

KIC 007138415

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})
007138415-01	OBS	No	0.826798	132.304866	172.0	1.042	9.1	10.8	2.98	8665	4.57	95660.37
007138415-02	OBS	No	0.578752	131.823007	309.0	0.962	12.8	20.2	2.98	8665	6.11	153912.95
007138415-03	OBS	No	0.578748	131.989942	332.0	0.888	12.2	21.2	2.98	8665	6.36	153914.29
007138415-04	OBS	No	0.578750	131.573494	45.7	1.500	12.1	-1.0	2.98	8665	2.06	153913.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007138415-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007138415-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
007138415-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007138415-04	OBS	FP	0.00	1	0	0	0	LPP_DV—NO_FITS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

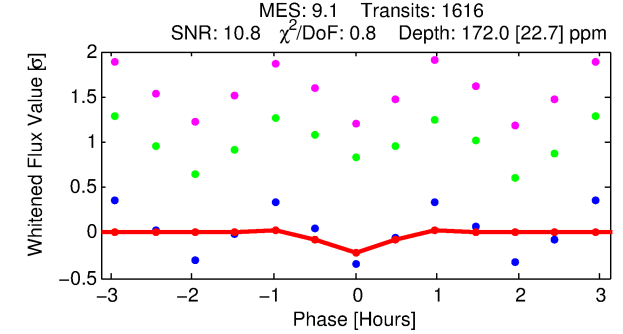
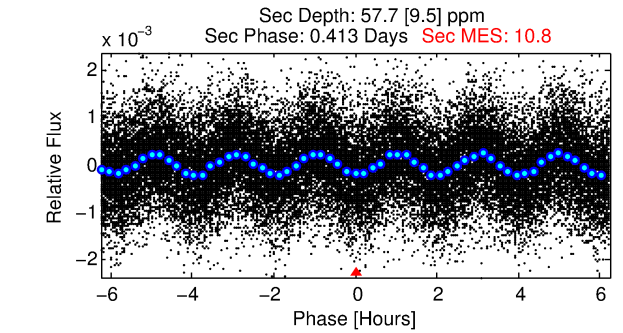
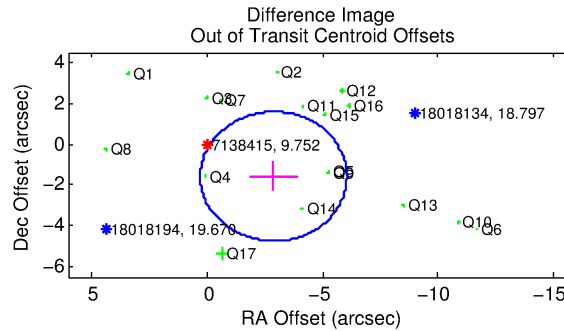
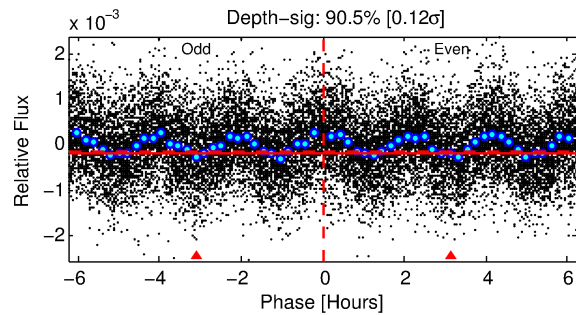
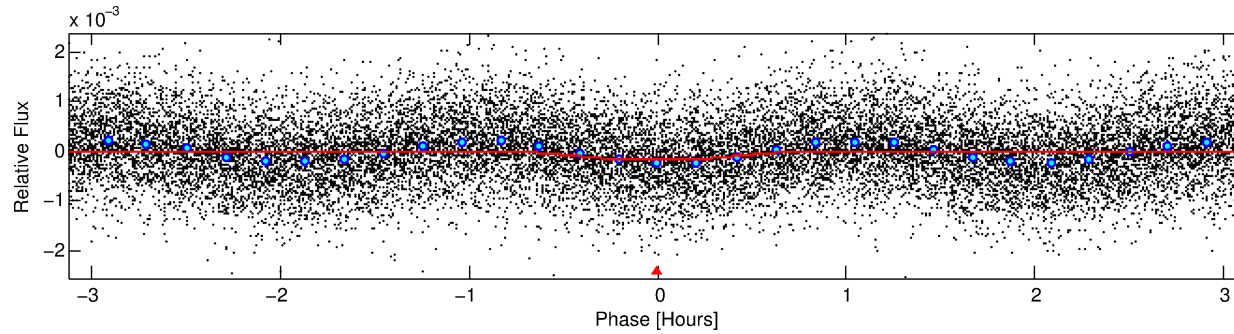
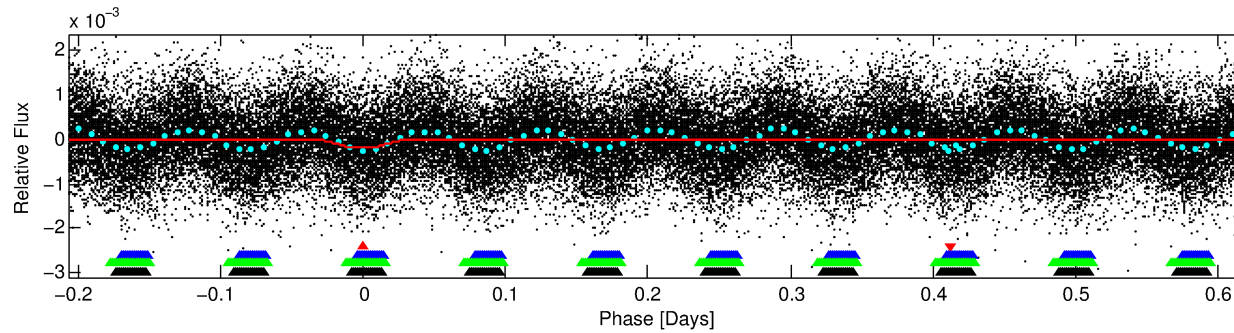
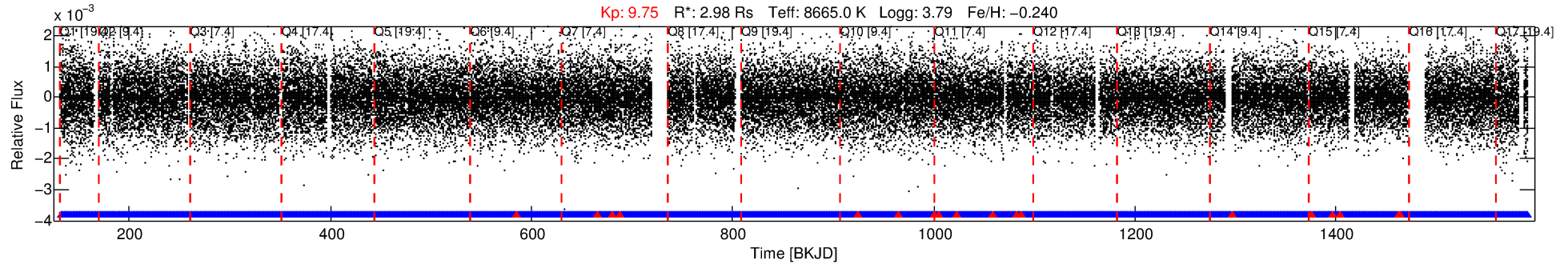
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007138415-01

No Significant Match Found

DV One-Page Summary

KIC: 7138415 Candidate: 1 of 4 Period: 0.827 d



DV Fit Results:

Period = 0.82680 [0.00001] d
Epoch = 132.3049 [0.0014] BKJD
 $R/R^* = 0.0140$ [0.0060]
 $a/R^* = 2.97$ [7.58]
 $b = 0.90$ [0.61]
 $\text{Seff} = 95660.37$ [64532.30]
 $T_{\text{eq}} = 4484$ [756] K
 $R_p = 4.56$ [2.74] Re
 $a = 0.0217$ [0.0088] AU
 $A_g = 0.72$ [0.78] [-0.36 σ]
 $T_{\text{eff}} = 6379$ [1423] K [1.18 σ]

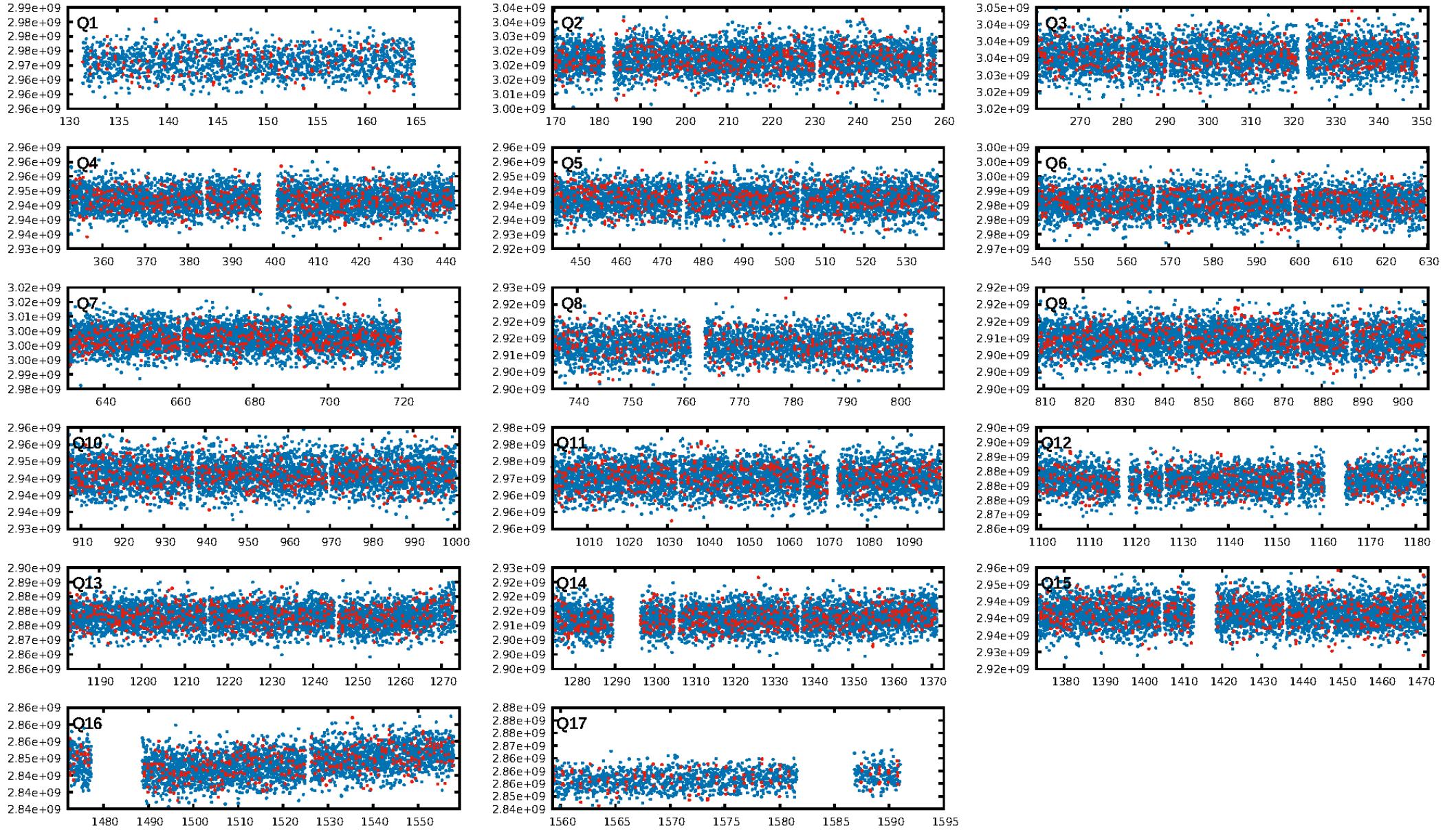
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.20 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1525/1543]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 0.224 arcsec [0.87 σ]
OotOffset-rm: 3.286 arcsec [3.11 σ]
KicOffset-rm: 2.932 arcsec [2.73 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

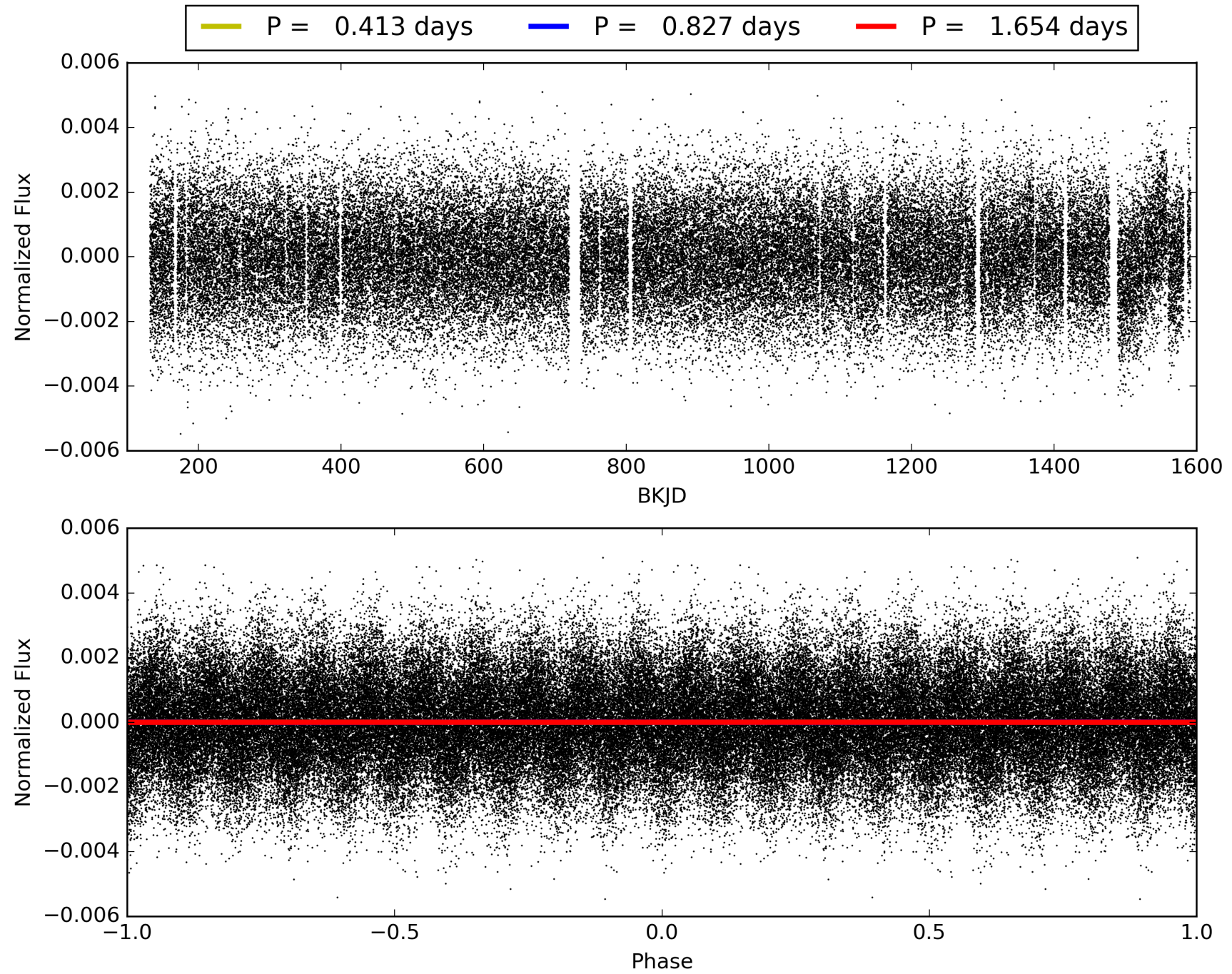
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:01:23 Z

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

TCE 007138415-01, PDC Light Curves

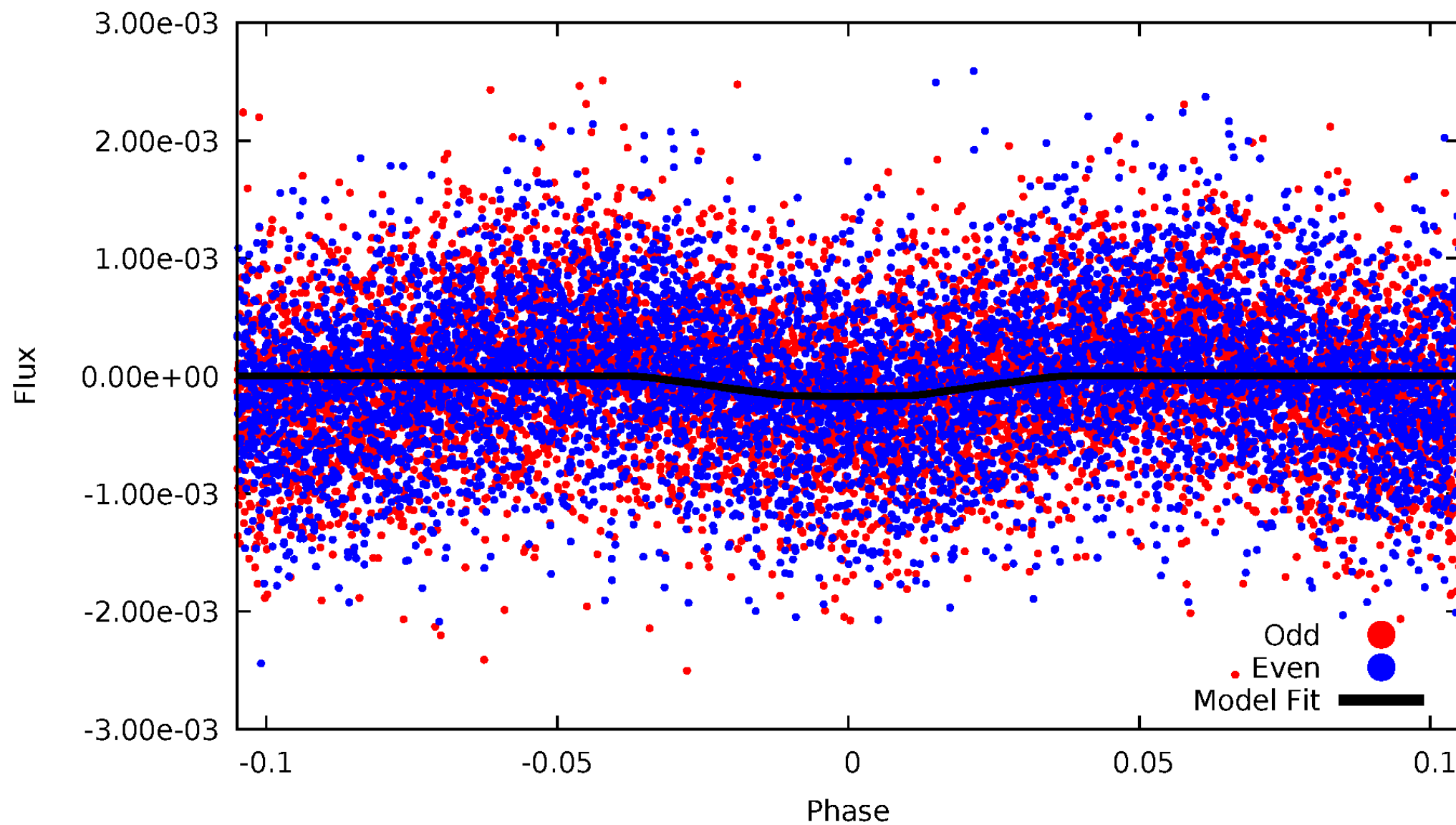


TCE 007138415-01



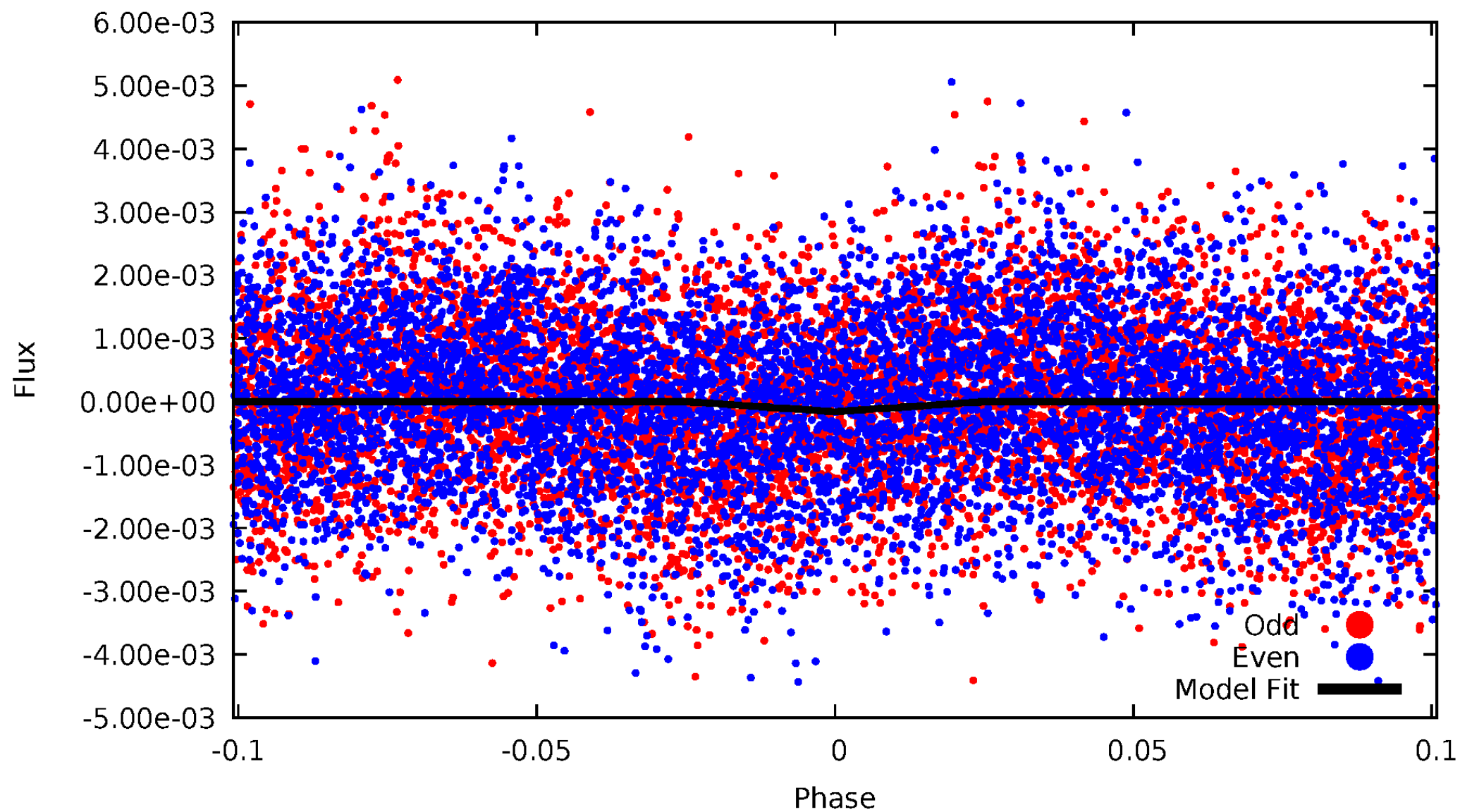
DV Odd/Even

TCE 007138415-01



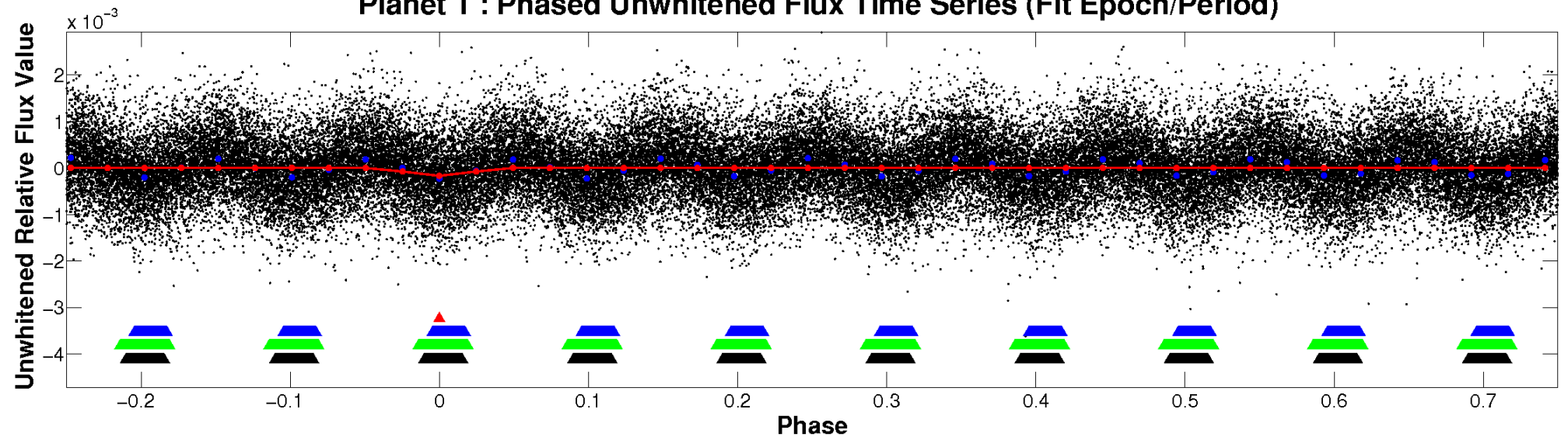
ALT Odd/Even

TCE 007138415-01

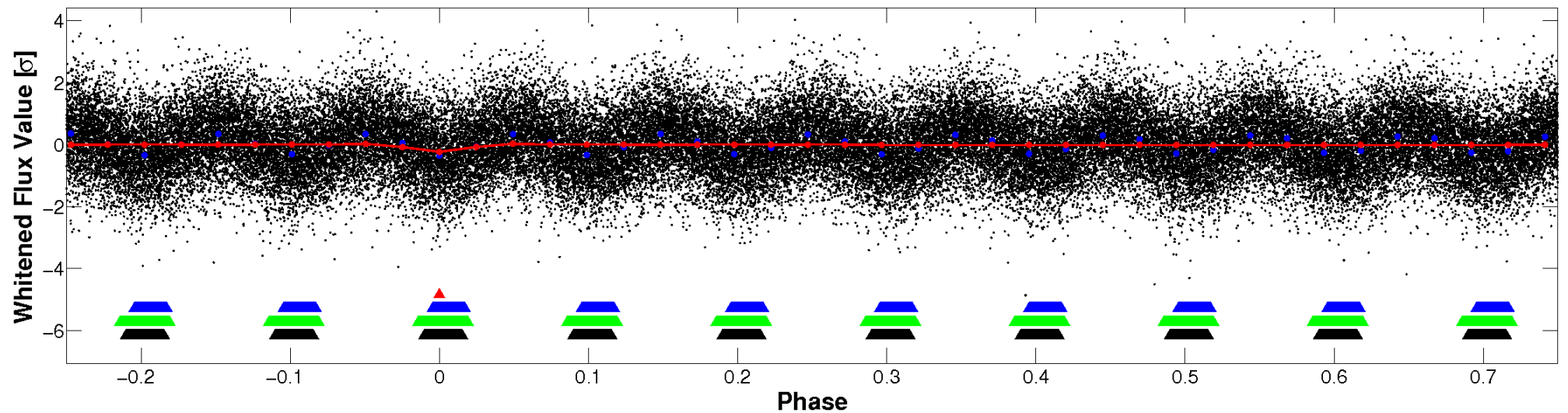


Non-Whitened Vs. Whitened Light Curve

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

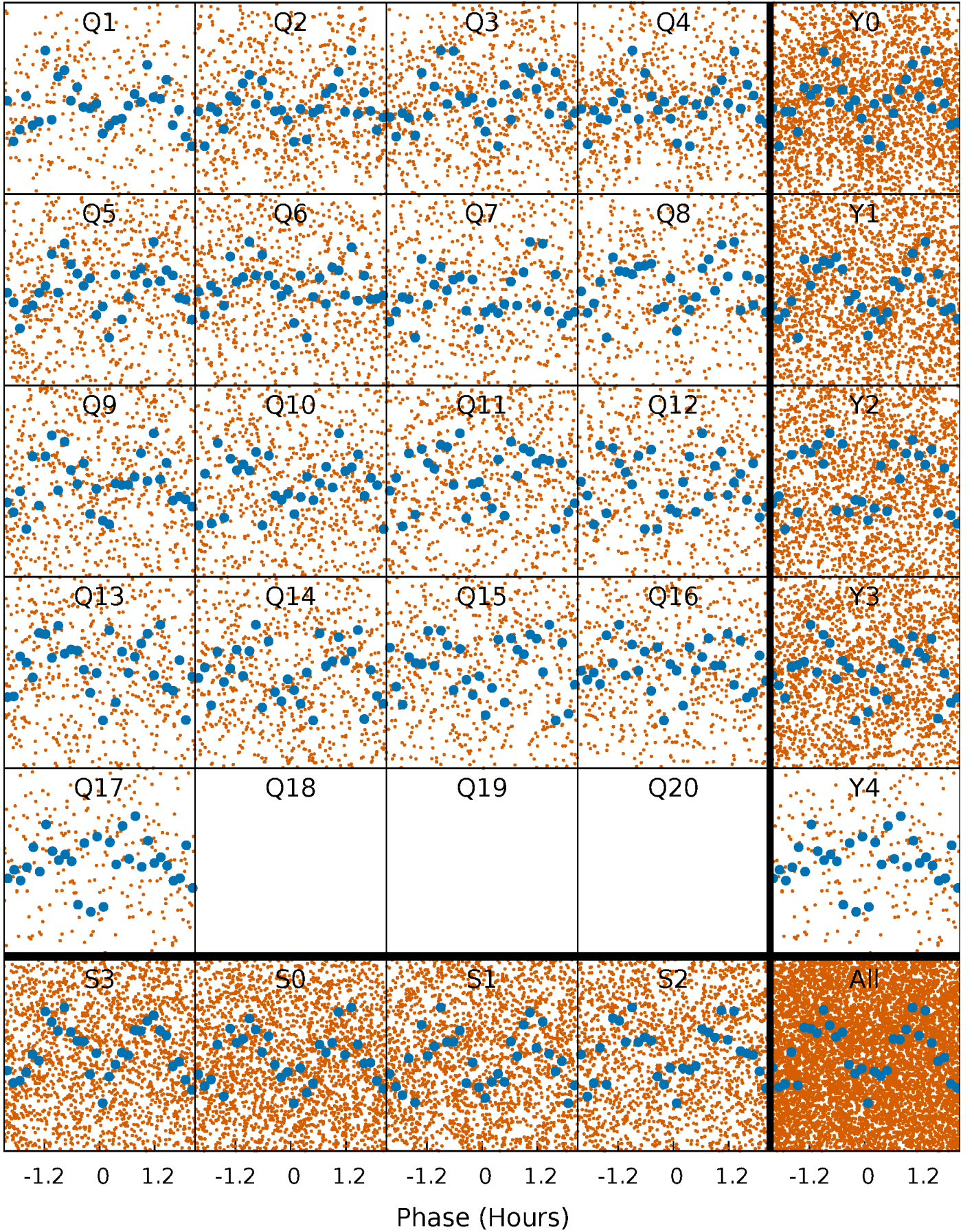


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



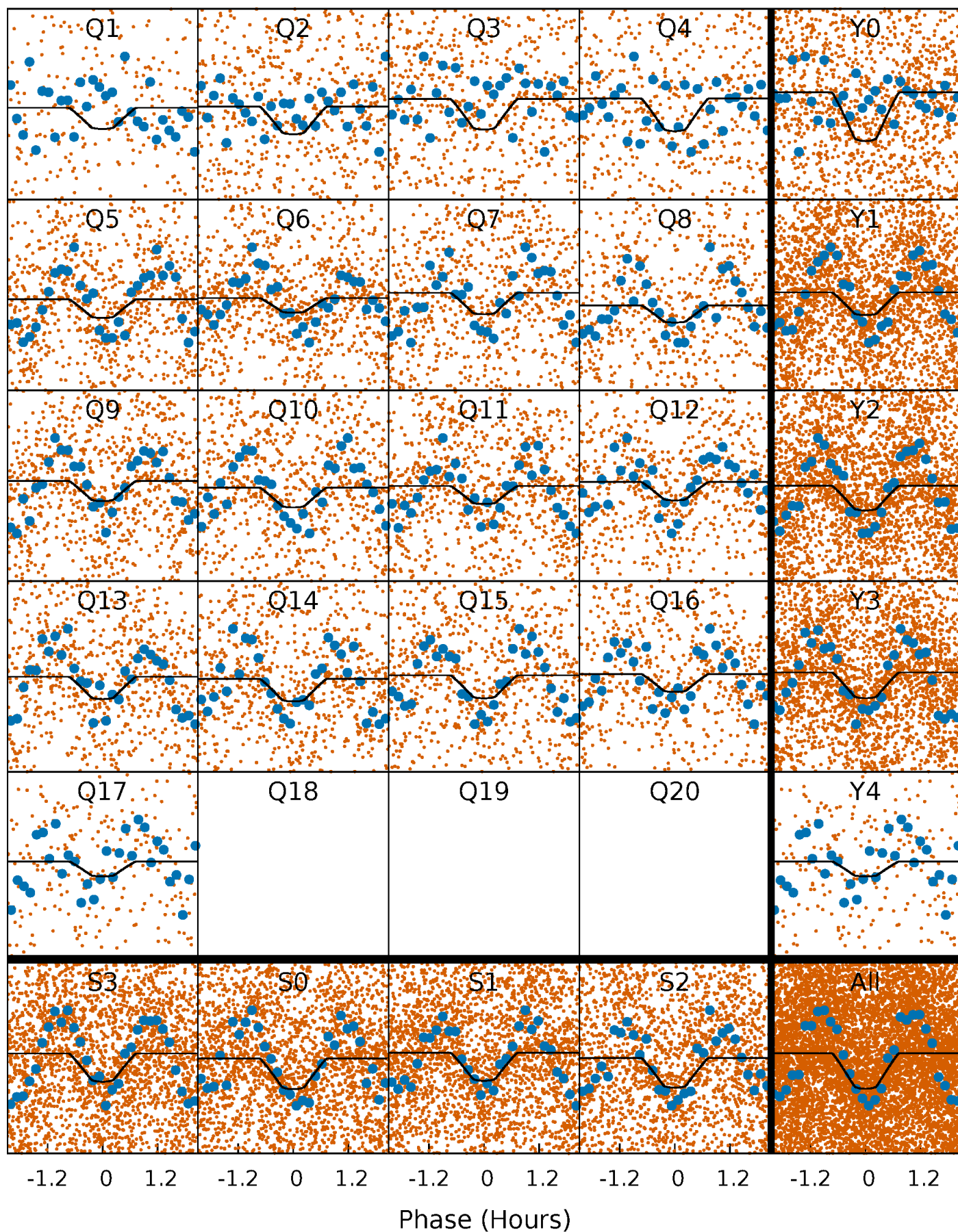
PDC Quarter-Phased Transit Curves

TCE 007138415-01 P= 0.826798 Days $T_0=132.304866$ (BKJD)



