

KIC 004839508

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})
004839508-01	OBS	No	1.028298	131.818970	30.0	4.604	8.9	4.9	4.98	6680	3.02	71850.25
004839508-02	OBS	No	1.028282	132.349537	57.4	3.595	13.3	9.5	4.98	6680	4.39	71851.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004839508-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
004839508-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD

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

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

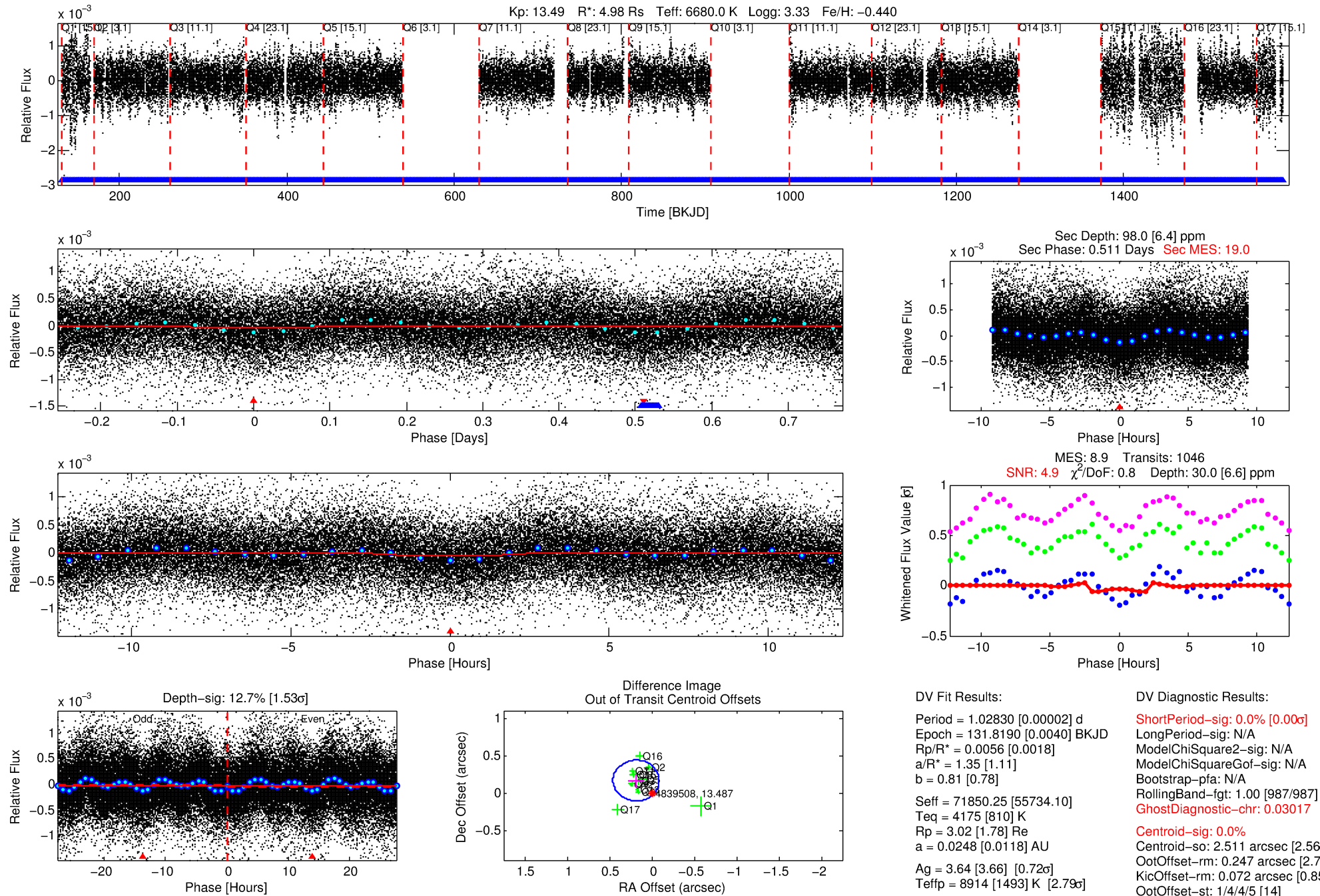
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004839508-01

No Significant Match Found

DV One-Page Summary

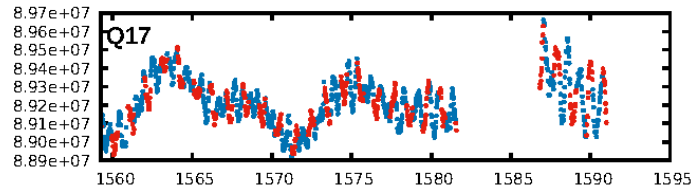
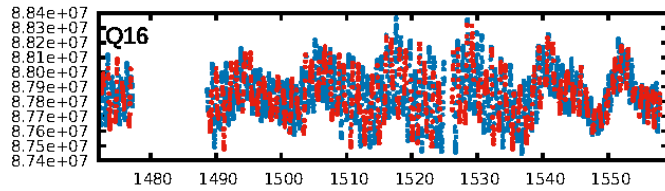
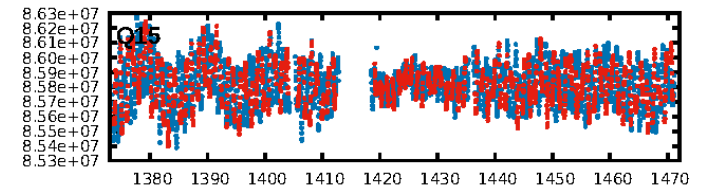
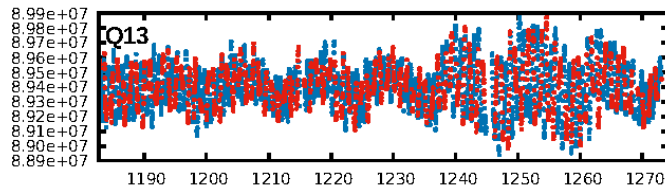
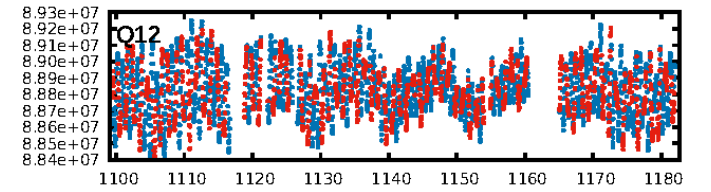
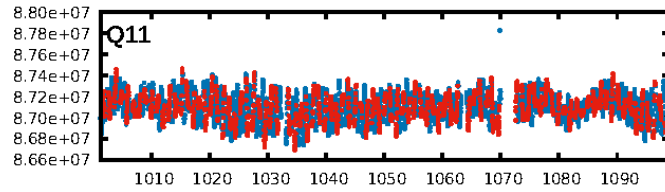
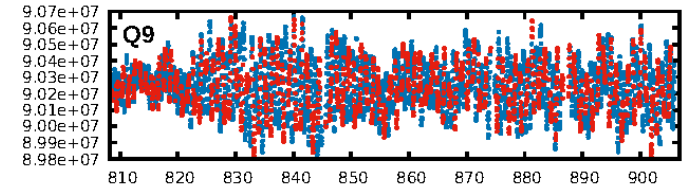
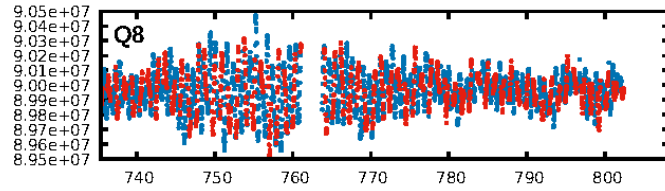
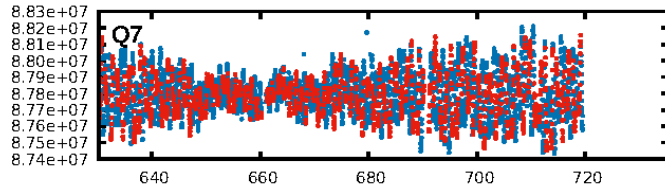
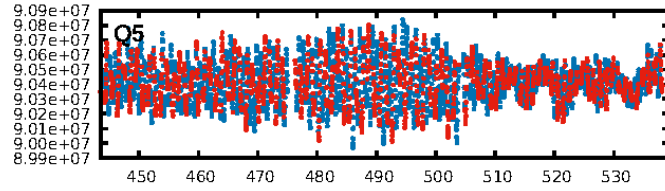
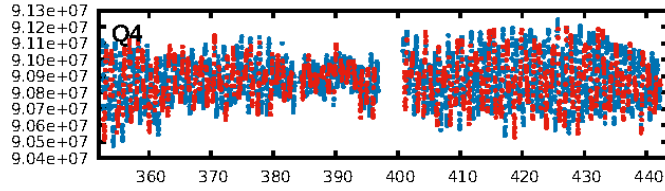
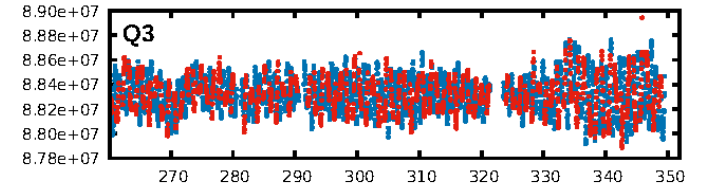
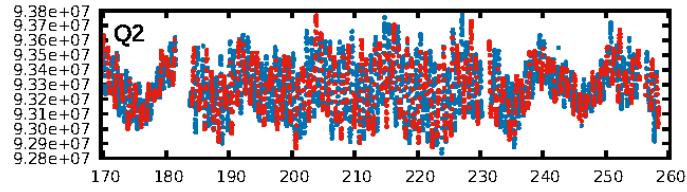
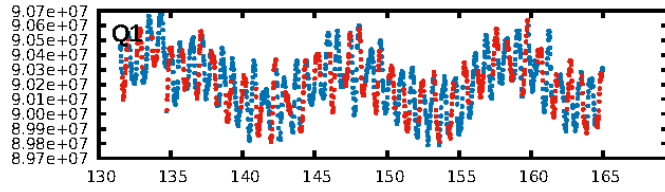
KIC: 4839508 Candidate: 1 of 2 Period: 1.028 d



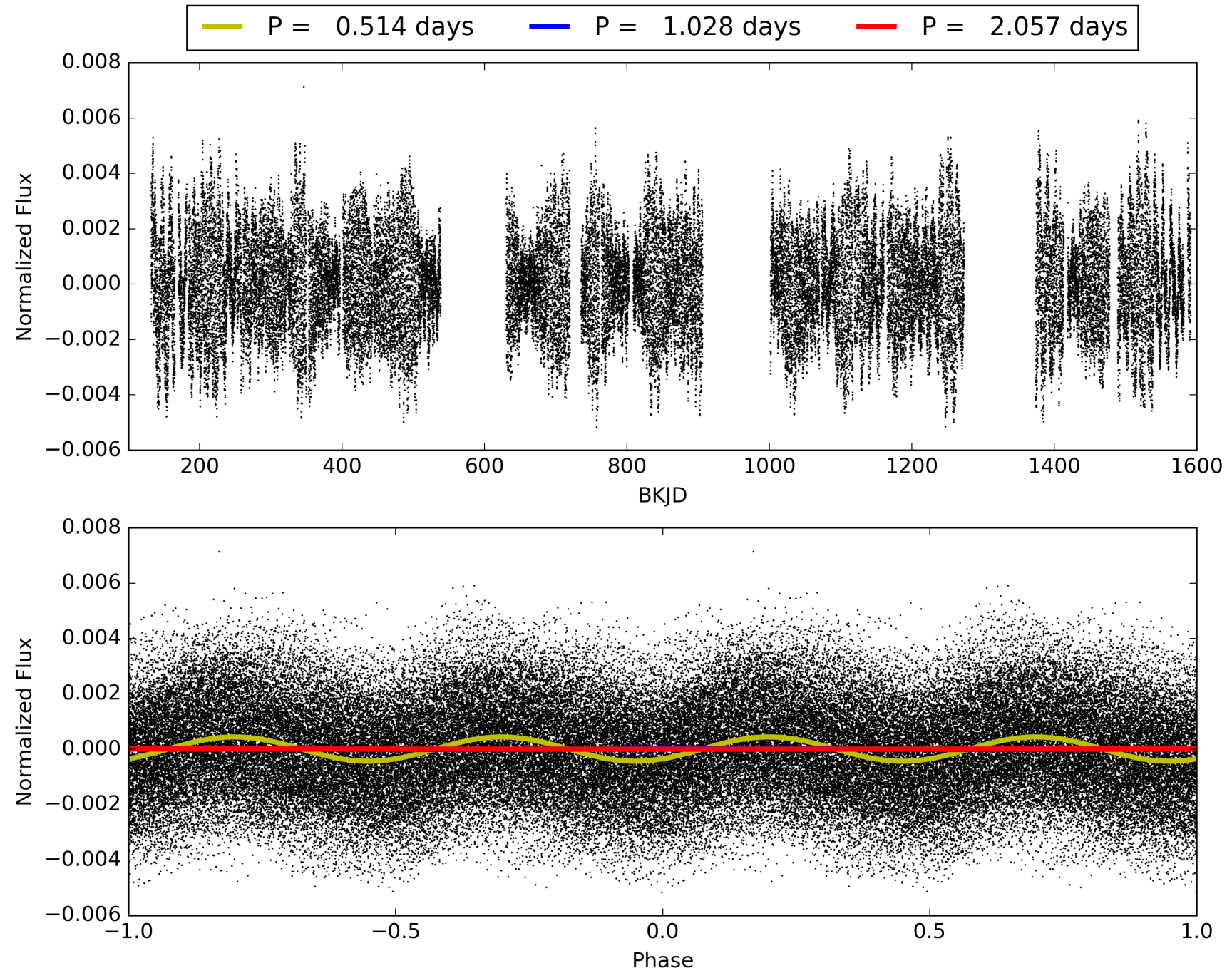
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004839508-01, PDC Light Curves

