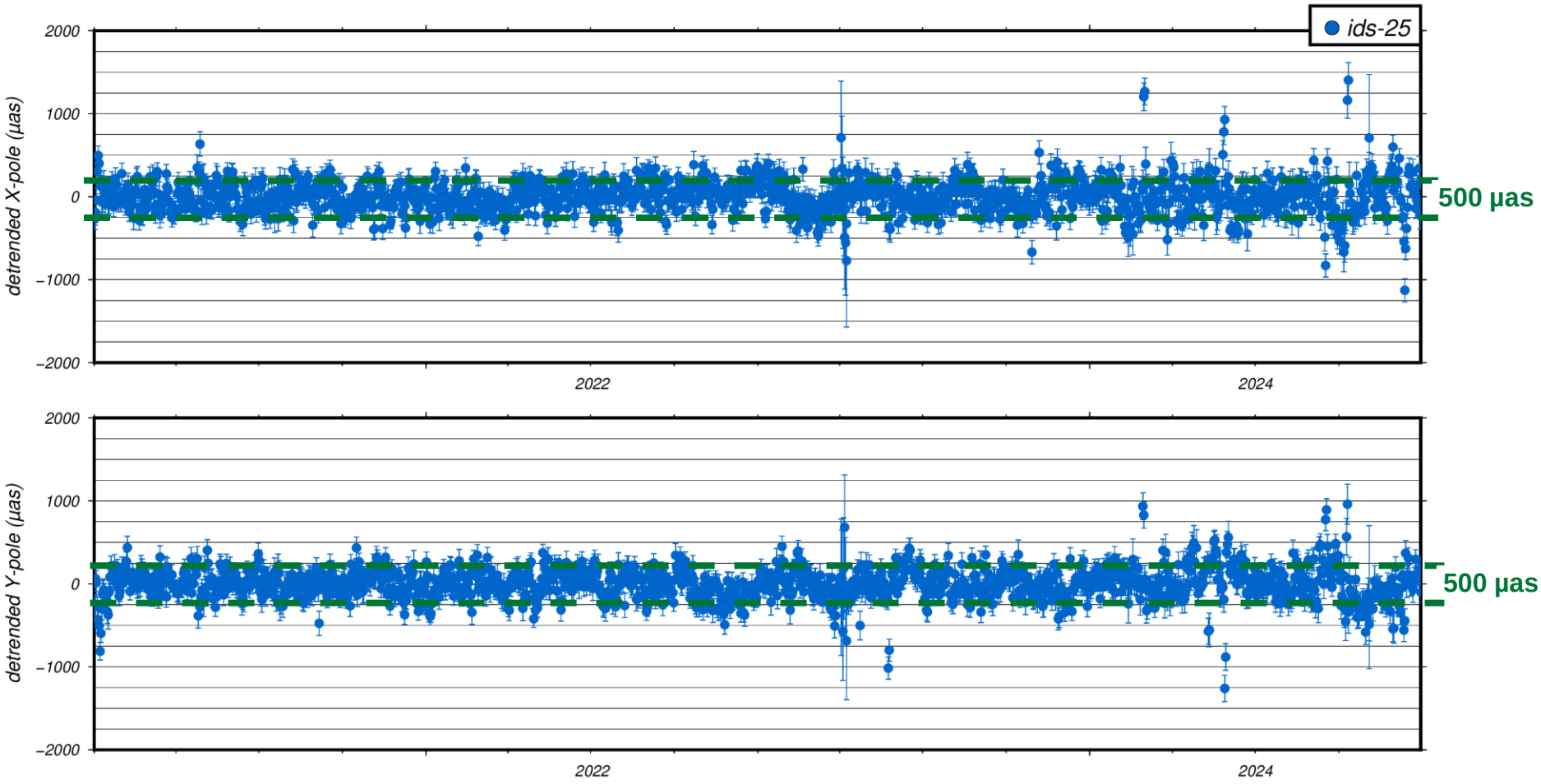
Mean [mm]	STD [mm]	Trend [mm/yr]
9.39	1.35	0.11

IDS scale is stable over the last 12.5 years.
Stability may be improved with selection of the DORIS missions contributing to the IDS AC combined scales.

Station Position WRMS wrt ITRF2020-u2023



EOP Differences wrt IERS-C04

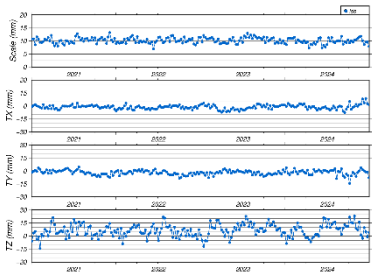


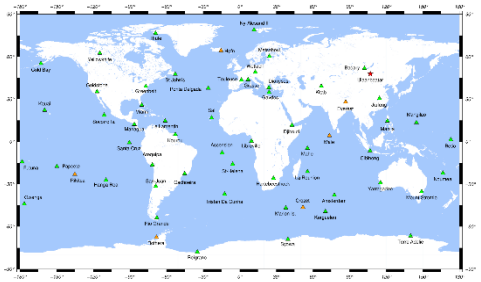
	XPO	YPO
Mean [µas]	1.023	-0.865
STD [µas]	199.697	190.241

The IDS contribution to the second ITRF2020 update

IDS 25 series

- **Is based on 5 AC contributions from 2021.0 to 2025.0.**
- **Makes use of 8 DORIS missions.**
- **Includes positions of 75 stations@61 sites. New site @ Ulaanbaatar.**
- **Depicts a scale trend of -0.08 mm/yr wrt ITRF2020-u2023.**
- **Shows STD of X- and Y-pole differences wrt IERS C04 at the order of 200µas.**





What's next?

- **Combined LOD.**
- **Add SWOT DORIS data**
  (inclin. = 77 deg, advantageous for observing geometry).

- **New IDS AC (GFZ is under evaluation).**

- **Apply new strategy to better model frequency variations of satellite USO's (in SAA region and throughout the orbit).**

- **New DORIS site (Kanpur - India).**
- **New DORIS mission (Sentinel-6B).**

➔ **6 IDS ACs with 6 different software packages**
➔ **10 DORIS missions simultaneously**
➔ **62 DORIS sites**