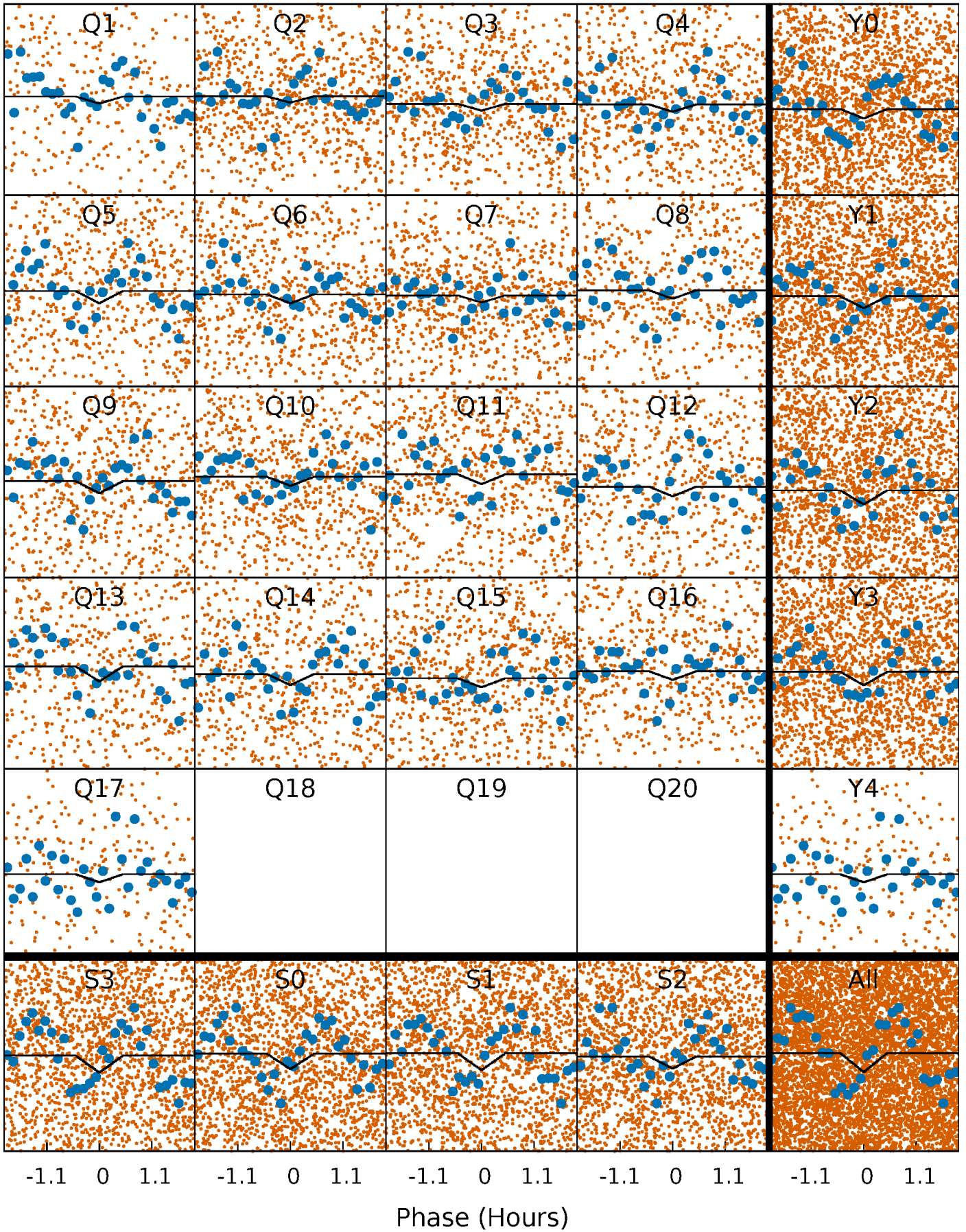
DV Quarter-Phased Transit Curves

TCE 007138415-01 P= 0.826798 Days $T_0=132.304866$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

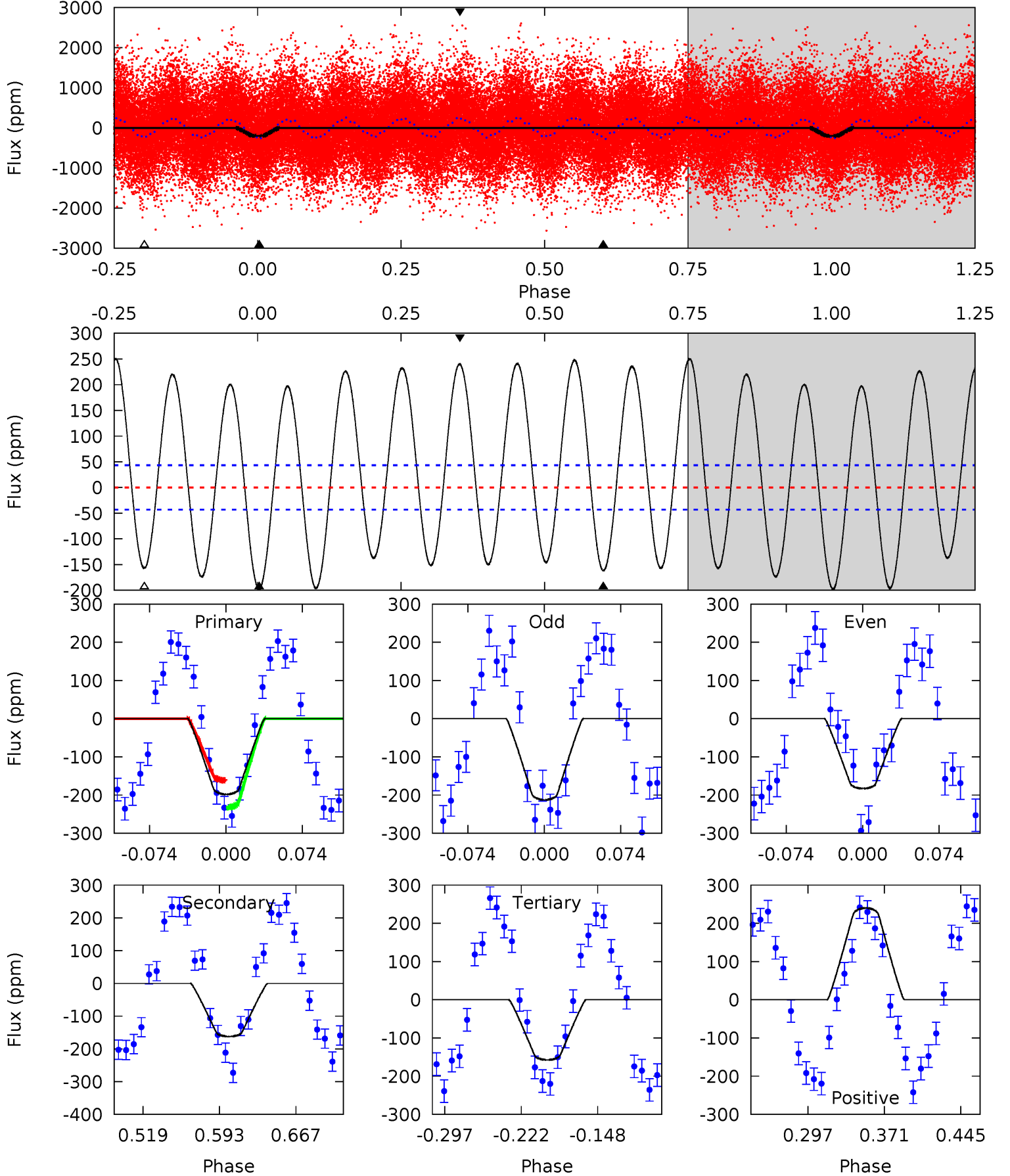
TCE 007138415-01 P= 0.826783 Days $T_0=131.508396$ (BKJD)



DV Model-Shift Uniqueness Test

007138415-01, P = 0.826798 Days, E = 131.478068 Days

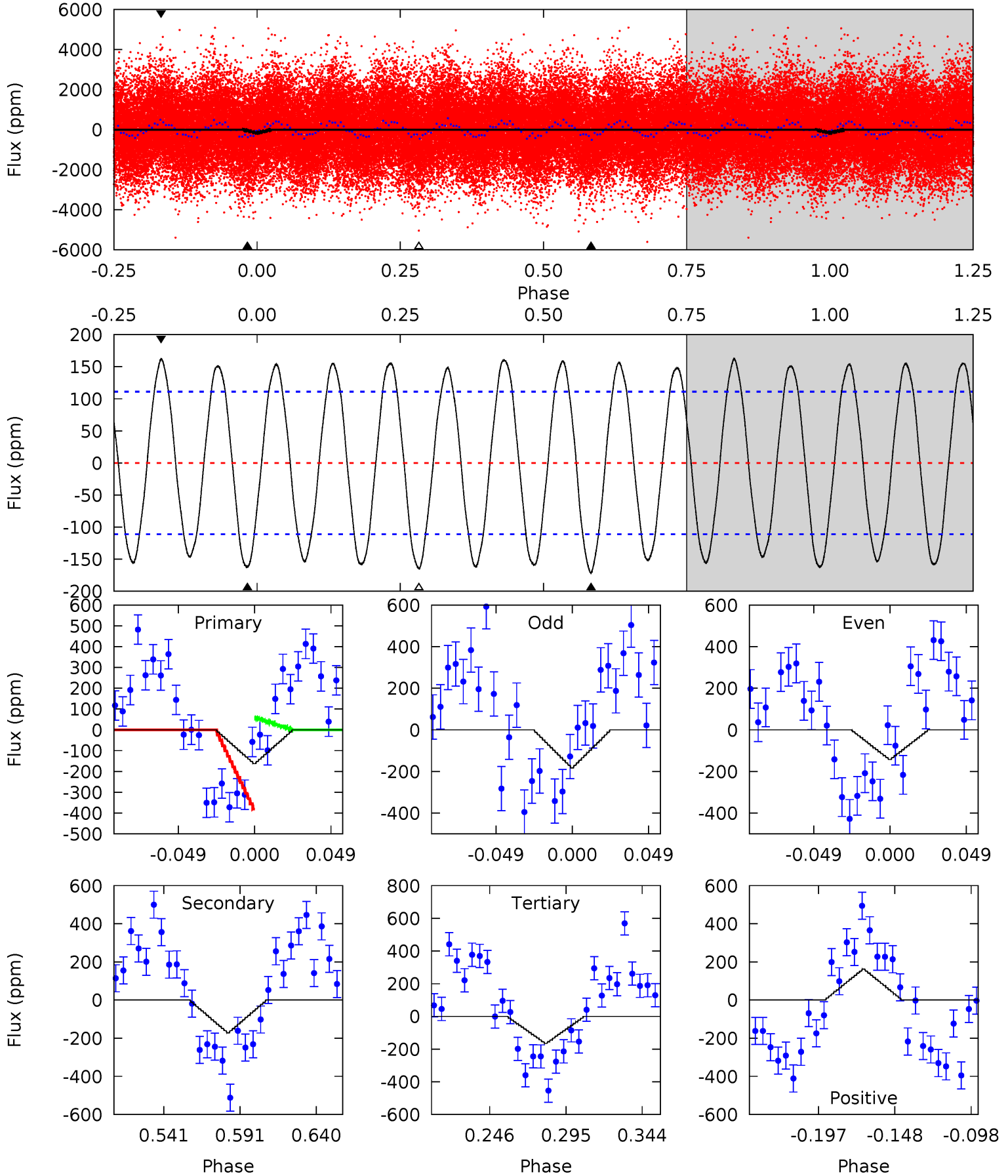
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	17.4	16.9	25.8	4.63	1.79	14.9	4.36	-4.52	0.50	-8.38	1.60	1.00	0.56	3.81



Alt Model-Shift Uniqueness Test

007138415-01, P = 0.826783 Days, E = 131.508396 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.90	7.29	7.01	6.89	4.71	1.97	4.66	-0.11	0.00	0.28	0.39	0.85	1.56	0.49	6.83



Stellar Parameters For KIC 007138415

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8665^{+270}_{-360}	$3.787^{+0.385}_{-0.165}$	$-0.240^{+0.450}_{-0.300}$	$2.985^{+1.024}_{-1.252}$	$1.994^{+0.495}_{-0.405}$	$0.106^{+0.349}_{-0.049}$
	+3%/-4%	+10%/-4%	+188%/-125%	+34%/-42%	+25%/-20%	+330%/-46%
Source	KIC0	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 007138415-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-162 ± 9	$4.23^{+2.27}_{-1.90}$	6099^{+618}_{-655}	7851^{+3681}_{-1777}	$2.409^{+5.254}_{-1.376}$
Alt.	-172 ± 24	$3.91^{+2.12}_{-1.86}$	6096^{+564}_{-638}	8465^{+5697}_{-2008}	$3.074^{+7.355}_{-1.834}$

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

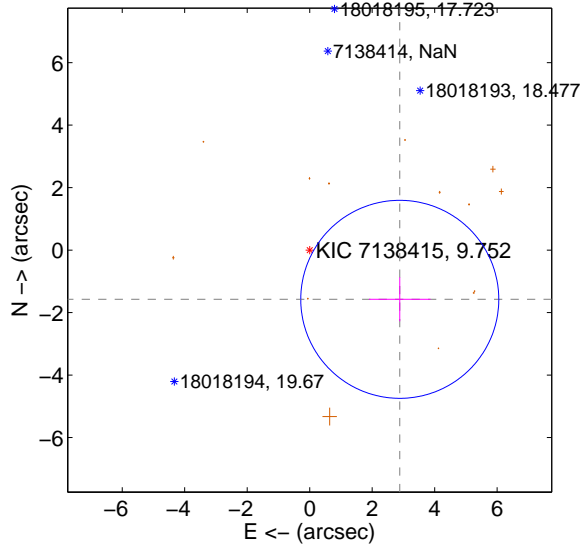
Supplemental centroid analysis for 007138415-01. **Kepler magnitude: 9.75.** Transit SNR 10.79

There are 0 quarters with good PRF difference image offsets

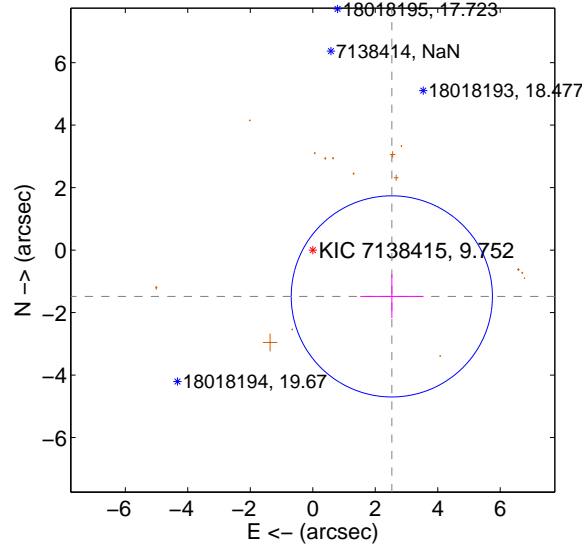
The OOT PRF centroid is offset from the target star catalog position by about 3.11 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.286 ± 1.056	3.11	-2.883 ± 0.987	-1.576 ± 0.704
PRF-fit source offset from KIC position	2.932 ± 1.073	2.73	-2.530 ± 1.011	-1.482 ± 0.694
photometric centroid source offset	0.22 ± 0.26	0.87	-0.21 ± 0.26	0.06 ± 0.16

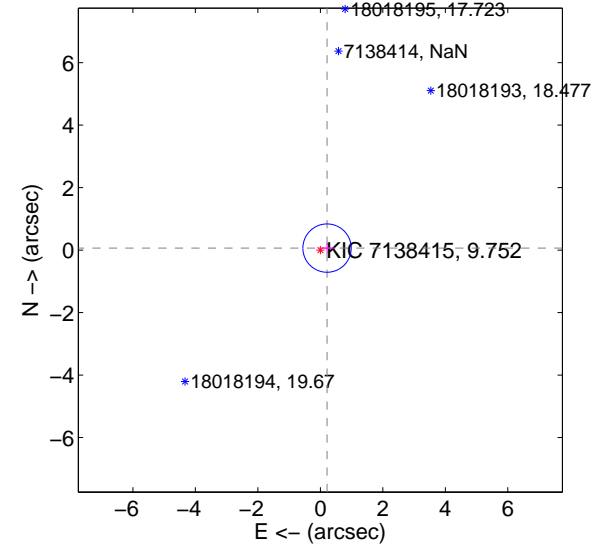
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

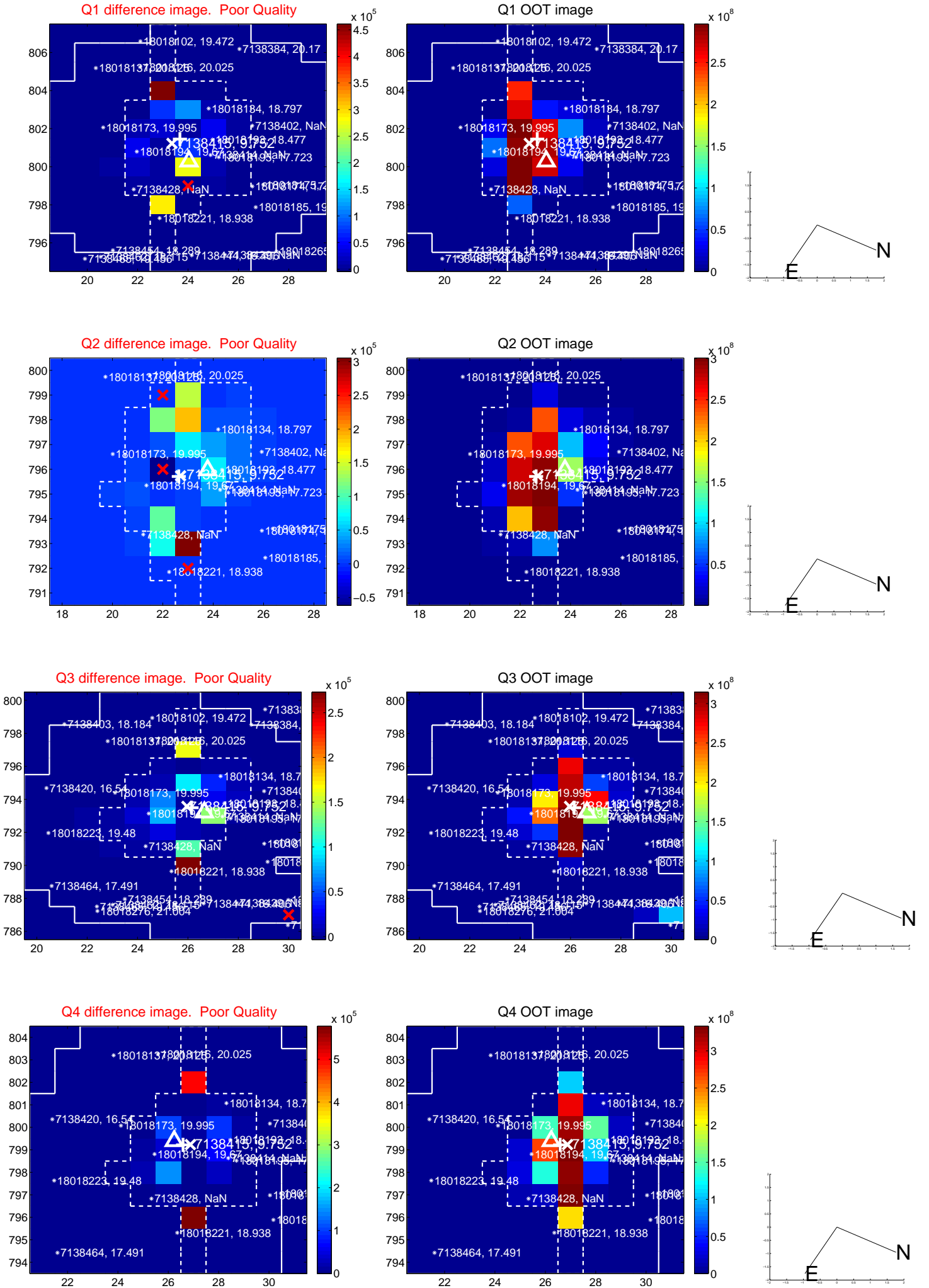


offset from photometric centroids

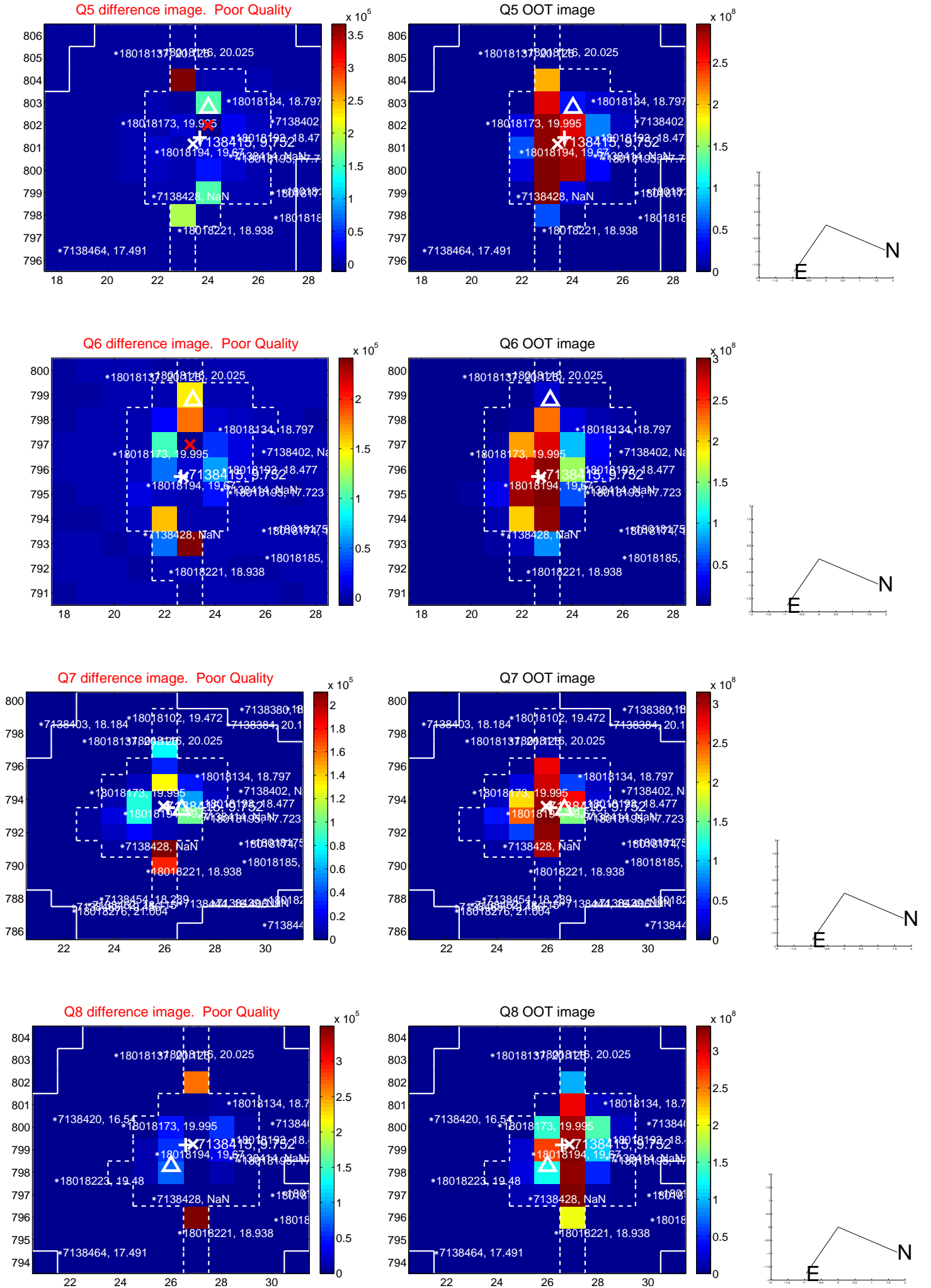


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

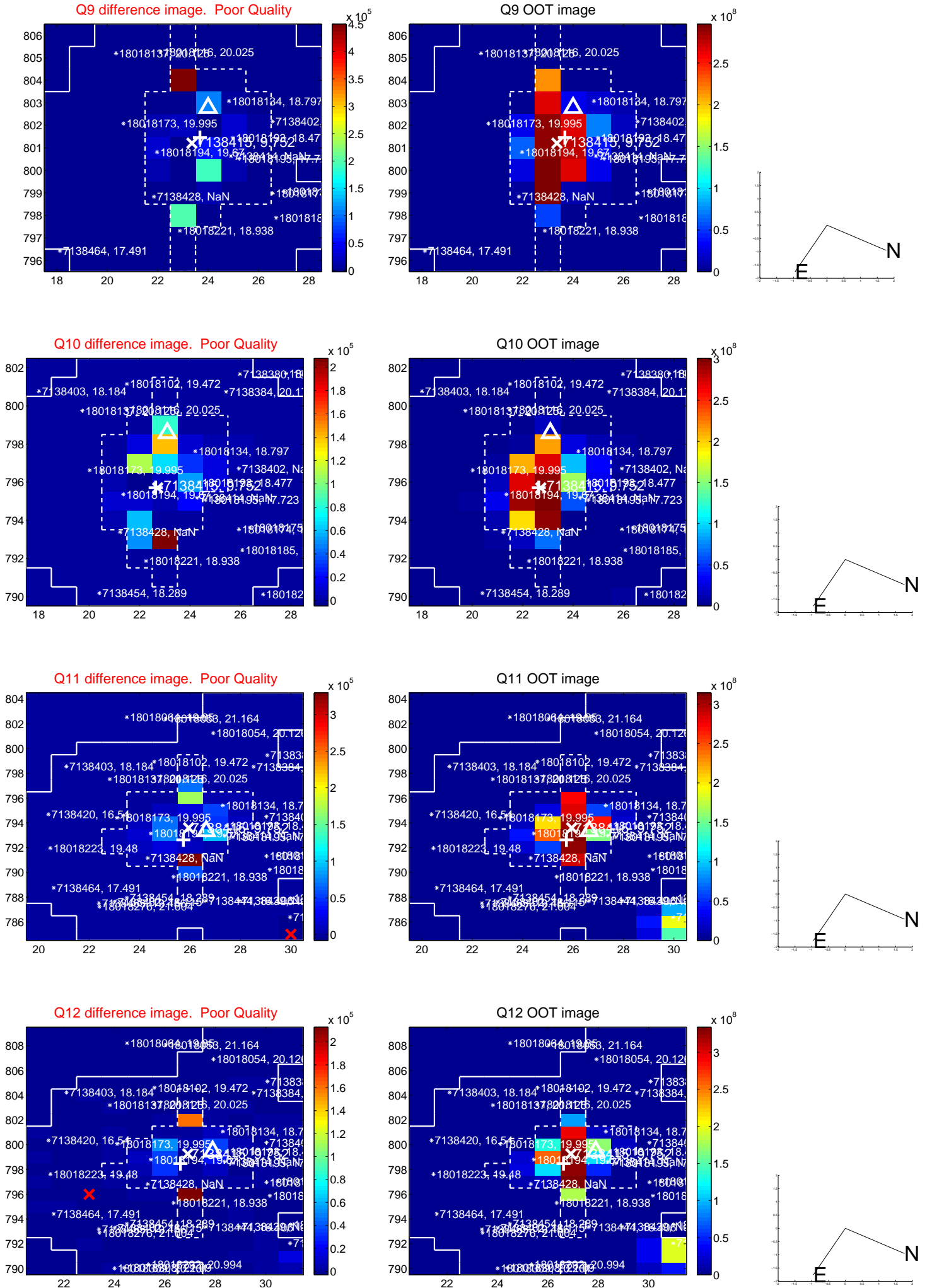
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



