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## **Target no. 1: PAN**

### *Little satellites and common people*

The astronomers are convince that by studying satellites, many things can be learned about the planet they orbit around. The big satellites of Saturn: Titan, Enceladus, Tehys, Rhea and Iapetus, were the first on the list of the spatial mission for Saturn.

As the study about the human race won't be conclusive, if we would limit our study to the impressive people on the planet, to geniuses, so the study about Saturn and its miraculous rings won't be complete, if the small satellites are not studied. As the modest people hide mysteries and many performances are never known, it is possible that in the case of the small satellites the same thing to be true. Pan is a small satellite, with a diameter of only 26 km (16 miles) and the mass of  $5 \times 10^{15}$  kg. It was discovered in 1990.

I am only 14 and I have little life experience, but I can say that even the grown, tough people that I have met, under the tough mask they have a warm heart. The research proved that many planets under the unfriendly aspect, they have a warm "heart", a mixture of lava, metals and gas.

More imagines with Pan, with a higher resolution, could reveal more about its surface features. Even though it has a less friendly aspect that our beloved Terra, Pan's heart could be warm. Investigating the internal structure we could learn more about the geological structure, of the planet that it orbits, maybe even about our solar system. With the information gained scientists could understand better the Universe and create scenarios for the future.

I think choosing the name for Pan was not random. Pan in mythology was half human, half animal. The satellite has an unusual appearance, a flattened shape, more wide than tall, like a flying saucer.

Pan, the mythological character was a shepherd and wandered through the woods. Pan the satellite though is 'more serious'. Its course is the same around Saturn, in the ring A, the fourth in order from Saturn. Pan the satellite is a kind of guardian of the "gate" Encke, known as Gap Encke, a distance inside the ring A.

The mythological character was famous as dancer, singer and artist and animator of parties. Pan the satellite interacts with the rings on the outskirts and creates a "dance" of the rings, visible in the photographs in the form of waves. La rândul ei, materia din inele interacționează cu satelitul Pan. Restless like Pan-half human half animal, the satellite throws from its way the particles keeping open Encke Gap. There are no known causes of this effect - Pan's magnetosphere, interaction of gravity, rotation period and other physical mechanisms?

If Cassini's investigations will target Pan, we might find an answer to these questions. The photographs and information gathered by Cassini about the little satellite Pan, will help complete the big picture of Saturn, just as the photographs and information about different people as race, colour, height, traditions, skills, complete the big picture of the humanity on Terra.