



MERTIS Target Strategy Document

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	Name	Institute	Date	Signature
Prepared by:	Océane Barraud Jan Hendrik Pasckert	DLR University of Münster		
Revised by:	Solmaz Adeli Lida Fanara Jörg Knollenberg	DLR DLR DLR		
Authorized by:	Harald Hiesinger Solmaz Adeli	University of Münster DLR		 Solmaz Adeli

Digitally signed by Solmaz Adeli
DN: cn=Solmaz Adeli, o=Deutsches Zentrum fuer
Luft- und Raumfahrt e.V. (DLR), st=Northrhine-Westfalen, e=
solmaz.adeli@dlr.de, postalCode=51147, street=Linder Höhe
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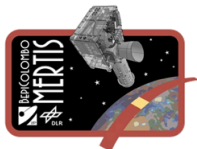


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Change Log

Date	Issue	Description
07.07.2025	1.0	First Issue
02.27.2026	2.0	Large updates after Operation Rehearsal #2

Accronyms

APH	Aphelion
BB3	Blackbody 300 K (internal MERTIS calibration target, passive, temperature floating)
BB7	Blackbody 700 K (internal MERTIS calibration target, temperature actively controlled)
DGF	Direct Gap Filling
DR	Data Rate
FOV	Field of View
GF	Gap Filling
GM	Global Mapping
LTP	Long-Term Planning
MERTIS	Mercury Radiometer and Thermal Imaging Spectrometer
MERTIS-TIR	MERTIS radiometer
MERTIS-TIS	MERTIS spectrometer
MTA	Mercury True Anomaly
MTP	Mid-Term Planning
OBCP	OnBoard Control Procedures
PHE	Perihelion
PSR	Permanently Shadowed Regions
SGS	ESA Science ground segment
TERM	Terminator
TGSTG	Targets and Georeference Systems Task Group
TMX	Traceability Matrix
TS	Terminator Strategy



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1. Introduction

This document outlines the target-oriented observational strategy employed by MERTIS for maximizing scientific returns during the BepiColombo mission.

This document is structured to provide a comprehensive operational description of MERTIS target-oriented observation strategy. The following sections are organized as follows :

- Section 2 describes the overall observing strategy of the MERTIS instrument;
- Section 3 details the rationale behind target oriented observations, including the structure of the target list and MERTIS targeted observation procedures,
- Section 4 describes MERTIS policy and approach to coordinate targeted observations with other instruments;
- Section 5 gives an overview of the MERTIS target-oriented observation strategy.

2. MERTIS observation strategy

MERTIS consists of a compact spectrometer that combines a push-broom IR grating spectrometer (TIS) with a radiometer (TIR). MERTIS-TIS is designed to record the day-side radiance spectra of Mercury's surface, whereas MERTIS-TIR will measure the surface radiance at day and night-side. MERTIS-TIR and TIS share the same optical path.

As MERTIS is a thermal infrared instrument in orbit of a planet with extreme conditions (e.g. close distance to the sun, large variation of temperature between day and night side..) calibration targets have to be observed on a regular basis. Therefore the nominal observation cycle of MERTIS consists of 16 sec of calibration target observations (deep space, and internal black bodies: BB3 and BB7) followed by 124 sec of planet observation. The 16 sec of calibration observations are creating gaps in the spatial coverage of MERTIS global mapping (GM) of Mercury's surface, that are partially being filled directly during the following orbits (direct gap filling: DGF) or later in the nominal mission (gap filling phase: GF).

MERTIS-TIS acquisition is flexible in applying spectral and/or spatial binning, windowing (to reduce the overlap across track) and modifying the duration of the observation cycle or the duration of the recording as well as the repetition rate (to reduce overlap along track). MERTIS-TIS modes are described in **Table 1**. The repetition rate of MERTIS-TIR is slightly variable depending on the mode (see **Table 1**).

During MERTIS operations MERTIS-TIR and MERTIS-TIS are always ON with MERTIS-TIR always observing ,while MERTIS-TIS is flexible. More specifically, MERTIS-TIS data can be discarded per requirement. For example, when using the mode *SciHighRes1_0*, all MERTIS-TIS data during planet observation are discarded. This mode is for example used during night side observations to maintain the thermal stability of the instrument with both channels observing but without keeping any



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MERTIS-TIS data, thus the 0 at the end of the mode name. In general, modes *SciHighRes1_X* allow adjusting the time X (in seconds) of MERTIS-TIS observations that is kept. These modes are mainly used for the DGF, however they can also be used for targeted-observations (see section 3.4). **Figure 1** shows a schematic representation of the *SciHighres1_X* mode in comparison to SciHighRes1 and SciHighRes.

Table 1: MERTIS-TIS and -TIR science modes for Mercury observations.

Mode	TIS			TIR
	Spatial binning	Spectral binning	Repetition rate [msec]	Repetition rate [msec]
SciHighRes1	1	2	100	800
SciHighRes1_X	1	2	100	800
SciHighRes1_0	Discarded			800
SciHighRes2	1	2	300	900
SciHighRes3	1	2	800	800
SciMedRes1	2	2	100	800
SciMedRes2	2	2	300	900
SciMedRes3	2	2	800	800
SciLowRes1	2	4	100	800
SciLowRes2	2	4	300	900
SciLowRes3	2	4	800	800