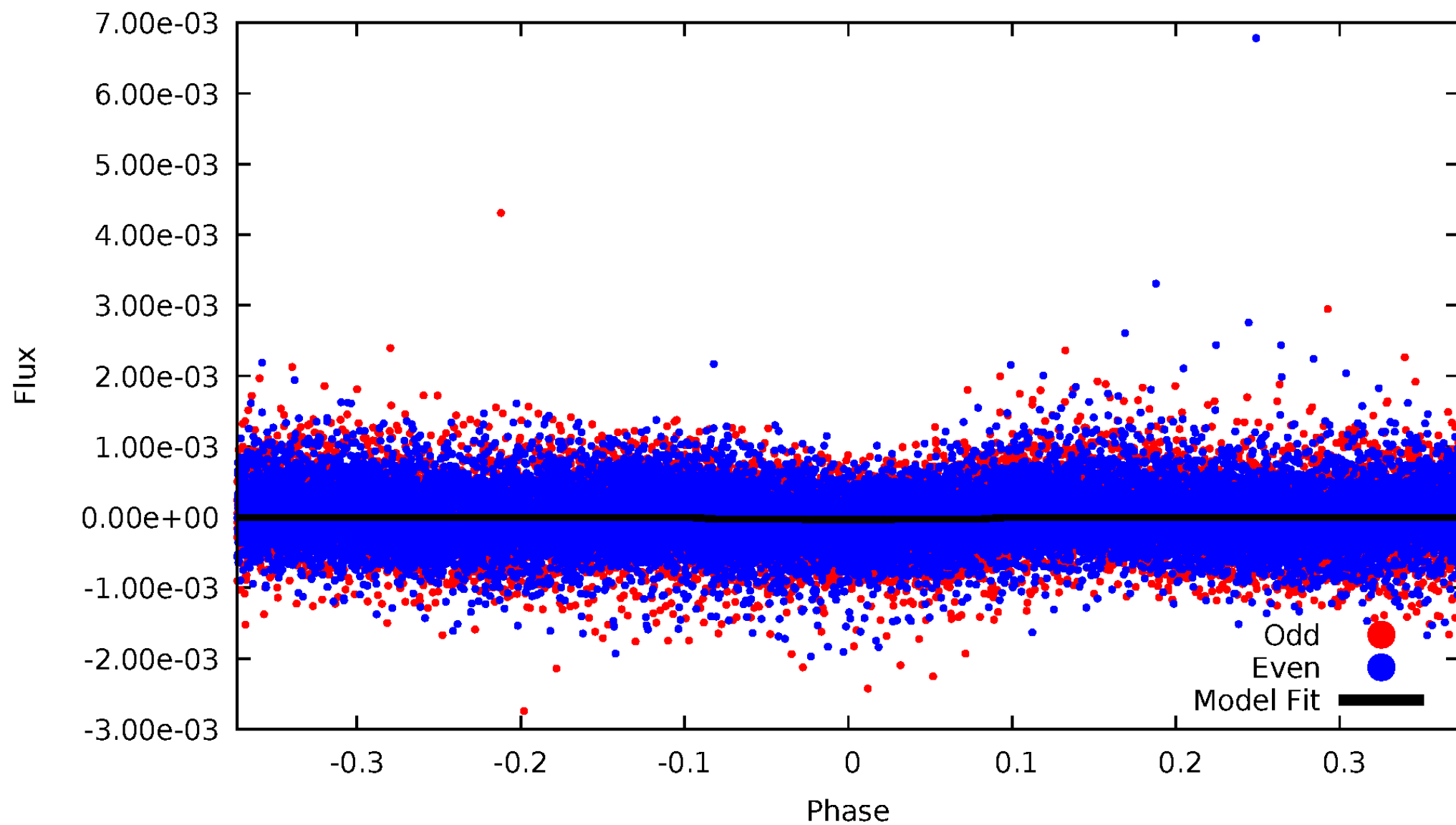


TCE 004839508-01



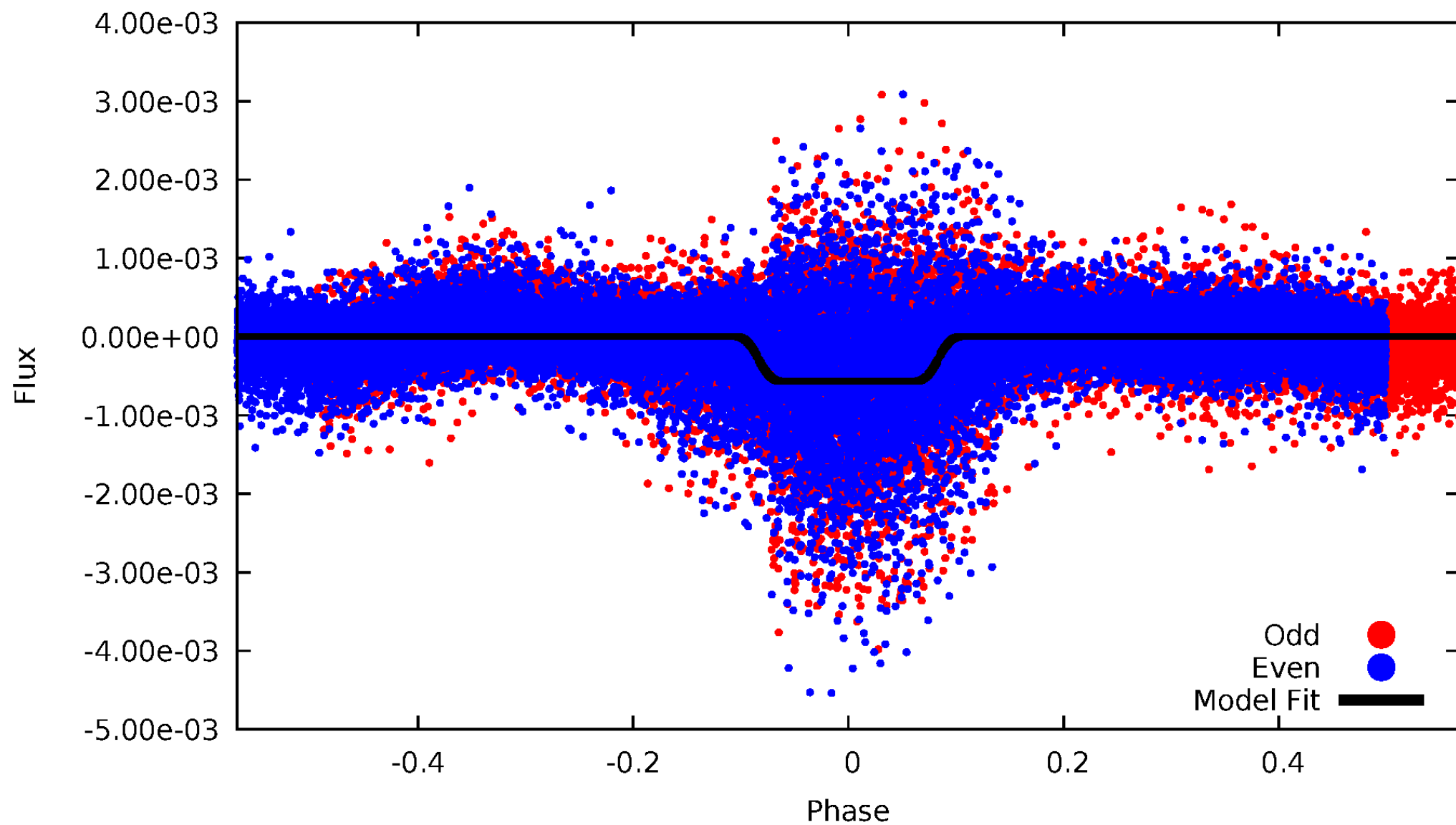
DV Odd/Even

TCE 004839508-01



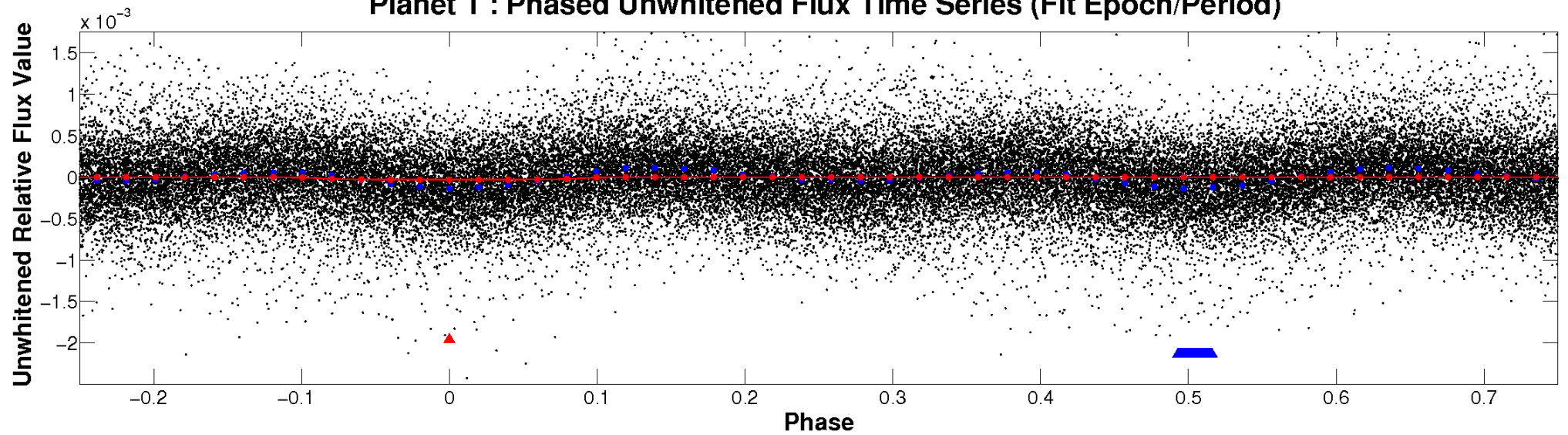
ALT Odd/Even

TCE 004839508-01

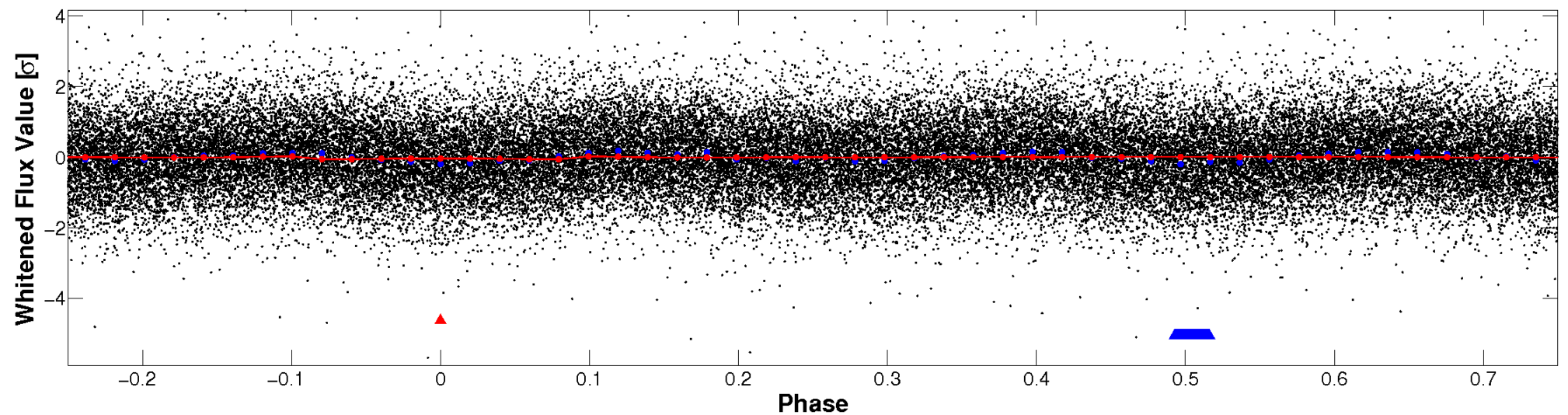


Non-Whitened Vs. Whitened Light Curve

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

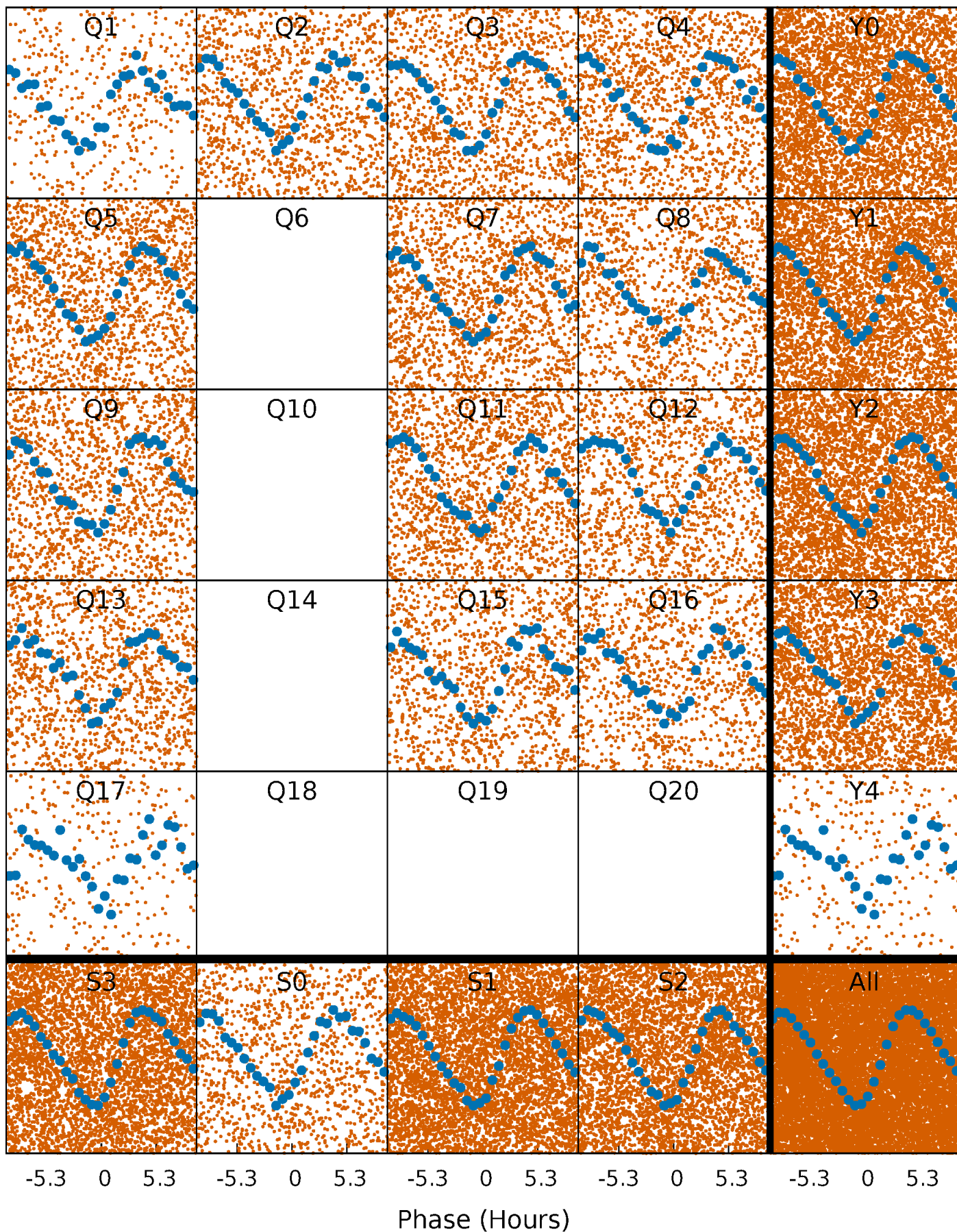


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



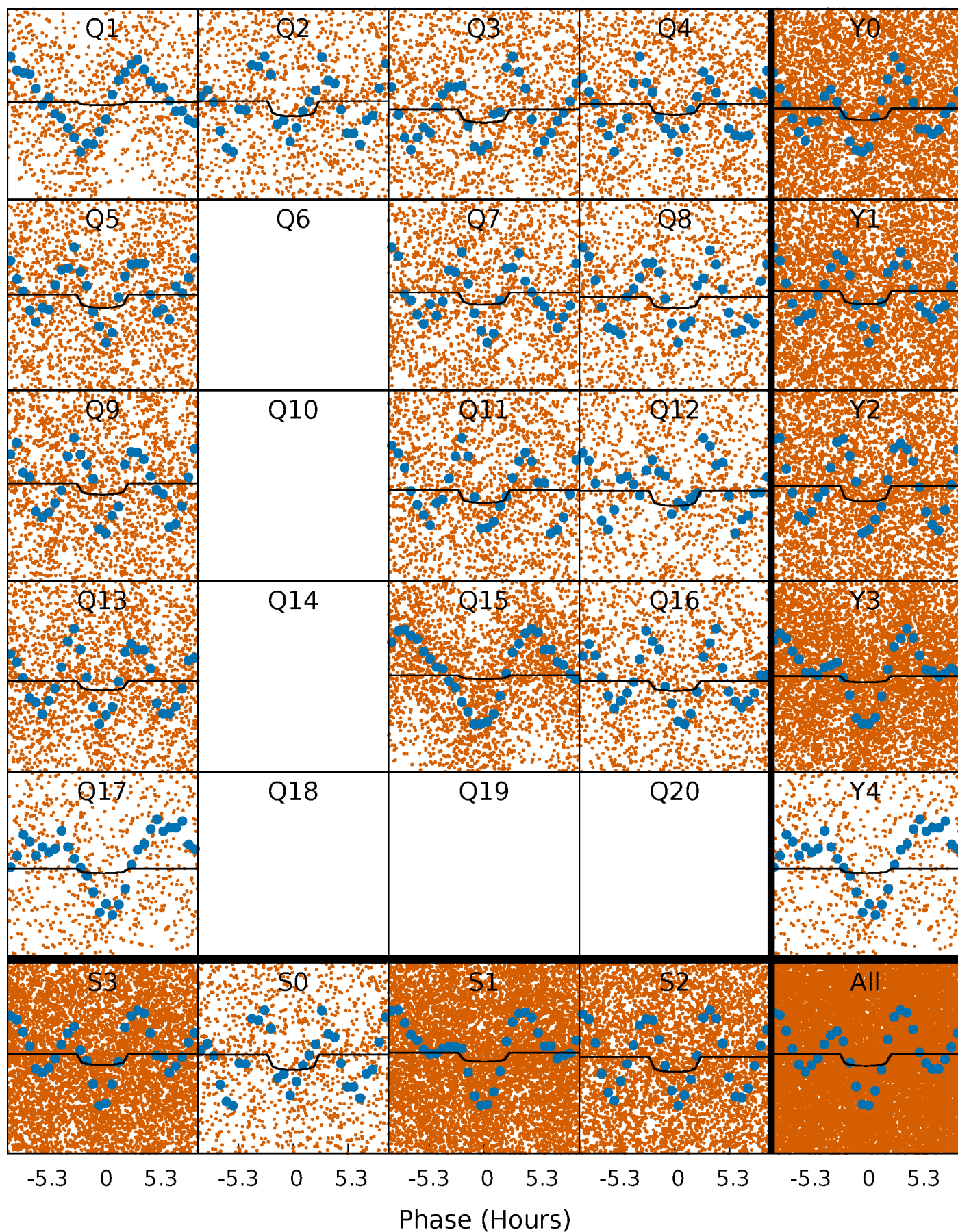
PDC Quarter-Phased Transit Curves

TCE 004839508-01 P= 1.028298 Days $T_0=131.818970$ (BKJD)



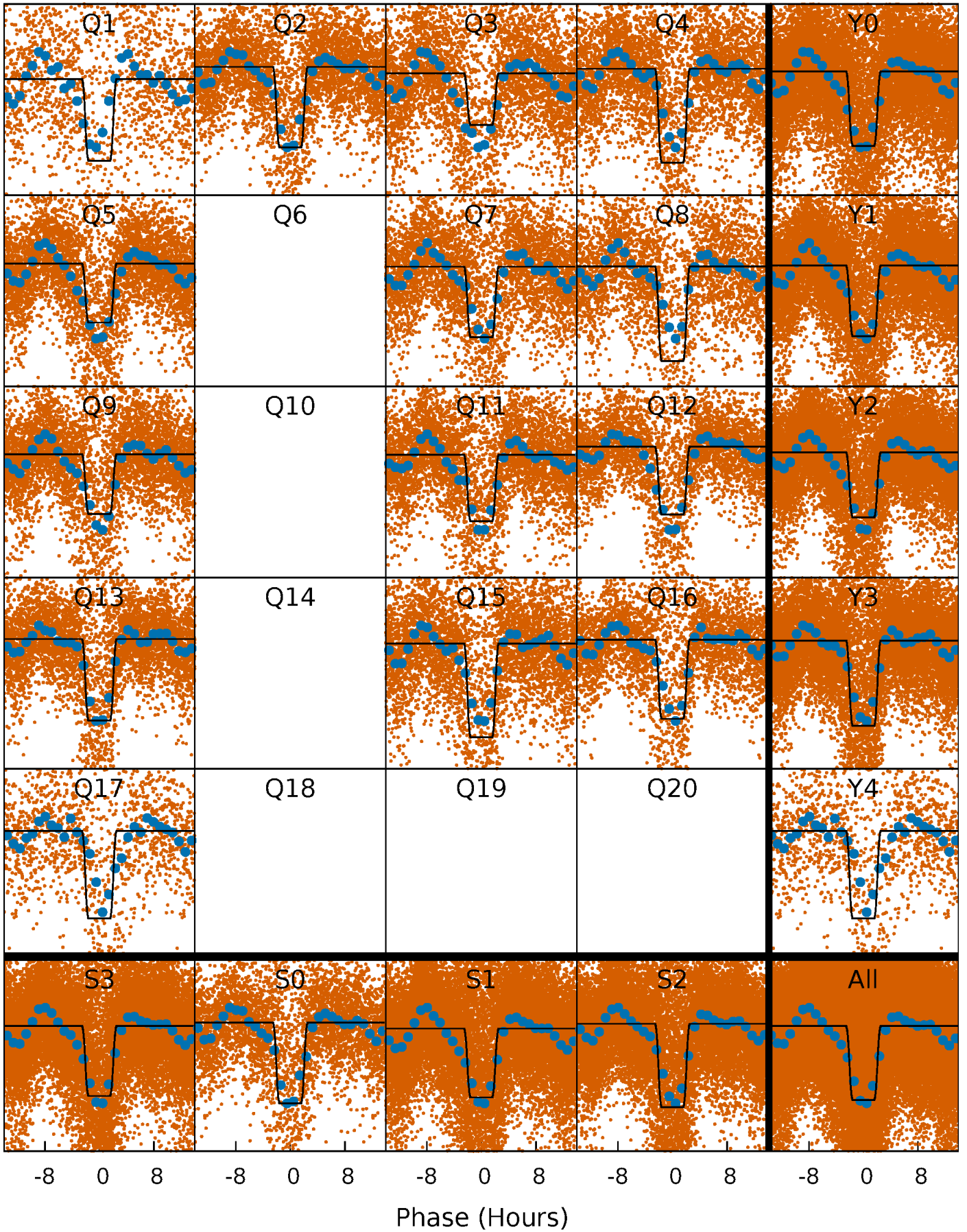
DV Quarter-Phased Transit Curves

TCE 004839508-01 P= 1.028298 Days $T_0=131.818970$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

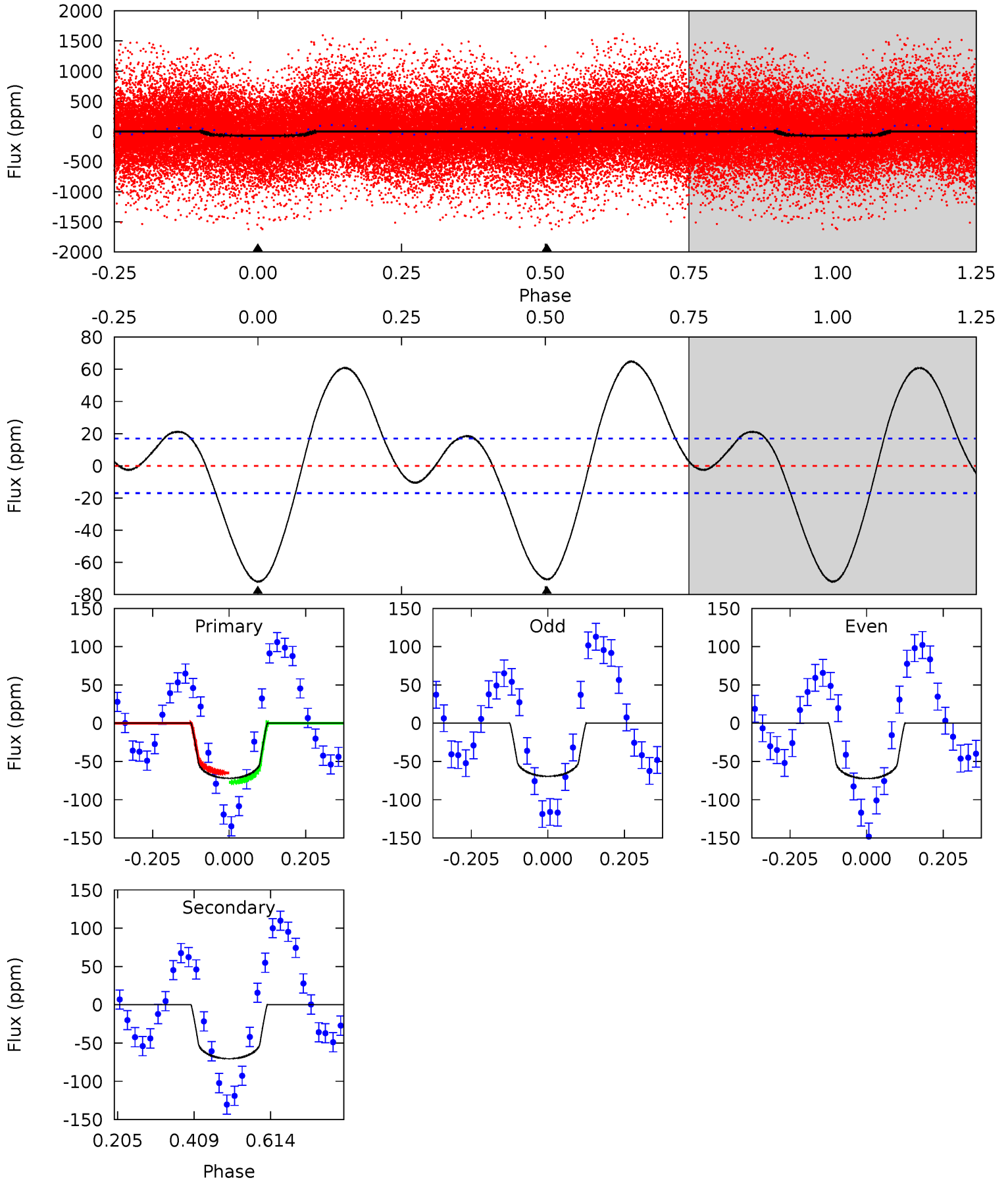
TCE 004839508-01 P= 1.028326 Days $T_0=131.784047$ (BKJD)



