

KIC 008525214

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})
008525214-01	OBS	No	0.560070	131.590411	33.0	2.433	10.7	10.3	1.54	7574	1.04	29082.85
008525214-02	OBS	No	0.560056	131.765693	51.1	3.865	14.0	12.0	1.54	7574	1.13	29083.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008525214-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008525214-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—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.

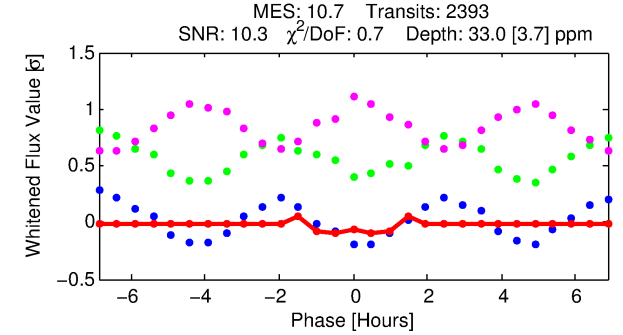
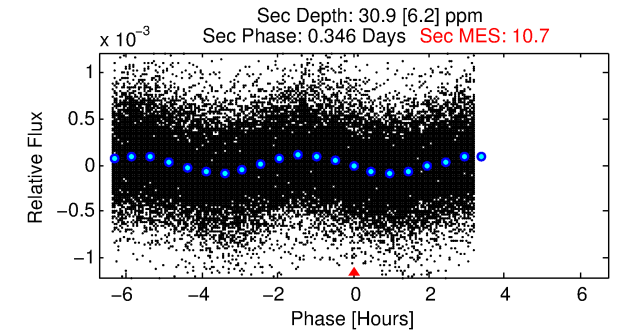
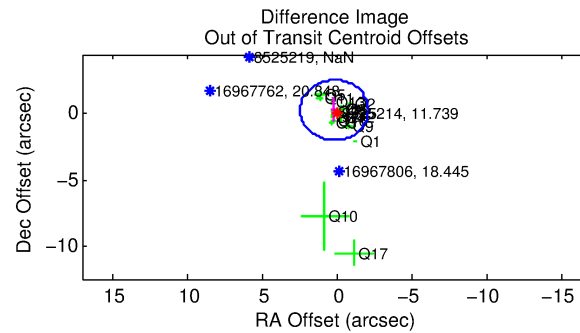
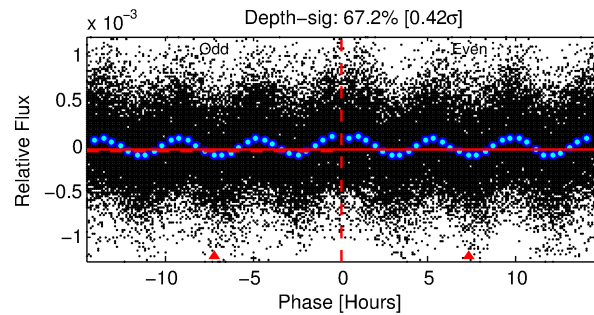
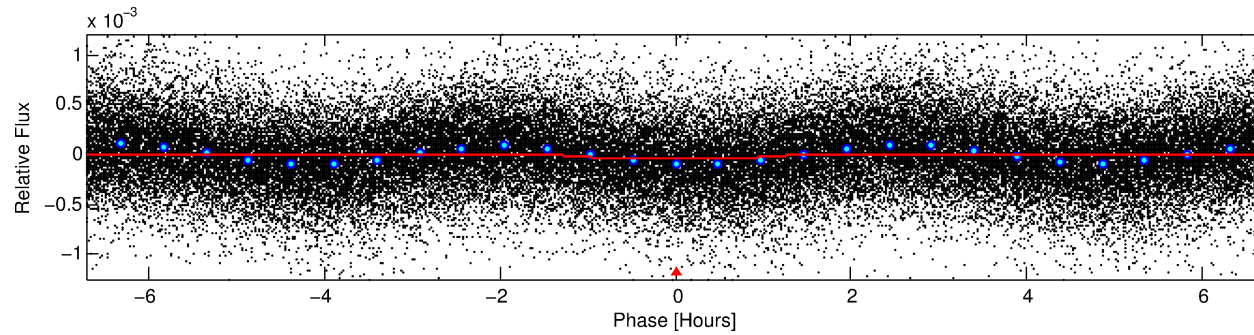
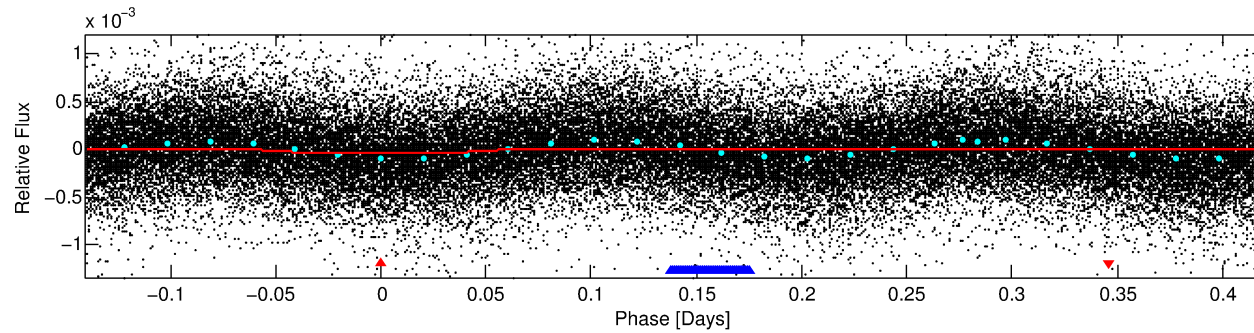
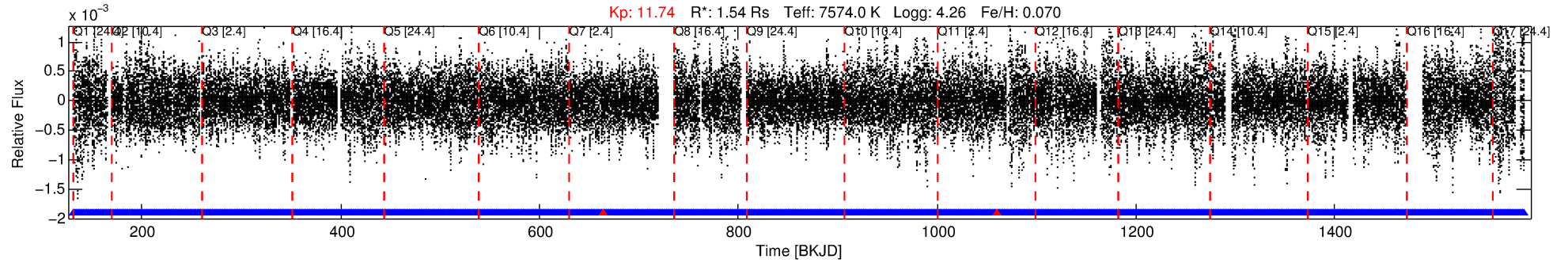
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008525214-01

No Significant Match Found

DV One-Page Summary

KIC: 8525214 Candidate: 1 of 2 Period: 0.560 d



DV Fit Results:

Period = 0.56007 [0.00001] d
Epoch = 131.5904 [0.0012] BKJD
 R_p/R^* = 0.0061 [0.0011]
 a/R^* = 1.21 [0.41]
 b = 0.91 [0.20]
 Seff = 29082.85 [13841.49]
 Teq = 3330 [396] K
 R_p = 1.04 [0.43] R_e
 a = 0.0155 [0.0048] AU
 Ag = 3.82 [2.30] [1.23 σ]
Teffp = 7200 [785] K [4.40 σ]

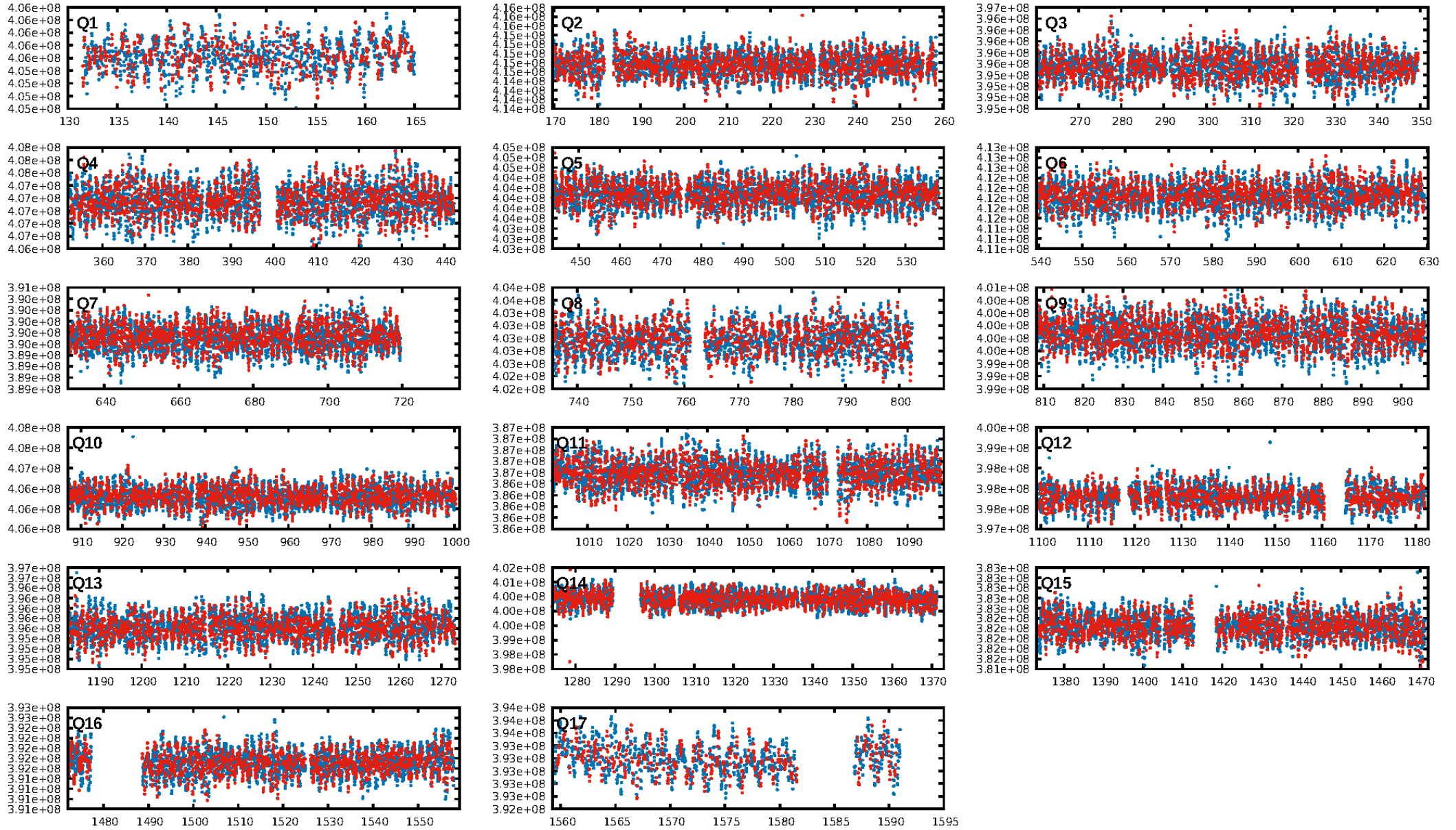
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.00e+00
RollingBand-fgt: 1.00 [2283/2285]
GhostDiagnostic-chr: 1.596
Centroid-sig: 35.2%
Centroid-so: 0.807 arcsec [1.71 σ]
OotOffset-rm: 0.318 arcsec [0.42 σ]
KicOffset-rm: 0.243 arcsec [0.33 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 0.00 [0/17]

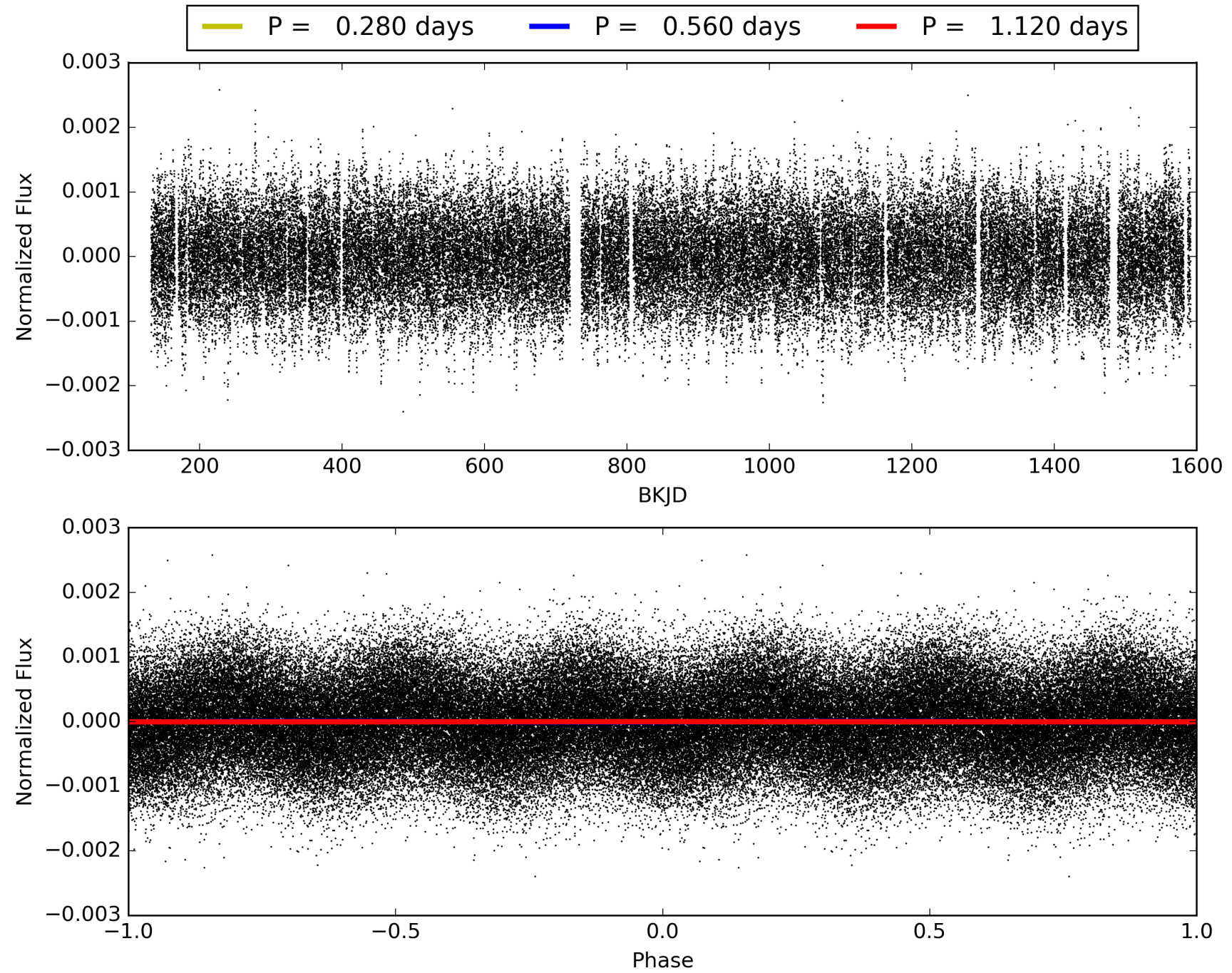
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:37:31 Z

