

Journal of Geophysical Research: Solid Earth

Supporting Information for

Chameleonic noise in GPS position time series

Alvaro Santamaría-Gómez

GET, Université de Toulouse, CNES, CNRS, IRD, UPS, Toulouse, France.

Jim R. Ray

National Geodetic Survey (retired), Silver Spring, MD 20910, USA.

Contents of this file

Table S1.
Figure S1.
Figure S2.
Figure S3.

Introduction

This Supporting Information file contains the list (Table S1) of 129 GPS stations selected from the online JPL PPP service at <https://sideshow.jpl.nasa.gov/post/series.html> (accessed in May 2019) together with a statistical description of their quality. Stations that passed the minimum data requirements for this study, but were later rejected because of apparent noise changes in the series are: USUD, MEDI, AVRY, GENO, LEWI, NEAH, RAMO, SFER, CAND and POMM.

In addition to the position offsets removed by JPL, we removed offsets at the following epochs. Some of these offsets are related to known equipment changes while others are unknown.

ALIC 2010.89829311503, 2011.54451086877
DAEJ 1999.72756402614, 2002.71215373097, 2004.15718650034
GRAZ 2004.38109882606
HOB2 2009.34226097444
MPWD 2002.75391153433, 2004.39076167378
REYK 2007.70890954772, 2008.45415801505

TORI 2019.2511936635
YSSK 2000.07480112907

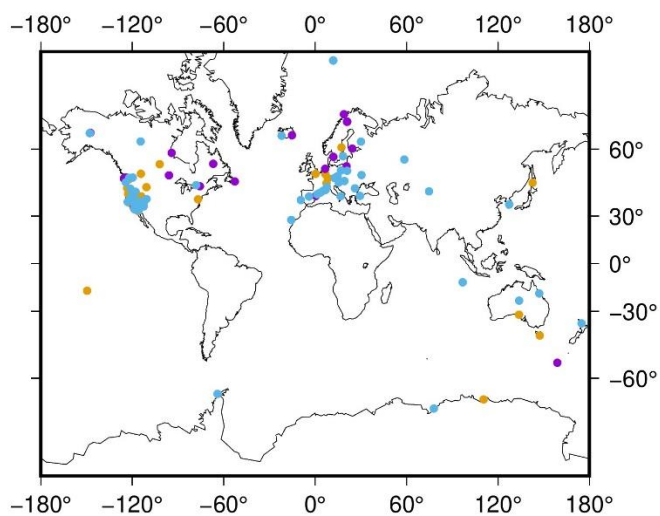
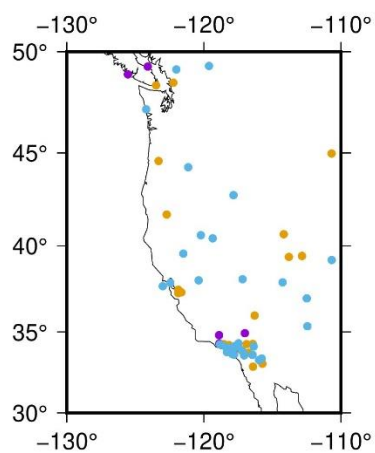
Tables

Table S1. List of the 127 stations used in this study and their corresponding series start, end, length and completeness. The preferred noise model amongst flicker noise (FN), flicker noise plus random walk (FNRW), power-law (PL) and Gauss-Markov (GM) is given for each component together with the maximum likelihood difference (dML) with respect to FN.

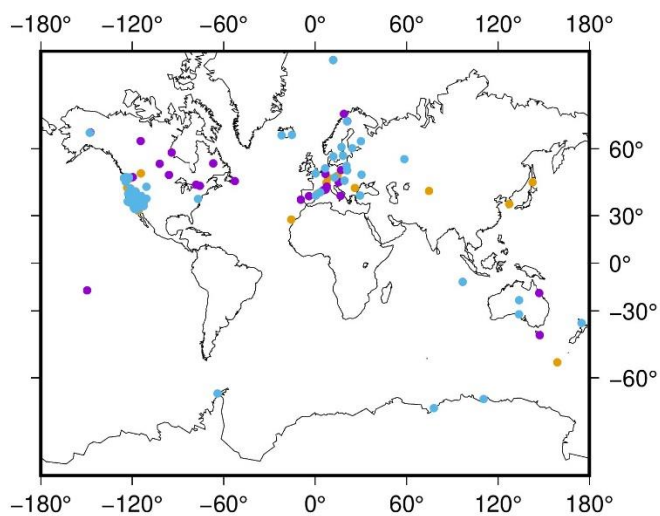
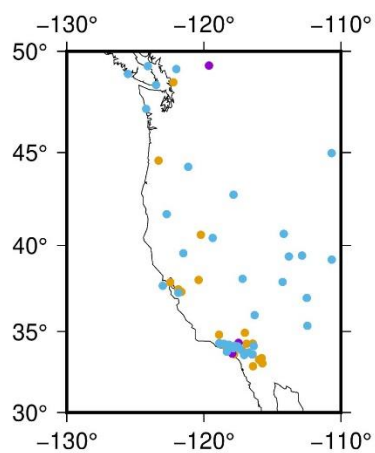
See separate file TableS1.txt

