Listing of columns

1. **ObsID:** Corresponds to the identifier of the Herschel observation. The observation ID uniquely identifies an observation for all mission phases.

2. **NAIF ID:** The NAIF integer ID codes are unique integers assigned to each body in the solar system.

3. **IAU Nomenclature:** The International Astronomical Union Committees and Working Groups have certified the names of astronomical objects and surface features since 1919: this is known as IAU nomenclature.

4. **Target:** In this column, we give the name of the body observed, as recorded in the observation log of the Herschel mission.

5. **Alternative names:** Alternative names have been listed. These may be the previous, provisional designation of the bodies, or other designations that can be find in scientific publications.

6. **First Classification:** Classification of the solar system bodies into major planets, dwarf planets, satellites, minor planets, transitional objects and comets.

7. **Dynamical Classification:** The bodies are classified according to their dynamic behaviour (e.g. orbit characteristic) into: Near Earth Asteroids, Main Belt Asteroids, Main Belt Comets, Centaurs, Trans-Neptunian Objects and TNOs/Centaurs.

8. **Second Dynamical Classification**: A second classification was applied for the TNOs dividing them into: classicals, Plutinos, Twotinos, other resonants (e.g. Resonant 4:9, Resonant 3:5,...), Scattered Disk Objects and Detached Objects.

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9. **Classification Comment:** In this column we indicate an extra information on the body, if available, such as members of orbital groups and families (Amor, Apollo, Aten, Haumea, Cybele, Senoid), the type of cometary orbit (long/short period comet), if an asteroid has shown cometary activity, or if it forms part of a binary or multiple system body, as well as an indication of the existence of rings in the system.

10. **OD:** The operational day of the mission to which the observation belongs to.

11. **Start time:** The starting time of the observation of the body in the following format: (yyyy-mm-dd hh:mm:ss) In UTC time system and fine time, which is defined as the atomic time (SI seconds) elapsed since the TAI epoch of 1 January 1958 UT2.

12. **Integration time:** Duration of the observation in seconds.

13. **Proposal:** Proposal name for the observations of the body, or bodies, during Herschel's observing time (GT, OT and DDT). Guaranteed Time, Open Time and Director's Discretionary Time are explained at the end of section 2.1 of this Explanatory Supplement.

14. **Mode:** Observational mode used for the AOR. The Astronomical Observation Templates are described in section 2.3 of this Explanatory Supplement.

15. **Instrument:** Instrument employed, for the observation: HIFI, PACS, SPIRE.

16. **S/P:** In this column we indicate if the AOR executed was a spectroscometer (S), or a photometer (P) observation.

17. **WL(1/2/3):** Indicates the wavelength, or wavelengths (in micrometres), that were used in the observation

18. **Albedo / Positive STD Albedo / Negative STD Albedo**: The Albedo is the fraction of the incident light reflected from the surface of a celestial body, expressed as the ratio of reflected light vs incident light. In this catalogue, we list the geometric albedo, which uses a flat Lambertian surface (surface which is uniformly bright from all viewing directions and reflects the entire incident light) for the calculations.

    When available, we give the values of the albedo expressed as a fraction from 0-1. In the following two columns, the positive and the negative STD, when available, are also indicated.

    When an albedo value is indicated, but its standard deviations is given as 0, the only value available is a lower limit: Real Albedo (unknown) > Value Albedo.

19. **V-R / V-R STD:** is a colour index. This index is the difference between magnitudes, in this case V and R, with negative values indicating a blue colour and increasingly positive values a red colour. Where available, the V-R colour index is given and in the following column, its standard deviation.

20. **B-V / B-V STD:** is a colour index. Where available, the B-V colour index is given and in the following column, its standard deviation.

21. **Ra/Dec:** Astrometric Right Ascension and Declination of the target centre with respect to the Herschel Space Observatory position, measured in hours, minutes and seconds [HH MM SS.ff] and degrees, minutes and seconds [DD MM SS.f] respectively. Expressed with respect to the planetary ephemeris ICRF/J2000 equator and equinox. Measured at the midpoint of the integration using the target's ephemerides provided by Horizons Web-Interface.

22. **Illumination:** Illuminated fraction seen by the observer, also known as phase, measured in %. Phase is the portion of the target object circular disk illuminated by the Sun as seen by the observer, with the observer the Herschel Space Observatory. Measured at the midpoint of the integration [21].