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

TCE 008525214-01, PDC Light Curves

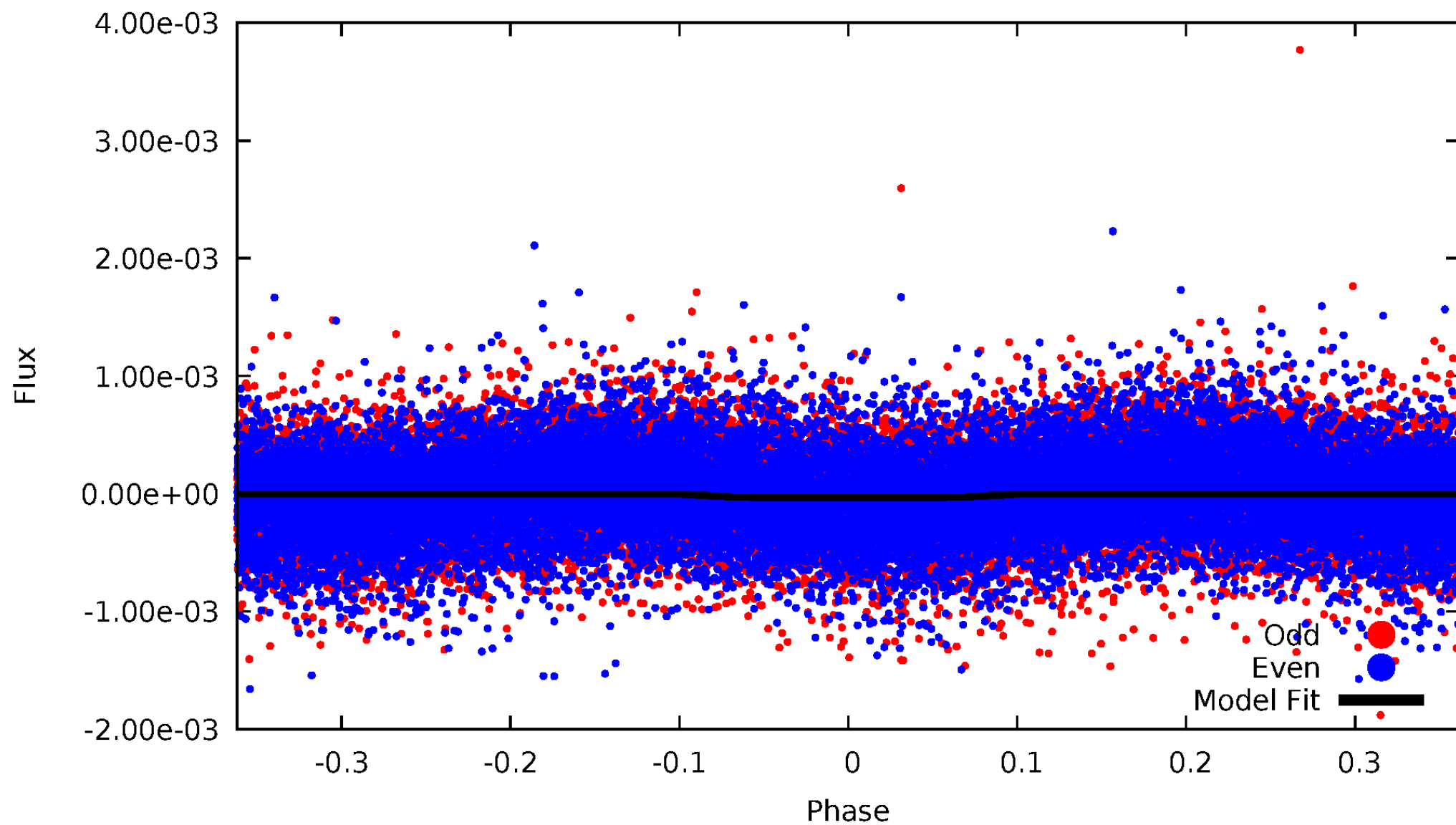


TCE 008525214-01



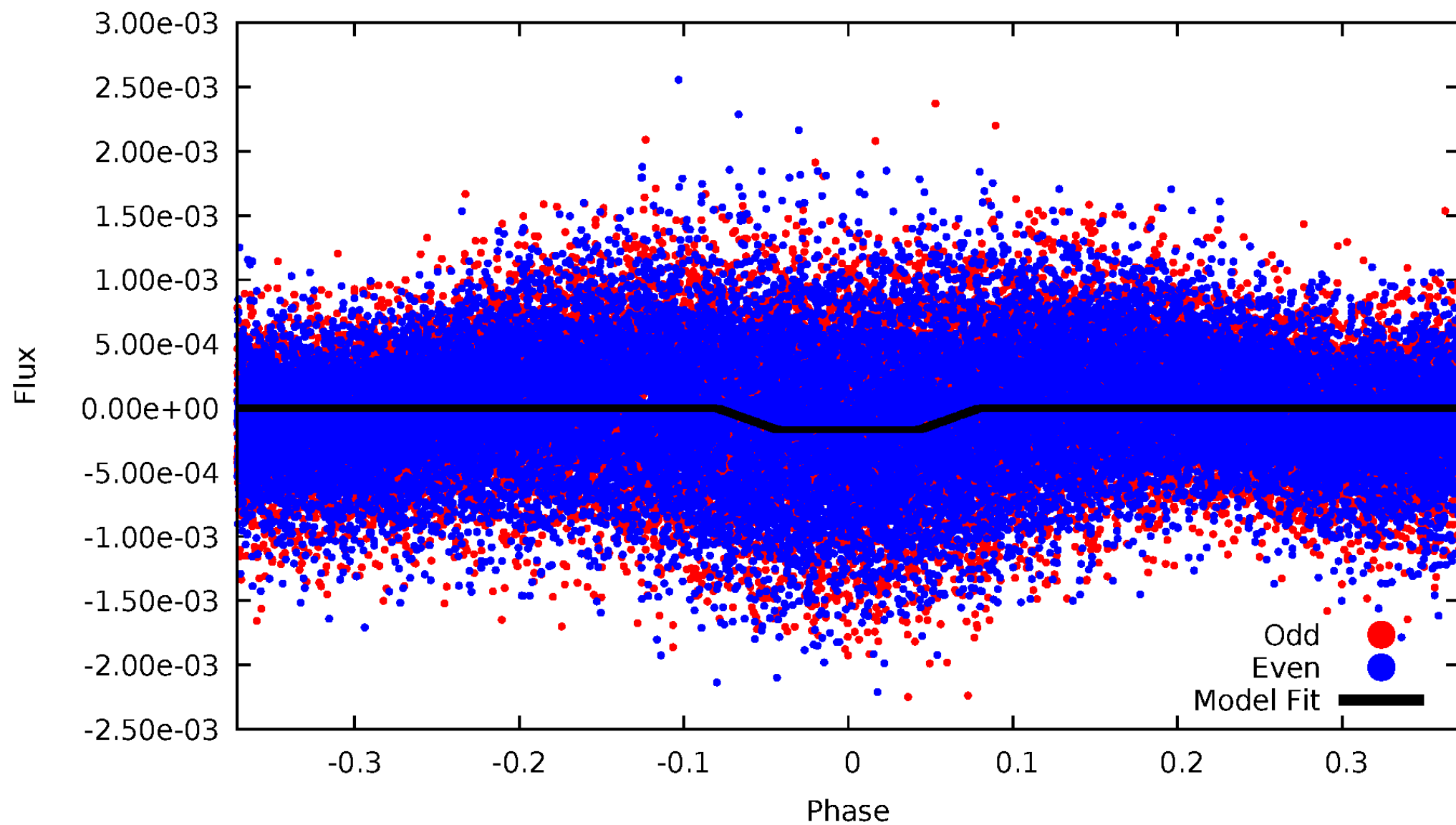
DV Odd/Even

TCE 008525214-01



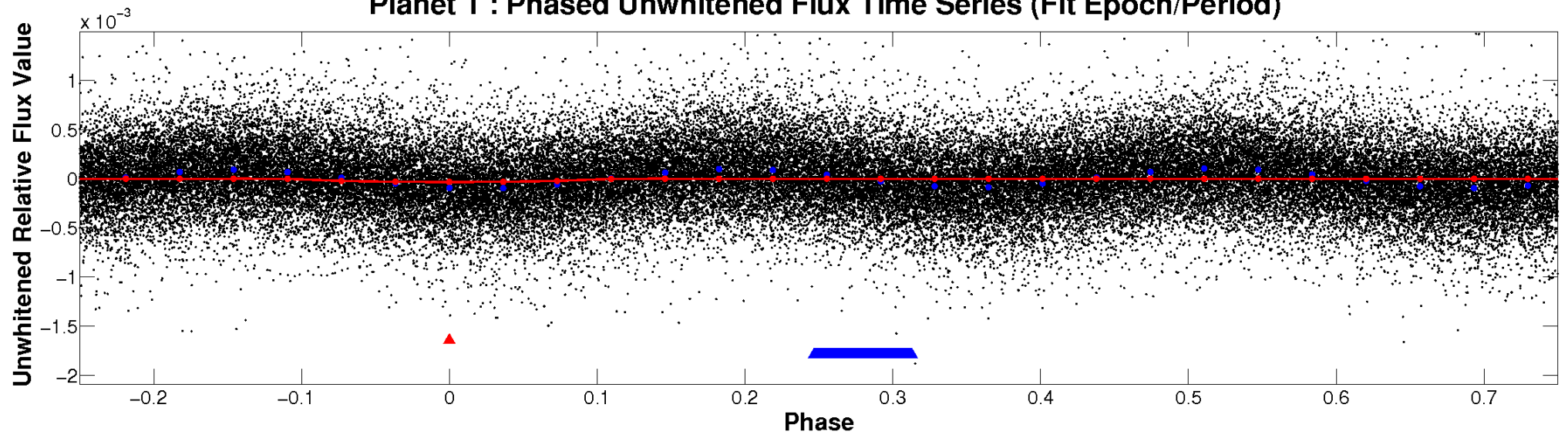
ALT Odd/Even

TCE 008525214-01

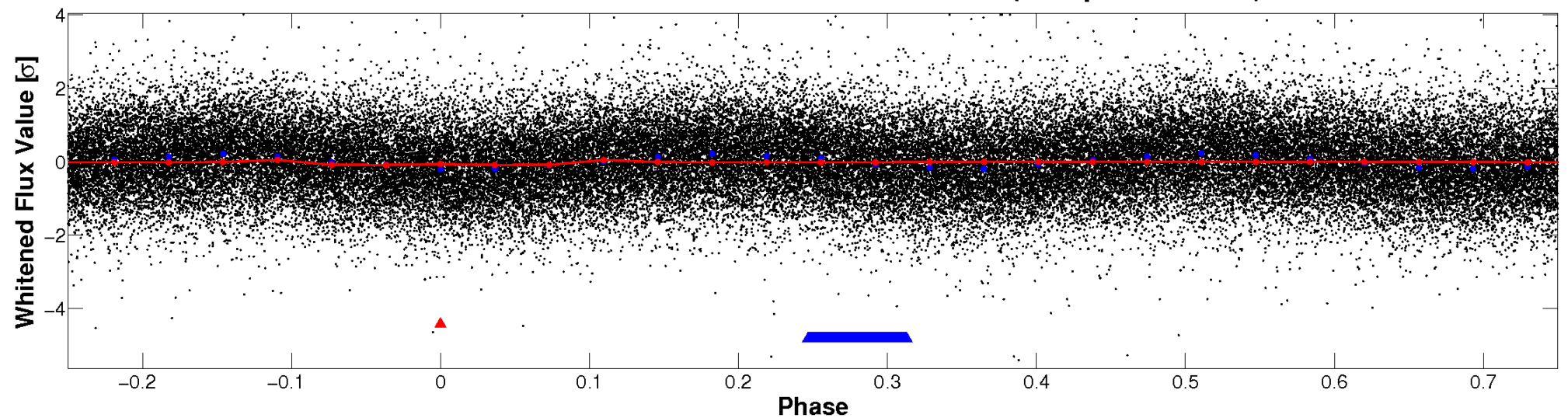


Non-Whitened Vs. Whitened Light Curve

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

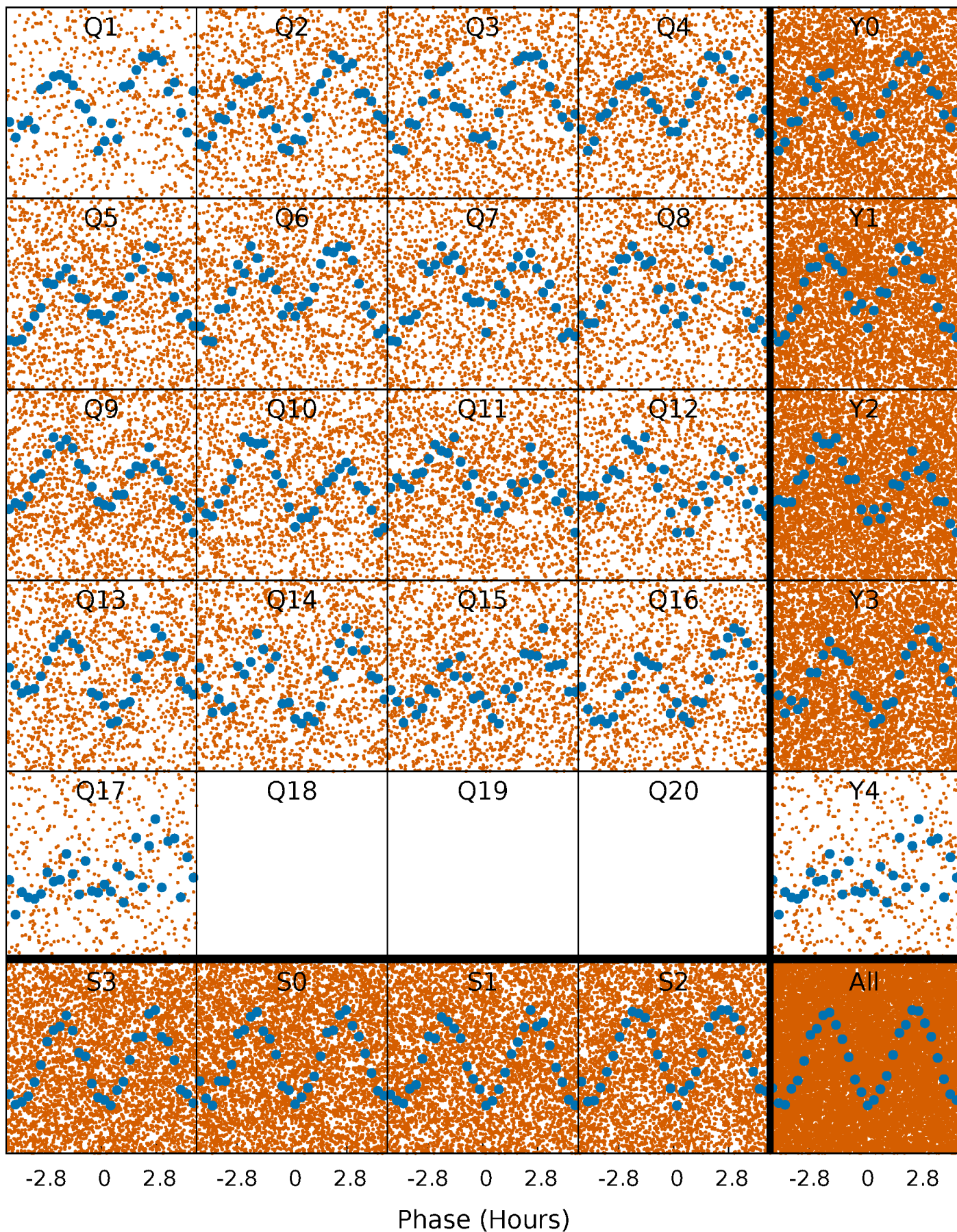


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



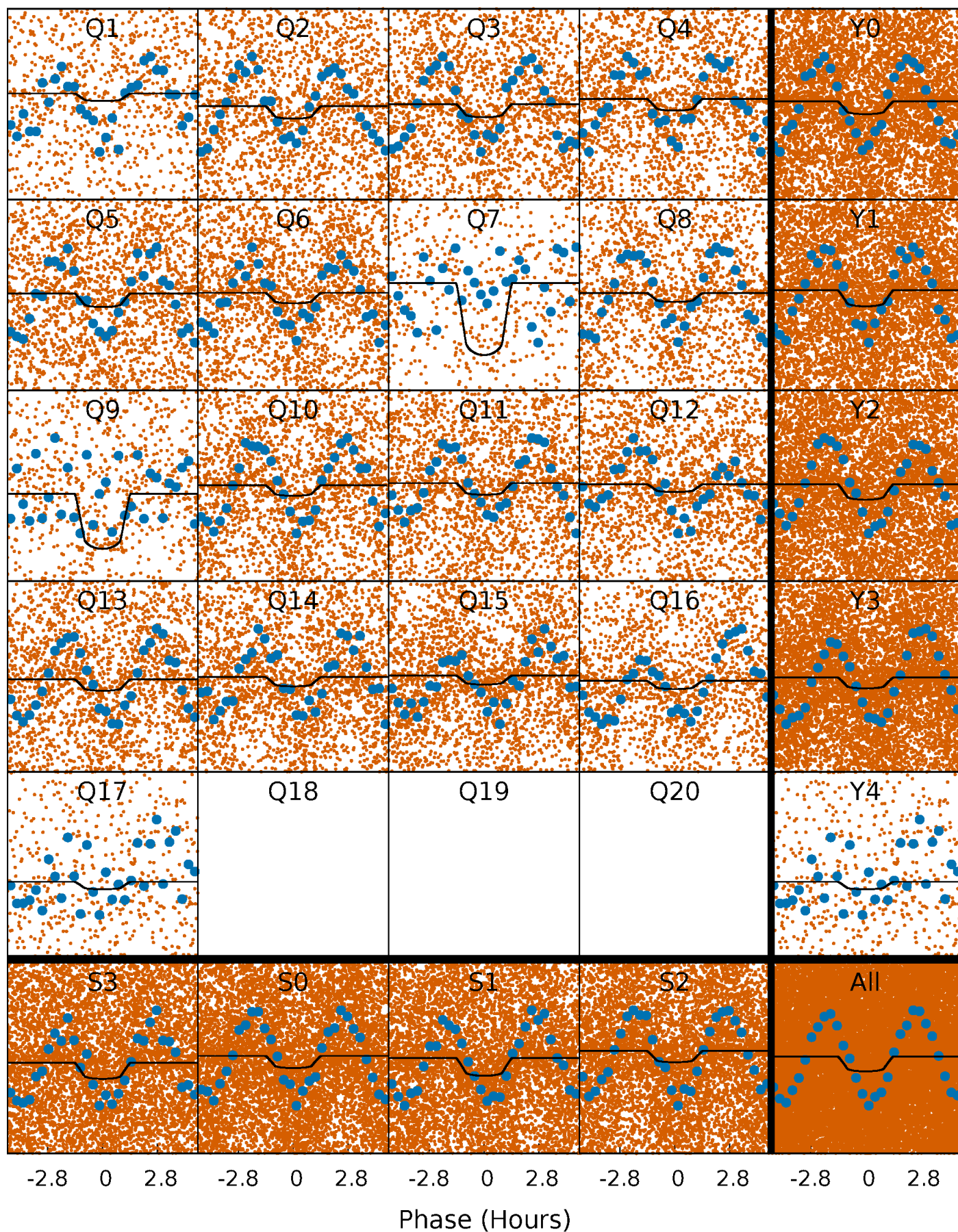
PDC Quarter-Phased Transit Curves

TCE 008525214-01 P= 0.560070 Days $T_0=131.590411$ (BKJD)



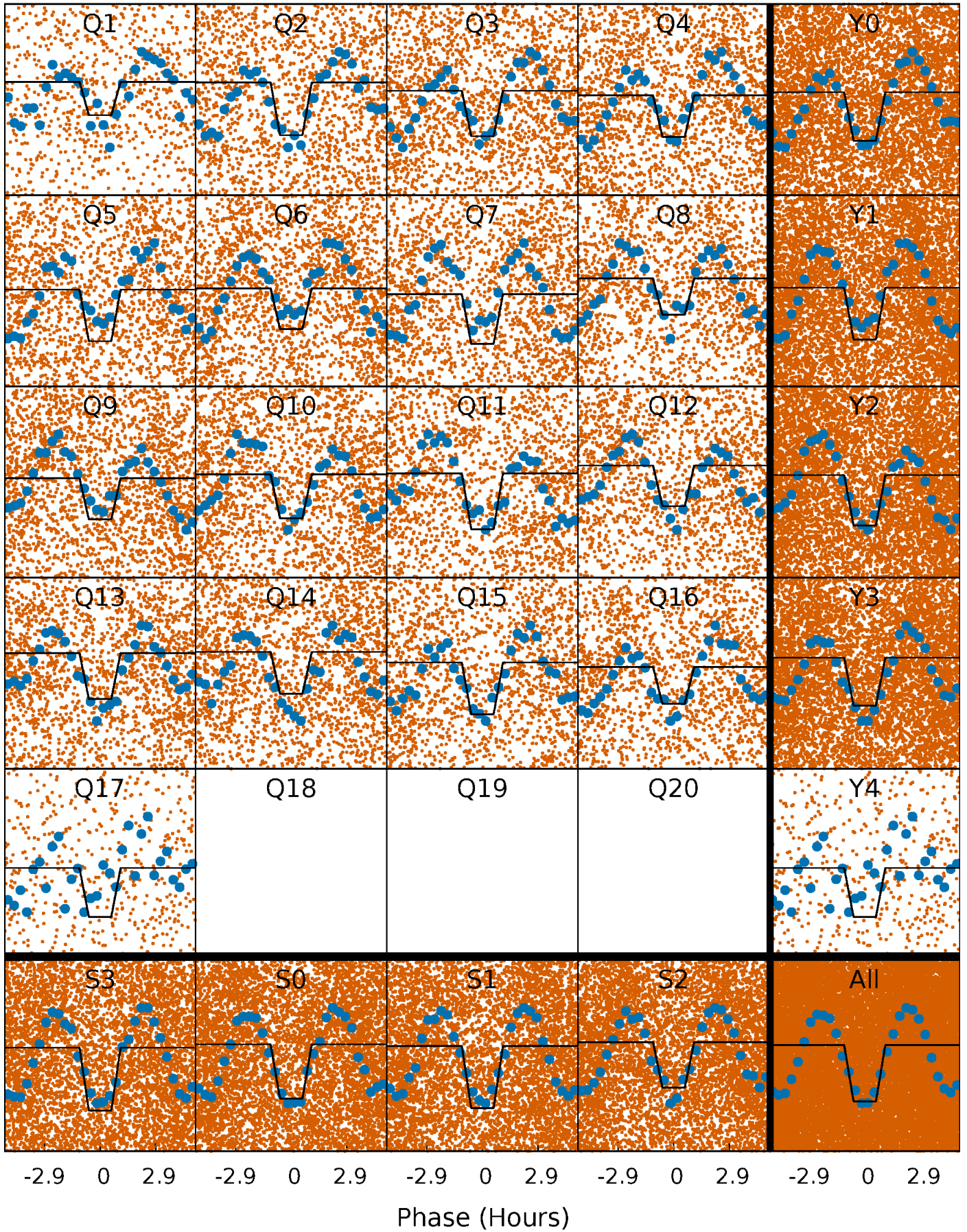
DV Quarter-Phased Transit Curves

TCE 008525214-01 P= 0.560070 Days $T_0=131.590411$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

