Recent Progress In Bioastronomy Space Missions

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Bioastronomy from space may be regarded as the set of technologies enabling humankind to get "clean" radio signals from the galactic environment. This signal detection from space may be achieved in three ways: *i*) By large space antennas orbiting the Earth (like the VSOP/HALCA mission). *ii*) By radiotelescopes placed in the only RFI-free spot around Earth: the far side of the Moon. Proposals have been made to place an antenna inside crater Saha and link it to Earth via another antenna in the Mare Smythii plain on near side. It is claimed in this paper that the relevant space mission would require no astronaut work since a tether tieing the two antennas, deployed in Moon orbit until the two antennas landed softly, would also be the cable connecting them on the surface. In this paper such a mission is furtherly investigated. *iii*) By suitable space antennas put at the foci of the Sun gravitational lens : 1) For electromagnetic waves, the minimal focal distance is 550 Astronomical Units (AU), about 14 times beyond Pluto. One could use the huge radio magnifications of sources aligned to the Sun and spacecraft to detect very weak Bioastronomical signals, originated quite far from us in the Galaxy. A Proposal about such a "FOCAL" space mission was submitted to ESA by this author in 1993, and the matter is furtherly investigated in this paper. 2) For gravitational waves and neutrinos, the focus lies between 22.45 and 29.59 AU (Uranus and Neptune orbits), with a consequent spacecraft flight time of less than 30 years. Two relevant space missions are proposed in this paper to exploit this Sun's focus for Bioastronomy research.