DV Model-Shift Uniqueness Test

004839508-01, P = 1.028298 Days, E = 130.790672 Days

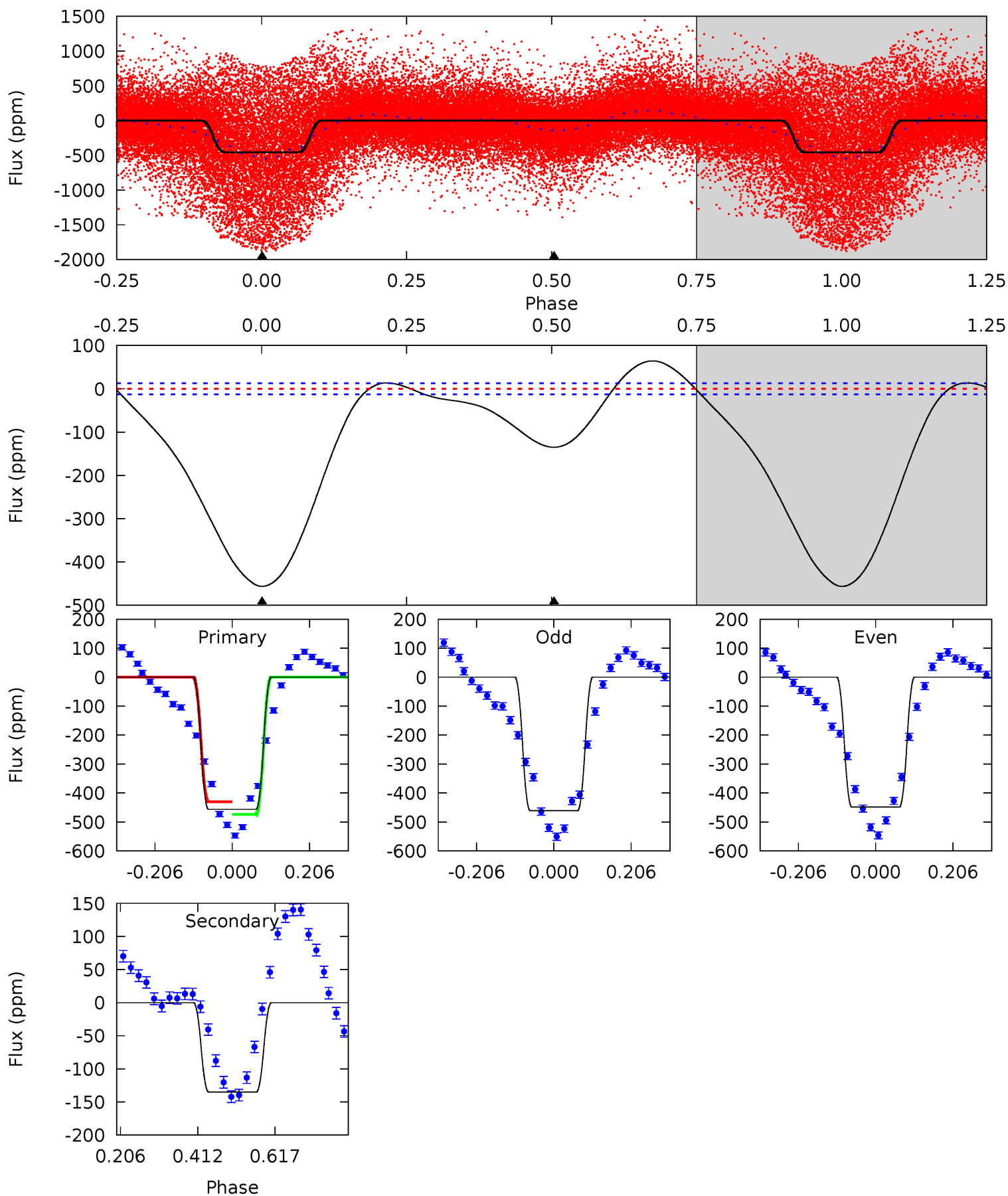
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	18.3	0	0	4.41	1.27	3.09	18.7	18.7	18.3	18.3	0.38	1.22	0.47	1.59



Alt Model-Shift Uniqueness Test

004839508-01, P = 1.028326 Days, E = 130.755721 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
158.3	46.8	0	0	4.41	1.27	8.50	158.3	158.3	46.8	46.8	2.05	1.10	0.12	7.50



Stellar Parameters For KIC 004839508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6680^{+181}_{-222}	$3.328^{+0.450}_{-0.050}$	$-0.440^{+0.400}_{-0.300}$	$4.976^{+0.271}_{-2.440}$	$1.924^{+0.137}_{-0.547}$	$0.022^{+0.099}_{-0.004}$
	+3%/-3%	+14%/-2%	+91%/-68%	+5%/-49%	+7%/-28%	+449%/-17%
Source	PHO1	FLK73	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 004839508-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-70 ± 4	$2.73^{+1.15}_{-1.00}$	5667^{+311}_{-624}	8191^{+2721}_{-1492}	$3.108^{+4.646}_{-1.494}$
Alt.	-135 ± 3	$12.13^{+1.71}_{-2.85}$	5675^{+293}_{-655}	2830^{+1205}_{-6435}	$0.312^{+0.179}_{-0.068}$

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 $A_{\text{obs}} \gg 1.0$

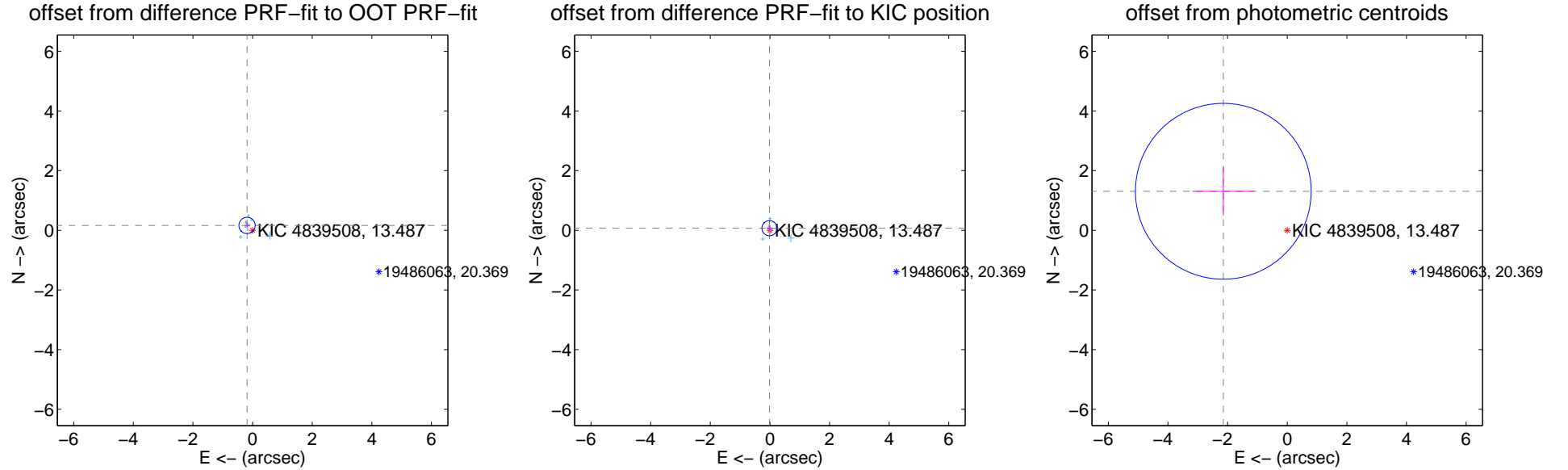
DV Centroid Data

Supplemental centroid analysis for 004839508-01. Kepler magnitude: 13.49. Transit SNR 4.90

There are 14 quarters with good PRF difference image offsets

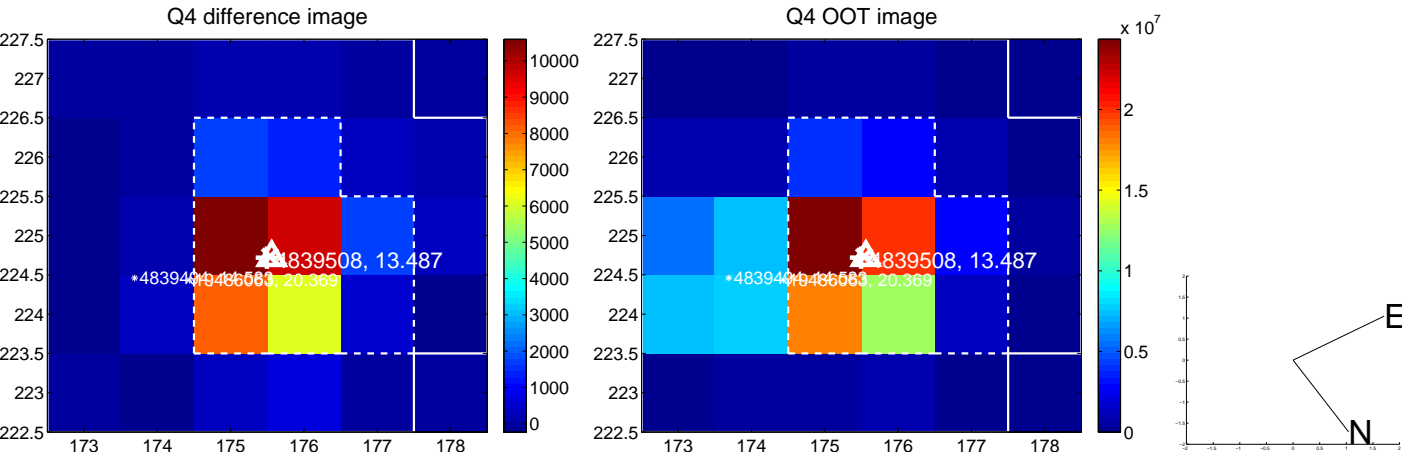
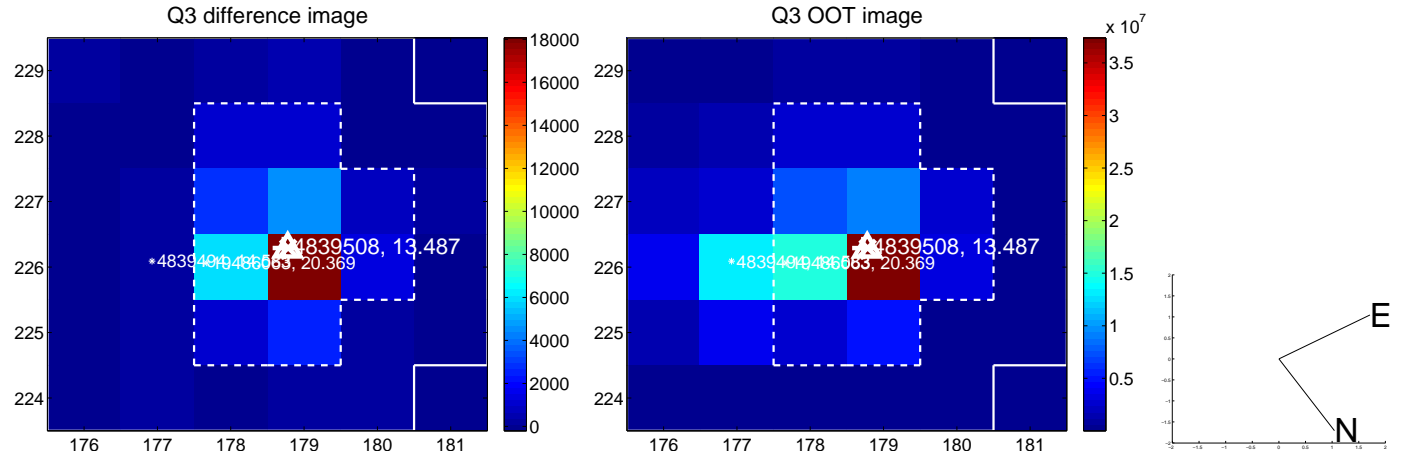
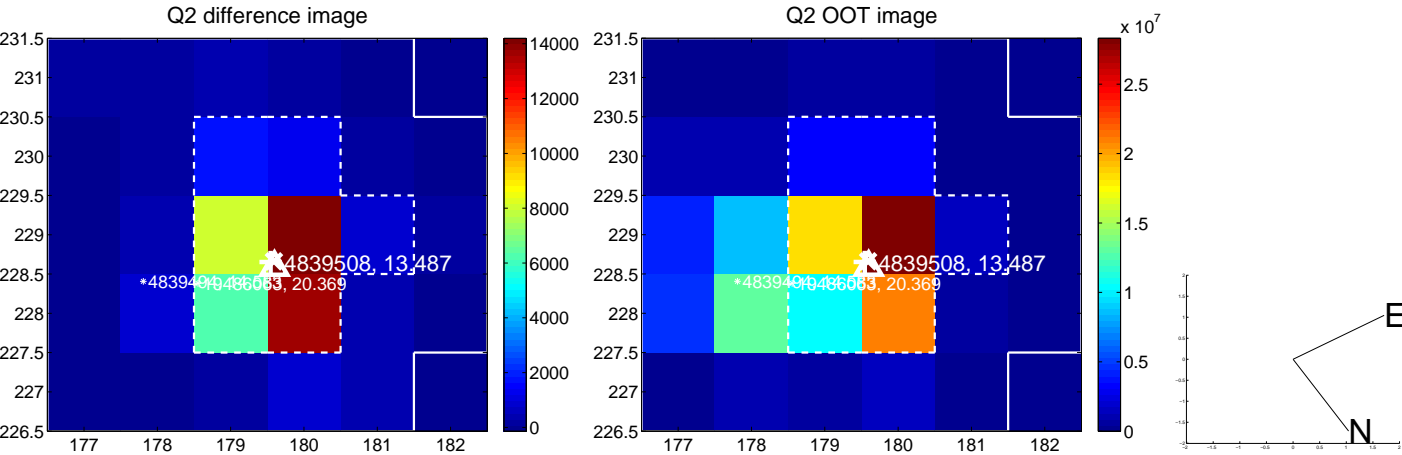
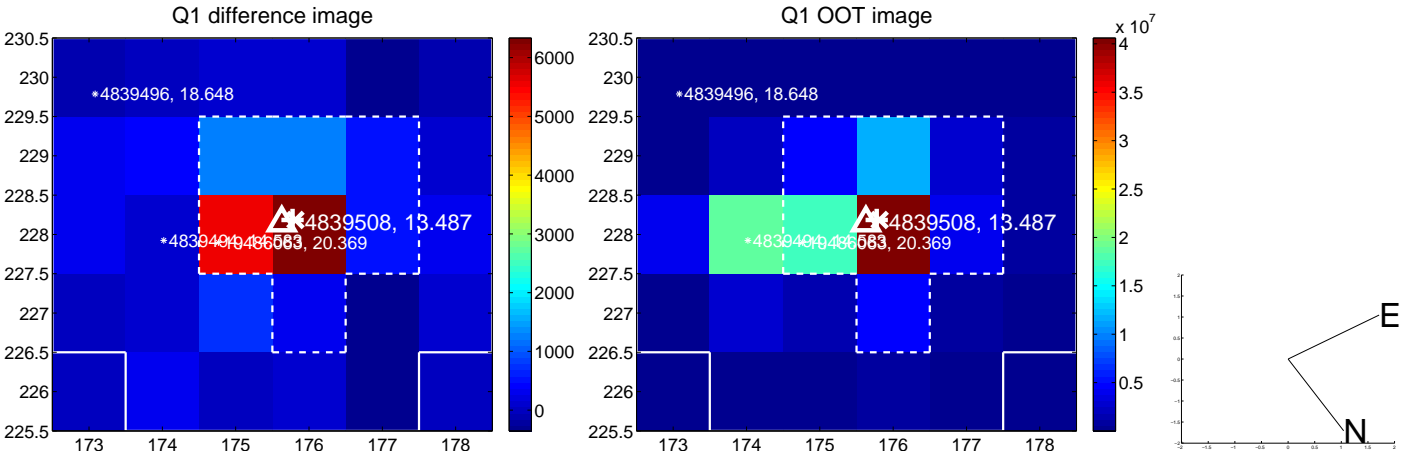
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.247 ± 0.091	2.71	0.185 ± 0.087	0.163 ± 0.083
PRF-fit source offset from KIC position	0.072 ± 0.085	0.85	0.014 ± 0.089	0.070 ± 0.082
photometric centroid source offset	2.51 ± 0.98	2.56	2.14 ± 1.04	1.31 ± 0.81

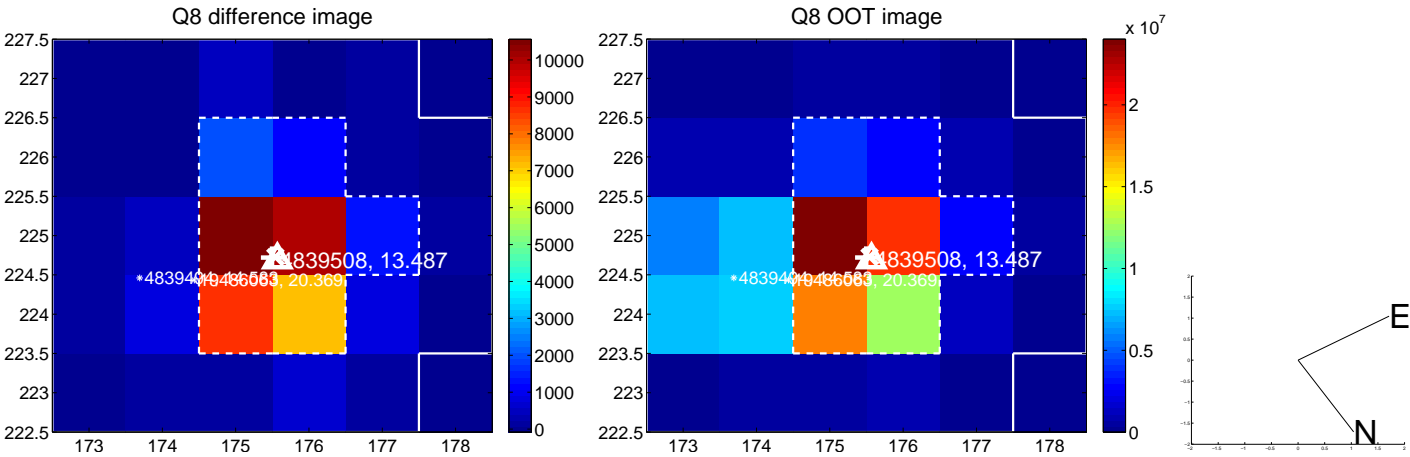
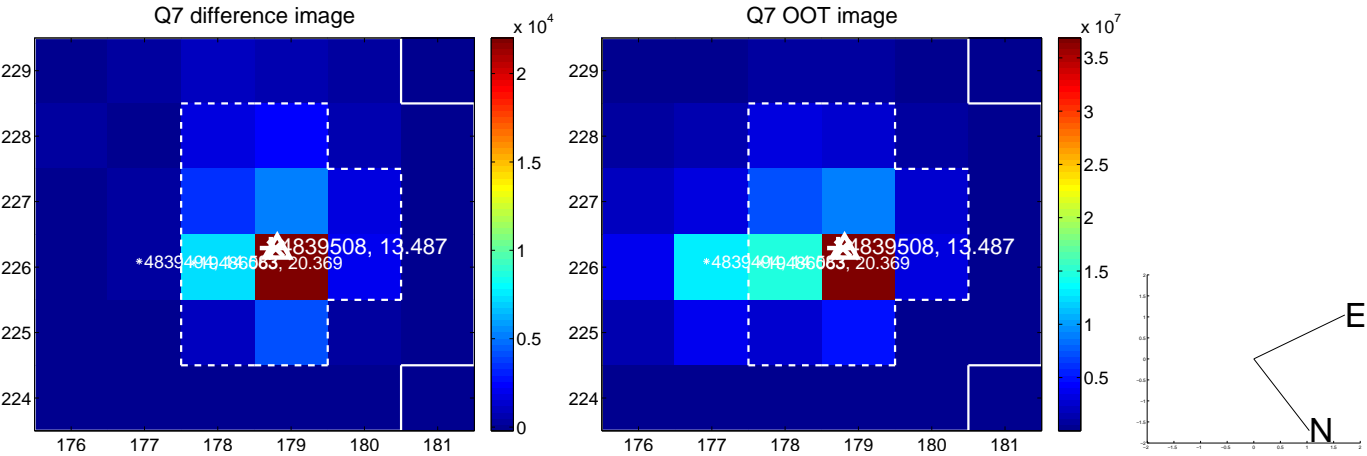
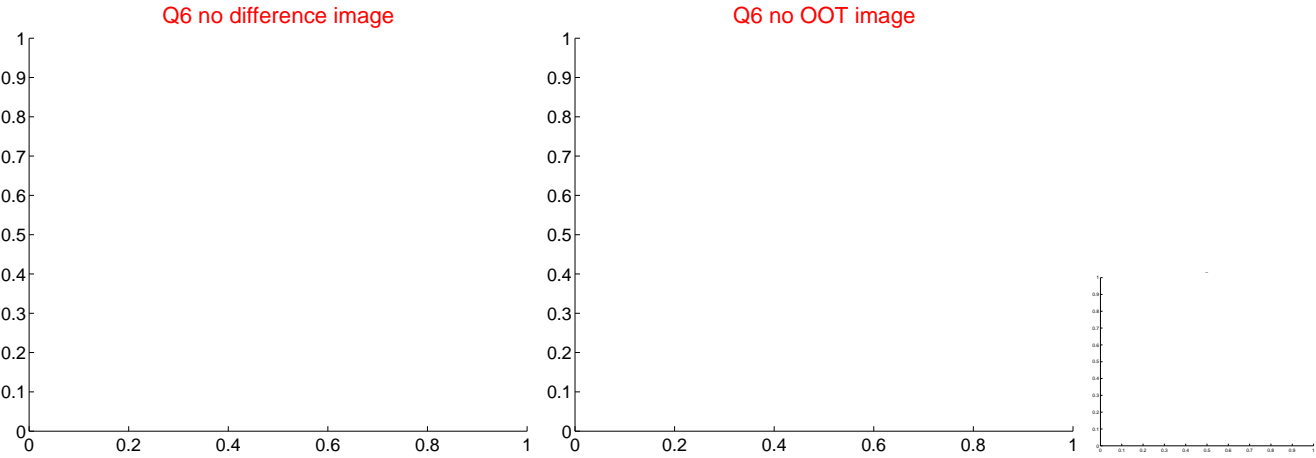
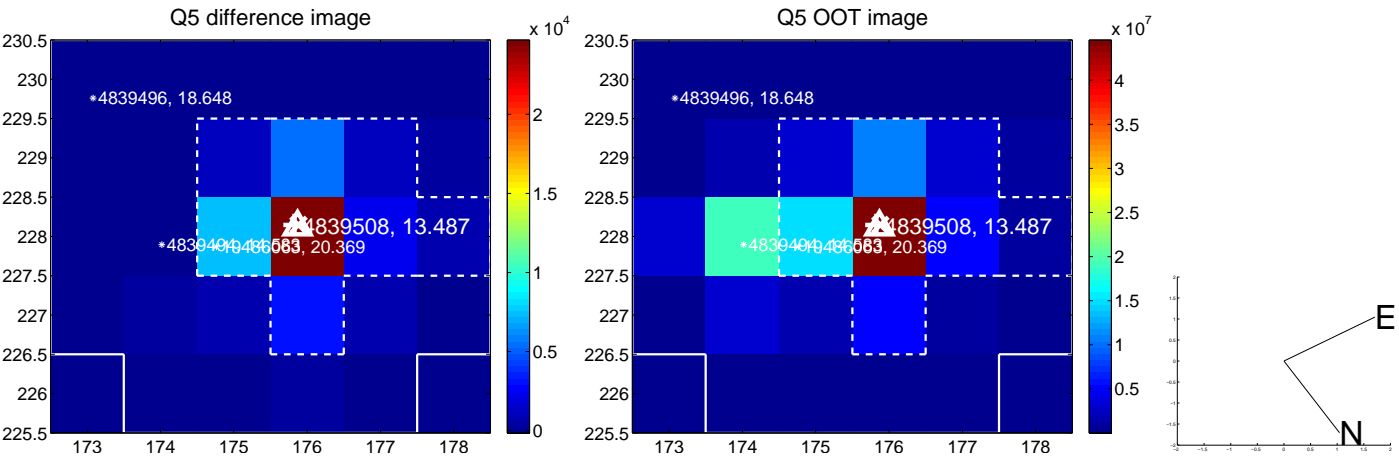