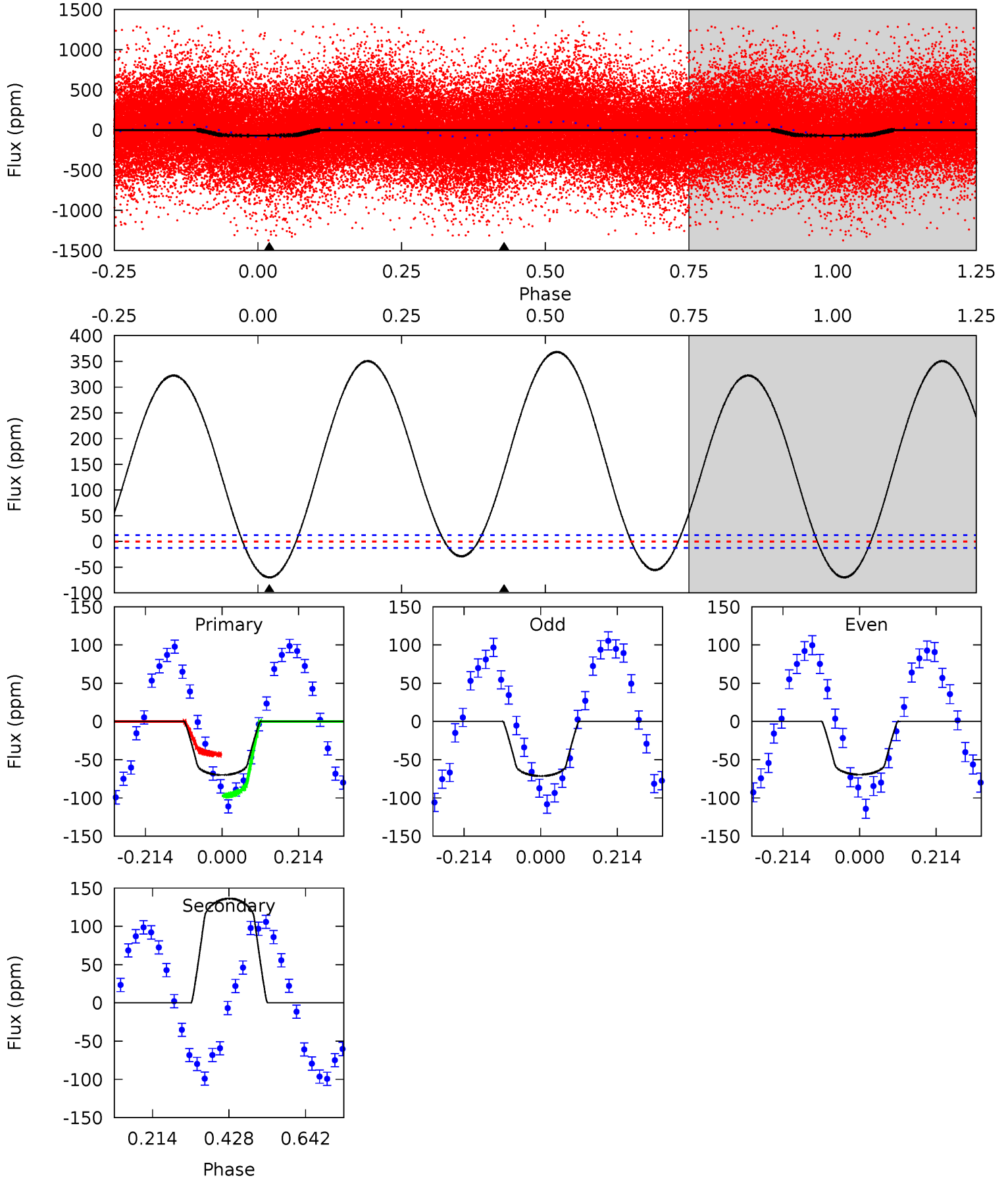
TCE 008525214-01 P= 0.560085 Days $T_0=131.583480$ (BKJD)



DV Model-Shift Uniqueness Test

008525214-01, P = 0.560070 Days, E = 131.030341 Days

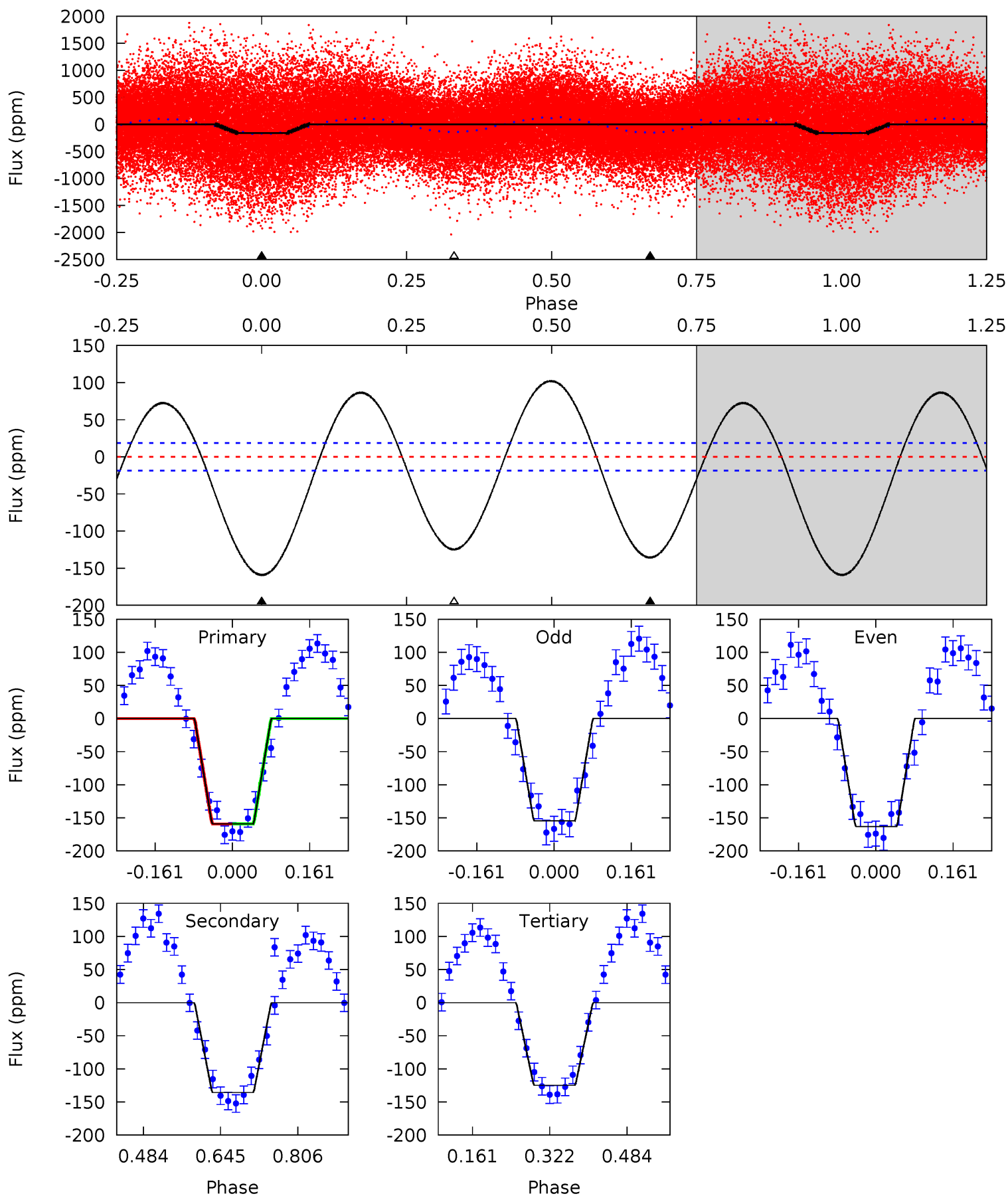
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.8	-48.3	0	0	4.40	1.24	33.4	24.8	24.8	-48.3	-48.3	0.33	1.07	0.84	9.63



Alt Model-Shift Uniqueness Test

008525214-01, P = 0.560085 Days, E = 131.023395 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.3	32.6	30.0	0	4.46	1.40	19.0	8.29	38.3	2.64	32.6	1.04	1.05	0.39	0.01



Stellar Parameters For KIC 008525214

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7574^{+211}_{-316}	$4.264^{+0.060}_{-0.240}$	$0.070^{+0.150}_{-0.400}$	$1.544^{+0.581}_{-0.194}$	$1.598^{+0.211}_{-0.211}$	$0.611^{+0.195}_{-0.342}$
	+3%/-4%	+1%/-6%	+214%/-571%	+38%/-13%	+13%/-13%	+32%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008525214-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	136 ± 3	$1.08^{+0.26}_{-0.21}$	4758^{+402}_{-266}	-11932^{+1471}_{-2245}	$-15.257^{+5.249}_{-7.917}$
Alt.	-136 ± 4	$2.26^{+0.41}_{-0.25}$	4761^{+383}_{-258}	6919^{+449}_{-371}	$3.445^{+0.962}_{-0.930}$

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

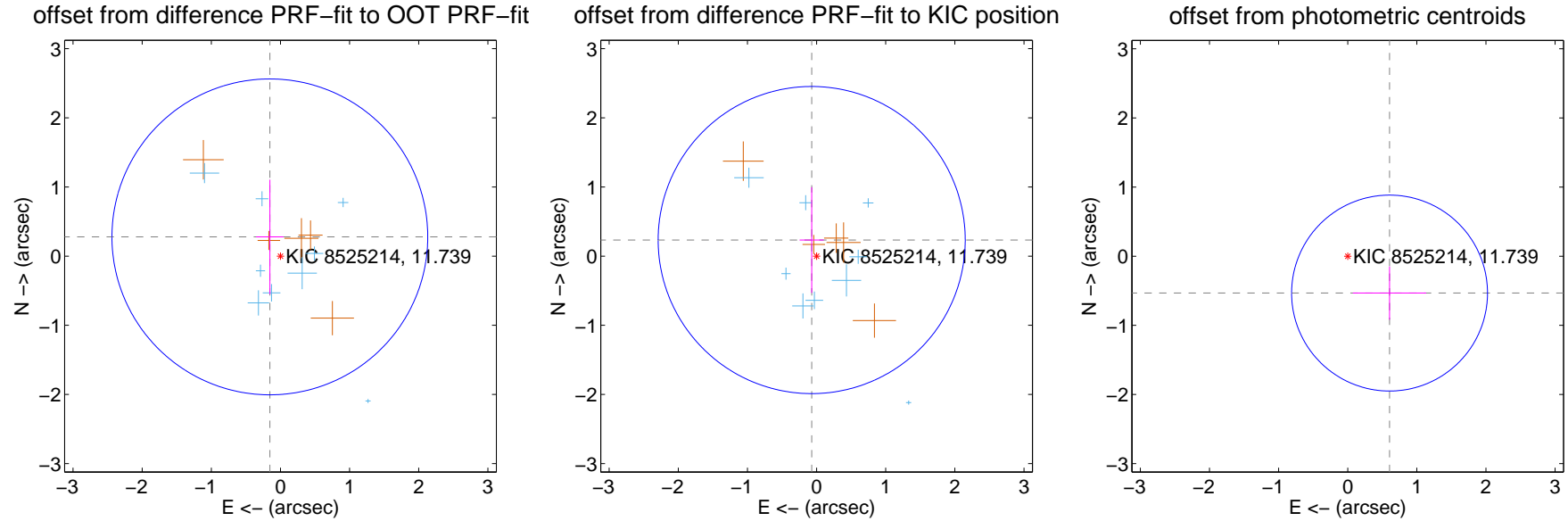
DV Centroid Data

Supplemental centroid analysis for 008525214-01. **Kepler magnitude: 11.74.** Transit SNR 10.35

There are 9 quarters with good PRF difference image offsets

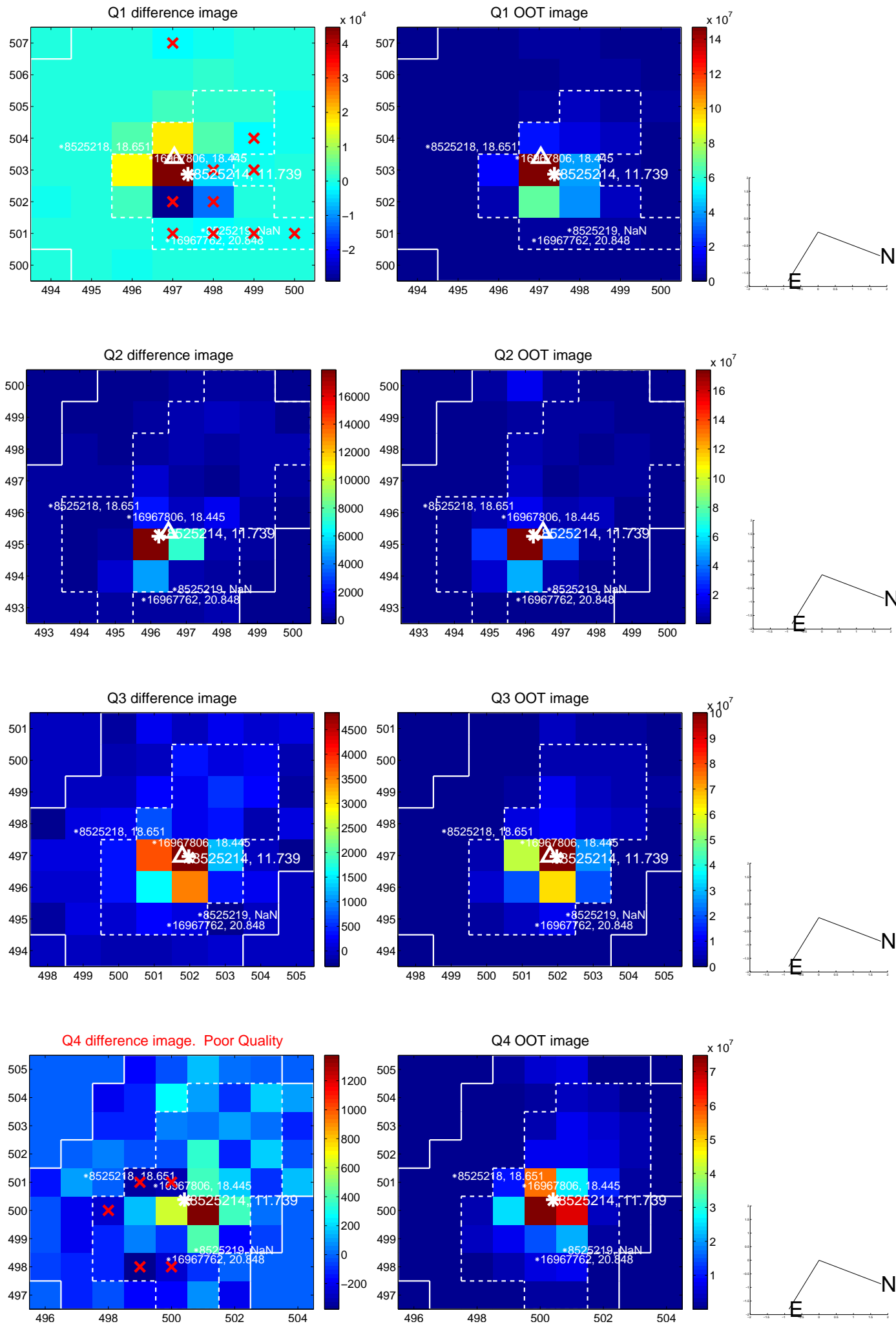
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.318 ± 0.761	0.42	0.154 ± 0.197	0.278 ± 0.828
PRF-fit source offset from KIC position	0.243 ± 0.740	0.33	0.071 ± 0.175	0.233 ± 0.764
photometric centroid source offset	0.81 ± 0.47	1.71	-0.61 ± 0.53	-0.53 ± 0.38

