Temporal coherence search for extraterrestrial signals

Erez N Ribak\textsuperscript{1}

\textsuperscript{1}Physics, Technion

(Submitted by Erez N Ribak, Physics, Technion, eribak@physics.technion.ac.il)

It is proposed to probe the temporal coherence of celestial objects to locate natural coherent sources, such as masers. But we might also see gravitationally lensed objects, ionospheres of planets, and occasionally intelligent life forms that use lasers. A simple realisation is by an imaging interferometer operating at large optical path difference, and is rather easy on a single telescope with a zero-shear interferometer. In a survey mode, a very wide field is measured, yielding all the coherent sources in it. Past experience shows that coherent signals can be detected against their incoherent bright host objects. The contrast ratio demonstrated is one thousand, and at known wave length, more than a million.