

KIC 010227914

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
010227914-01	OBS	No	2.570042	132.539497	42.1	11.580	7.3	7.2	0.83	5717	0.54	517.97
010227914-02	OBS	No	524.442460	295.544489	514.5	8.909	7.8	7.0	0.83	5717	1.97	0.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010227914-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST
010227914-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

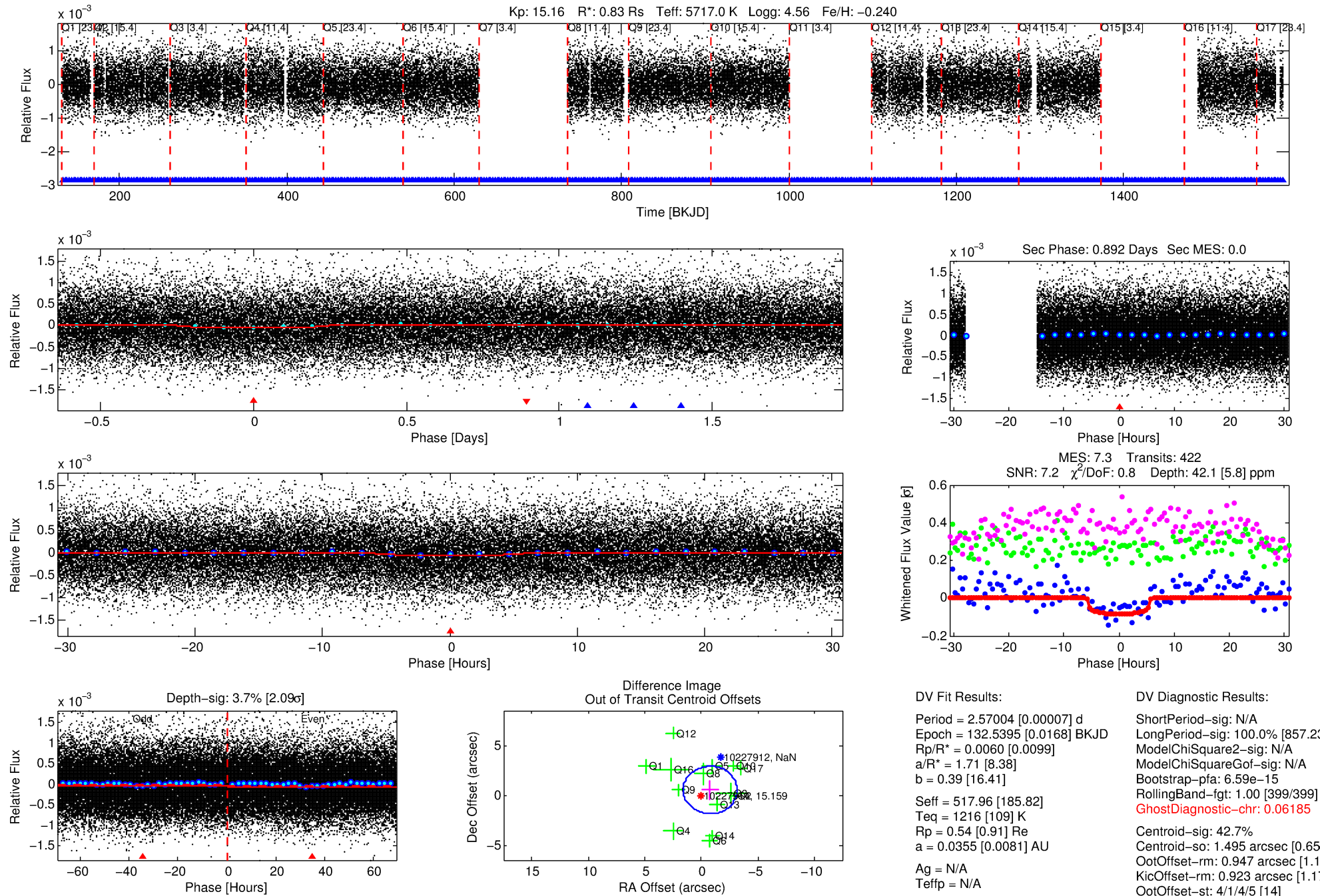
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010227914-01

No Significant Match Found

DV One-Page Summary

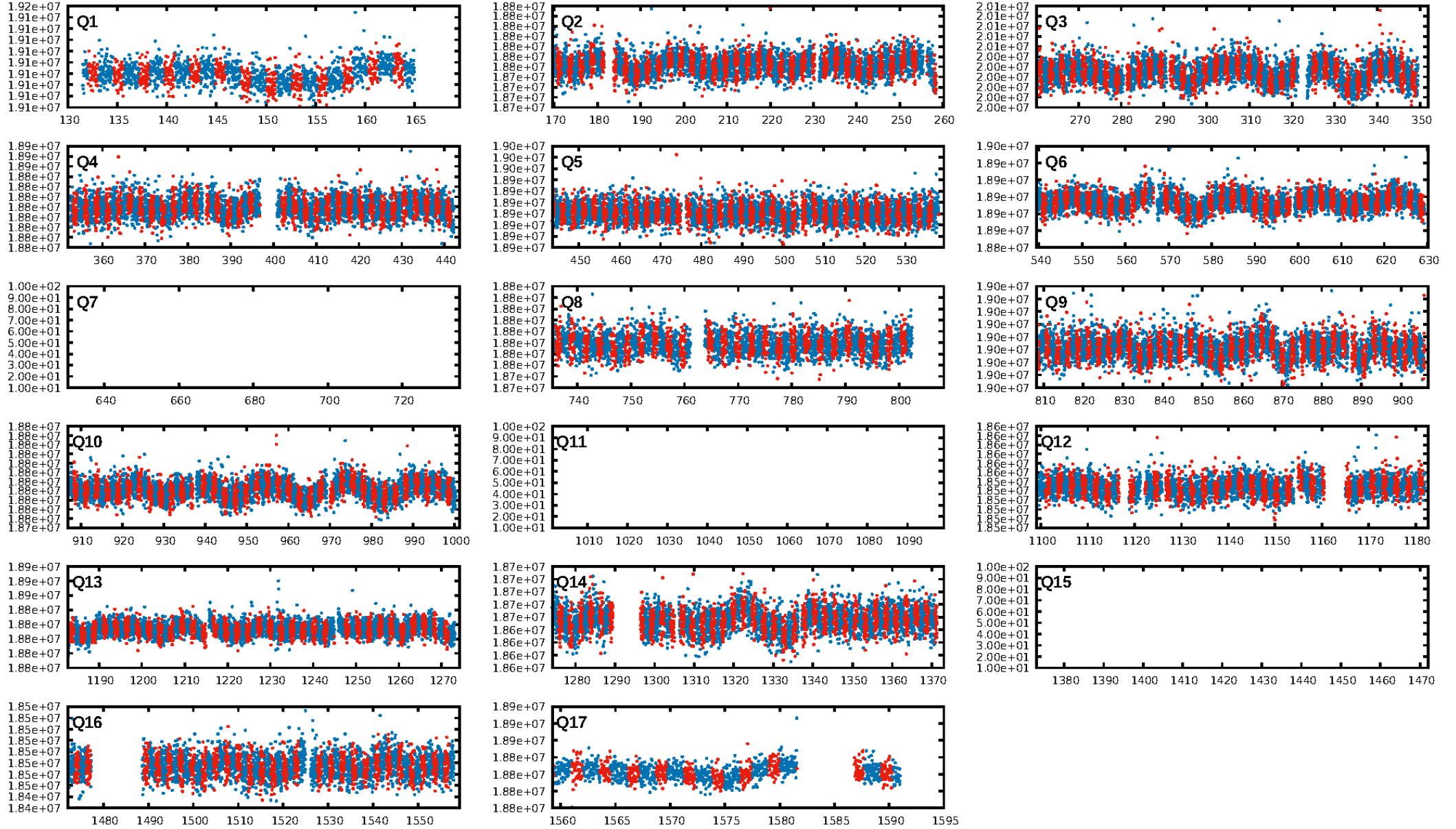
KIC: 10227914 Candidate: 1 of 2 Period: 2.570 d



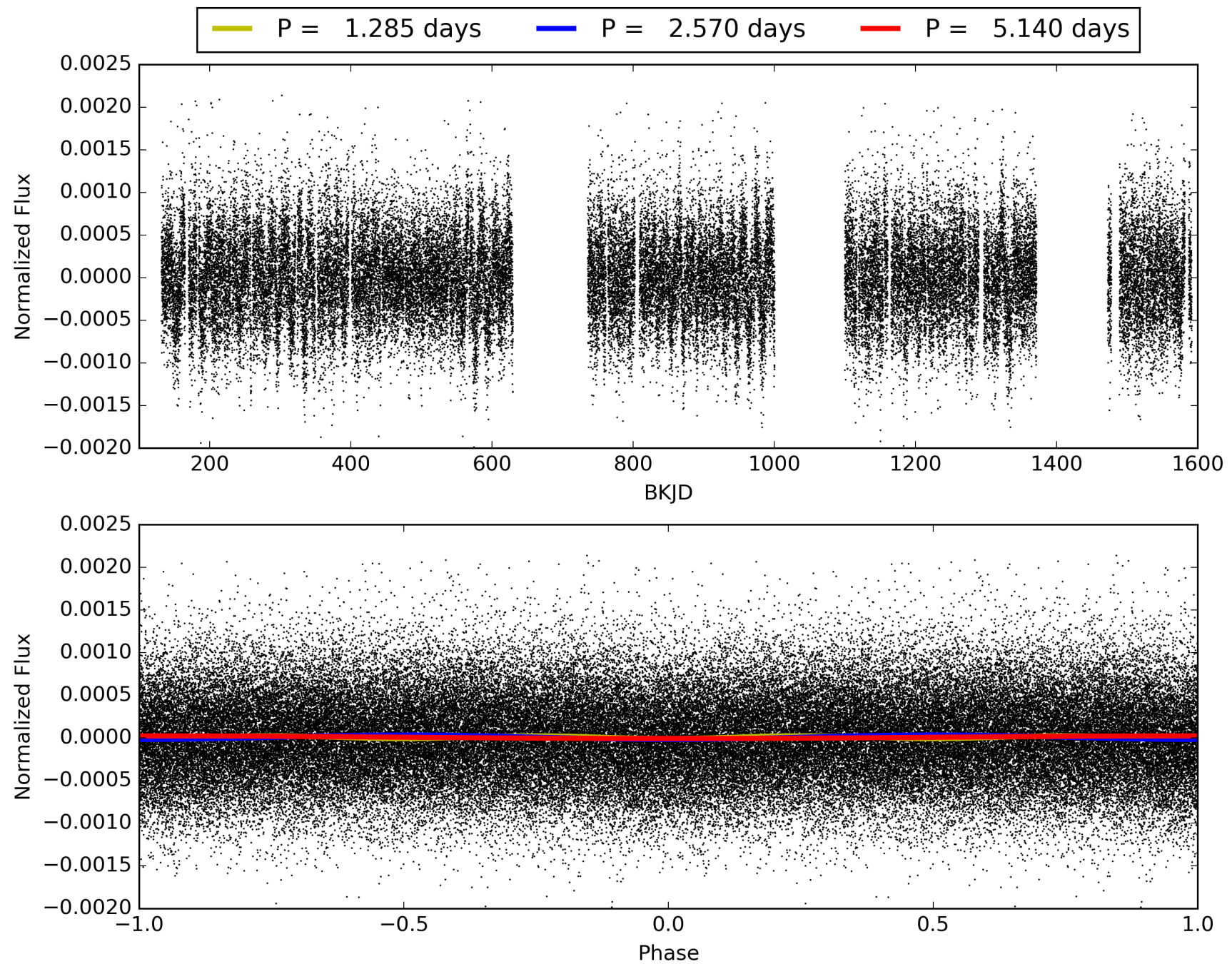
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:56:41 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010227914-01, PDC Light Curves