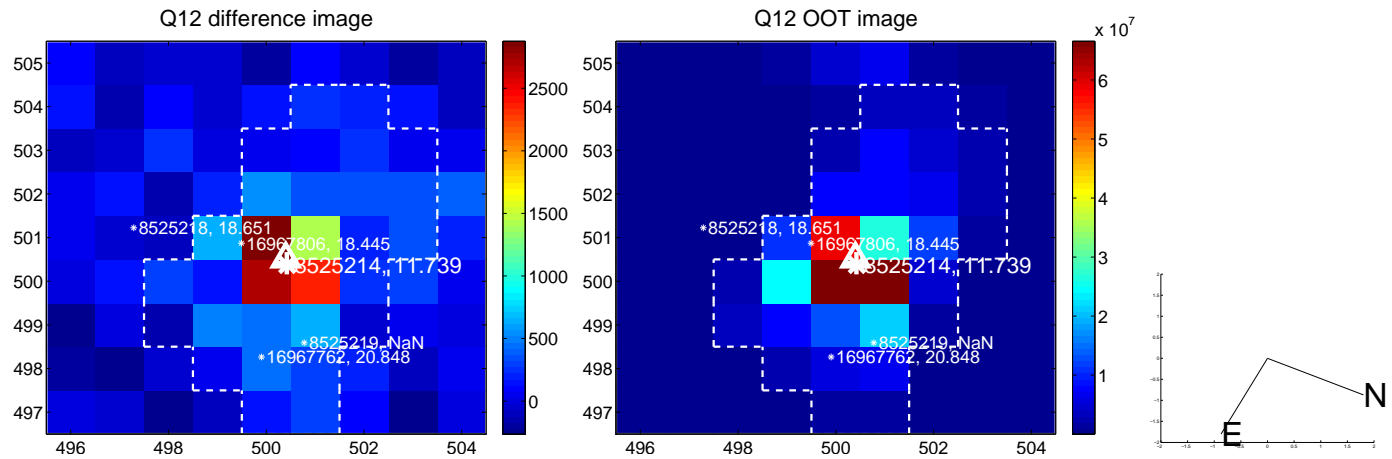
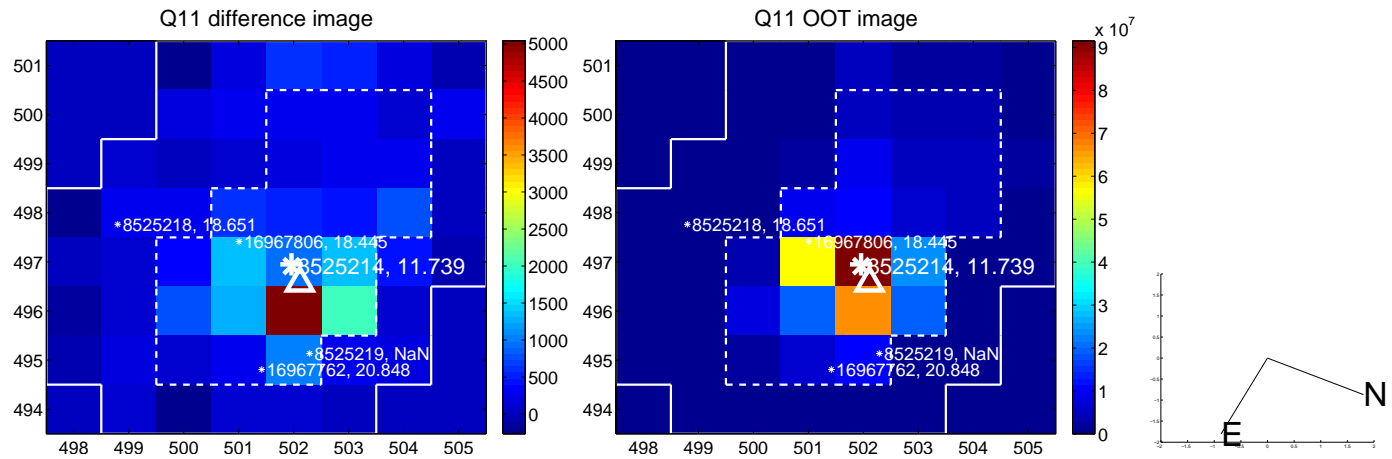
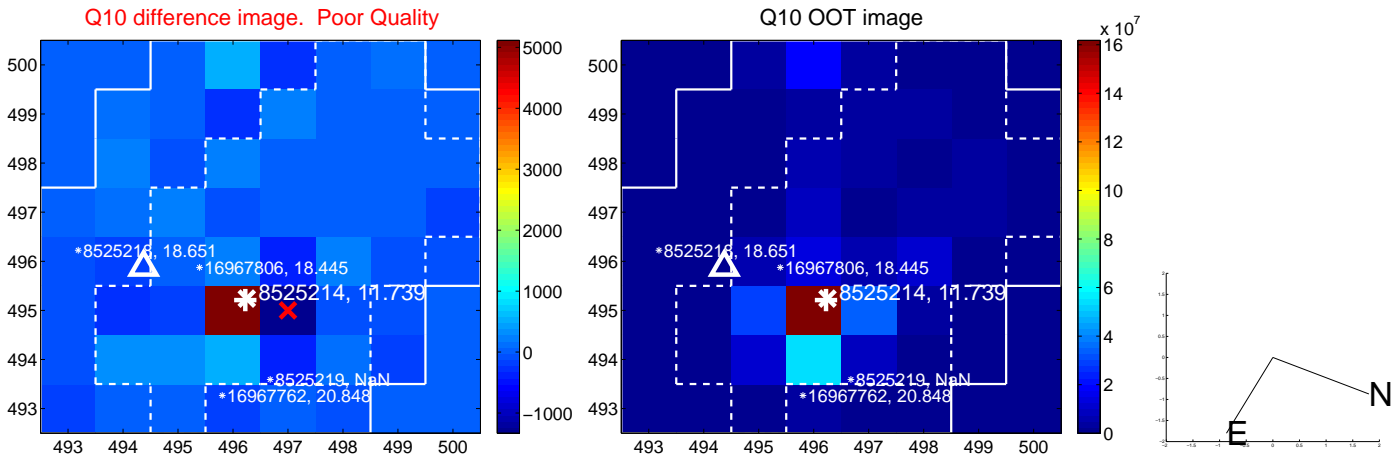
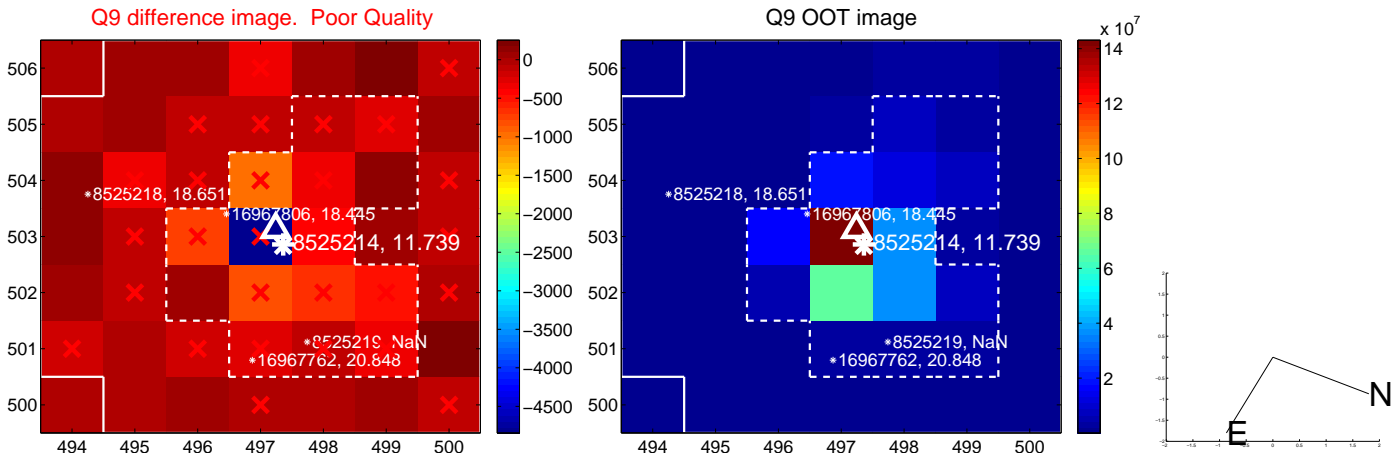


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

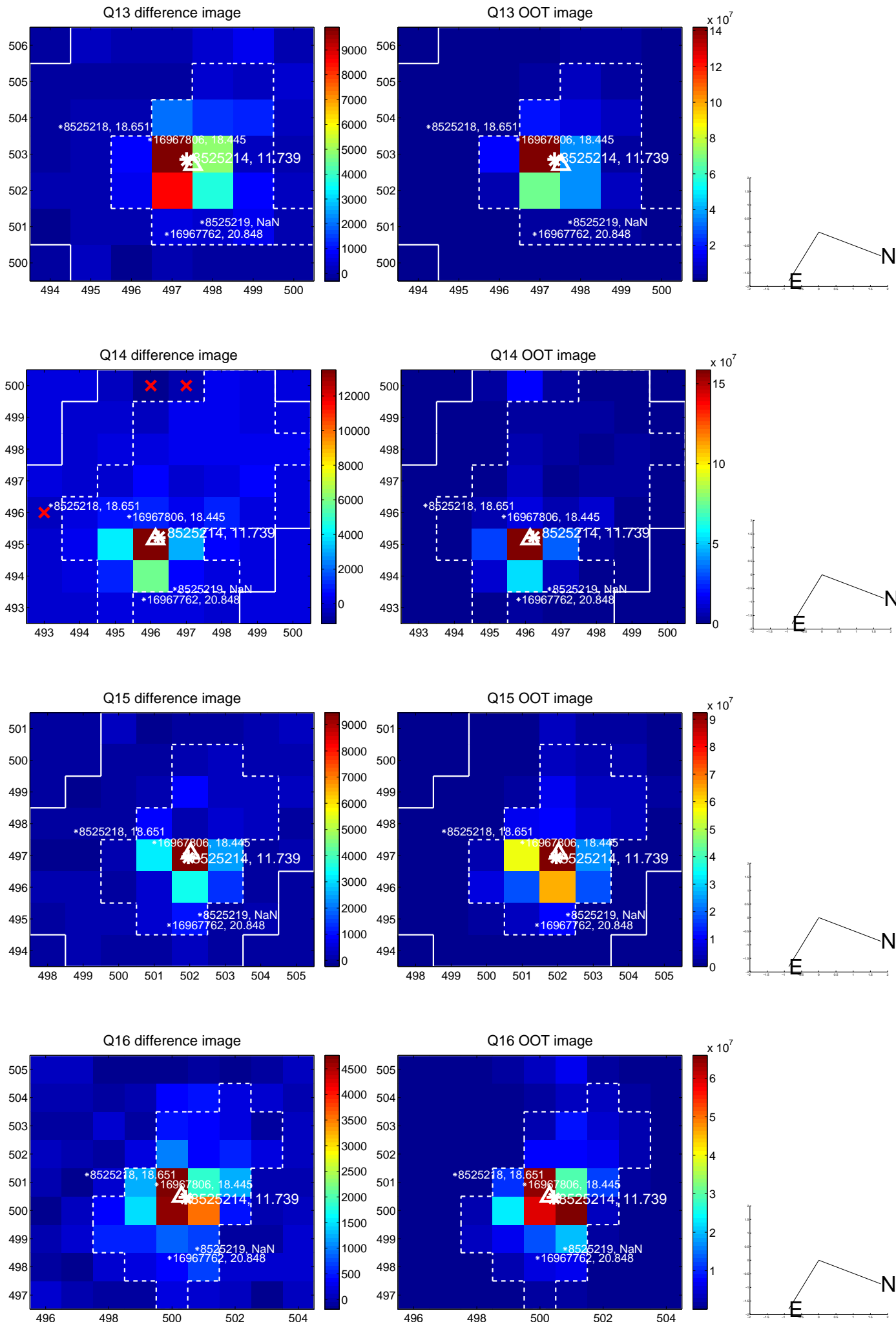
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



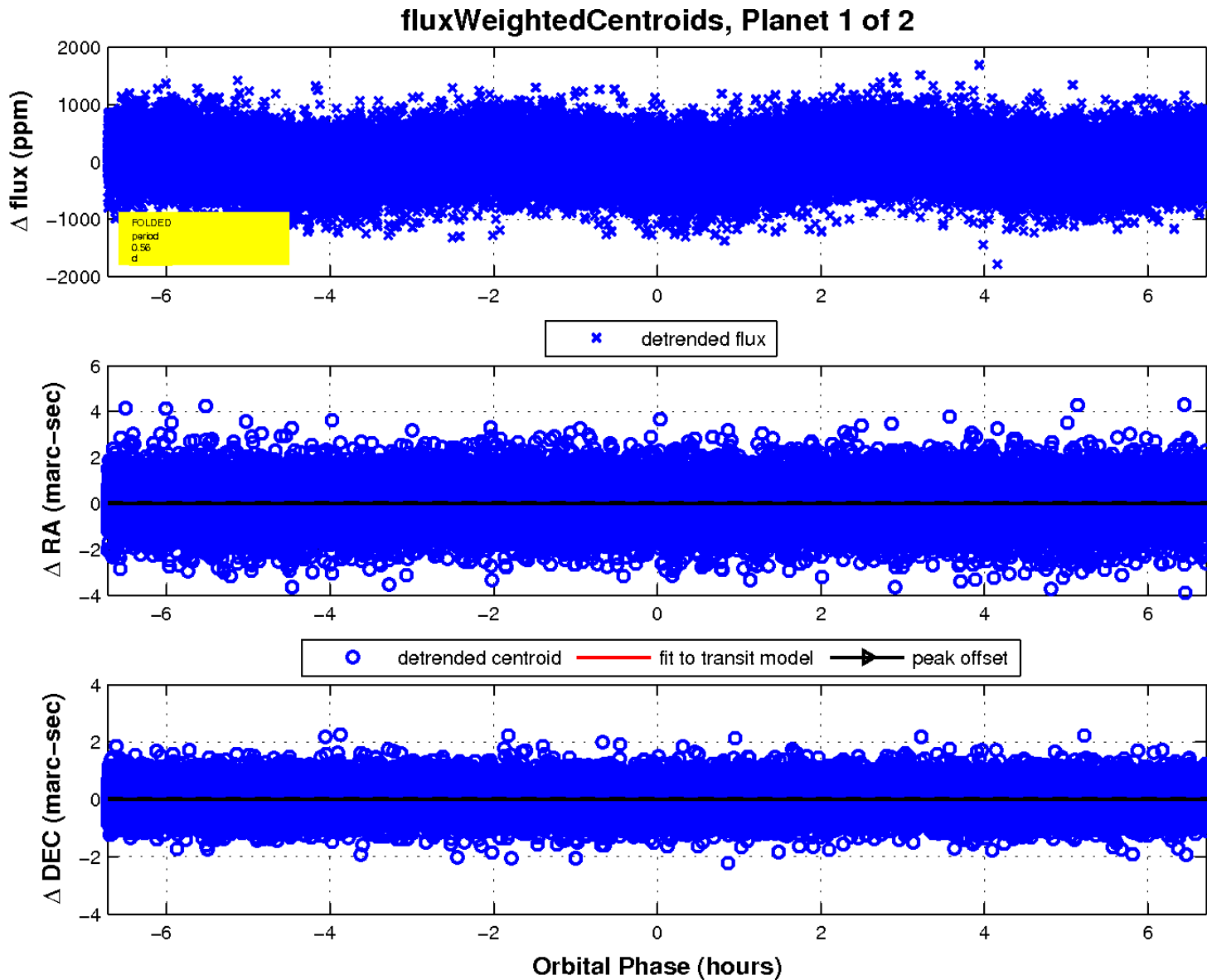
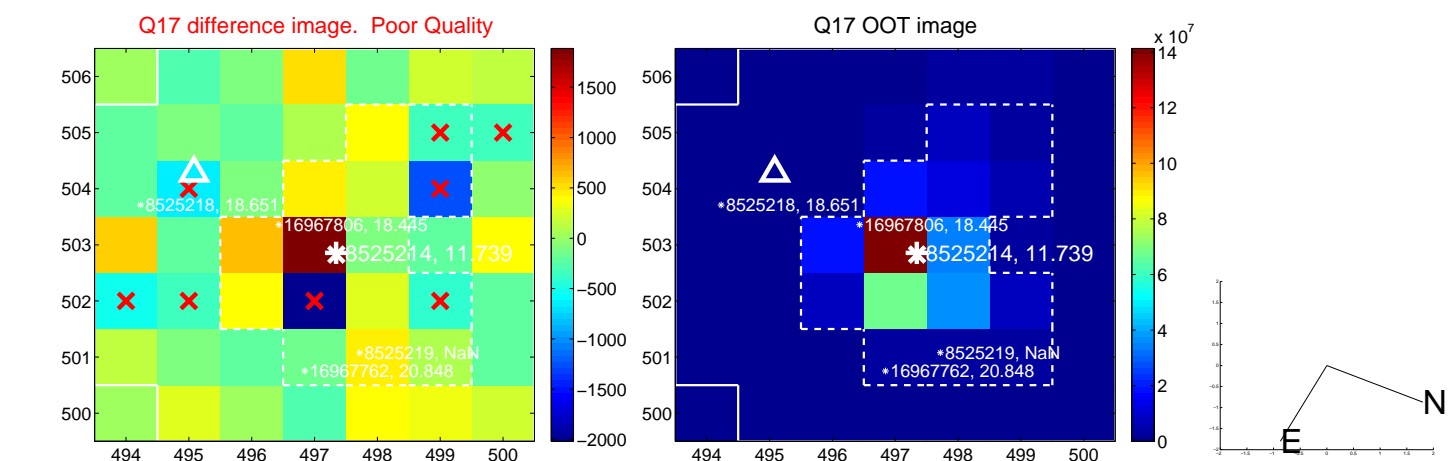
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

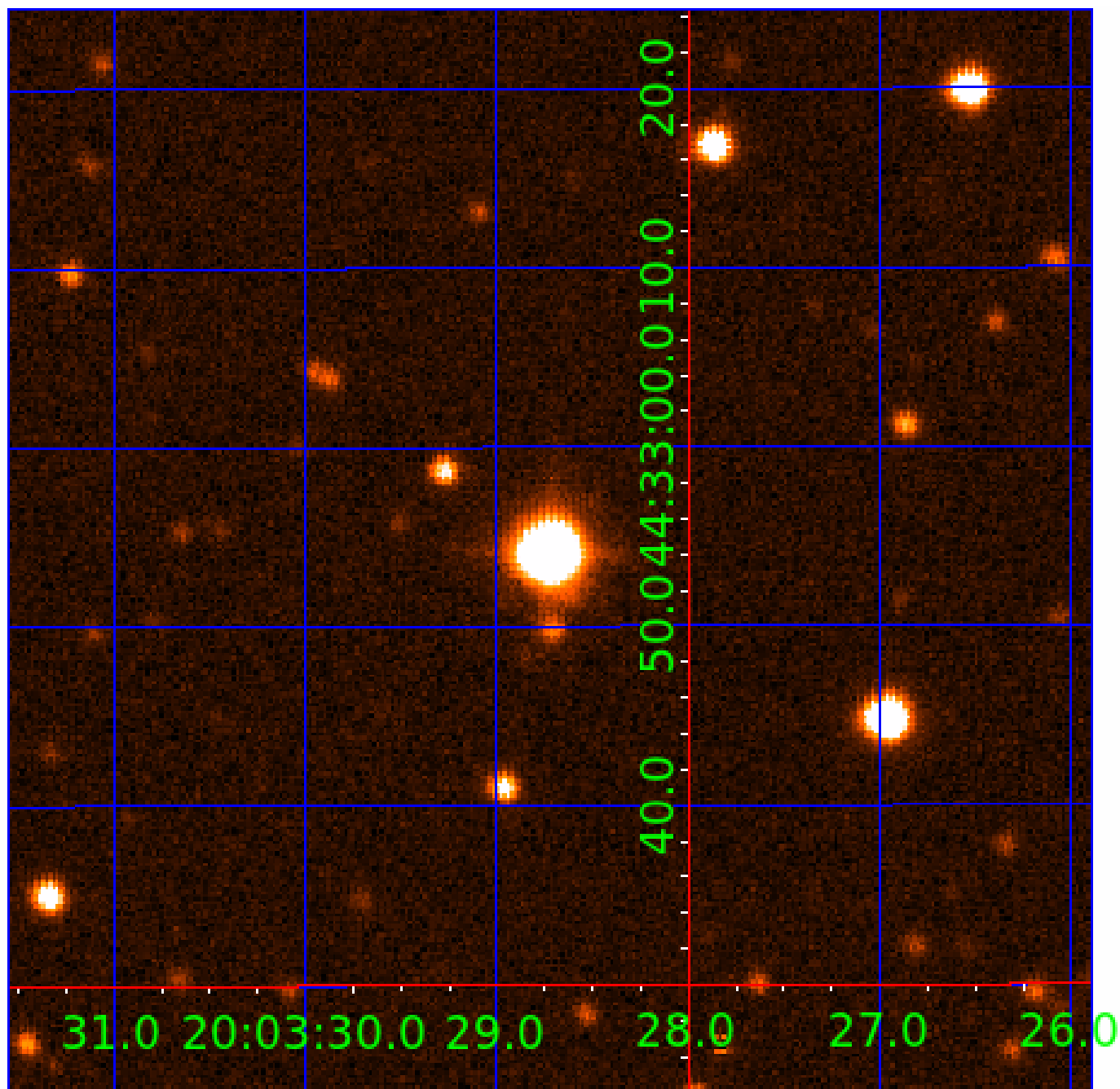


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008525214

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})
008525214-01	OBS	No	0.560070	131.590411	33.0	2.433	10.7	10.3	1.54	7574	1.04	29082.85
008525214-02	OBS	No	0.560056	131.765693	51.1	3.865	14.0	12.0	1.54	7574	1.13	29083.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008525214-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008525214-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—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.

