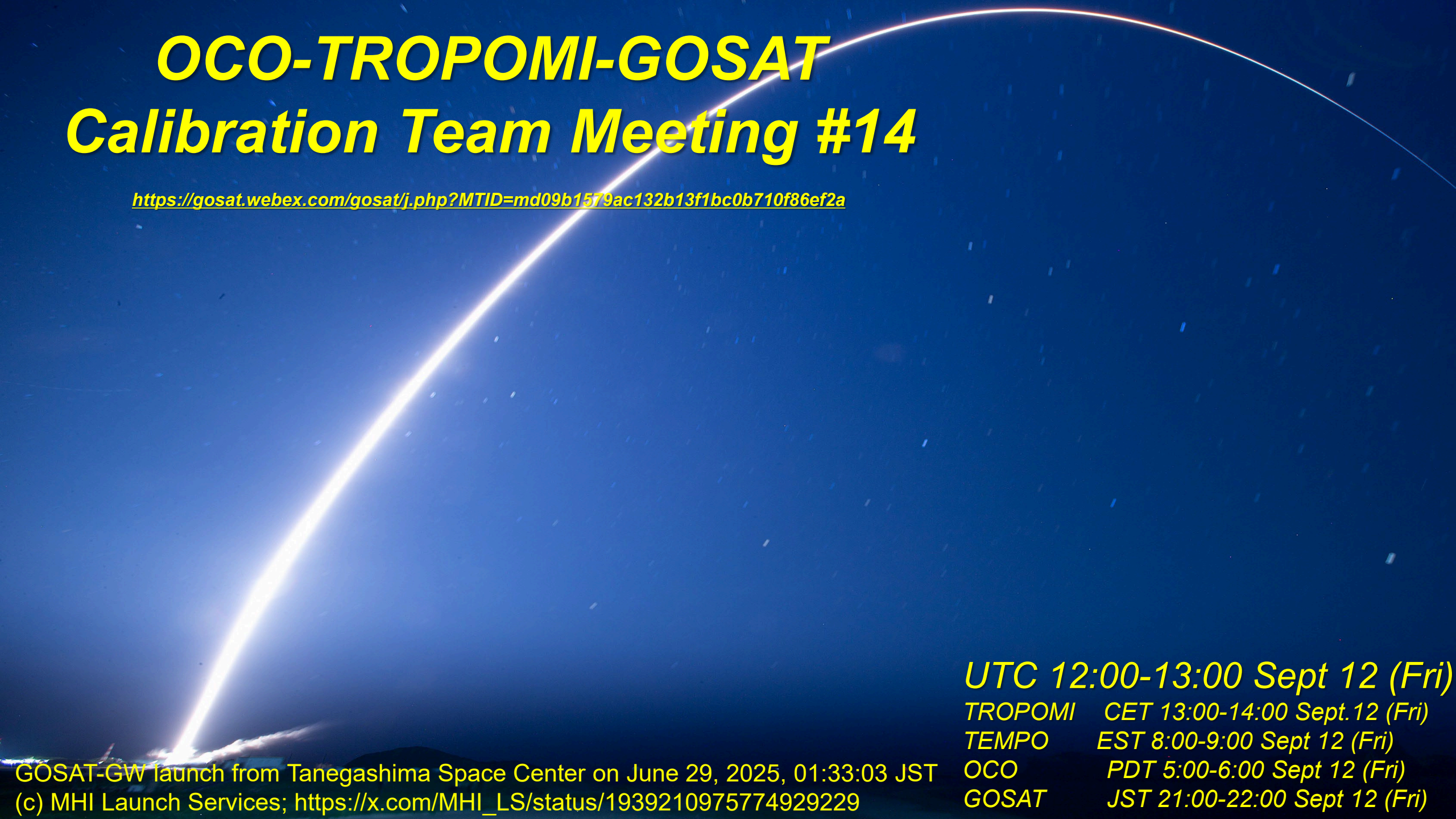
OCO-TROPOMI-GOSAT Calibration Team Meeting #14

https://gosat.webex.com/gosat/j.php?MTID=md09b1579ac132b13f1bc0b710f86ef2a



GOSAT-GW launch from Tanegashima Space Center on June 29, 2025, 01:33:03 JST
(c) MHI Launch Services; https://x.com/MHI_LS/status/1939210975774929229

UTC 12:00-13:00 Sept 12 (Fri)

TROPOMI	*CET 13:00-14:00 Sept.12 (Fri)*
TEMPO	*EST 8:00-9:00 Sept 12 (Fri)*
OCO	*PDT 5:00-6:00 Sept 12 (Fri)*
GOSAT	*JST 21:00-22:00 Sept 12 (Fri)*

OCO-TROPOMI-GOSAT Calibration Team Meeting #14 Agenda

1. UTC 12:00-12:15 Welcome and GOSAT (Shiomi)
2. 12:15- 12:30 OCO (Rosenberg / Fu)
3. 12:30- 12:40 TEMPO (Liu / Chong)
4. 12:40- 12:50 TROPOMI (Loots)
5. 12:50- 12:55 GSICS activity (Flynn)
6. 12:55- 13:00 Discussion

Next meeting #15 candidate 13 UTC on Fri, Jan 30, 2026

GOSAT and GOSAT-2 status

Now Both satellites and sensors in healthy conditions

A. GOSAT Observation: **Nominal**

(1) FTS and CAI observations have been fully operated. The target observations are also nominal.