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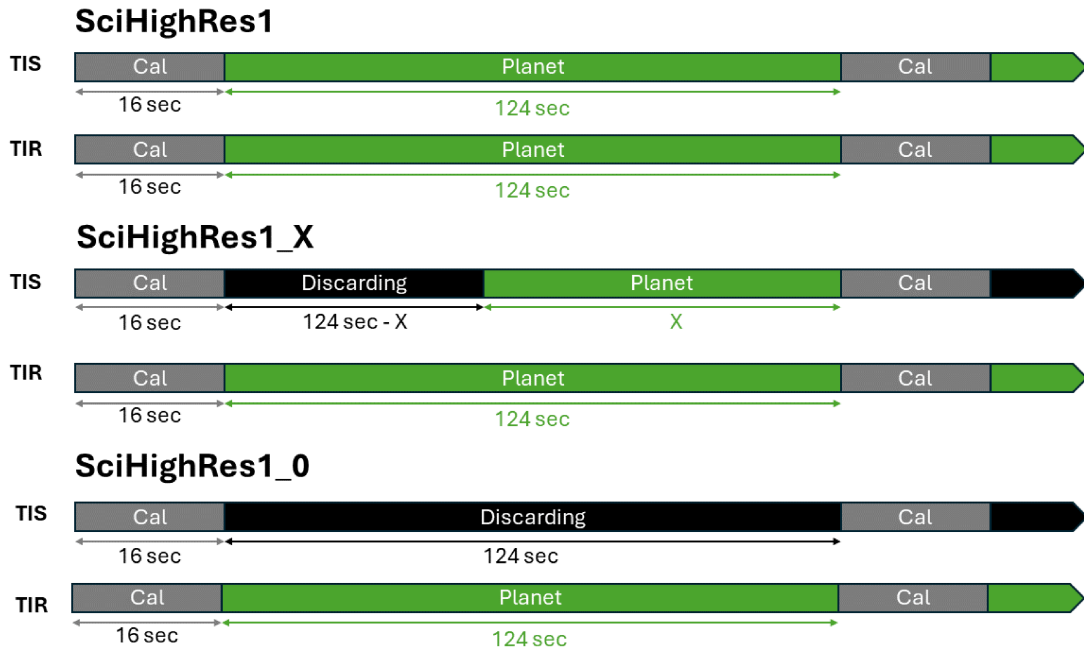


Figure 1: Schematic representation of the *SciHighRes1* modes of MERTIS.

MERTIS observation strategy is based on the operational seasonal phase separated in three main seasons: aphelion (APH) ($135^\circ < \text{MTA} < 225^\circ$), terminator (TERM) ($225^\circ < \text{MTA} < 315^\circ$ and $45^\circ < \text{MTA} < 135^\circ$), and perihelion (PHE) ($315^\circ < \text{MTA} < 45^\circ$). A schematic description of MERTIS observation strategy is shown in **Figure 2**.

During the APH season ($135^\circ < \text{MTA} < 225^\circ$), MERTIS conducts its global mapping (GM). The instrument operates in *SciHighRes1*, *SciHighRes1_0*, *SciHighRes1_24* and *SciHighRes1_20* modes. MERTIS-TIS observes Mercury's day-side with its highest spectral and spatial resolution during the entire season ($135^\circ < \text{MTA} < 225^\circ$). MERTIS-TIR observes on both day and night side performing high spatial resolution mapping on the day-side (periside) and low spatial resolution mapping on the night side (aposide).

During the TERM seasons, MERTIS-TIR continuously observes in *SciHighRes1_0* mode on both day and night sides at its highest repetition rate and MERTIS-TIS data will mainly be discarded. MERTIS-TIS observation strategy focuses on the terminator crossing and permanently shadowed regions (PSR) performing observations 3 days before and 3 days after the terminator crossing for 6 orbits per day (see **Figure 3**). As mentioned previously, MERTIS-TIR continues to observe during MERTIS-TIS operations.

During the PHE season, the instrument performs low resolution survey mapping outside the ground passes. Survey mapping is performed in *SciLowRes3* mode.

Table 2 summarises the modes used by MERTIS across the seasons.