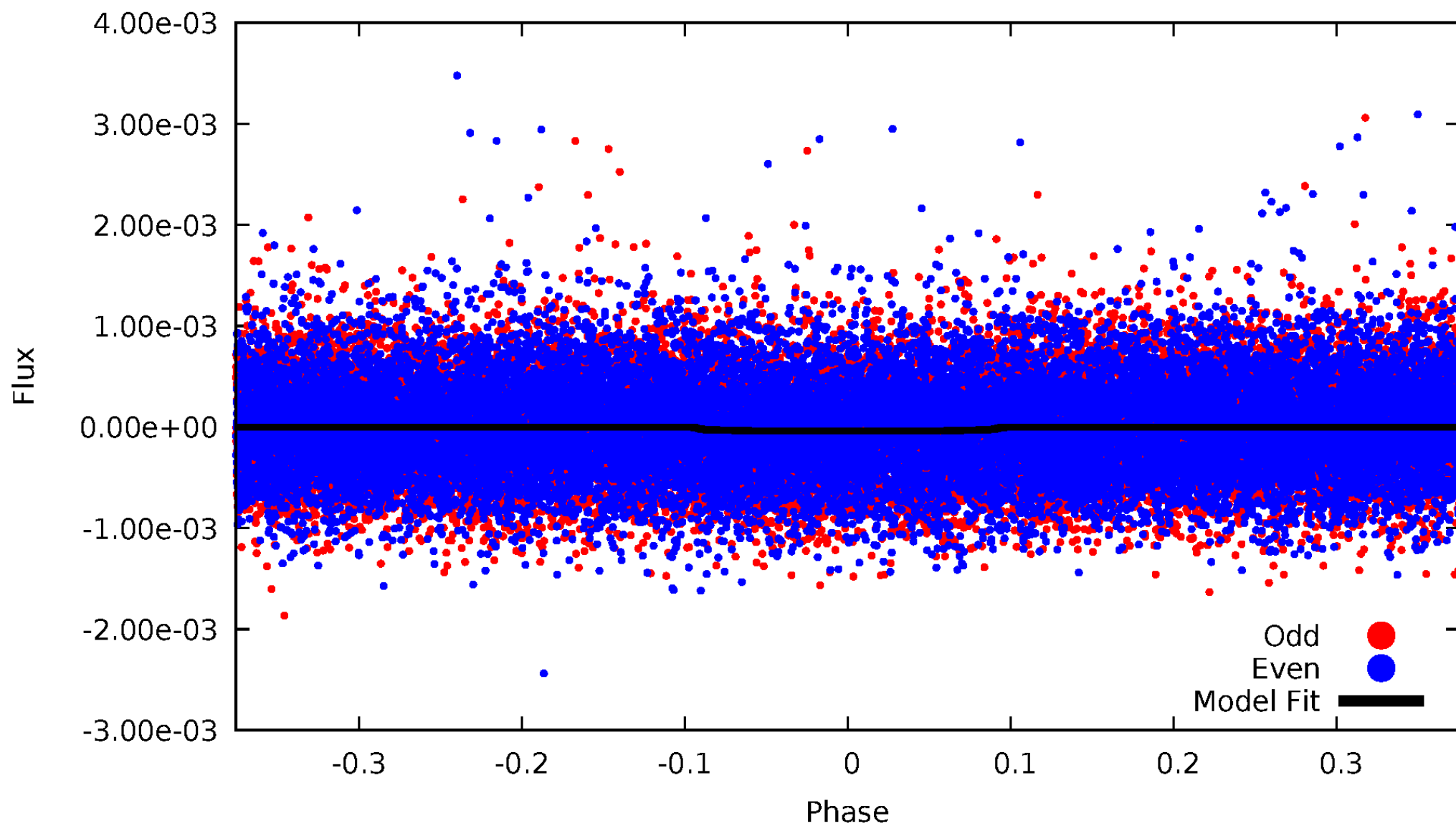


TCE 010227914-01



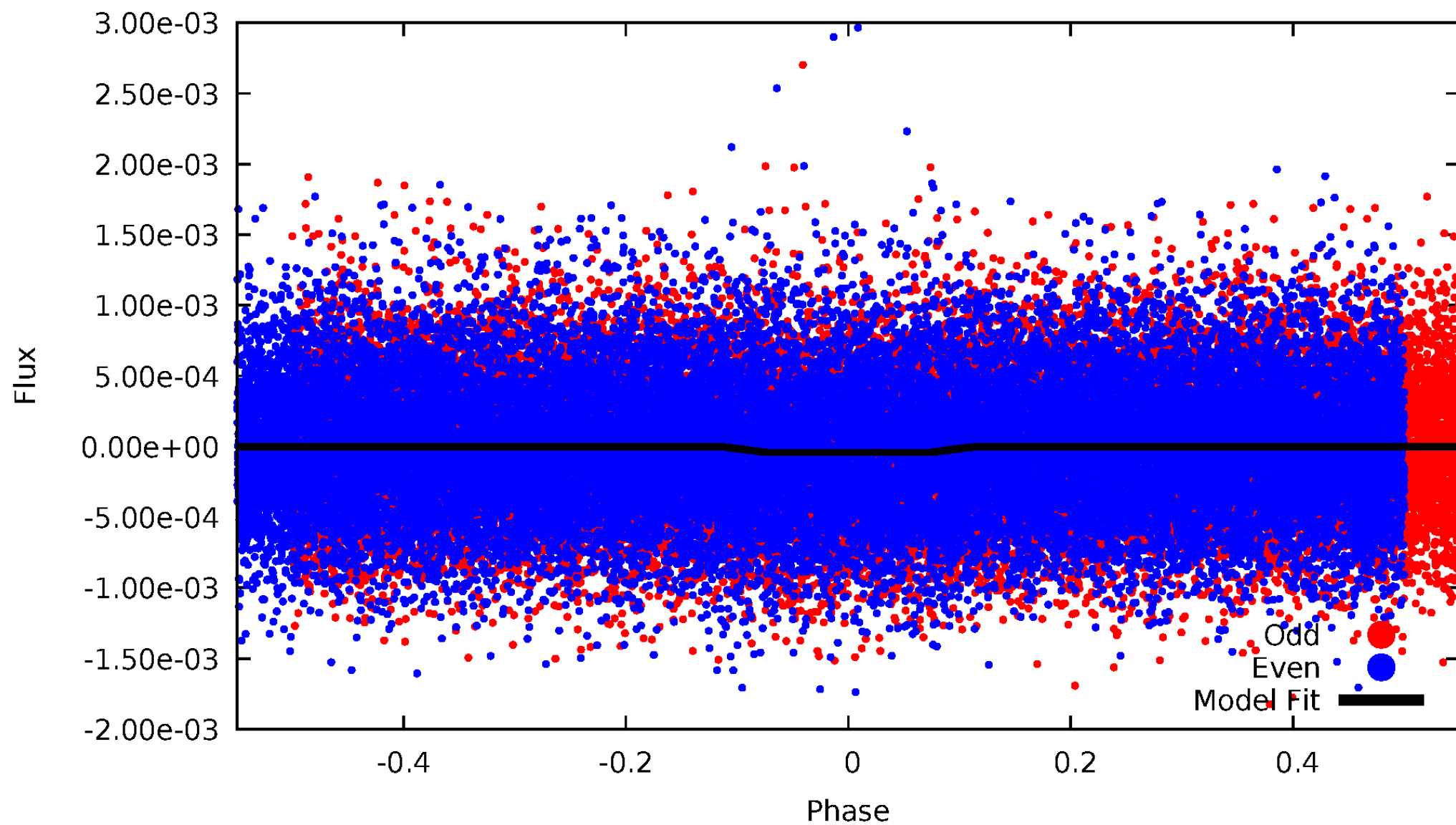
DV Odd/Even

TCE 010227914-01



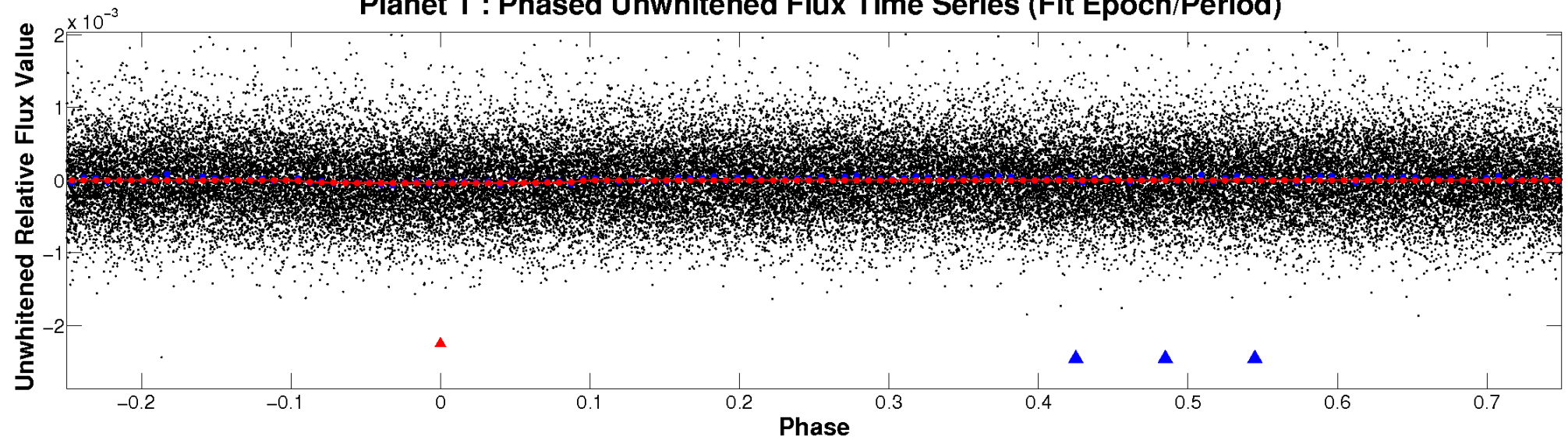
ALT Odd/Even

TCE 010227914-01

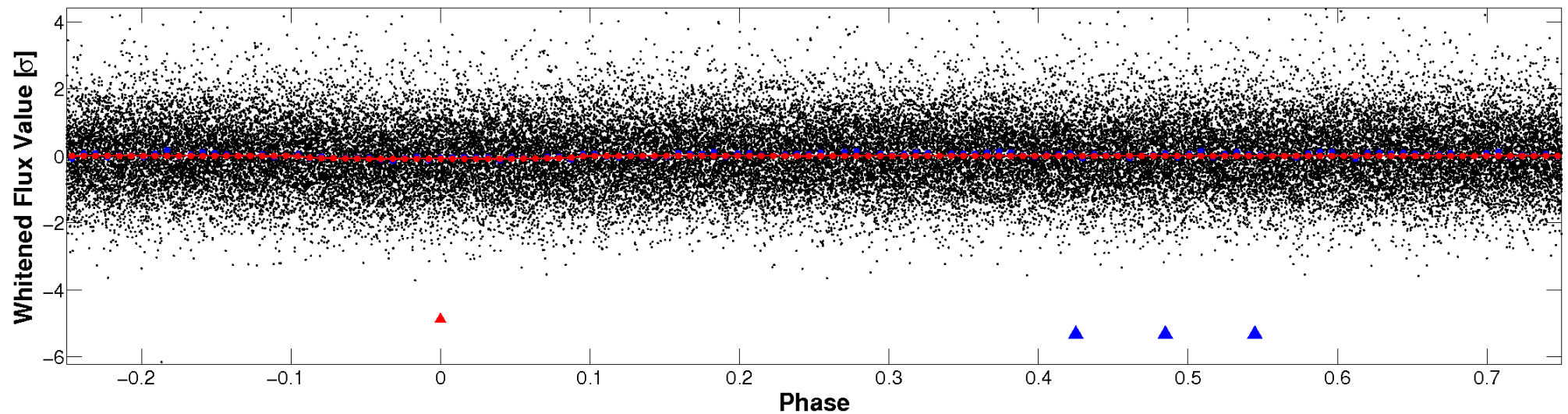


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

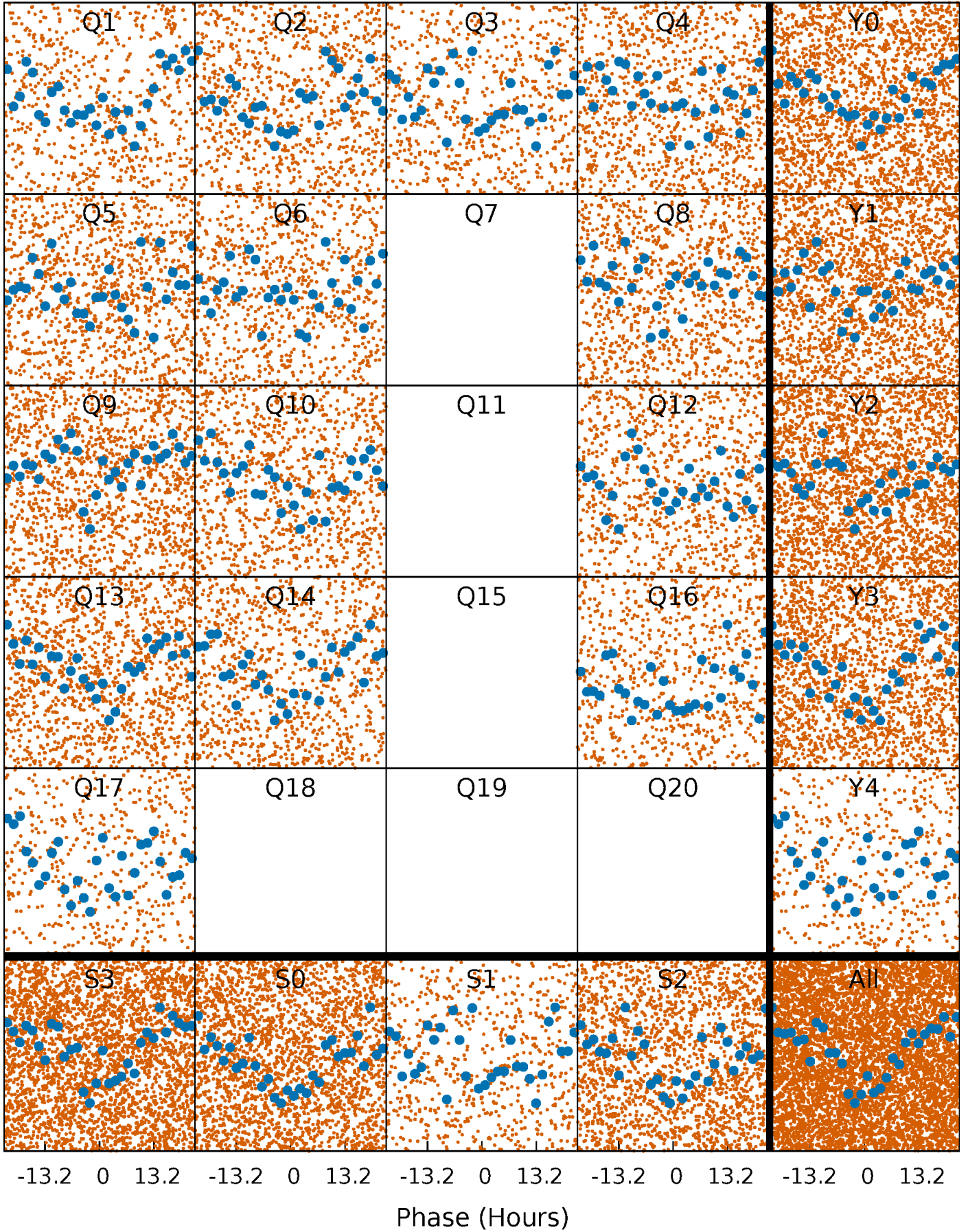


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



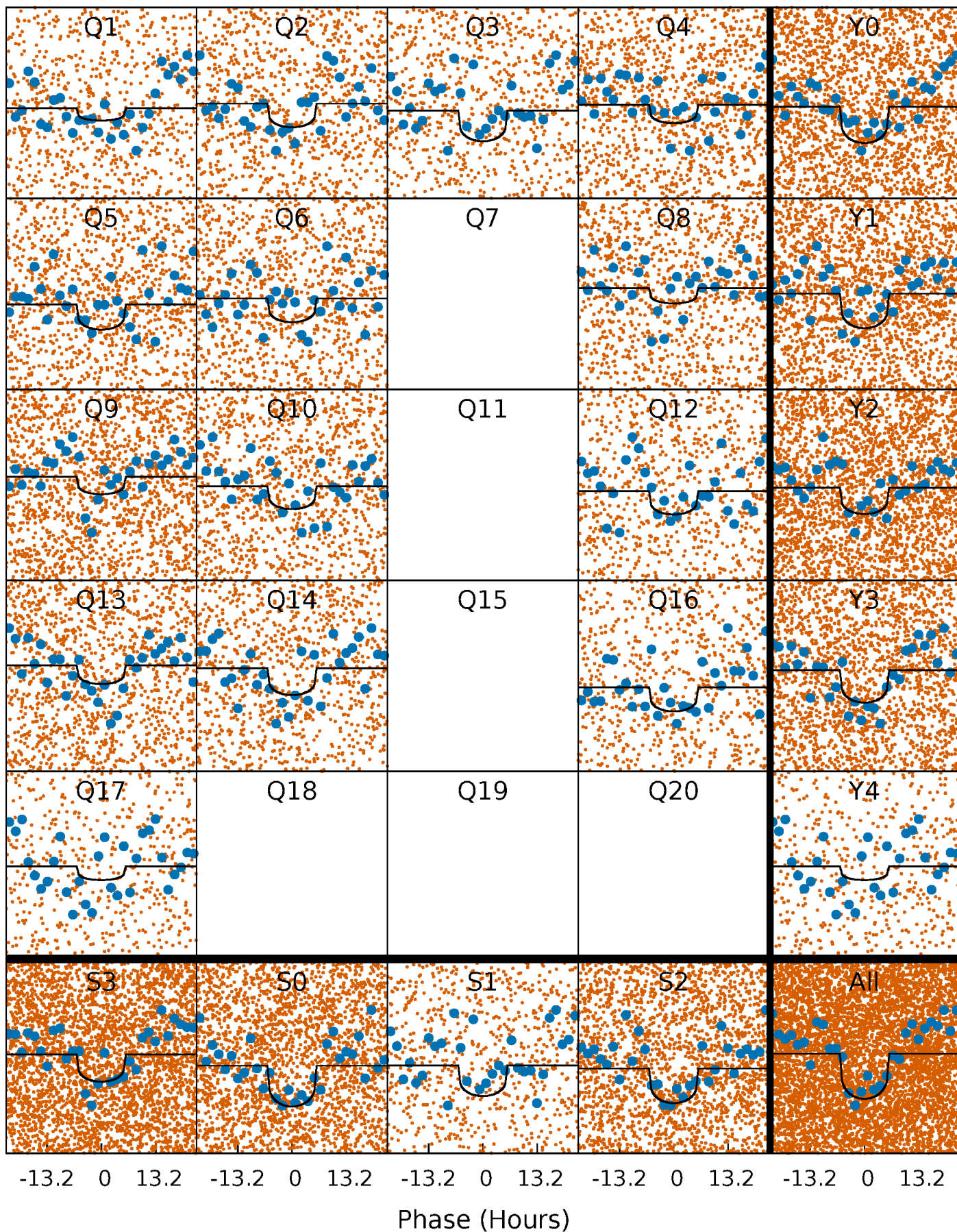
PDC Quarter-Phased Transit Curves

TCE 010227914-01 P= 2.570042 Days $T_0=132.539497$ (BKJD)



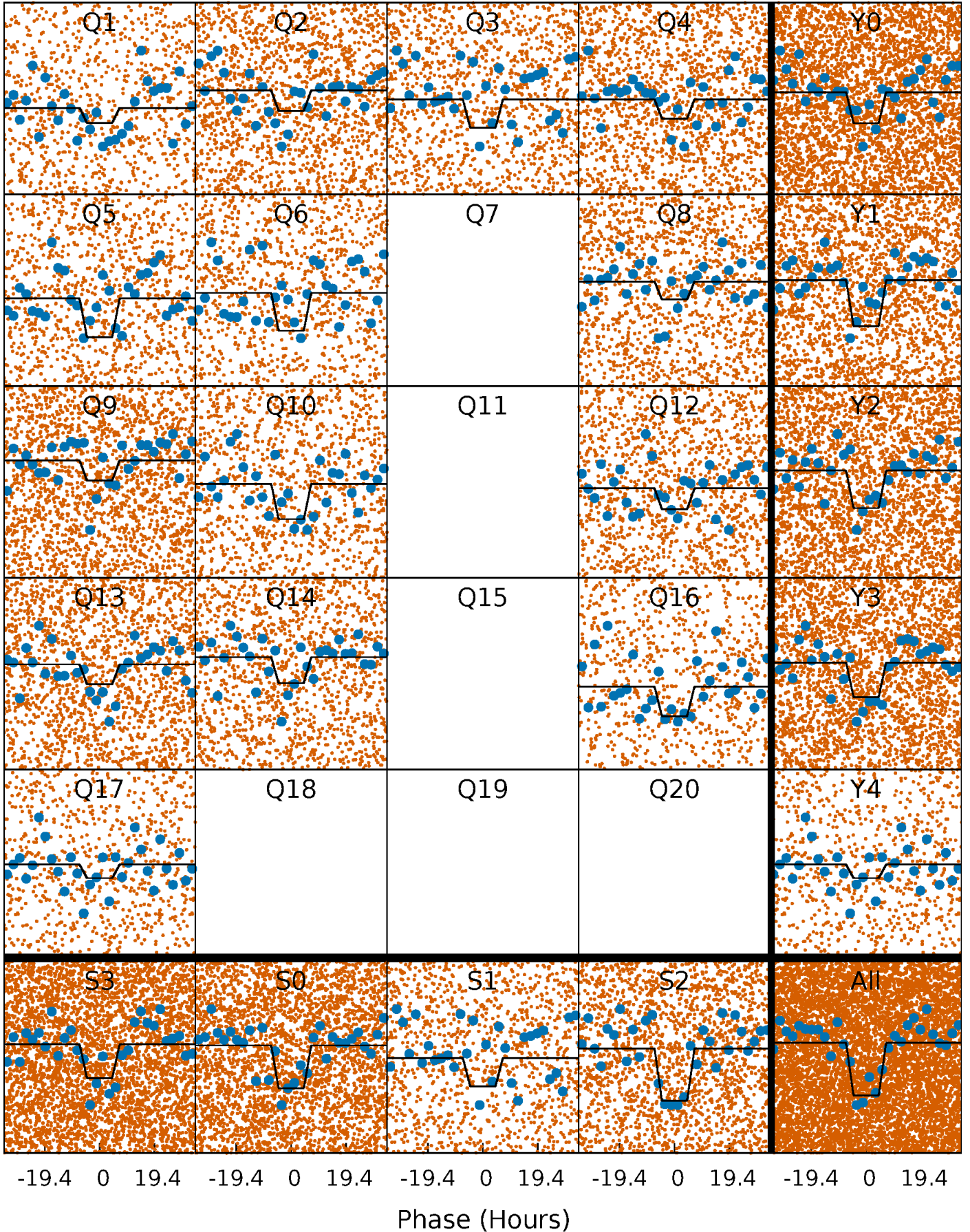
DV Quarter-Phased Transit Curves

TCE 010227914-01 P= 2.570042 Days $T_0=132.539497$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

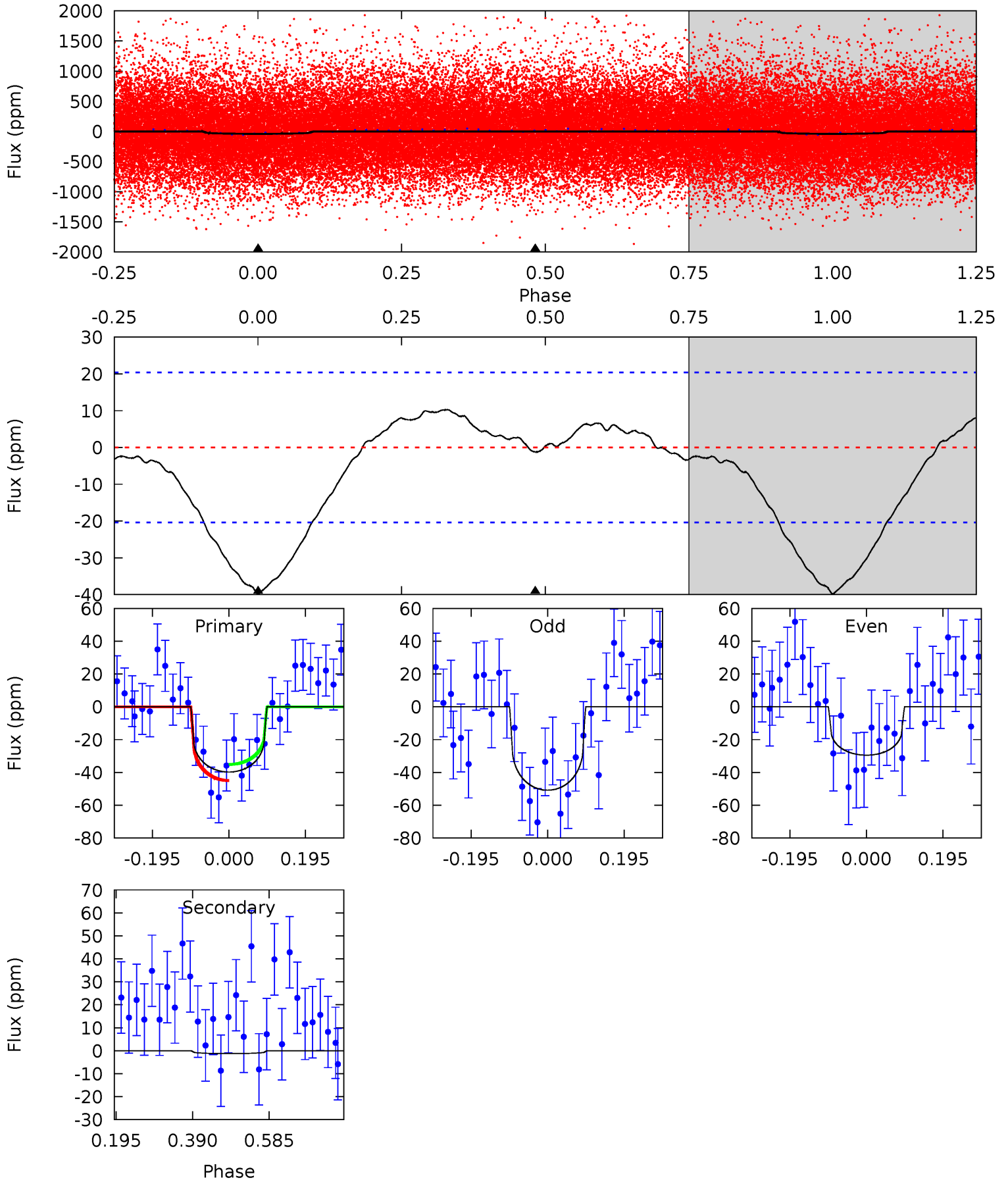
TCE 010227914-01 P= 2.569884 Days $T_0=132.593270$ (BKJD)