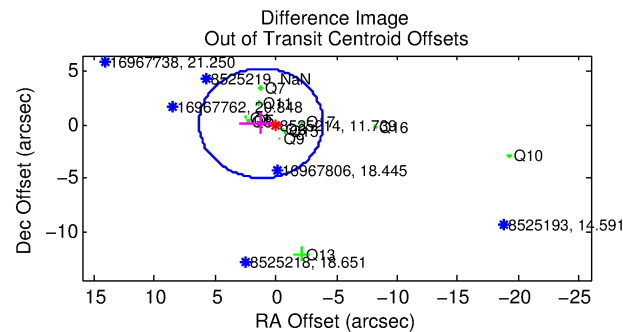
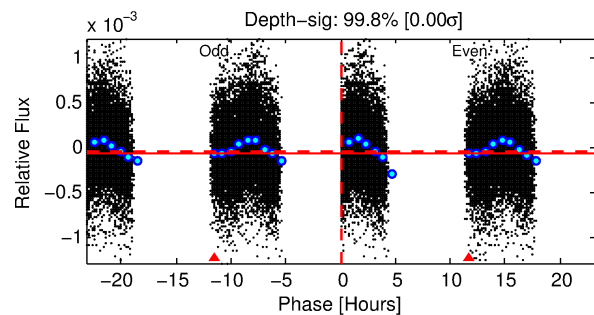
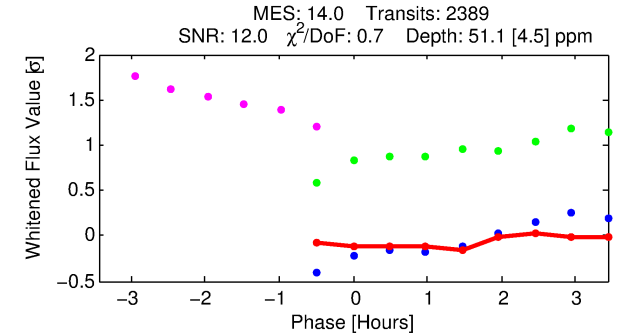
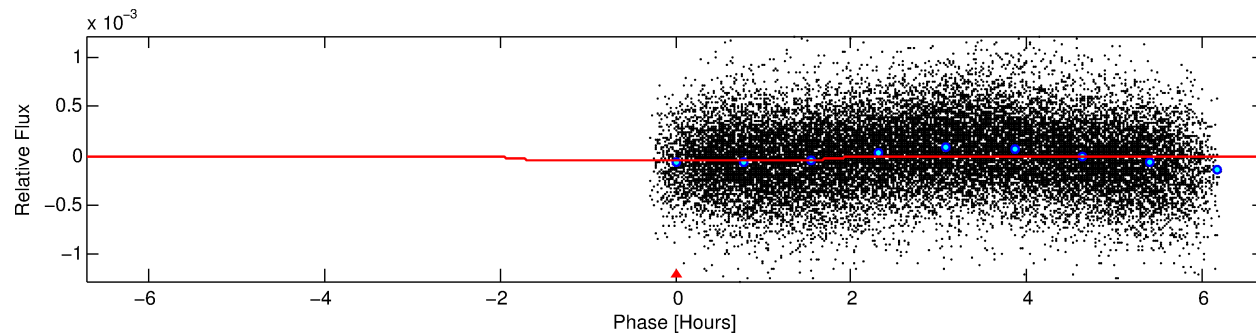
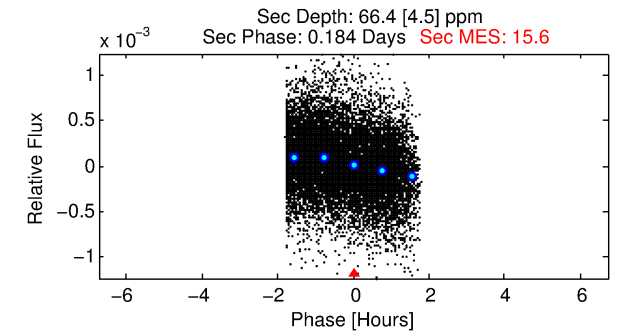
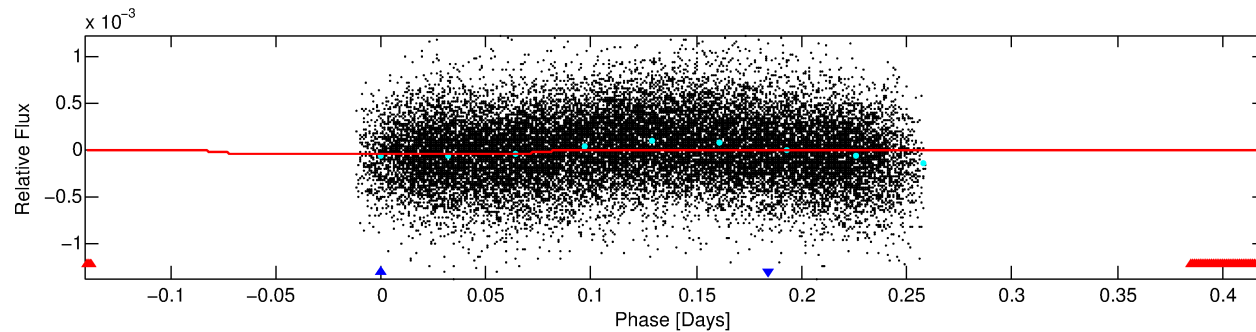
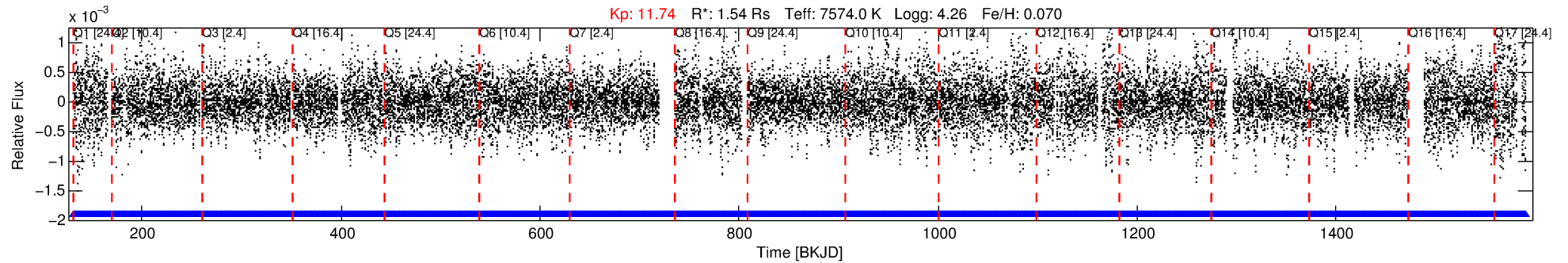
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008525214-02

No Significant Match Found

DV One-Page Summary

KIC: 8525214 Candidate: 2 of 2 Period: 0.560 d



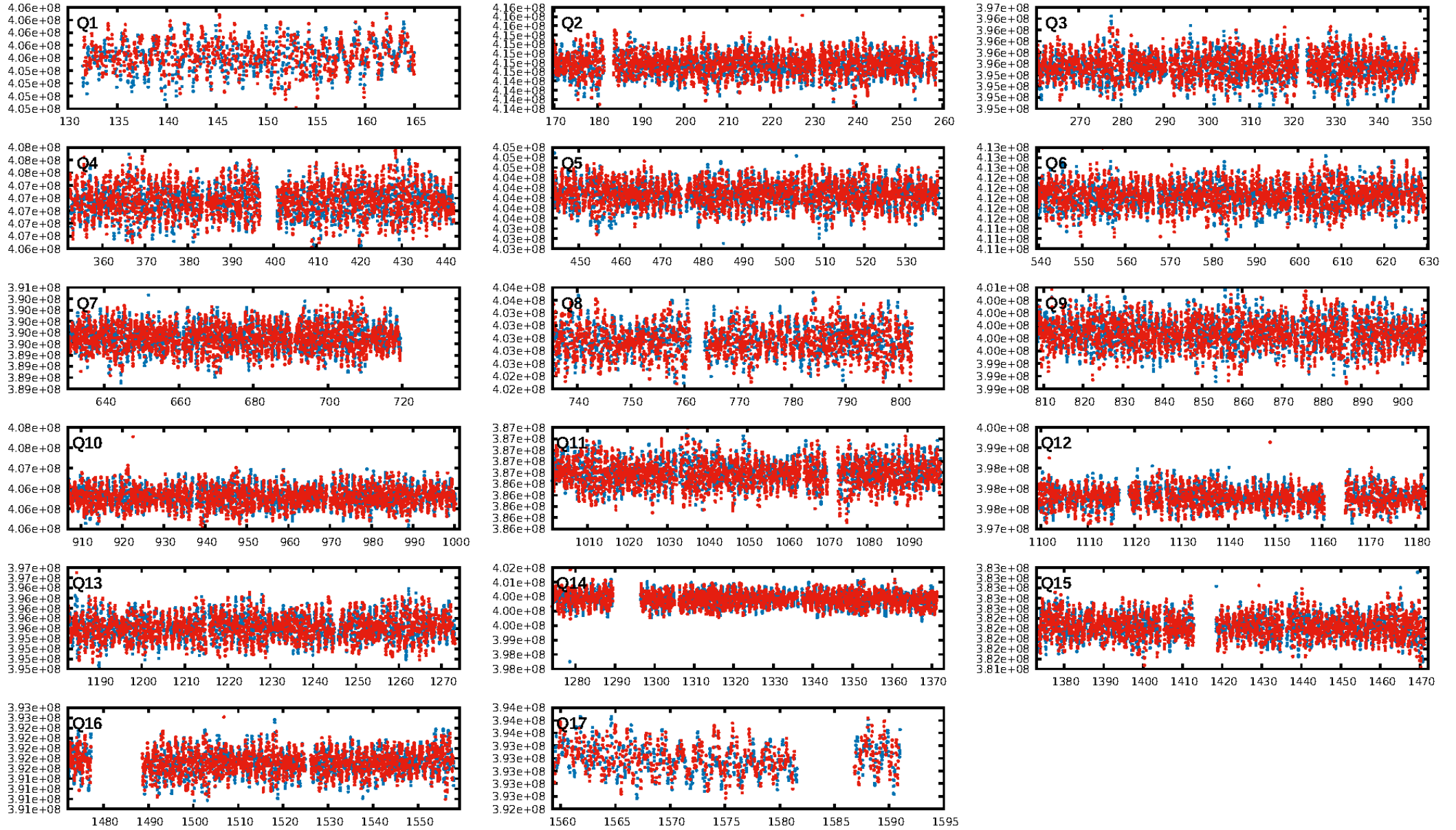
DV Fit Results:

Period = 0.56006 [0.00001] d
Epoch = 131.7657 [0.0034] BKJD
Rp/R* = 0.0067 [0.0021]
a/R* = 1.26 [0.92]
b = 0.30 [5.99]
Seff = 29083.84 [13841.96]
Teff = 3330 [396] K
Rp = 1.13 [0.56] Re
a = 0.0155 [0.0048] AU
Ag = 6.92 [5.40] [1.10σ]
Teffp = 8351 [1383] K [3.49σ]

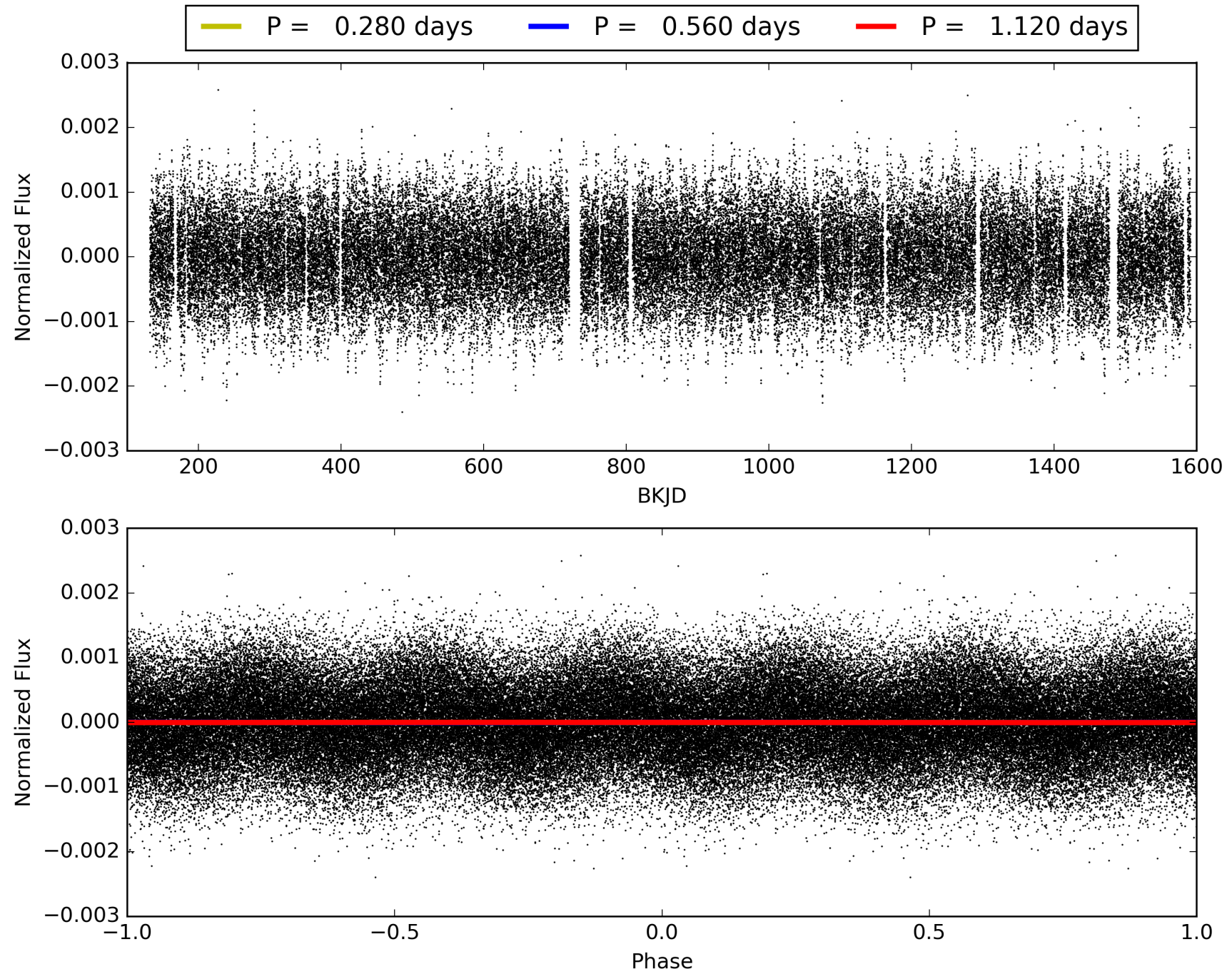
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.00e+00
RollingBand-fgt: 1.00 [2281/2281]
GhostDiagnostic-chr: 3.827
Centroid-sig: 76.4%
Centroid-so: 0.729 arcsec [2.73σ]
OotOffset-rm: 1.229 arcsec [0.72σ]
KicOffset-rm: 1.133 arcsec [0.67σ]
OotOffset-st: 1/4/2/5 [12]
KicOffset-st: 1/4/2/5 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 008525214-02, PDC Light Curves