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

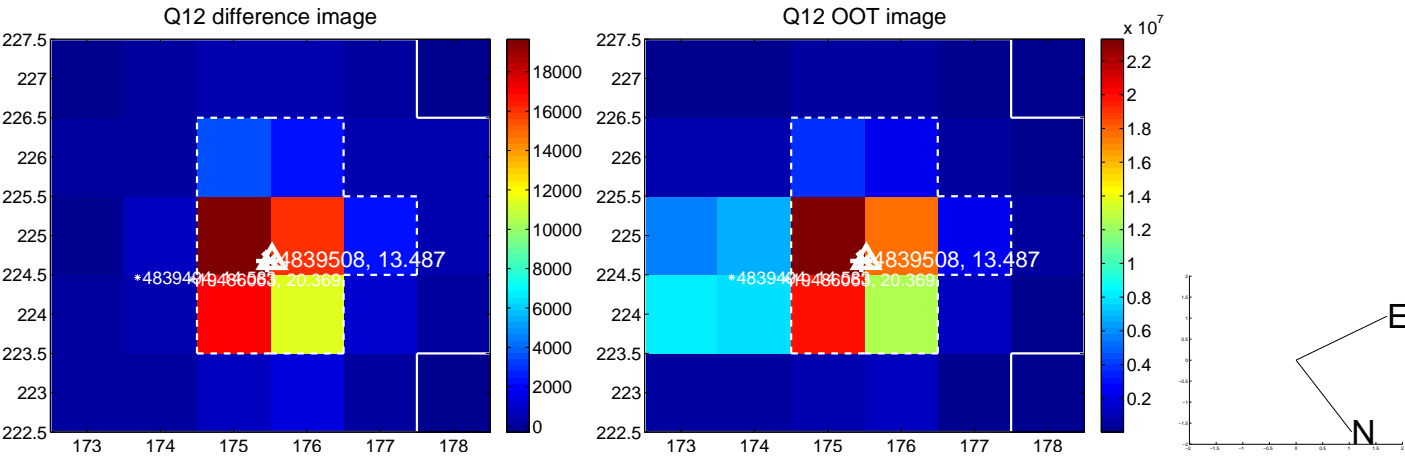
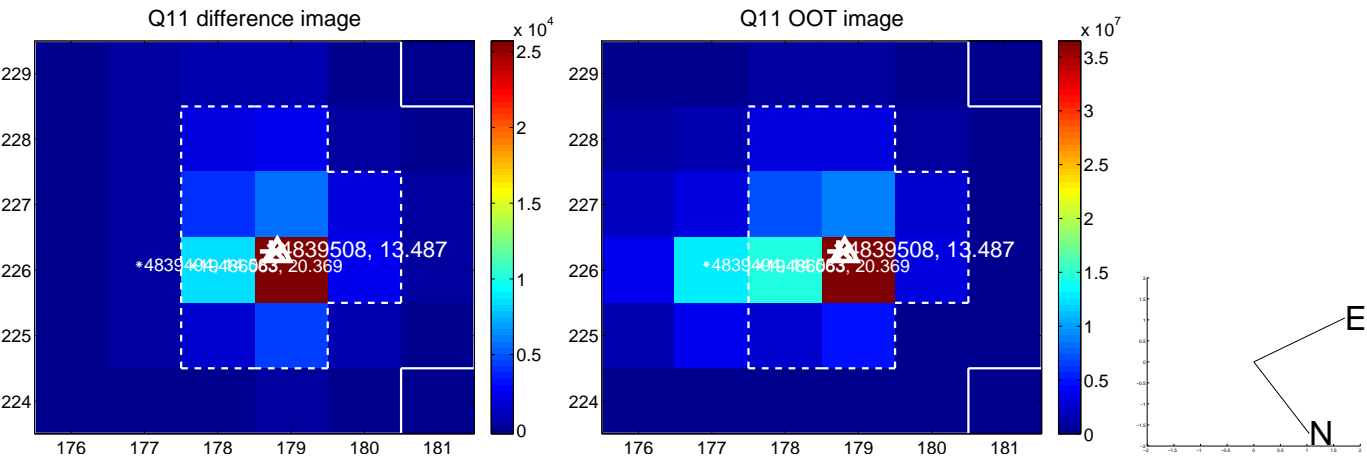
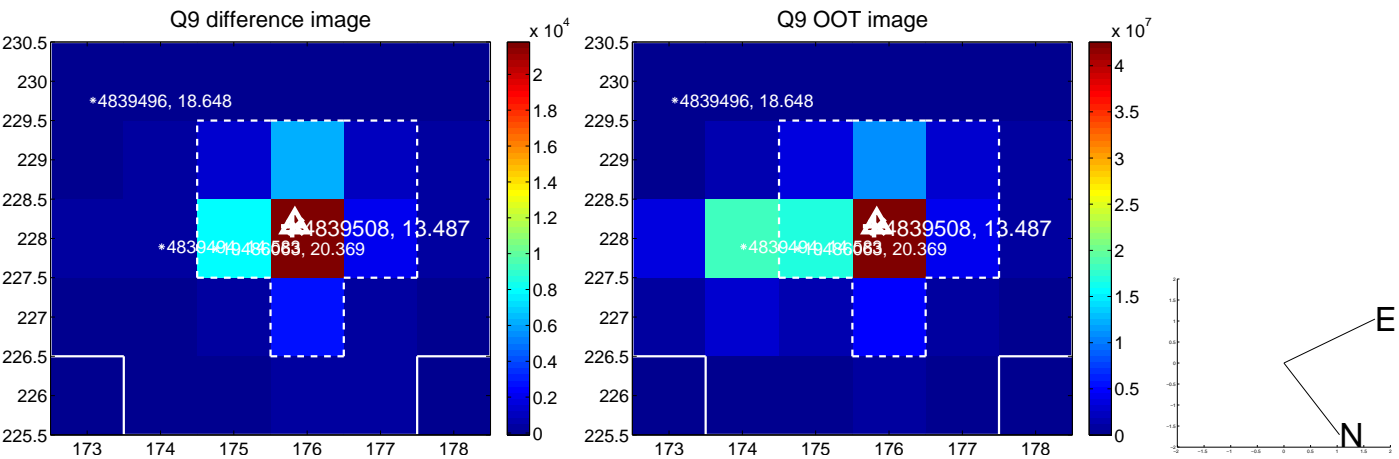
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



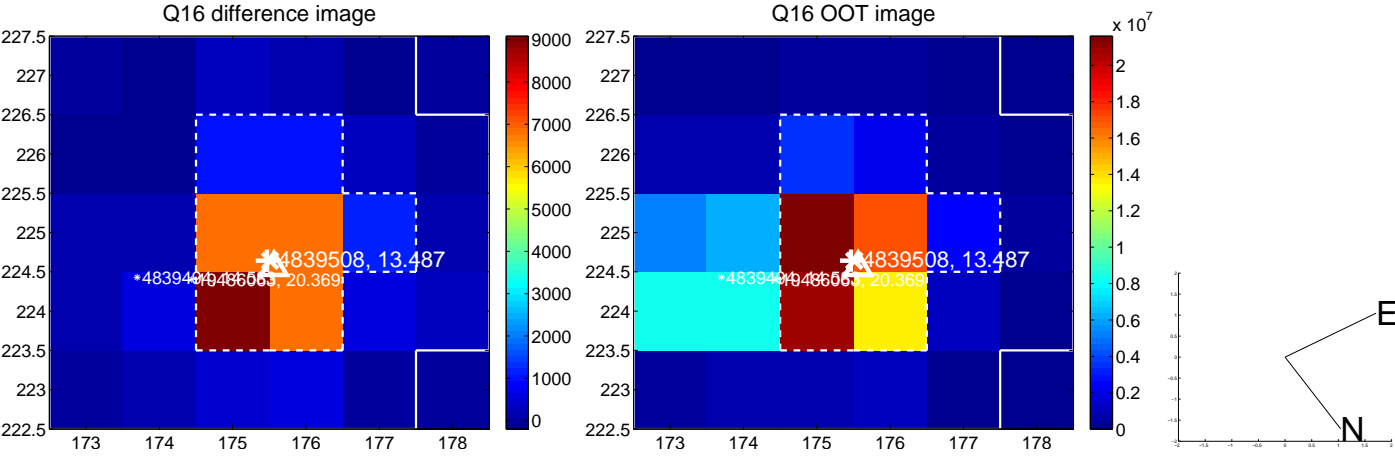
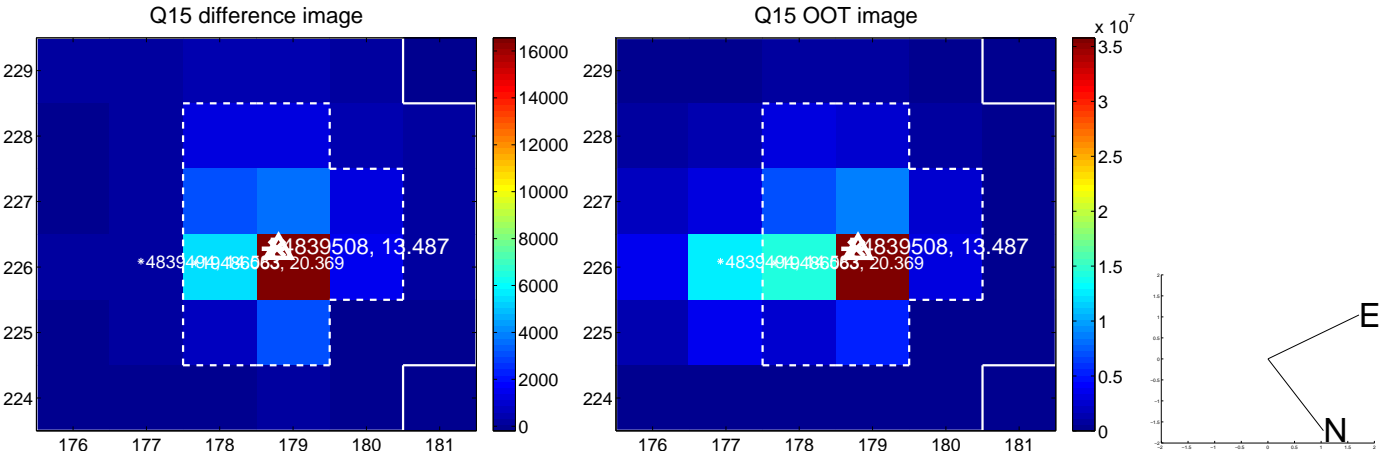
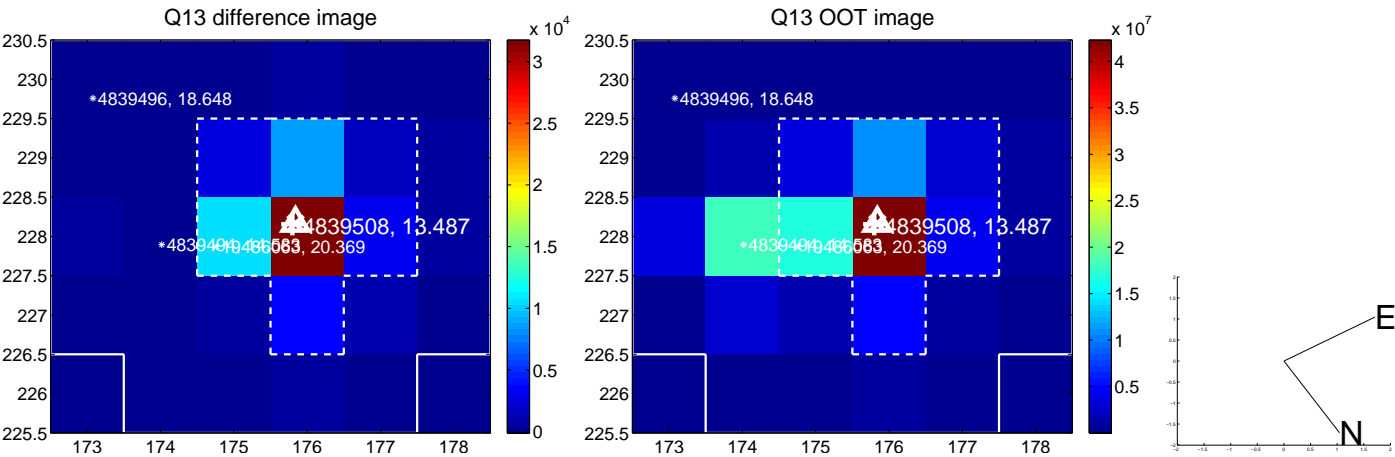
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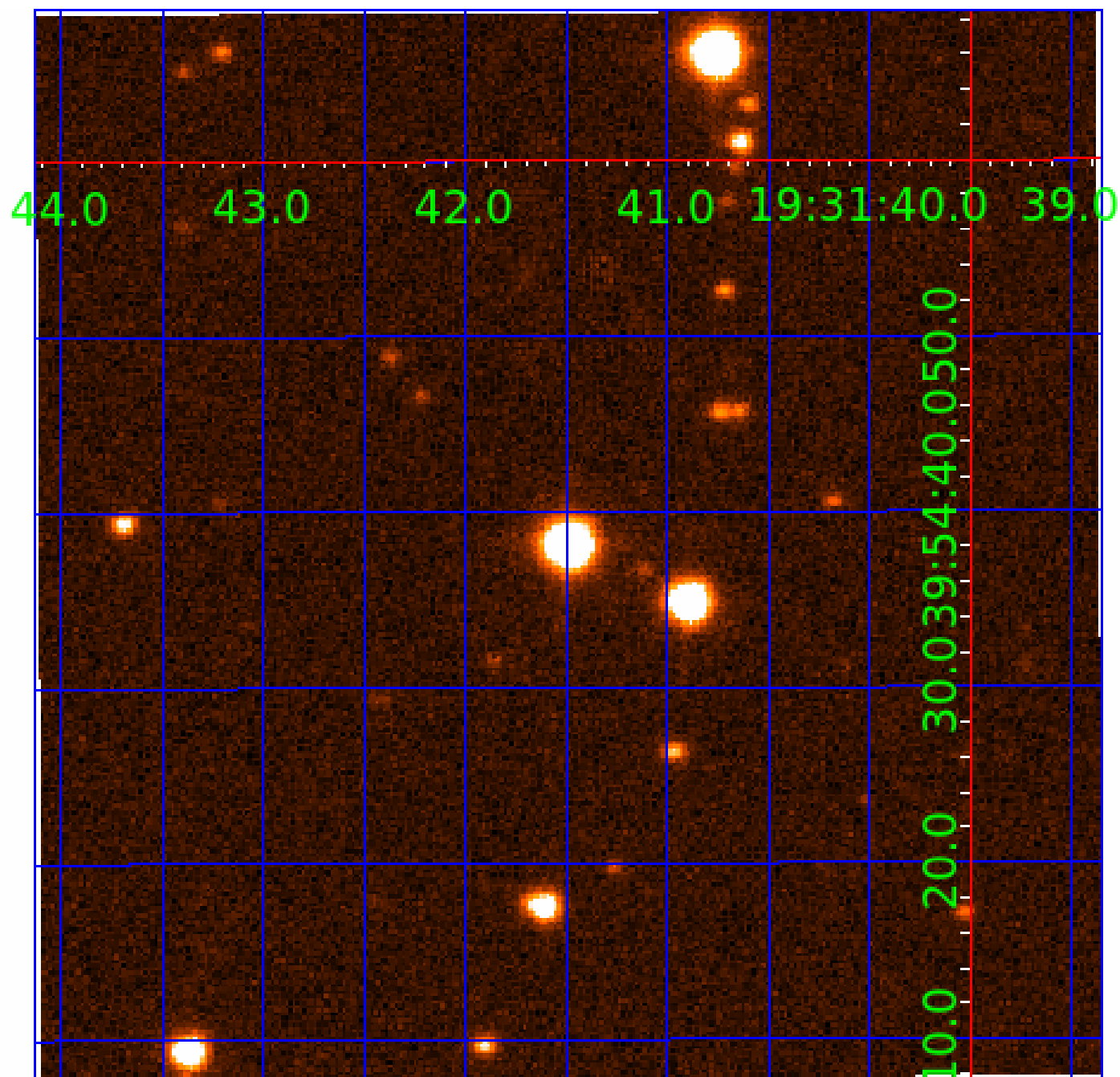


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004839508

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

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004839508-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD