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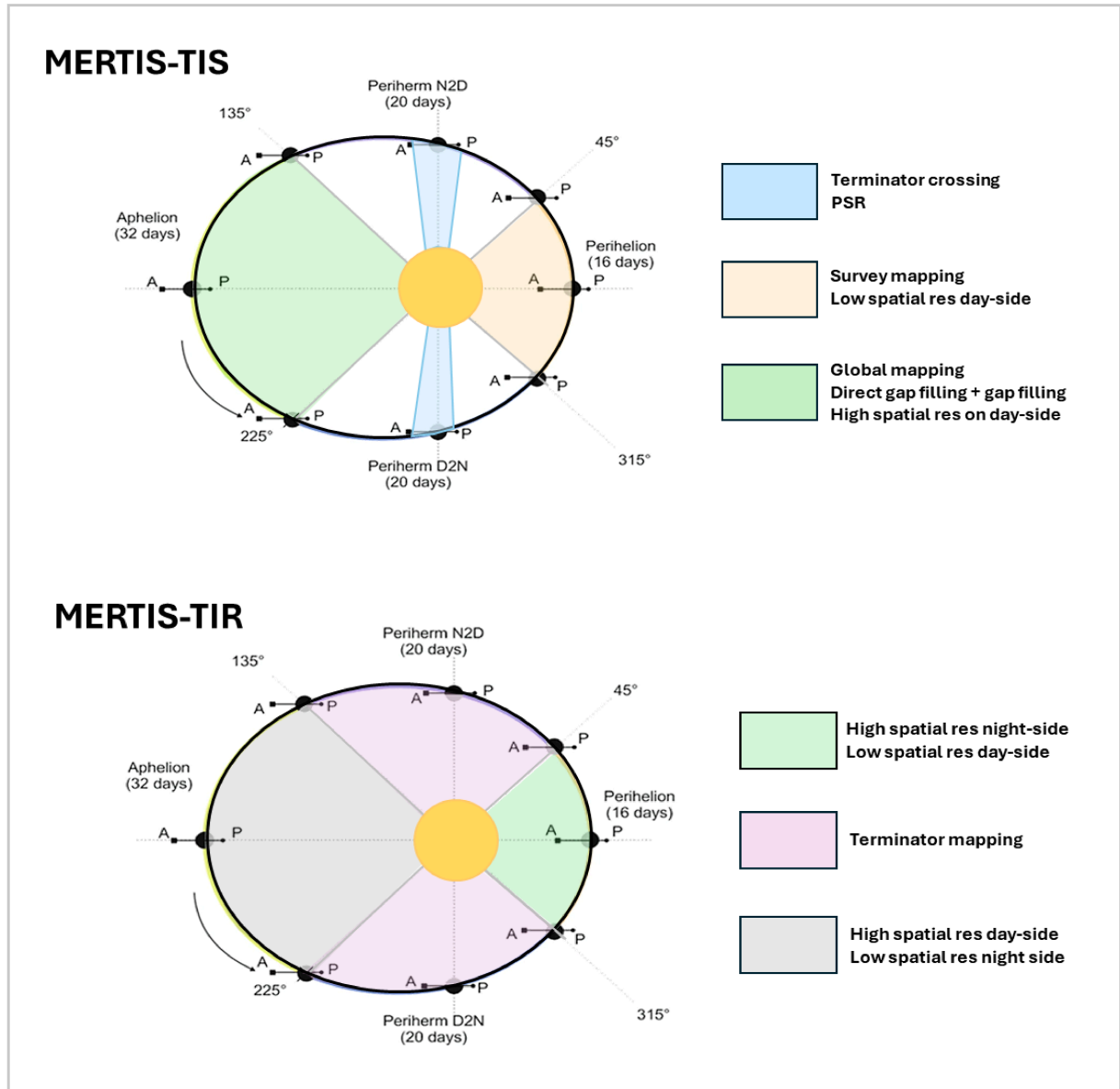


Figure 2: Overview of MERTIS-TIS (top) and MERTIS-TIR (bottom) channels observing strategy across seasonal phases of Mercury.



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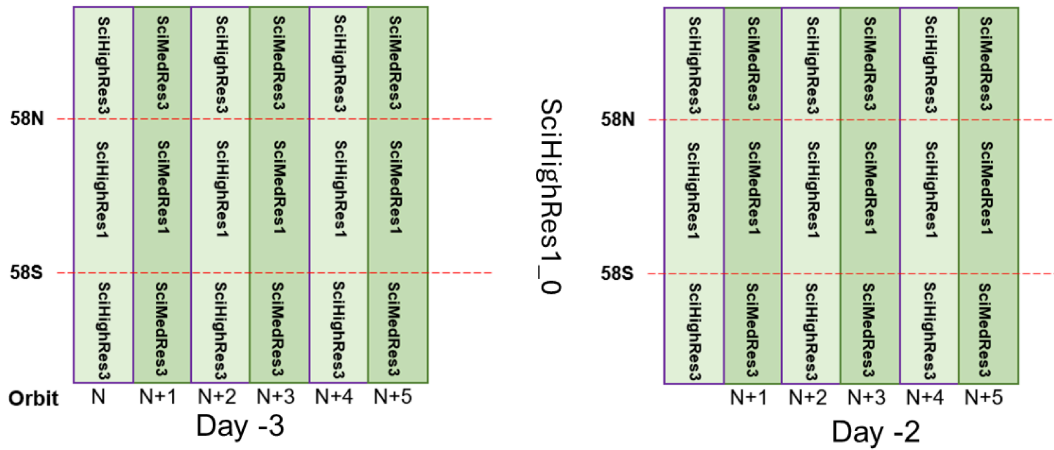


Figure 3: MERTIS TERM observation Strategy (TS) for day -3 before the TERM crossing and 6 first orbits of day -2 before the TERM crossing. During the four “SciHighRes1_0” orbits MERTIS-TIS data are discarded.

Table 2: MERTIS modes used across the orbital phase.

Orbital phase name	MTA range (°)	MERTIS mode (day-side)	MERTIS-mode night side
Aphelion season	135-225	SciHighRes1 SciHighRes1_0 SciHighRes1_20 SciHighRes1_24	SciHighRes1_0
Terminator season	225-315 and 45-135	SciHighRes1_0 SciHighRes1 SciHighRes3 SciMedRes3	SciHighRes1_0 SciHighRes1 SciHighRes3 SciMedRes3
Perihelion season	315-45	SciLowRes3	SciHighRes1_0

3. Targeted-observation strategy

3.1. Target definition

A MERTIS target is any feature with high science interest at the surface of Mercury that:

- we would like to image **in specific conditions** and/or **in a repeated way**;
- will help answering one or more science questions defined by the mission-TMX and instrument-TMX measurements;
- needs to be observed at **different conditions than those provided by the GM phase**.



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MERTIS is a thermal instrument; therefore, surface **temperature and illumination conditions** are parameters of strong importance. In order to well characterize a target, MERTIS needs to observe it at **different local times** (e.g., morning vs noon vs evening) and **different MTA** (e.g., aphelion vs perihelion). Therefore, the main interest for MERTIS is the repeatability of the targets. Targets to be observed at different seasons and/or different conditions have been duplicated (see next section). All targets with no specific phase (0-360) will be observed at all opportunities (APH, PHE and TERM), to increase the repeatability.

3.2. Target List

A first target list for testing during the operation rehearsal #2 has been sent by the MERTIS team to ESA SGS on July 4th, 2025, as a shapefile.