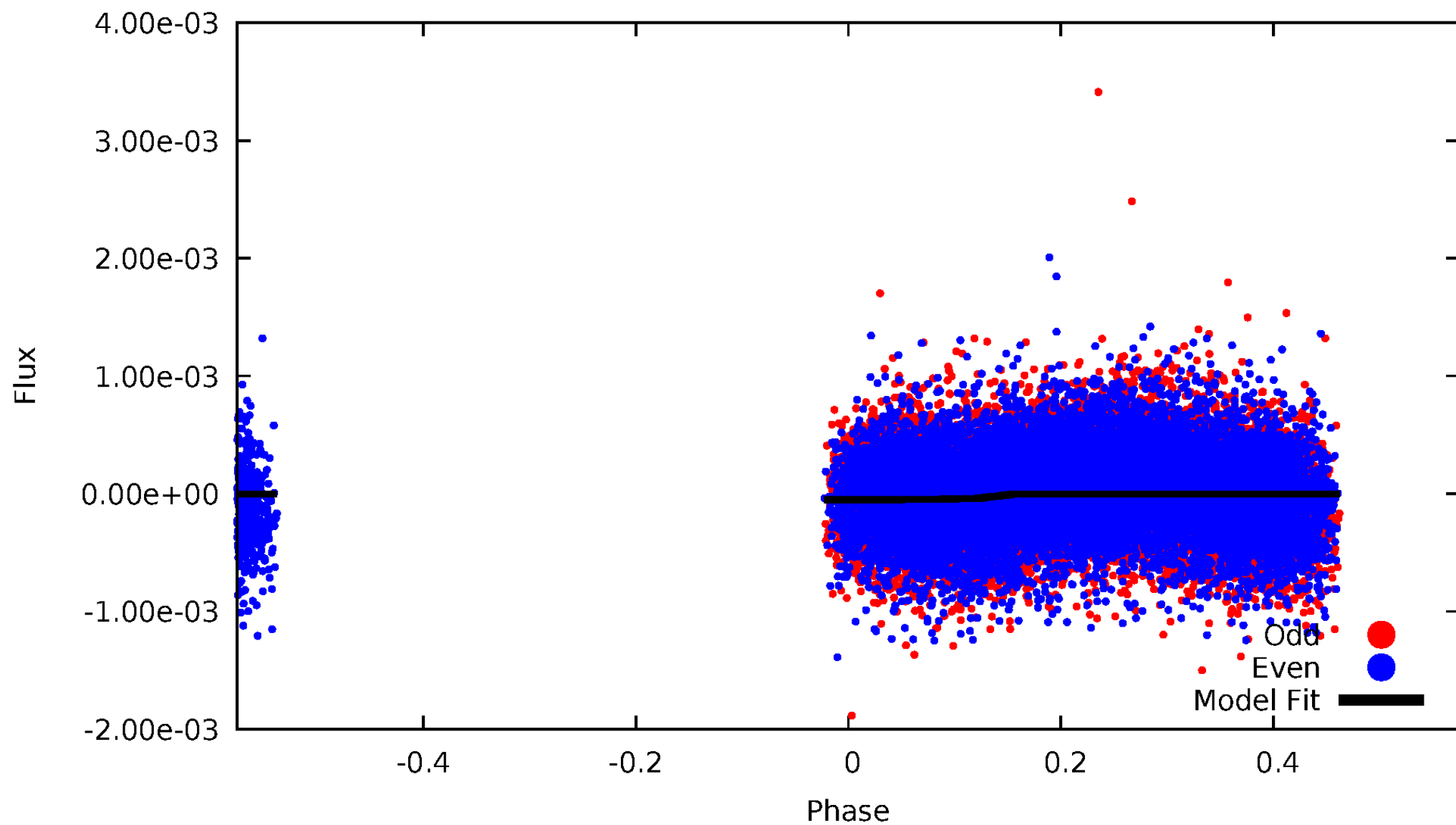


TCE 008525214-02



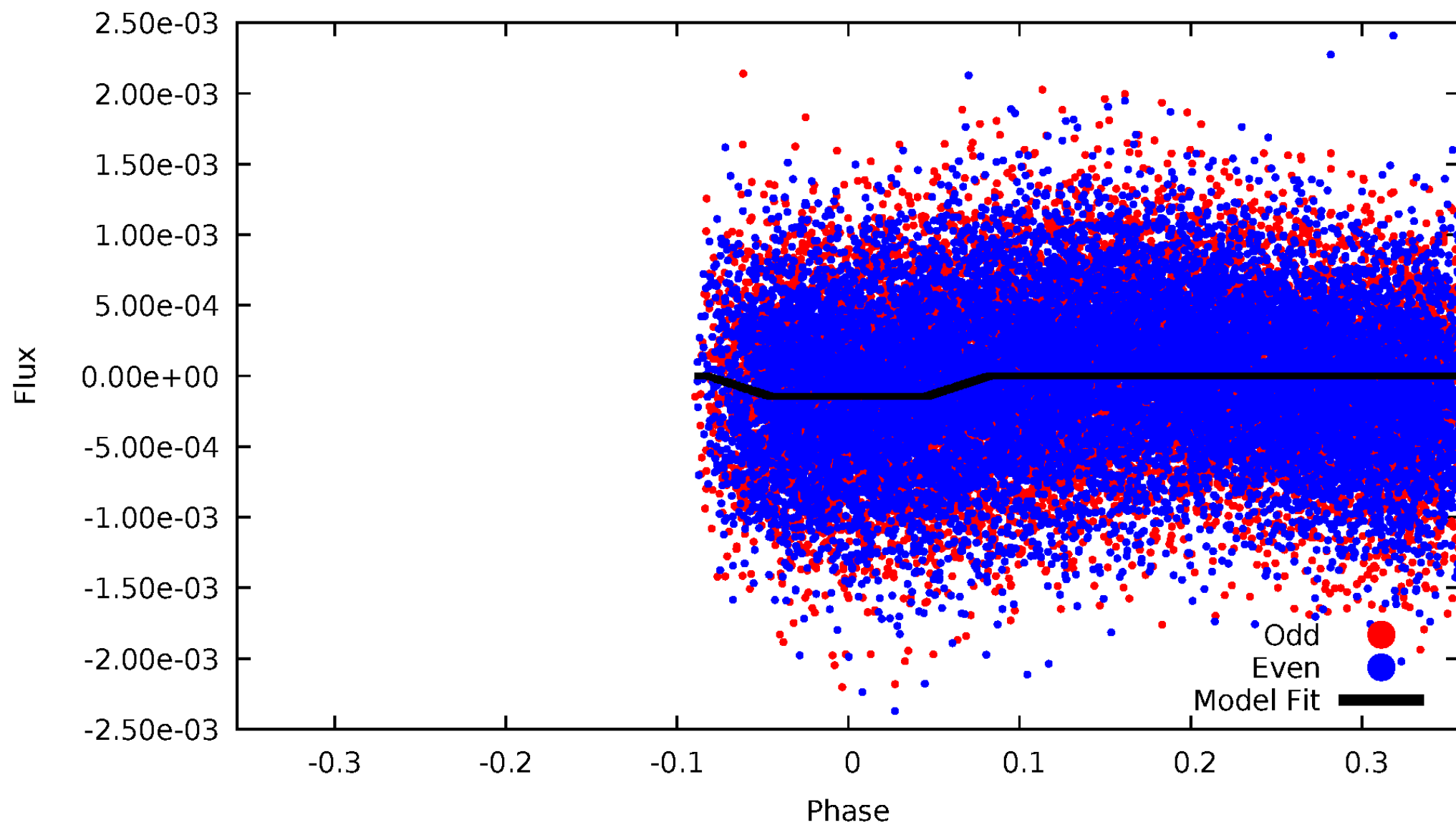
DV Odd/Even

TCE 008525214-02



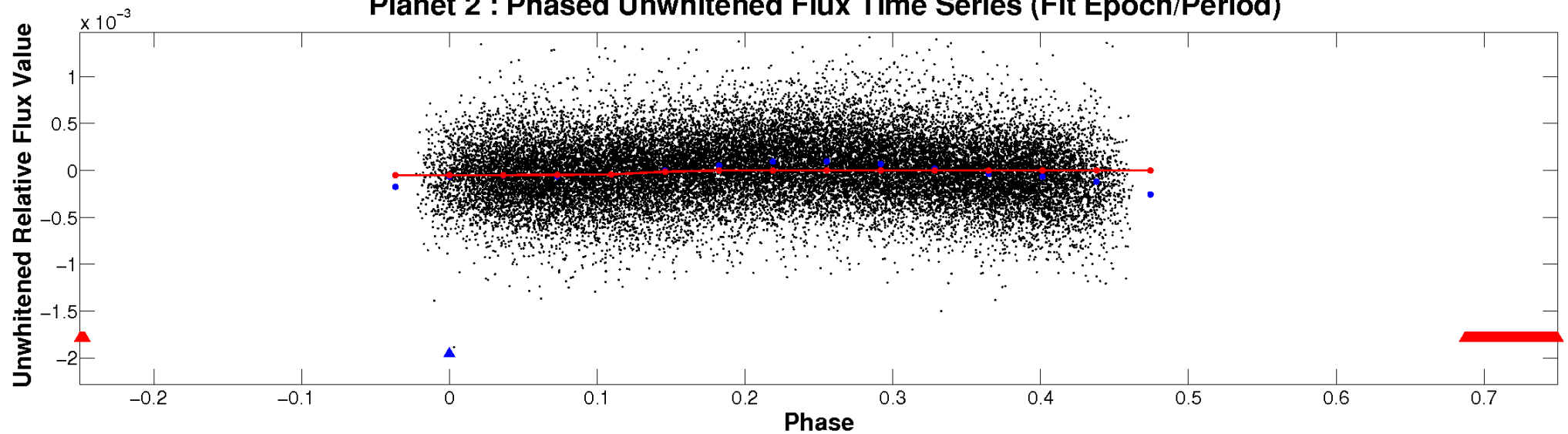
ALT Odd/Even

TCE 008525214-02

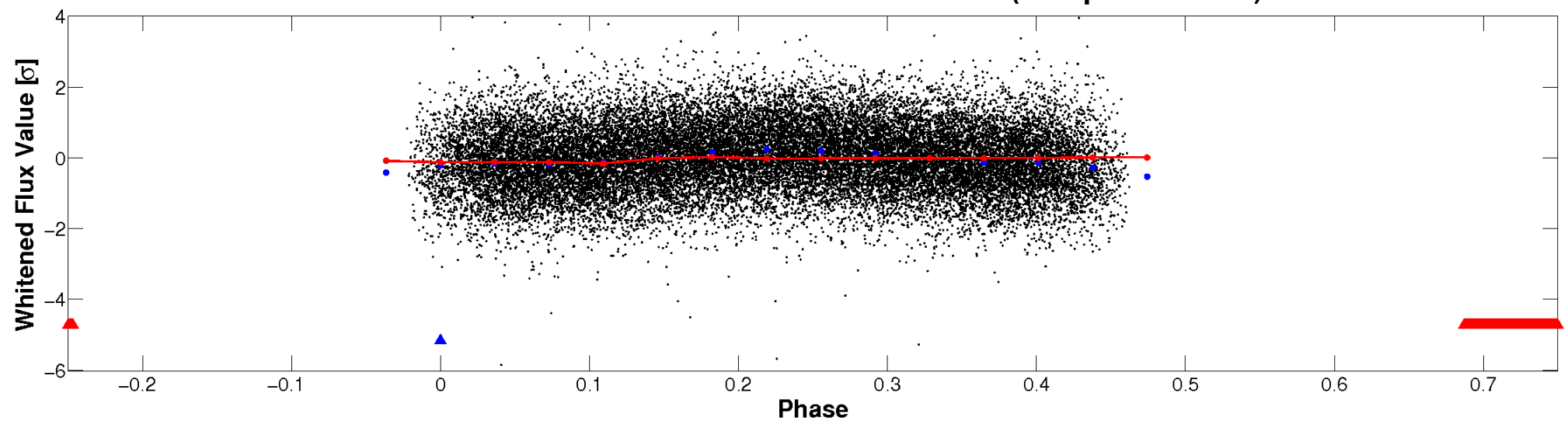


Non-Whitened Vs. Whitened Light Curve

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

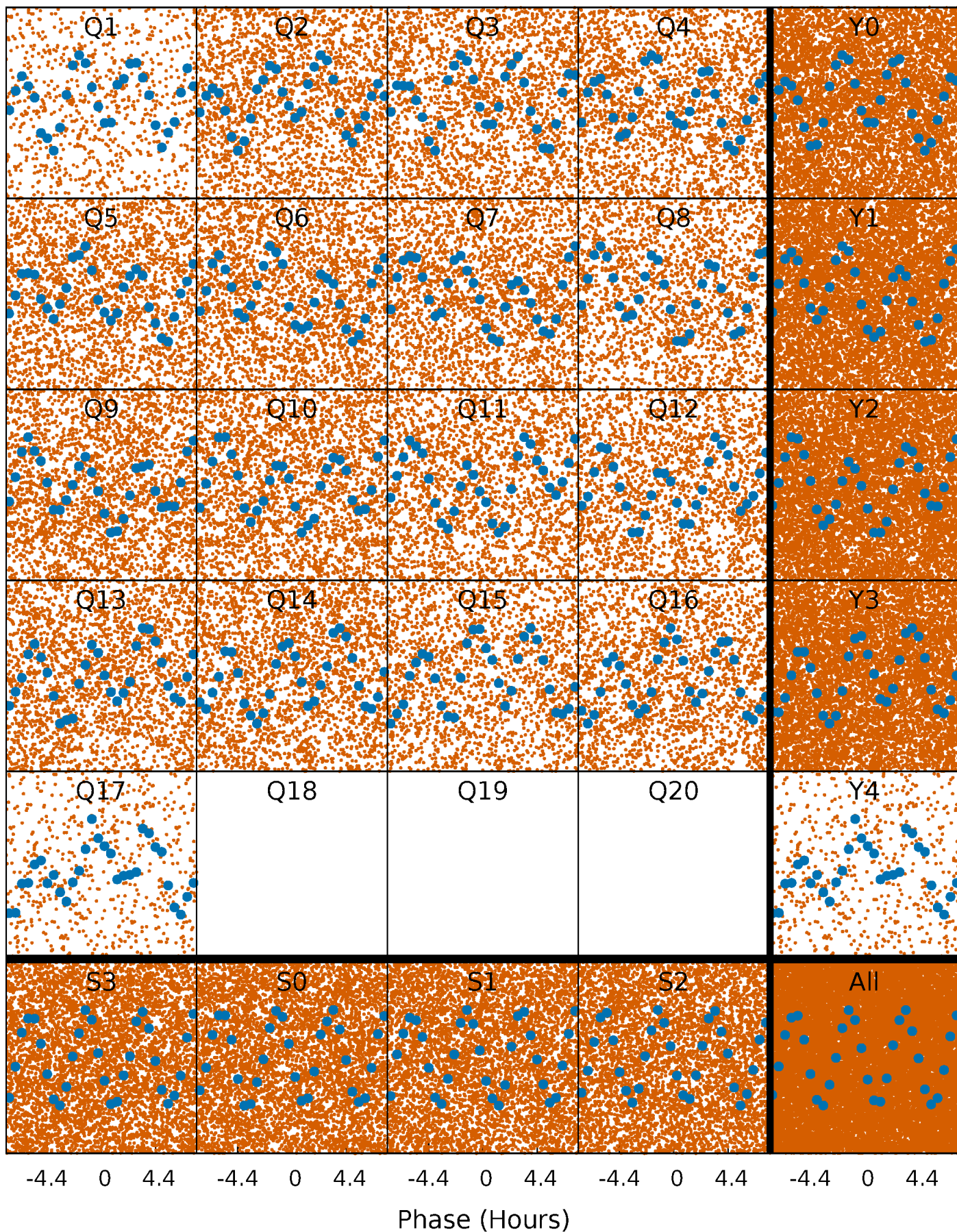


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



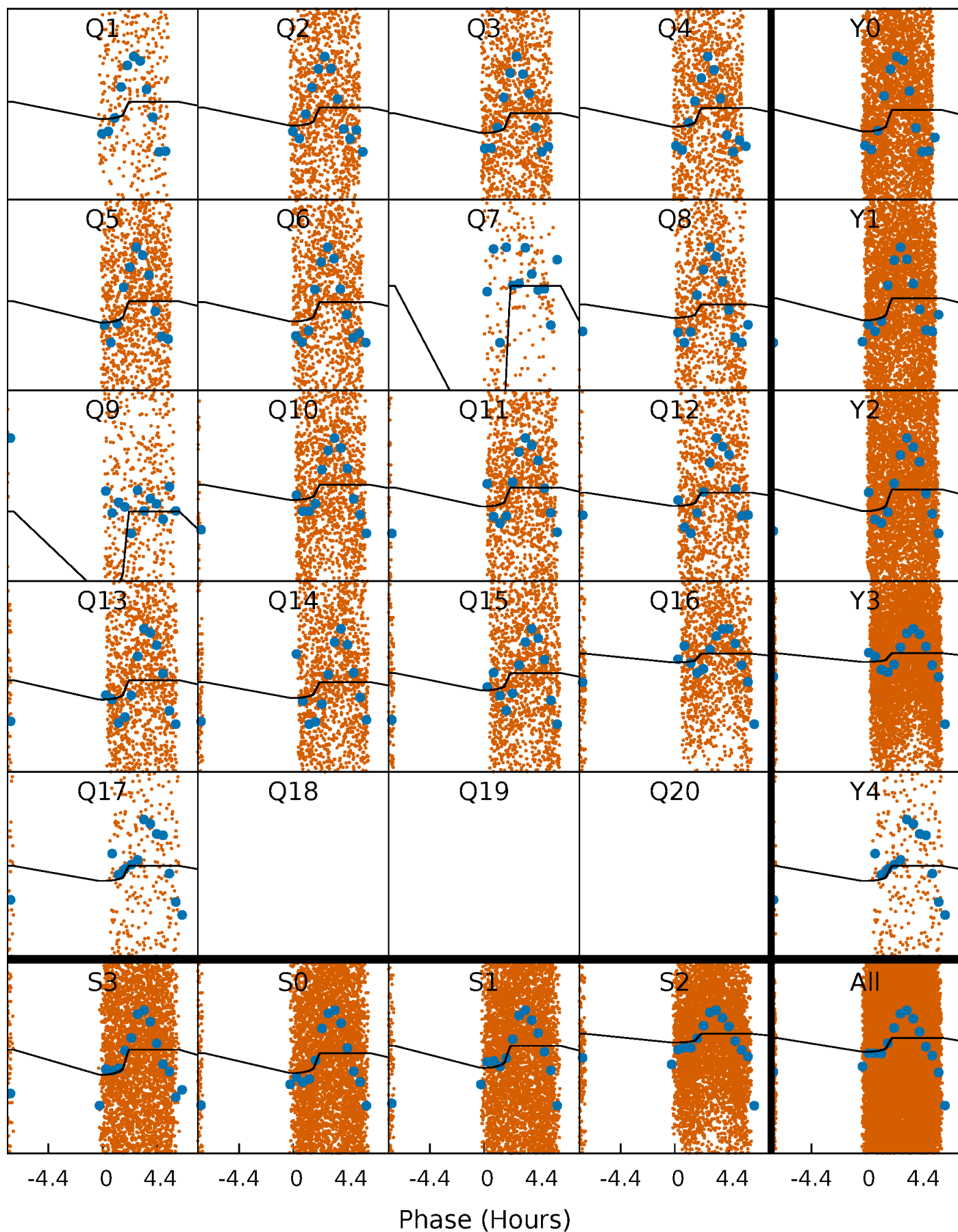
PDC Quarter-Phased Transit Curves

TCE 008525214-02 P= 0.560056 Days $T_0=131.765693$ (BKJD)



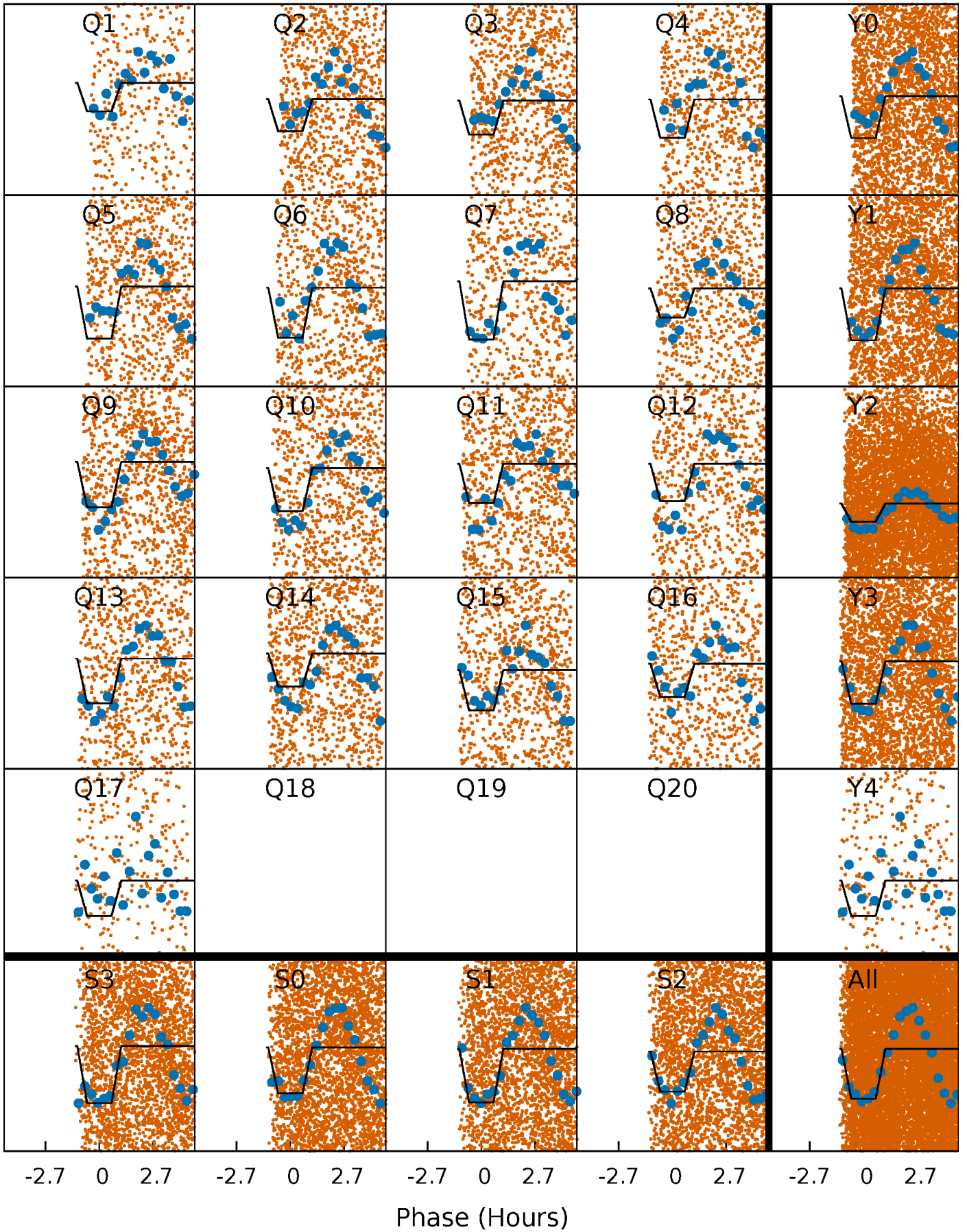
DV Quarter-Phased Transit Curves

TCE 008525214-02 P= 0.560056 Days $T_0=131.765693$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