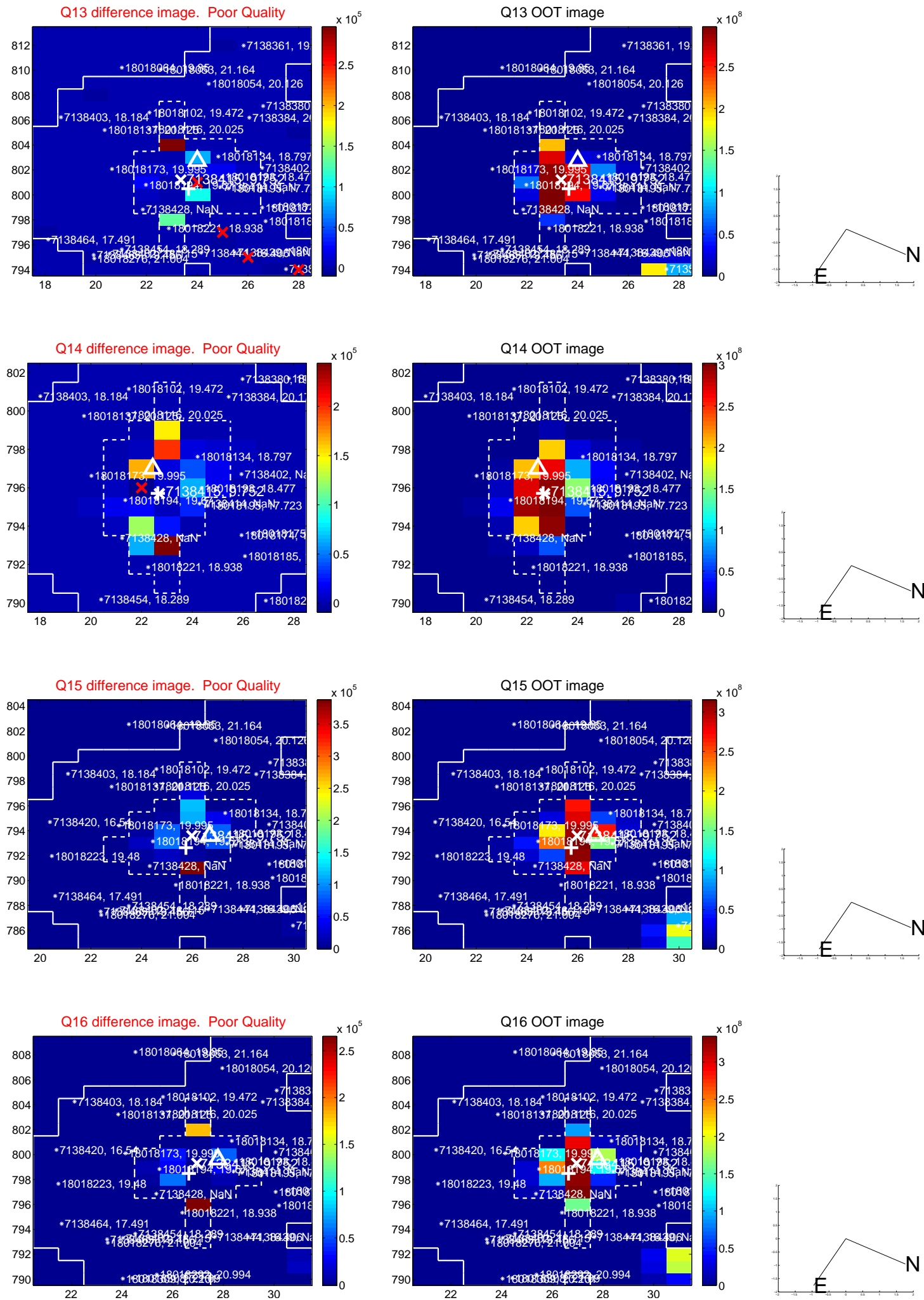
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



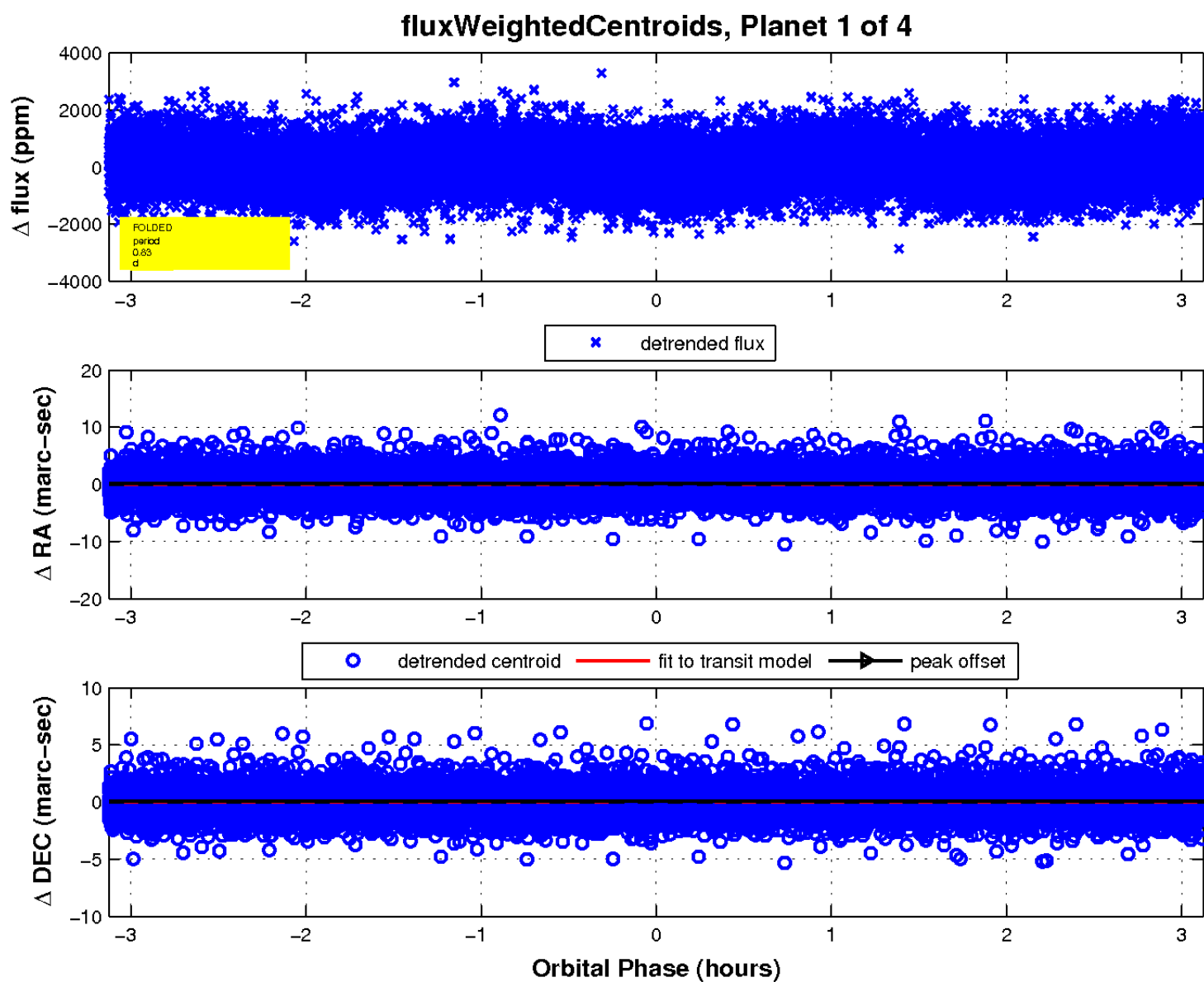
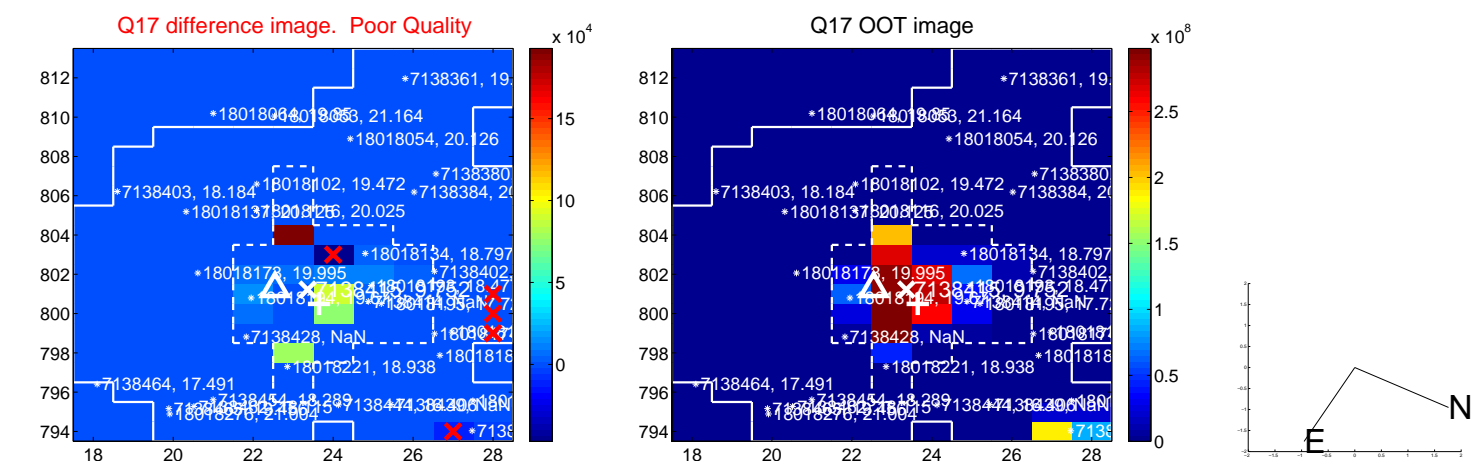
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

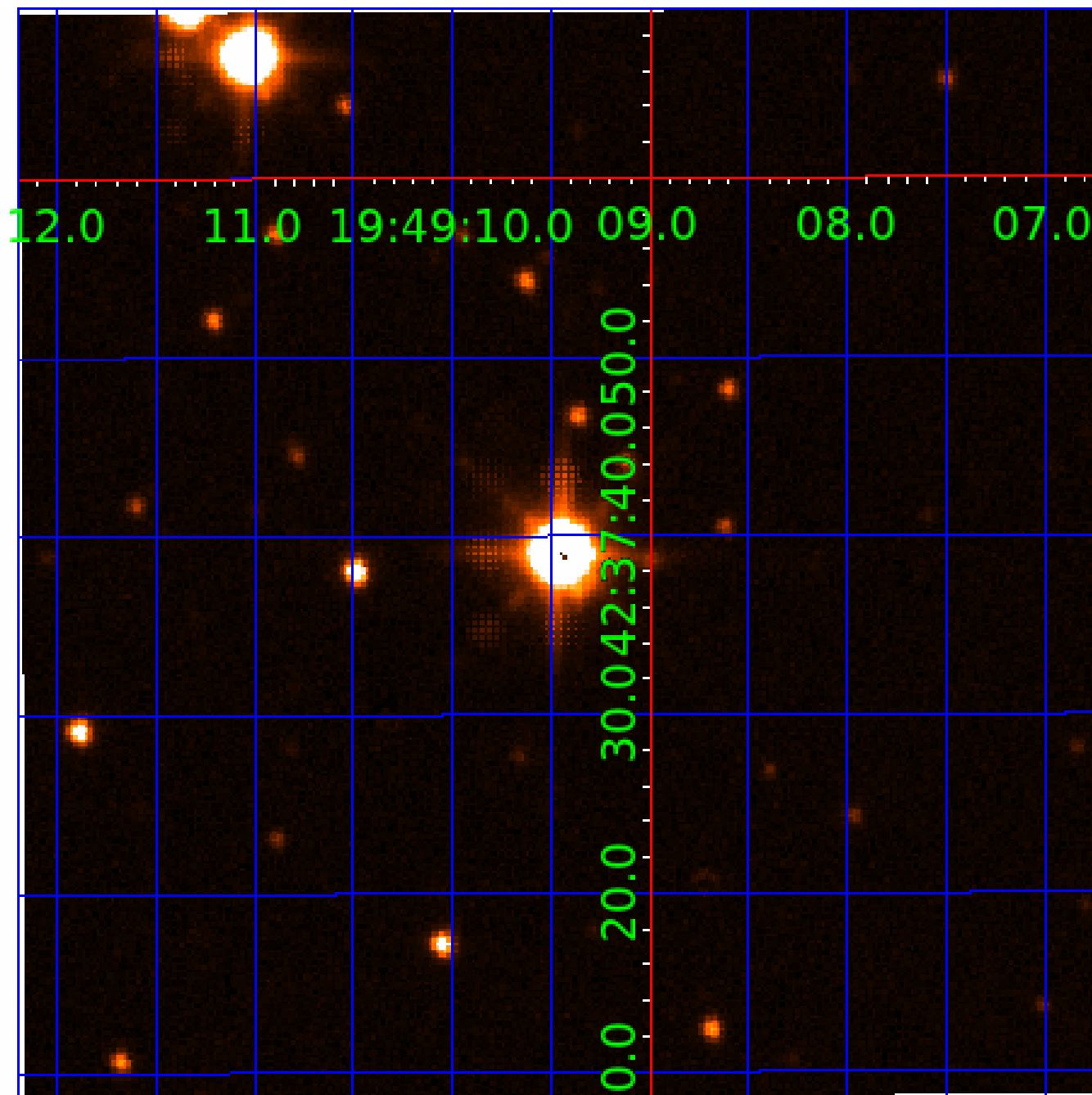


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007138415

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})
007138415-01	OBS	No	0.826798	132.304866	172.0	1.042	9.1	10.8	2.98	8665	4.57	95660.37
007138415-02	OBS	No	0.578752	131.823007	309.0	0.962	12.8	20.2	2.98	8665	6.11	153912.95
007138415-03	OBS	No	0.578748	131.989942	332.0	0.888	12.2	21.2	2.98	8665	6.36	153914.29
007138415-04	OBS	No	0.578750	131.573494	45.7	1.500	12.1	-1.0	2.98	8665	2.06	153913.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007138415-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007138415-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
007138415-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007138415-04	OBS	FP	0.00	1	0	0	0	LPP_DV—NO_FITS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

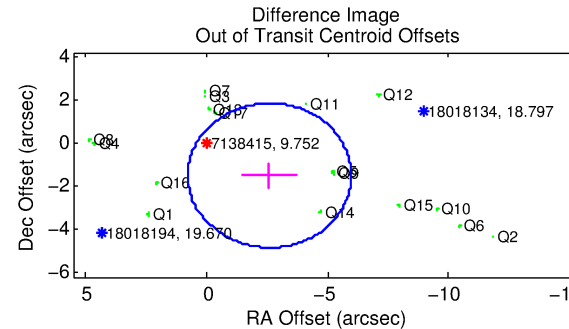
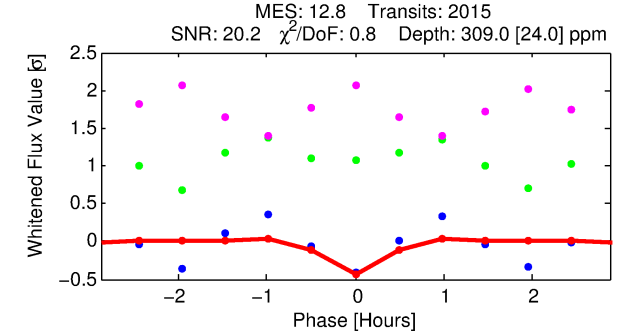
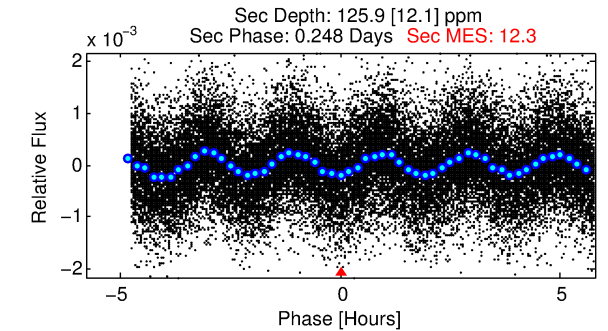
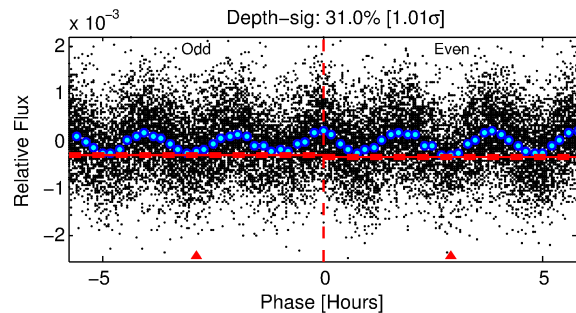
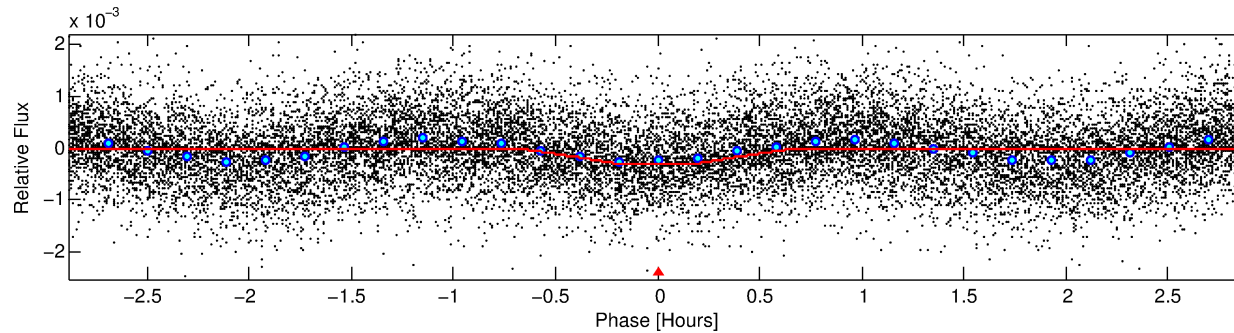
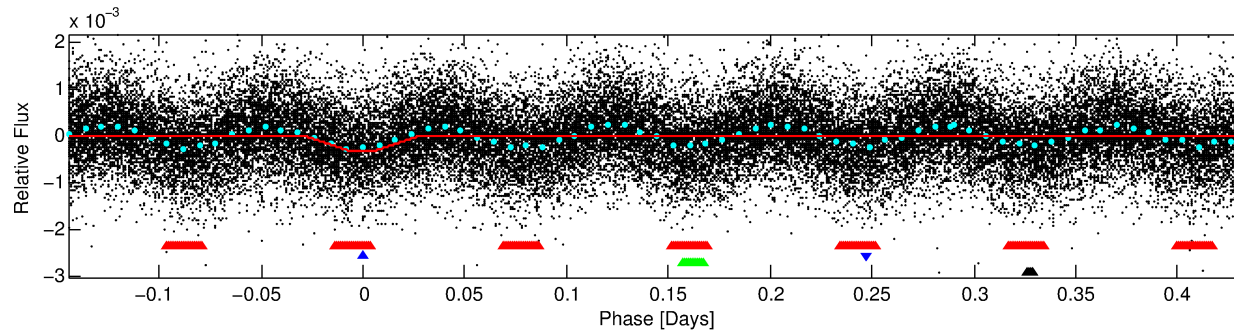
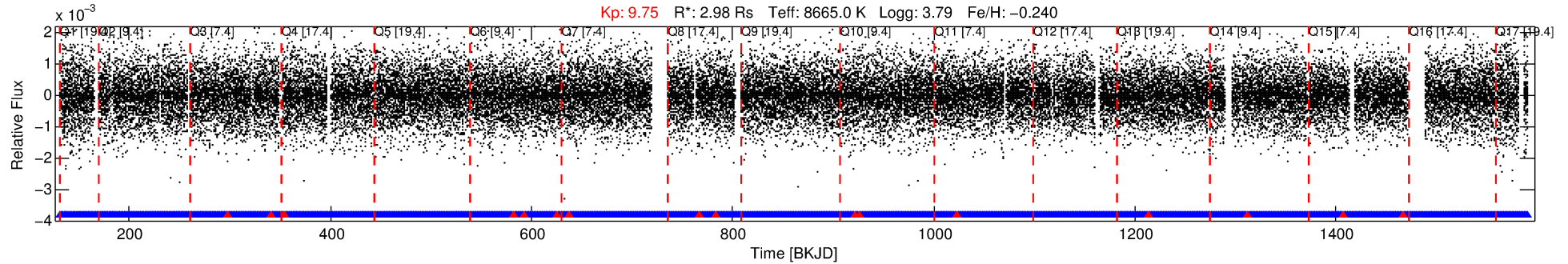
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007138415-02

No Significant Match Found

DV One-Page Summary

KIC: 7138415 Candidate: 2 of 4 Period: 0.579 d



DV Fit Results:

Period = 0.57875 [0.00001] d
Epoch = 131.8230 [0.0007] BKJD
 $R_p/R^* = 0.0188$ [0.0037]
 $a/R^* = 2.41$ [2.57]
 $b = 0.90$ [0.29]
 $\text{Seff} = 153912.95$ [103829.37]
 $T_{\text{eq}} = 5051$ [852] K
 $R_p = 6.11$ [2.83] R_e
 $a = 0.0171$ [0.0070] AU
 $A_g = 0.54$ [0.42] [-1.09 σ]
 $T_{\text{eff}} = 6702$ [737] K [1.47 σ]

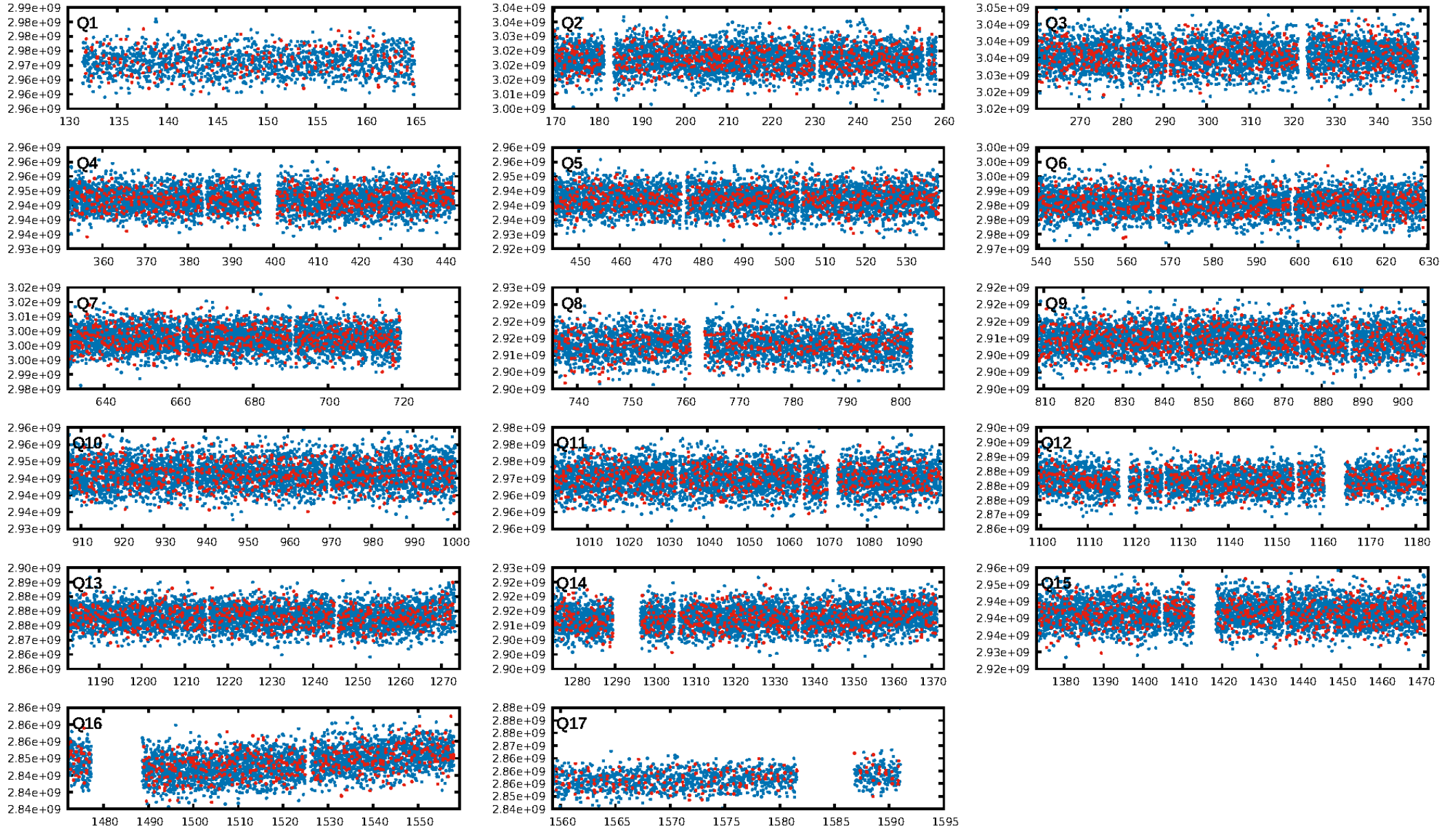
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [4.20 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1908/1924]
GhostDiagnostic-chr: N/A
Centroid-sig: 61.0%
Centroid-so: 0.423 arcsec [4.23 σ]
OotOffset-rm: 3.008 arcsec [2.68 σ]
KicOffset-rm: 2.406 arcsec [1.87 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

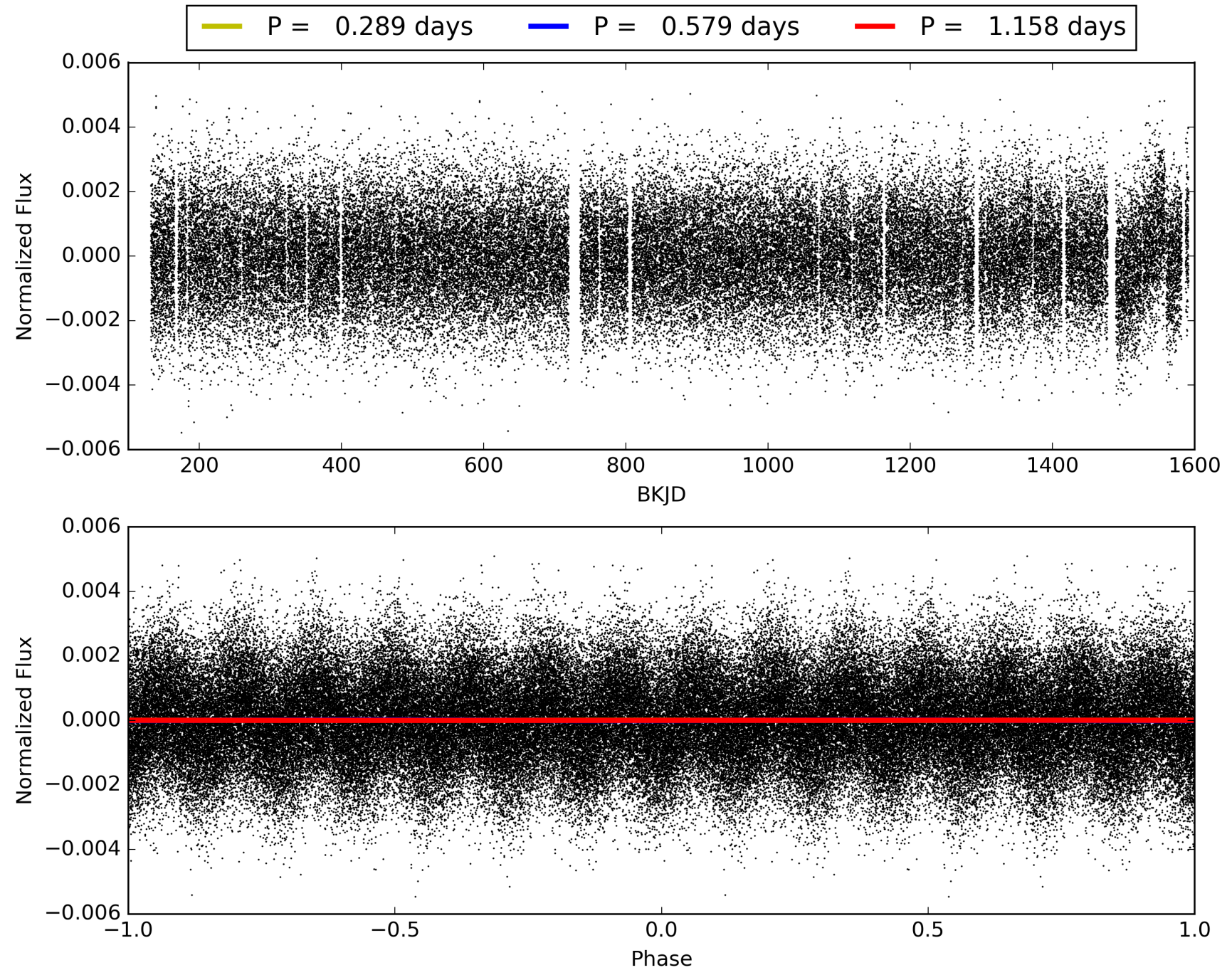
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:01:32 Z