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

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

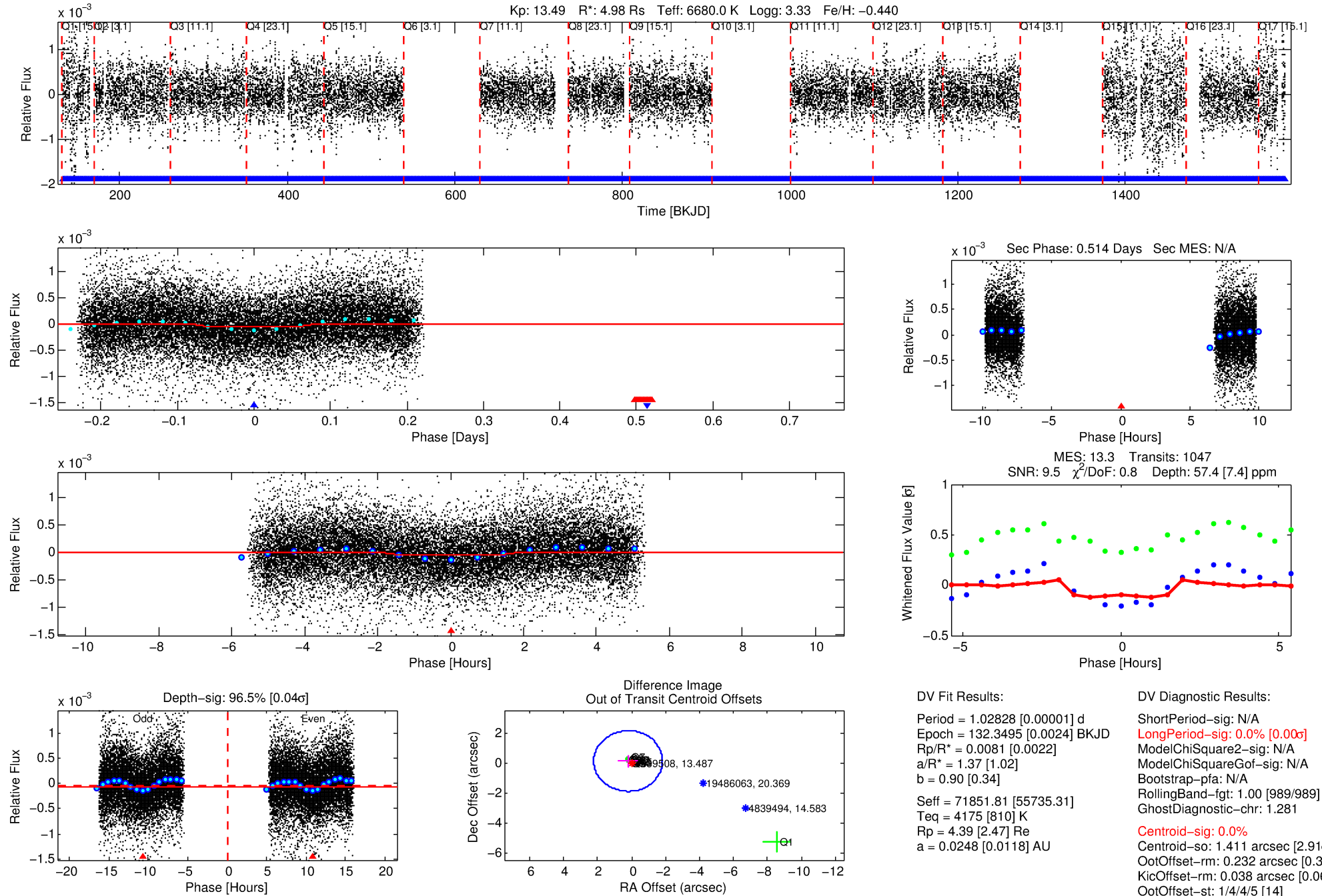
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004839508-02

No Significant Match Found

DV One-Page Summary

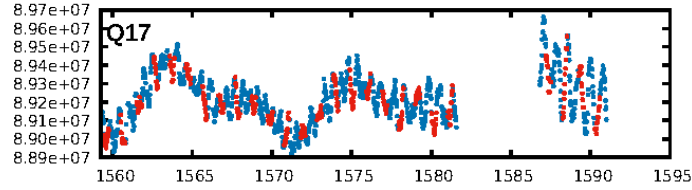
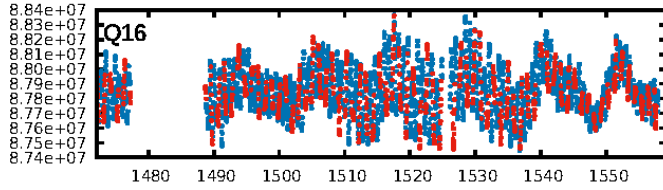
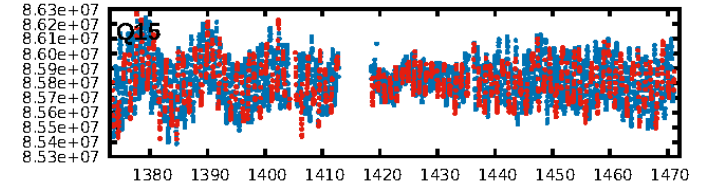
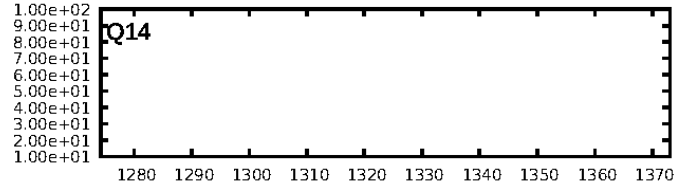
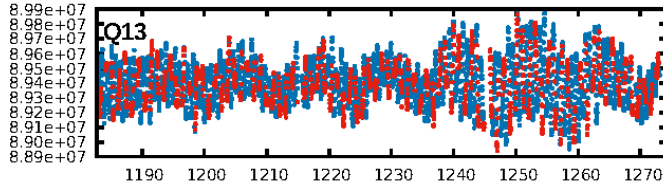
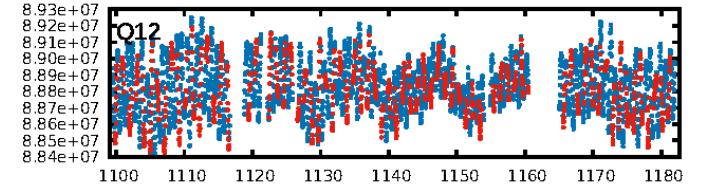
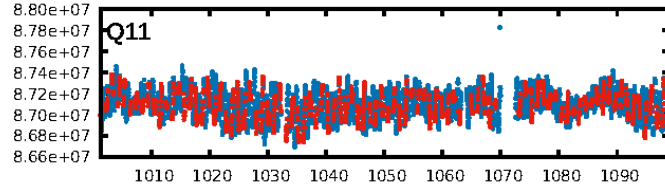
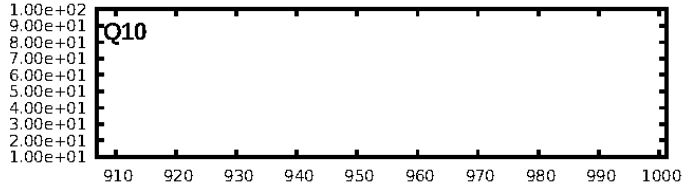
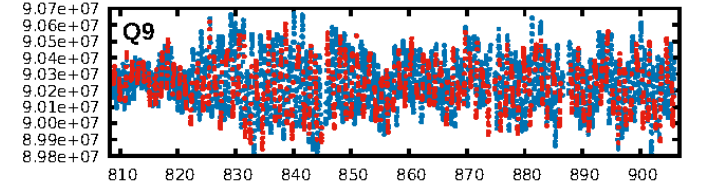
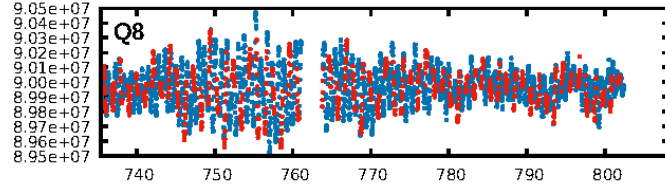
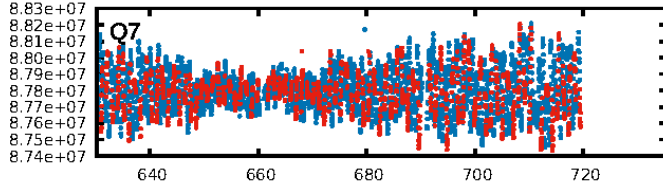
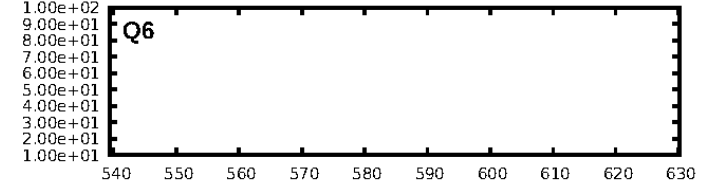
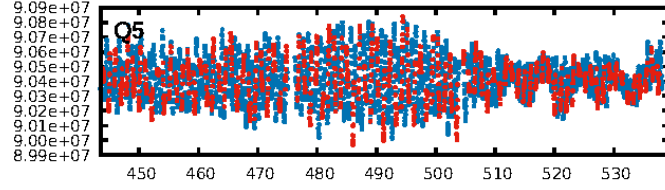
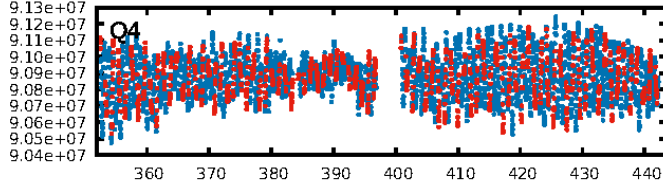
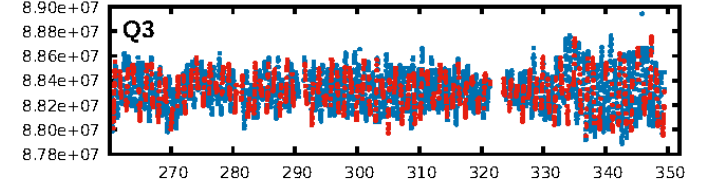
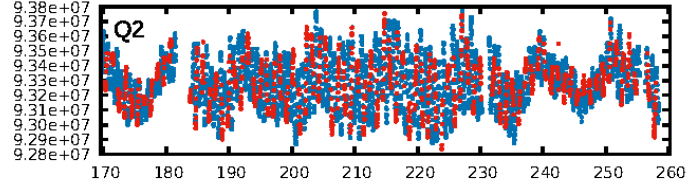
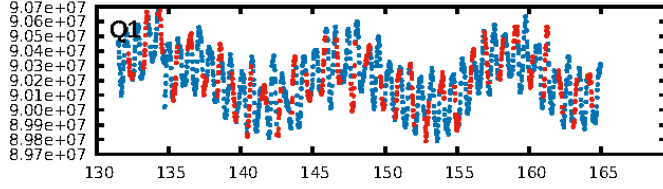
KIC: 4839508 Candidate: 2 of 2 Period: 1.028 d



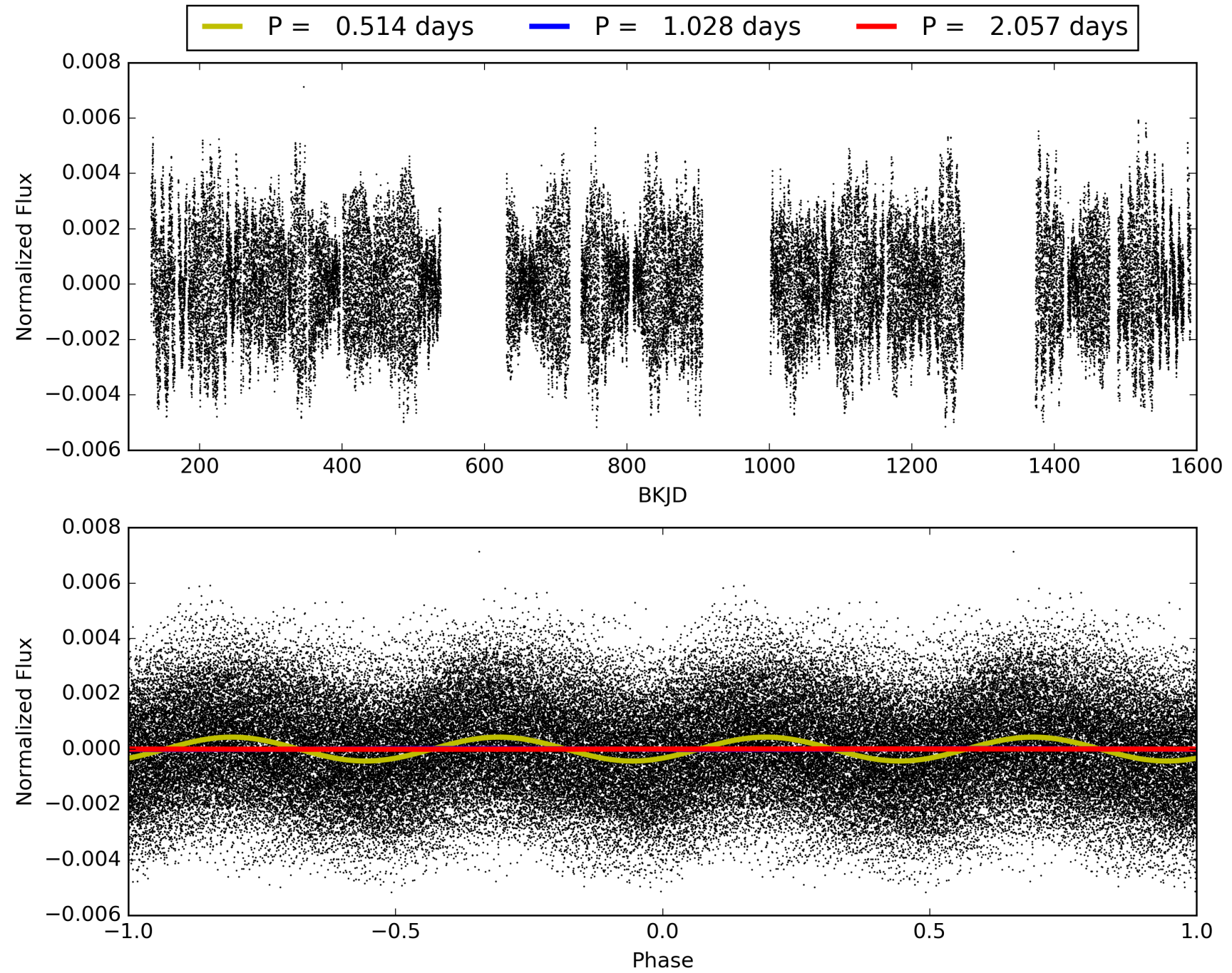
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004839508-02, PDC Light Curves