Table 3 shows MERTIS target list shared with ESA SGS.

Table 3: Record of MERTIS target list updates.

Filename	Date	Update
MERTIS_Target_List_shapefiles_07_25	07.04.2025	Version 1
MERTIS_Target_List_c180_07_25_v2	07.16.2025	Update column name "Target_ID" to "TARGET_ID"
MERTIS_Target_List_v7_c0_c180	10.13.2025	Additional targets
MERTIS_Target_List_v8_c0_c180	10.14.2025	Update format RANK column from strings to integers.
MERTIS_Target_List_v11_c0_c180	02.27.2026	Additional targets Added THERMAL ANOMALY as target type in the TERRAINS category

The target list is delivered as a shapefile following the rules, including all the required fields as recommended by BepiColombo's Targets and Georeference Systems Task Group (TGSTG) [RD.2]. However, additional clarifications are needed for the case of MERTIS:

- **Local time range (LOCAL_TIME)**

As agreed during the TGSTG meeting on December 17th, 2025, the local time is expressed as a single value in the target list (see document BC-TGSTG-TN-Baseline-Recommendations). However, local time ranges are more appropriate for MERTIS; therefore, MERTIS will use the following correspondence between single values and time ranges. Minutes will be used to indicate a range rather than a single value. For example, a time of 12:00:00 indicates a single instant (12:00:00), whereas 12:06:00



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indicates a range starting at 12:00:00 and lasting six hours, until 18:00:00. Following this approach, observations required only during nighttime would be indicated as 18:12:00, while observations during daytime would be indicated as 06:12:00.

- **Modes: MERTIS-TIS and MERTIS-TIR**

To simplify the MERTIS target list, we did not include all modes described in the section 2, and instead chose the “YES/NO” option for TIS and TIR mode. However, if the field MERTIS-TIS is “ON” by definition MERTIS-TIR should also be “ON”. The modes used for targeted observations are described in section 3.3.

- **Duplicates**

To support the need of observation repeatability under varying conditions—such as local time, illumination geometry, viewing geometry, and MTA— targets have been duplicated with different parameters. Each time a target becomes observable under the specified conditions, MERTIS will acquire observations in order to increase the number of measurements available for that target.

- **Target Ranking (RANK)**

In the case of MERTIS, where repeatability and duplicated observations are central to the targeted observation strategy, the parameter “**RANK**” is applied in a specific way according to the following rules:

- **Rank 5 – Highest Priority.** Assigned to scientifically critical targets that require specific observing conditions, mainly defined by incidence angle, emission angle, local time, and/or MTA. For Rank 5 targets, the illumination and observing geometry is the key driver. These observations must be planned as a priority within the nominal mission, in accordance with the MERTIS observation strategy defined in the following sections.
- **Rank 4 – High Priority.** Assigned to highly relevant scientific targets for which all possible observation opportunities must be evaluated. These targets are defined with inclusive parameter ranges (e.g., 0–90° incidence angle and 0–360° MTA). From all computed opportunities, the maximum feasible number will be selected by the MERTIS team based on scientific relevance, provided they have not already been scheduled as Rank 5 targeted observations.
- **Rank 3 – Medium Priority.** Assigned to targets with moderate scientific relevance. All possible observation opportunities must be computed. From these, a short list (up to three observations per target) will be defined by the MERTIS operations team in order to select the best observing conditions.
- **Rank 2 – Low Priority.** Assigned to targets with limited scientific relevance. The target will be observed once more under different conditions than the GM ones selected by the MERTIS operations team from the available opportunities
- **Rank 1 – Lowest Priority.** Assigned to targets with very limited scientific relevance. If the target falls within a coverage gap during the GM phase, it must be observed during the GF phase to ensure coverage completeness.



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For all ranking levels, if a target falls within a coverage gap during the GM phase, it shall be prioritized for observation during the GF phase, following the priority order defined by its assigned ranking.

Scientific rank will be the main parameter used to discriminate among requests when allocating resources of any type. However, a fully operational plan will require further interaction between scientific needs and operational capabilities. For this reason, we reserve the option to introduce an additional ranking and continuously update the ranking of targets defined prior to the nominal mission, aimed at linking scientific relevance with observation quality. This will be particularly important for targets with multiple duplicates, where repeatability and very specific thermal constraint is essential to achieve strong scientific results.

- **Future targets**

Given that Mercury has not previously been observed in the thermal infrared domain, it is expected that **new MERTIS targets will be identified throughout the mission**. It is therefore crucial to preserve observational flexibility within MERTIS operations to accommodate these new targets.

3.3 Target coverage

Each target shall be covered by MERTIS planet observations with a baseline margin of 5 sec before target entry and 5 sec after target exit from the MERTIS-TIS FOV. This margin accounts for the difference in spatial coverage between the two channels. In particular, the TIR channel requires approximately ± 5 seconds relative to the TIS coverage to ensure that the target is fully observed by both TIR arrays and the TIS channel. The current SGS timing accuracy is up to 10 sec (SGS–MERTIS meeting, February 23, 2026). To account for this uncertainty, an additional 10-sec margin shall be applied. As a result, MERTIS targeted planet observations shall be scheduled for MERTIS-TIS FOV ± 15 sec. This 15-sec margin needs to be added at the start and the end of the target coverage.

Each MERTIS observation (all modes) begins with a 16 sec calibration cycle, the start of targeted observations must be scheduled earlier than the actual target coverage to prevent loss of data due to this initial calibration gap. In addition, switching between nominal science modes introduces an extra gap of up to 12 sec (as per state model + margin). As a result, MERTIS mode should be changed to the mode used for MERTIS targeted observation 28 sec (12 + 16) before the target enters the MERTIS-TIS FOV - 15 sec (**Figure 4**).