DV Model-Shift Uniqueness Test

010227914-01, P = 2.570042 Days, E = 129.969455 Days

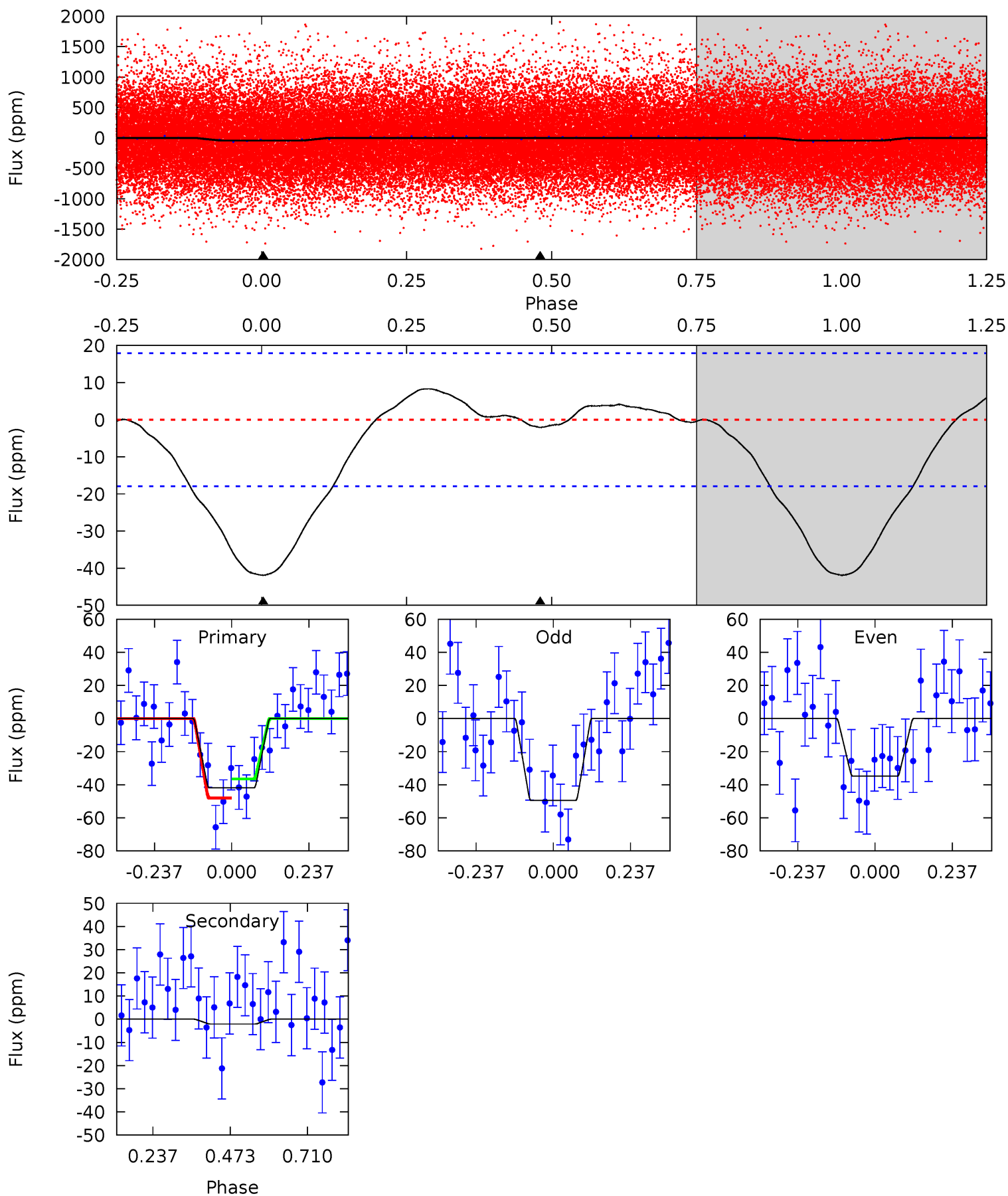
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.62	0.27	0	0	4.42	1.30	0.93	8.62	8.62	0.27	0.27	2.31	1.04	0.21	1.06



Alt Model-Shift Uniqueness Test

010227914-01, P = 2.569884 Days, E = 130.023386 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	0.51	0	0	4.38	1.18	0.57	10.2	10.2	0.51	0.51	1.77	1.17	0.17	1.40



Stellar Parameters For KIC 010227914

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5717^{+155}_{-172}	$4.560^{+0.033}_{-0.187}$	$-0.240^{+0.300}_{-0.300}$	$0.826^{+0.221}_{-0.079}$	$0.904^{+0.100}_{-0.100}$	$2.258^{+0.418}_{-1.112}$
	+3%/-3%	+1%/-4%	+125%/-125%	+27%/-10%	+11%/-11%	+19%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010227914-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 5	$0.94^{+0.79}_{-0.63}$	1737^{+116}_{-75}	2239^{+1614}_{-5570}	$0.492^{+9.603}_{-4.587}$
Alt.	-2 ± 4	$0.93^{+0.85}_{-0.62}$	1747^{+104}_{-76}	2562^{+1296}_{-5532}	$0.911^{+9.974}_{-2.559}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

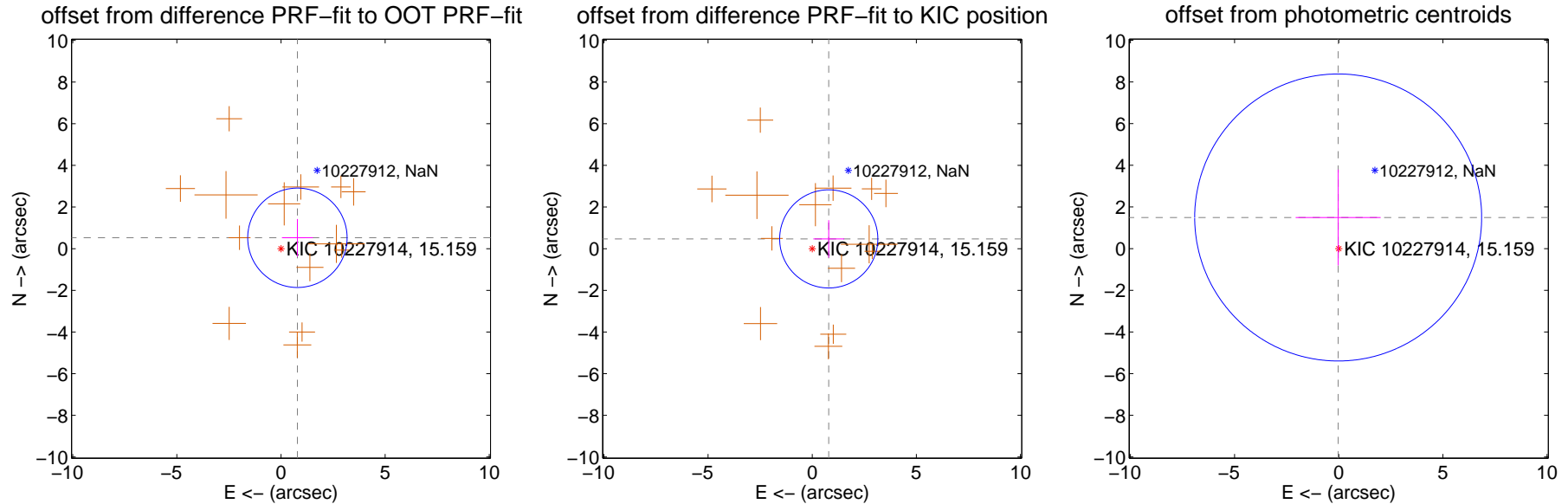
DV Centroid Data

Supplemental centroid analysis for 010227914-01. Kepler magnitude: 15.16. Transit SNR 7.23

There are 0 quarters with good PRF difference image offsets

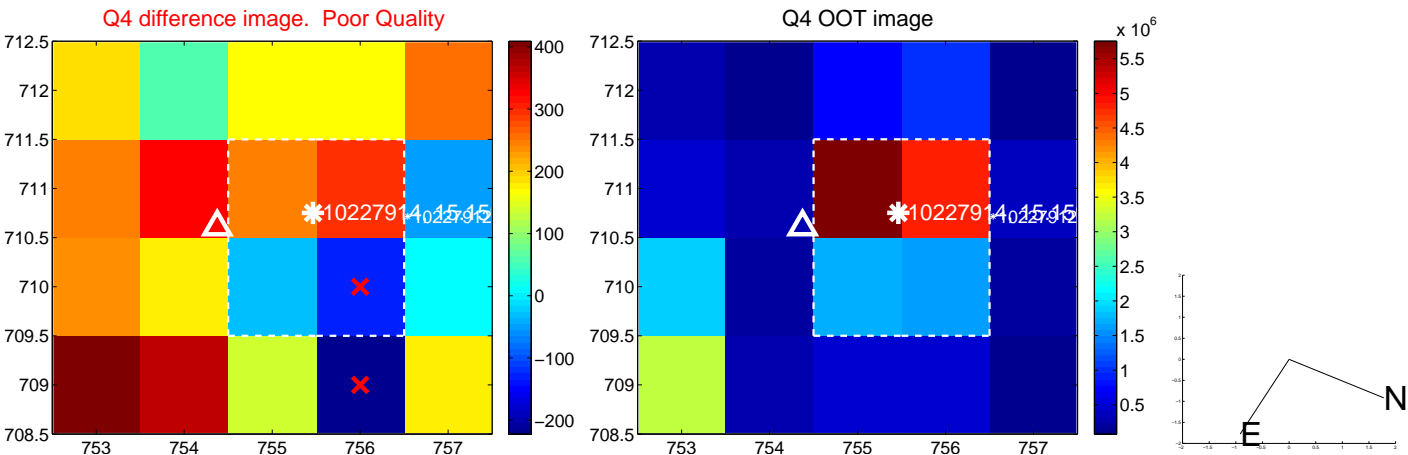
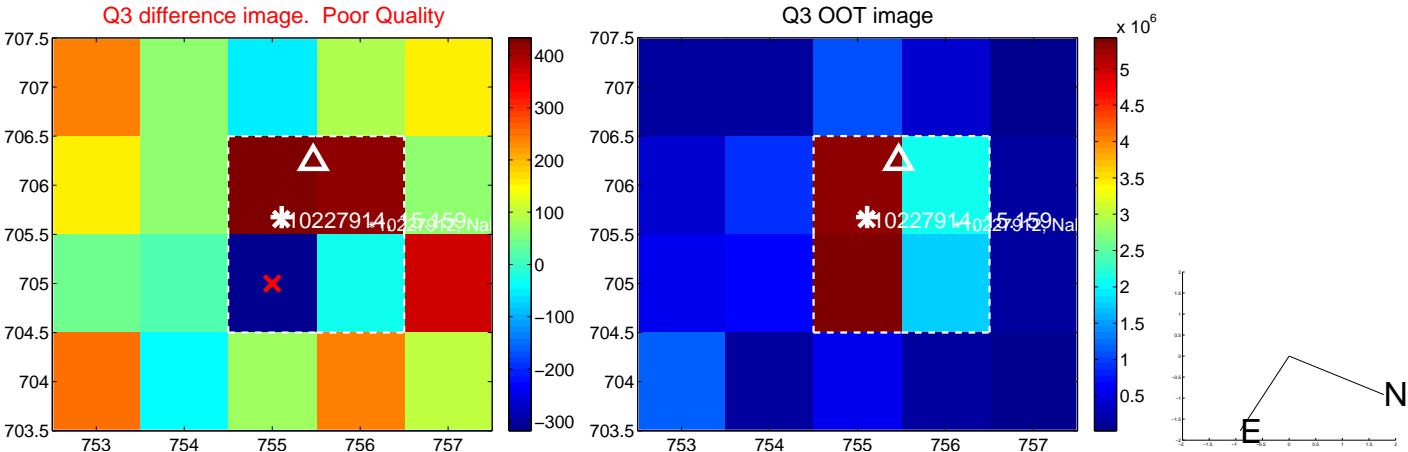
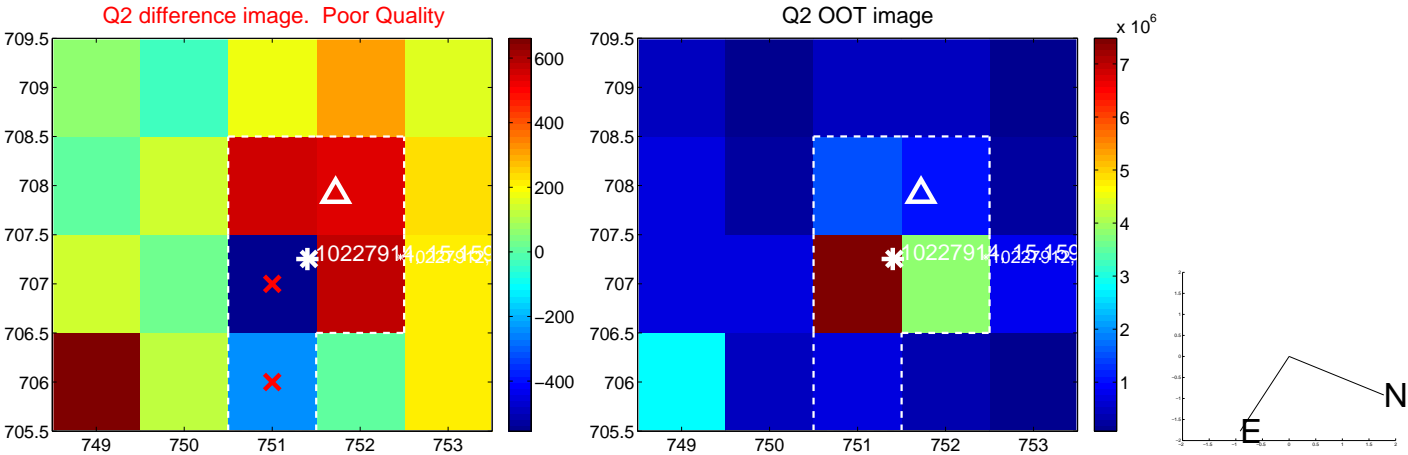
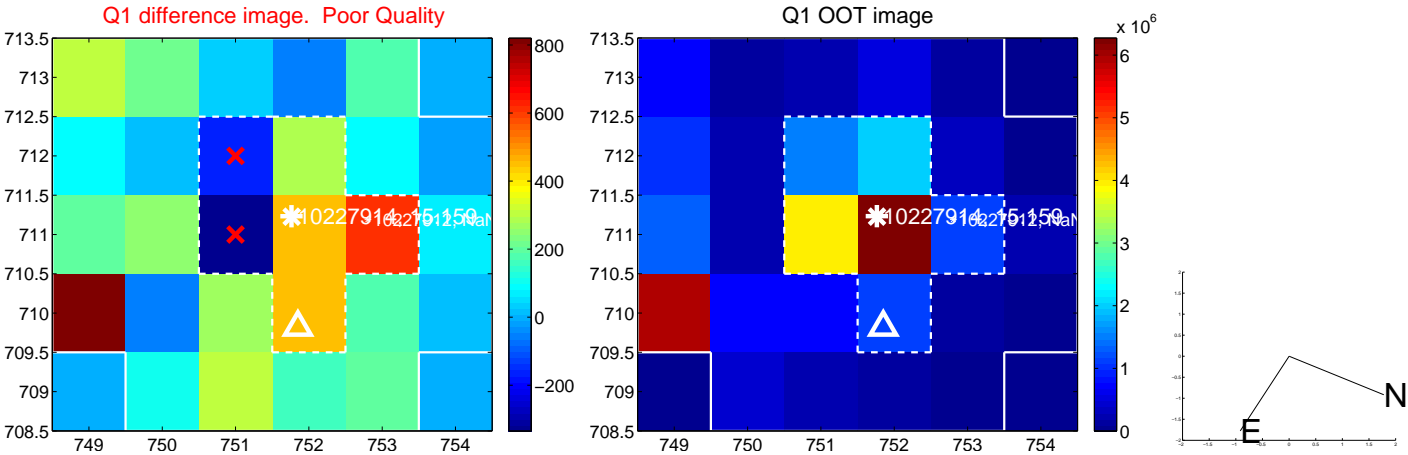
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.947 ± 0.795	1.19	-0.789 ± 0.744	0.524 ± 0.900
PRF-fit source offset from KIC position	0.923 ± 0.786	1.17	-0.794 ± 0.741	0.471 ± 0.900
photometric centroid source offset	1.50 ± 2.30	0.65	0.03 ± 2.04	1.49 ± 2.30