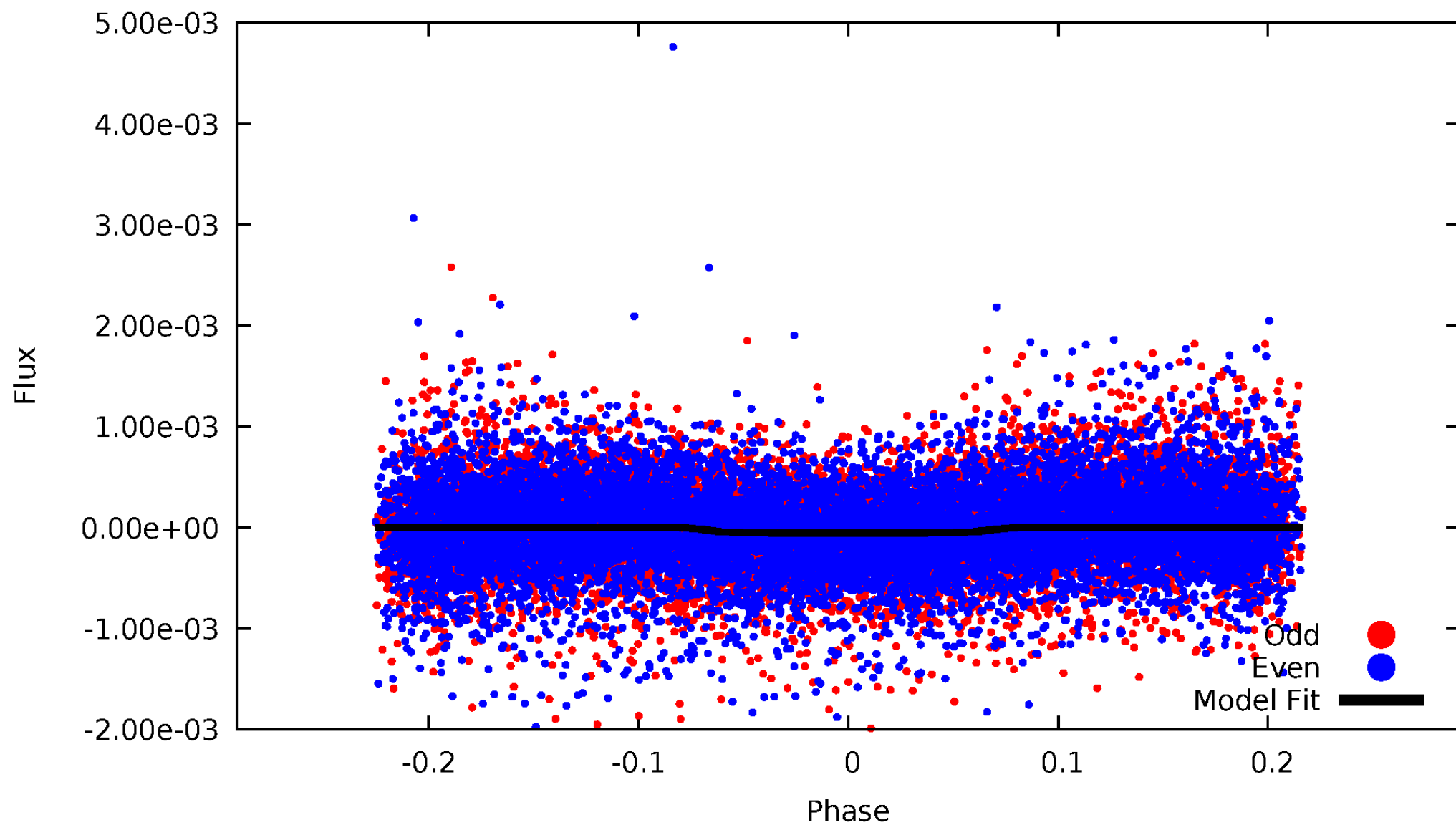


TCE 004839508-02



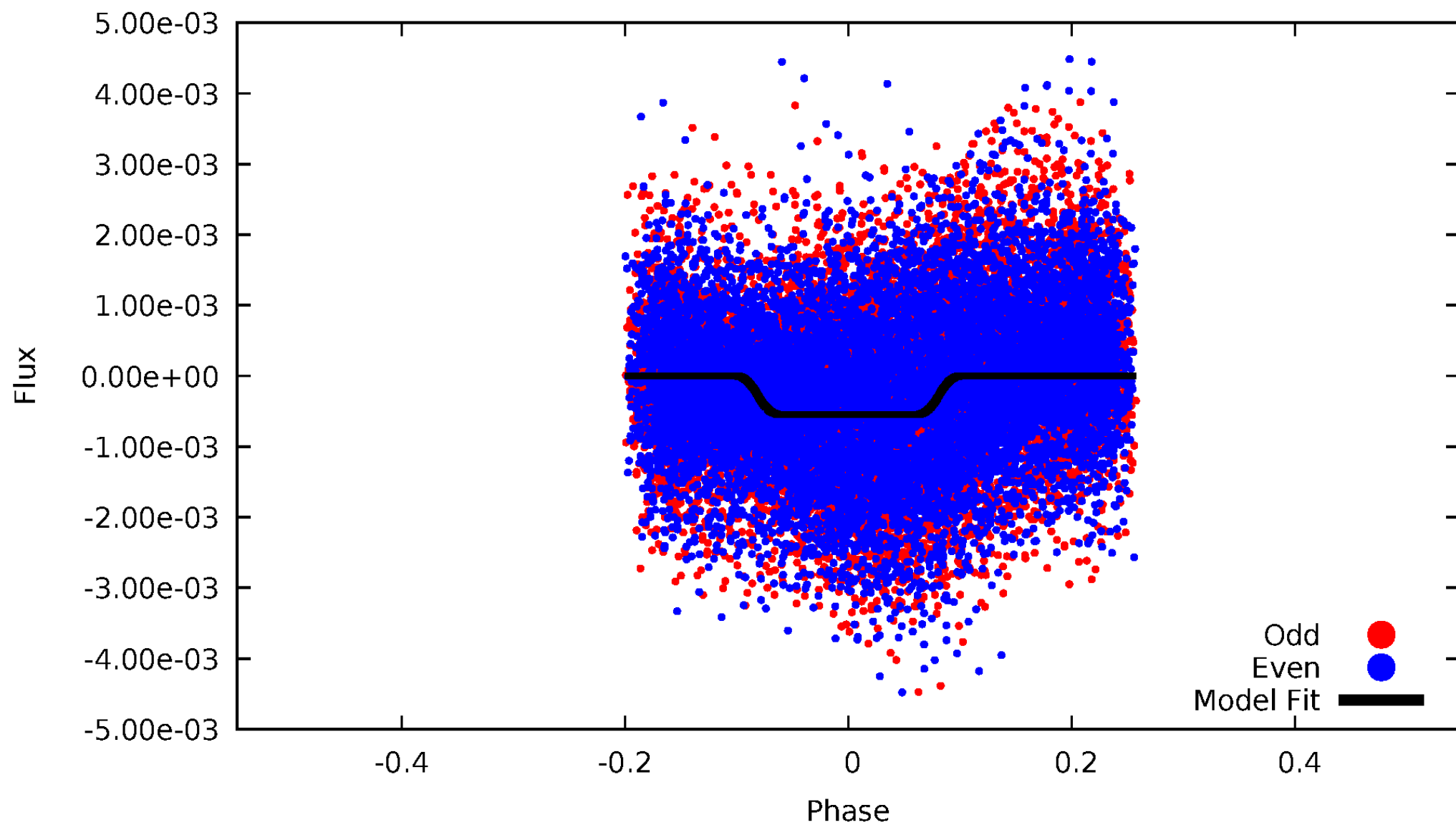
DV Odd/Even

TCE 004839508-02



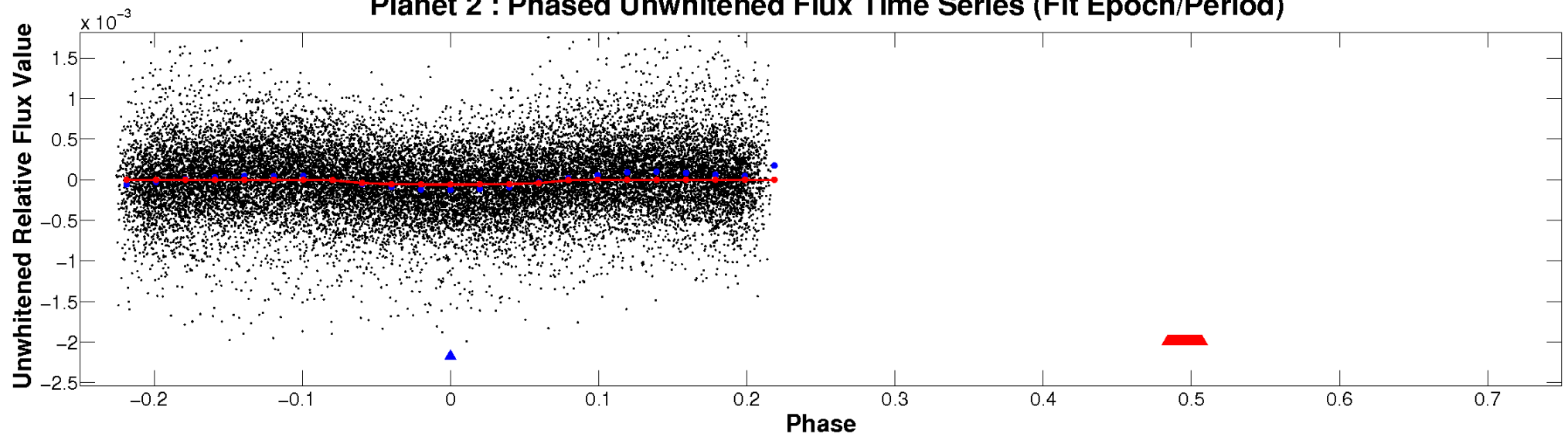
ALT Odd/Even

TCE 004839508-02

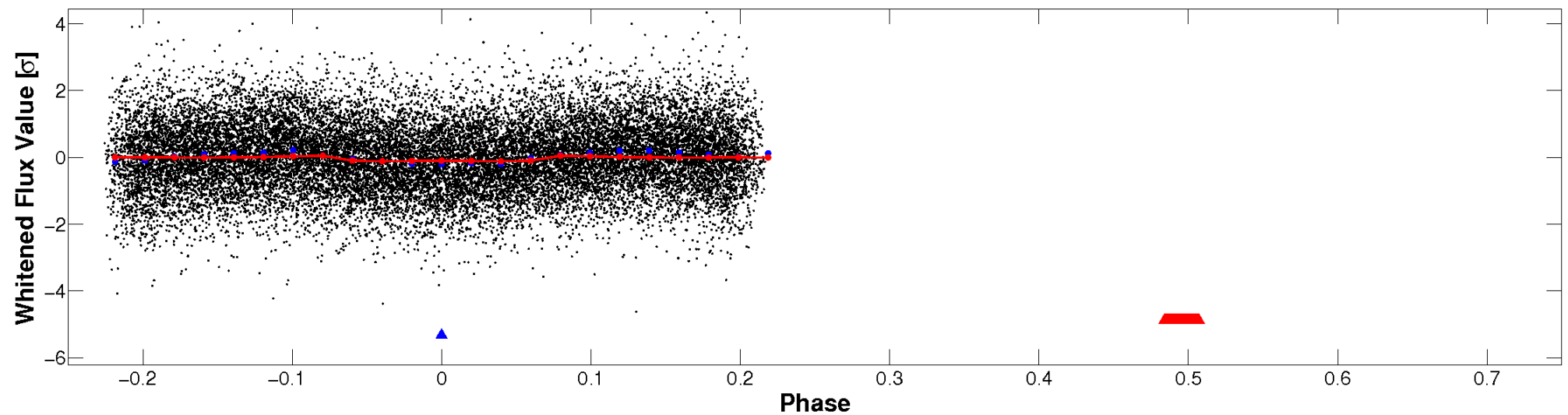


Non-Whitened Vs. Whitened Light Curve

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

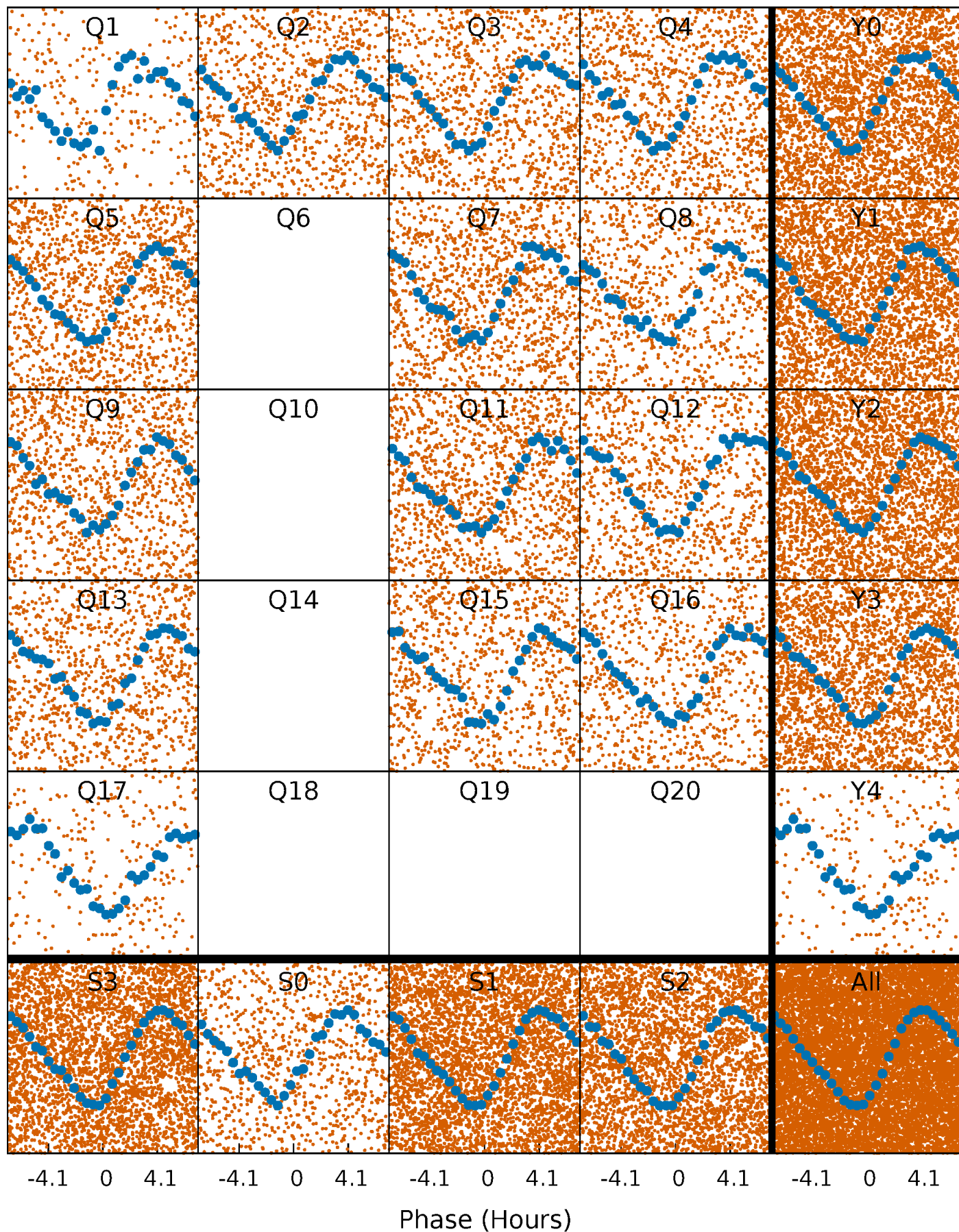


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



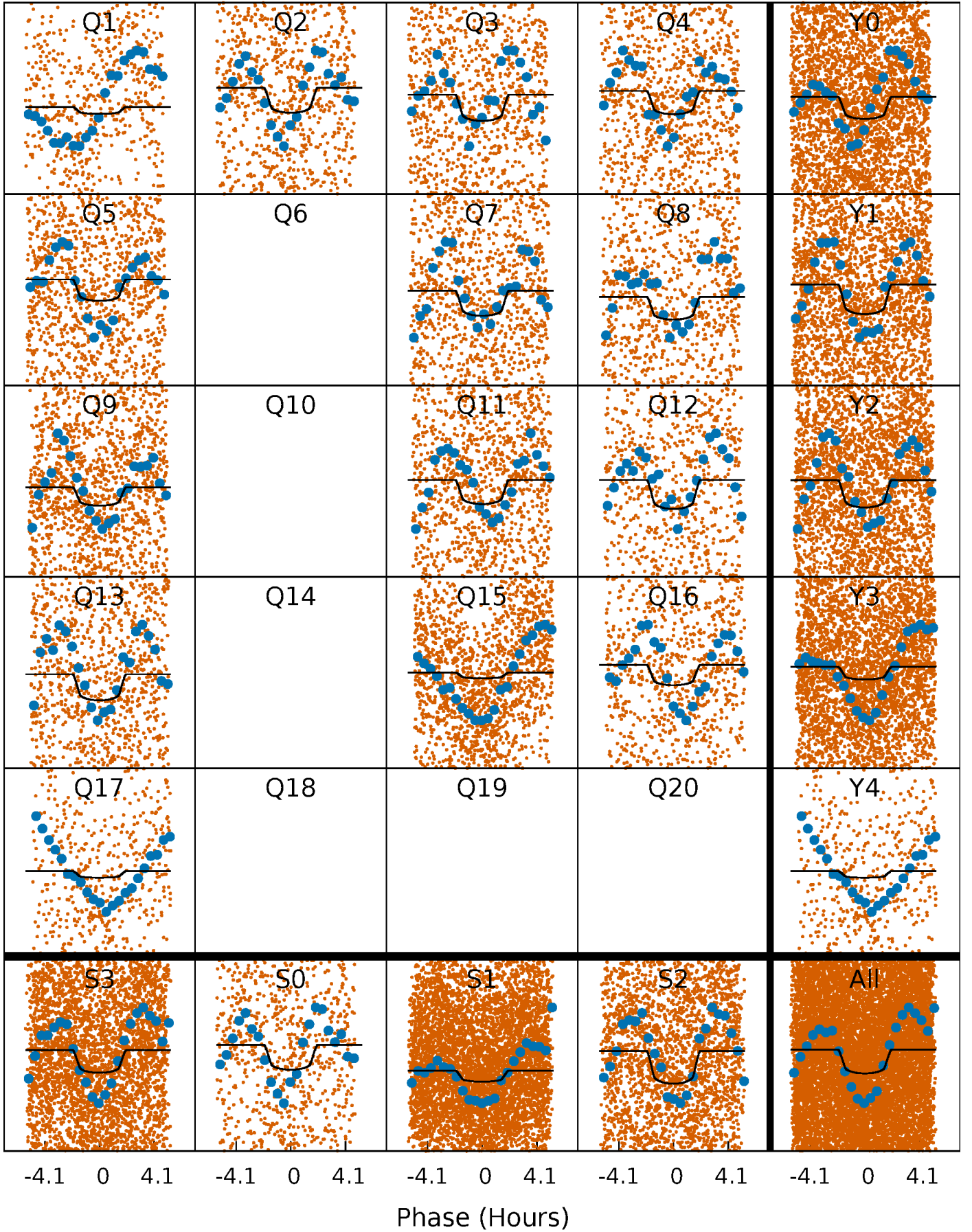
PDC Quarter-Phased Transit Curves

TCE 004839508-02 $P = 1.028282$ Days $T_0 = 132.349537$ (BKJD)



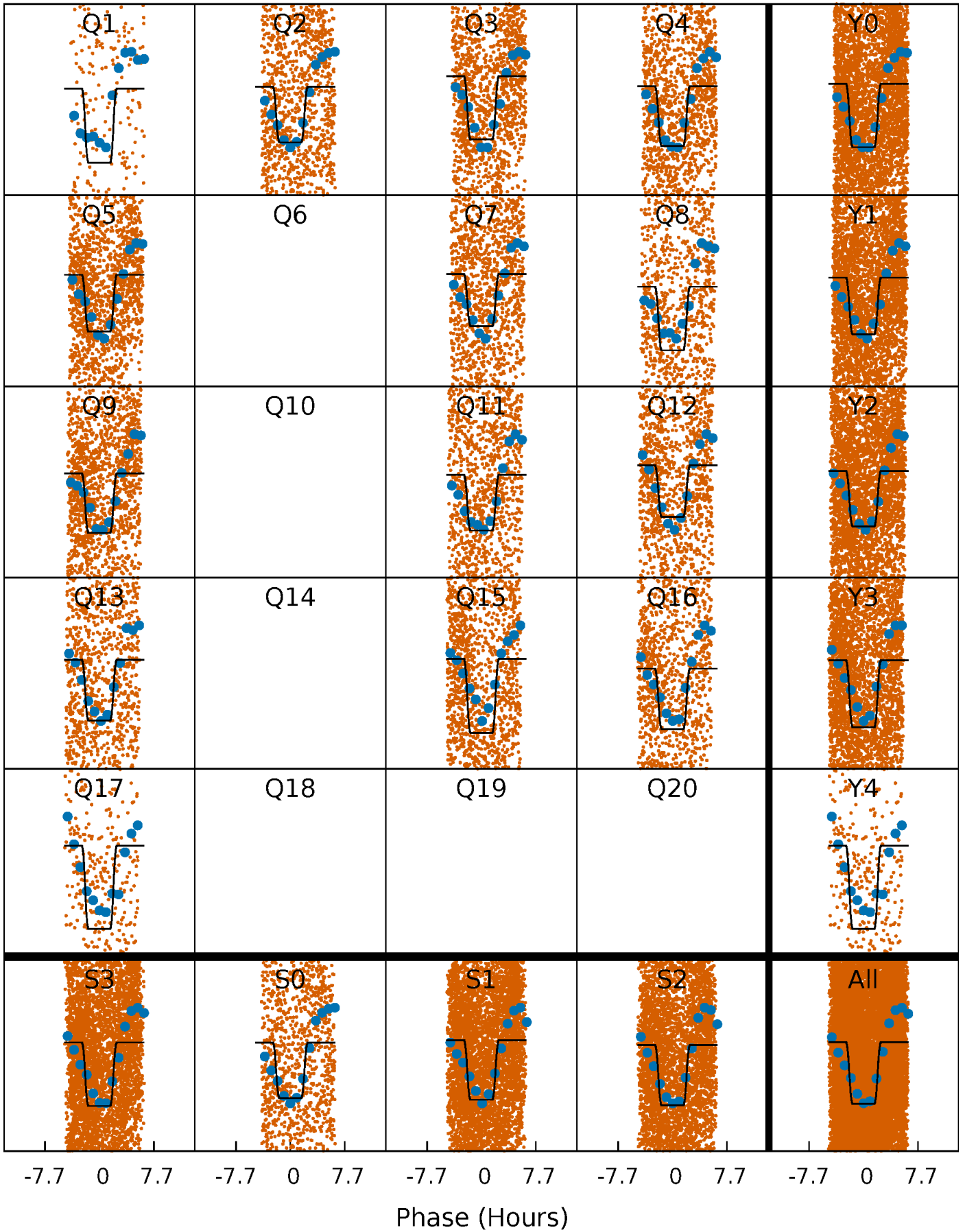
DV Quarter-Phased Transit Curves

TCE 004839508-02 $P = 1.028282$ Days $T_0 = 132.349537$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

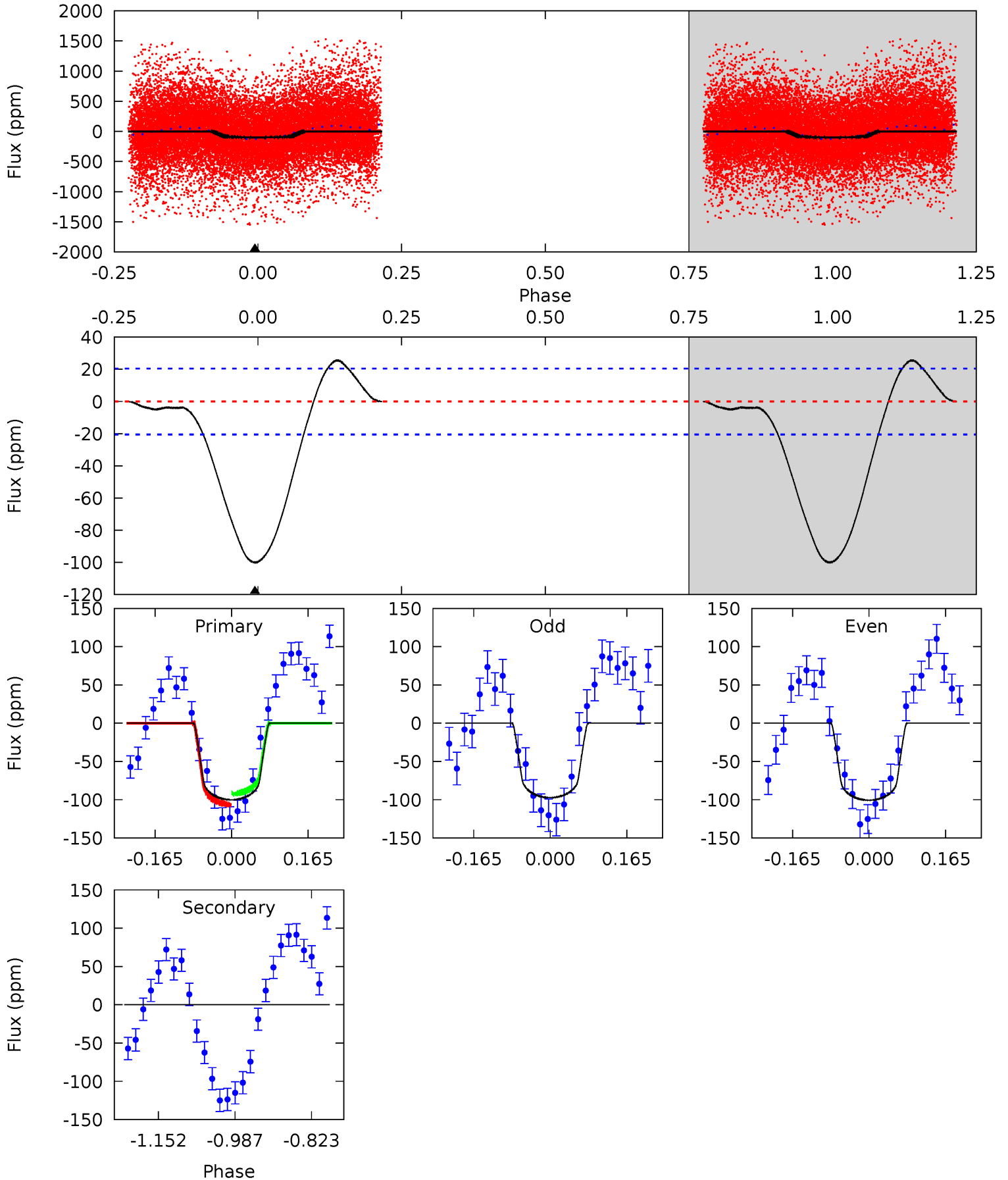
TCE 004839508-02 $P = 1.028326$ Days $T_0 = 132.283760$ (BKJD)