23. **r:** Heliocentric range in AU. Measured at the midpoint of the integration.

24. **Δ:** Range from the target centre to the observer in AU, the observer being the Herschel Space Observatory (i.e. the Herschelcentric distance). Measured at the midpoint of the integration.

25. **Phase (STO):** Angle measured in degrees between the Sun-target-observer. This is slightly different to the phase angle, as it includes stellar aberration in both vectors.

26. **Method Flux Obs:** Shows the method used in the calculation of the fluxes (e.g. aperture photometry, polarimetry).

27. **Method Flux Comm.:** Gives more information about the method used in the calculation of the fluxes, when available (e.g. wavelength followed by the aperture radius, the inner radius of the sky annulus and the outer radius of the sky annulus in arc-seconds).

28. **WL_(1/2/3):** This column indicates the wavelength or wavelengths in micrometres at which the flux was measured. For PACS photometry: WL_1 = 70, WL_2 = 100, WL_3= 160). For SPIRE photometry: (WL_1 = 250, WL_2 = 350, WL_3 = 500). For the special case of HIFI spectroscopy: (WL_1 = 530.7).

29. **WL_(1/2/3)_Comm.:** A comment that indicates if the flux has been averaged using all the body's flux values for that wavelength or not. The flux can only be averaged between observations of consecutive observations with a difference no bigger than 20 arcsec between the position of the body in this consecutive observations. A 1 indicates that the flux has been averaged, 0 indicates that the flux has not been averaged.

30. **WL_(1/2/3)_Flux:** Monochromatic flux densities measured in milliJansky (mJy).

31. **WL_(1/2/3)_Flux_STD:** This column shows the standard deviation of the measured flux in mJy.

    If there is a value in the Flux column but the Flux STD has the indication of Not Available (NA) means that that flux is unknown and the only information available is this upper limit: Real Flux (unknown) < Value Flux (the information that we have).

32. **CC_WL_(1/2/3)_ThisWork:** This column indicates whether or not the fluxes "in band" extracted from publications, which were not colour corrected as published, have been corrected in this catalogue. 1 indicates that the flux was colour corrected in this work using flux in band values from publication. See the publications in Appendix B. A blank cell indicates that the flux "in band" from the publications was already colour corrected and no further calculations was performed in this work.

33. **WL_(1/2/3)_ThisWork:** This column indicates whether or not the values of the flux and flux standard deviation have been calculated in this work (1 for yes, 0 for no).

34. **Temperature:** Theoretical greybody temperature of the body measured in Kelvin [K]. Calculated in this work. The calculation will be explained in the next section "Completion of Missing Information: Photometric Calculation".

*For a more detail description, example and references see the explanatory supplement of the catalogue section 3.2 Organization of the Information.

Images included

For each of the new flux values, see Tables 27, 28, 29 and 30 from the HCSSOO Explanatory Supplement, there will be three images included in the catalogue, excluding the case of the new fluxes of comets, as more detailed analysis was performed in the Herschel Catalogue of Solar System Object Observations Explanatory Supplement Volume I. The three images will have the following structure:

1. ObsID -ProductID.png: Corresponding to the image of the body at a specific observing wavelength.

2. ObsID -ProductID-ApPhot.png: Corresponding to the image of the body at a specific observing wavelength, with the representation of the aperture radius, inner and outer radius of the sky annulus, described from smaller to larger, used to calculate the flux of the body by using the aperture photometry method.

3. ObsID -ProductID-Stdv-F.png Corresponding to the image of the body at a specific observing wavelength with the representation of the aperture radius grid after exclusion of apertures for calculating the Flux STD.

ObsID was defined in section 3.2.2. Ancillary Information. ProductID corresponds to Level2 data products Blue/Red (HPPPMB/HPPPMR) depending on the observing wavelength (blue for 70 and 100 µm and red for 160 µm) or Level-2.5 data products Blue/Red (HPPUNIMAPB/HPPUNIMAPR) depending on the observing wavelength (blue for 70 and 100 µm and red for 160 µm).

*For a more detailed description on how the images were produced, please refer to the Explanatory Supplement of the 4.1.1 Photometric Calculation Pipeline.