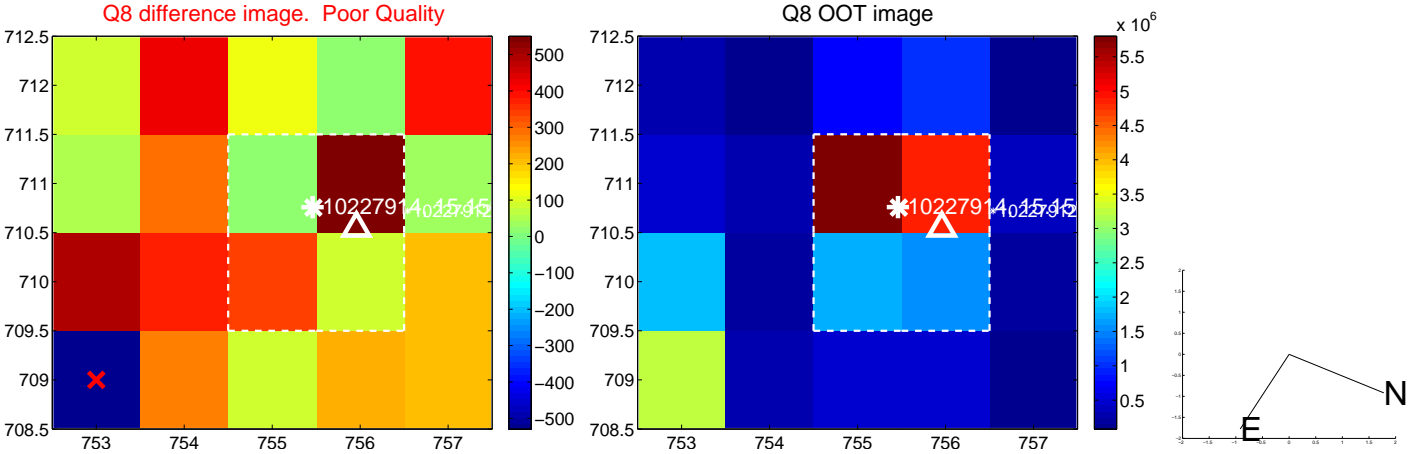
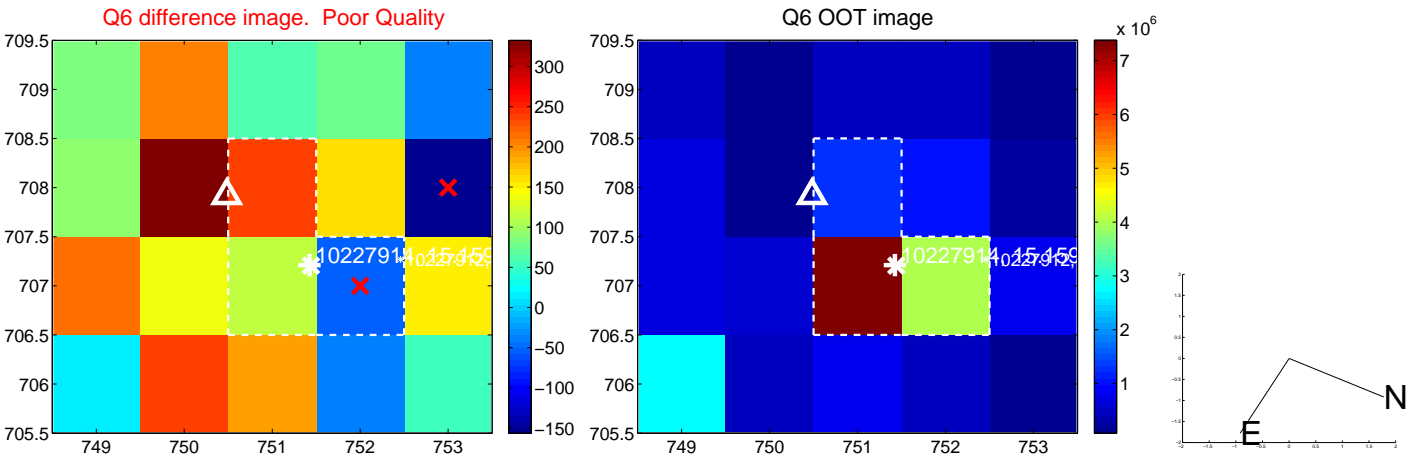
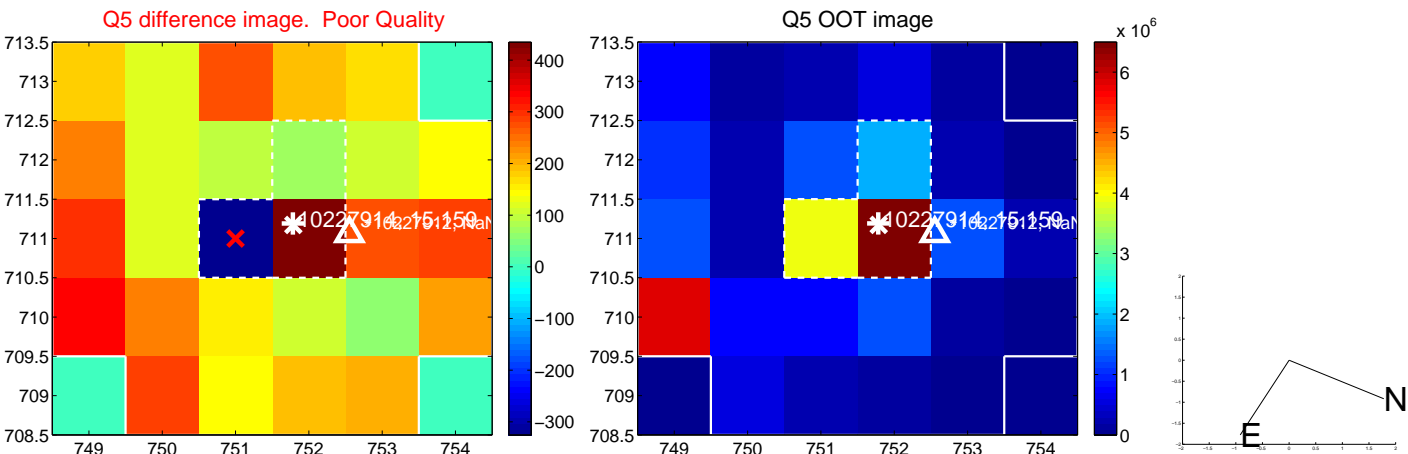


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

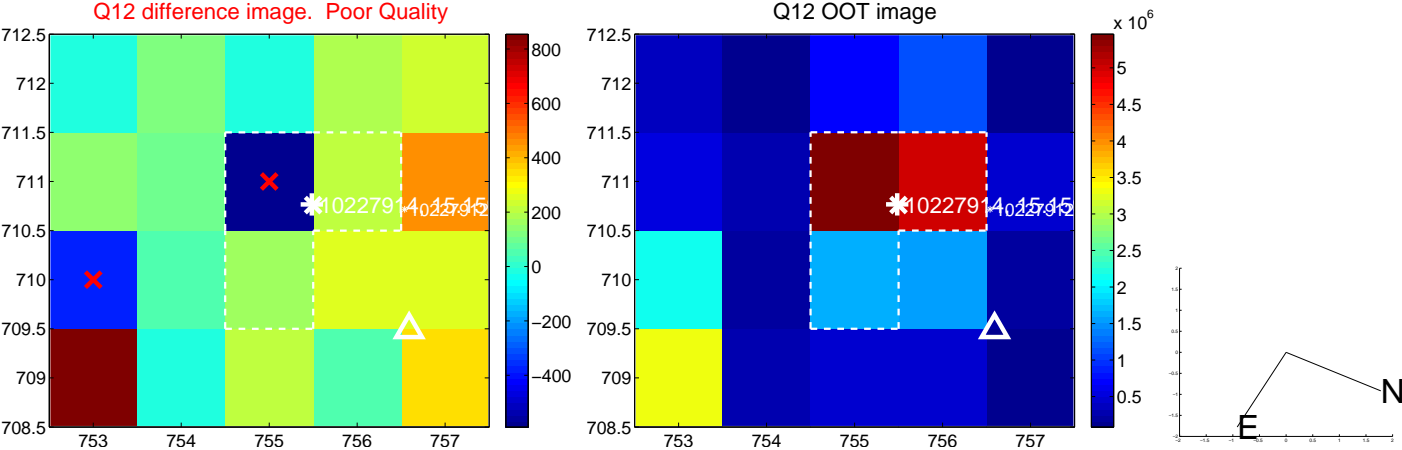
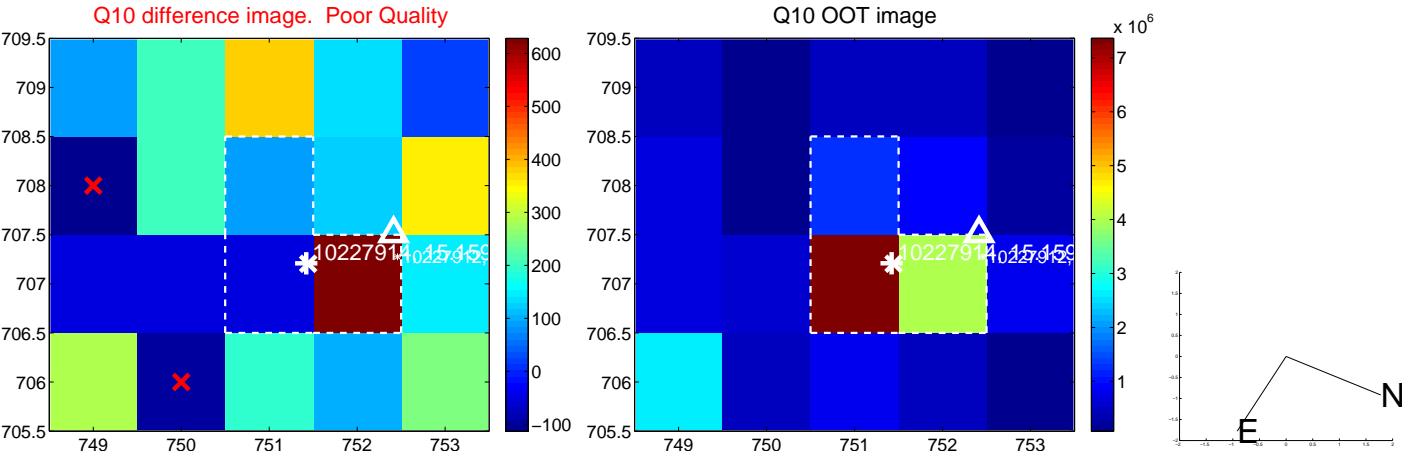
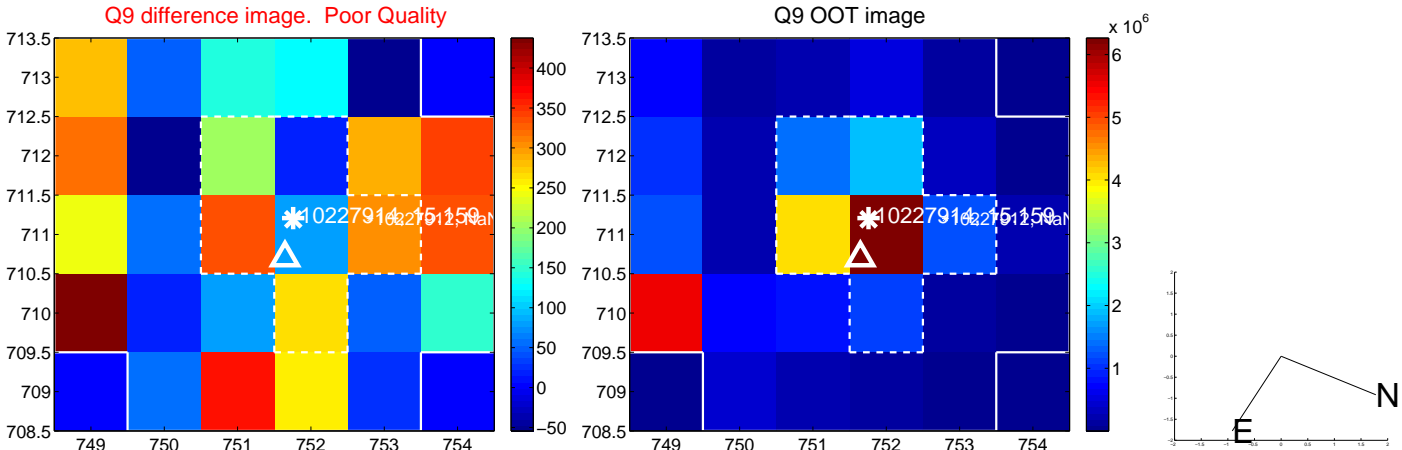
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



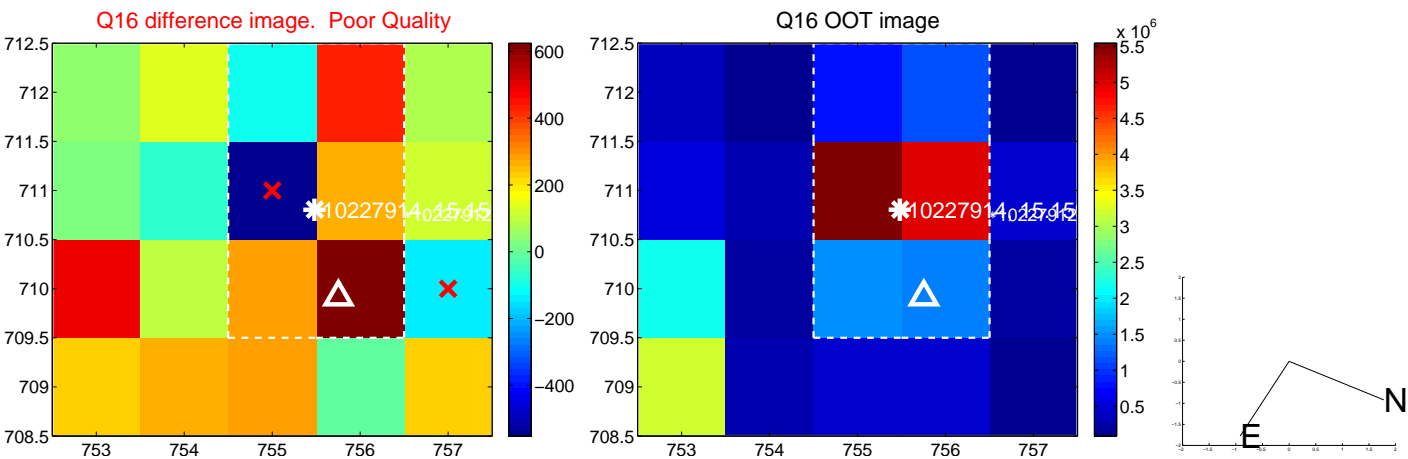
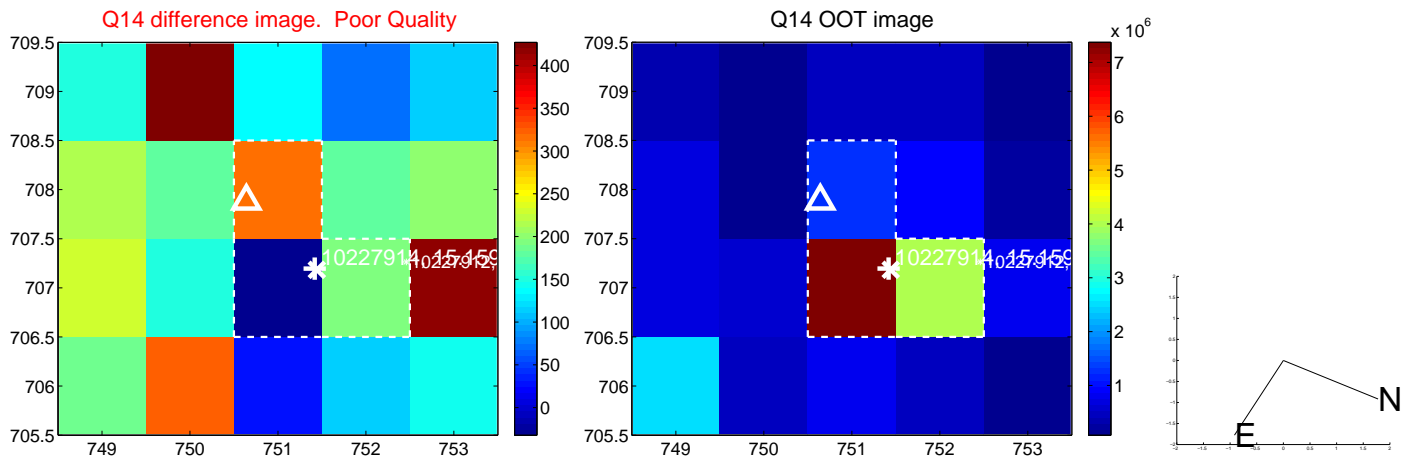
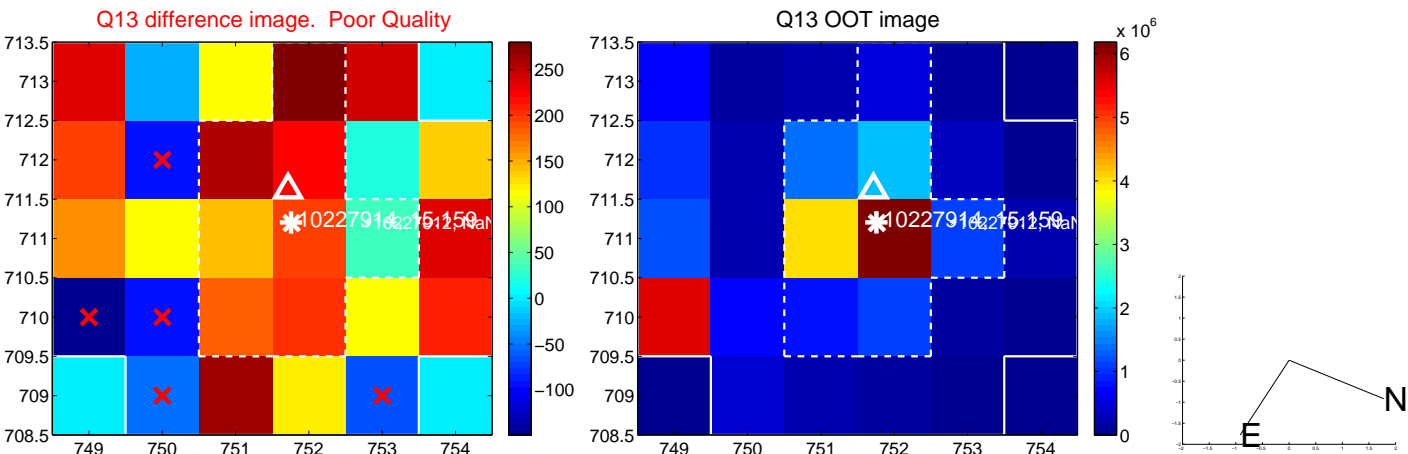
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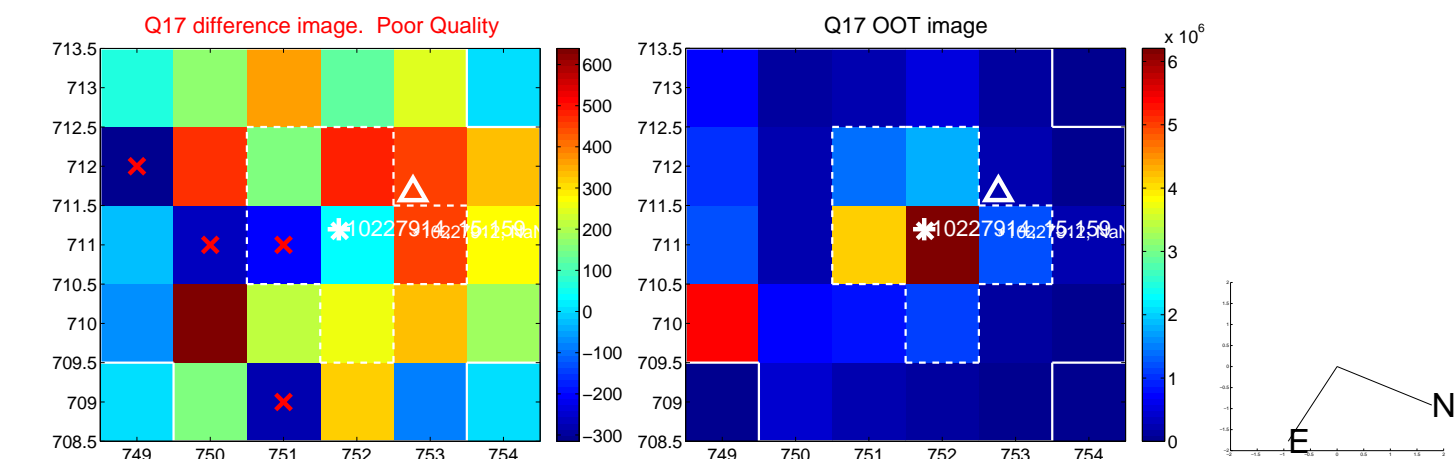
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