DV Model-Shift Uniqueness Test

004839508-02, P = 1.028282 Days, E = 131.321255 Days

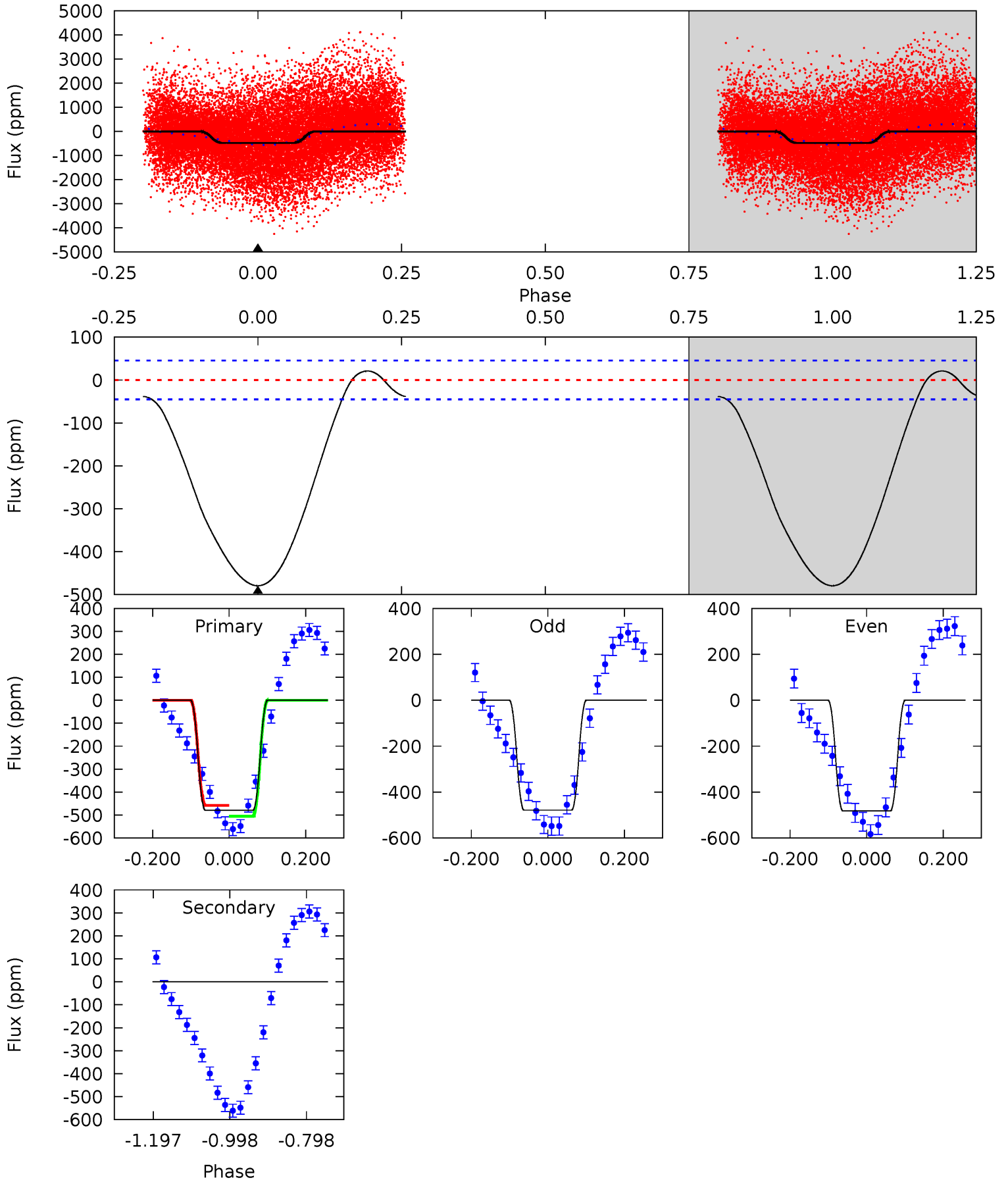
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	0	0	0	4.46	1.39	1.67	21.8	21.8	0	0	0.37	1.11	0.20	1.75



Alt Model-Shift Uniqueness Test

004839508-02, P = 1.028326 Days, E = 131.255434 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.7	0	0	0	4.42	1.28	1.69	46.7	46.7	0	0	0.17	0.98	0.04	2.24



Stellar Parameters For KIC 004839508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6680^{+181}_{-222}	$3.328^{+0.450}_{-0.050}$	$-0.440^{+0.400}_{-0.300}$	$4.976^{+0.271}_{-2.440}$	$1.924^{+0.137}_{-0.547}$	$0.022^{+0.099}_{-0.004}$
	+3%/-3%	+14%/-2%	+91%/-68%	+5%/-49%	+7%/-28%	+449%/-17%
Source	PHO1	FLK73	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 004839508-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 5	$3.97^{+1.38}_{-1.39}$	5684^{+278}_{-631}	-4715^{+572}_{-398}	$0.001^{+0.104}_{-0.106}$
Alt.	0 ± 10	$11.96^{+1.74}_{-3.04}$	5680^{+296}_{-669}	-4756^{+419}_{-217}	$0.001^{+0.027}_{-0.027}$

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 $A_{obs} \gg 1.0$

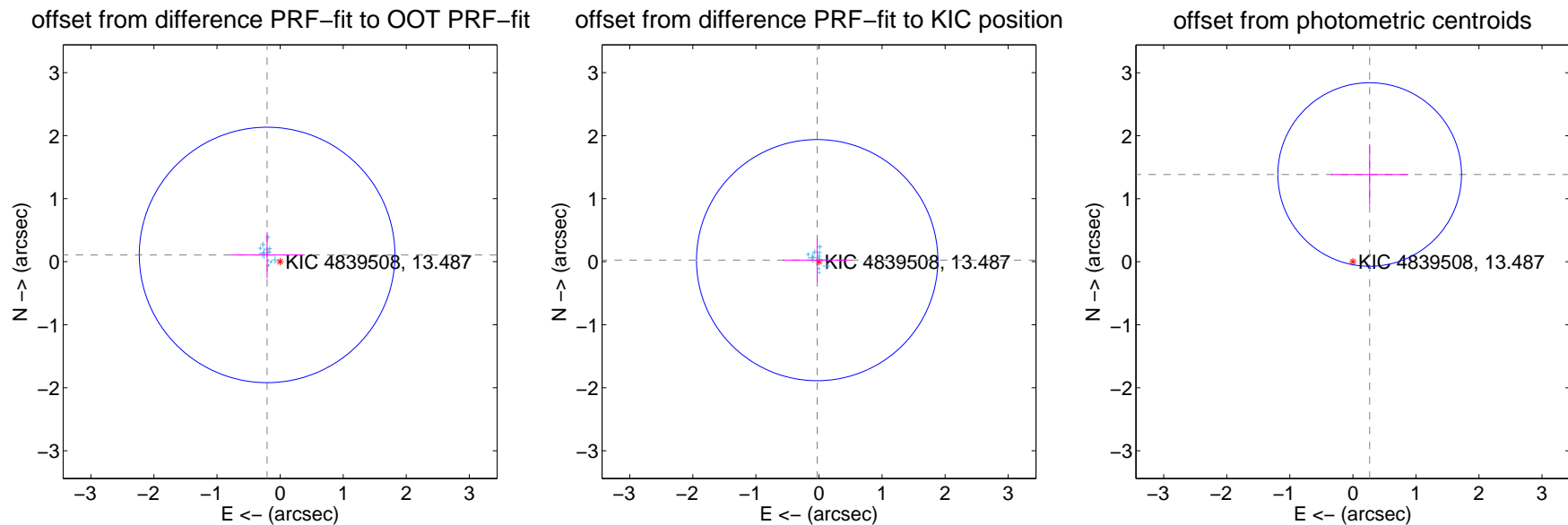
DV Centroid Data

Supplemental centroid analysis for 004839508-02. Kepler magnitude: 13.49. Transit SNR 9.54

There are 13 quarters with good PRF difference image offsets

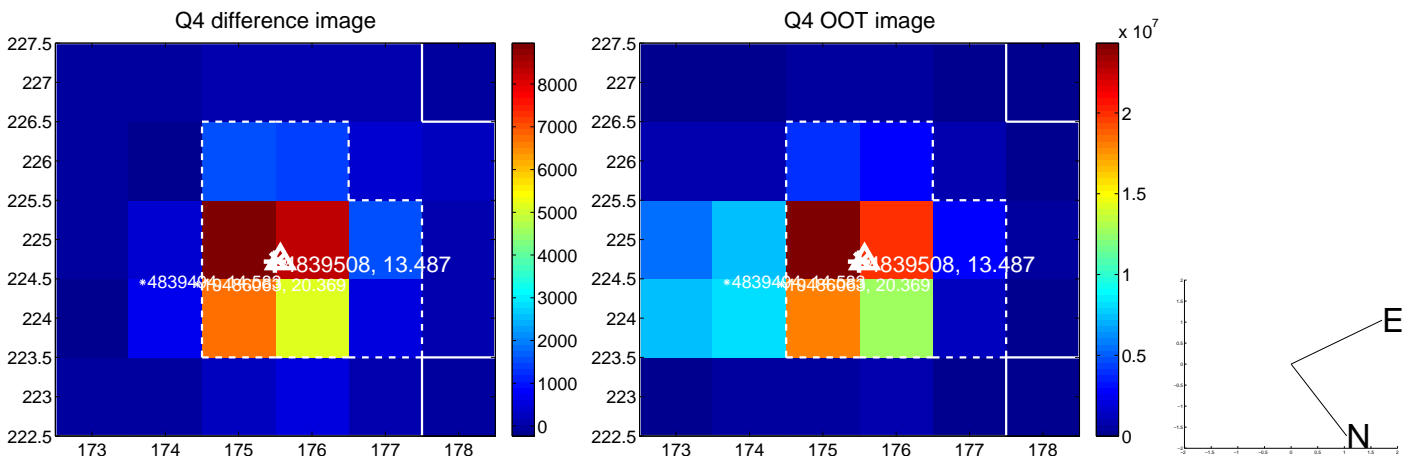
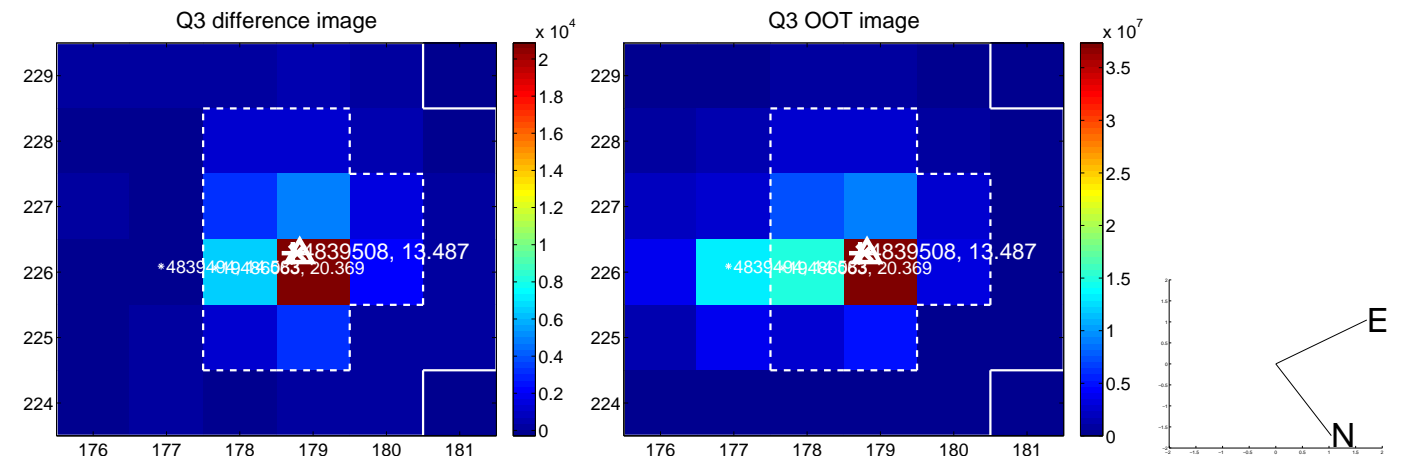
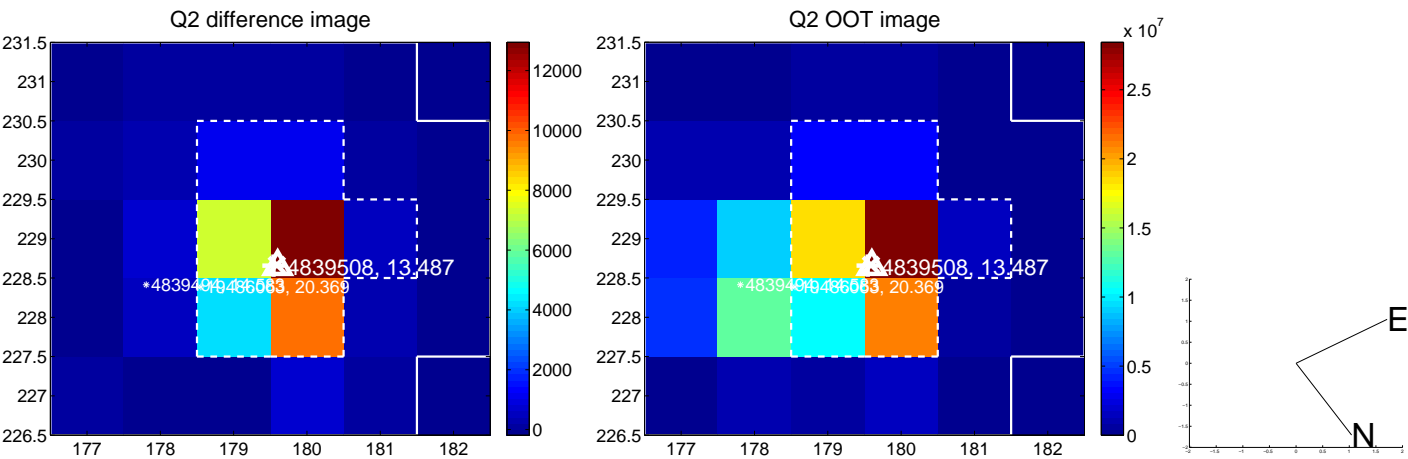
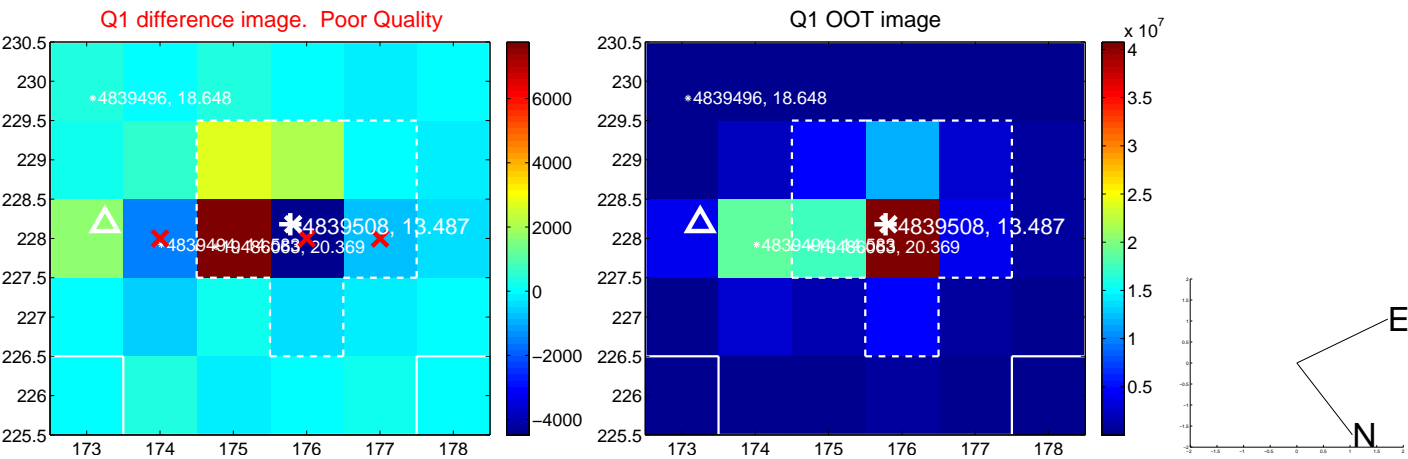
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.232 ± 0.676	0.34	0.206 ± 0.576	0.107 ± 0.365
PRF-fit source offset from KIC position	0.038 ± 0.638	0.06	0.029 ± 0.548	0.025 ± 0.347
photometric centroid source offset	1.41 ± 0.49	2.91	-0.27 ± 0.61	1.39 ± 0.48

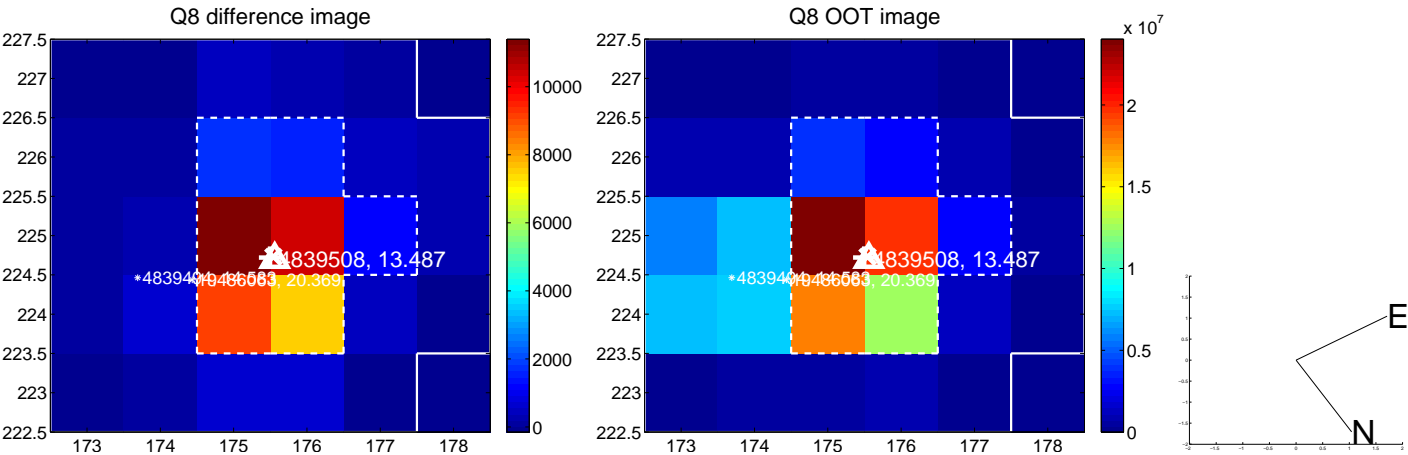
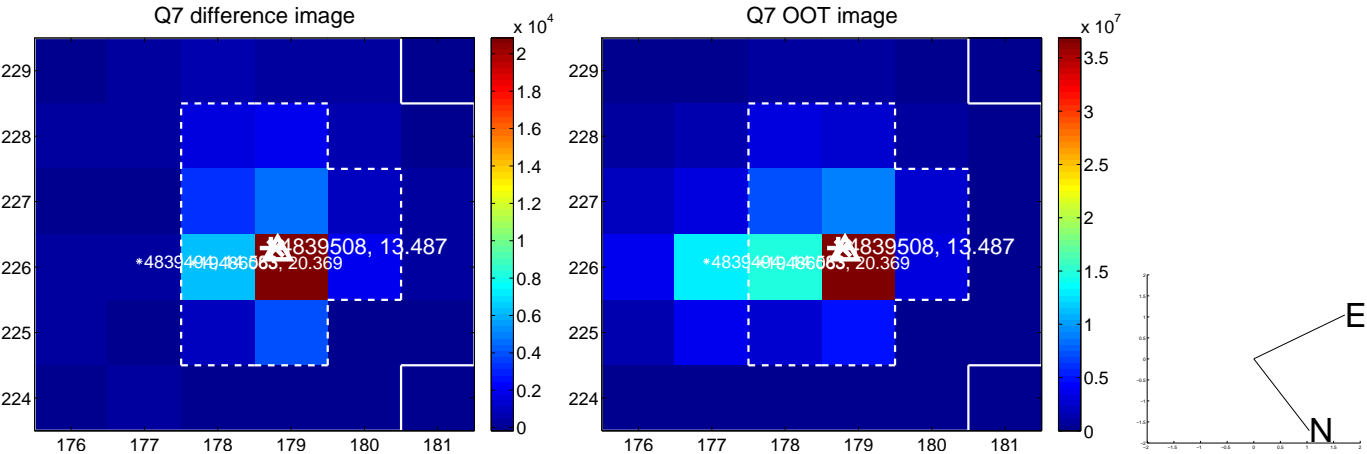
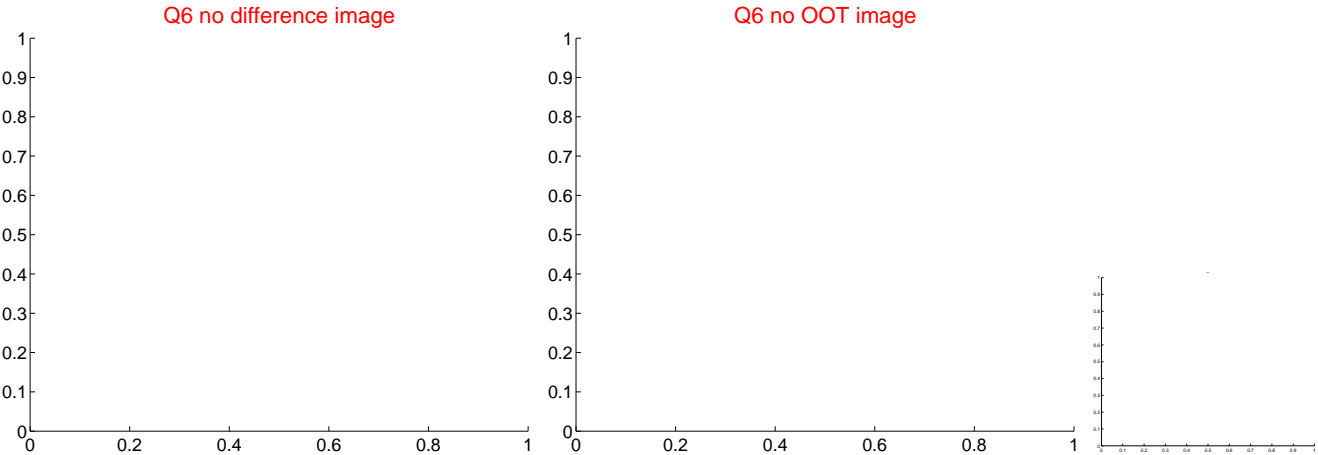
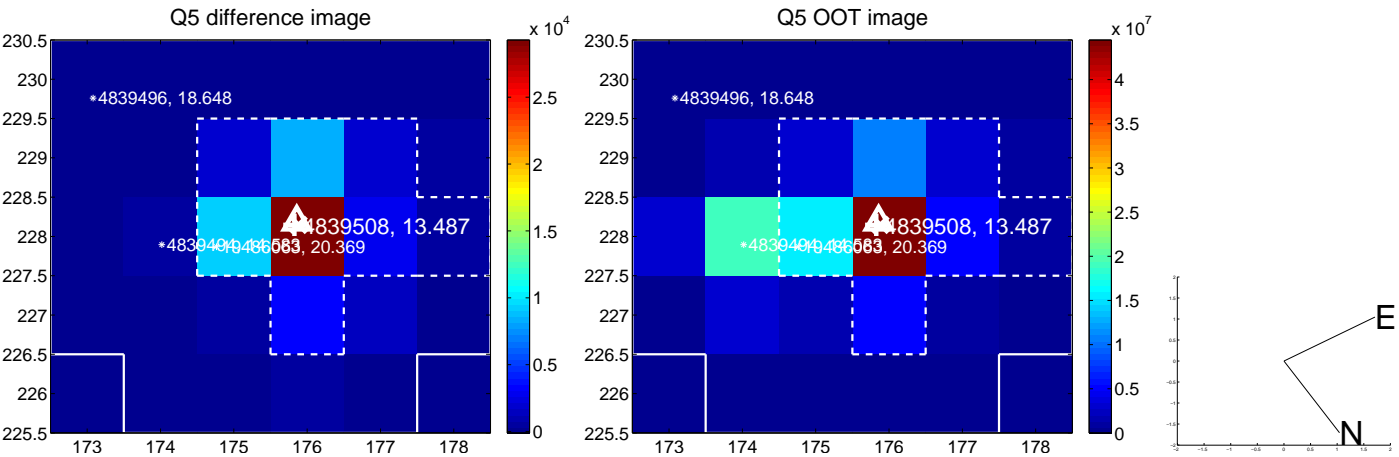