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

TCE 007138415-02, PDC Light Curves

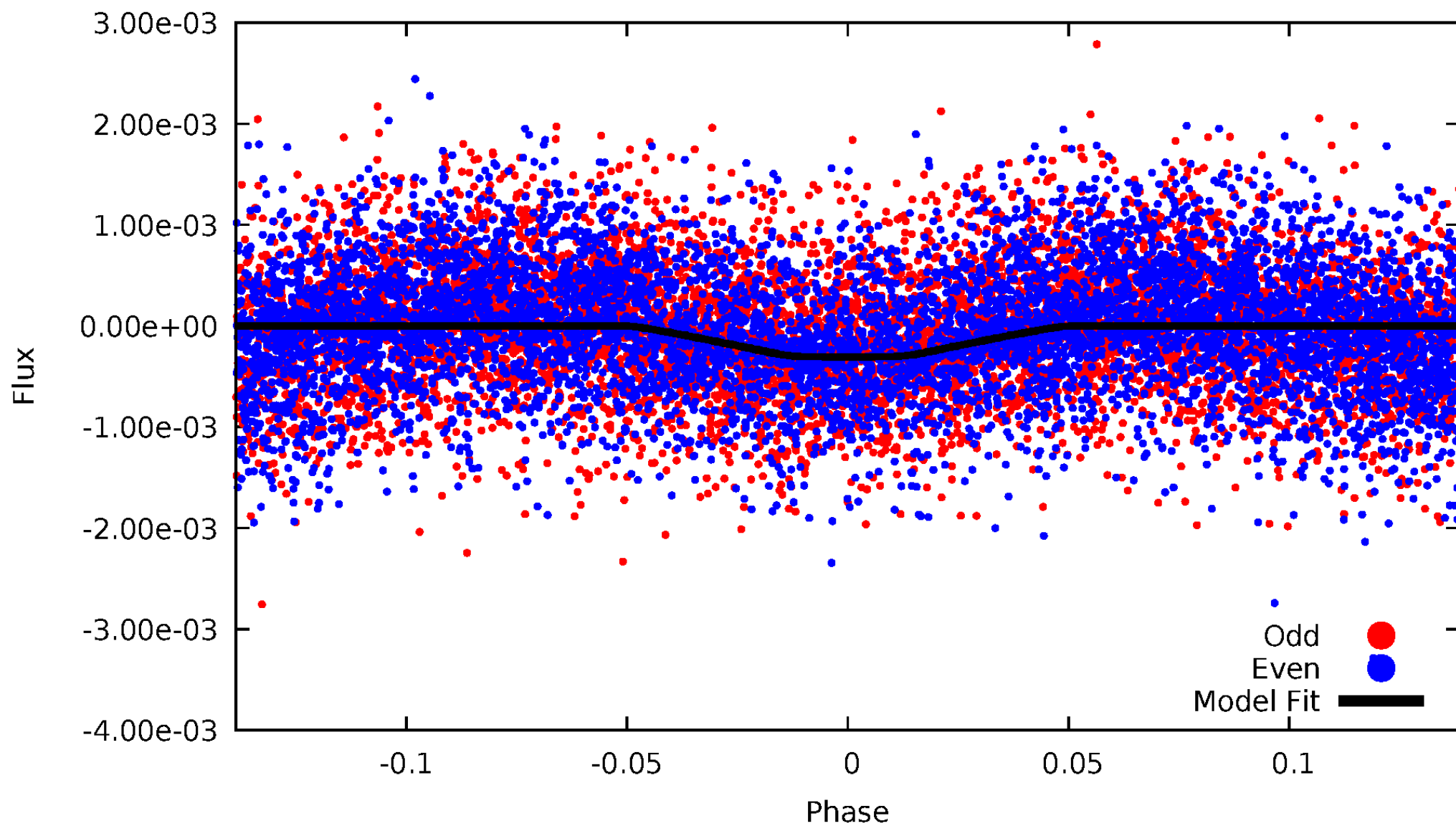


TCE 007138415-02



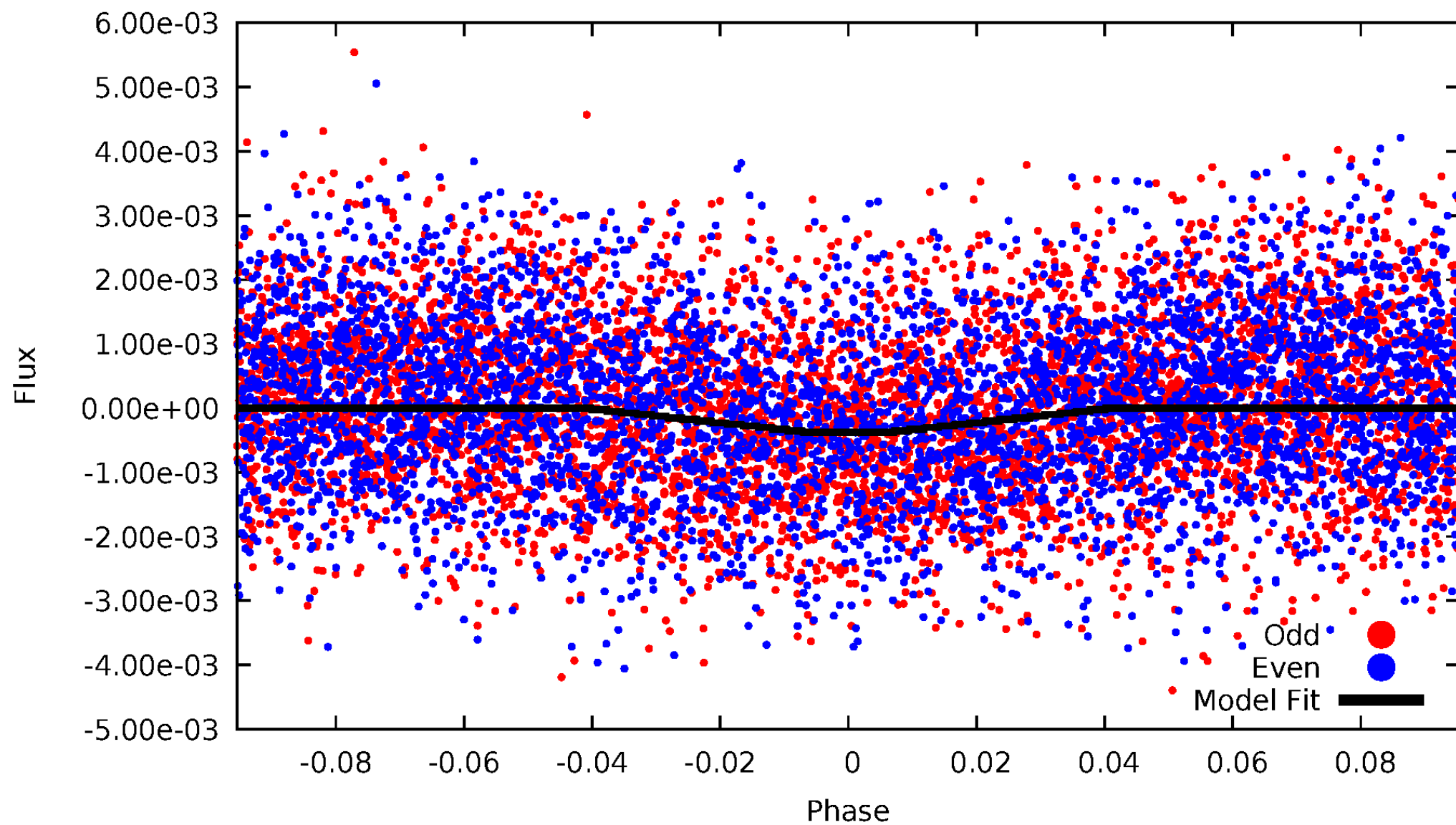
DV Odd/Even

TCE 007138415-02



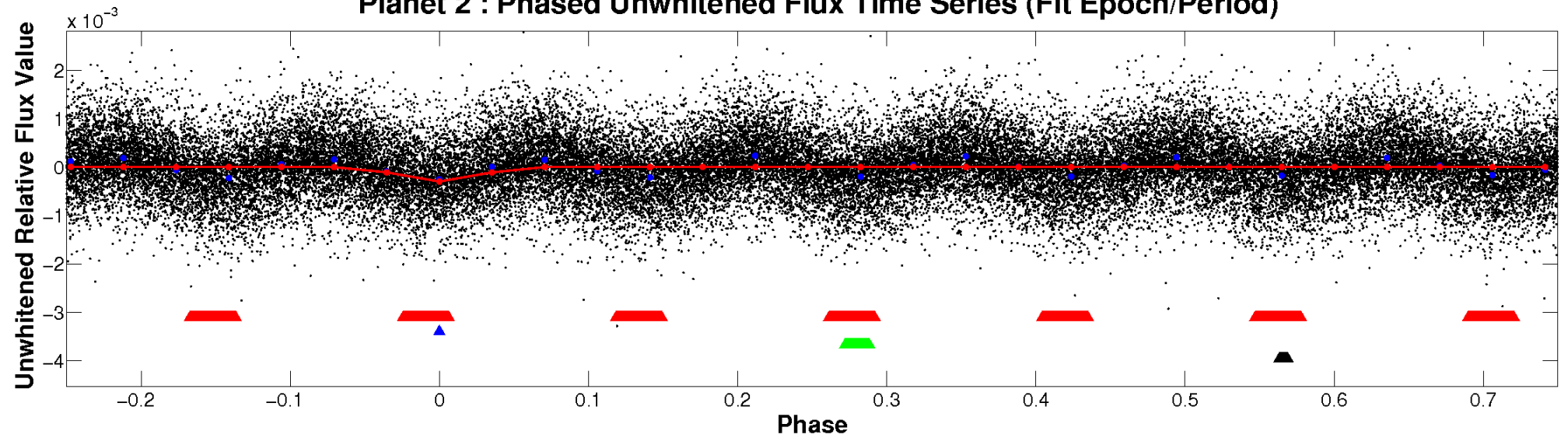
ALT Odd/Even

TCE 007138415-02

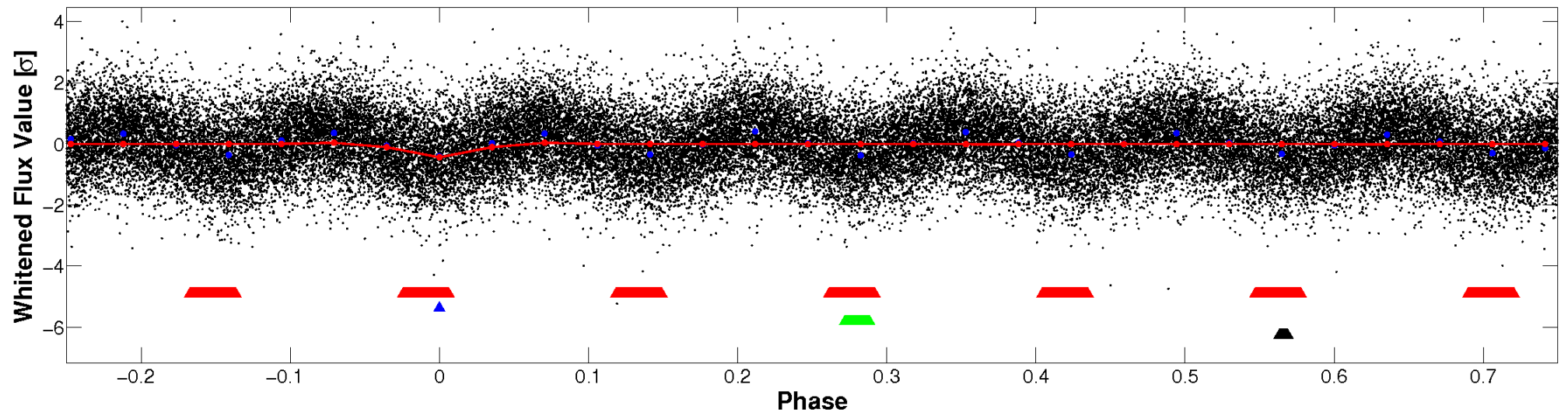


Non-Whitened Vs. Whitened Light Curve

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

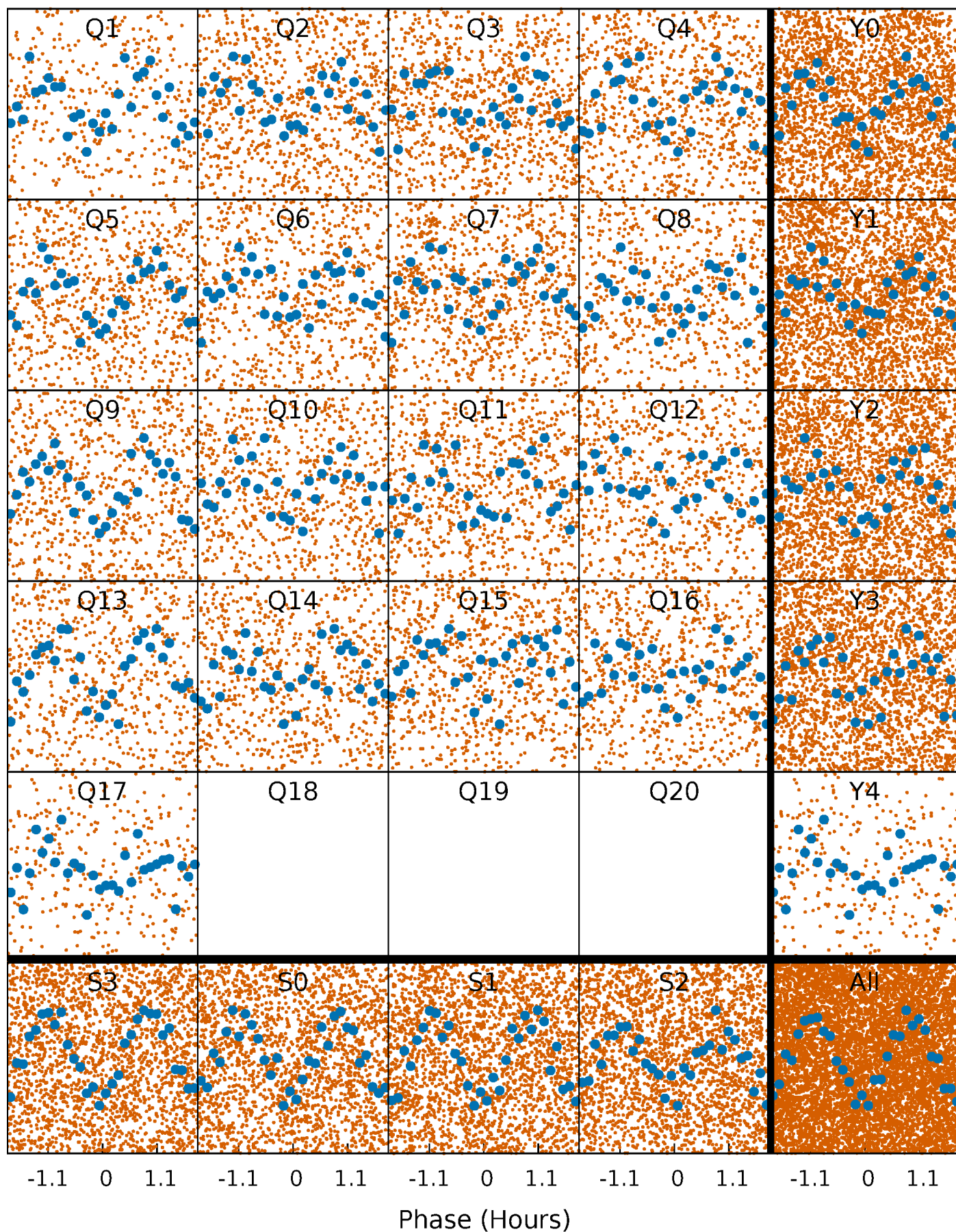


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



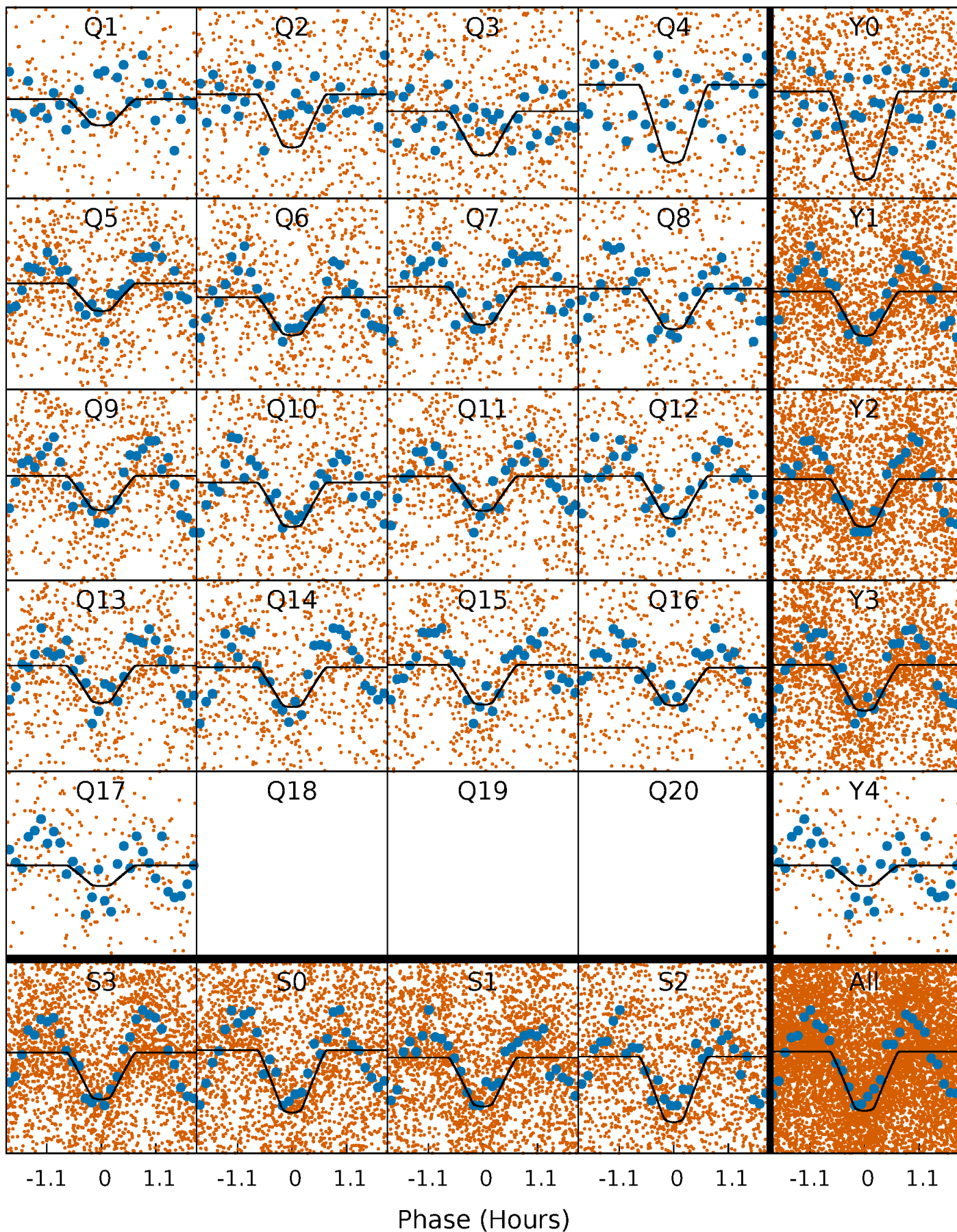
PDC Quarter-Phased Transit Curves

TCE 007138415-02 P= 0.578752 Days $T_0=131.823007$ (BKJD)



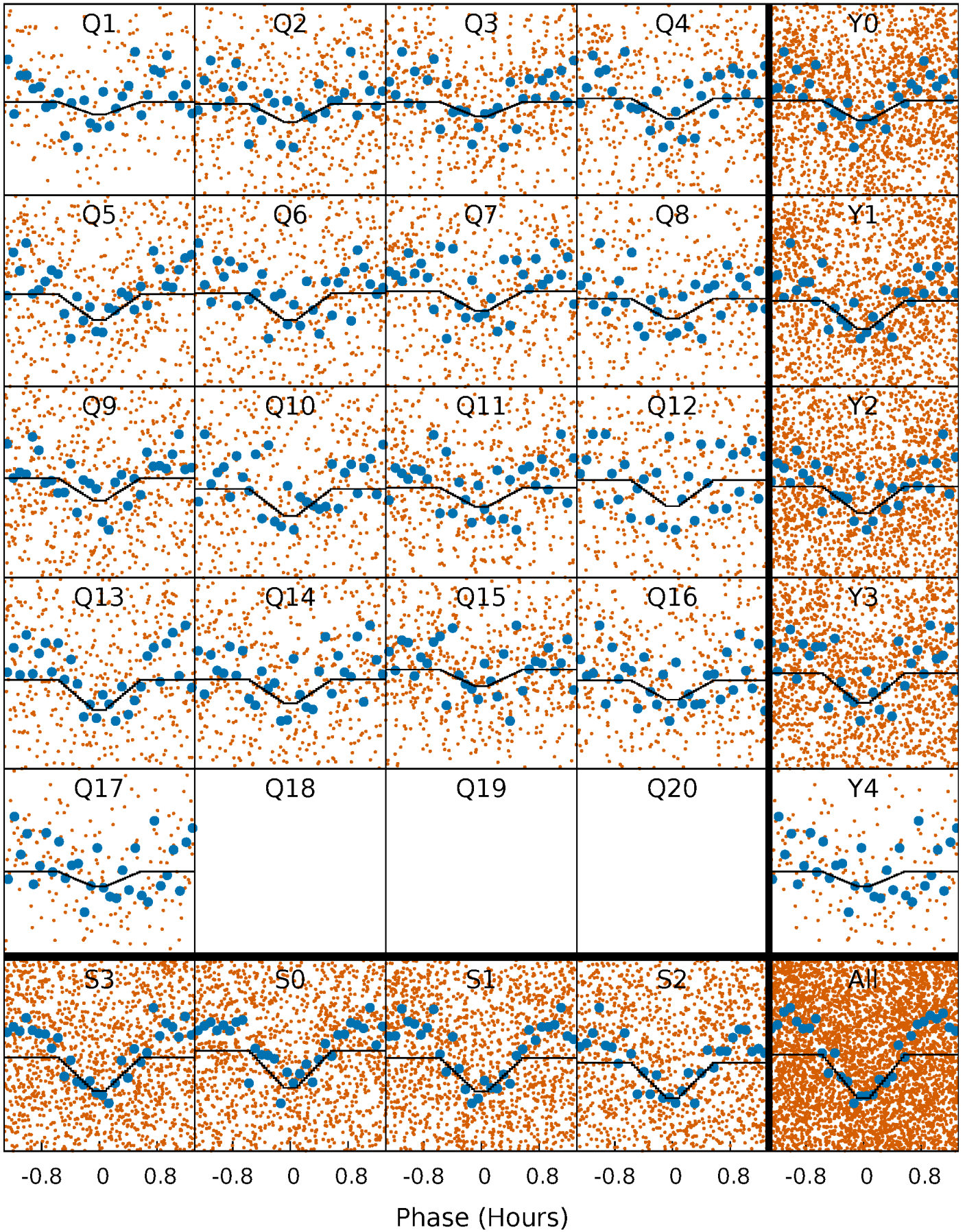
DV Quarter-Phased Transit Curves

TCE 007138415-02 P= 0.578752 Days $T_0=131.823007$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

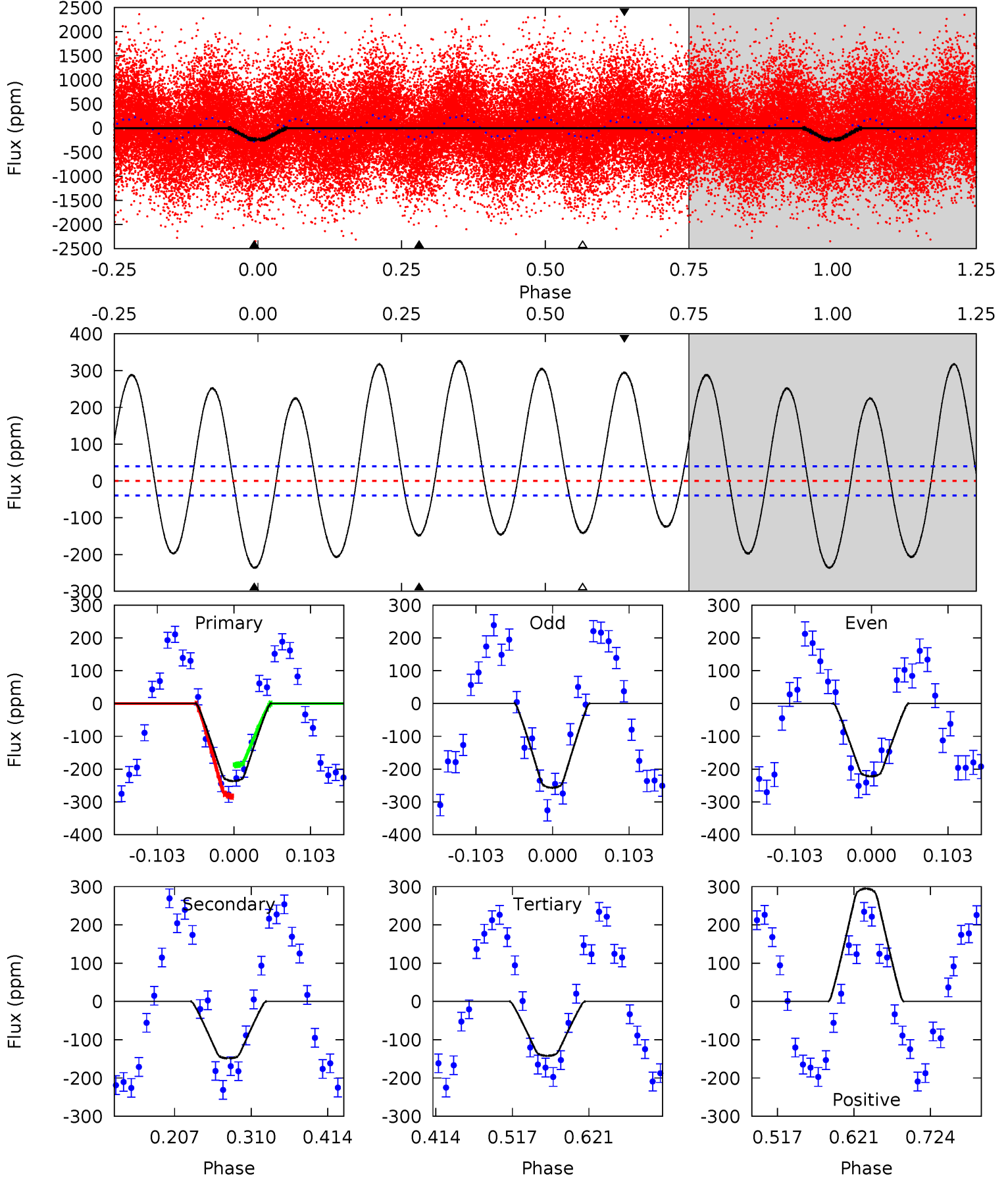
TCE 007138415-02 P= 0.578750 Days $T_0=131.821956$ (BKJD)



DV Model-Shift Uniqueness Test

007138415-02, P = 0.578752 Days, E = 131.244255 Days

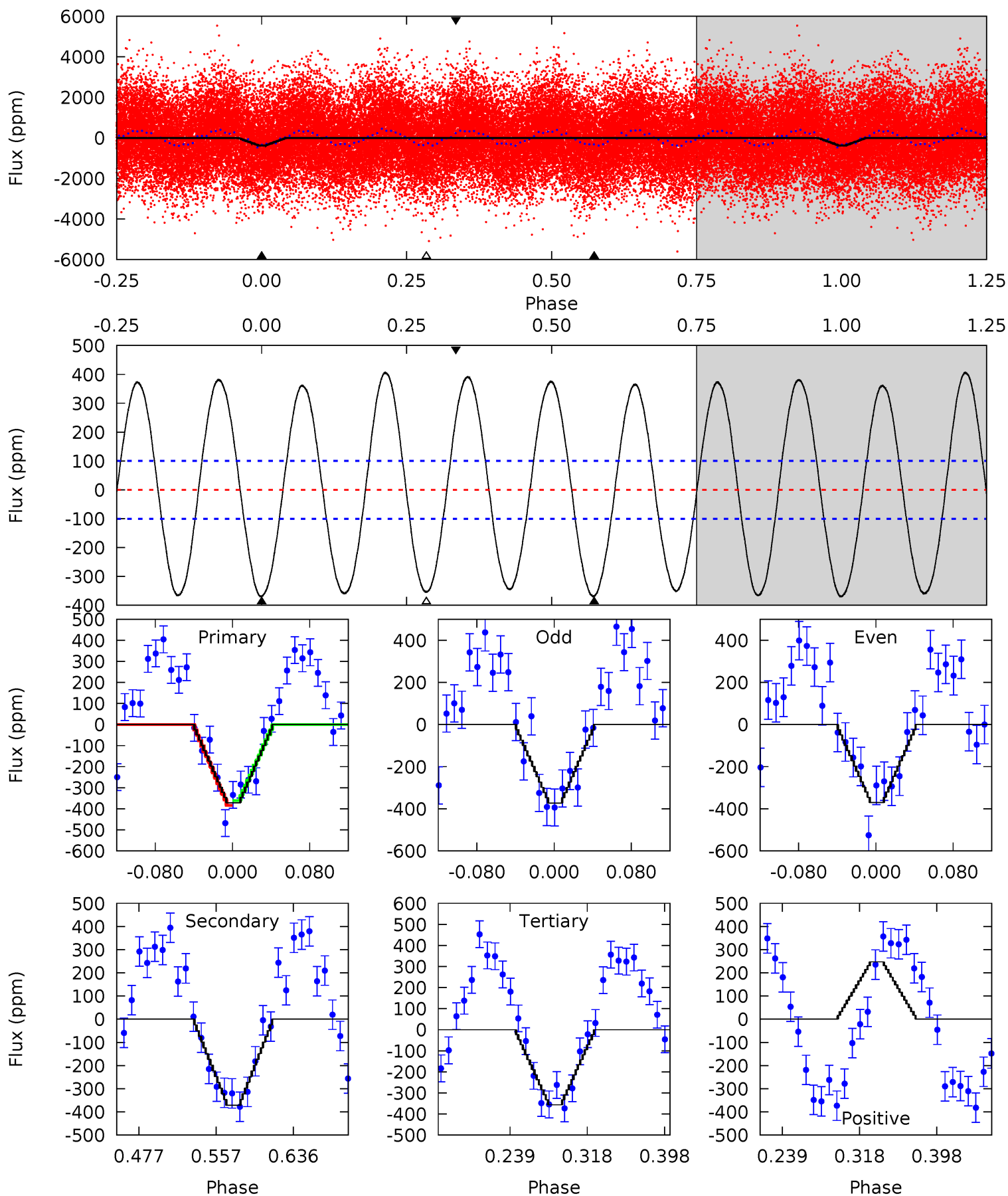
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.1	17.0	16.3	33.8	4.56	1.63	18.4	10.8	-6.70	0.78	-16.8	2.01	0.97	0.58	5.53



Alt Model-Shift Uniqueness Test

007138415-02, P = 0.578750 Days, E = 131.243206 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	17.1	16.4	11.4	4.61	1.75	11.7	0.68	5.68	0.70	5.70	0.05	0.87	0.52	0.52



Stellar Parameters For KIC 007138415

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8665^{+270}_{-360}	$3.787^{+0.385}_{-0.165}$	$-0.240^{+0.450}_{-0.300}$	$2.985^{+1.024}_{-1.252}$	$1.994^{+0.495}_{-0.405}$	$0.106^{+0.349}_{-0.049}$
	+3%/-4%	+10%/-4%	+188%/-125%	+34%/-42%	+25%/-20%	+330%/-46%
Source	KIC0	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 007138415-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-149 ± 9	$5.76^{+1.82}_{-1.50}$	6881^{+614}_{-676}	5844^{+1129}_{-1104}	$0.726^{+0.597}_{-0.286}$
Alt.	-372 ± 22	$5.91^{+1.85}_{-1.64}$	6872^{+631}_{-709}	8044^{+1680}_{-1050}	$1.735^{+1.482}_{-0.718}$

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 $A_{obs} \gg 1.0$

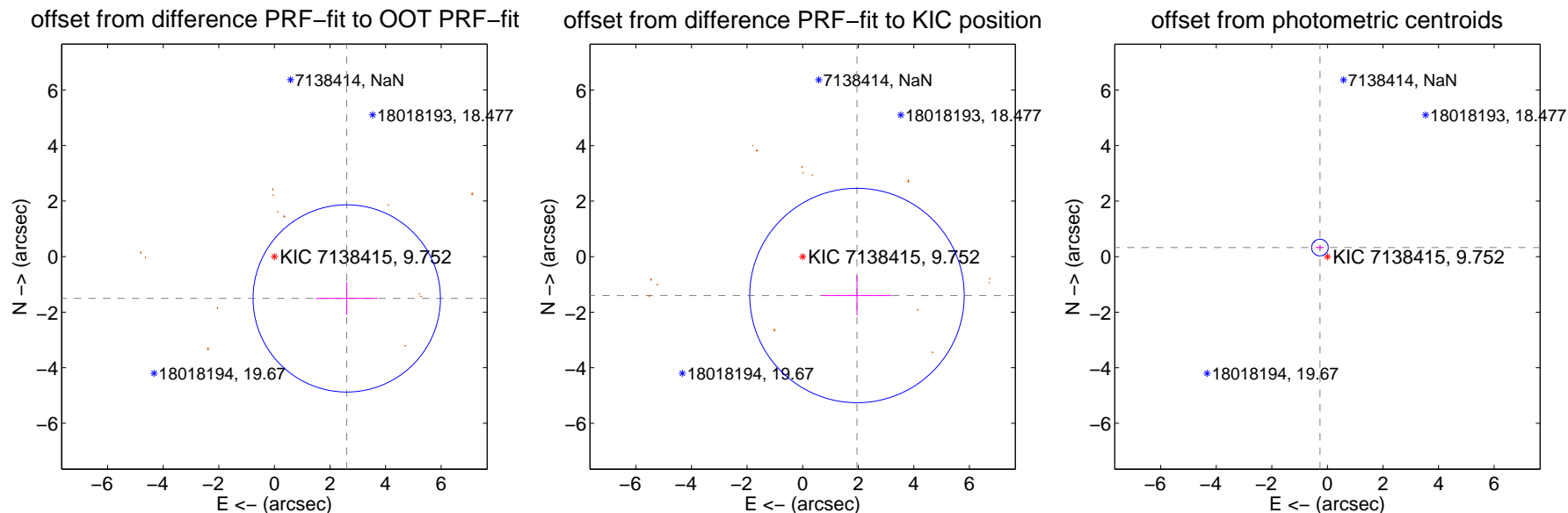
DV Centroid Data

Supplemental centroid analysis for 007138415-02. **Kepler magnitude: 9.75.** Transit SNR 20.21