To ensure proper data calibration, **targeted observation must start AND end with a calibration cycle with similar parameters** (i.e. using the same science mode). Therefore, at the end of each targeted observation an additional cycle must continue to provide a final calibration cycle.

Depending on the target size, three scenarios are possible (**Figure 4**):



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- **“Small” target (Scenario 1):** If a target is small enough to be fully observed within a single MERTIS cycle of 140 sec (16 sec calibration followed by 124 sec of planet observation), the timing of the observation is adjusted as explained before (see **Figure 4**).
- **“Large” target:** if the target observation (including target coverage +/- 15 sec margins) is larger and requires more than one MERTIS observation cycle (124 sec planet observation), one or more calibration gaps may occur during the observation. To minimize the impact of these calibration gaps and maximize scientific return, two scenarios are considered at this stage depending on the commissioning results:
 - **Scenario 2:** If the MERTIS observation cycle **CANNOT** be extended to more than 140 sec, MERTIS operators will adjust the timing of the targeted observations at MTP level, in order to shift gaps away from scientifically critical regions. This will result in an offset at the beginning of the targeted observation (see **Figure 4**, scenario 2).
 - **Scenario 3:** If the MERTIS observation cycle **CAN** be extended to more than 140 sec, a higher cycle duration may be implemented (example: 200 sec = 16 sec calibration cycle + 184 sec planet observation) to be able to cover the target without adding a calibration cycle inside the target observation. The new cycle duration may include target coverage and the +/- 15 sec margin accounting for the FOV and the accuracy on the orbit.

In summary, targeted observations are defined as events at LTP level and must start 28 sec before the target is covered by the MERTIS-TIS FOV - 15 sec, therefore the targeted observation should be scheduled a total of 43 sec before the actual start of the target coverage. If one or more calibration gaps fall within the observation window, timing adjustments will be applied at MTP level to avoid placing gaps over key scientific features. The feasibility of using the longer cycle (Scenario 3) can only be assessed during the commissioning phase. Therefore, targeted observations planned for the first LTP (LTP#1) will not include an extended cycle configuration (more than 140 sec). If the MERTIS team confirms that data quality remains acceptable when using a longer cycle, this observing parameter (cycle duration) may be introduced for targeted observations starting from LTP#2 onward.



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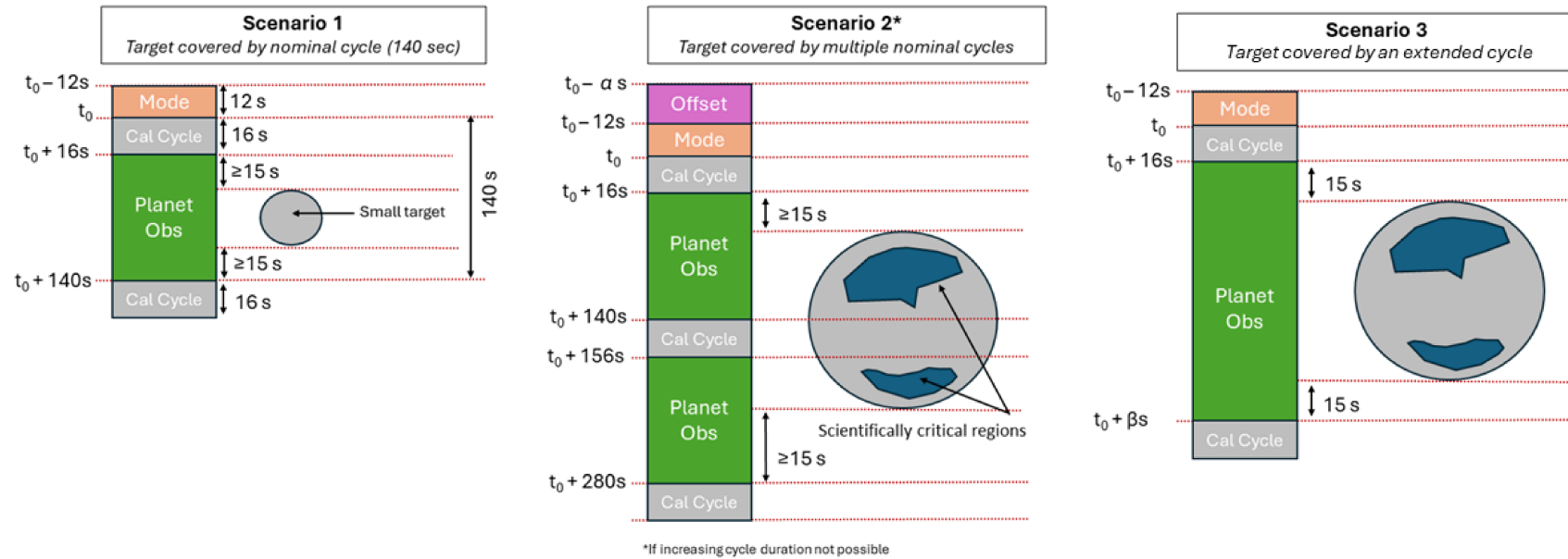


Figure 4: Timing of MERTIS targeted observations. The orbital direction (or time progression) is downward. Mode (in orange) represents the delay due to the mode changing (e.g. from SciLowRes3 to SciHighRes1), Cal cycle (in grey) is the 16s calibration cycle of MERTIS, Planet obs (in green) is the planet observation. t_0 is the start time of the targeted observation MERTIS-TIS FOV - 15 sec. α (in s) represents the offset for adjustment of the calibration cycle inside the target coverage done at MTP level. β is the duration of the extended cycle to cover the target larger than the nominal cycle duration (140 sec).