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

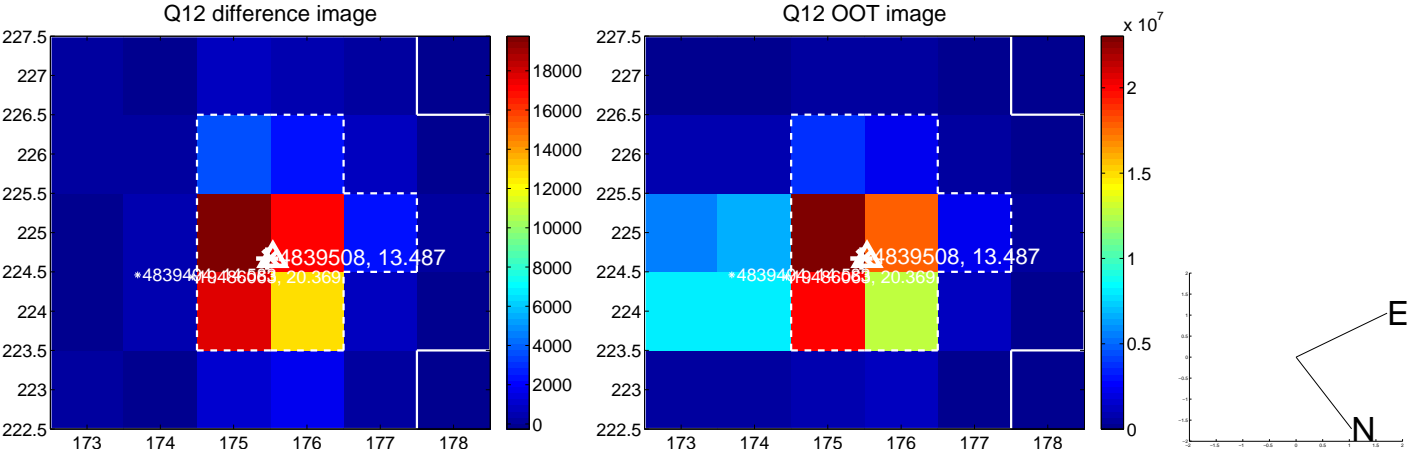
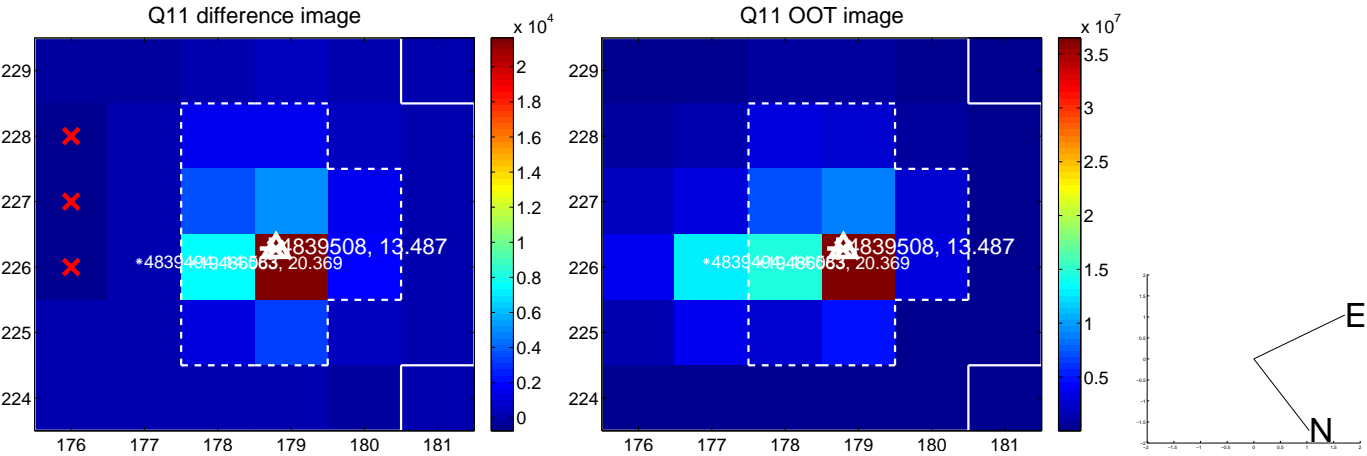
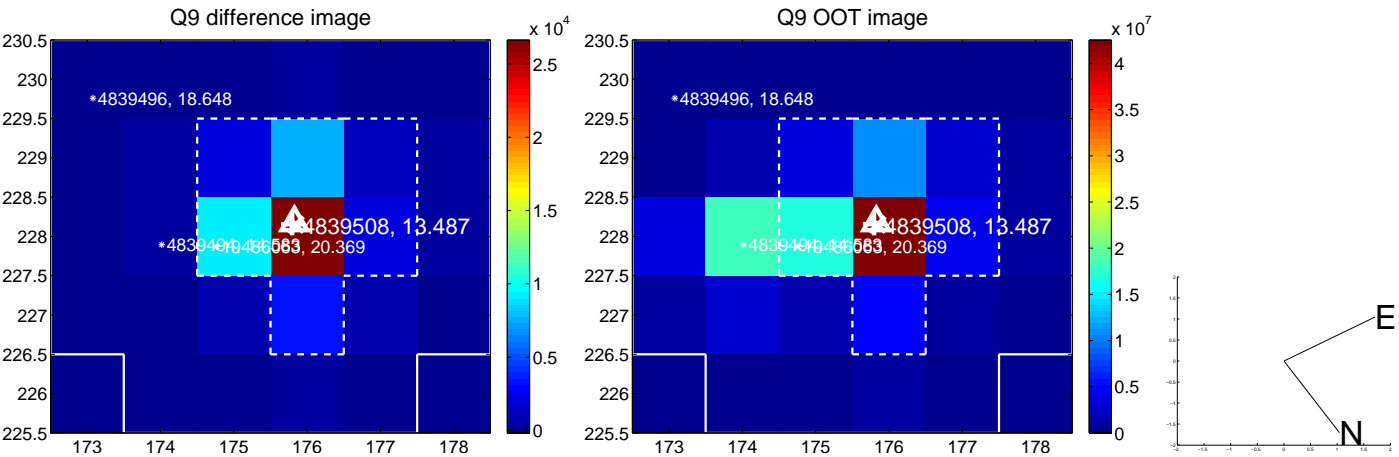
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



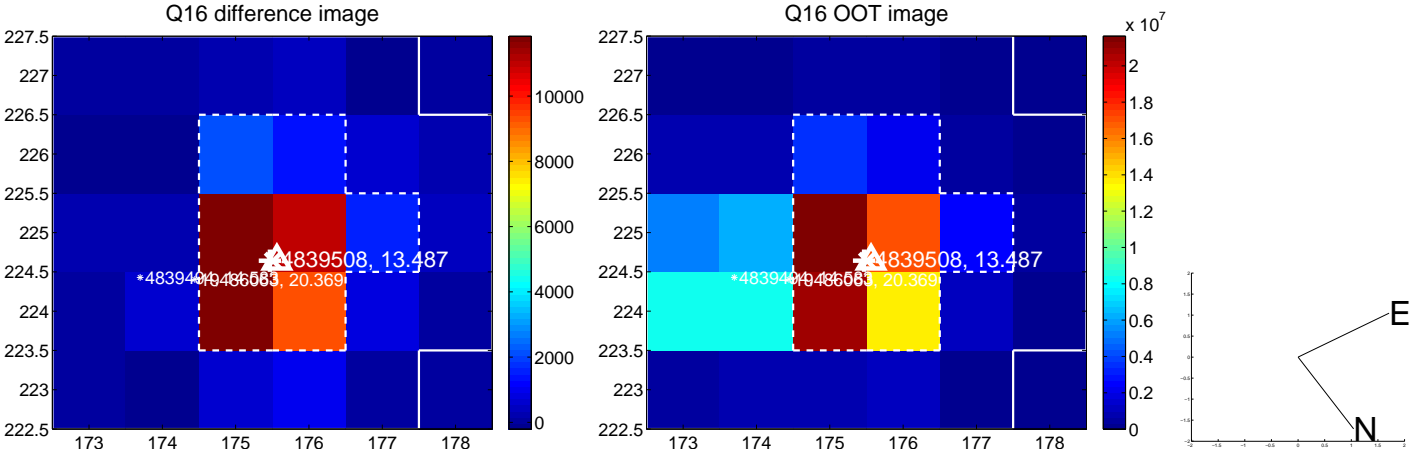
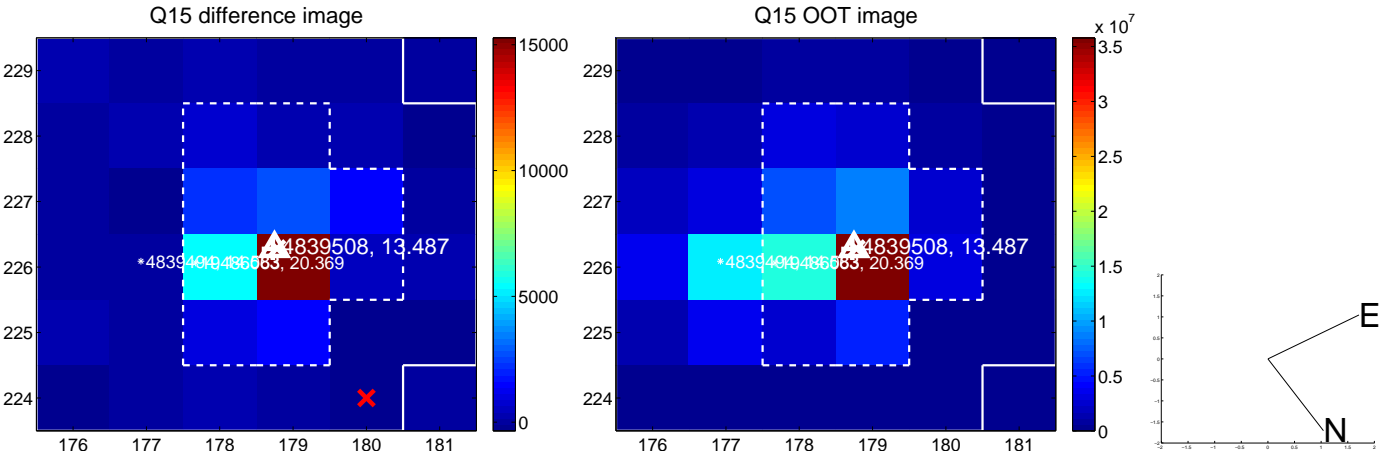
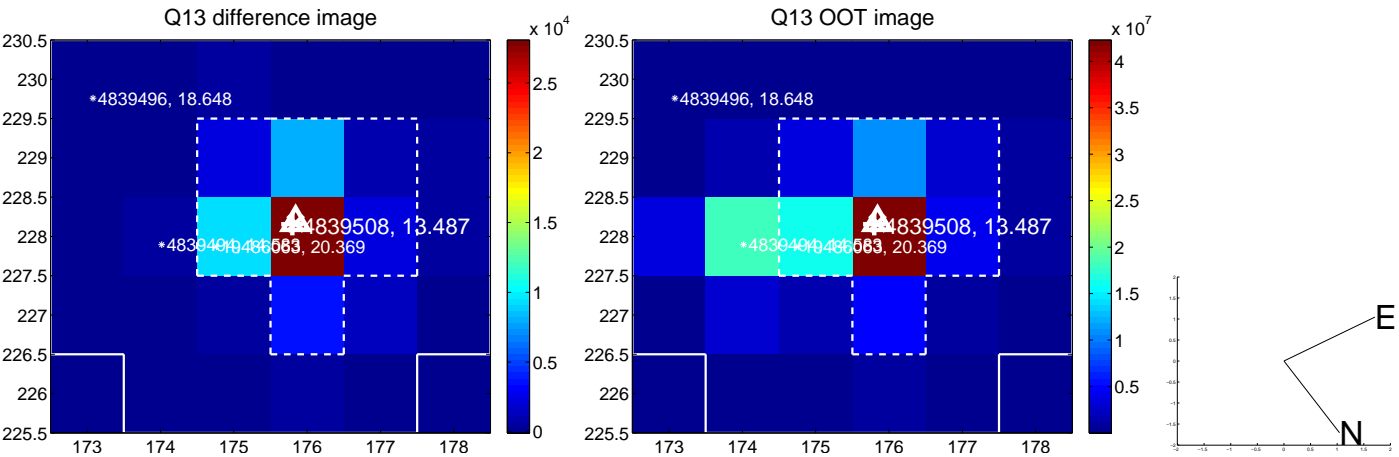
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



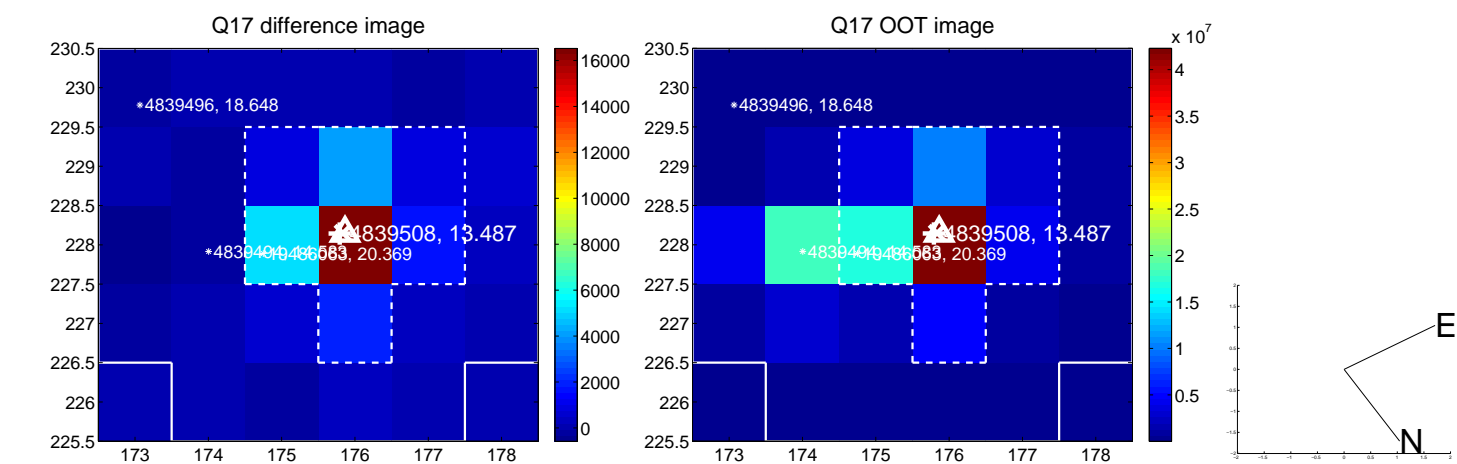
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



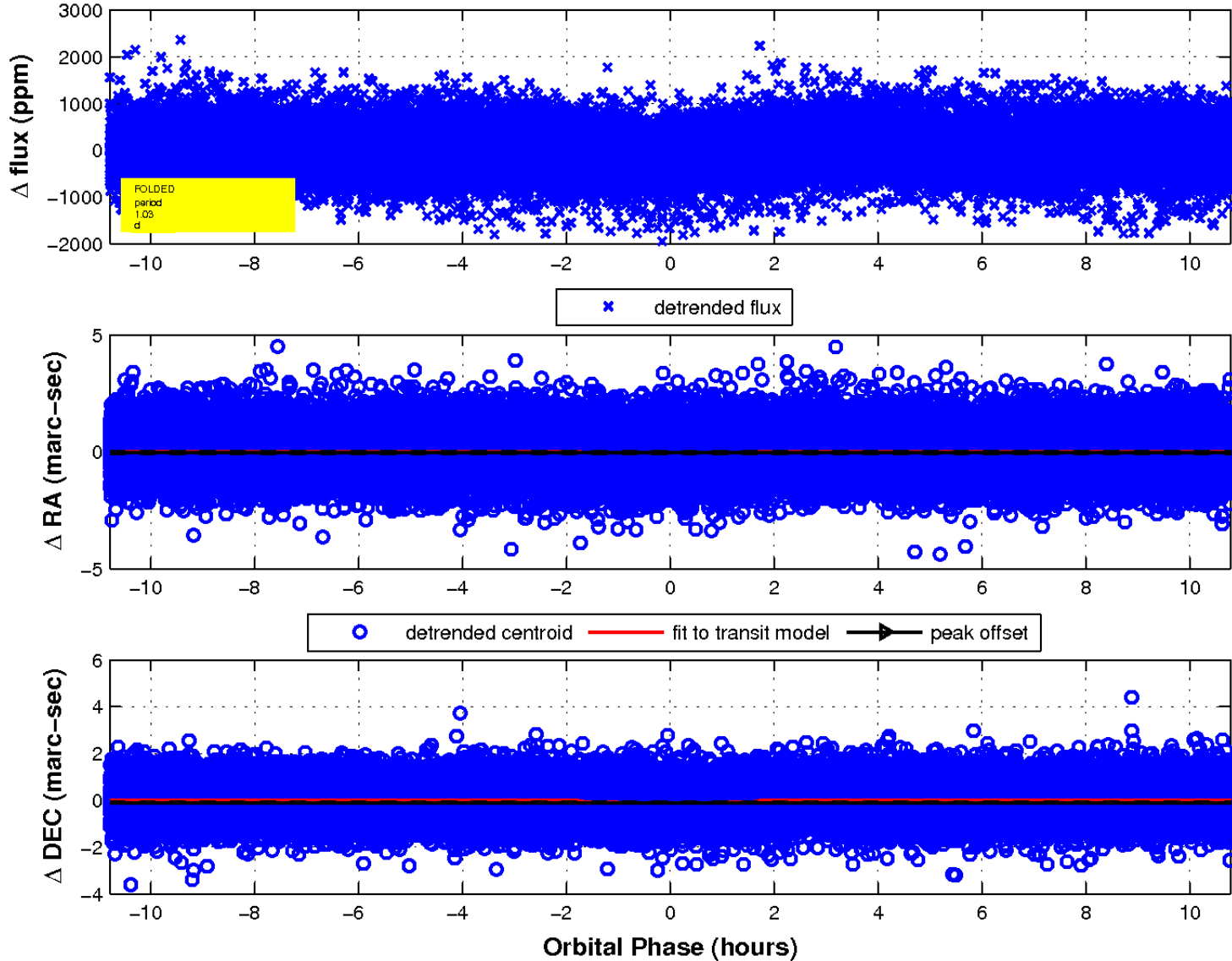
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