There are 0 quarters with good PRF difference image offsets

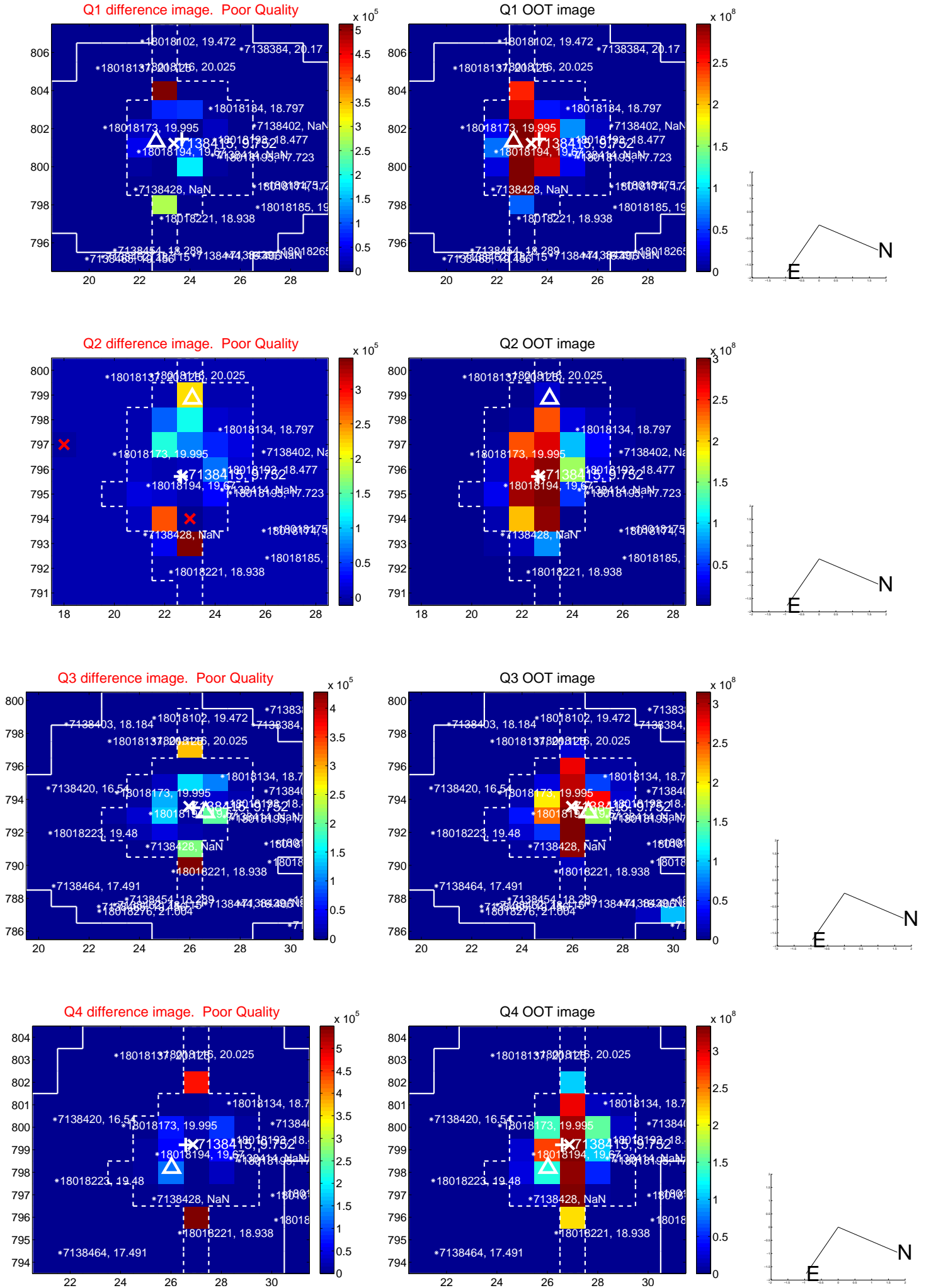
The OOT PRF centroid is offset from the target star catalog position by about 3.10 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.008 ± 1.124	2.68	-2.604 ± 1.111	-1.507 ± 0.593
PRF-fit source offset from KIC position	2.406 ± 1.287	1.87	-1.956 ± 1.248	-1.400 ± 0.719
photometric centroid source offset	0.42 ± 0.10	4.23	0.27 ± 0.13	0.33 ± 0.08

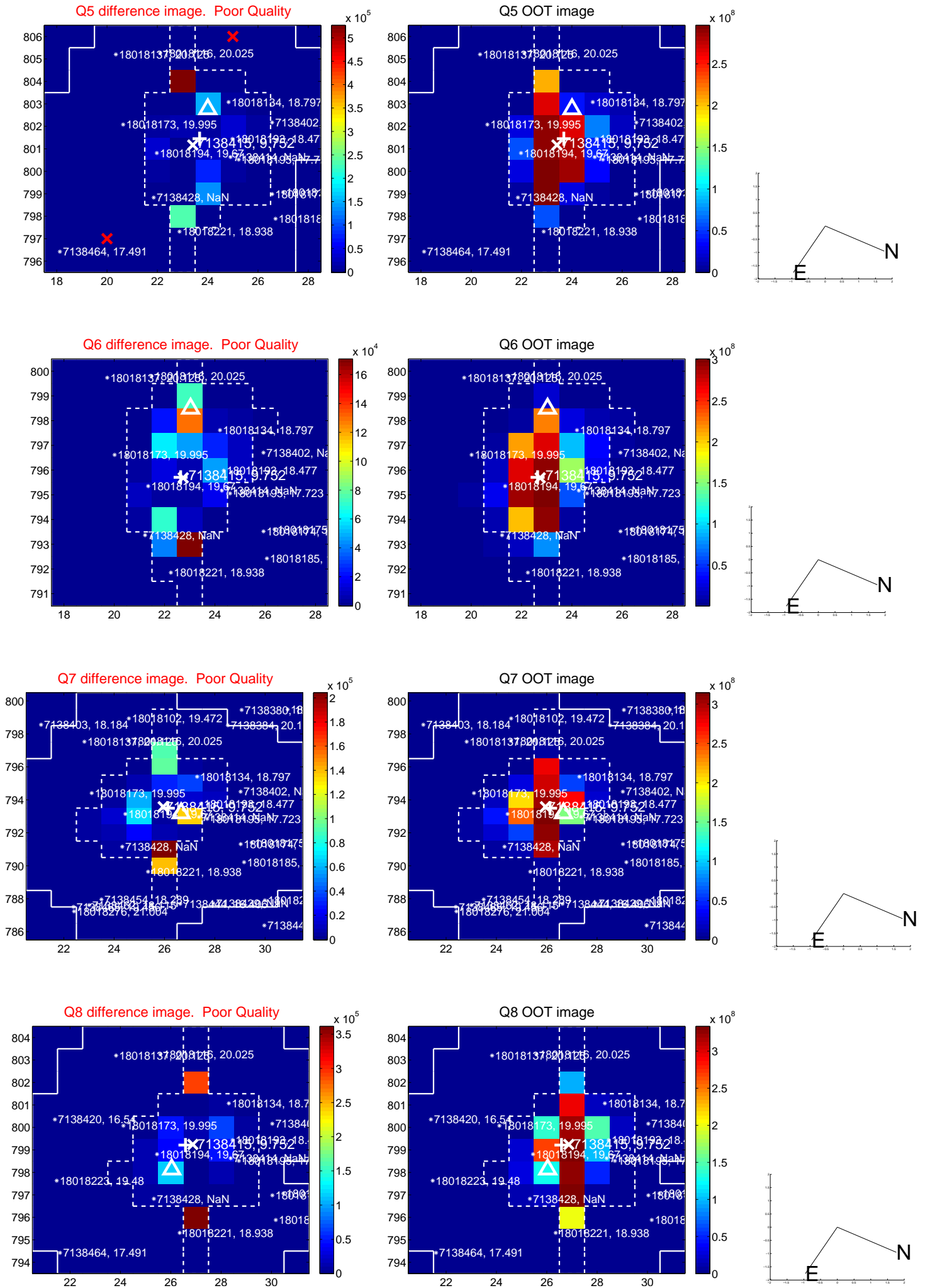


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

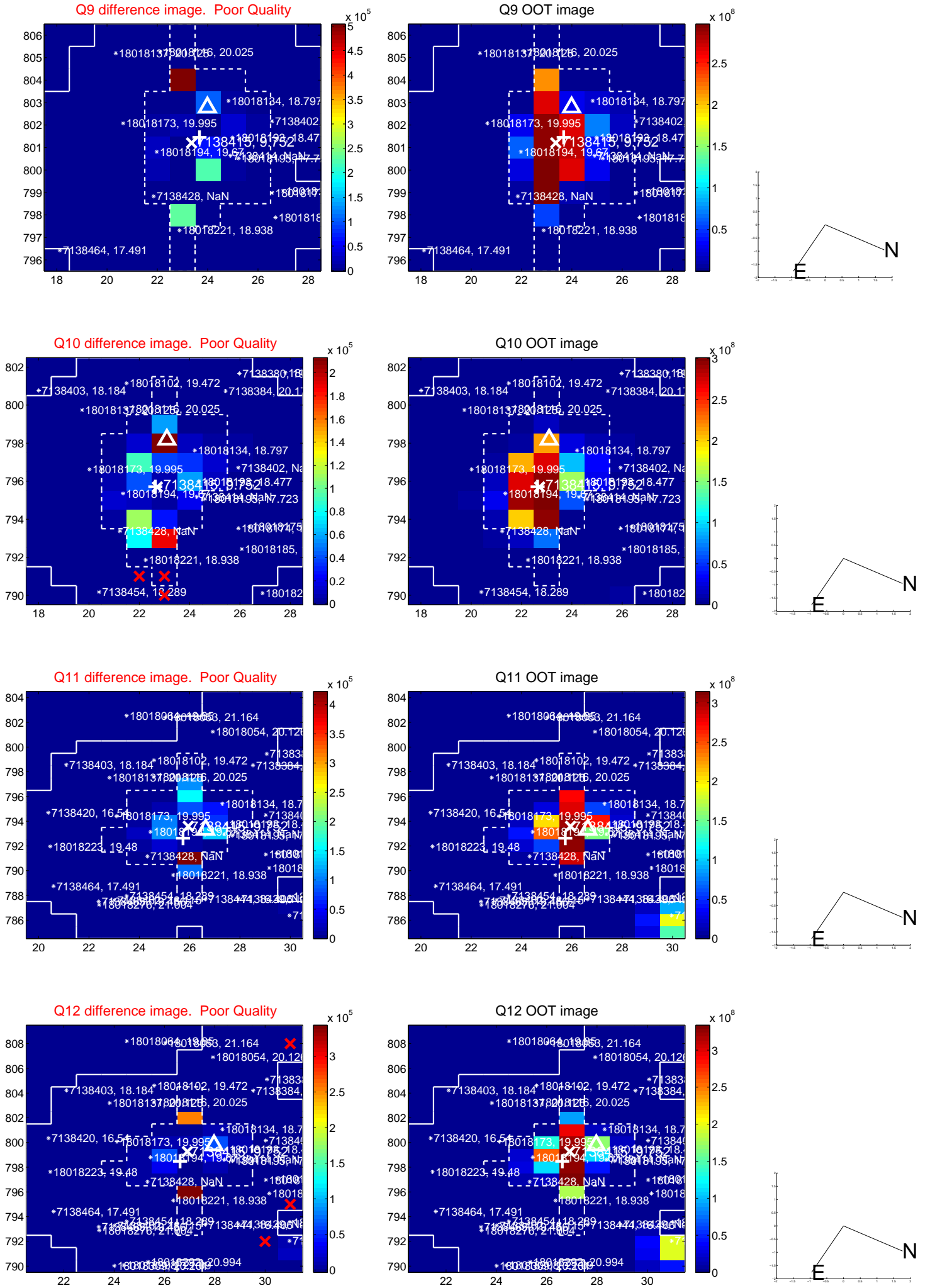
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



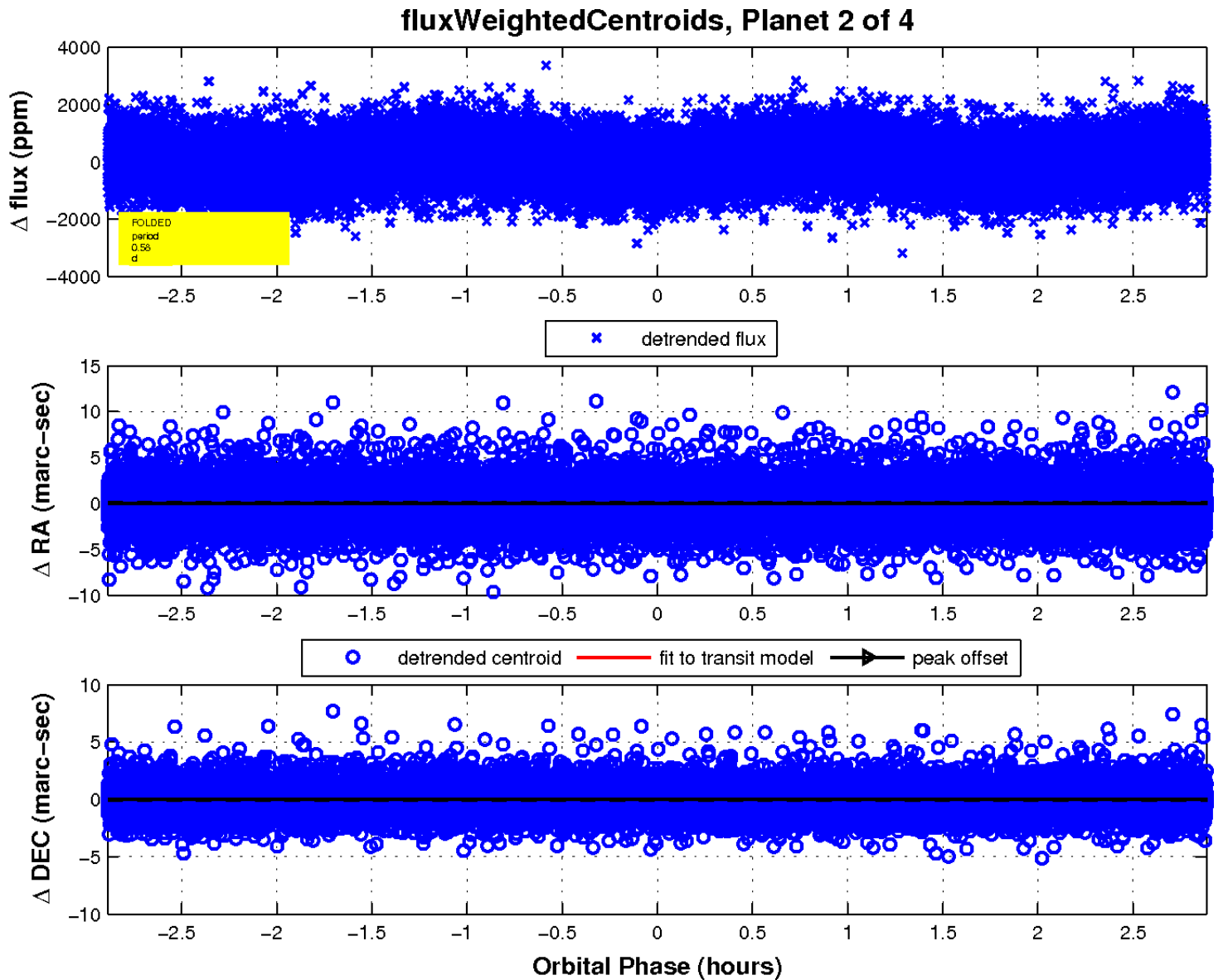
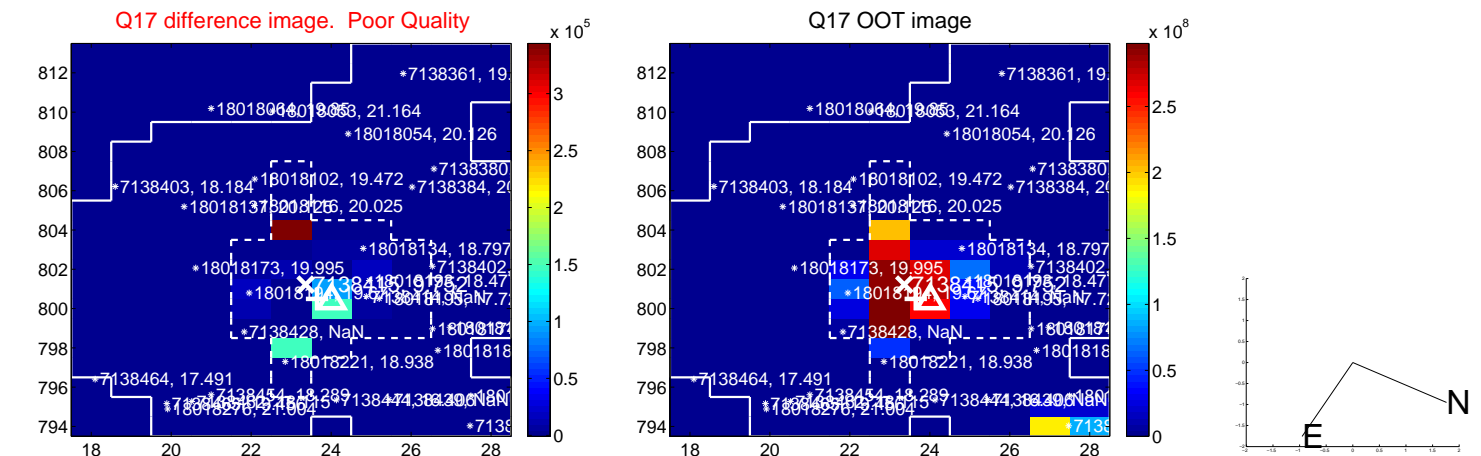
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

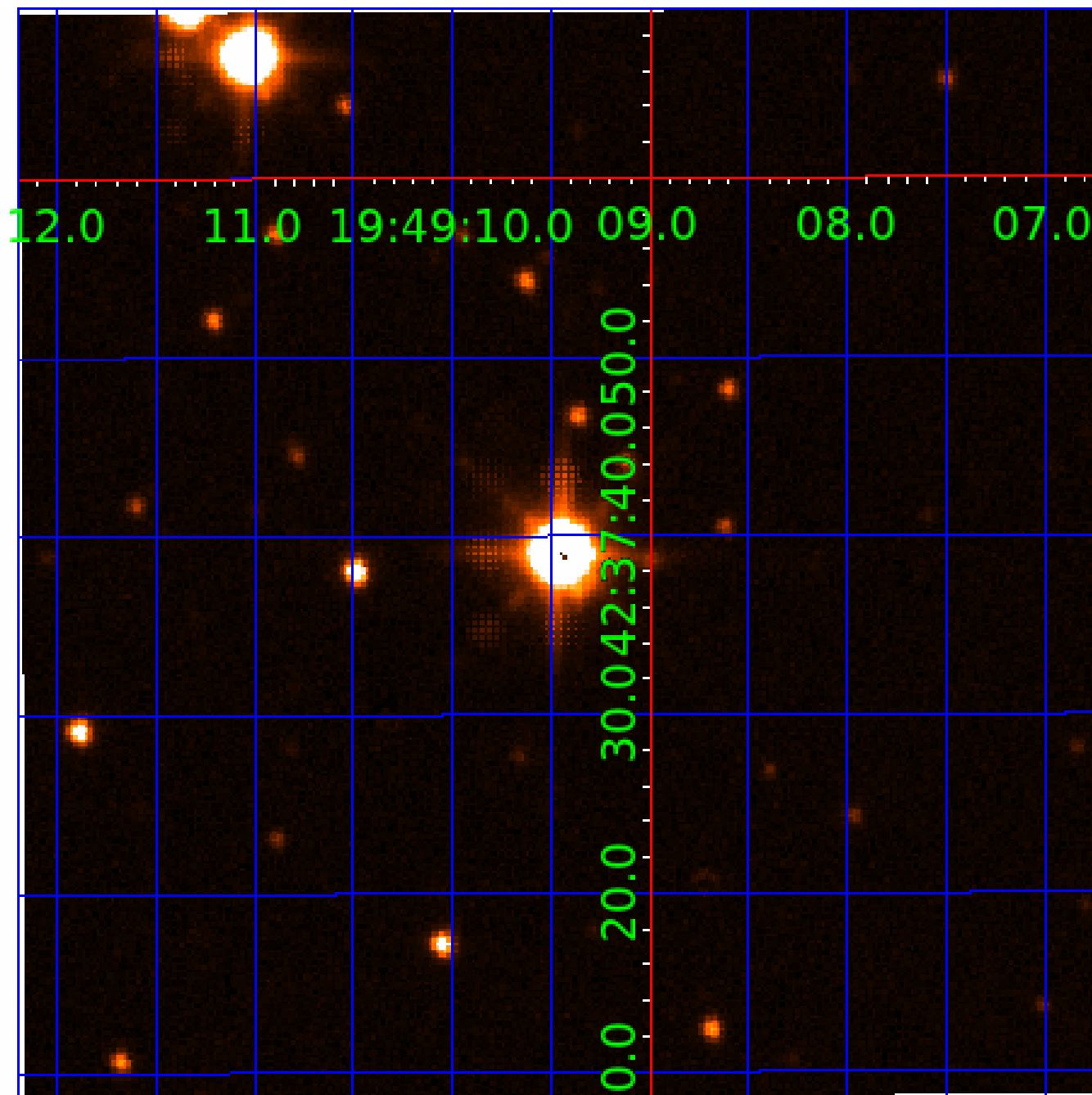


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007138415

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})
007138415-01	OBS	No	0.826798	132.304866	172.0	1.042	9.1	10.8	2.98	8665	4.57	95660.37
007138415-02	OBS	No	0.578752	131.823007	309.0	0.962	12.8	20.2	2.98	8665	6.11	153912.95
007138415-03	OBS	No	0.578748	131.989942	332.0	0.888	12.2	21.2	2.98	8665	6.36	153914.29
007138415-04	OBS	No	0.578750	131.573494	45.7	1.500	12.1	-1.0	2.98	8665	2.06	153913.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007138415-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007138415-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
007138415-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007138415-04	OBS	FP	0.00	1	0	0	0	LPP_DV—NO_FITS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

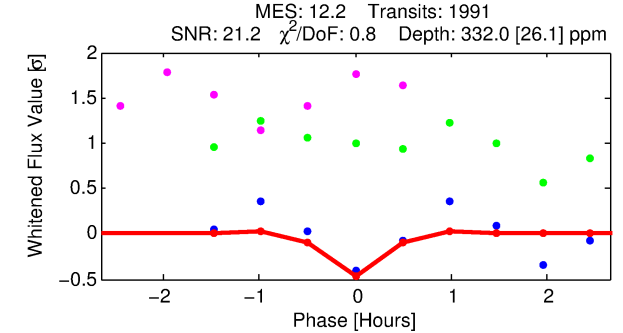
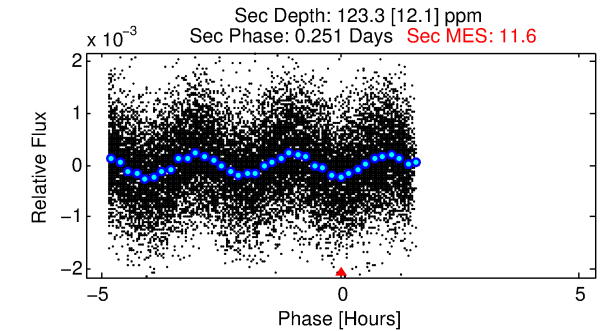
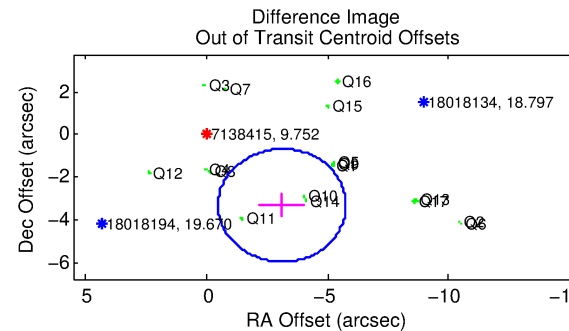
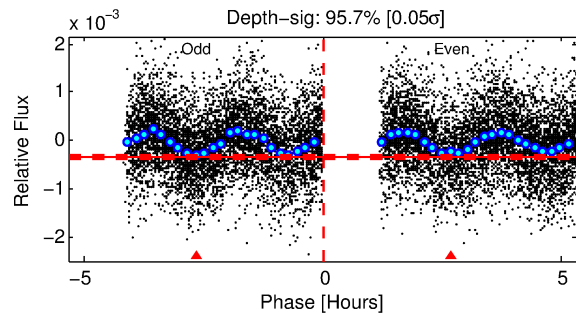
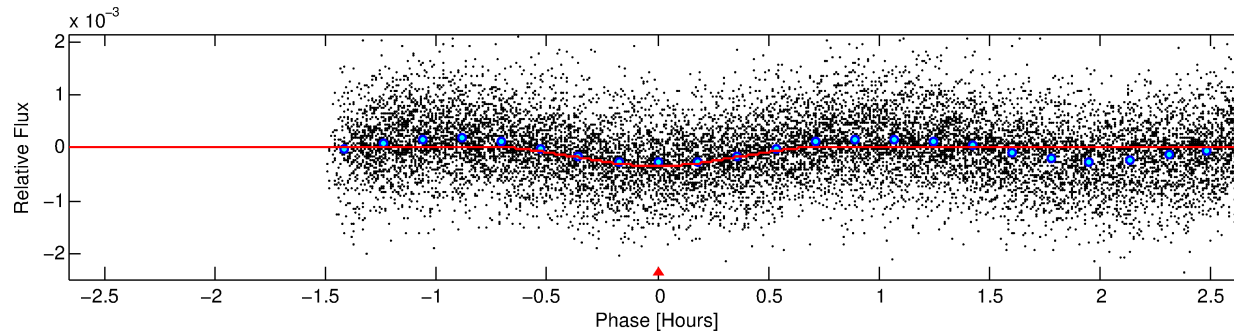
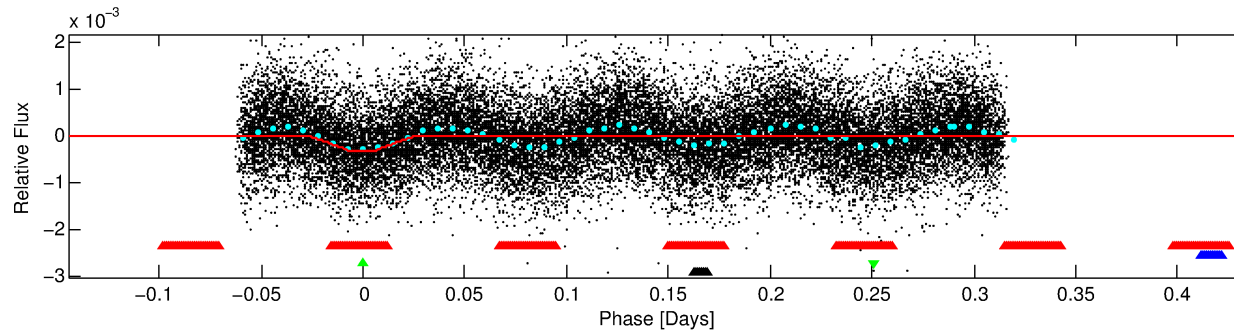
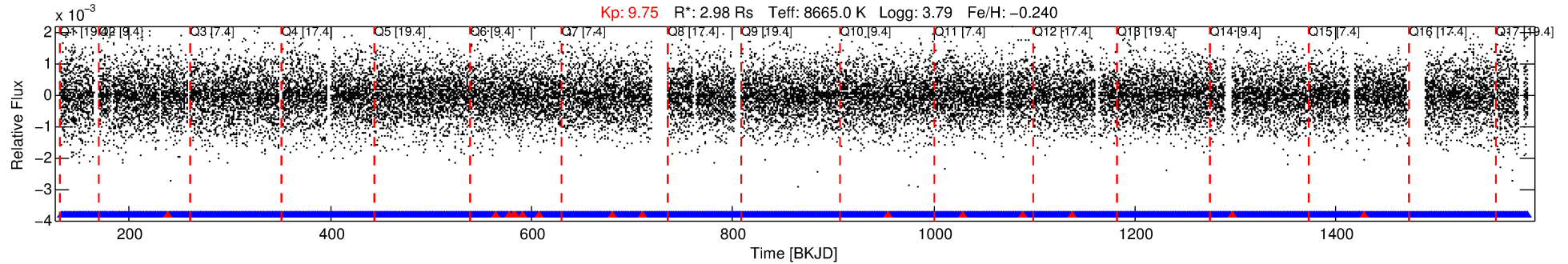
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007138415-03

No Significant Match Found

DV One-Page Summary

KIC: 7138415 Candidate: 3 of 4 Period: 0.579 d



DV Fit Results:

Period = 0.57875 [0.00001] d
Epoch = 131.9899 [0.0006] BKJD
 $R_p/R^* = 0.0195$ [0.0037]
 $a/R^* = 2.55$ [2.66]
 $b = 0.90$ [0.26]
 $\text{Seff} = 153914.29$ [103830.28]
 $T_{\text{eq}} = 5051$ [852] K
 $R_p = 6.36$ [2.93] R_{e}
 $a = 0.0171$ [0.0070] AU
 $A_g = 0.49$ [0.37] [-1.36 σ]
 $T_{\text{eff}} = 6533$ [696] K [1.35 σ]

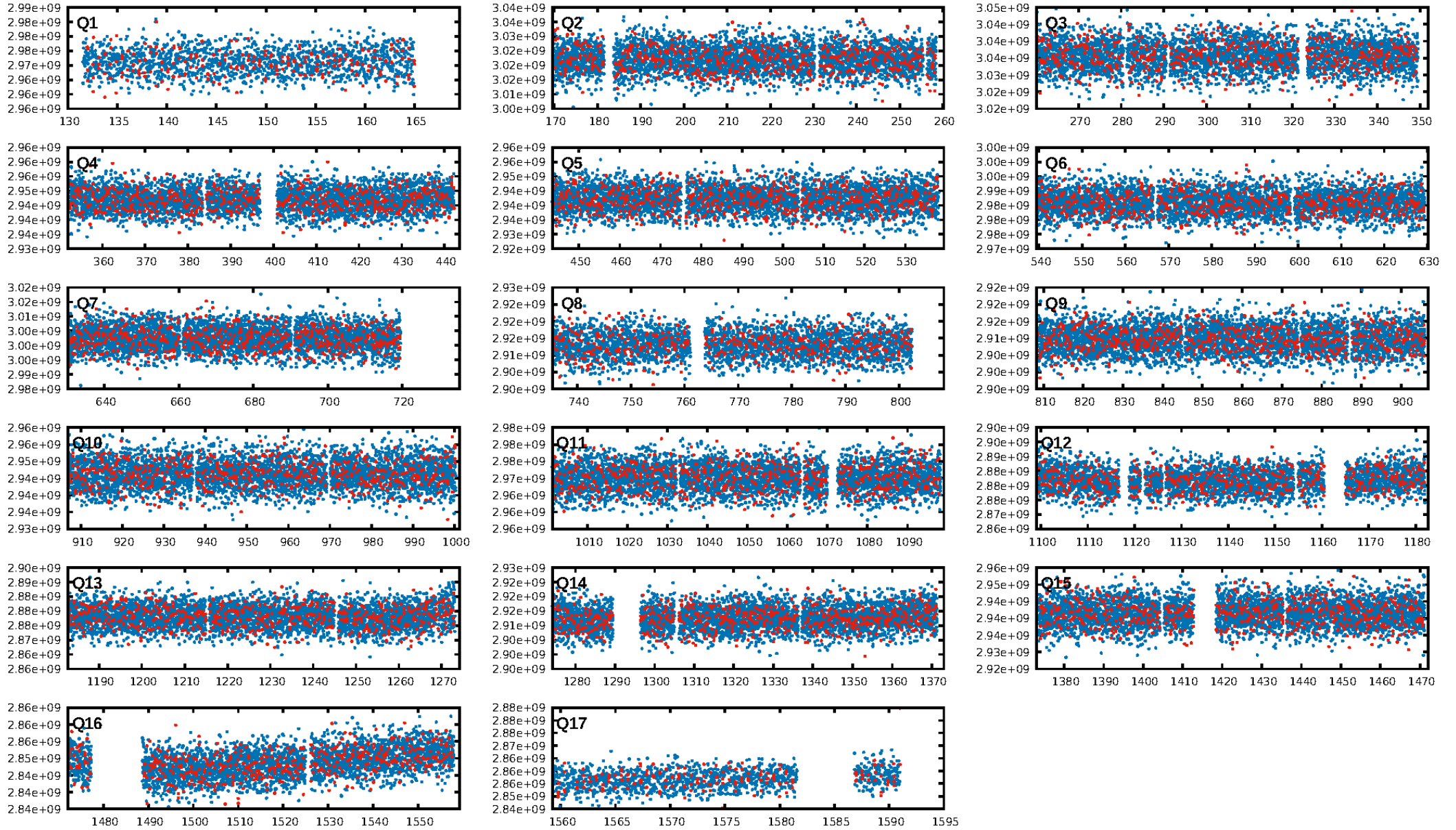
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1890/1905]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 0.149 arcsec [2.02 σ]
OotOffset-rm: 4.551 arcsec [5.18 σ]
KicOffset-rm: 4.680 arcsec [5.10 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