(2) Both instruments and satellite are very healthy.

B. GOSAT-2 Observation: **Nominal**

(1) Especially FTS-2 Band 1 radiometric response has recovered over 10% since Sep 2023 evaluated by monthly LCAL. RRV2025 summer result and Sahara desert monitoring also agree. Must be updated.

(2) NIES L2 algorithm team investigated the B1 response recovery effect on XCH4 full physics compared with proxy product with/without using O2A band, also compared with GOSAT full physics product.

C. GOSAT-GW: **Initial check out**

(1) Successful launch on June 29 JST, TANSO-3 and AMSR3 are healthy in nominal orbit, self-controlled.

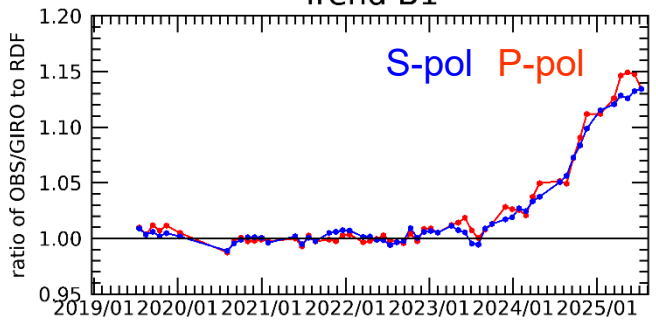
(2) TANSO-3: Observation since July 14, First lunar CAL on Aug 8 (wide) and 9 (focus), Start RRV target

