Table A4. Complete results from Rung 2-lower is better (except column labeled f where higher is better).
Preprocessing: 1) Christiano-Fitzgerald filter, Trend-(CF-Trend); 2) Christiano-Fitzgerald filter, Cycle-(CF-Cycle); 3) Christiano-Fitzgerald filter (CF-Trend/Cycle), combines two components: Trend-(CF-Trend) and Cycle-(CF-Cycle); 4) Differencing; 5) Simple Net Return (SNR); 6) Wavelet Denoising (WD); 7) Raw Data (preprocessing technique was not applied). Time delay estimation methods from COSMOGRAIL: a) D3 Curve Shifting (D3CS); b) Free-Knot Spline Fit (SPL); c) Spline Difference (SDI). Time delay estimation methods employed in this research: I) Dispersion Spectra (DS_1^2); II) Discrete Correlation Function (DCF); III) Locally Normalized Discrete Correlation Function (LNDCF); IV) Interpolated Cross-Correlation Function (ICCF). Selection techniques for Cross-correlation methods: A) Mean (proposed alternative); B) Max, typical selection procedure of estimation.

Methods	Preprocessing	f	χ^2	P	A	MAD	MSE	$RMSE$	$MAPE$	uncertainty	average search length
D3CS		0.614	1.19	0.37	0.10	2.34	37.69	6.14	10.42	7.58	
SDI		0.576	1.68	0.14	0.08	1.81	15.54	3.94	8.01	3.01	
SPL		0.610	11.34	**0.10**	**0.06**	**1.52**	35.16	5.93	**5.71**	2.04	
DS_1^2	CF-Trend	1.0	5.08	0.33	0.12	2.70	12.73	3.57	12.33	7.65	23.41
DS_1^2	CF-Cycle	1.0	7.51	0.34	0.11	2.59	13.28	3.64	11.14	7.10	16.48
DS_1^2	CF-Trend/Cycle	1.0	2.36	0.33	0.09	2.10	7.94	2.82	8.95	7.37	39.89
DS_1^2	Differencing	1.0	5.76	0.38	0.11	2.66	13.37	3.66	11.43	8.75	17.63
DS_1^2	SNR	1.0	7.45	0.35	0.11	2.66	13.47	3.67	11.44	7.52	17.28
DS_1^2	WD	1.0	5.92	0.30	0.12	2.65	12.27	3.50	12.23	6.92	25.65
DS_1^2	Raw Data	1.0	4.83	0.34	0.10	2.33	10.24	3.20	10.21	7.50	27.05
DCF-Max	Differencing	0.981	1.42	0.28	0.13	3.35	22.47	4.74	12.82	9.10	44.83
DCF-Mean	Differencing	0.981	1.63	0.28	0.10	2.36	11.25	3.35	9.96	9.10	42.51
DCF-Max	Raw Data	0.985	2.19	0.27	0.16	4.00	28.38	5.33	15.55	8.81	40.79
DCF-Mean	Raw Data	0.985	2.09	0.27	0.11	2.60	12.50	3.54	11.28	8.81	48.75
DCF-Max	WD	0.965	3.82	0.32	0.27	6.95	56.82	7.54	27.01	10.49	34.46
DCF-Mean	WD	0.965	3.56	0.32	0.17	3.93	21.24	4.61	17.40	10.49	32.83
DCF-Max	SNR	0.972	3.05	0.35	0.25	6.17	48.52	6.97	24.60	11.06	37.93
DCF-Mean	SNR	0.972	2.97	0.35	0.17	3.82	20.71	4.55	17.18	11.06	34.34
DCF-Max	CF-Trend	0.979	3.61	0.32	0.27	6.93	56.85	7.54	26.96	10.40	34.21
DCF-Mean	CF-Trend	0.979	3.36	0.32	0.18	4.11	22.33	4.73	18.35	10.40	33.88
DCF-Max	CF-Cycle	0.959	2.85	0.34	0.23	5.95	45.89	6.77	23.21	10.90	41.21
DCF-Mean	CF-Cycle	0.959	2.71	0.34	0.16	3.64	18.86	4.34	15.67	10.90	34.32
DCF-Max	CF-Trend/Cycle	0.990	1.94	0.32	0.18	4.31	27.25	5.22	18.27	10.46	37.71
DCF-Mean	CF-Trend/Cycle	0.990	1.85	0.32	0.13	2.76	11.55	3.40	13.42	10.46	34.20
LNDCF-Max	Differencing	0.958	0.71	0.27	0.11	3.25	21.49	4.64	11.10	9.00	42.88
LNDCF-Mean	Differencing	0.958	0.68	0.27	0.08	2.23	10.10	3.18	8.00	9.00	43.35
LNDCF-Max	Raw Data	0.981	1.18	0.24	0.11	2.71	15.98	4.00	11.00	8.43	42.37
LNDCF-Mean	Raw Data	0.981	1.17	0.24	0.09	1.91	7.84	2.80	8.69	8.43	51.89
ICCF-Max	Differencing	0.987	8.23	0.27	0.29	5.43	39.16	6.26	23.20	7.04	57.50
ICCF-Mean	Differencing	0.984	6.58	0.25	0.21	4.61	29.25	5.41	20.53	7.04	46.45
ICCF-Max	Raw Data	0.987	8.23	0.27	0.29	6.90	55.02	7.42	28.67	7.54	75.48
ICCF-Mean	Raw Data	0.987	5.24	0.27	0.18	4.13	21.17	4.60	17.66	7.54	47.25
MIX-DS_1^2 with CF-Trend/Cycle and LNDCF-Mean with Differencing		1.0	**0.20**	0.32	0.06	1.65	**4.94**	**2.22**	6.46	8.30	31.18