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3.4 Targeted-observation modes

The *SciHighRes1* mode shall be used for all targeted observations, except when specific operational constraints apply, such as during the perihelion season.

During perihelion, the preferred mode for targeted observations remains *SciHighRes1*, in order to ensure consistency with observations acquired in other seasons. However, if operational limitations prevent the use of this mode, alternative observation modes may be used. In order of priority, these are *SciMedRes1* followed by *SciLowRes1*. The corresponding implications for data rate (DR) are summarized in **Table 4**.

Table 4: MERTIS data rates (DR) for the operation modes used during perihelion season, with nominal cycle of 140 sec (16/124). The DR values are calculated based on the table already shared with SGS.

Operation mode	DR [kbit/s]
Nominal perihelion mode (16/124)	
SciLowRes3	10.4
Targeted perihelion mode (16/124)	
SciHighRes1	315.5
SciMedRes1	158.9
SciLowRes1	80.6

To reduce the data volume of targeted observations, several adjustments may be applied when the target size allows:

- **Windowing.** If the target width is 29–33 MERTIS-TIS pixels, the 74×80 windowing mode may be applied. If the target width is smaller than 29 MERTIS-TIS pixels, the 66×80 windowing mode may be applied. Windowing is permitted only when the projected MERTIS field-of-view (FOV) boresight (i.e., the FOV center) falls within ± 2 MERTIS-TIS pixels of the target center (see **Figure 5**).

The corresponding implications for data rate (DR) are summarized in **Table 5**.

Table 5: MERTIS data rates (DR) with and without windowing for a nominal cycle of 140 sec (16/124). The DR values are calculated based on the table already shared with SGS.

Operation mode	DR [kbit/s]
Nominal targeted mode (16/124)	
SciHighRes1	315.5
Targeted perihelion mode (16/124)	
SciHighRes1 - windowing 74*80	234.1
SciHighRes1 - windowing 66*80	209.0



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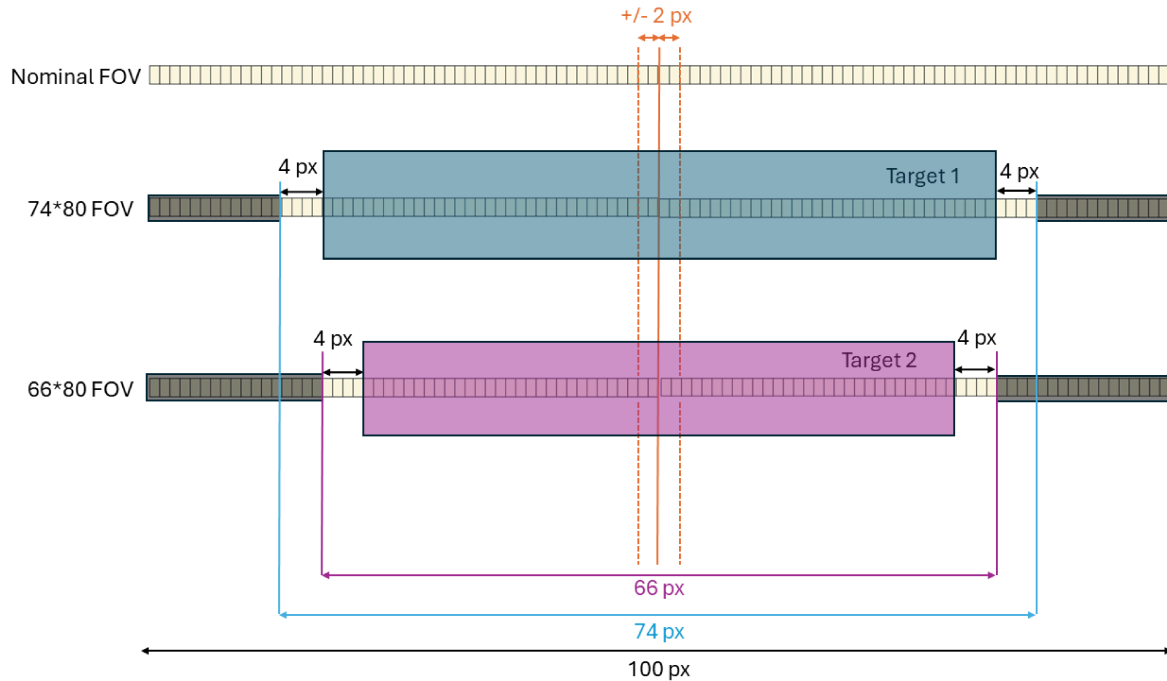


Figure 5: Schematic representation of the use of windowing to reduce the data volume for targeted observations. Target 1 and Target 2 are the maximum width for targeted observations using 74*80 and 66*80 windowing, respectively. The orange line shows the MERTIS-TIS FOV boresight projected on the surface and the center of the targets, the dashed orange lines show the ± 2 pixels deviation from the center of the target.

- MERTIS Cycle.** If the target can be fully covered within an observation time shorter than 14 sec, the cycle duration may be reduced to 60 s (16 s calibration + 44 s planetary observation). The same ± 15 sec MERTIS-TIS FOV margin is then applied (15 sec margin + 14 sec target coverage + 15 sec margin).
- Discarding mode.** If the nominal planet observation time (124 sec) is longer than the target coverage and the target is too large to be fully covered with 14 sec, the “SciHighRes1_X” mode can be used (see **Figure 6**). The timing of the MERTIS-TIS recording will be adjusted accordingly to include the ± 15 sec margin.