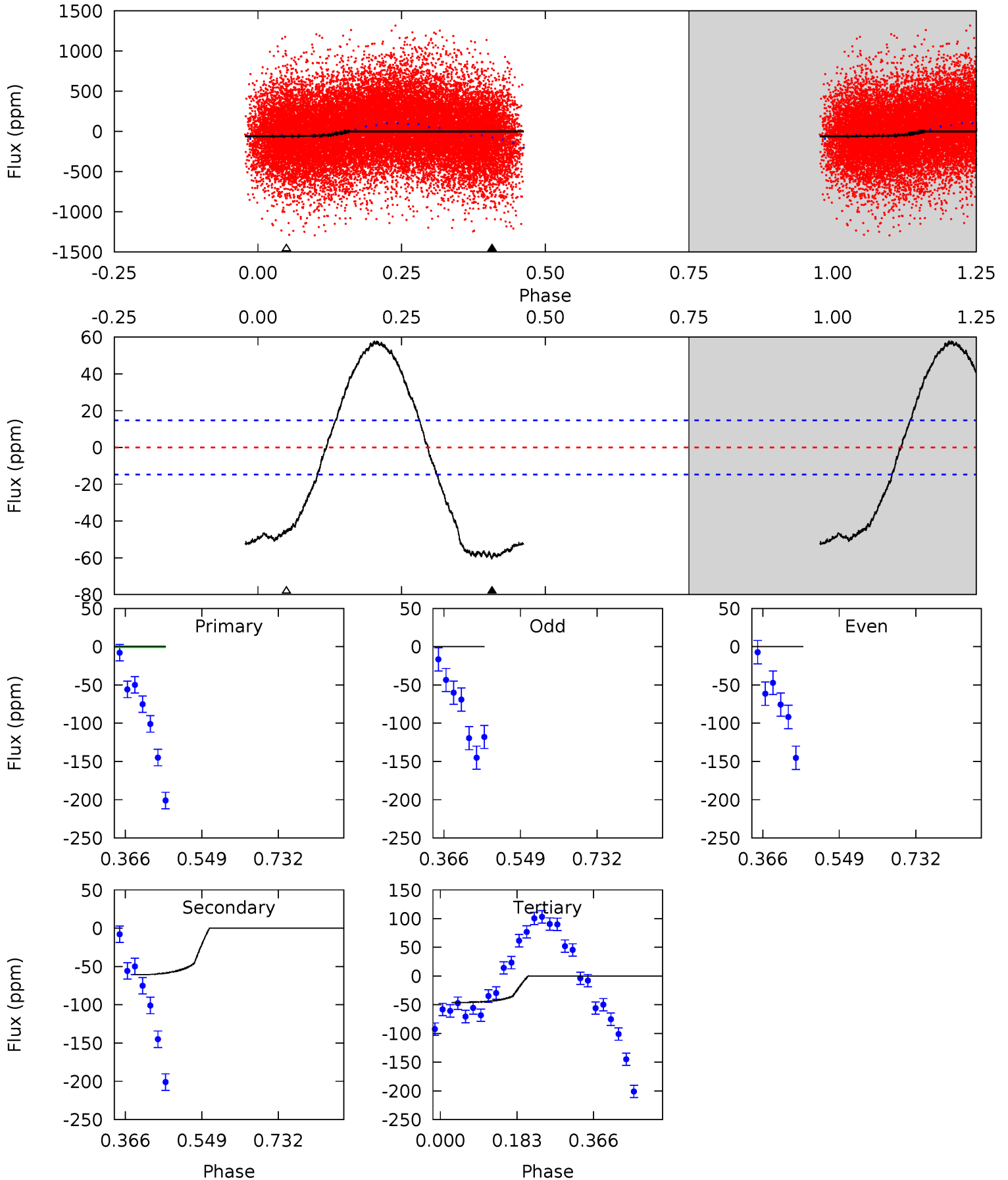
TCE 008525214-02 $P = 0.560083$ Days $T_0 = 131.770946$ (BKJD)



DV Model-Shift Uniqueness Test

008525214-02, P = 0.560056 Days, E = 131.205637 Days

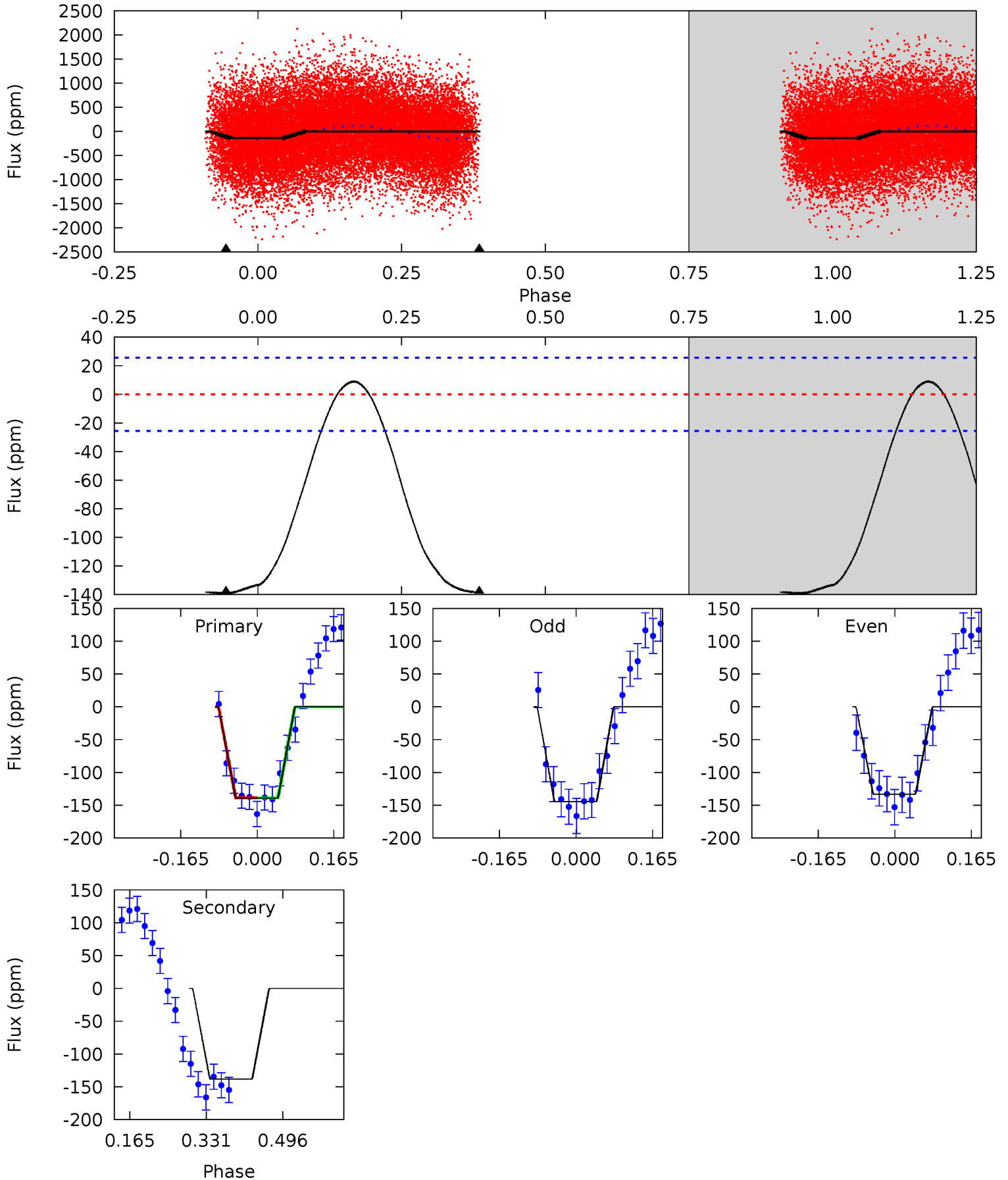
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	18.3	13.9	0	4.44	1.33	11.5	4.36	18.3	4.36	18.3	0.41	1.15	0.49	2.65



Alt Model-Shift Uniqueness Test

008525214-02, P = 0.560083 Days, E = 131.210863 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.2	24.1	0	0	4.46	1.39	1.87	24.2	24.2	24.1	24.1	0.97	1.04	0.06	0.01



Stellar Parameters For KIC 008525214

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7574^{+211}_{-316}	$4.264^{+0.060}_{-0.240}$	$0.070^{+0.150}_{-0.400}$	$1.544^{+0.581}_{-0.194}$	$1.598^{+0.211}_{-0.211}$	$0.611^{+0.195}_{-0.342}$
	+3%/-4%	+1%/-6%	+214%/-571%	+38%/-13%	+13%/-13%	+32%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008525214-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-61 ± 3	$1.19^{+0.47}_{-0.37}$	4748^{+406}_{-253}	8036^{+2494}_{-1286}	$5.548^{+6.061}_{-2.655}$
Alt.	-138 ± 6	$2.12^{+0.53}_{-0.46}$	4748^{+406}_{-260}	7324^{+1041}_{-787}	$4.003^{+2.419}_{-1.344}$

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

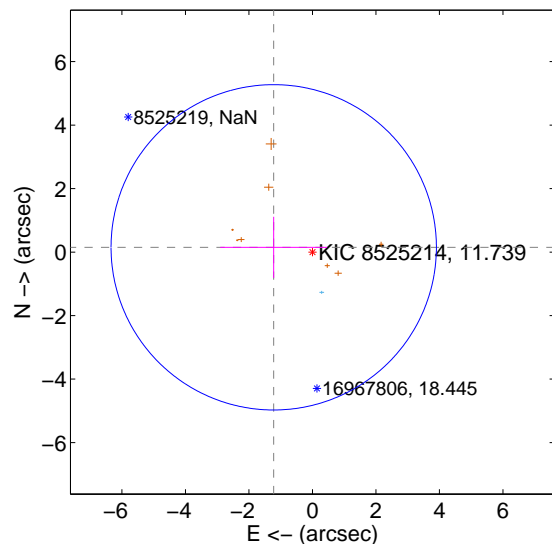
Supplemental centroid analysis for 008525214-02. **Kepler magnitude: 11.74.** Transit SNR 12.02

There are 1 quarters with good PRF difference image offsets

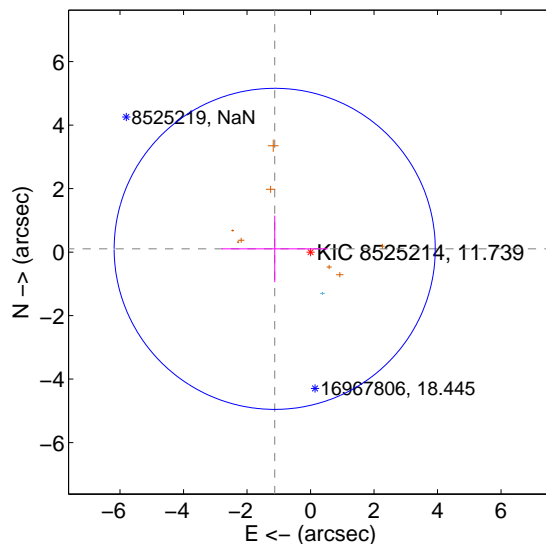
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.229 ± 1.708	0.72	1.219 ± 1.684	0.150 ± 0.962
PRF-fit source offset from KIC position	1.133 ± 1.685	0.67	1.128 ± 1.671	0.102 ± 1.047
photometric centroid source offset	0.73 ± 0.27	2.73	-0.66 ± 0.28	-0.31 ± 0.20

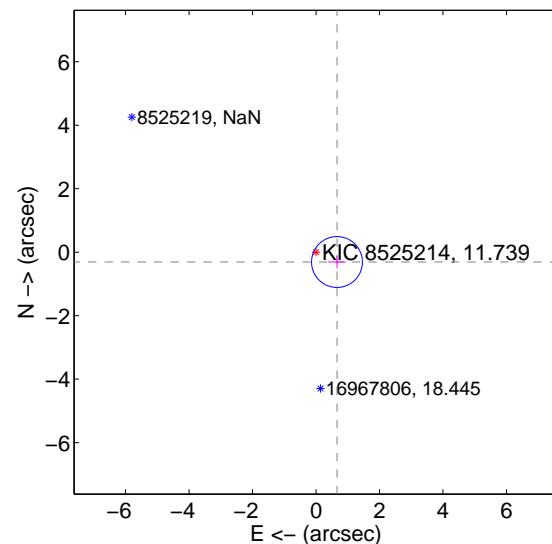
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

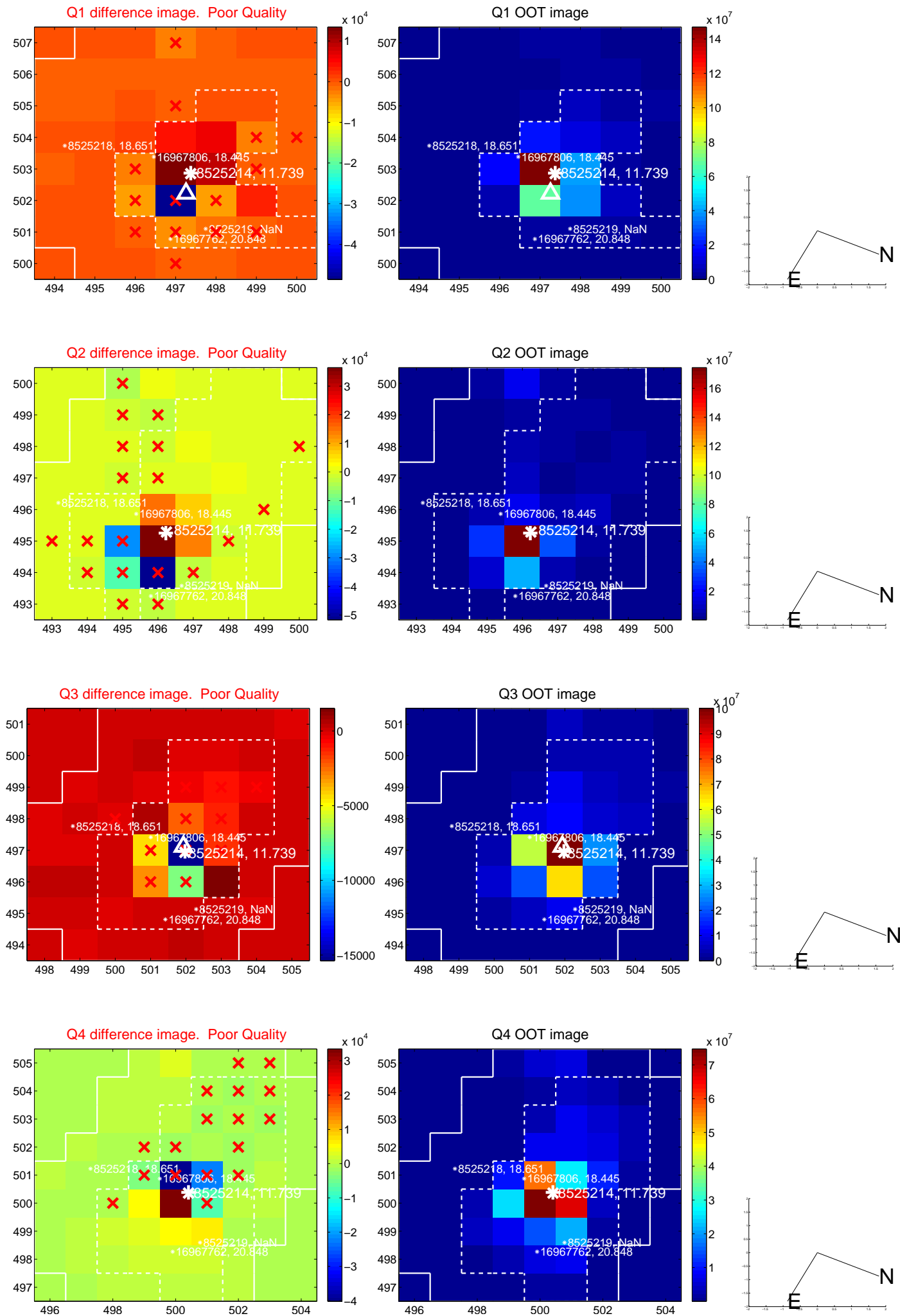


offset from photometric centroids

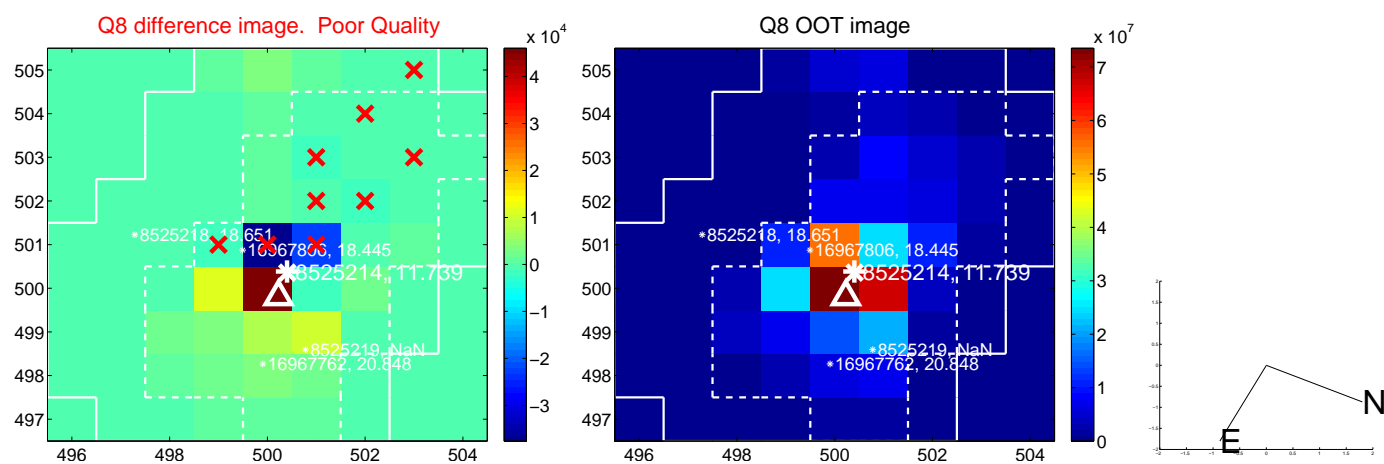
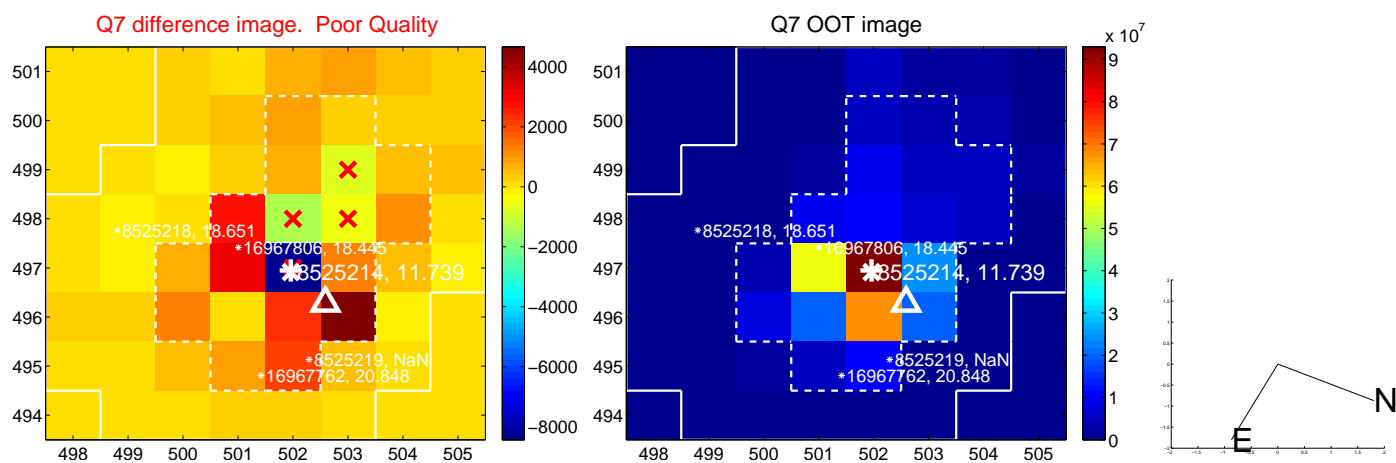
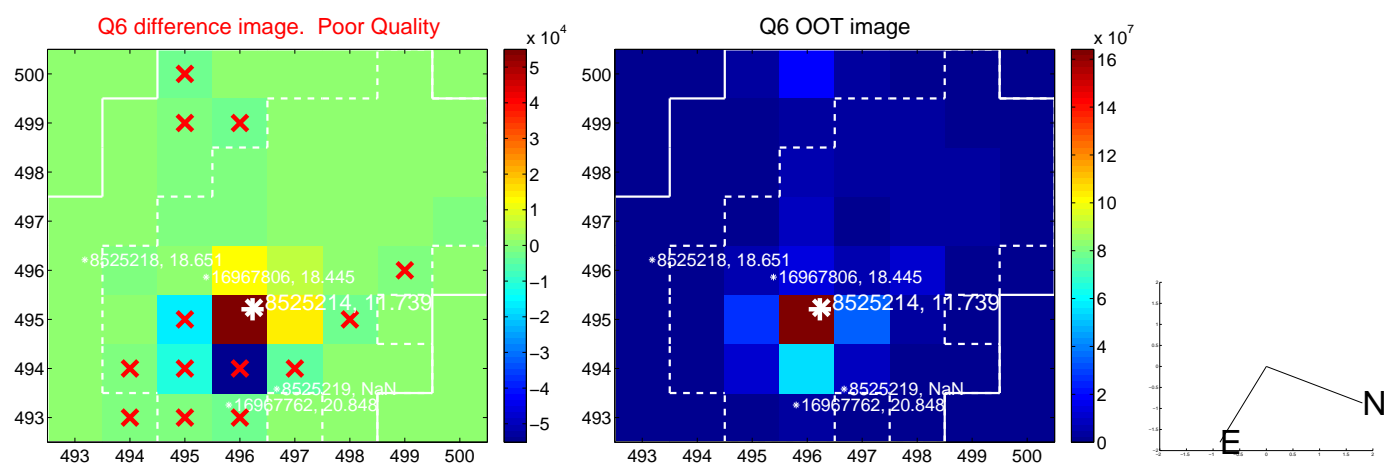
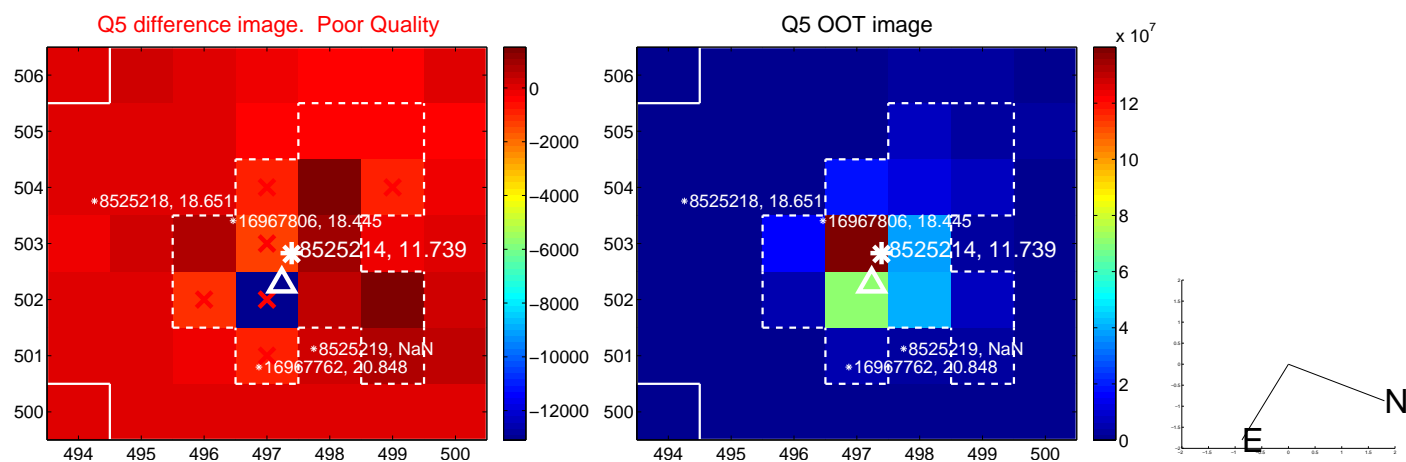