GOSAT-2 FTS-2 radiometric response change evaluated with 3 methods

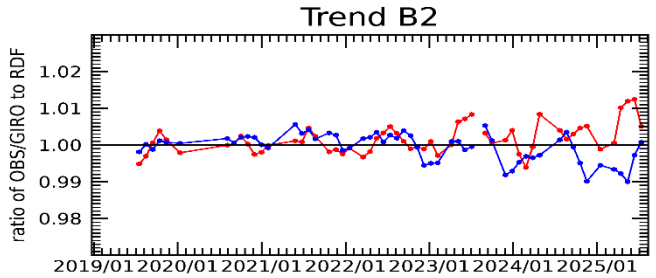
LunarCAL

monthly

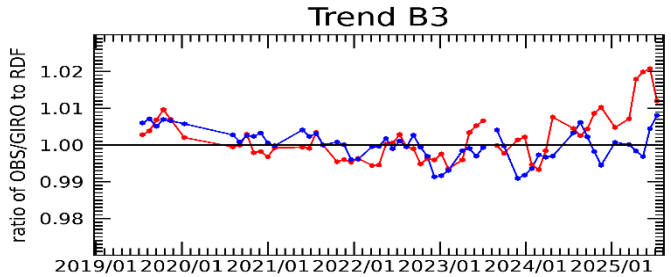
Trend B1



Trend B2

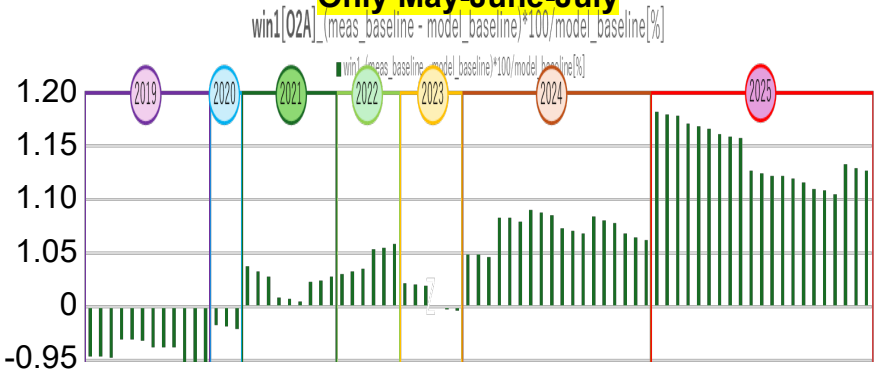


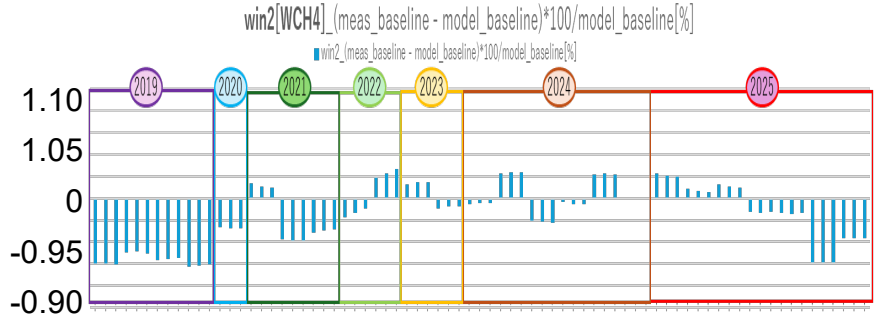
Trend B3

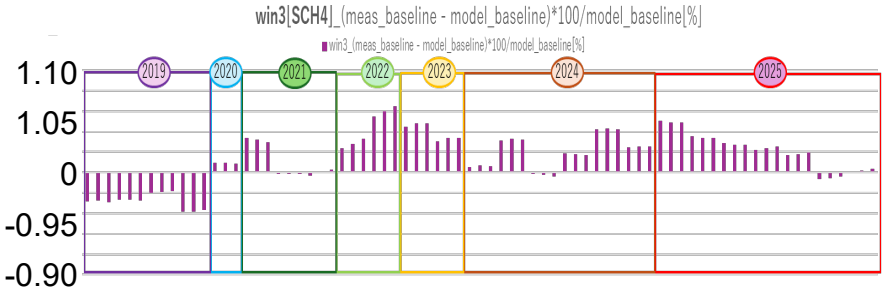


RRV ViCAL

Only May-June-July

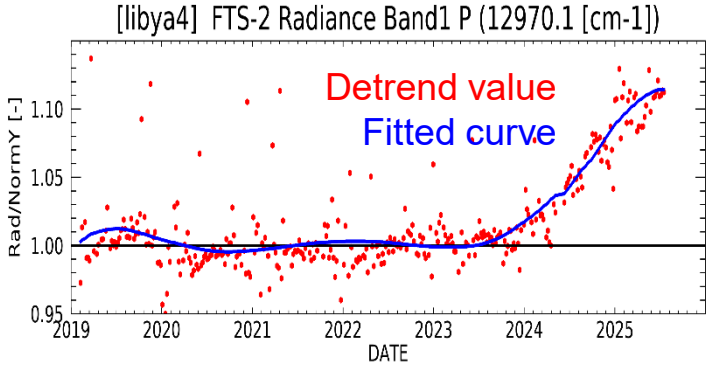


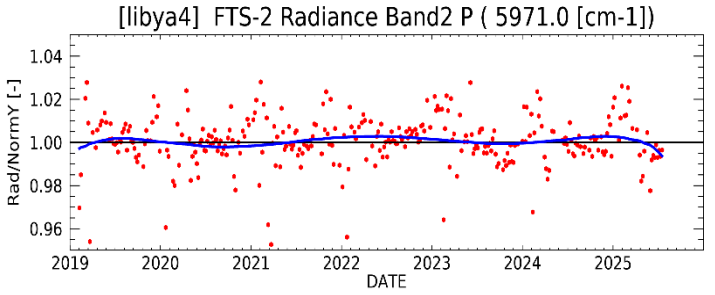


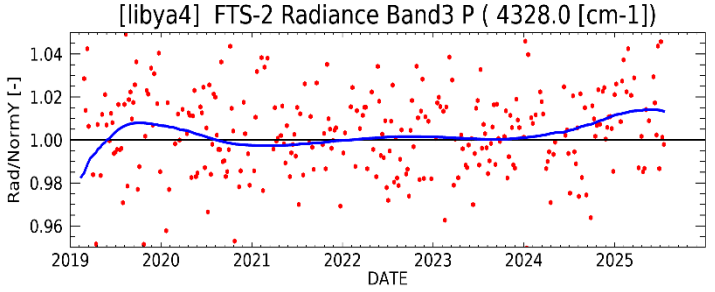


Sahara desert

After detrend



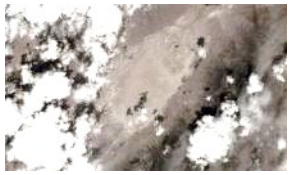




Radiometric response change ratios to the current L1B RDF between 3 methods almost agree.

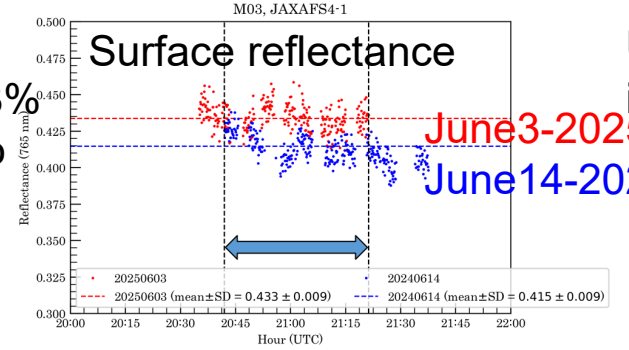
Summary of RRV2025 summer campaign

Surface data collected by OCO and GOSAT teams

	30-May-25	31-May-25	1-Jun-25	2-Jun-25	3-Jun-25	4-Jun-25	5-Jun-25
OCO-2 path			138 (20:53UTC)		~~136 (20:40UTC)~~		
GOSAT path	36 (20:52UTC)	37 (21:24UTC)		36 (20:52UTC)	37 (21:24UTC)	No	36 (20:52UTC)
GOSAT-2 path	72 (20:54UTC)	73 (21:10UTC)	74 (21:26UTC)			No	72 (20:54UTC)
TROPOMI VZA[deg]	28deg	53.6deg	8.1deg	6.9deg	46.3deg	31.7deg	46.6deg
OCO-3			19:07UTC				17:35UTC
TEMPO		SPECICAL(21UTC)	SPECICAL(21UTC)	SPECICAL(21UTC)	SPECICAL(21UTC)		SPECICAL(21UTC)
GOSAT-1/-2 FOV camera 10km-FOV							
Weather	Clear sky (21UTC)	Clear sky (21UTC)	Clear-up just noon Partly cloudy (21UTC)	Clear sky (21UTC)	Clear sky (21UTC)		Cloudy (17:35UTC) Cloudy (21UTC)