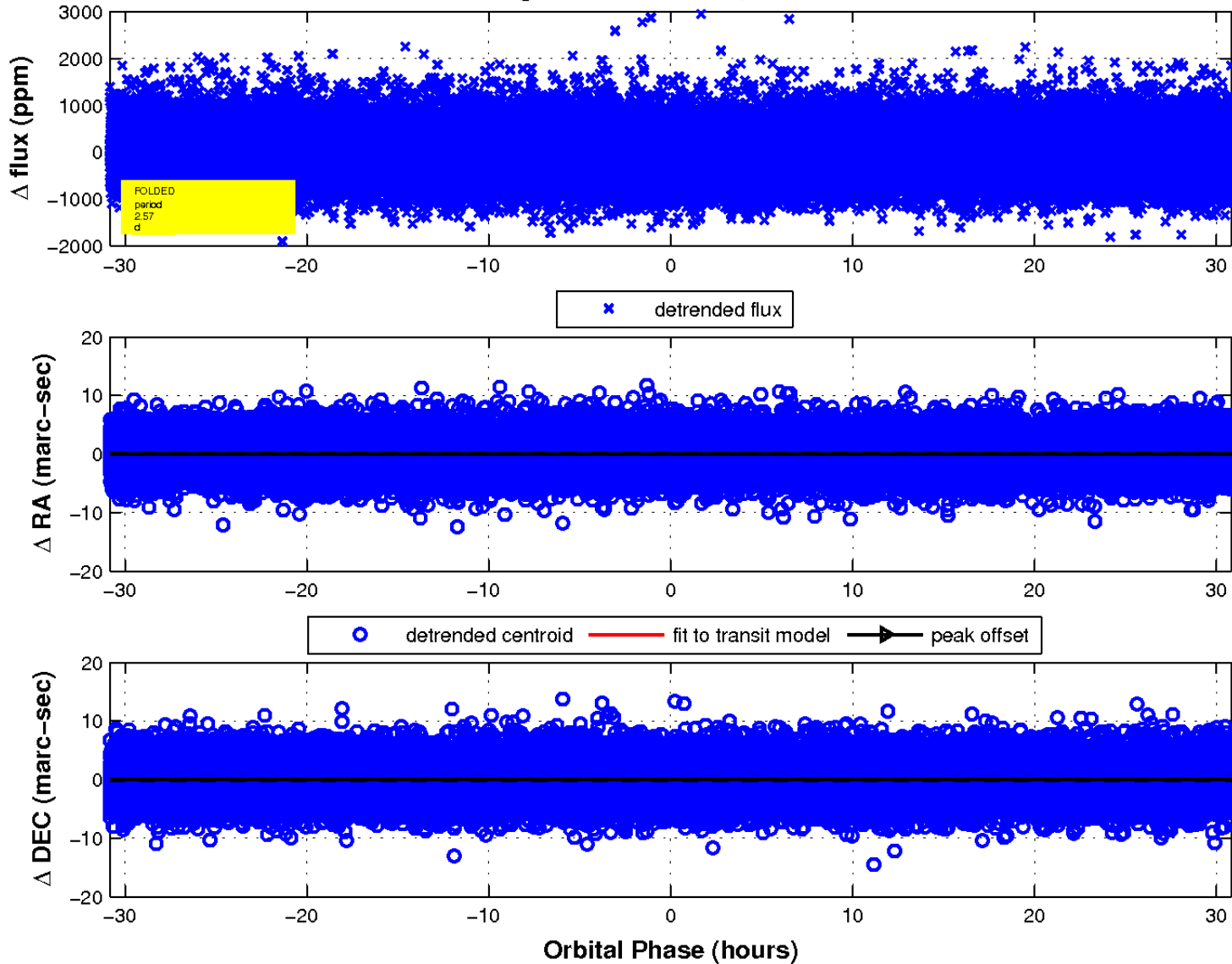
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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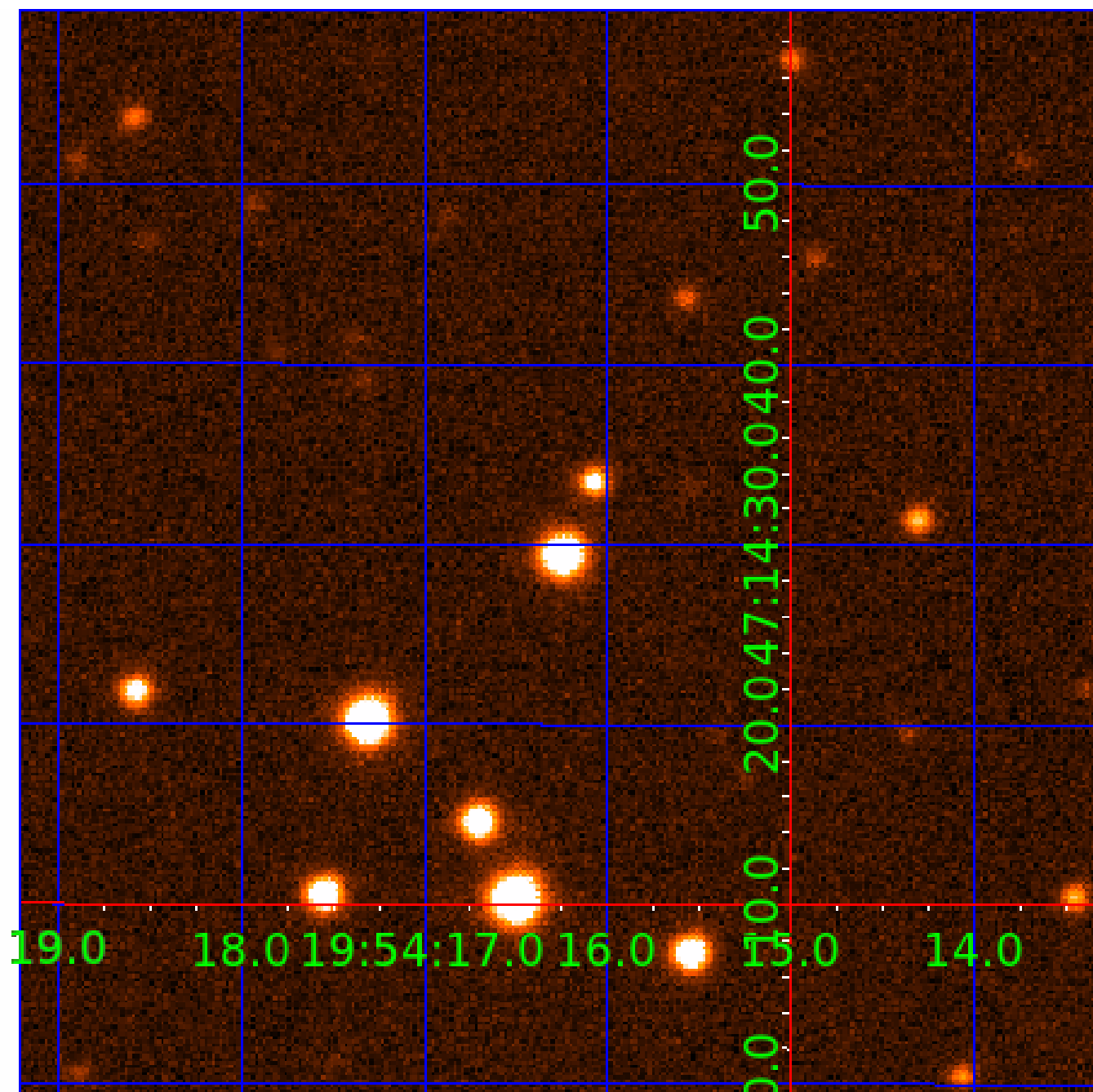


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010227914

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010227914-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

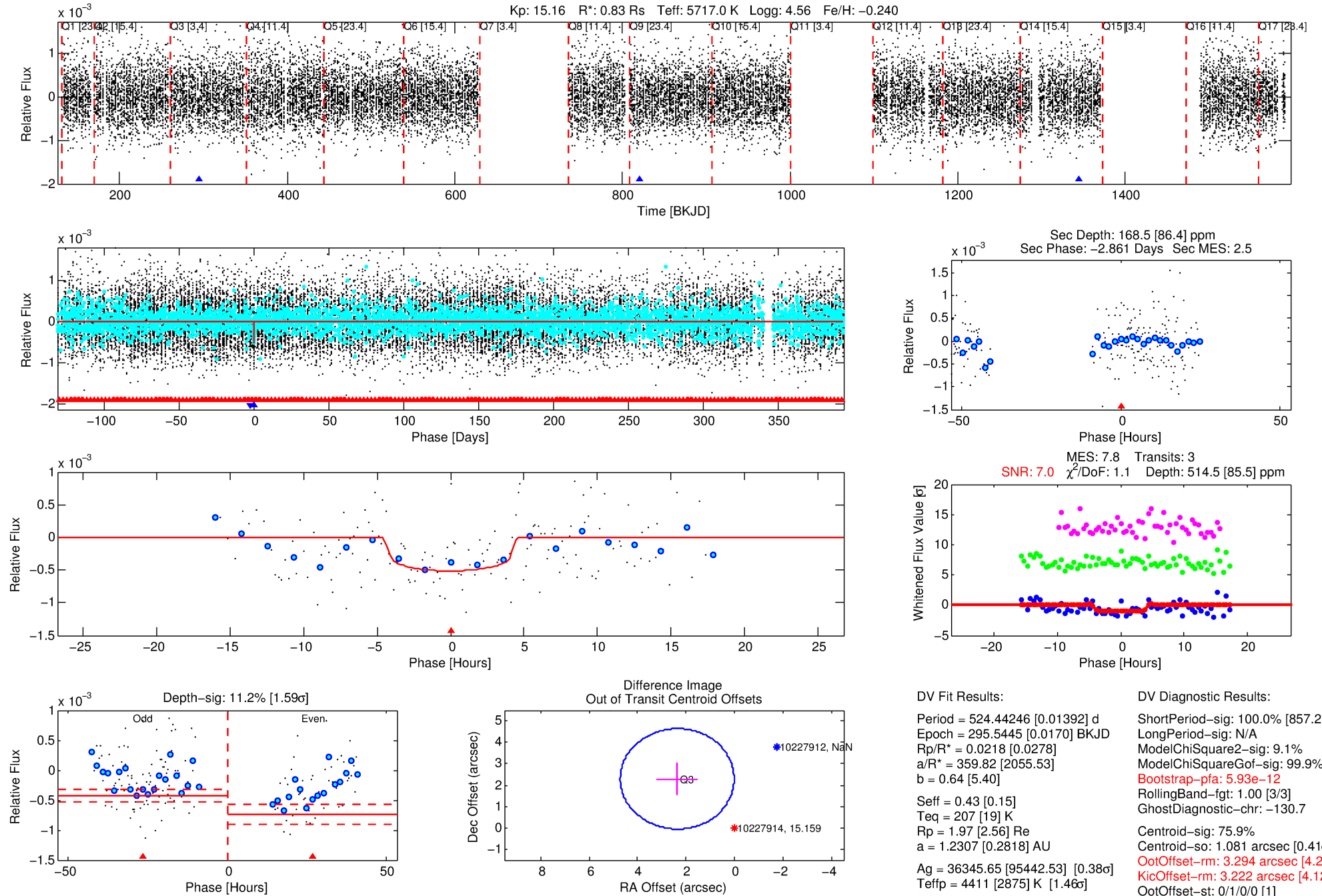
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010227914-02

No Significant Match Found

DV One-Page Summary

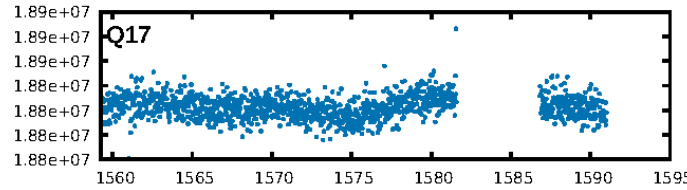
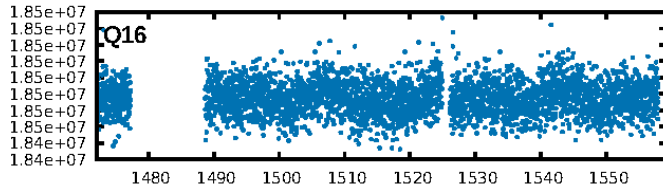
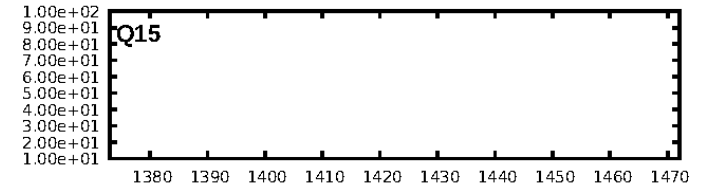
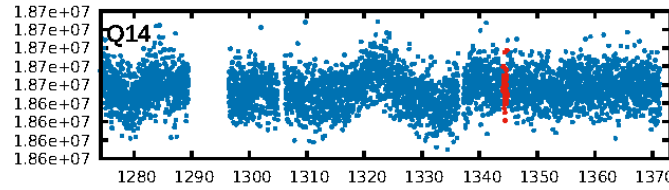
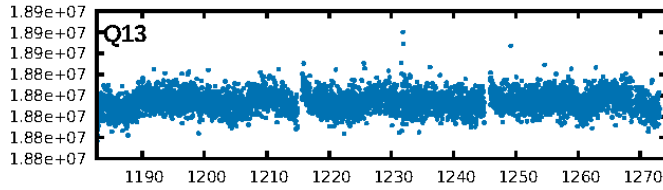
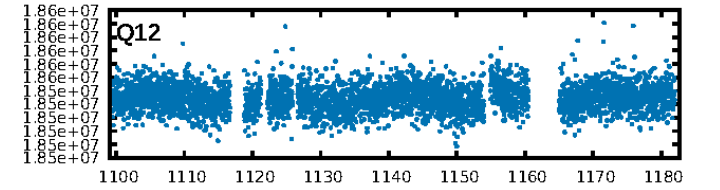
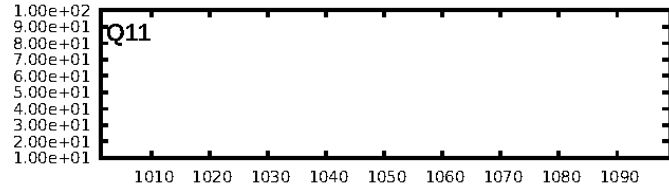
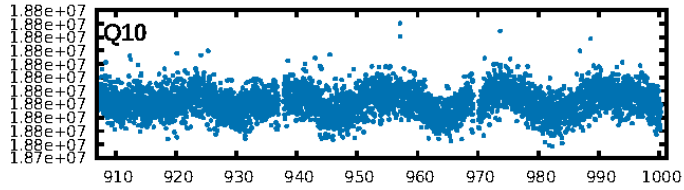
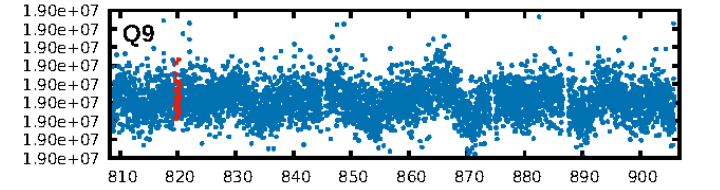
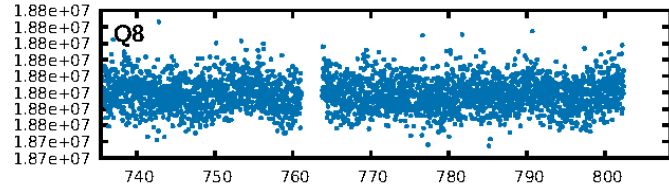
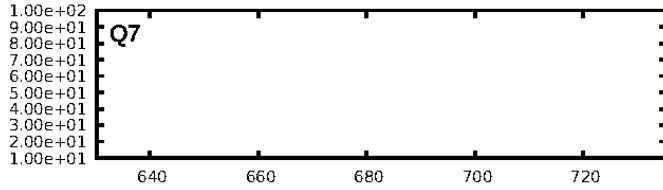
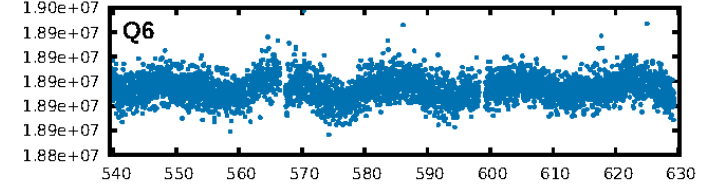
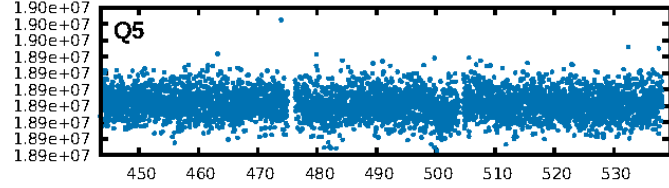
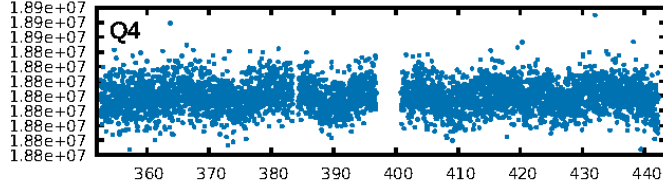
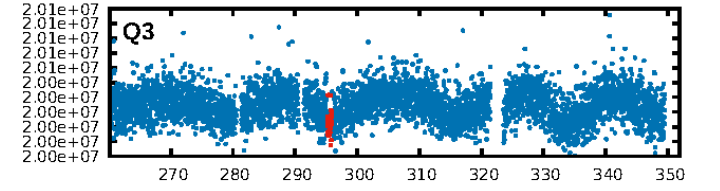
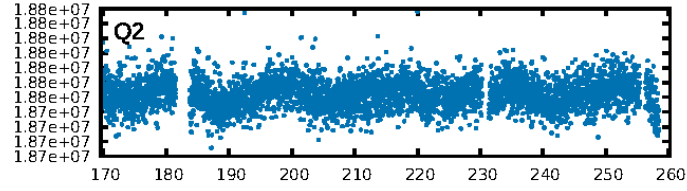
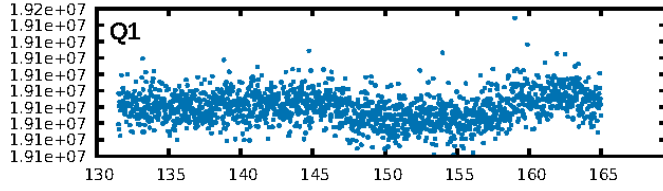
KIC: 10227914 Candidate: 2 of 2 Period: 524.442 d