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

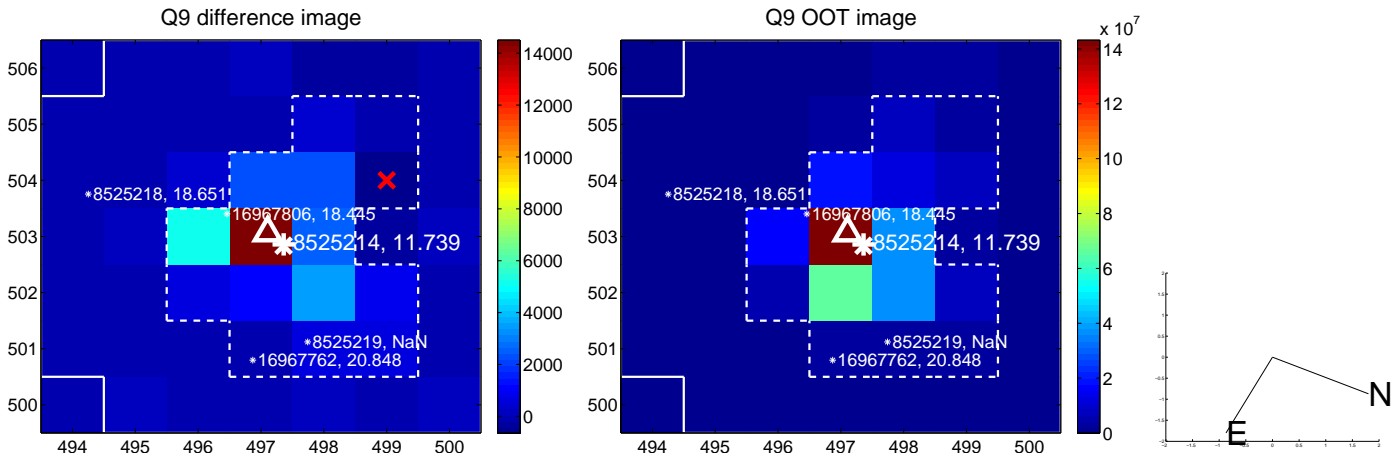
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



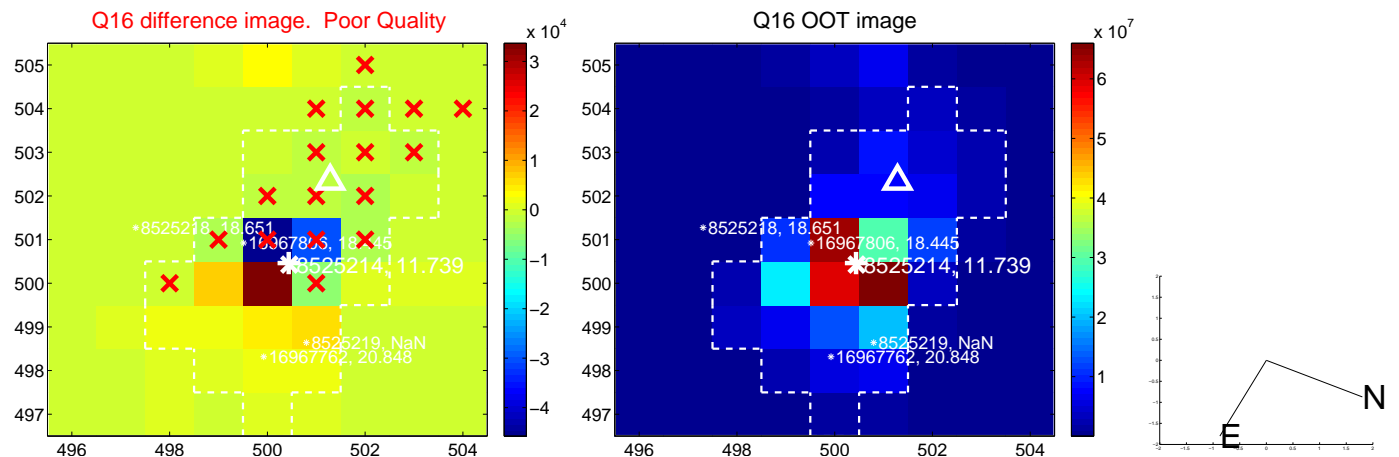
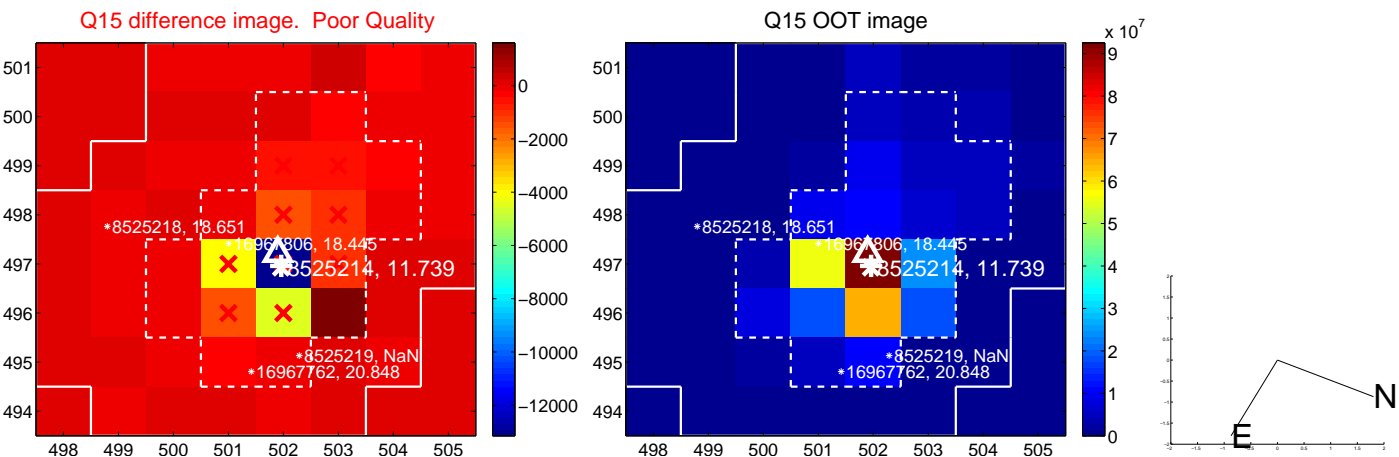
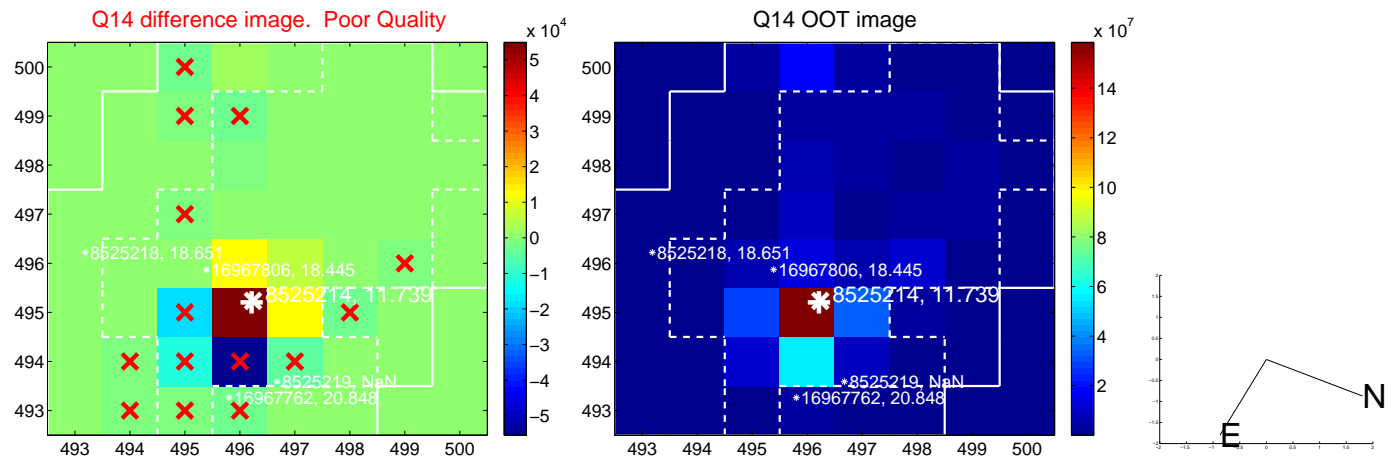
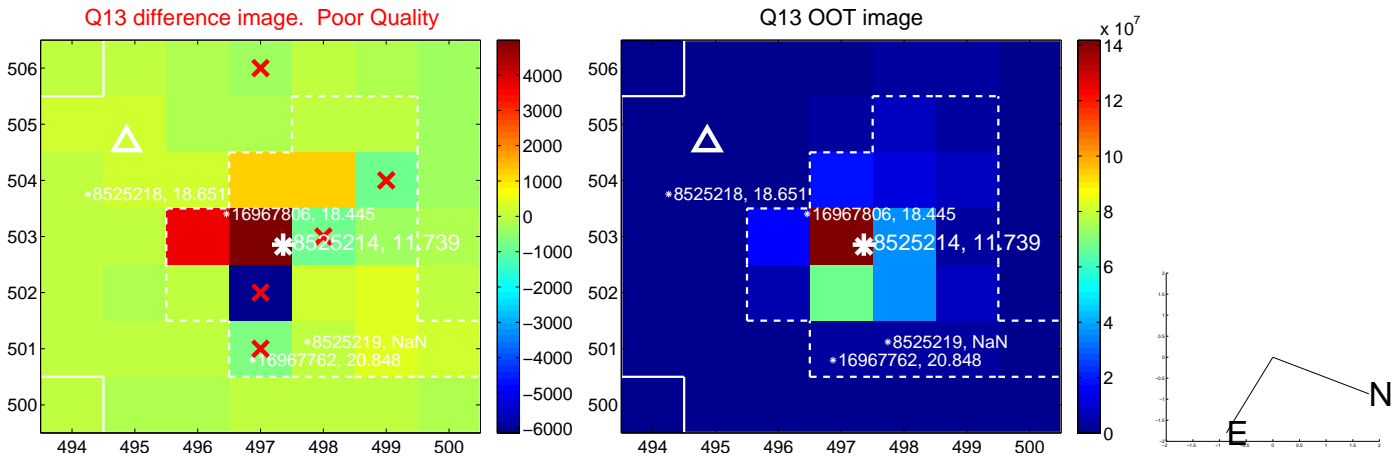
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



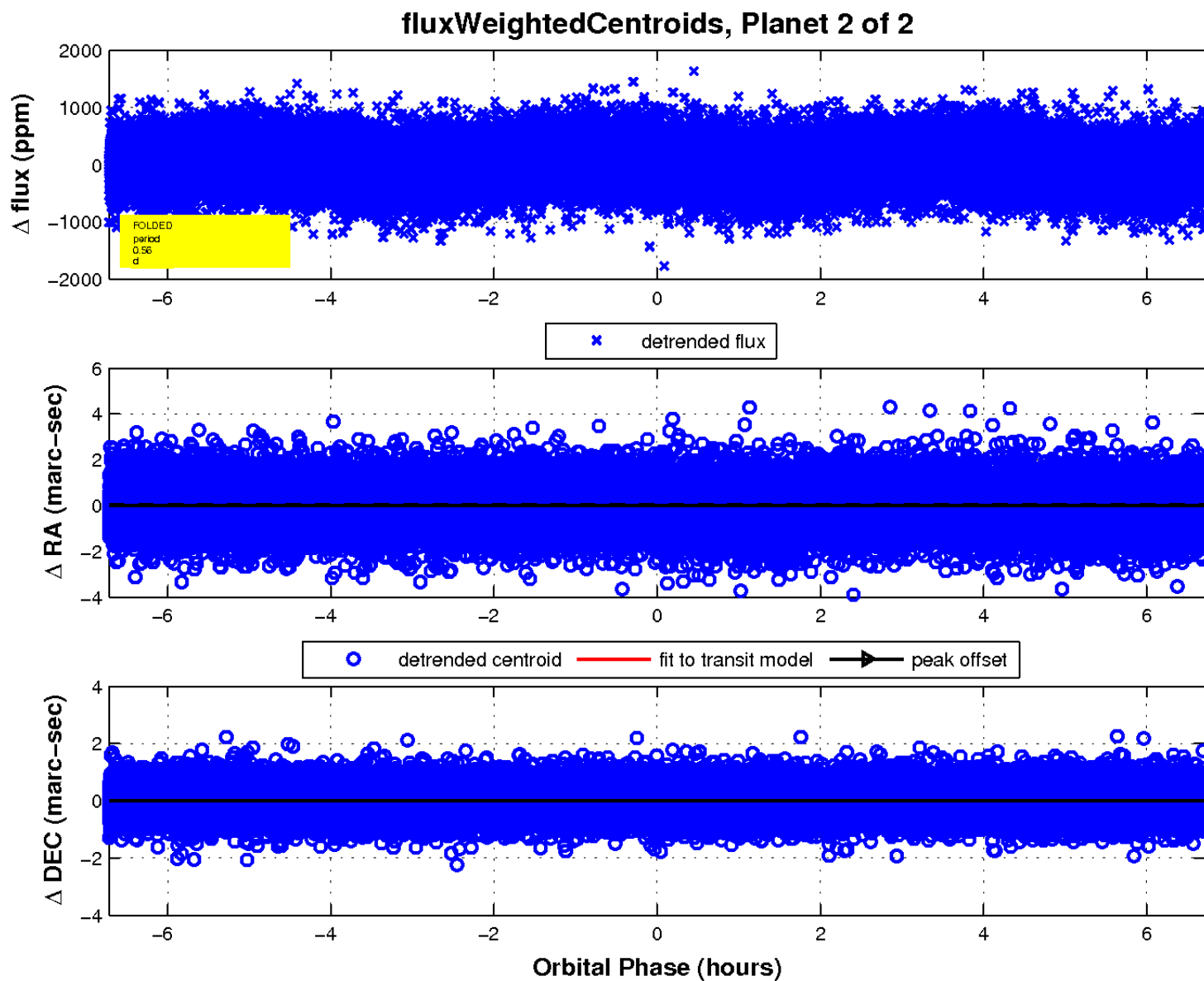
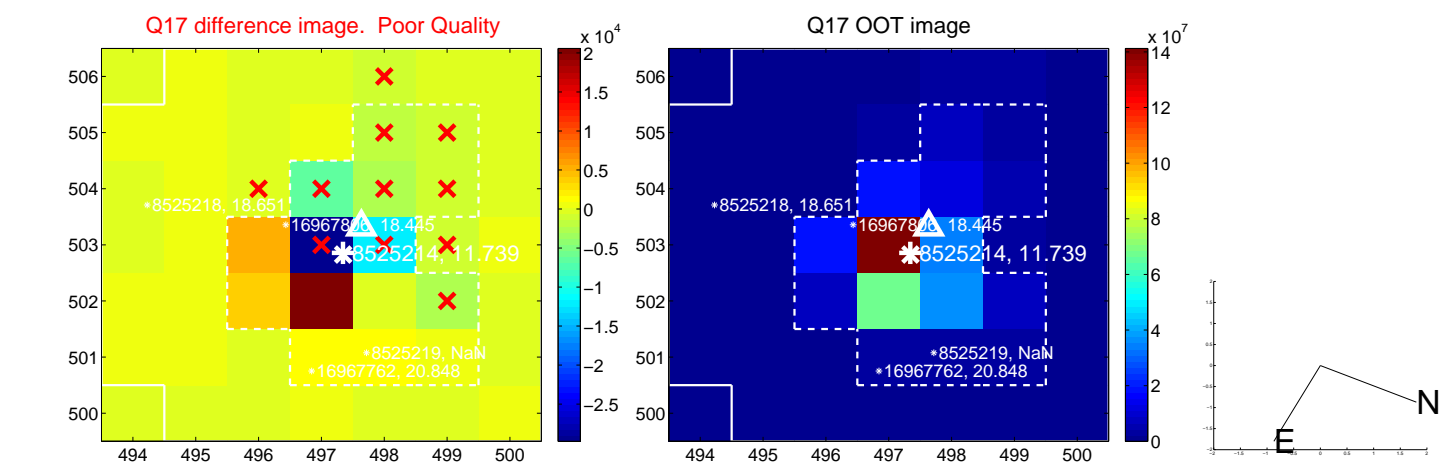
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