Sept. 2025

Up 4.3% in ratio

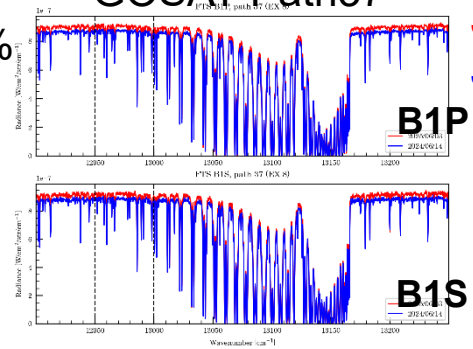


Up 3.9% in ratio

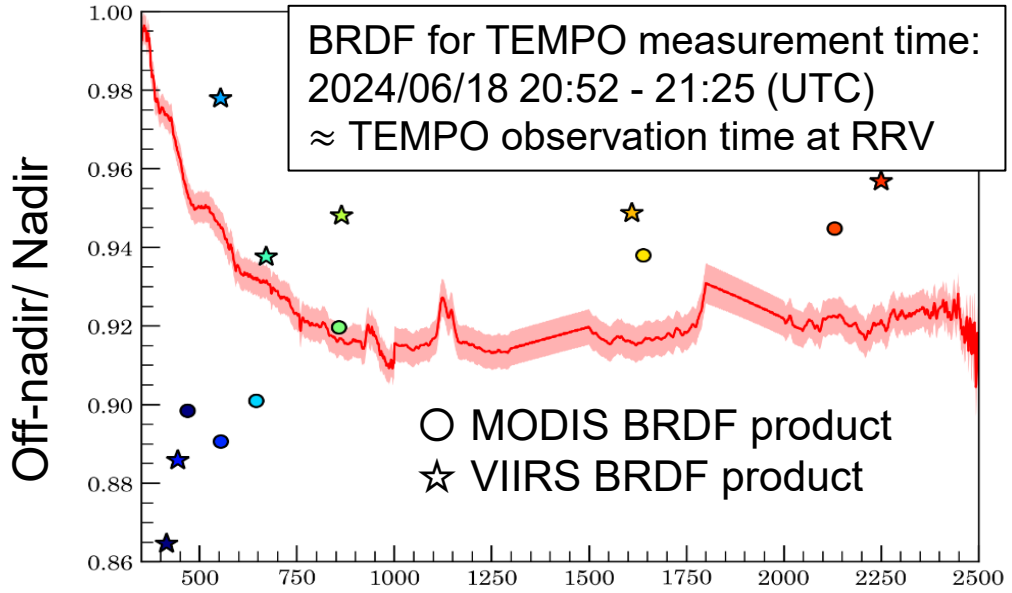
GOSAT Path37

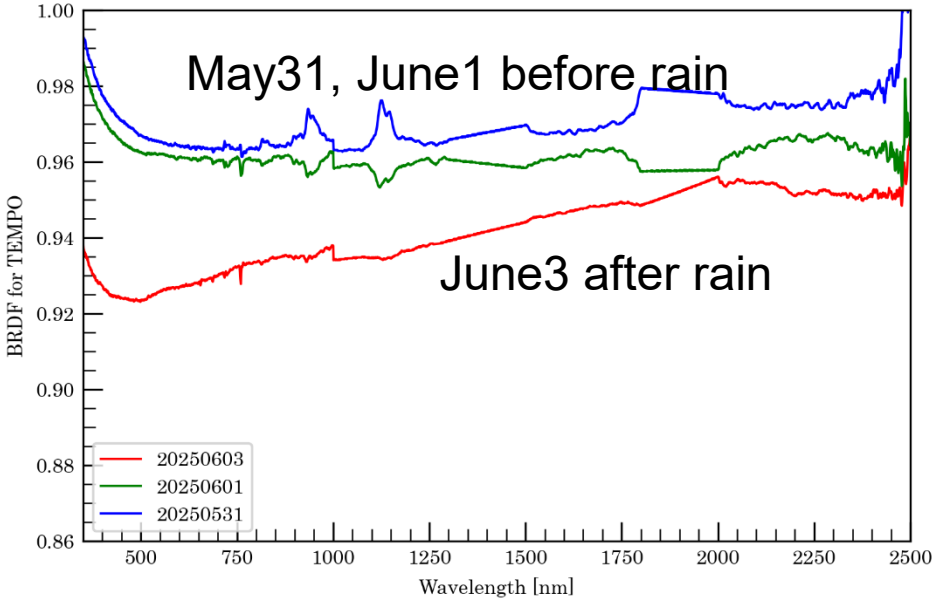
June3-2025

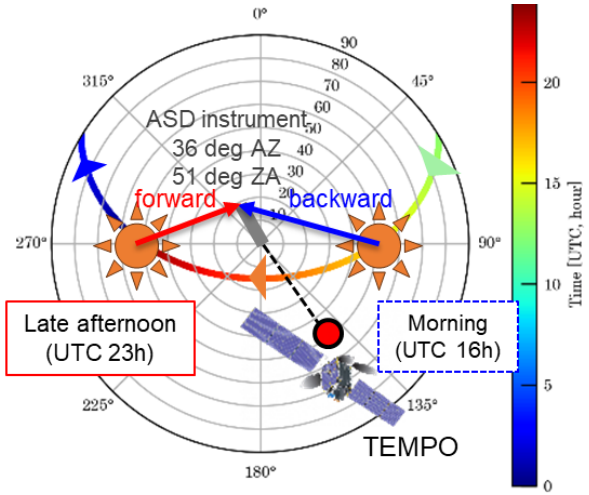
June14-2024

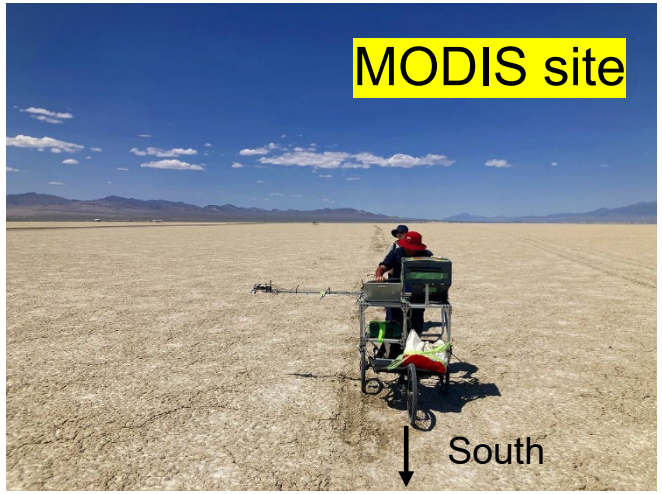