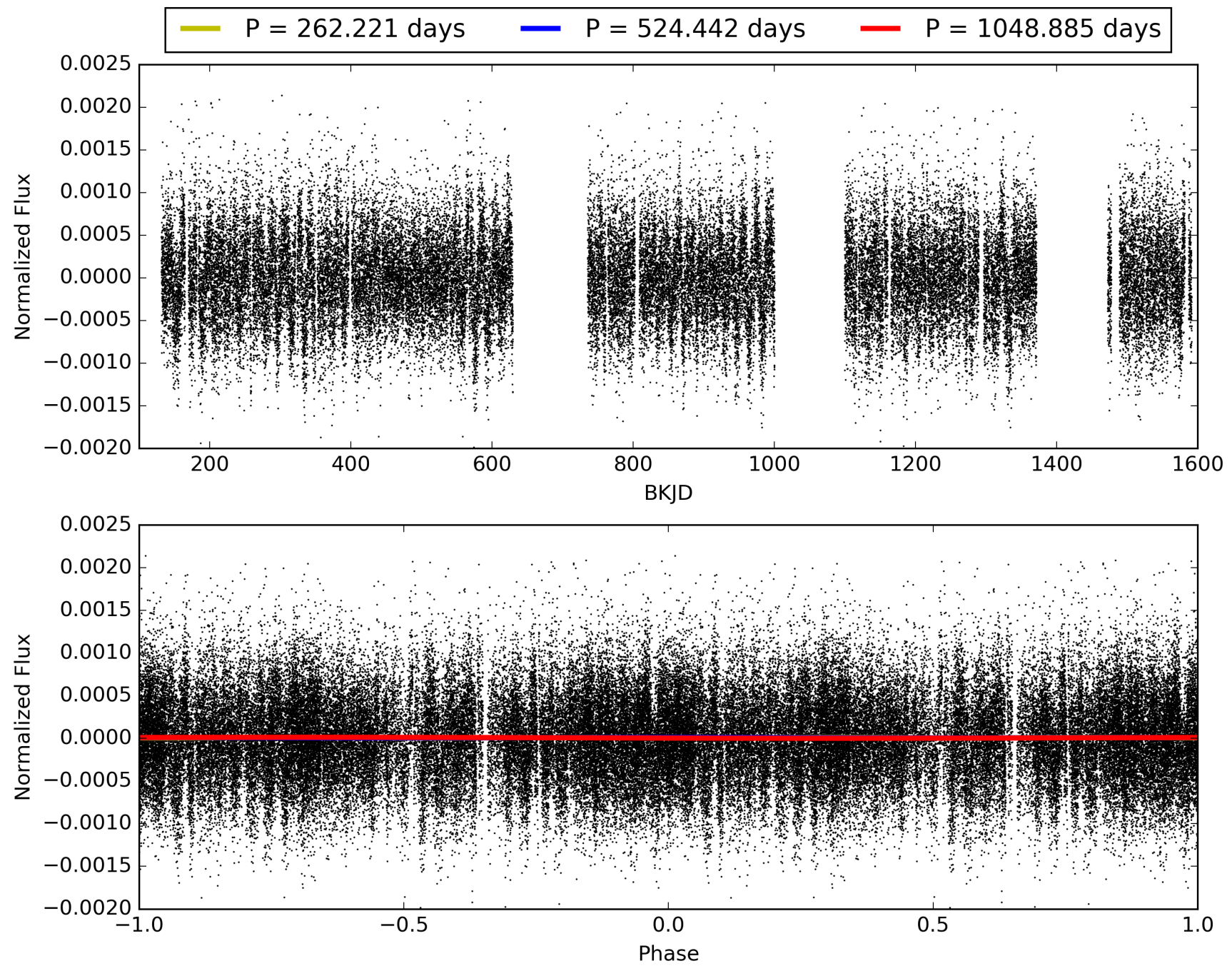
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:56:53 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010227914-02, PDC Light Curves

