

**CONTROL ID:** 2247796

**TITLE:** On oxygenic photosynthesis in planets of Red Dwarfs

**ABSTRACT BODY:**

**Abstract Body:** The results of the Kepler mission indicate that Earthlike planets are common not only around solar-type stars but also among planets orbiting Red Dwarf (RD) stars, the most numerous stellar type in the Milky Way galaxy. Early considerations indicated that conditions on RD planets would be inimical to life, as their Habitable Zones would be so close as to make planets tidally locked to their star. This was thought to cause an erratic climate and expose life forms to flares of ionizing electro-magnetic radiation and charged particles. It has also been argued that the lesser photon energy of the radiation of the relatively cool RDs would not suffice for oxygenic photosynthesis. However, recent calculations show that these negative factors are less severe than originally estimated, hence conditions for photosynthesis could exist on RD planets. Furthermore, the huge number and the long Main-Sequence lifetime of RDs could make photosynthesis and biotic life on RD planets statistically even more abundant than on planets of solar type stars.

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**PRESENTATION TYPE:** Oral