Nadir and off-nadir adjusted to the TEMPO view angle



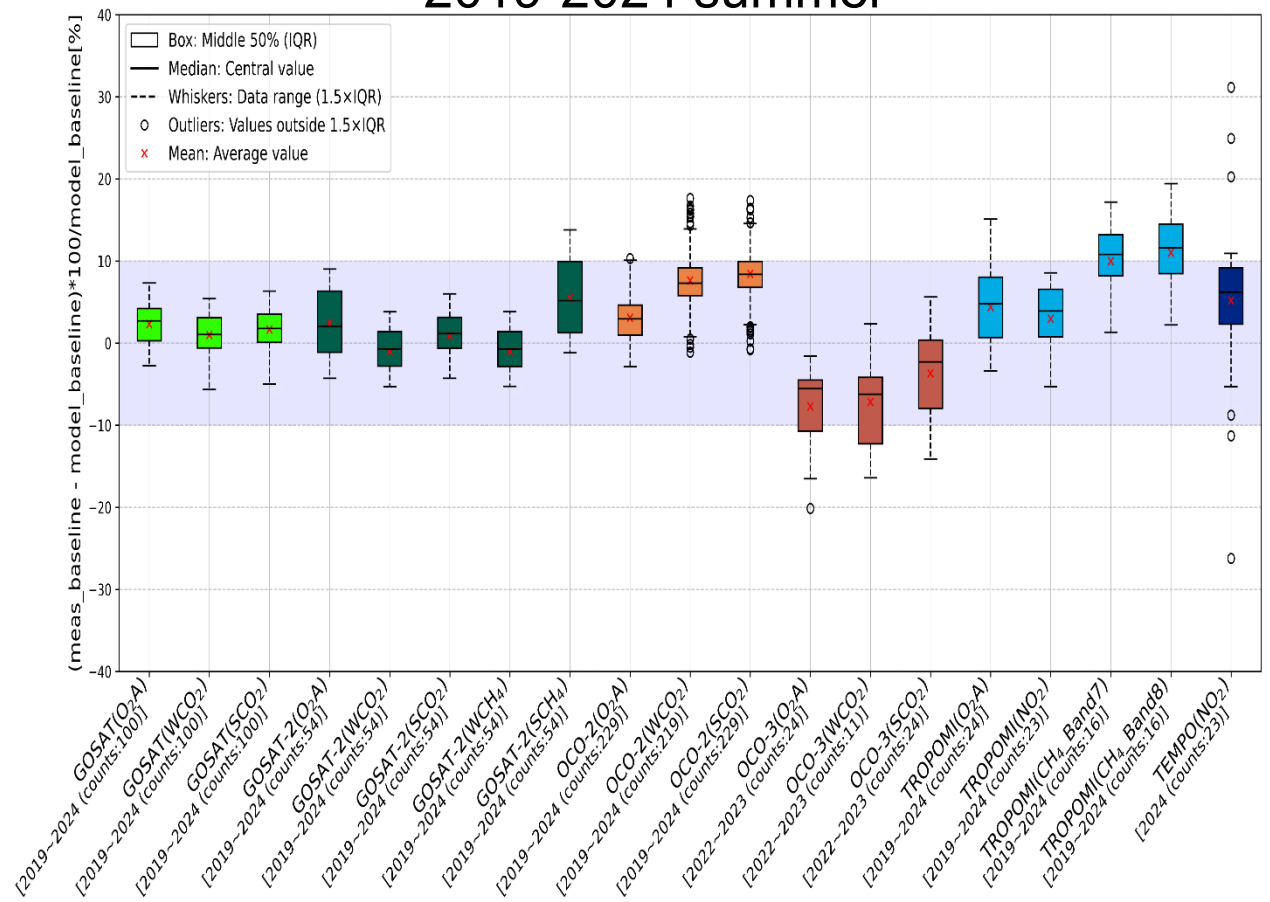




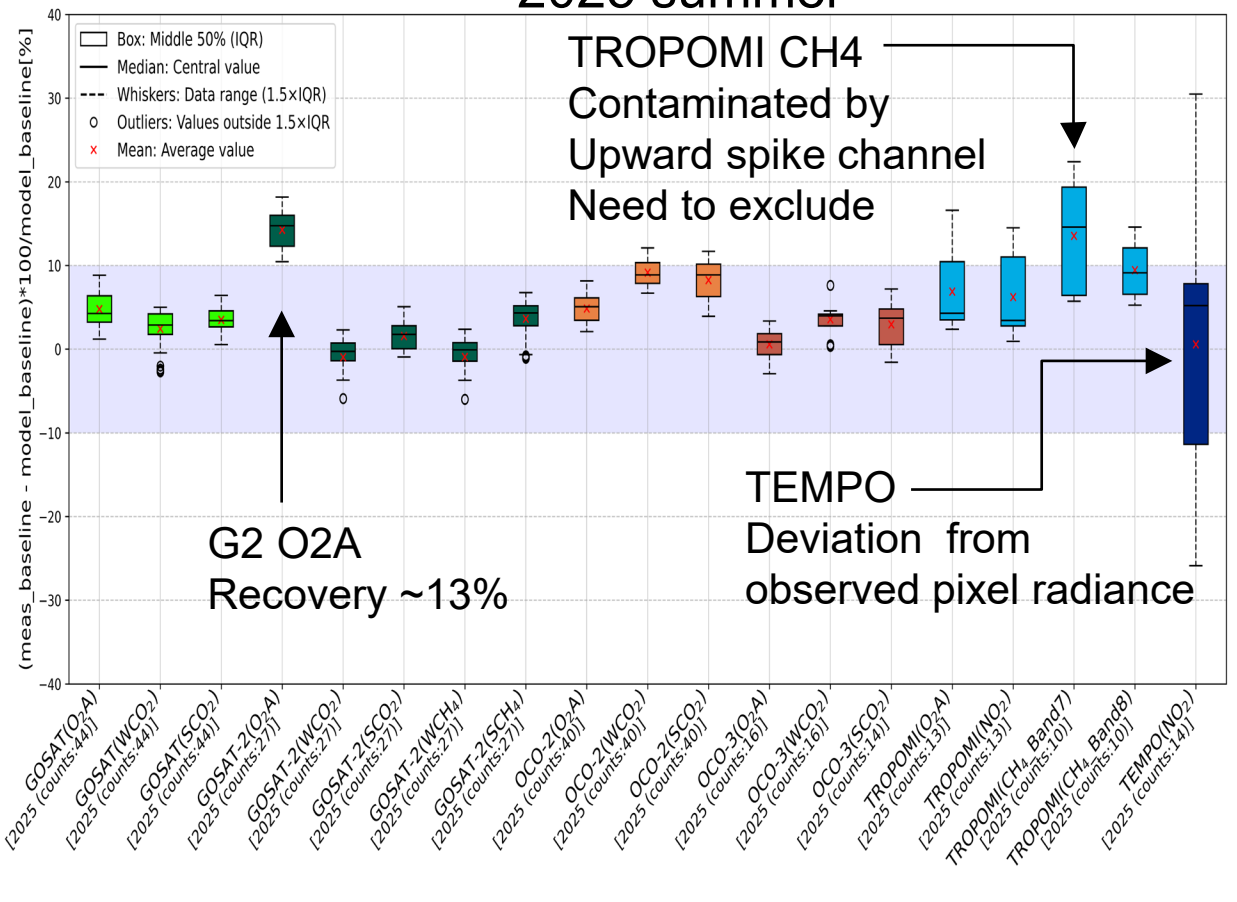


Radiometric validation for GHG multi-sensors by RRV vicarious calibration data

2019-2024 summer



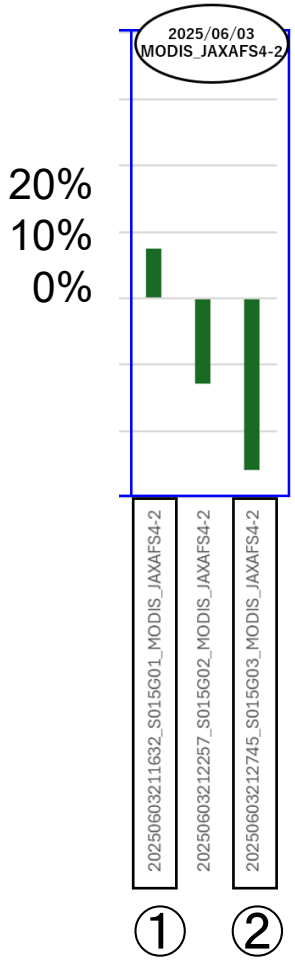
2025 summer



- Computed by RIDORT V3.6 contained in the NASA/ACOS ‘RTRetrievalFramework’
- BRDF correction within the FOV by using 500m-res MODIS product (MCD43A1)
- No or less absorption baseline estimated by collecting 15%-channel radiances from max in the band