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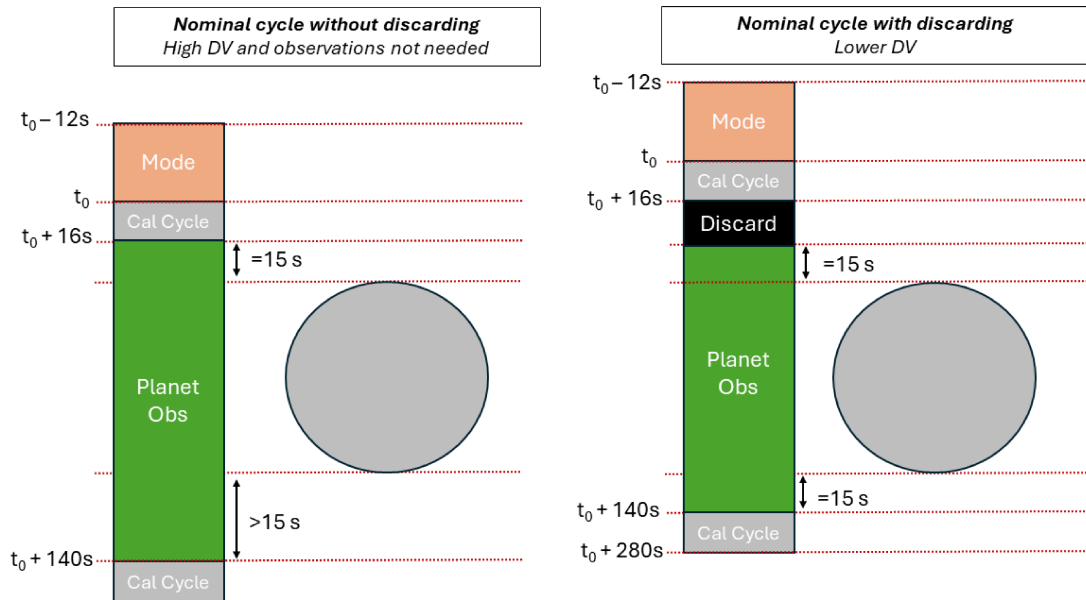


Figure 6: Discarding mode used to reduce DV. This scenario can be used if the target coverage and the additional 2×15 sec MERTIS-TIS FOV margins are in total lower than 124 sec (planet observation) in order to reduce the DV. The green and black part on the right sketch are the same size as the green part on the left sketch. The green part on the right sketch corresponds to the X sec used in the SciHighRes1_X mode, the mode allowing to discard data.

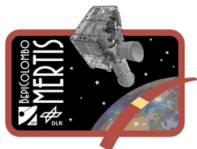
3.5 Consecutive targets

If two targets are in the same longitude bands for targeted observations, the following rules apply:

- If the targets are separated by more than one MERTIS nominal cycle (140 sec) the targets are observed separately following the strategy defined in the previous sections.
- If the targets are closer than one MERTIS cycle, the target with the highest ranking is observed and the other target is skipped. If both targets have the same ranking, MERTIS operation team will define the strategy to follow as we are not expecting this case to happen often.

3.6 Off-pointing targets

Off-pointing targeted observations might be requested by MERTIS during TERM seasons and PHE seasons at any LTP outside regular MERTIS activities (e.g. terminator strategy around the terminator



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crossing). The main science objectives of off-pointing targeted observations are photometric analysis and definition of the emission phase function of specific targets.

During LTP#3 and LTP#4, MERTIS will perform GF observations at latitudes below 45°. Targets located outside the GF region (latitudes higher than 45°N and 45°S) may also be observed during this period including science off-pointing targeted observations. The operational modes used for these off-pointing observations are the same as those defined in section 3.3.

3.7 Overall MERTIS targeted observation strategy

Nominal mission LTP#1 and LTP#2

During LTP#1 and LTP#2, the priority for MERTIS is the GM therefore during APH seasons on the day-side and night-side no targeted-observations are planned. If some MERTIS targets are only observable during APH season (in the conditions requested) but fall in a calibration gap of the GM (which are not directly filled by the DGF strategy), those targets become of high priority for the GF phase during LTP#3 and LTP#4.

During TERM seasons, MERTIS has the opportunity to observe targets in different conditions:

- just after the targets have passed into the light
- just after they have passed into the penumbra
- at the end of a very long night
- at the end of a very long day.

So, these observations are very important for characterizing the thermophysical properties of surface targets. If targets are observable during the TERM season, MERTIS will observe them. However, the targeted observation should not modify the TS (3 days before and 3 days after the terminator crossing). **Figure 5** shows when targeted observations are allowed during the TS. Off-pointing targeted observations may be requested during the TERM seasons outside TS.



