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Titulo: The Sulamitis collisional family: primitive hydration

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Resumen:

Asteroid families are formed by the fragments produced by the disruption of a common parent body resulting from a collision event. Primitive asteroids (C complex and subclasses) in the Solar System are believed to have undergone less thermal processing compared with the differentiated asteroids (S complex and subclasses). The study of primitive asteroid families provides information about the Solar System formation period. The Sulamitis collisional family is located in the inner part of the asteroid belt, and, together with other three families (Polana, Clarissa, and Erigone) and a population of background asteroids, it is believed to be the origin of the two primitive Near-Earth asteroids that are the main targets of the NASA's OSIRIS-REx and JAXA's Hayabusa 2 missions, (101955) Bennu and (162173) Ryugu, respectively. These steroids will be visited by spacecrafts and a sample of their surface material will be returned to Earth. Therefore, understandi ng of the families that are considered potential sources will enhance the scientific return of the missions. The goal of this work is to compositionally characterize the Sulamitis collisional family. Asteroid (752) Sulamitis has been classified as a primitive C-type object, and we expect the members of this family to be compositionally consistent with the spectral type of the parent body. We have obtained visible spectra (0.5-0.9 microns) of a significant number of members of the Sulamitis family, using the OSIRIS instrument at the 10.4m Gran Telescopio Canarias. We performed a taxonomical classification of these asteroids, finding that the number of primitive asteroids in our sample is in agreement with the hypothesis of a common primitive parent body. In addition, we have found a significant fraction of asteroids in our sample that present evidences of aqueous alteration, the same as we found in a previous study for the Erigone collisional family (Morate et al. 2016). This might point to a similar origin of these bodies, and we discuss the possibility of a relationship between the two parent bodies.