Sept. 2025

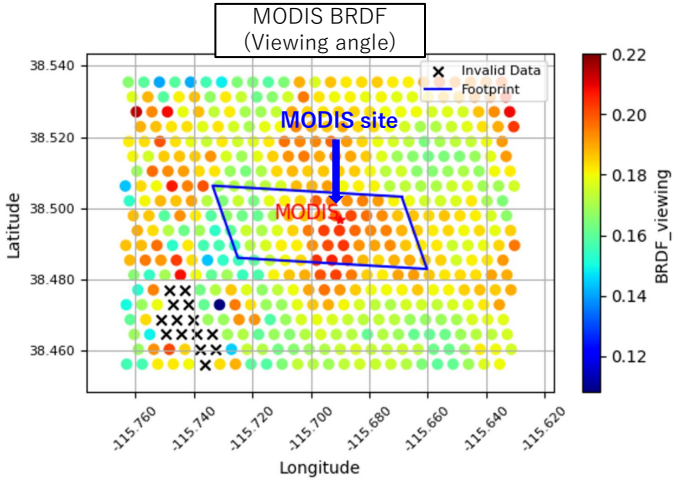
TEMPO NO_2 band

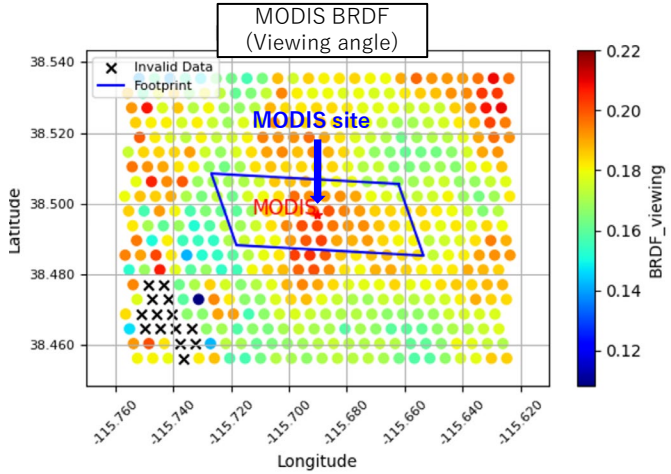


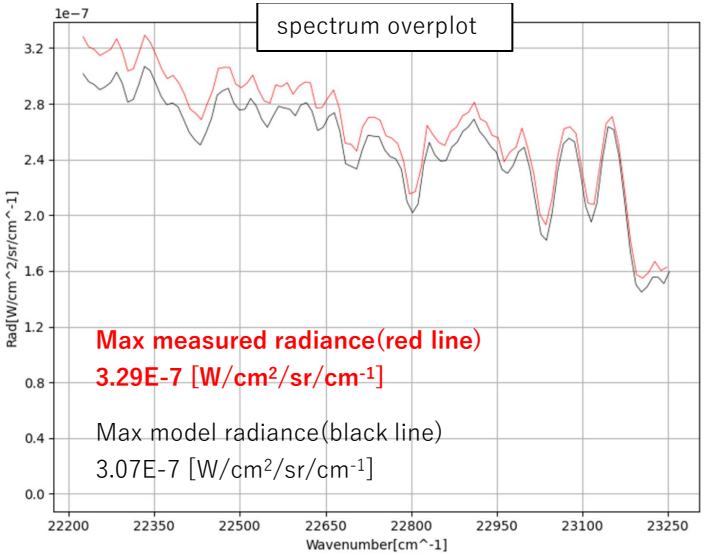
Pixel bias?

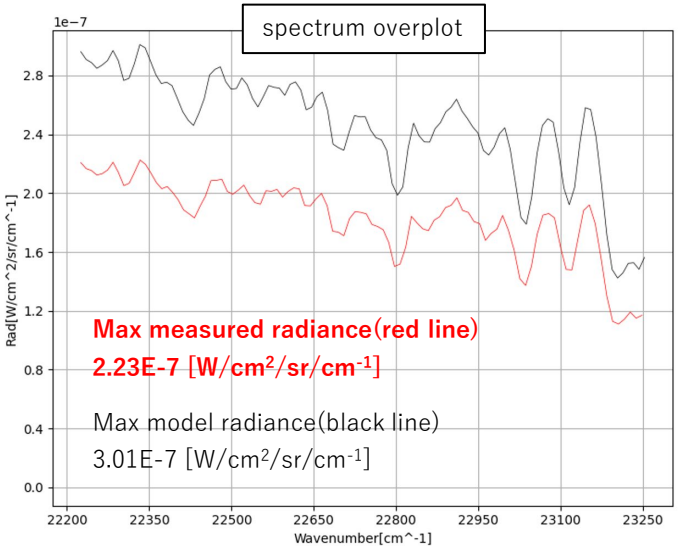
① 20250603211632_S015G01_MODIS_JAXAFS4-2
2025/06/03 21:16(UTC)
time index:122
CT index:716
* index start : 0

② 20250603212745_S015G03_MODIS_JAXAFS4-2
2025/06/03 21:27(UTC)
time index:84
CT index:931
* index start : 0