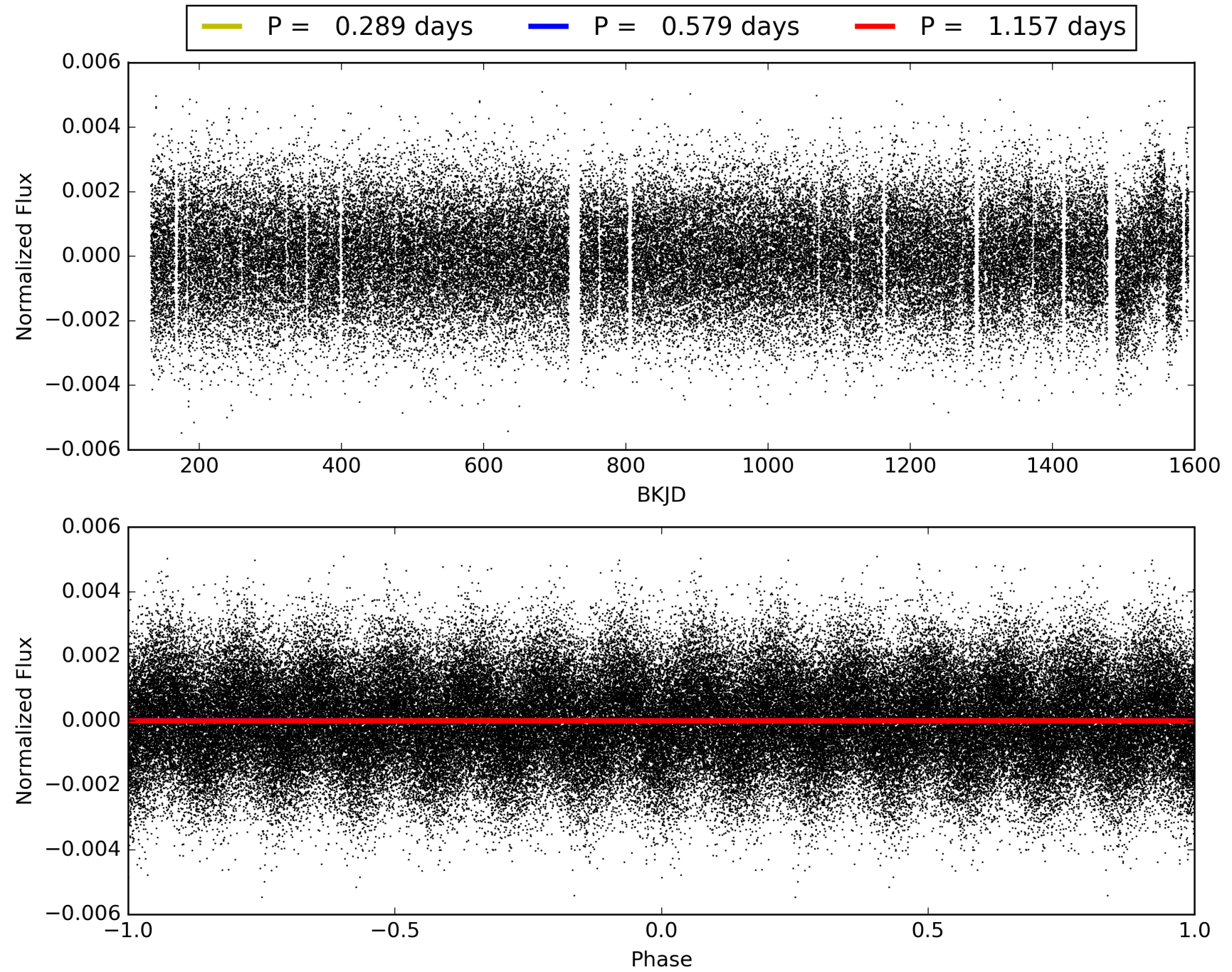
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:01:41 Z

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

TCE 007138415-03, PDC Light Curves

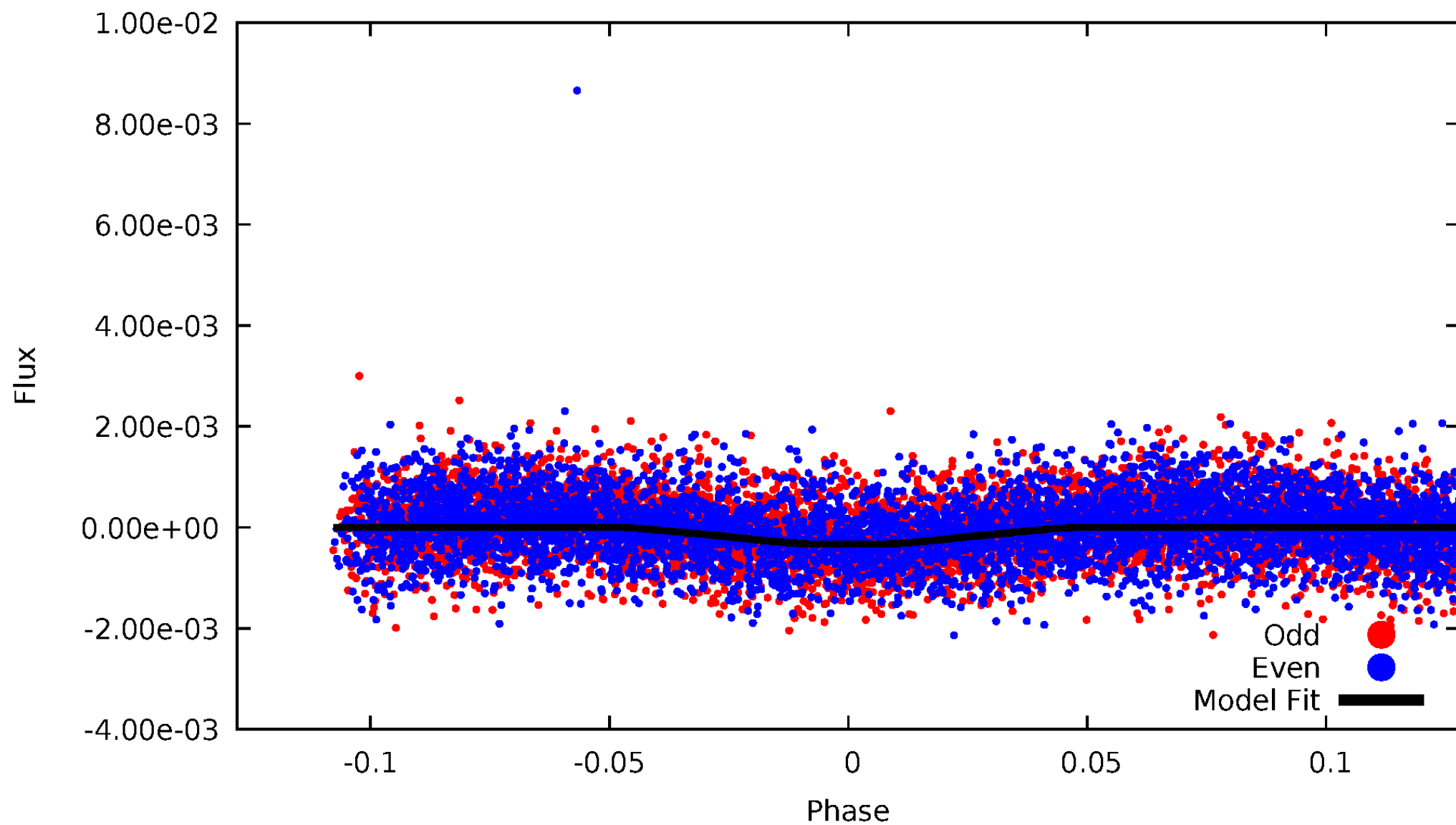


TCE 007138415-03



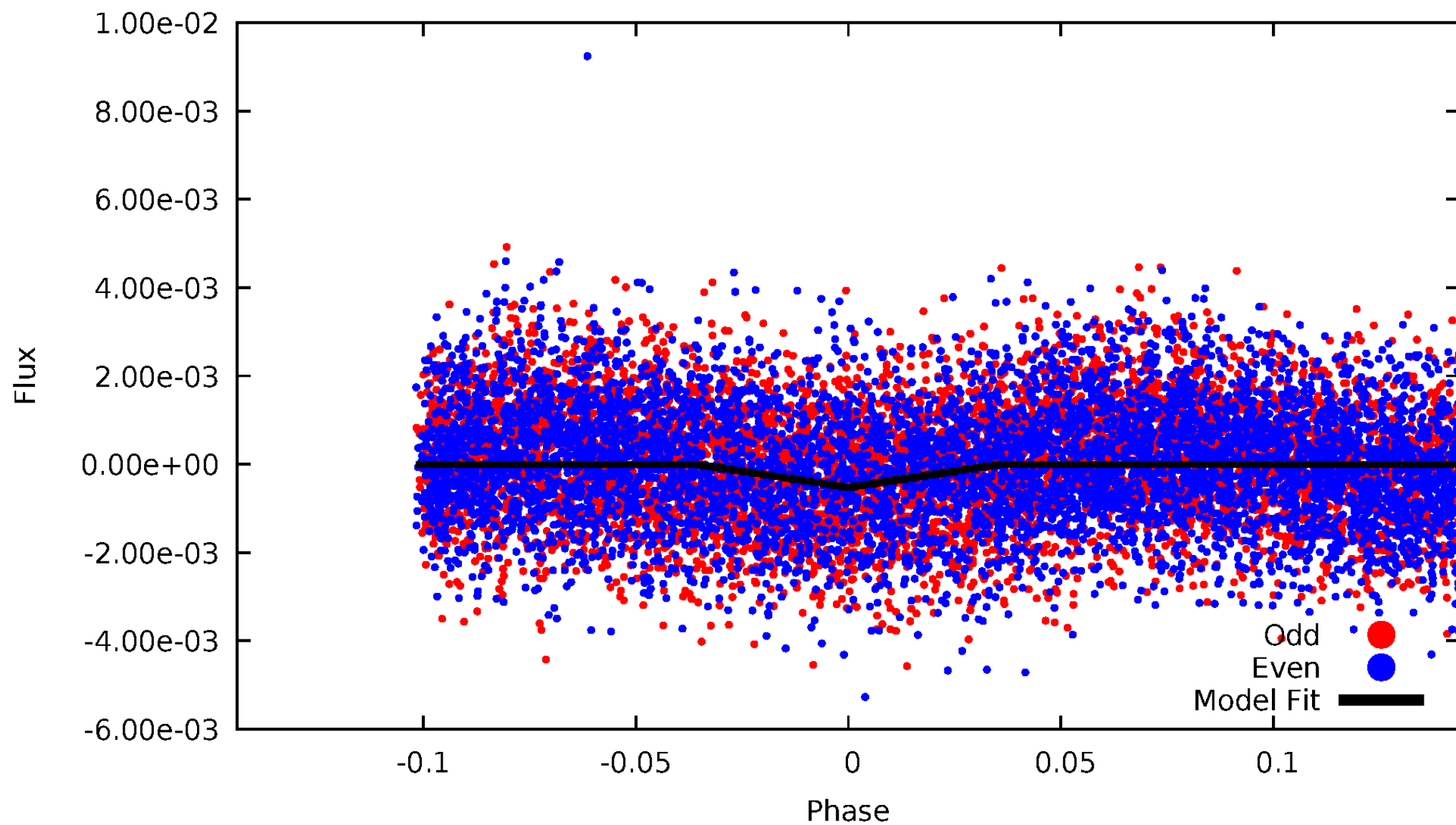
DV Odd/Even

TCE 007138415-03

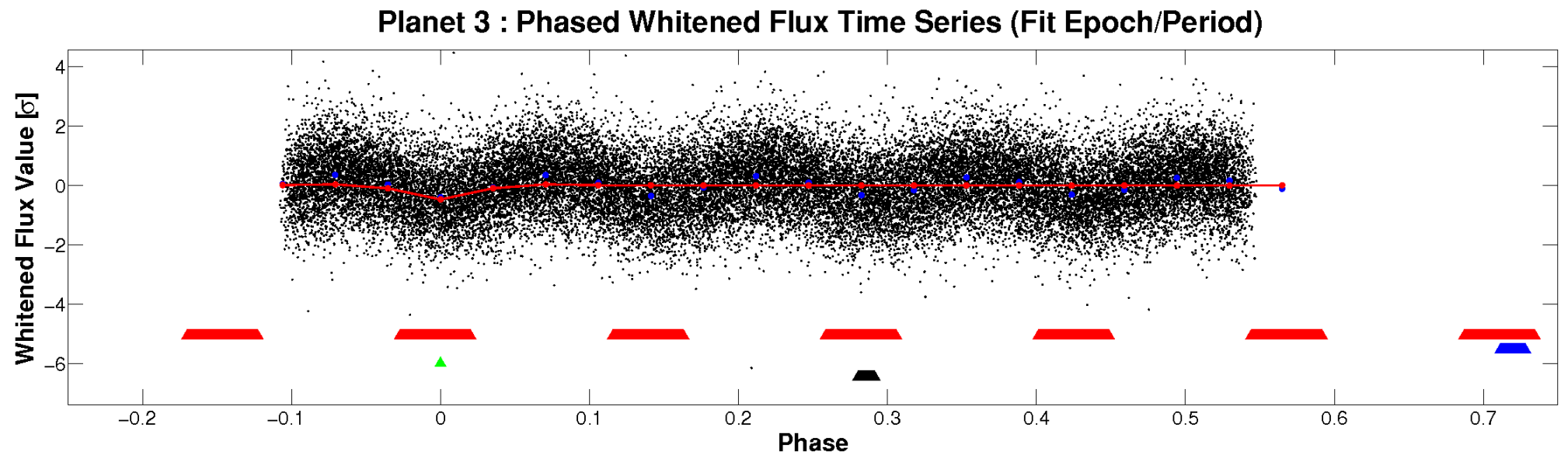
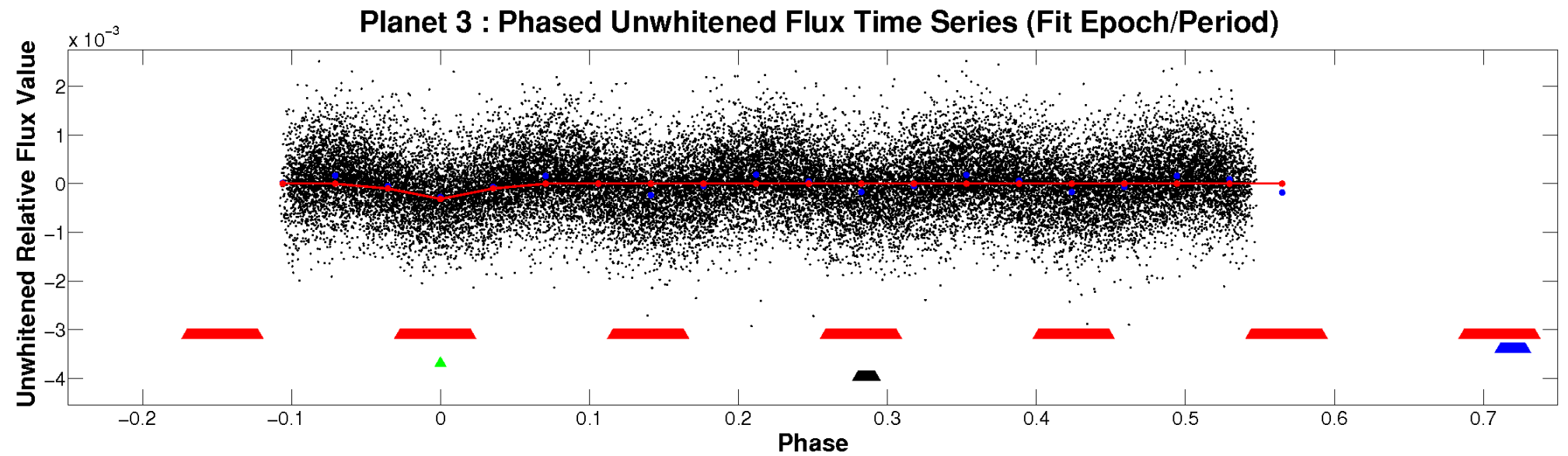


ALT Odd/Even

TCE 007138415-03

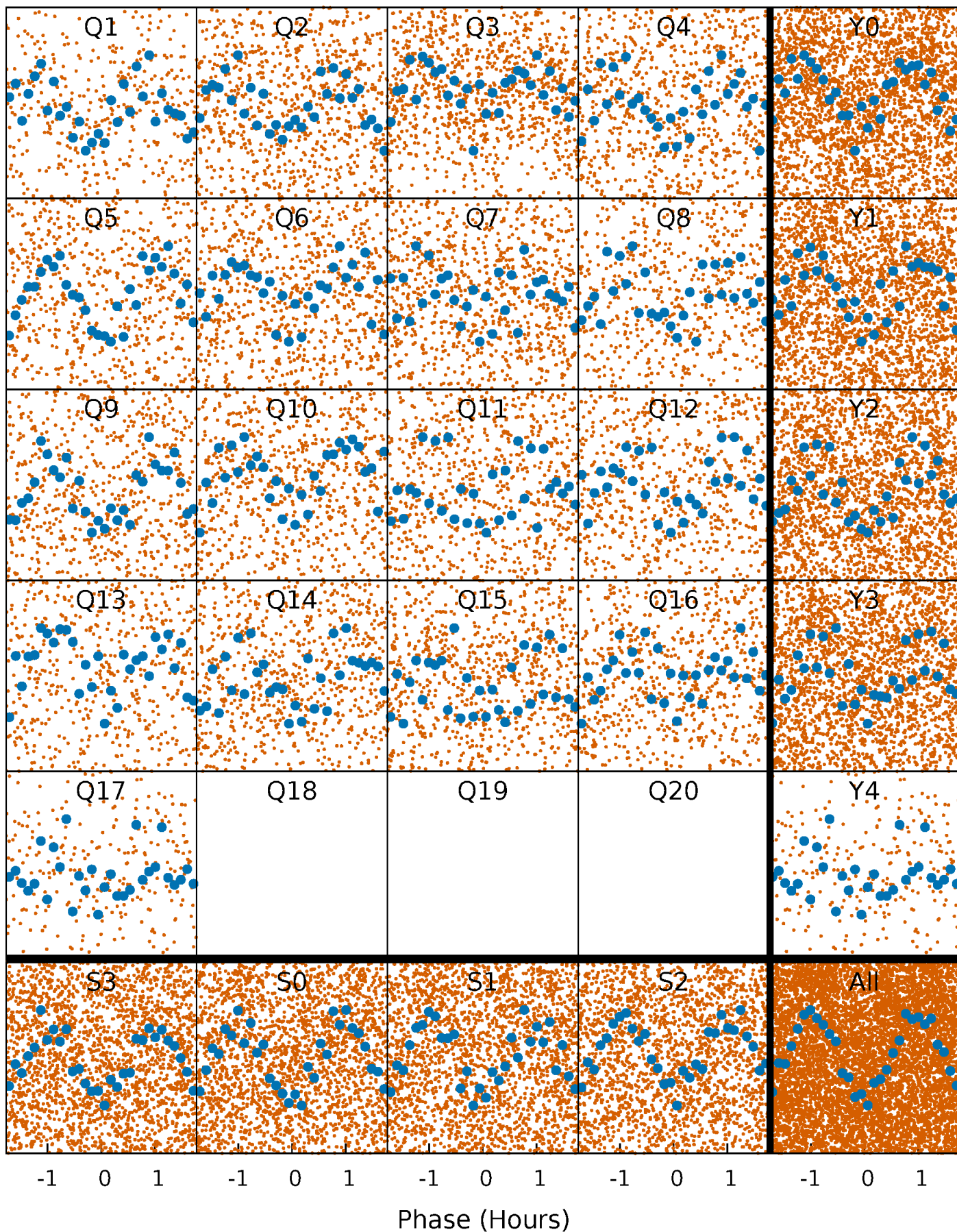


Non-Whitened Vs. Whitened Light Curve



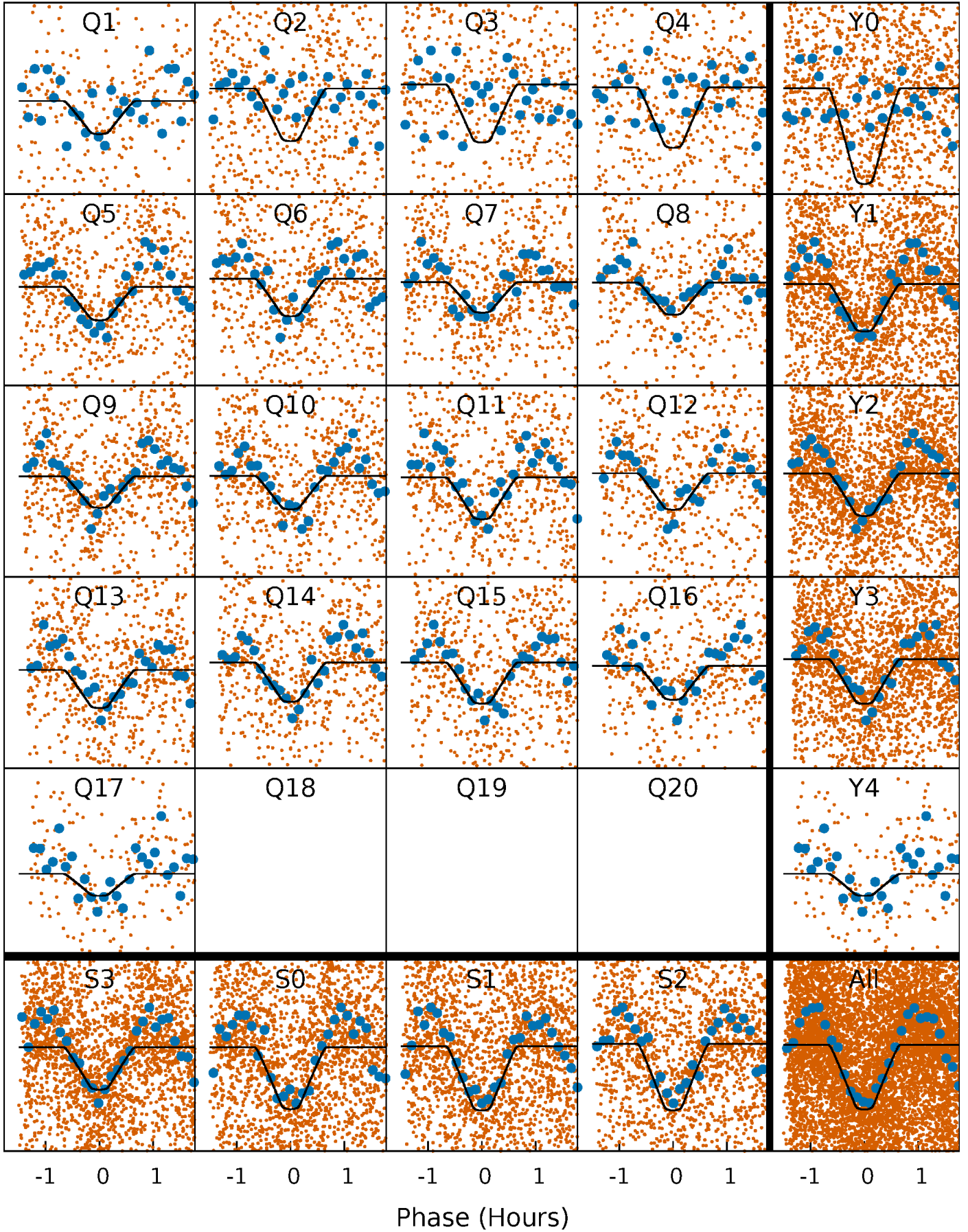
PDC Quarter-Phased Transit Curves

TCE 007138415-03 P= 0.578748 Days $T_0=131.989942$ (BKJD)



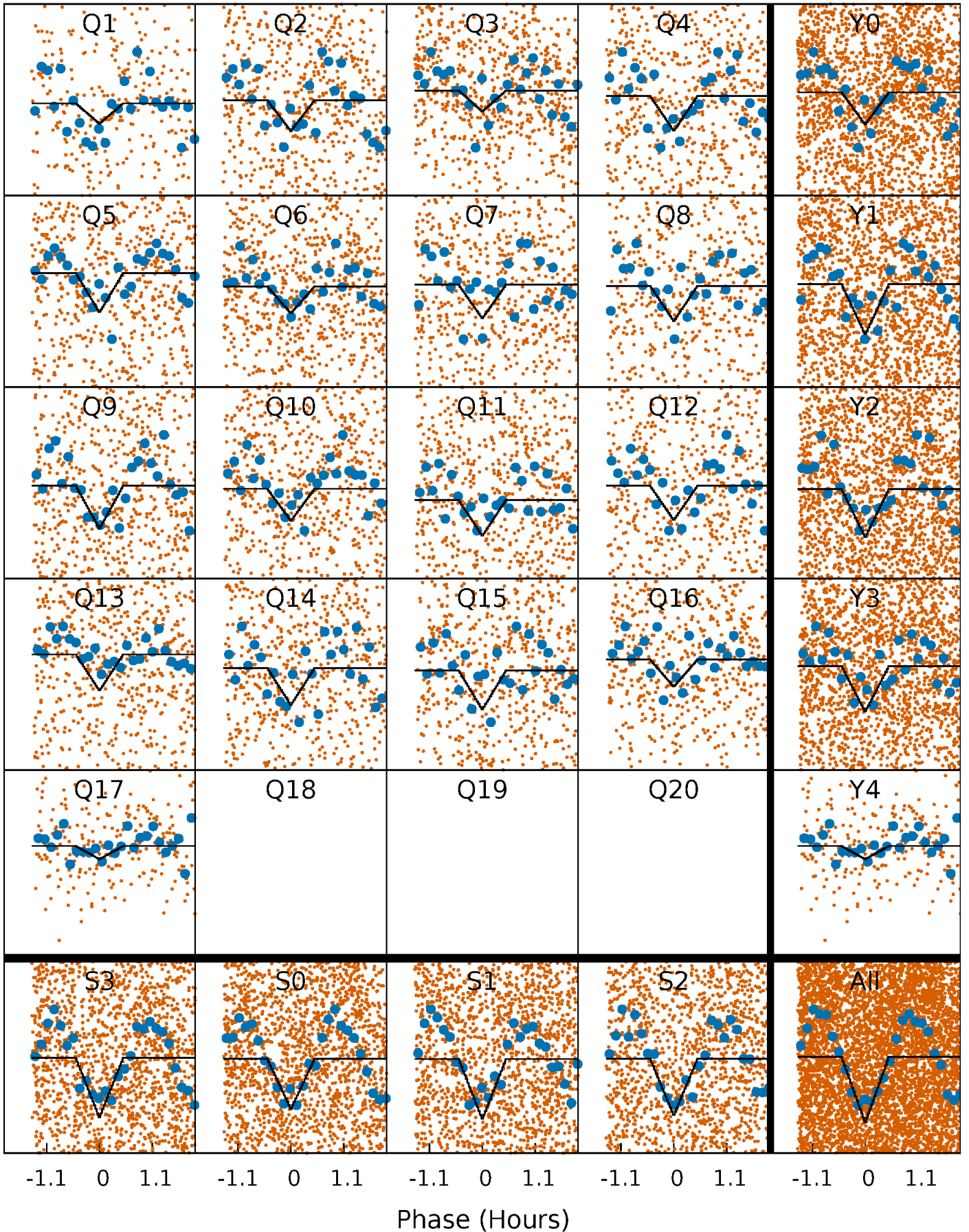
DV Quarter-Phased Transit Curves

TCE 007138415-03 P= 0.578748 Days $T_0=131.989942$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

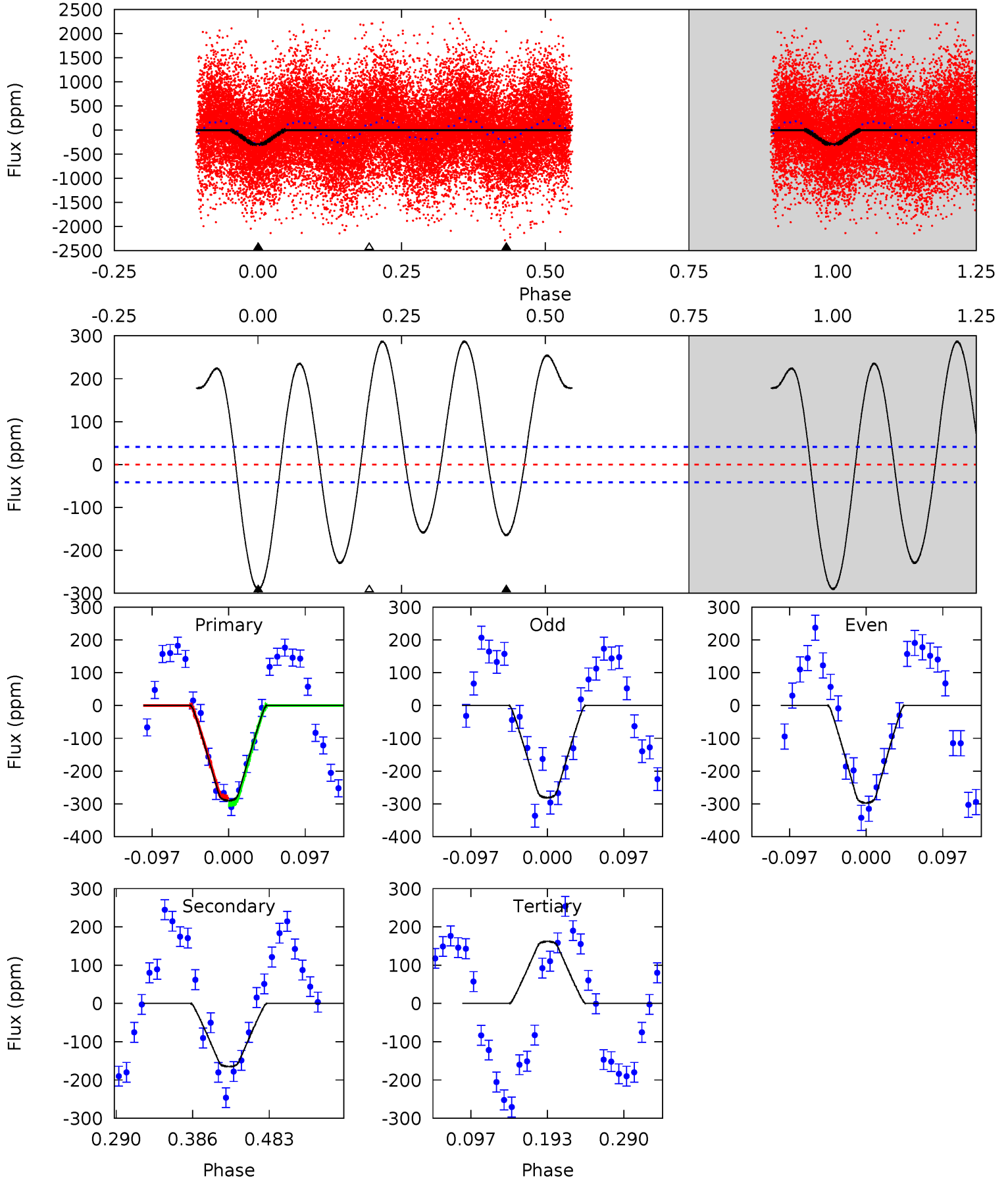
TCE 007138415-03 P= 0.578750 Days $T_0=131.986279$ (BKJD)