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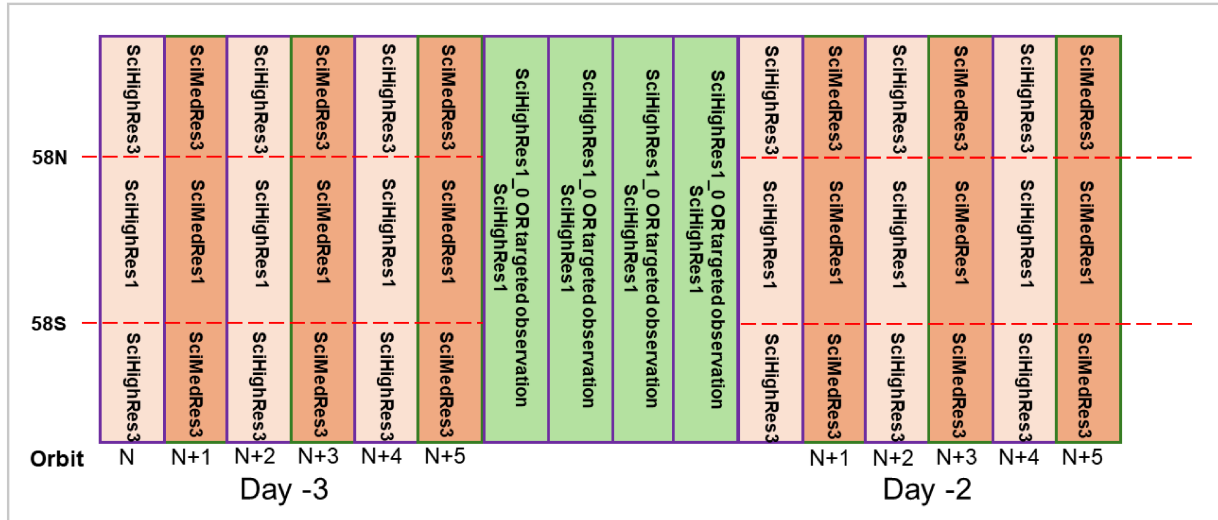


Figure 5: MERTIS targeted observations by both channels (TIS and TIR) during Terminator Strategy (TS). Targeted observations (without off-pointing) are allowed during the green orbits (previously defined as SciHighRes1_0).

During PHE, MERTIS observes the surface in SciLowRes3 mode. Targeted observations in this season are of high scientific value, as the Mercury surface is expected to be significantly hotter. Comparing observations of the same targets acquired during APH or TERM seasons with those obtained during PHE will substantially enhance the scientific return of MERTIS. For targeted observations during PHE, the change to SciHighRes1 mode is strongly requested. If this mode cannot be used due to operational constraints, the observation modes shall be selected in accordance with the rules defined in Section 3.4. Off-pointing targeted observations may be requested during the TERM seasons.

Nominal mission LTP#3 and LTP#4

During the LTP#3 and LTP#4, the same rules apply for the TERM and PHE seasons. At APH seasons, MERTIS will perform GF. This activity should remain the priority however targets located outside the GF region have to be observed. In particular, APH gives the opportunity to observe polar targets multiple times in order to increase the signal to noise ratio and to perform off-pointing targeted observations at latitudes higher than 45°.

Since Mercury has not yet been observed in the thermal infrared domain, new scientific targets are expected to emerge during the mission. It is therefore essential to allocate observational flexibility for MERTIS to incorporate additional targets as the mission progresses—particularly during LTP #3 and #4, as well as during any potential extended mission phase, if approved.

Extended mission

During the extended mission phase targeted observations are requested, in particular off-pointing targeted observations in order to increase the constraint on the emission phase function of several MERTIS Targets. Those targeted observations may concern predefined targets (in the current delivered list, see section 3.2) as well as targets defined during LTP#1 to LTP#4.



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4. Coordination with Other Instrument Teams

MERTIS has consistently expressed its readiness to operate in coordination with targeted observations proposed by other instrument teams of the BepiColombo mission, particularly SIMBIO-SYS, MIXS, BELA, and PHEBUS. During such joint observations, MERTIS preferably operates in its SciHighRes1 mode to ensure optimal data quality. However, in cases where limitations apply (such as during the PHE season) MERTIS operation mode may be adjusted following coordination, especially if the proposed targets are not part of the predefined MERTIS target list. MERTIS observation priorities are structured as follows (from high priority to low priority):

- (1) global mapping and gap filling (limited to the APH season);
- (2) terminator strategy (TERM);
- (3) MERTIS-defined targets;
- (4) survey mapping (PHE);
- (5) targets proposed by other instruments (that are not on the MERTIS target list).

5. Concluding remarks

The major parameter for planning targeted observations is the seasonal phase (MTA). Summary of the MERTIS overall targeted-observation strategy according to the seasonal phase and mission planning at LTP level is shown in **Table 6**.

Whenever additional resources become available at the MTP or STP level, the MERTIS targeted-observation strategy will be updated to:

- Reintroduce previously excluded high-priority targets;
- Include new scientifically relevant targets identified through the mission;
- Extend observational coverage to broader contextual areas, and improve the location of calibration gaps;
- Improve the operation modes and parameters.



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Table 6: Overall MERTIS Targeted-observation strategy for the nominal and extended mission.

Planning and main MERTIS Task	Season	Targeted Observations	Targeting Mode	Target Off-poiting
LTP#1 Global mapping	Aphelion	No	-	-
	Terminator	Yes	SciHighRes1	Yes (outside Terminator Strategy)
	Perihelion	Yes	SciHighRes1 SciMedRes1 SciLowRes1	No
LTP#2 Global mapping	Aphelion	No	-	-
	Terminator	Yes	SciHighRes1	Yes (outside Terminator Strategy)
	Perihelion	Yes	SciHighRes1 SciMedRes1 SciLowRes1	No
LTP#3 Gap Filling	Aphelion	Yes (latitudes higher than 45°)	SciHighRes1	Yes (latitudes higher than 45°)
	Terminator	Yes	SciHighRes1	Yes
	Perihelion	Yes	SciHighRes1 SciMedRes1 SciLowRes1	Yes
LTP#4 Gap Filling	Aphelion	Yes (latitudes higher than 45°)	SciHighRes1	Yes (latitudes higher than 45°)
	Terminator	Yes	SciHighRes1	Yes
	Perihelion	Yes	SciHighRes1 SciMedRes1 SciLowRes1	Yes
Extended mission	All seasons	Yes	SciHighRes1	Yes