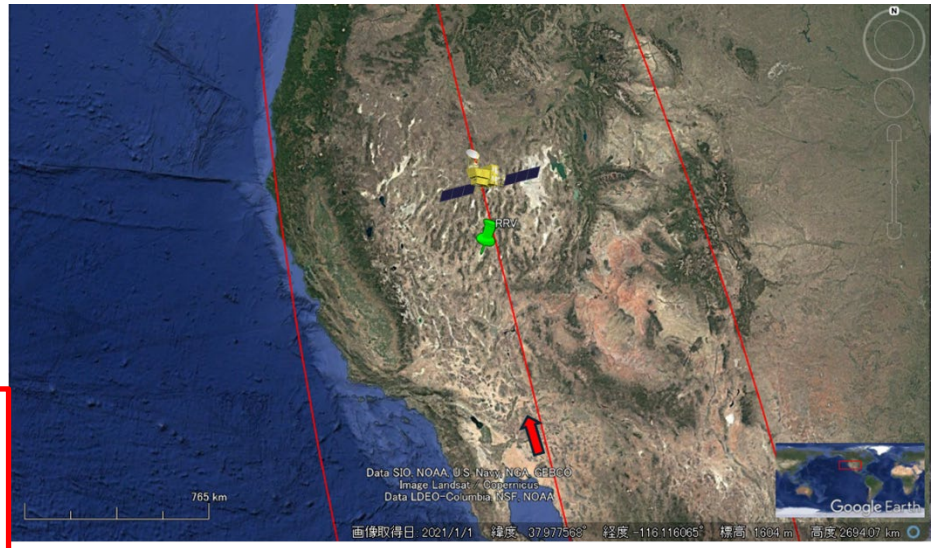






RRV2025 Fall joint campaign schedule

	Day frm 01Jan20		OCO-2	OCO-2	GOSAT	GOSAT-2	GOSAT-GW	TROPOMI InstZA	OCO-3	
28-Sep-25	2098	Sun	9	(139)	37	73	13	52.9		T1: Depart for US, Arrive at Pasad
29-Sep-25	2099	Mon	10		no	74	no	35.9		T1: JPL, Load, Bakersfield(GWpatl
30-Sep-25	2100	Tue	11	137	36	no	no	40.7		
1-Oct-25	2101	Wed	12		37	no	13	6.2		T1: Bakersfield(GWpath13)
2-Oct-25	2102	Thu	13		no	no	no	8.9		T1: Bakersfield(GWpath14)
3-Oct-25	2103	Fri	14		36	72	no	0.6		T2: Depart for US, Arrive at JPL, L
4-Oct-25	2104	Sat	15		37	73	13	4.1	01:13/17:53	Bakersfield(GWpath13)
5-Oct-25	2105	Sun	16		no	74	no	28.0	00:23/17:03	Bakersfield(GWpath14), Move to T
6-Oct-25	2106	Mon	1		36	no	no	53.6	16:14/22:43	Fall-campaign candidate (training)
7-Oct-25	2107	Tue	2	138	37	no	13	8.1	16:59/23:29	Fall-campaign candidate
8-Oct-25	2108	Wed	3		no	no	no	6.9	16:09/**22:45**	Fall-campaign candidate
9-Oct-25	2109	Thu	4	136	36	72	no	46.3	15:25/21:49	Fall-campaign candidate
10-Oct-25	2110	Fri	5		37	73	13	31.7	16:06/22:35	Fall-campaign candidate
11-Oct-25	2111	Sat	6		no	74	no	46.6	15:21/**21:51**	Move to Pasadena
12-Oct-25	2112	Sun	7		36	no	no	7.1	**14:32/21:02**	A day off
13-Oct-25	2113	Mon	8		37	no	13	7.9		Load off / Meeting
14-Oct-25	2114	Tue	9	(139)	no	no	no	52.9		LAX, Depart for JPN
15-Oct-25	2115	Wed	10		36	72	no	35.9		Arrive at JPN



path14 path13 path12

Path 13: RRV target at 8deg-VZA from East
RRV is targeted only from Path 13 every 3 days.
Bakersfield can be targeted in both Path 13 &14.

- GOSAT-GW was launched at 1:33am om June 29 JST with 3-day revisit observations in ascending orbit.
- RRV2025 fall campaign schedule is Oct 6-10 (5 days) on site including OCO-2, GOSAT, GOSAT-2 and GOSAT-GW overpass times, also showing TROPOMI zenith and OCO-3 overpass time (bold red is closest).
- TEMPO will make special target at the on-site measurement. MicroCARB has a potential to target.

OCO2 path136 ~ GW path13 >	OCO2 path138 >	G1 path36 >	G2 path72 >	G2 path73 >	G1 path37 >	G2 path74
20:41	20:38	20:53	20:51	20:53	21:09	21:24	21:25

GOSAT-GW RRV target Path13

GW path13 RRV date	ObsMode and binning
2025/7/15 20:37:26	Focus non-binning
2025/7/18 20:38:34	Focus non-binning
2025/7/24 20:38:22	Focus non-binning
2025/7/27 20:38:19	Focus non-binning
2025/7/30 20:38:15	Focus non-binning
2025/8/2 20:38:10	Wide binning
2025/8/5 20:38:06	Wide binning
2025/8/8 20:38:02	Wide binning
2025/8/11 20:37:58	Wide binning
2025/8/14 20:37:54	Wide binning
2025/8/17 20:37:50	Wide binning
2025/8/20 20:37:40	Wide binning

GW path13 RRV date	ObsMode and binning
2025/8/20 20:37:50	Focus non-binning (AT~0deg)
2025/8/23 20:37:42	Wide non-binning
2025/8/23 20:38:17	Focus non-binning backward

Pattern1: Aug20, 26, …
Focus mode target along Caltech~Dryden~Bakersfield
Move scan mirror and Focus mode target at RRV

Pattern2: Aug23, 29, …
Wide mode along Caltech~Dryden~Bakersfield~RRV
Focus mode target at RRV from backward view

Currently Alternate operate Pattern1 and Pattern2