DV Model-Shift Uniqueness Test

007138415-03, P = 0.578748 Days, E = 131.411194 Days

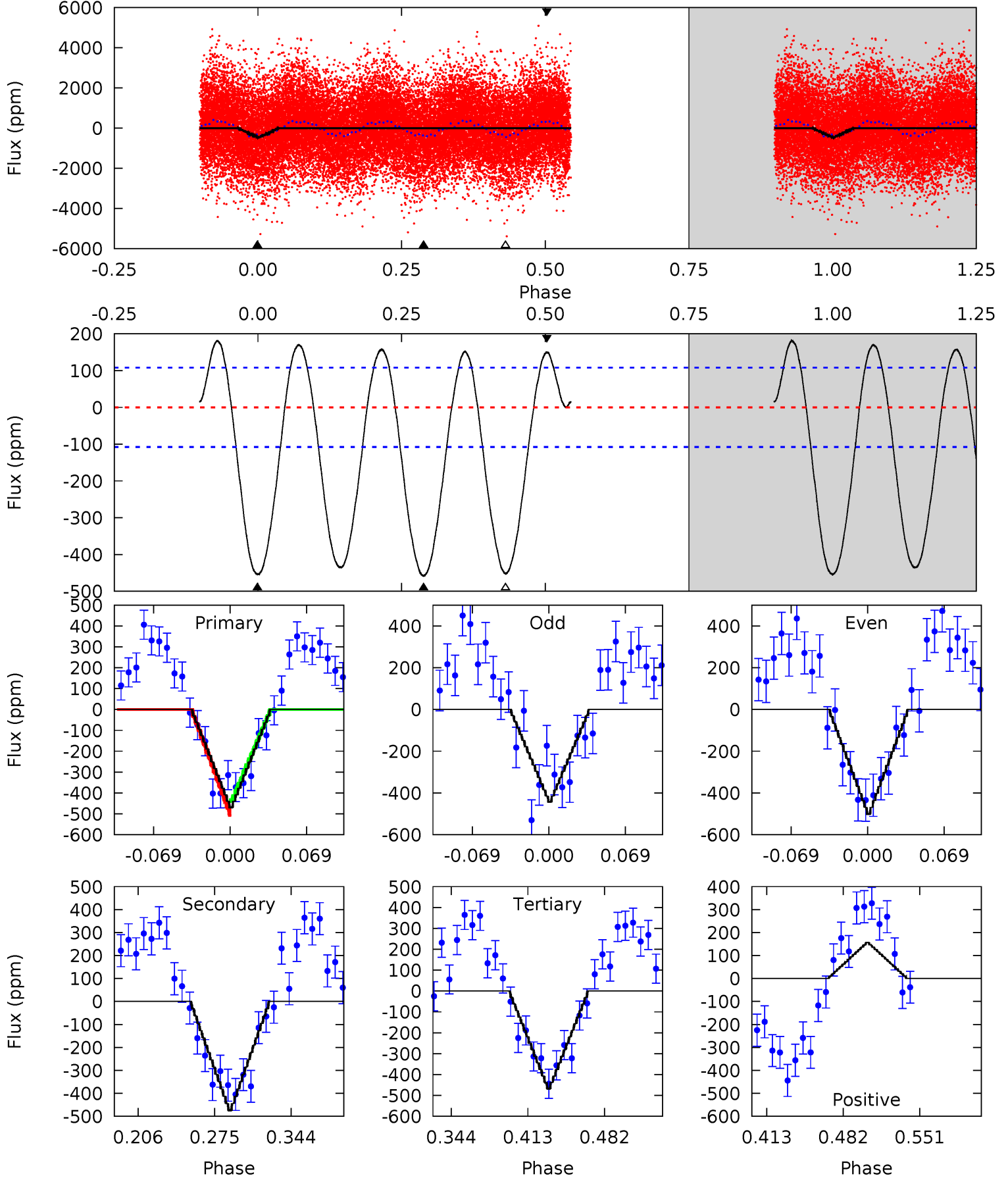
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.1	18.2	-17.9	0	4.57	1.66	17.8	50.0	32.1	36.2	18.2	0.90	0.94	0.50	1.02



Alt Model-Shift Uniqueness Test

007138415-03, P = 0.578750 Days, E = 131.407529 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	19.9	19.6	6.55	4.64	1.82	9.14	0.09	13.1	0.28	13.3	1.19	1.01	0.28	1.69



Stellar Parameters For KIC 007138415

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8665^{+270}_{-360}	$3.787^{+0.385}_{-0.165}$	$-0.240^{+0.450}_{-0.300}$	$2.985^{+1.024}_{-1.252}$	$1.994^{+0.495}_{-0.405}$	$0.106^{+0.349}_{-0.049}$
	+3%/-4%	+10%/-4%	+188%/-125%	+34%/-42%	+25%/-20%	+330%/-46%
Source	KIC0	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 007138415-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-165 ± 9	$6.01^{+1.95}_{-1.61}$	6866^{+666}_{-687}	5821^{+1183}_{-1050}	$0.736^{+0.641}_{-0.294}$
Alt.	-461 ± 23	$7.02^{+2.01}_{-1.82}$	6897^{+602}_{-777}	7719^{+1292}_{-936}	$1.529^{+1.141}_{-0.589}$

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 $A_{obs} \gg 1.0$

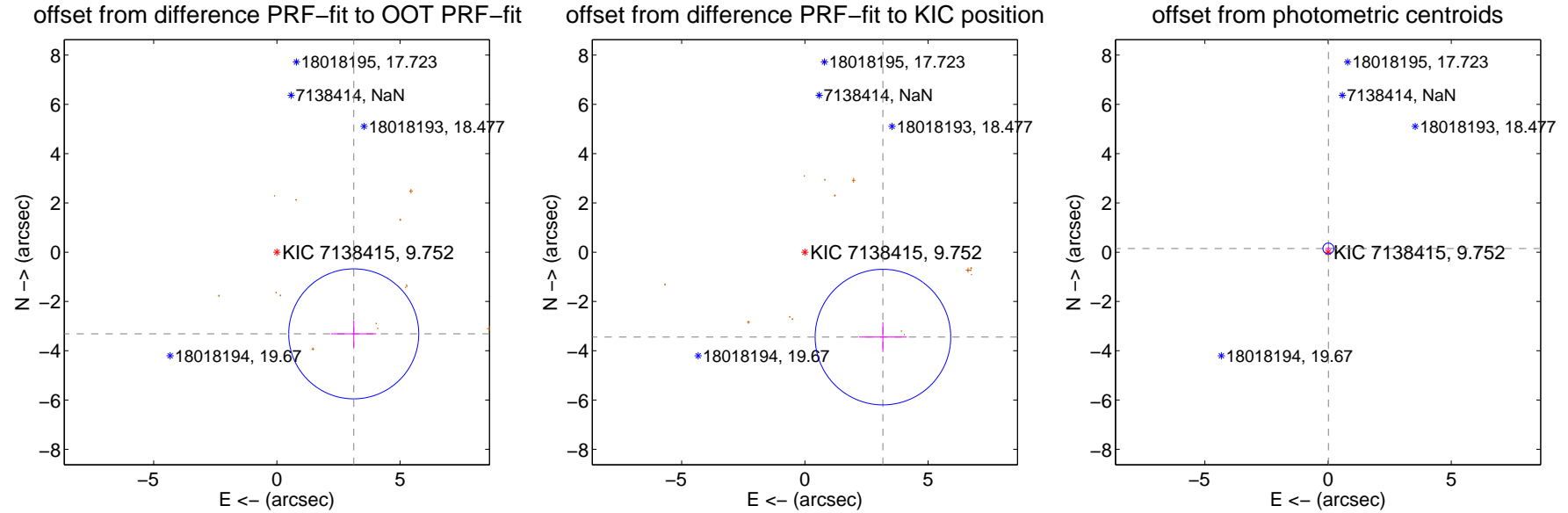
DV Centroid Data

Supplemental centroid analysis for 007138415-03. **Kepler magnitude: 9.75.** Transit SNR 21.19

There are 0 quarters with good PRF difference image offsets

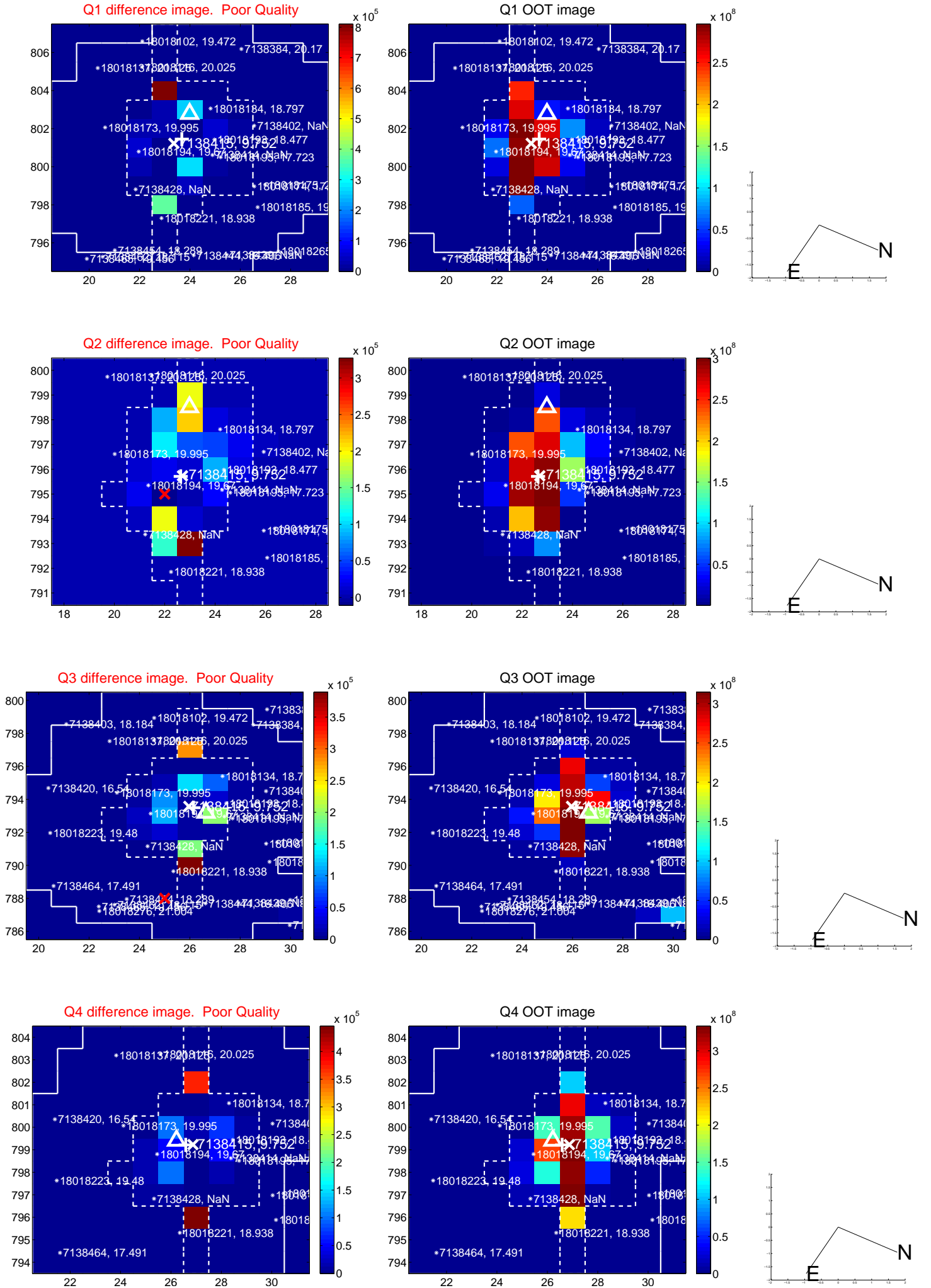
The OOT PRF centroid is offset from the target star catalog position by about 3.10 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.551 ± 0.879	5.18	-3.120 ± 0.918	-3.314 ± 0.544
PRF-fit source offset from KIC position	4.680 ± 0.917	5.10	-3.168 ± 0.965	-3.445 ± 0.607
photometric centroid source offset	0.15 ± 0.07	2.02	-0.01 ± 0.12	0.15 ± 0.07

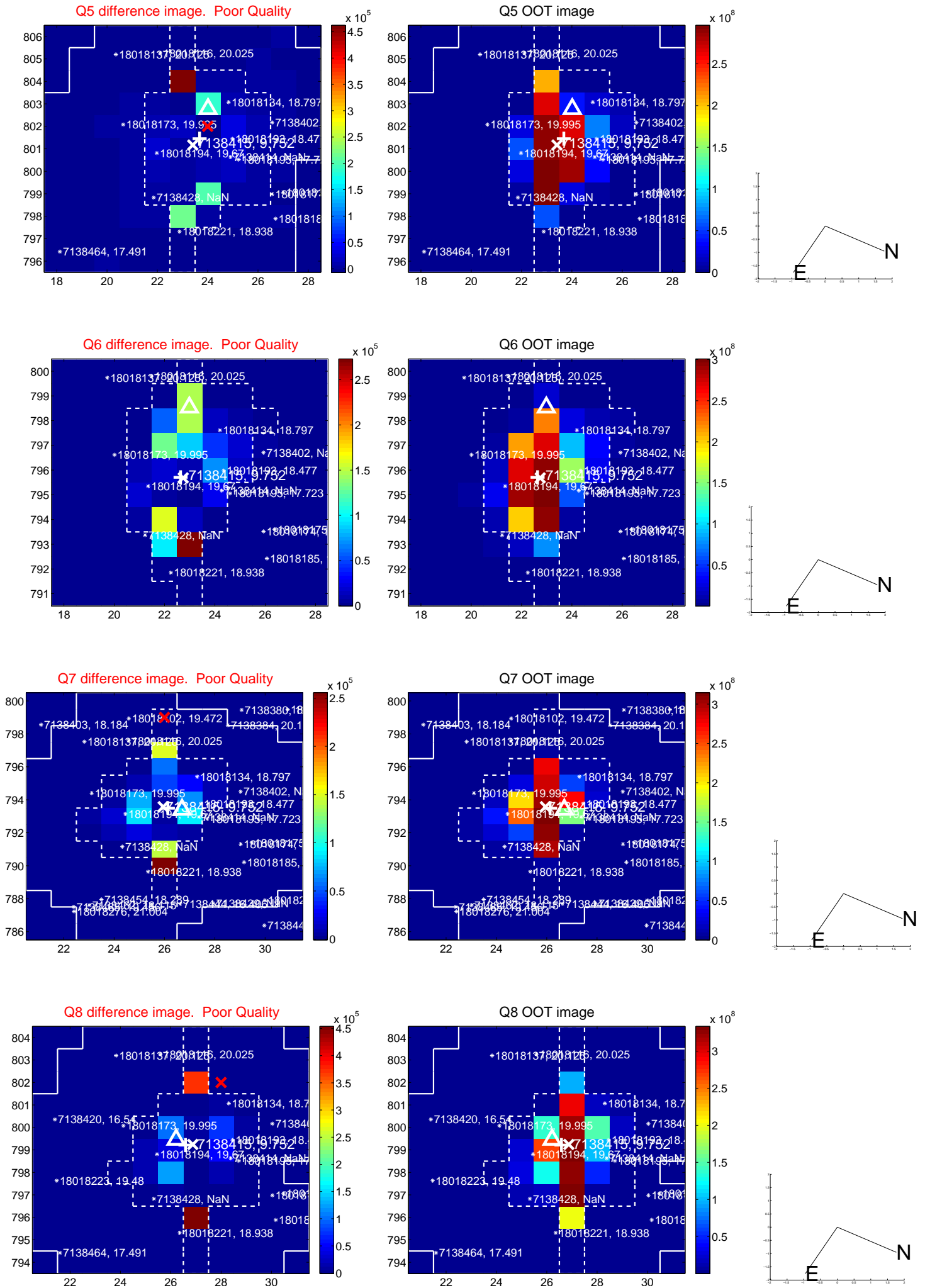


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

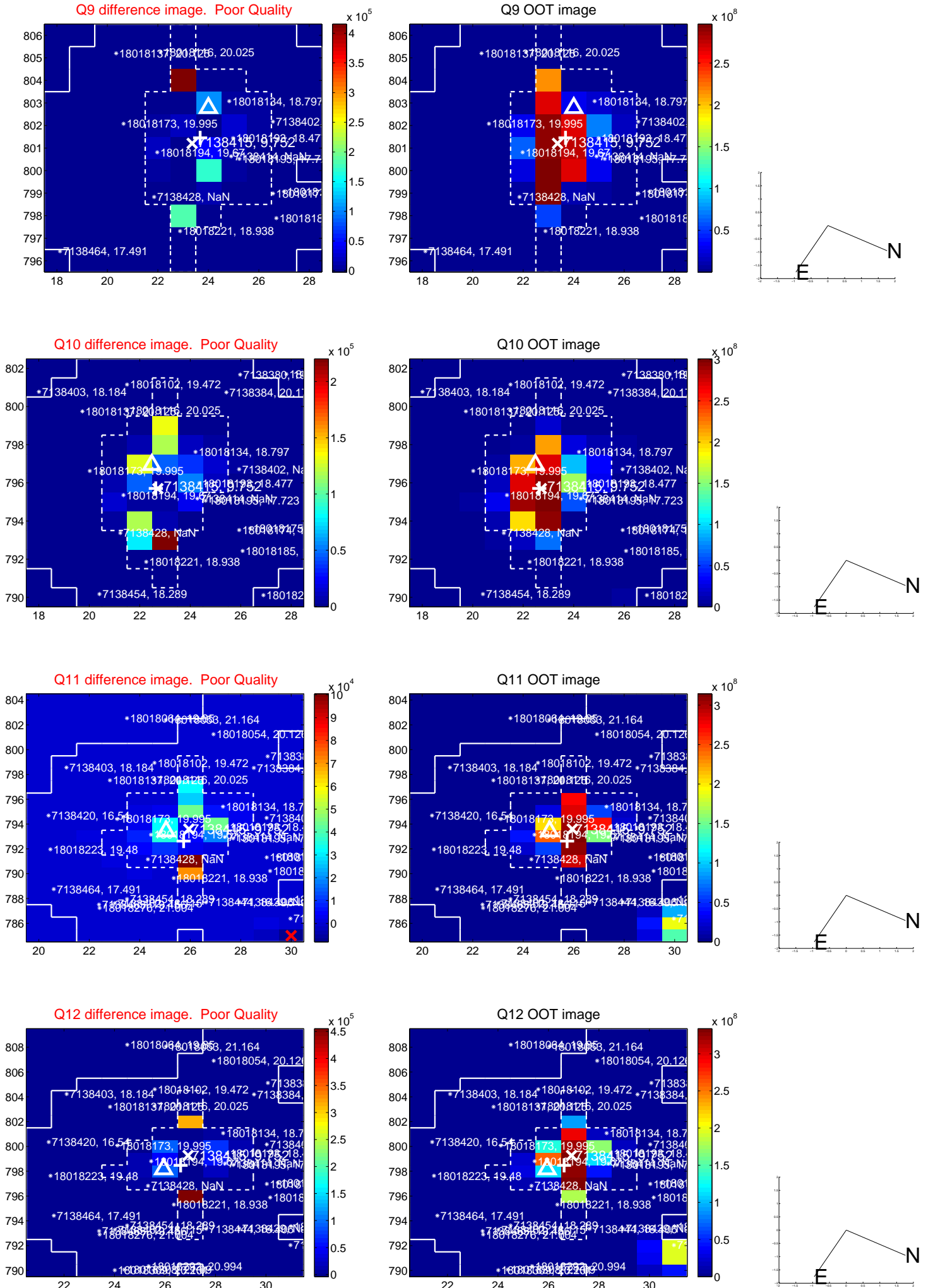
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



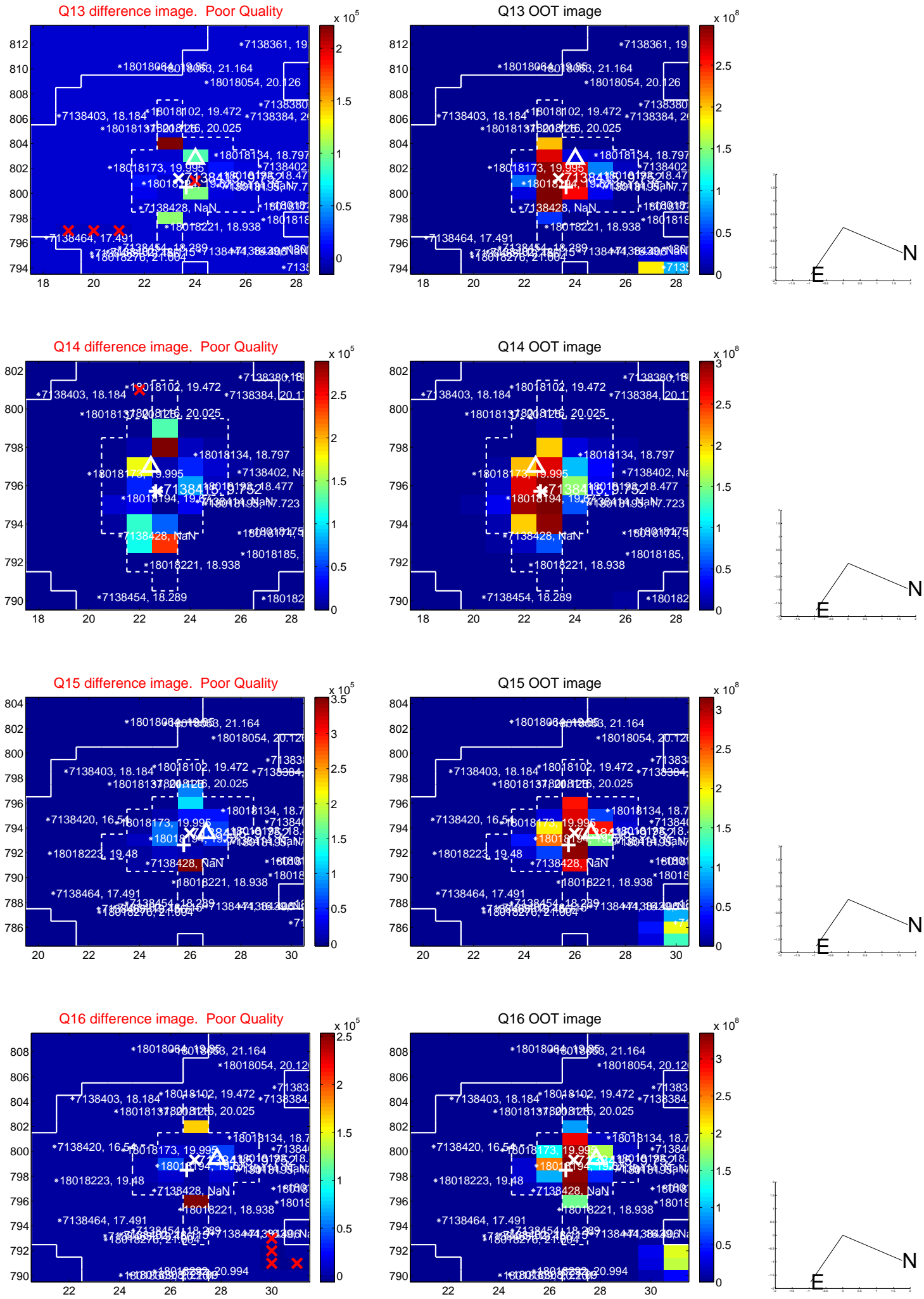
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

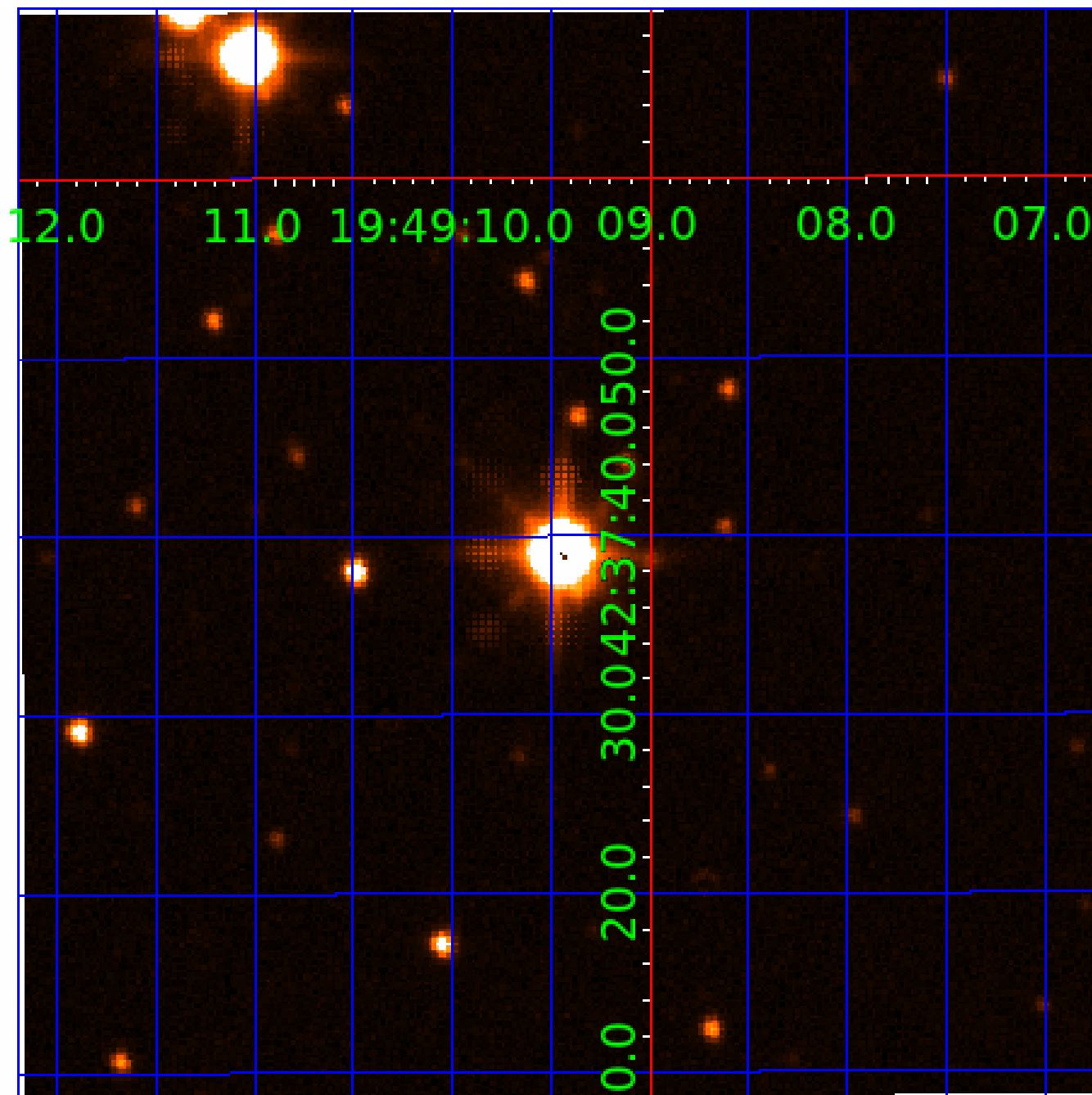


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007138415

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})
007138415-01	OBS	No	0.826798	132.304866	172.0	1.042	9.1	10.8	2.98	8665	4.57	95660.37
007138415-02	OBS	No	0.578752	131.823007	309.0	0.962	12.8	20.2	2.98	8665	6.11	153912.95
007138415-03	OBS	No	0.578748	131.989942	332.0	0.888	12.2	21.2	2.98	8665	6.36	153914.29
007138415-04	OBS	No	0.578750	131.573494	45.7	1.500	12.1	-1.0	2.98	8665	2.06	153913.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007138415-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007138415-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
007138415-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007138415-04	OBS	FP	0.00	1	0	0	0	LPP_DV—NO_FITS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

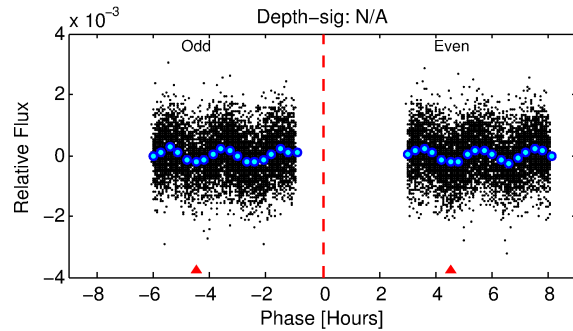
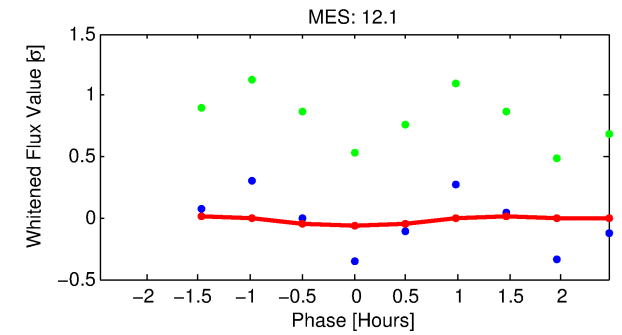
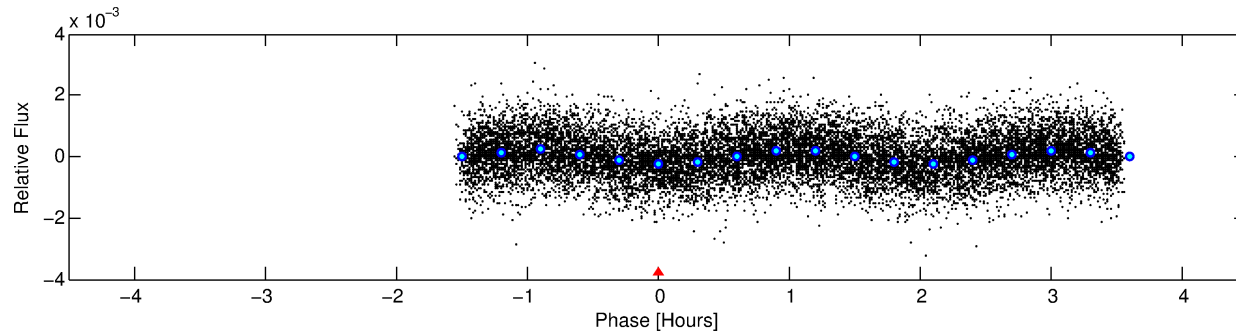
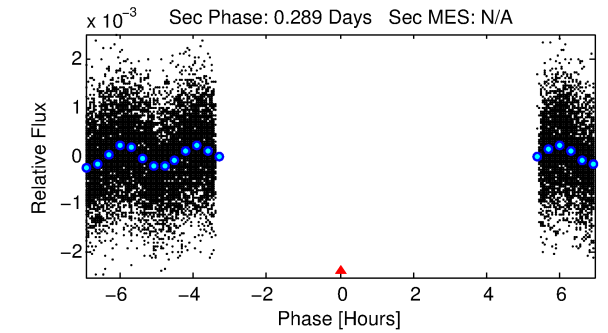
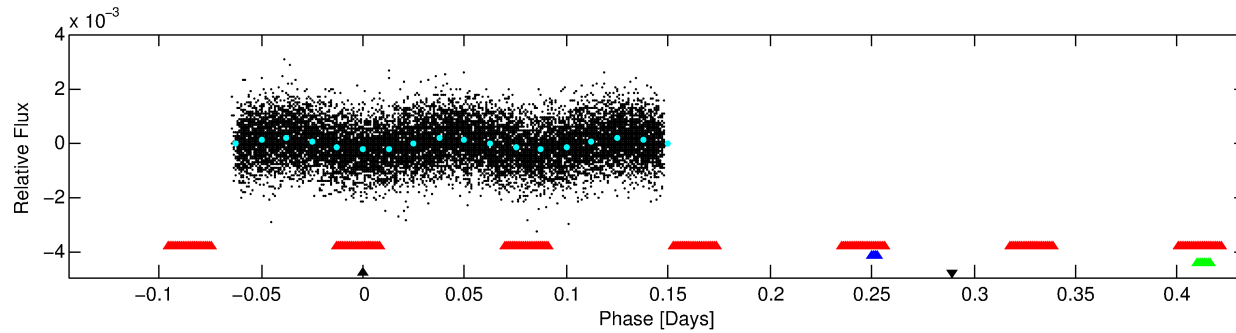
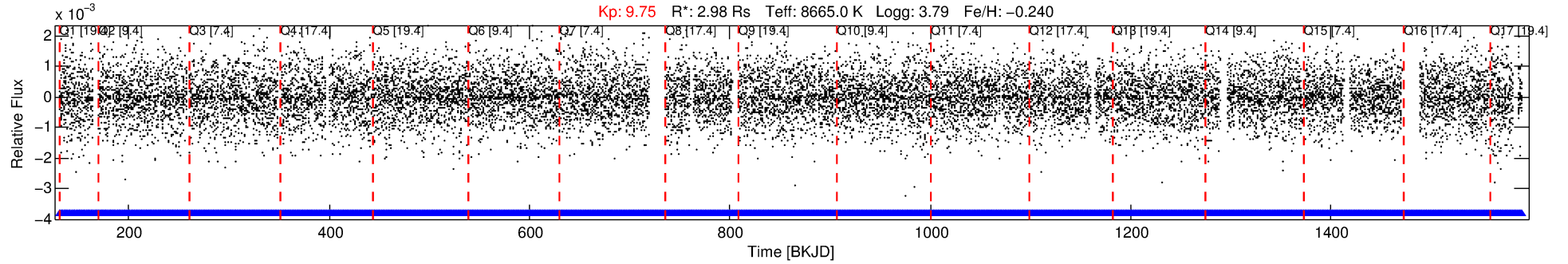
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007138415-04

