Solar and Stellar Space Weather and Space Climate: Relevant Issues in the Birth and Evolution of Life?

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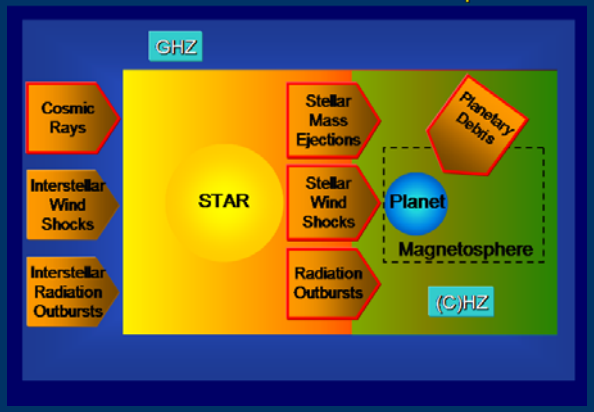
THE HABITABILITY ZONES and SSpM



THE ROLE OF SSpM IN LIFE-GENICITY

A. STELLAR SPACE CLIMATE
- STELLAR IRRADIANCE VARIATIONS (<0.1%)
- Standard Solar Model (initial flux 30% lower)?
- New Solar Models (initial flux 5% higher)?

B. STELLAR SPACE WEATHER
- Stellar activity modulates Cosmic Rays
- Planetary Magnetosphere shields Solar Cosmic Rays
- Planetary Atmosphere modulates radiation and particles at sea level

- Question: How much relevance in the "Twilight Zone"?
- or: How to quantify "moderate", "adequate", etc.?

THE ROLE OF SSpM IN LIFE-SUSTAINABILITY

A. STELLAR SPACE CLIMATE
- STELLAR IRRADIANCE VARIATIONS (<0.1%)
- ACTIVITY CYCLE

B. STELLAR SPACE WEATHER
- Stellar activity modulates Cosmic Rays
- Planetary Magnetosphere shields Solar Cosmic Rays
- Planetary Atmosphere modulates radiation and particles at sea level

- Question: How much relevance in LIFE EVOLUTION?
- or: How to quantify "moderate", "adequate", etc.?

CONCLUSIONS

- Stellar Space Weather and Space Climate have been playing a fundamental role in Life-Genicity and Life-Sustainability
- The definition of HZ must be extended to include SSpM
- The definition of CHZ must be extended as well
- The study of Solar SpM must be refined
- Stellar SpM is beyond present instrumental capabilities
- This analysis must be carried out in the framework of AB

Trieste Solar Radio System

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