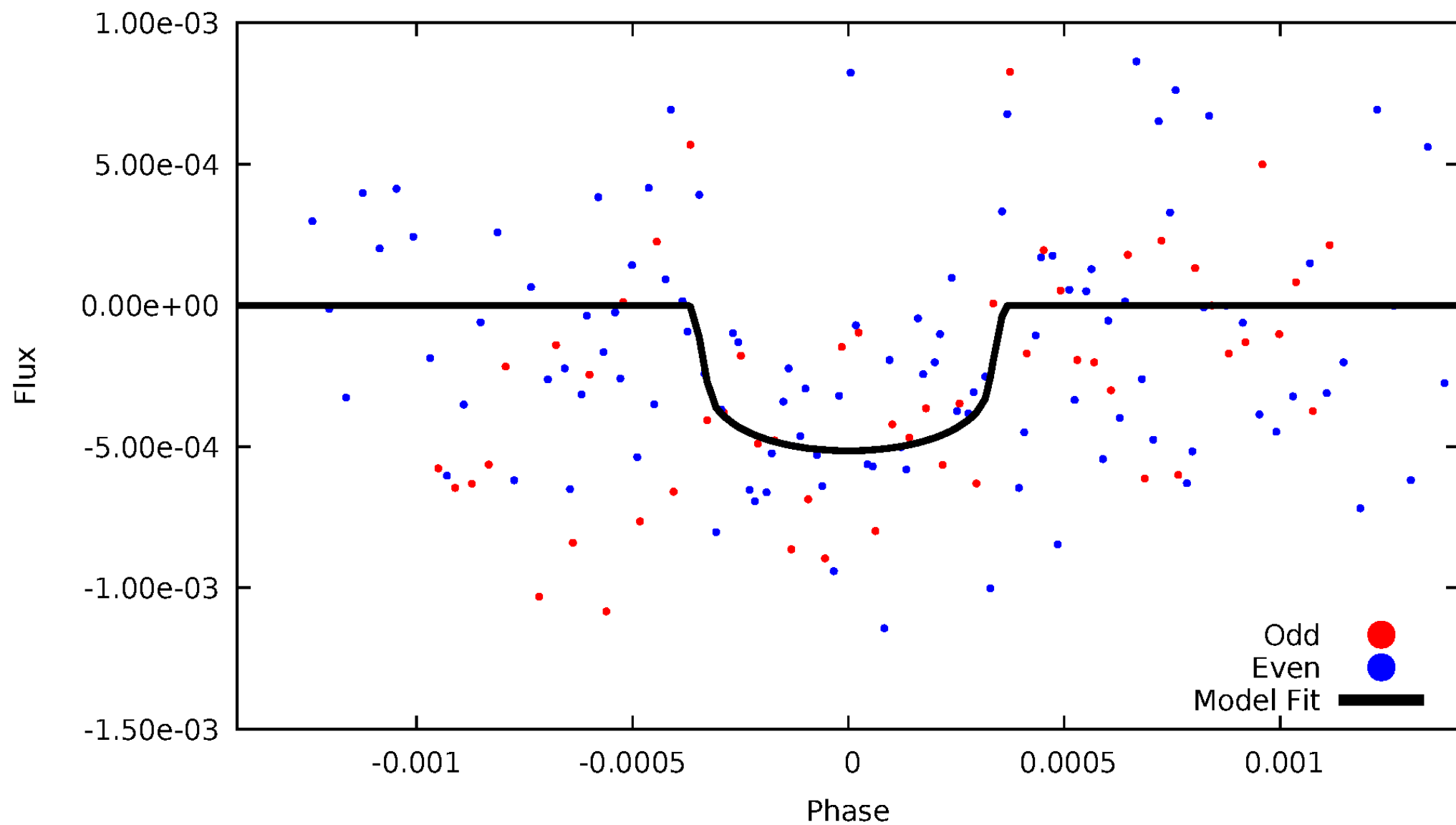


TCE 010227914-02



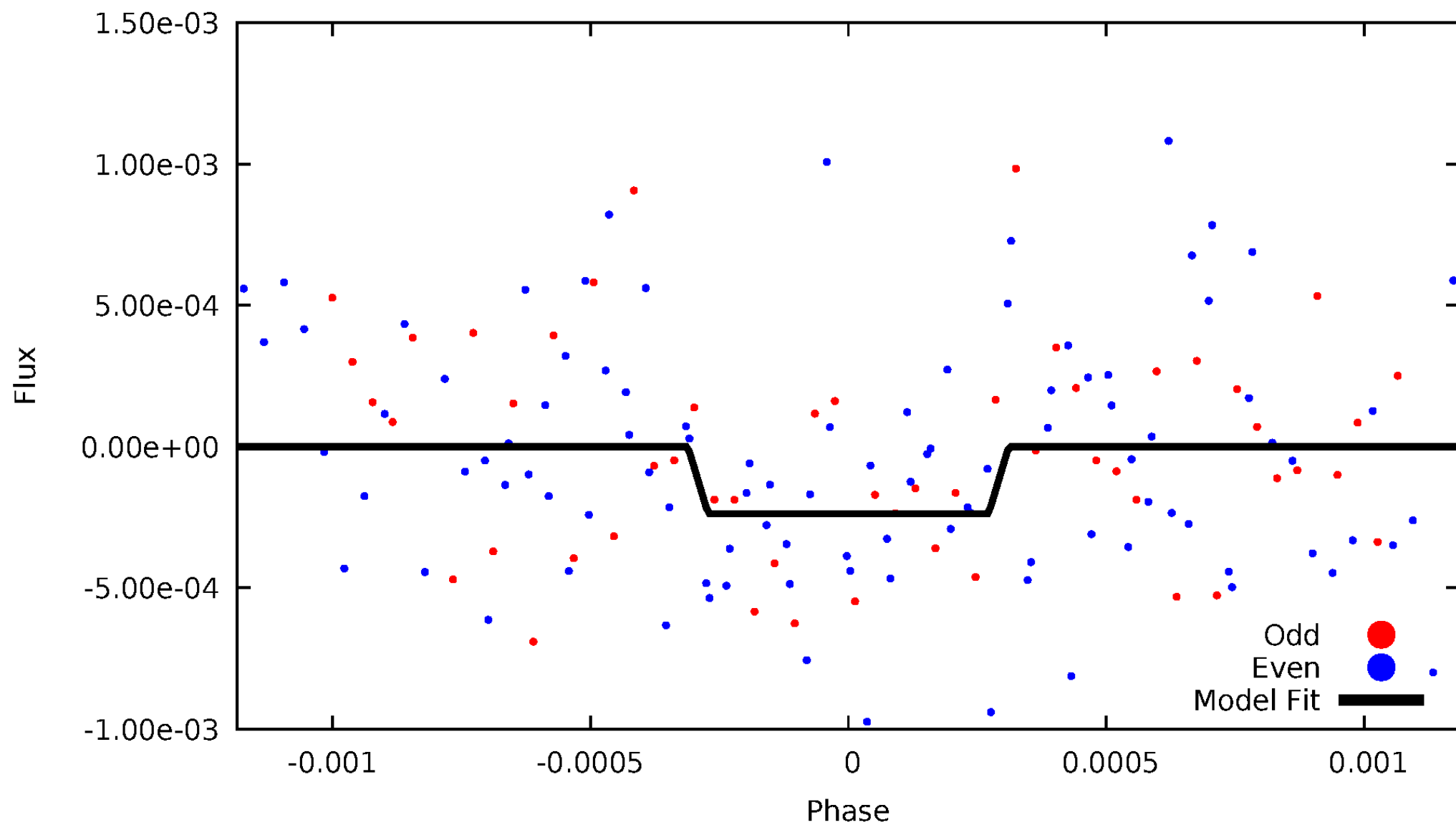
DV Odd/Even

TCE 010227914-02



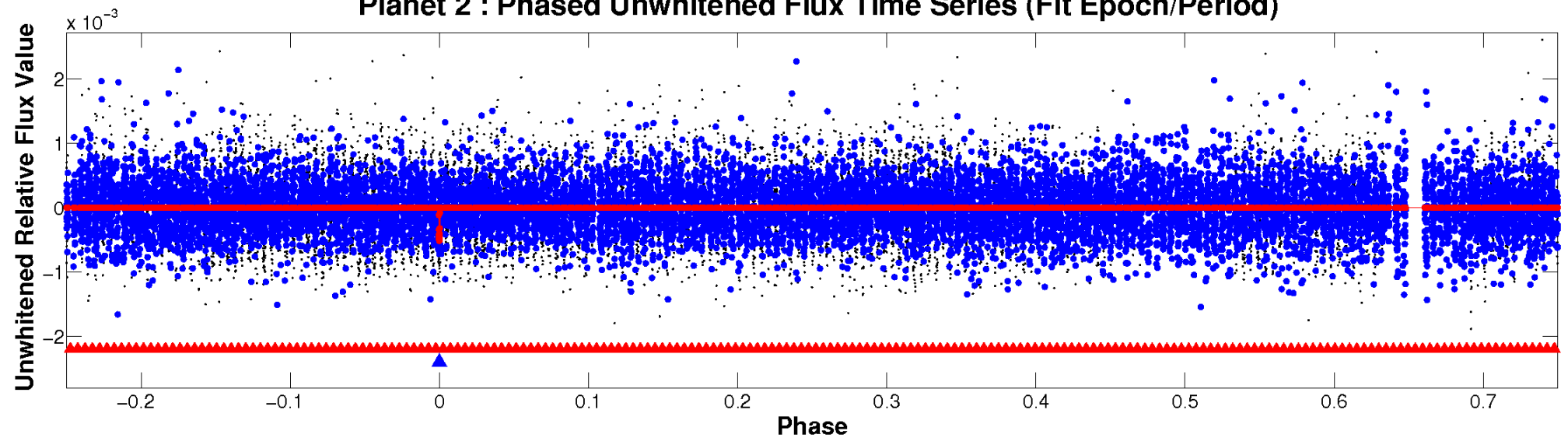
ALT Odd/Even

TCE 010227914-02

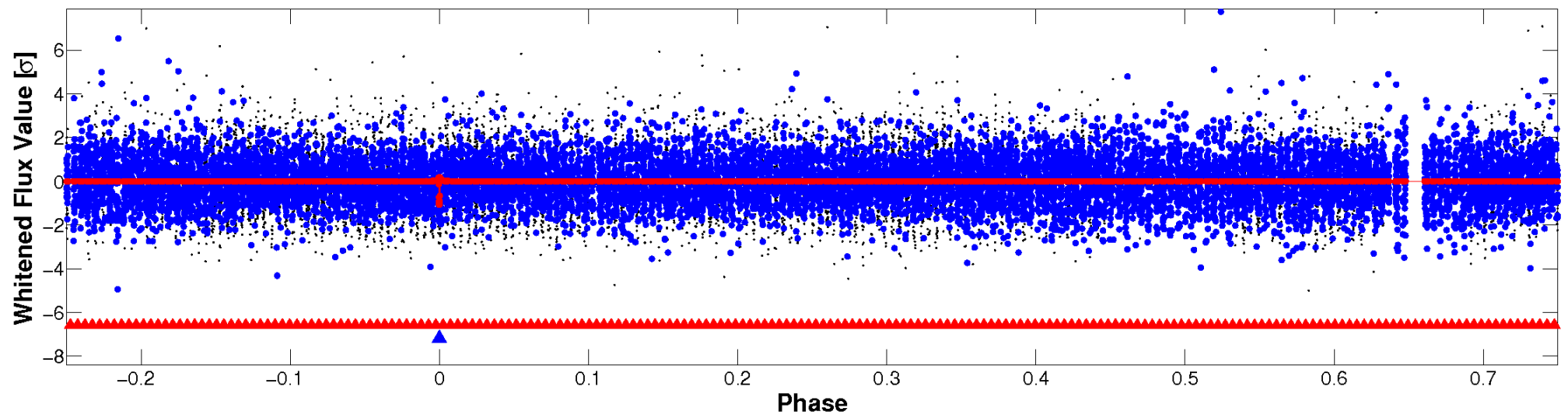


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

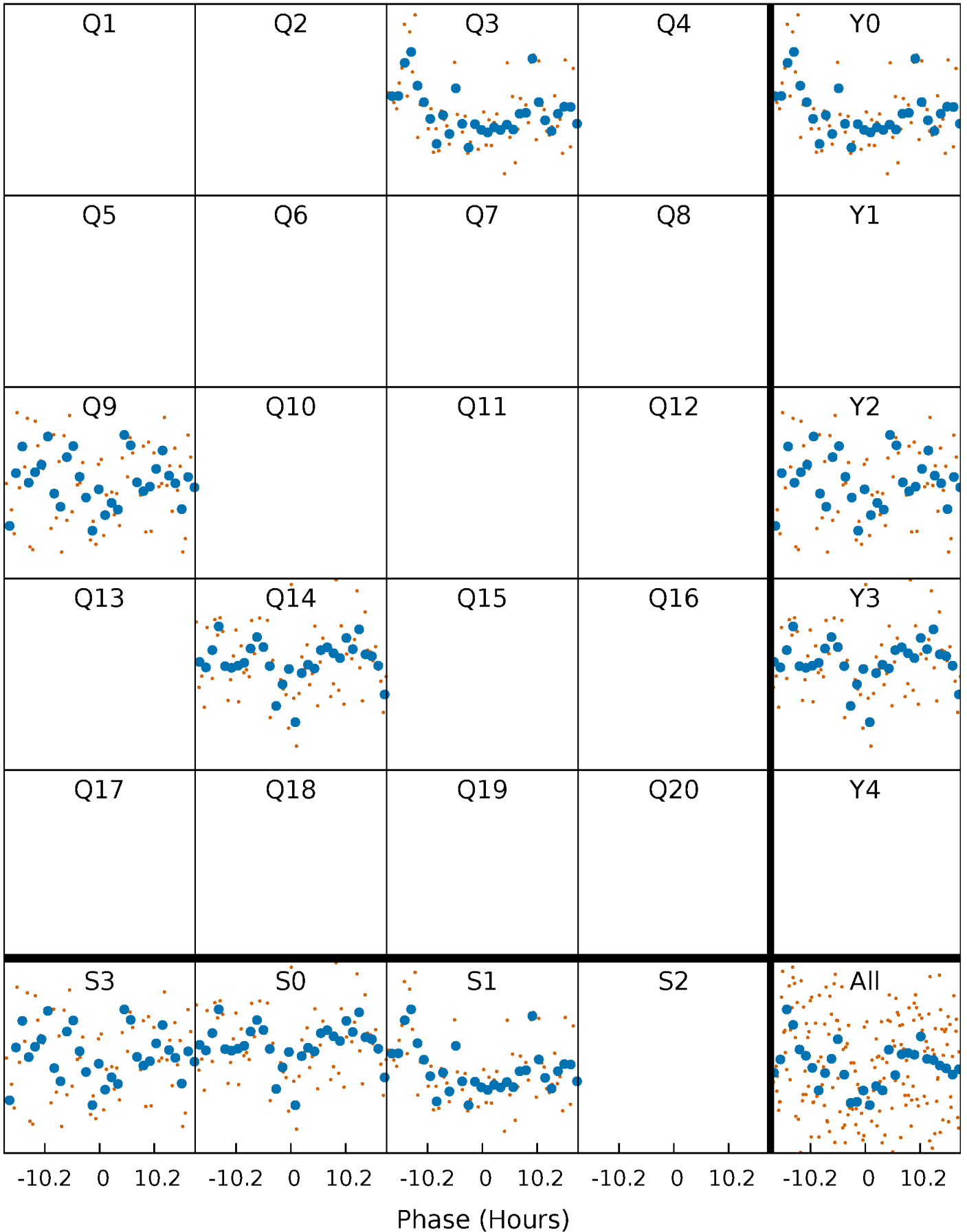


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



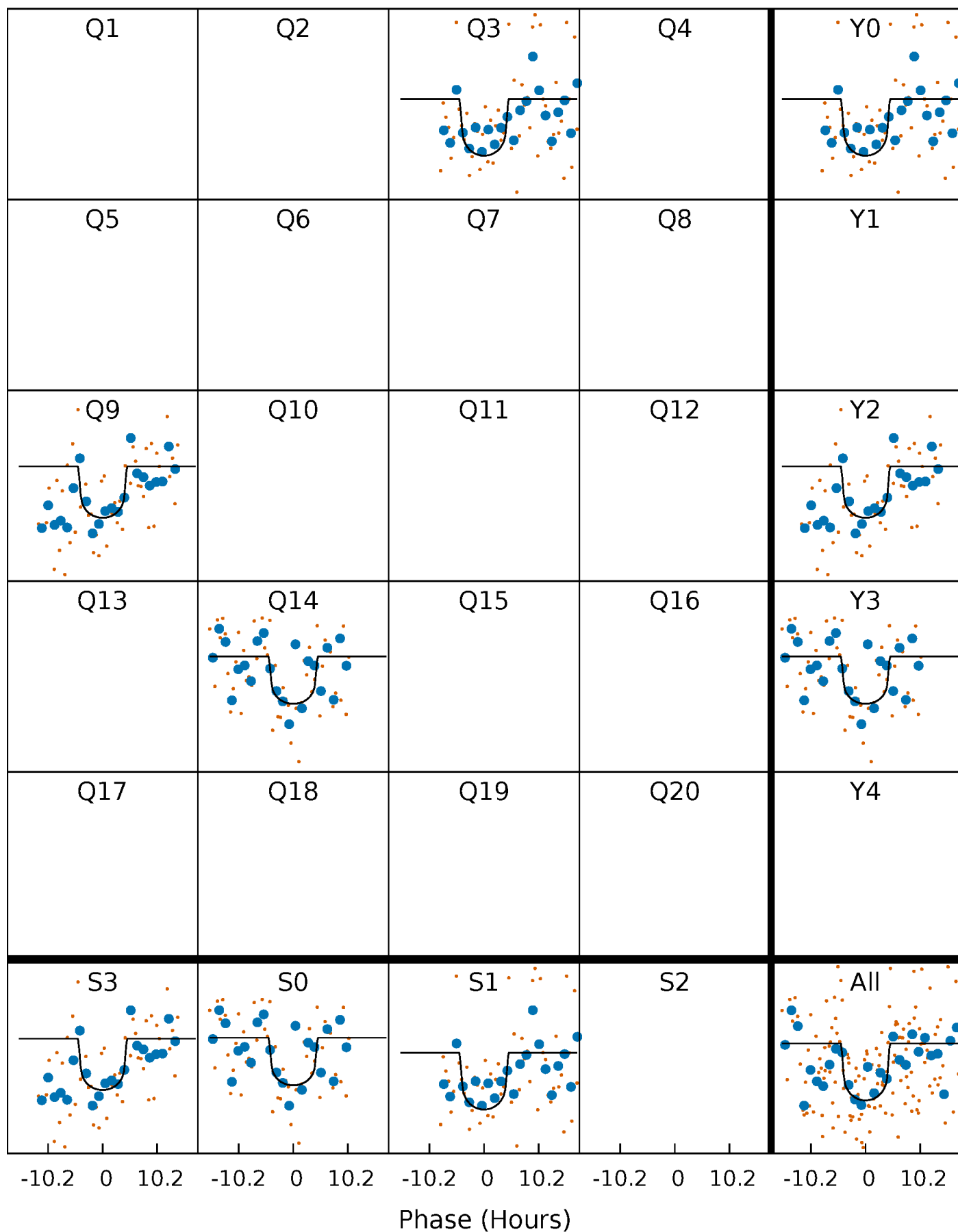
PDC Quarter-Phased Transit Curves

TCE 010227914-02 $P=524.442460$ Days $T_0=295.544489$ (BKJD)



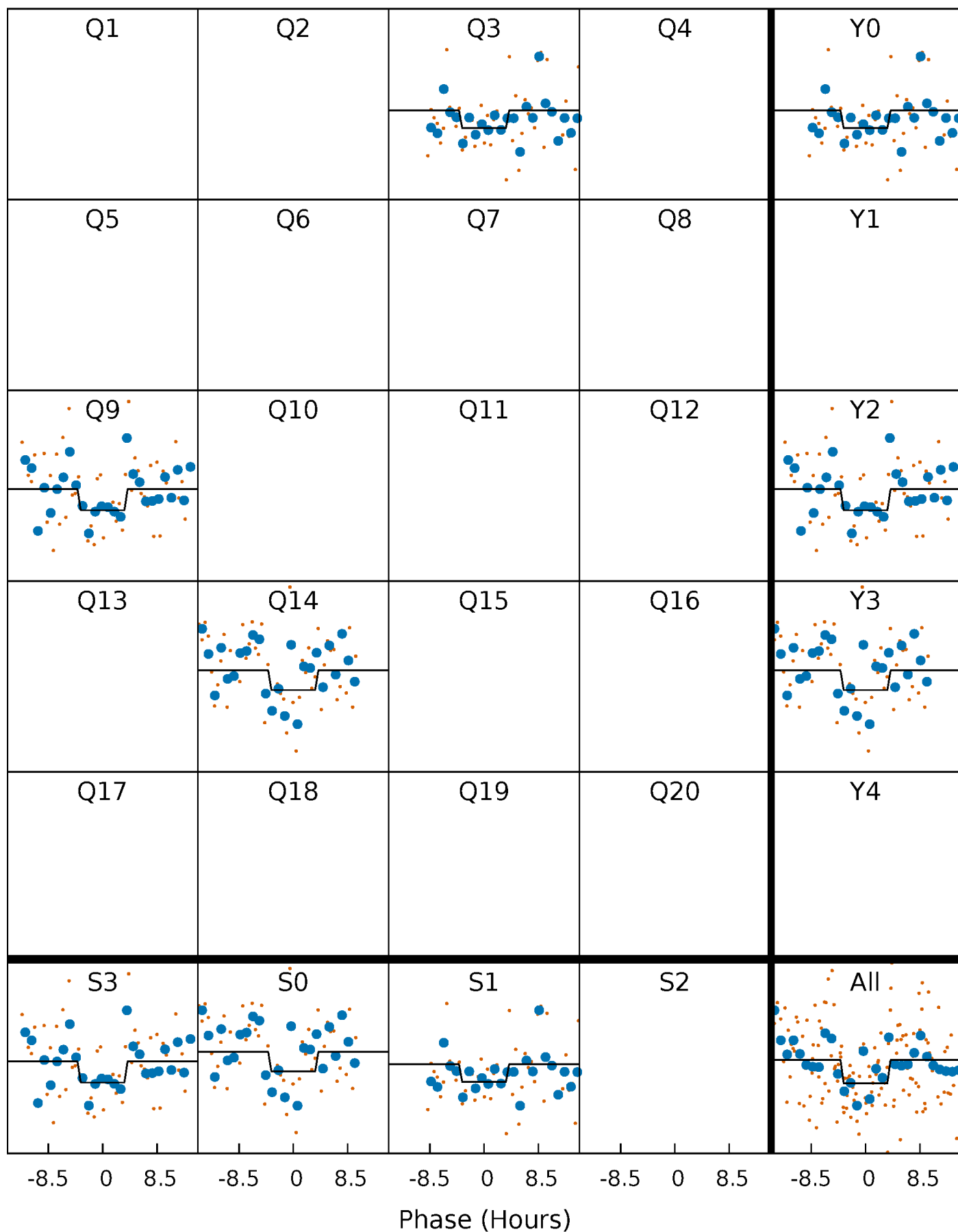
DV Quarter-Phased Transit Curves

TCE 010227914-02 P=524.442460 Days $T_0=295.544489$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

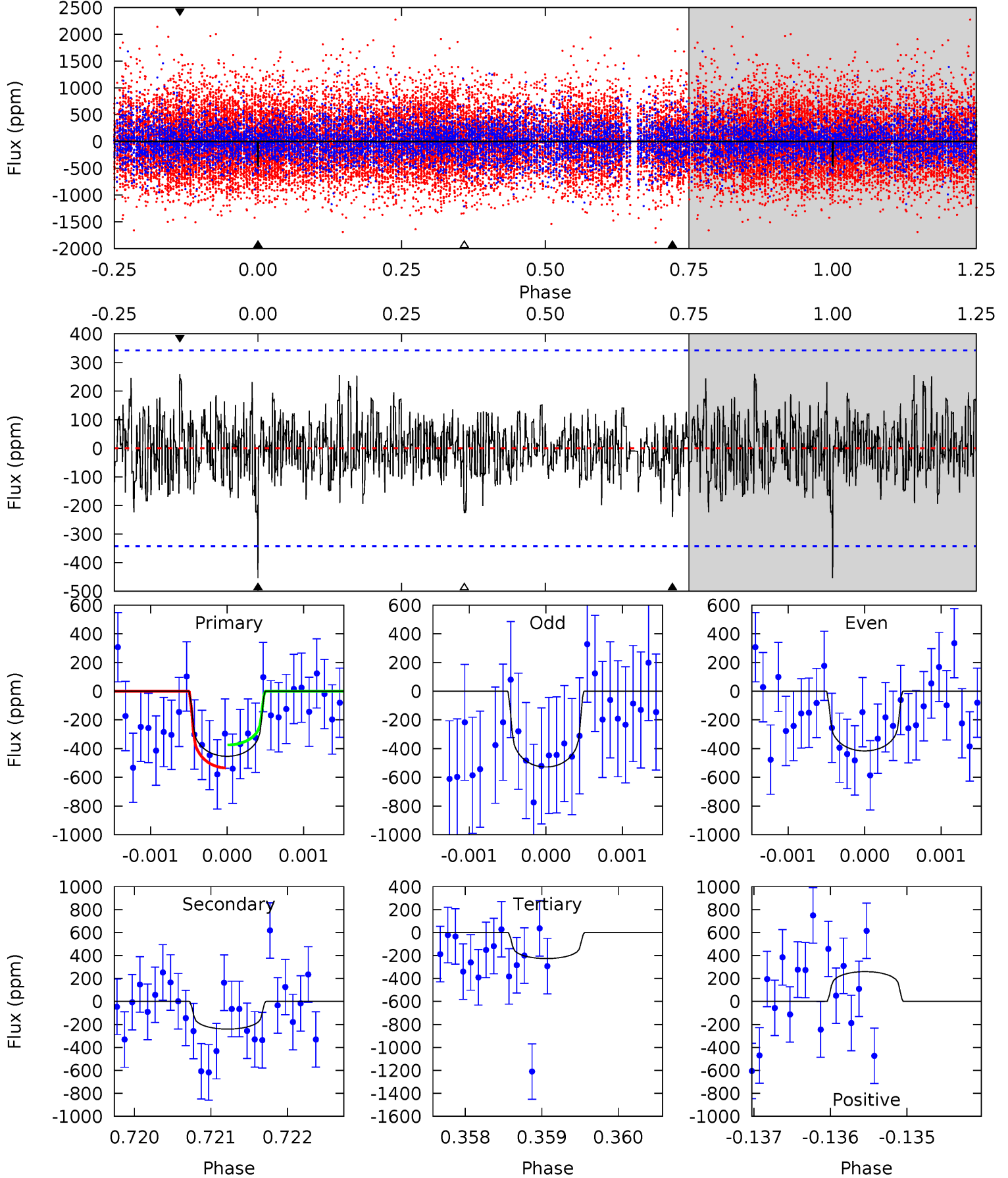
TCE 010227914-02 P=524.440940 Days $T_0=295.572201$ (BKJD)



DV Model-Shift Uniqueness Test

010227914-02, P = 524.442460 Days, E = 295.544489 Days

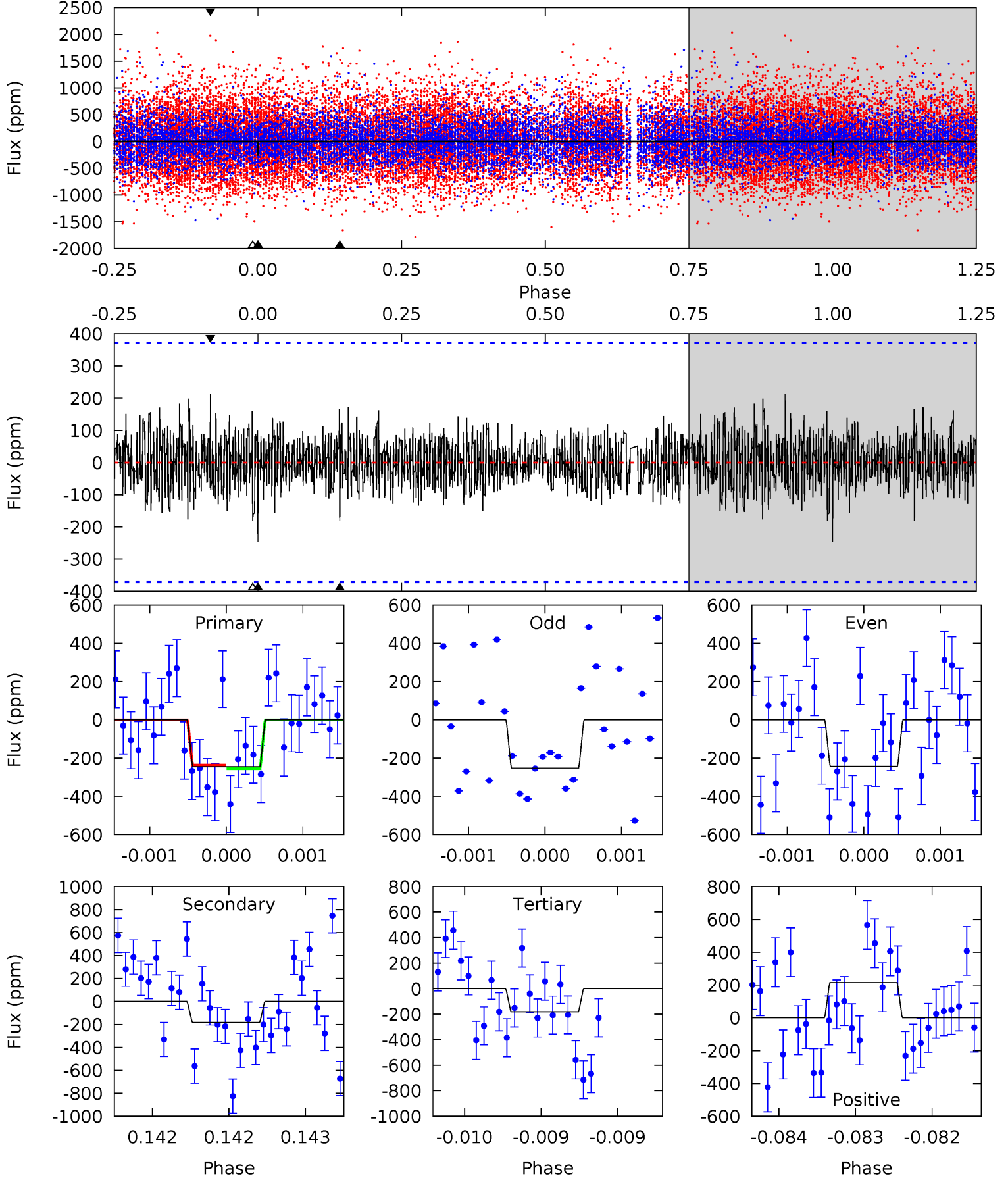
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.30	3.87	3.64	4.18	5.50	3.37	1.19	3.66	3.12	0.23	-0.31	0.85	1.08	0.36	1.29



Alt Model-Shift Uniqueness Test

010227914-02, P = 524.440940 Days, E = 295.572201 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.66	2.70	2.69	3.19	5.54	3.43	0.77	0.97	0.47	0.01	-0.49	0.07	0.98	0.47	0.13



Stellar Parameters For KIC 010227914

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5717^{+155}_{-172}	$4.560^{+0.033}_{-0.187}$	$-0.240^{+0.300}_{-0.300}$	$0.826^{+0.221}_{-0.079}$	$0.904^{+0.100}_{-0.100}$	$2.258^{+0.418}_{-1.112}$
	+3%/-3%	+1%/-4%	+125%/-125%	+27%/-10%	+11%/-11%	+19%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010227914-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-241 ± 62	$2.91^{+2.45}_{-1.84}$	296^{+17}_{-14}	4234^{+2525}_{-778}	$22136^{+148259}_{-15697}$
Alt.	-181 ± 67	$2.27^{+2.29}_{-1.56}$	296^{+17}_{-13}	4427^{+3458}_{-989}	$26565^{+280866}_{-20407}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

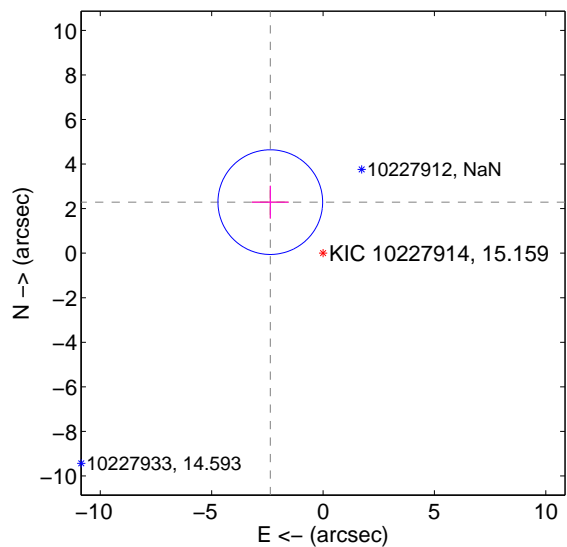
Supplemental centroid analysis for 010227914-02. Kepler magnitude: 15.16. Transit SNR 7.04

There are 0 quarters with good PRF difference image offsets

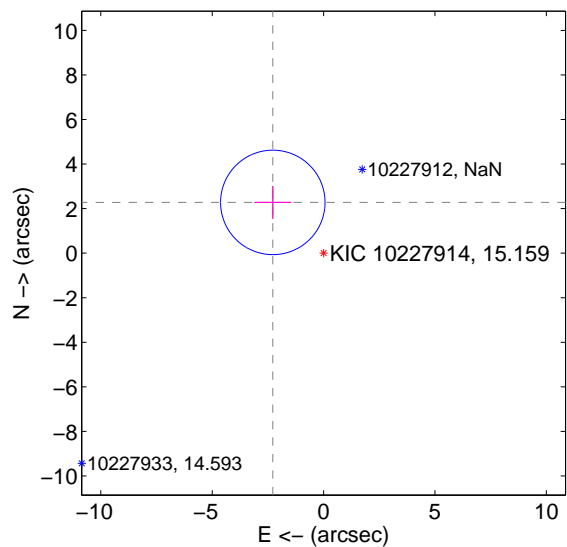
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.294 ± 0.783	4.21	2.367 ± 0.825	2.291 ± 0.736
PRF-fit source offset from KIC position	3.222 ± 0.781	4.12	2.278 ± 0.825	2.279 ± 0.736
photometric centroid source offset	1.08 ± 2.66	0.41	-0.18 ± 2.22	-1.07 ± 2.67

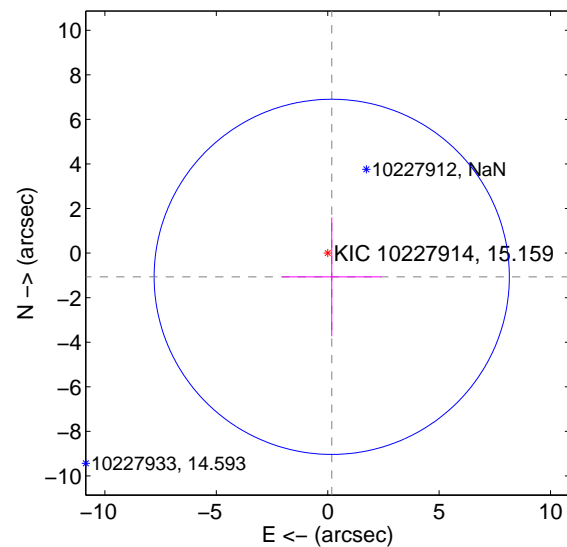
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