No Significant Match Found

DV One-Page Summary

KIC: 7138415 Candidate: 4 of 4 Period: 0.579 d



TPS TCE Results:

Period = 0.57875 d
Epoch = 131.5735 BKJD

DV fit results are unavailable

DV Diagnostic Results:

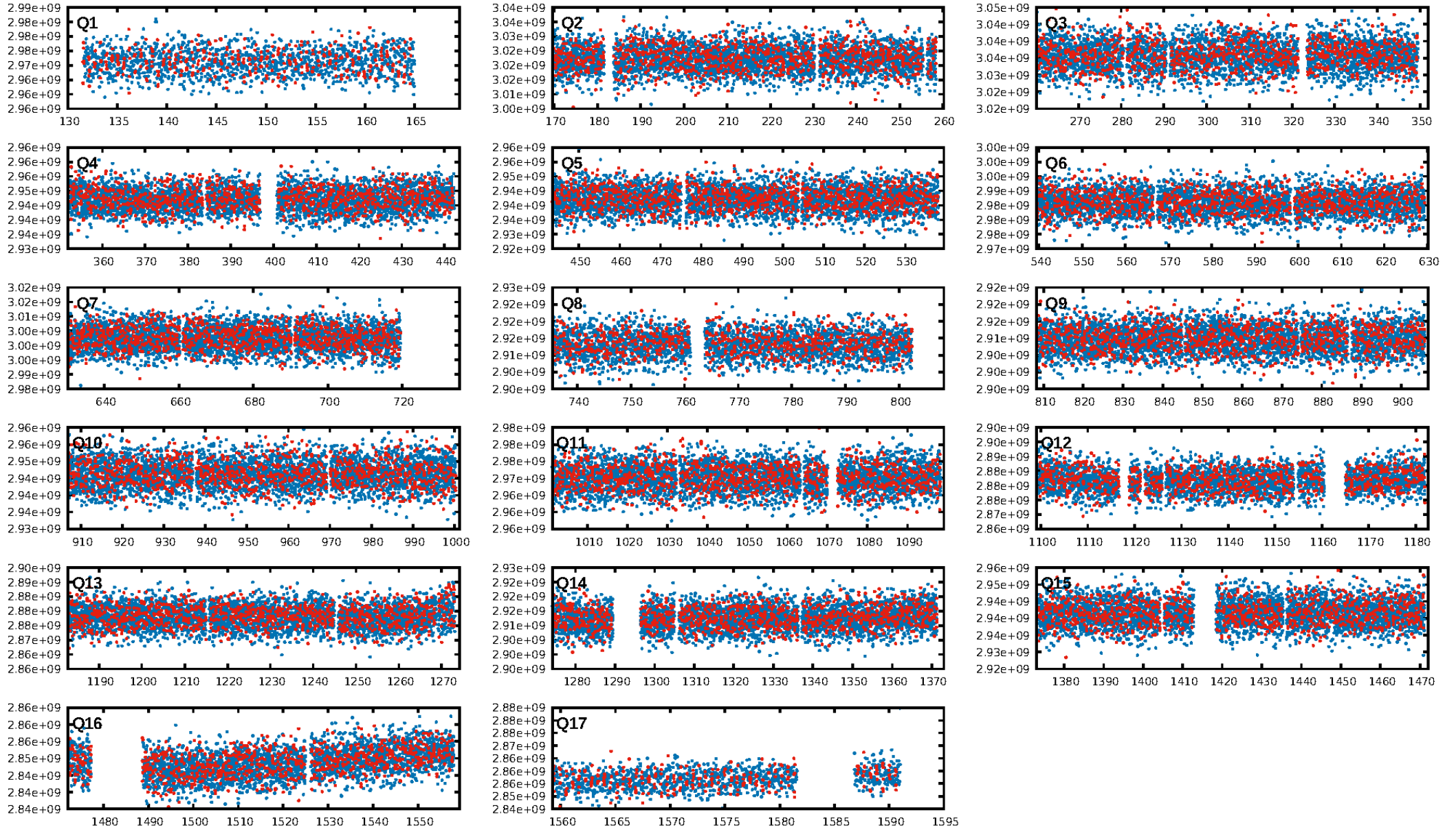
ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: N/A
GhostDiagnostic-chr: N/A

Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

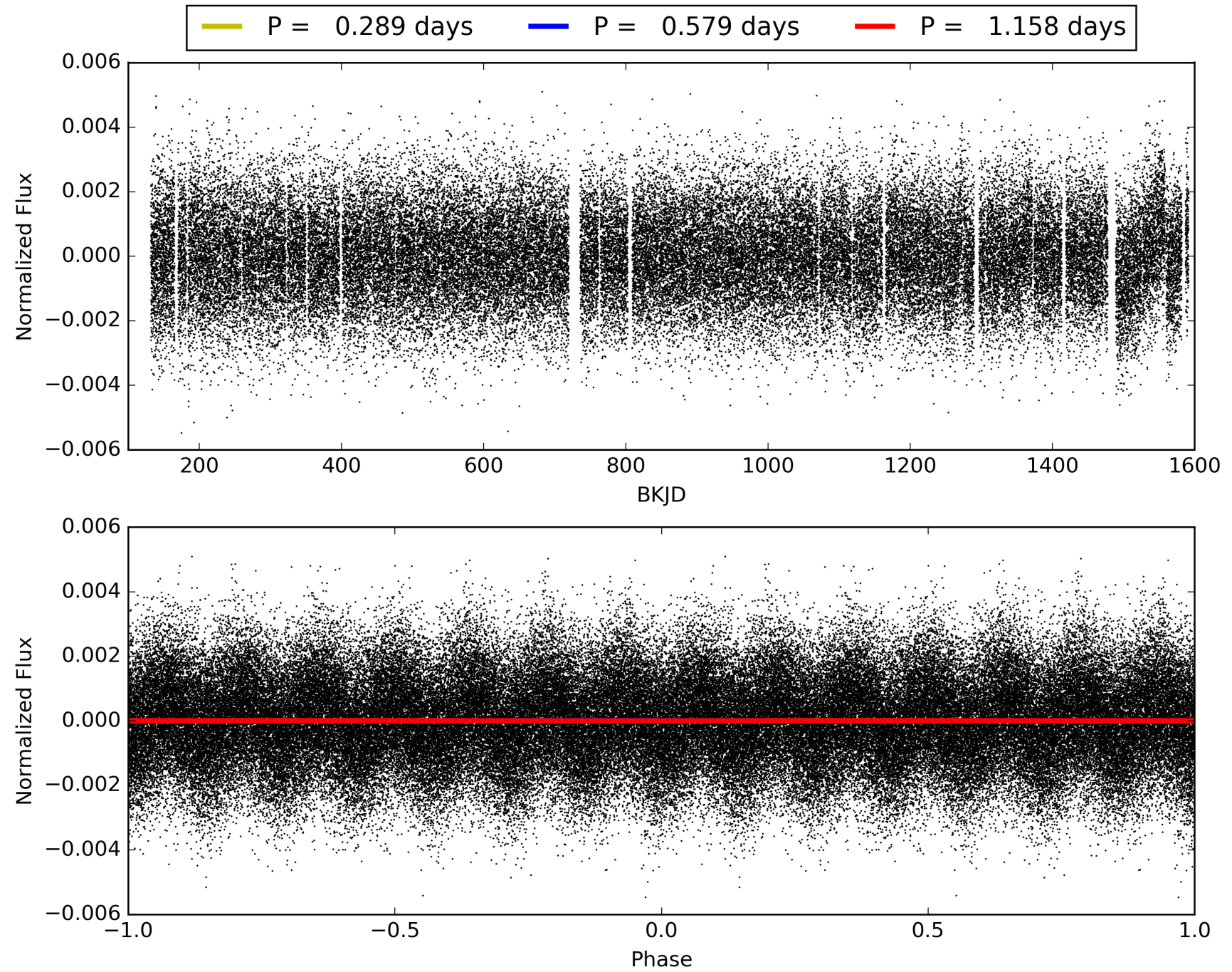
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:01:47 Z

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

TCE 007138415-04, PDC Light Curves

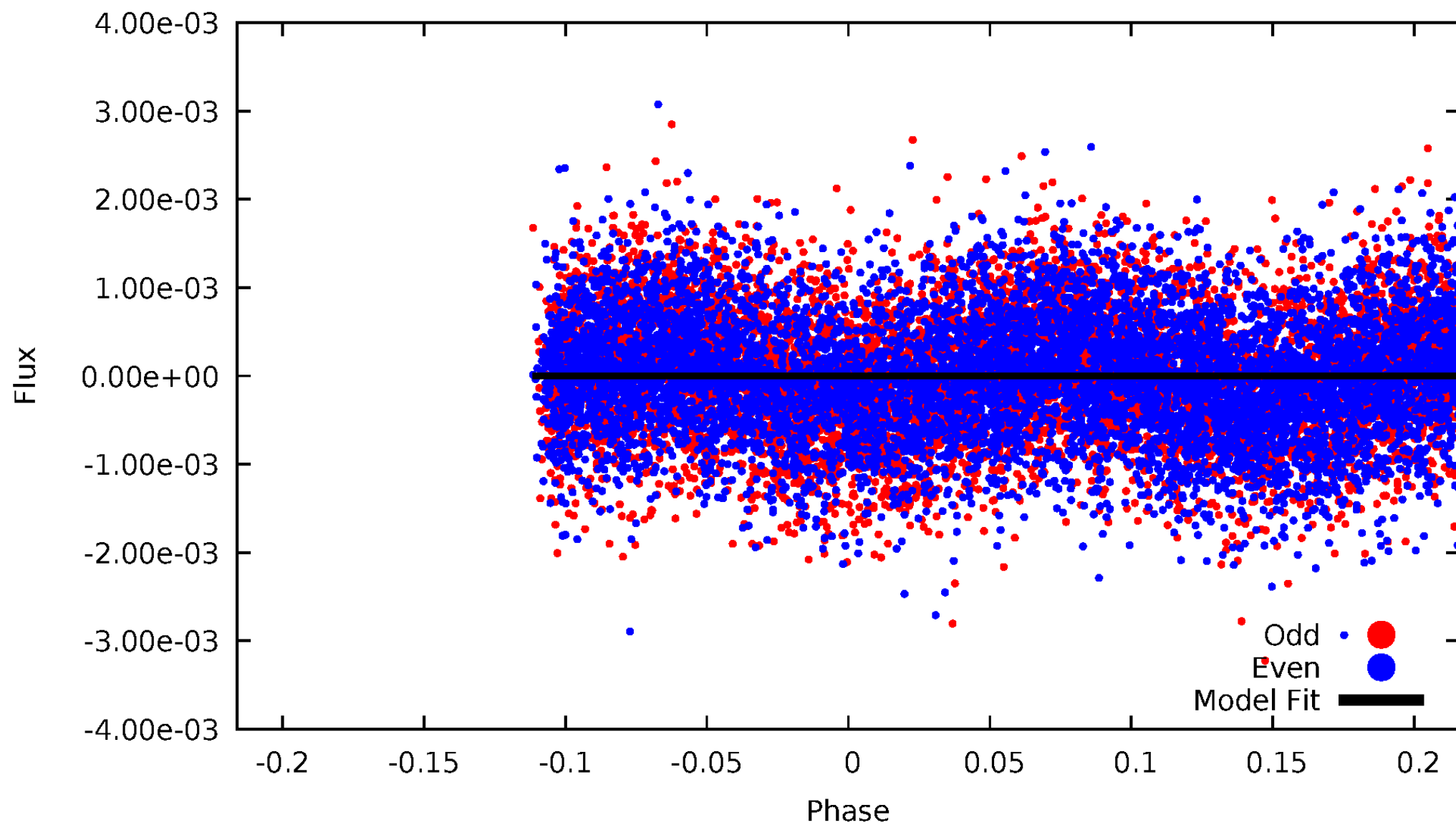


TCE 007138415-04



DV Odd/Even

TCE 007138415-04

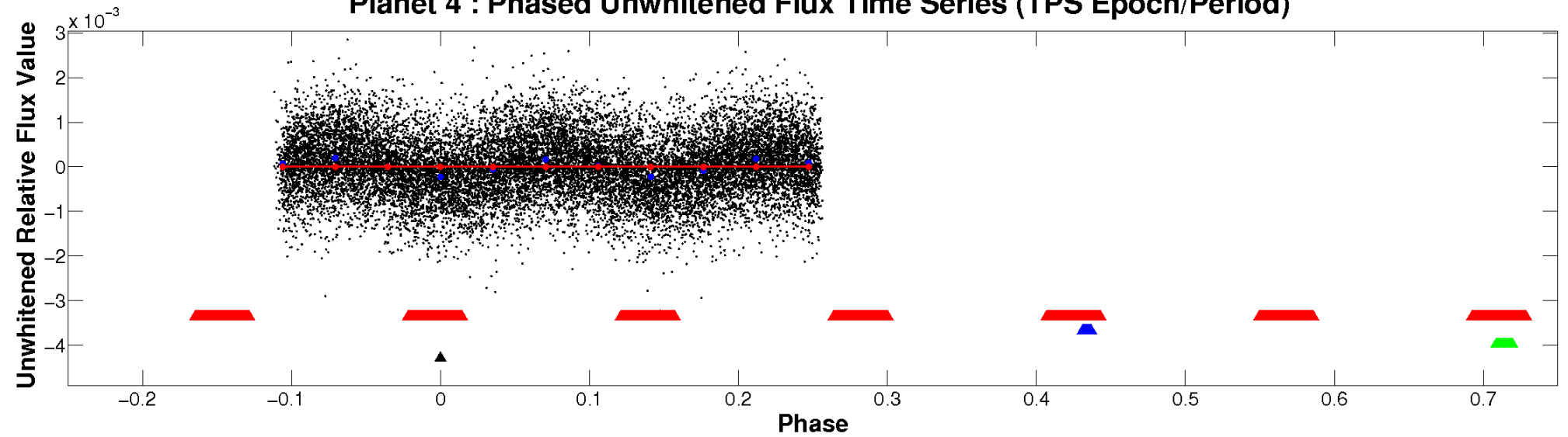


ALT Odd/Even

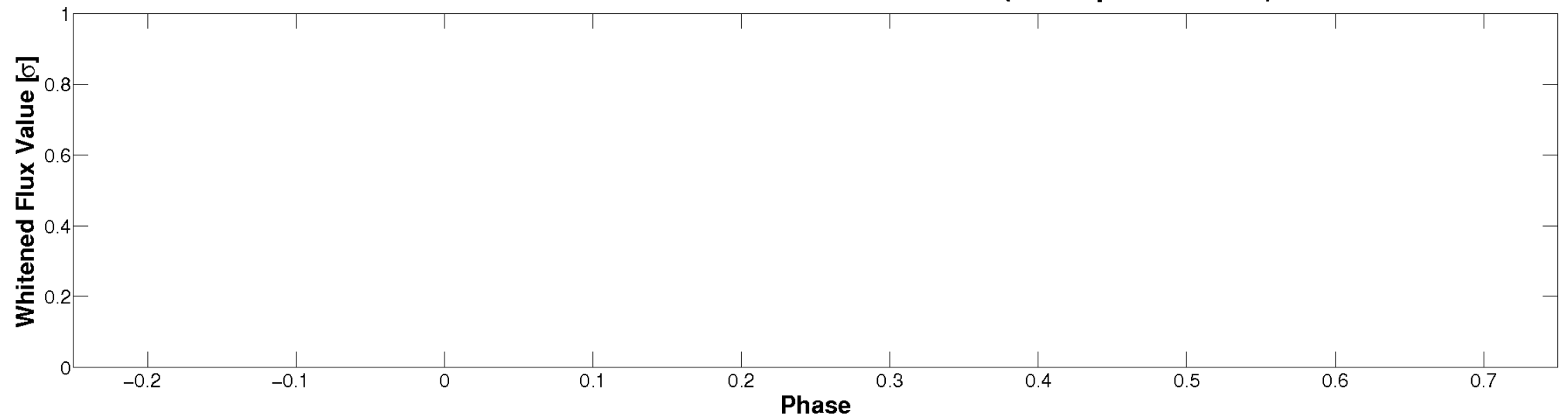
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

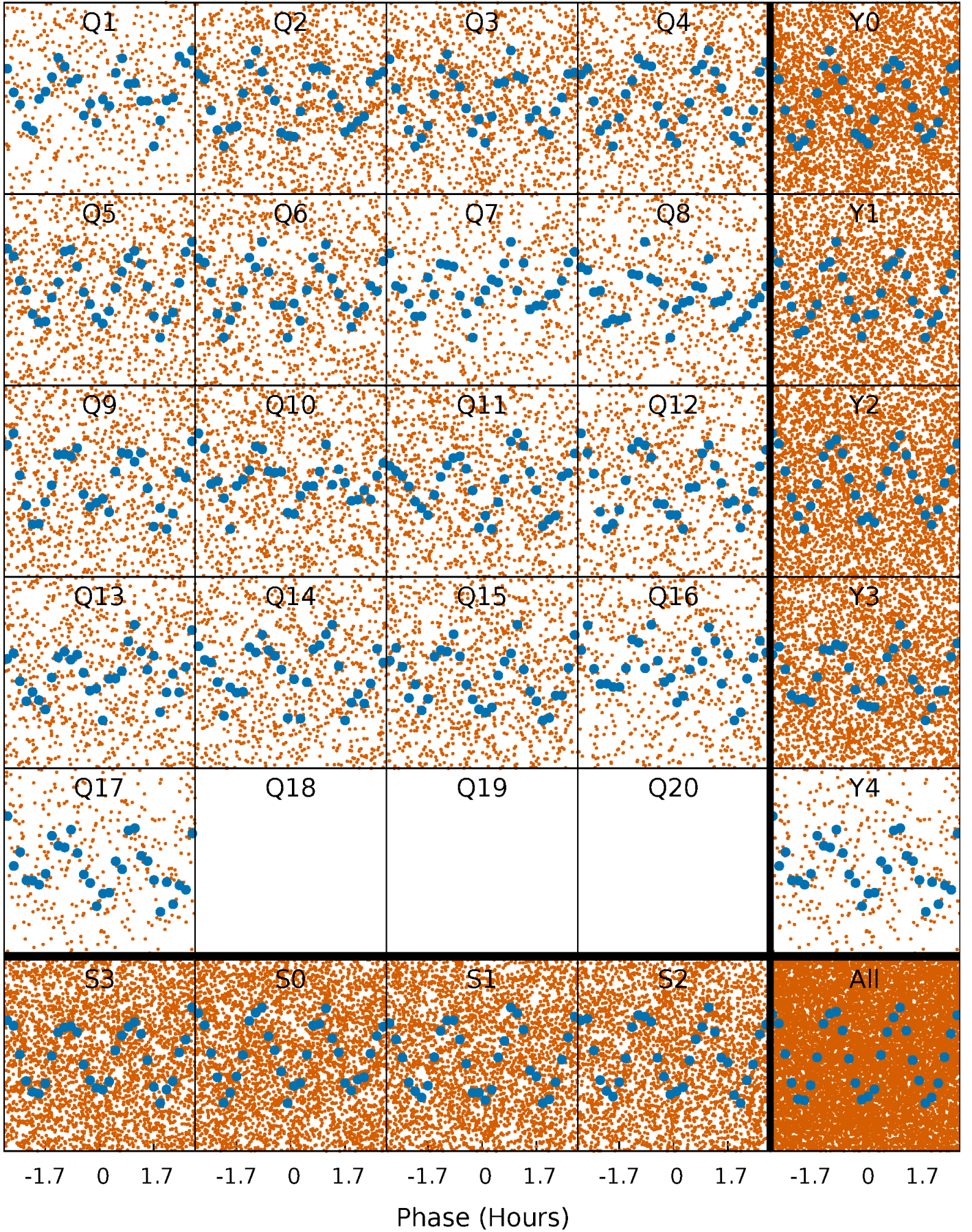


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



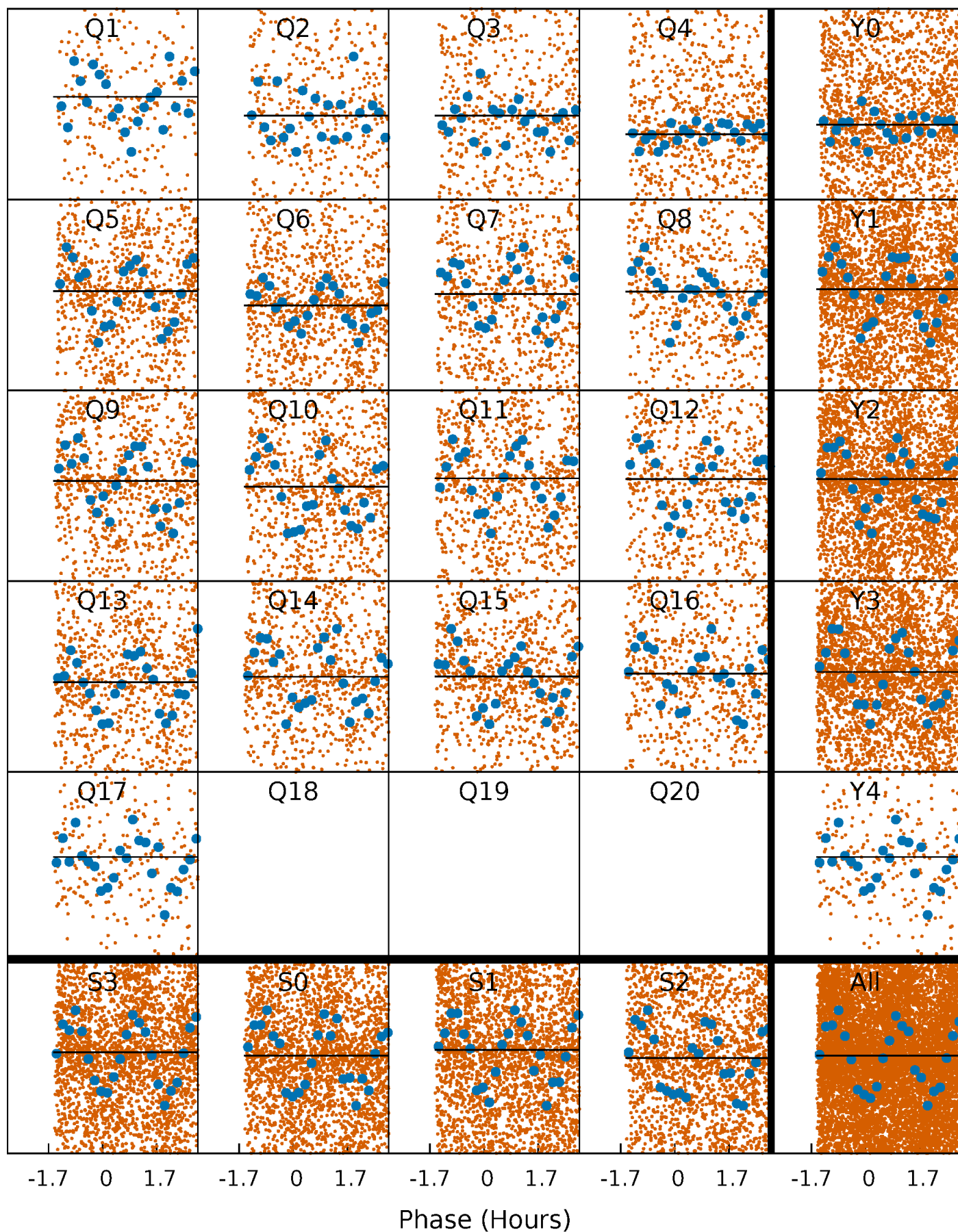
PDC Quarter-Phased Transit Curves

TCE 007138415-04 P= 0.578750 Days $T_0=131.573494$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007138415-04 P= 0.578750 Days $T_0=131.573494$ (BKJD)

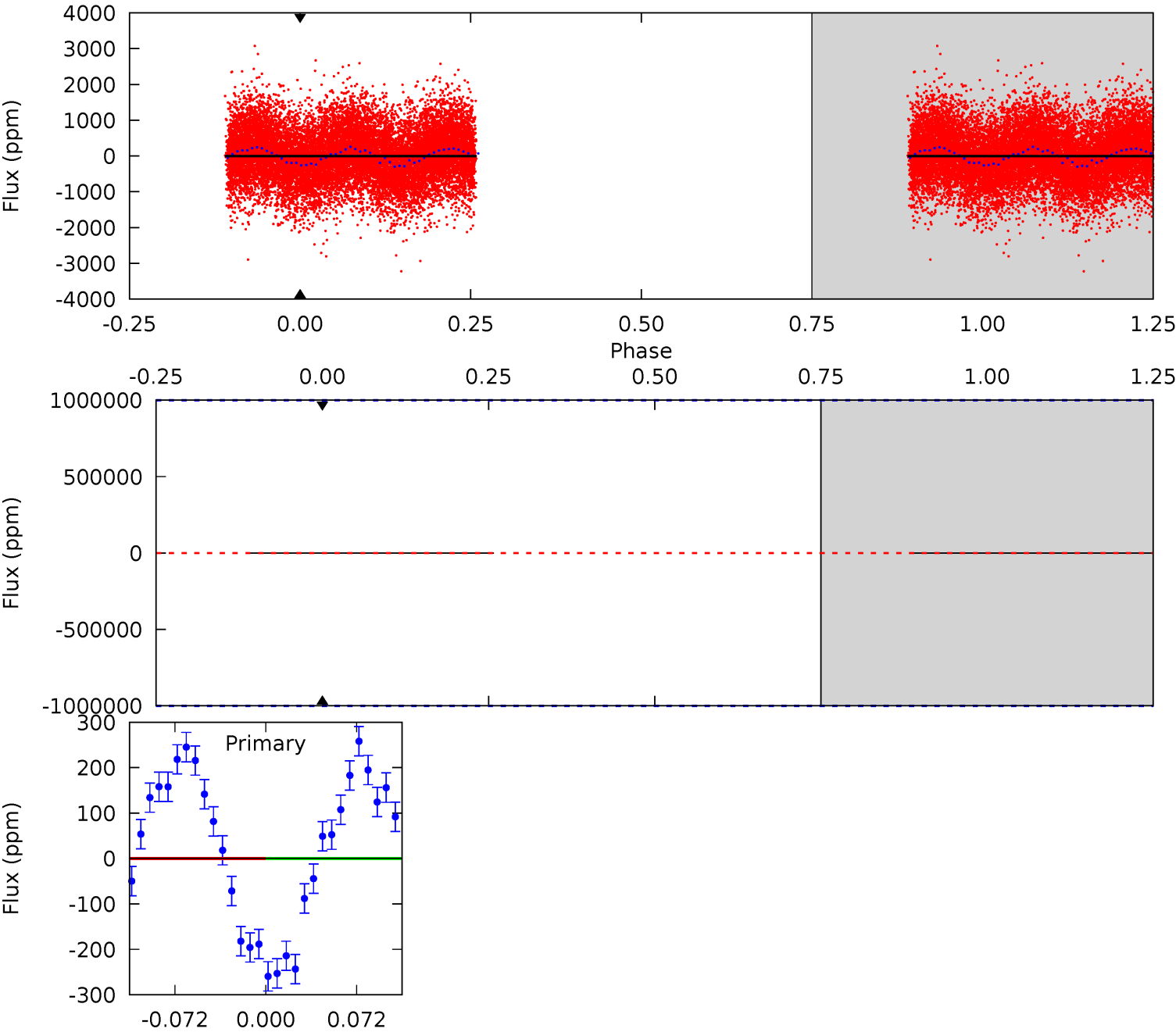


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007138415-04, P = 0.578750 Days, E = 131.573494 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007138415

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8665^{+270}_{-360}	$3.787^{+0.385}_{-0.165}$	$-0.240^{+0.450}_{-0.300}$	$2.985^{+1.024}_{-1.252}$	$1.994^{+0.495}_{-0.405}$	$0.106^{+0.349}_{-0.049}$
	+3%/-4%	+10%/-4%	+188%/-125%	+34%/-42%	+25%/-20%	+330%/-46%
Source	KIC0	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 007138415-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$21.39^{+23.57}_{-14.77}$	6895^{+650}_{-773}	4030^{+62879}_{-54023}	$0.345^{+65.271}_{-52.476}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

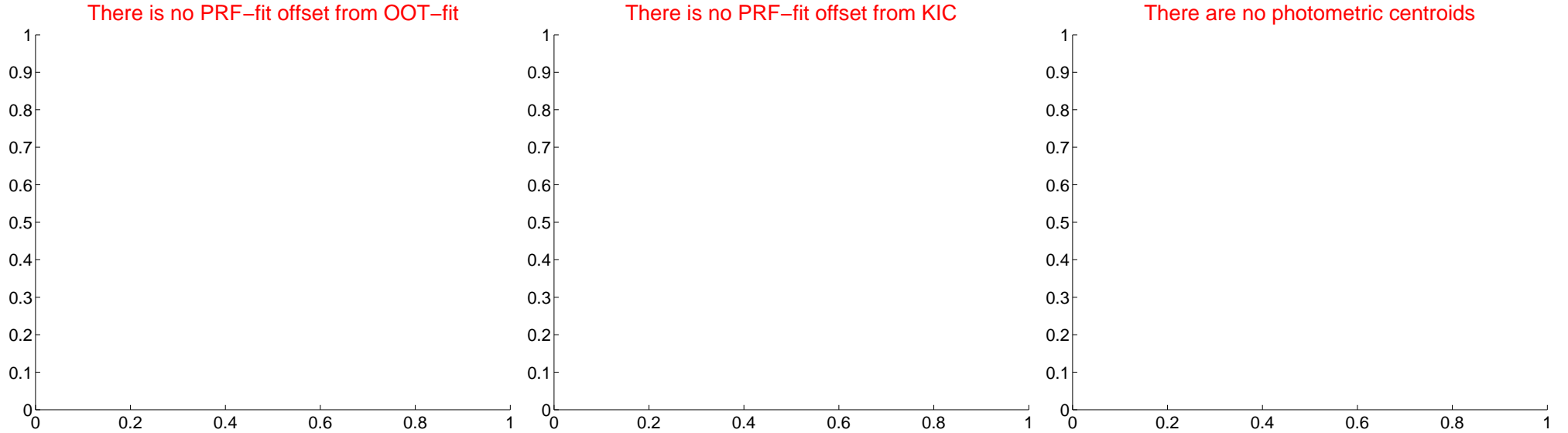
DV Centroid Data

Supplemental centroid analysis for 007138415-04. **Kepler magnitude: 9.75.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.



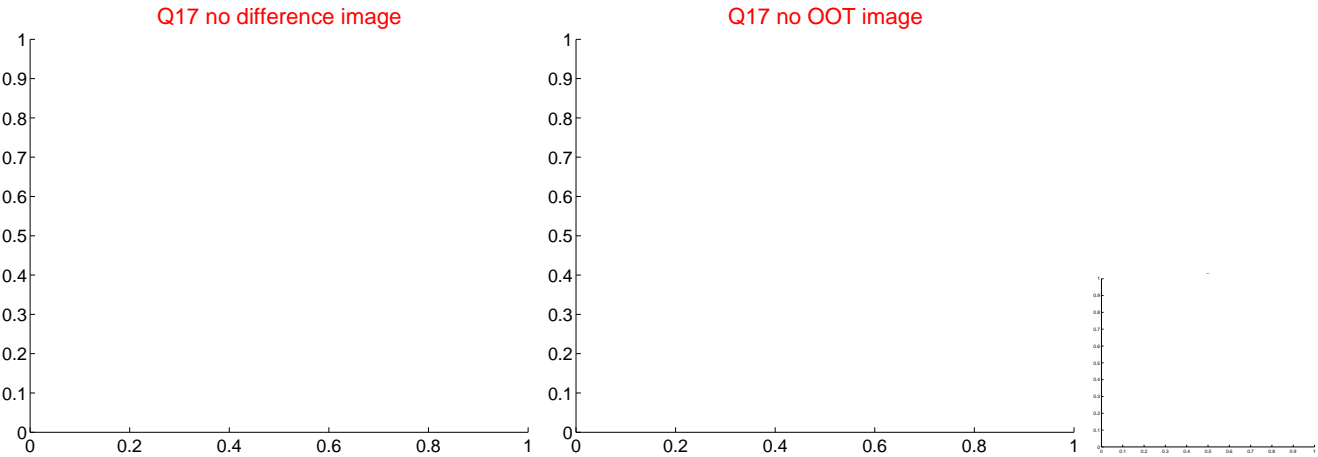
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