Figures

a) North



b) East



c) Up

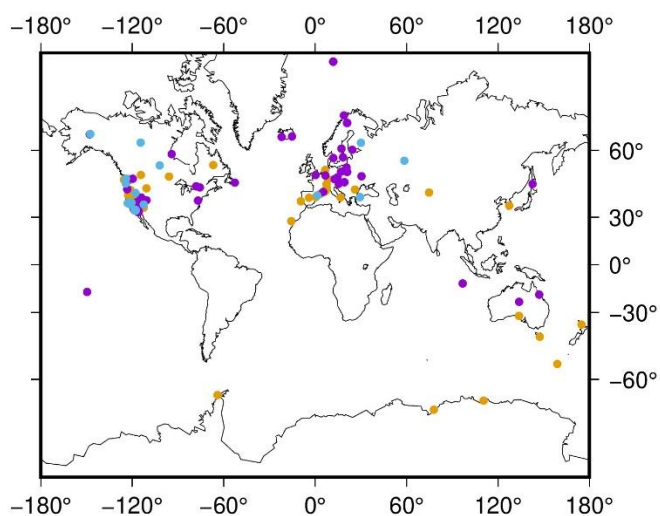
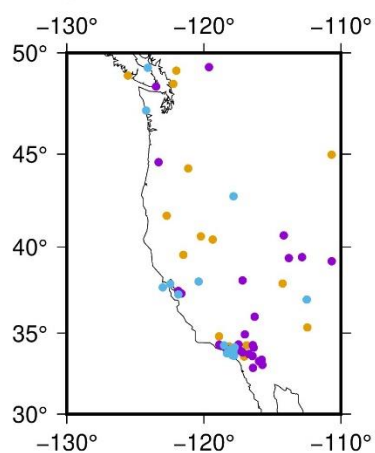


Figure S1. Geographic distribution of the 127 JPL stations used in this study and their preferred noise model for each coordinate component. The colors of the noise models correspond to those of Fig. 4.

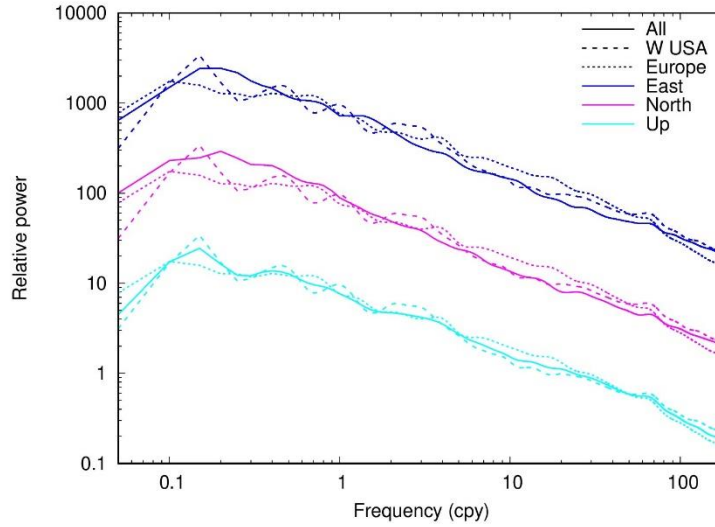


Figure S2. Smoothed stacked spectra for the three coordinate components of the 127 JPL stations used in this study (all, corresponding to Fig. 1), and for the 62 stations located in Western USA and the 36 located in Europe.

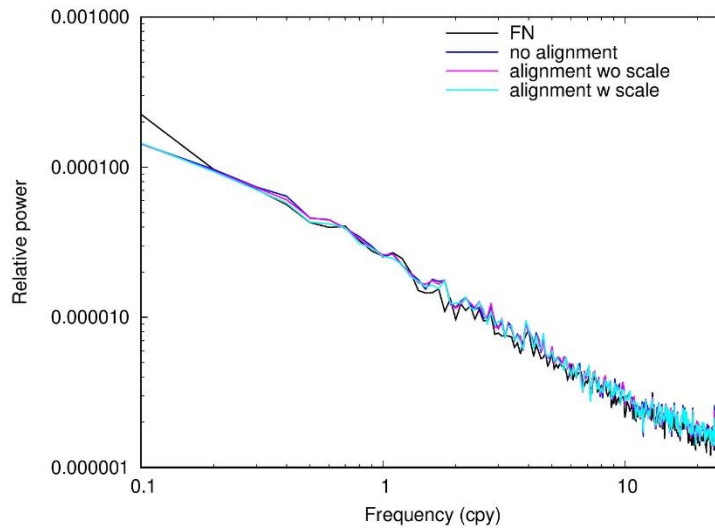


Figure S3. Stacked power spectra of the synthetic weekly series of the IGS14 core stations without alignment (blue), with alignment excluding the scale (pink) and with alignment including the scale (cyan). The black curve represents the stacked power spectra of the weekly flicker noise (FN) series that were added to the weekly SINEX files.