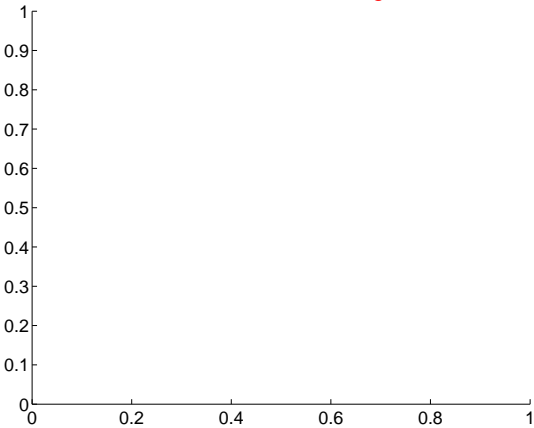
Q1 no difference image



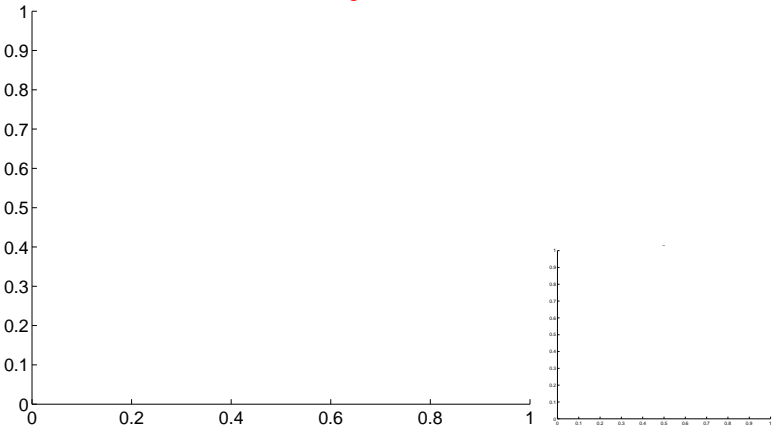
Q1 no OOT image



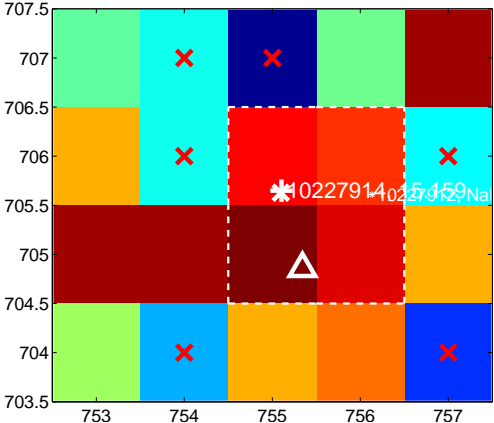
Q2 no difference image



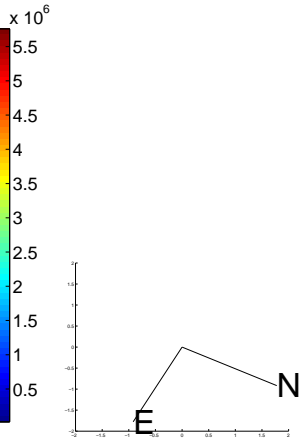
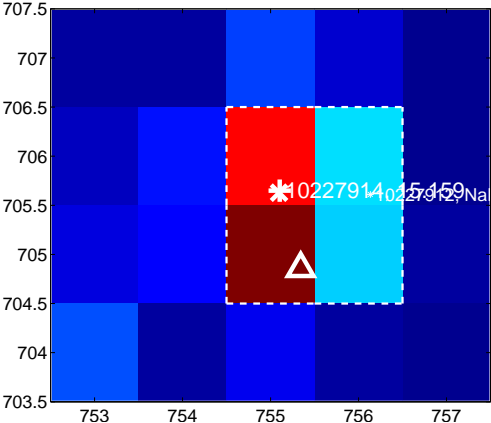
Q2 no OOT image



Q3 difference image. Poor Quality



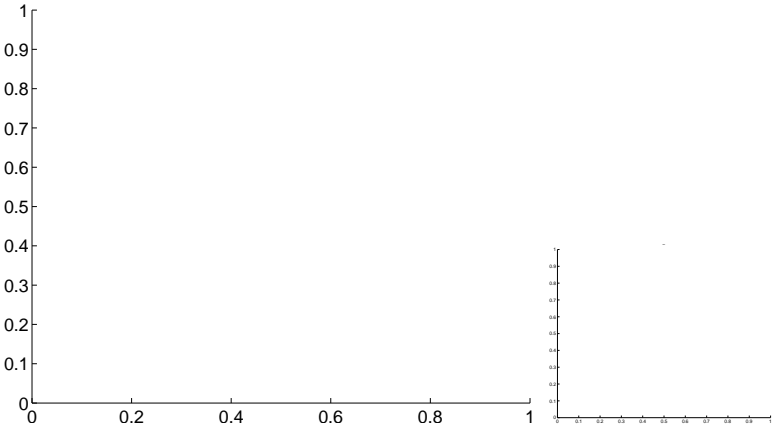
Q3 OOT image



Q4 no difference image



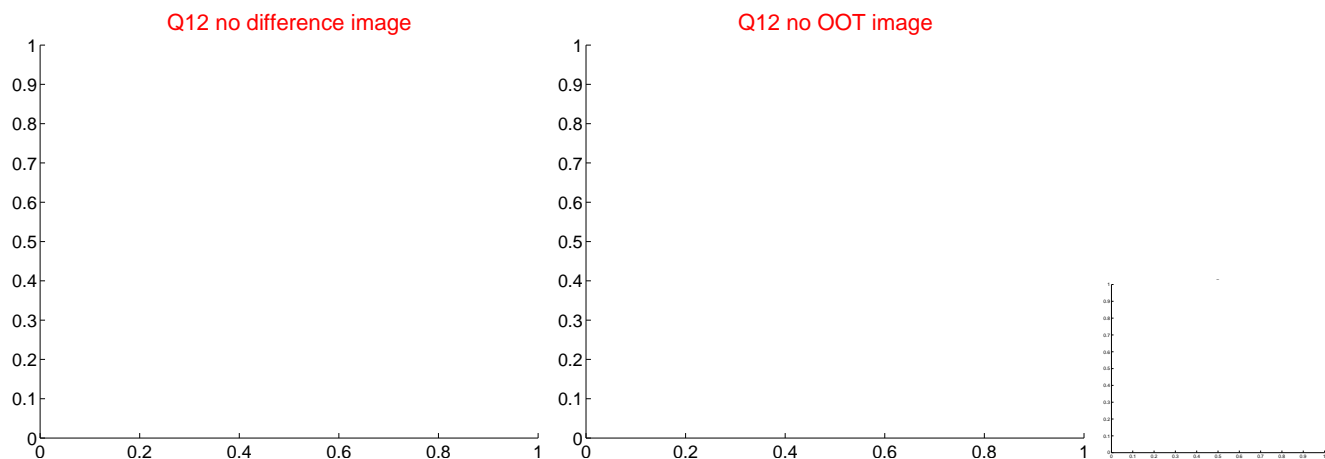
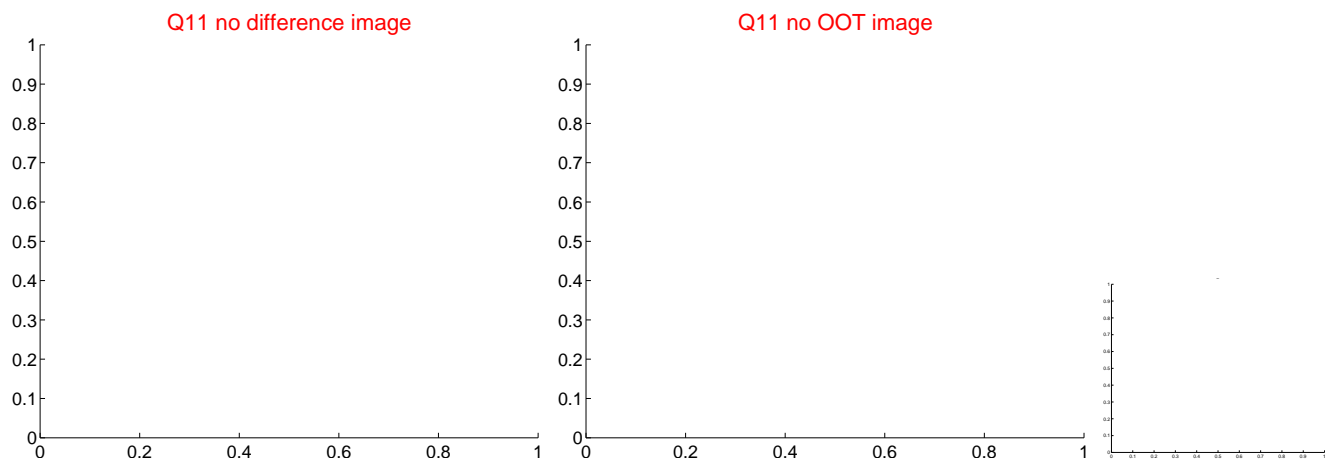
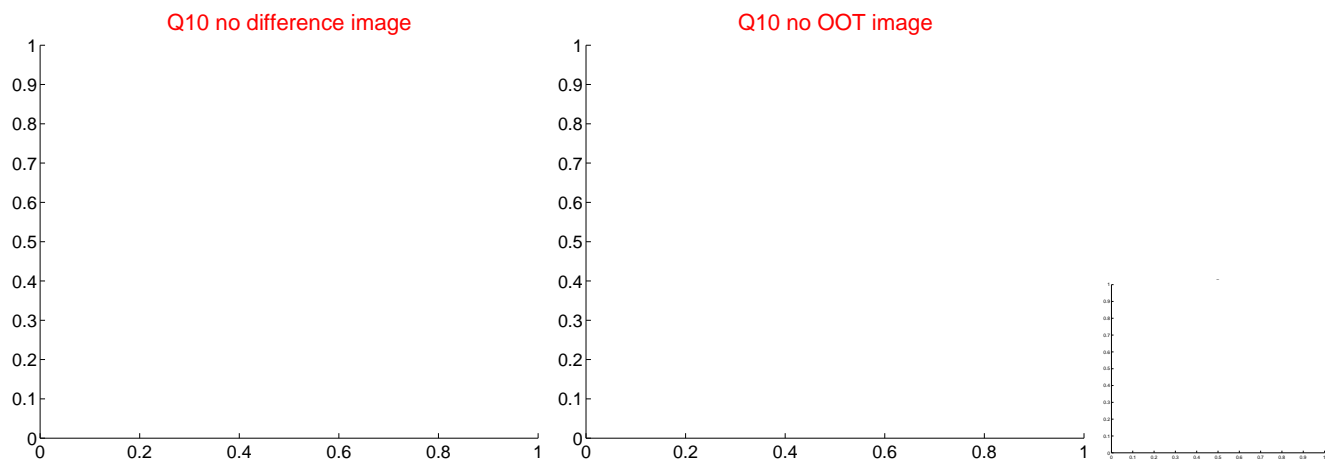
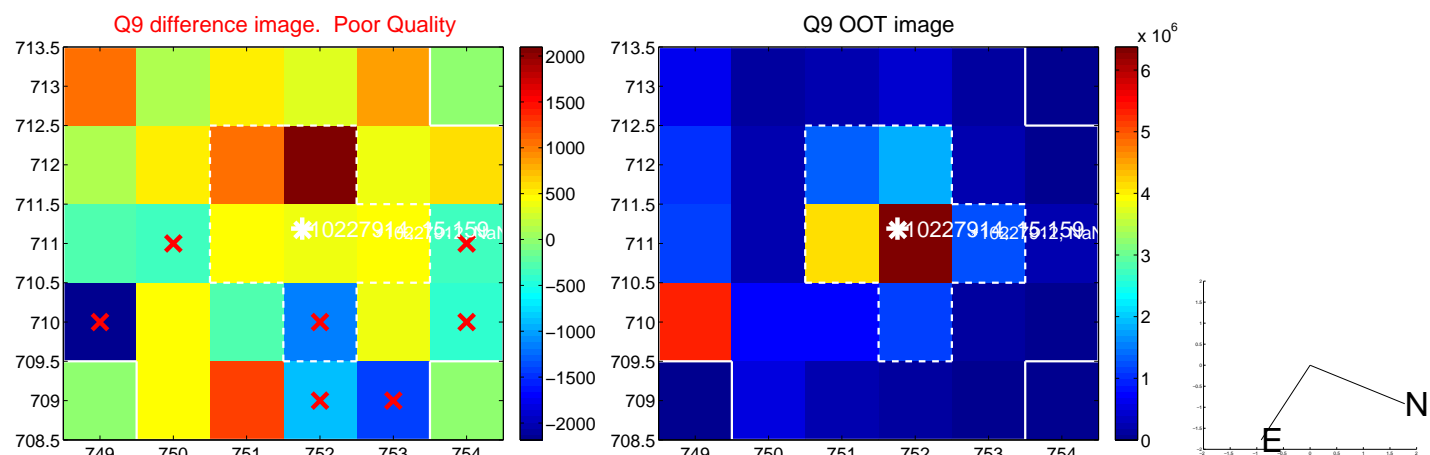
Q4 no OOT image



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

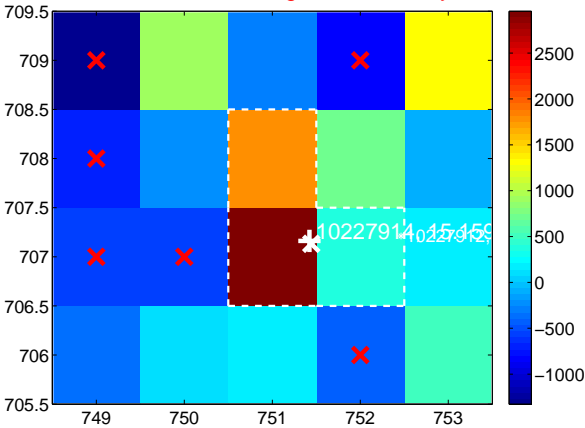
Q13 no difference image



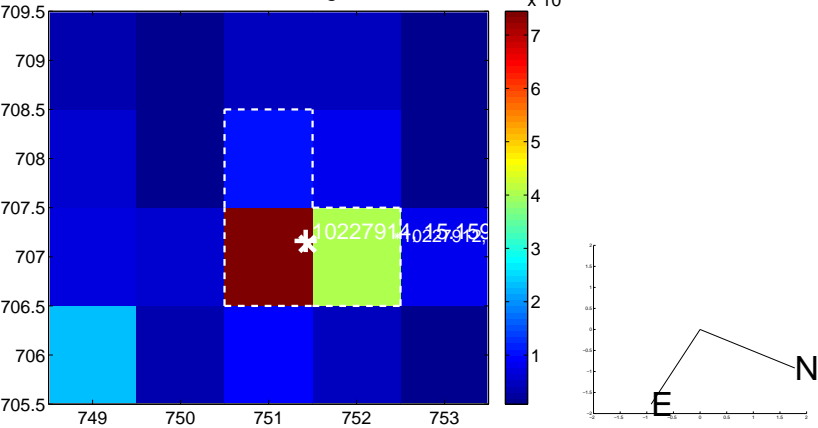
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



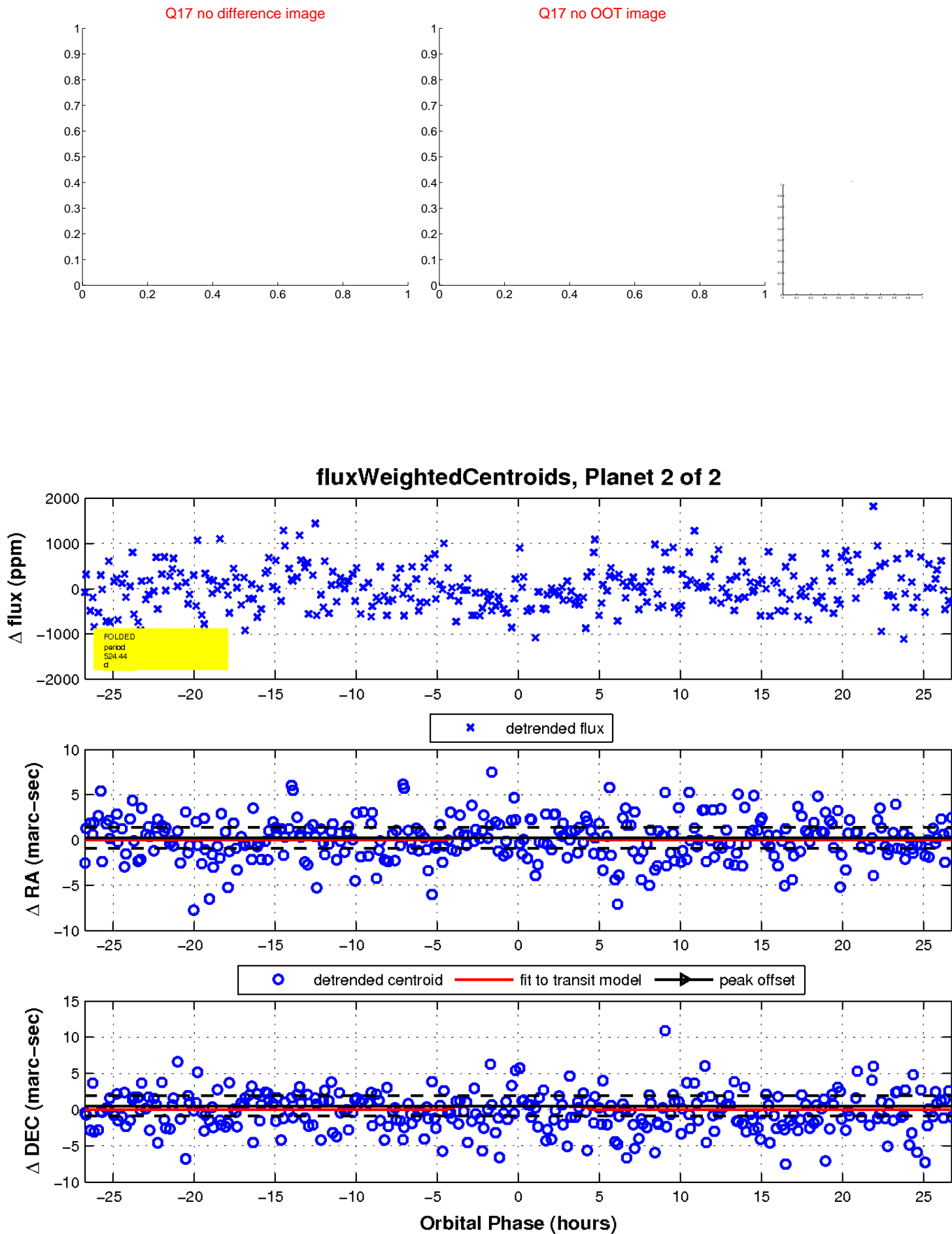
Q16 no difference image



Q16 no OOT image



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

