

KIC 010489265

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})
010489265-01	OBS	No	1.976077	132.024451	321.6	3.775	9.6	6.1	2.74	7956	6.24	18453.79
010489265-02	OBS	No	0.739365	131.820677	444.4	1.500	8.5	9.3	2.74	7956	6.77	68445.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010489265-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010489265-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

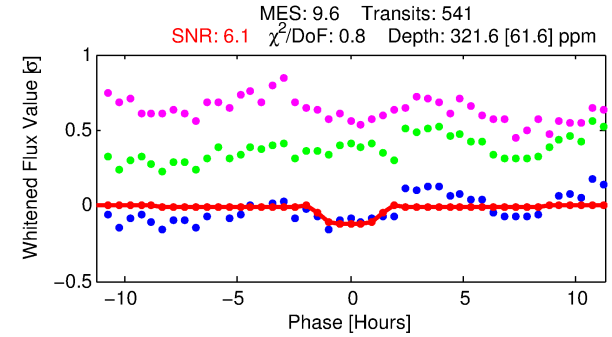
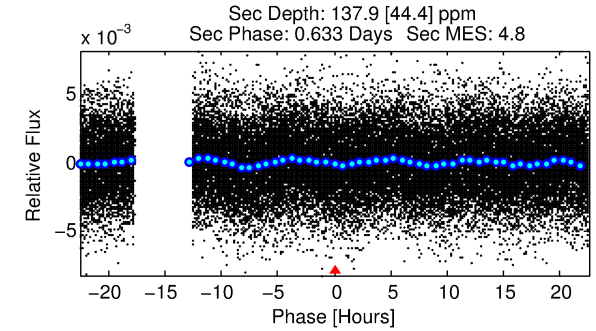
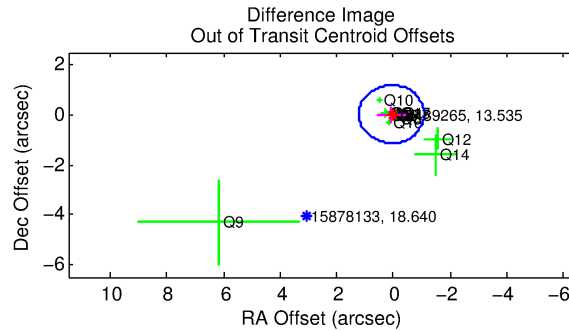
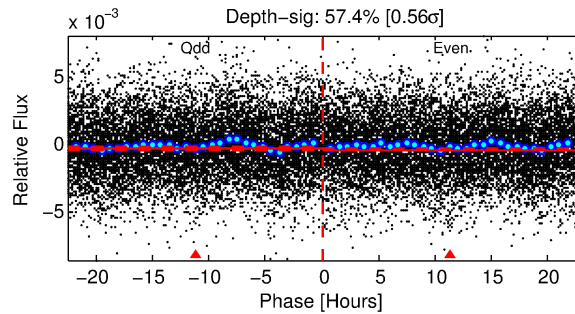
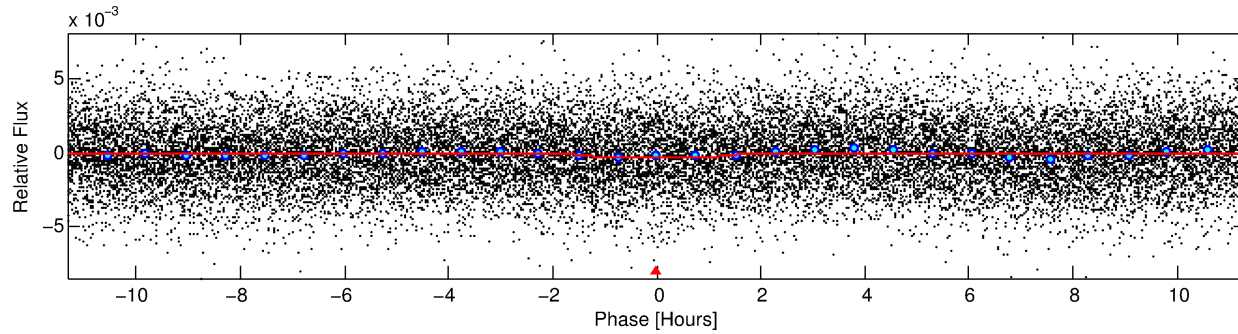
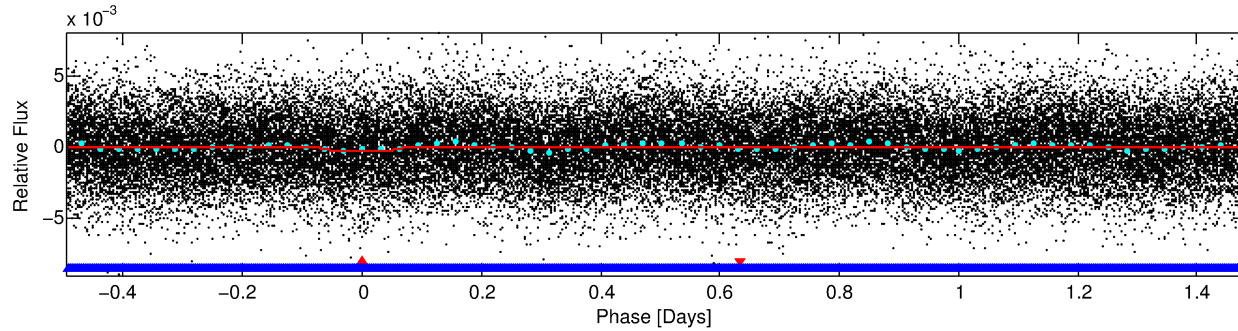
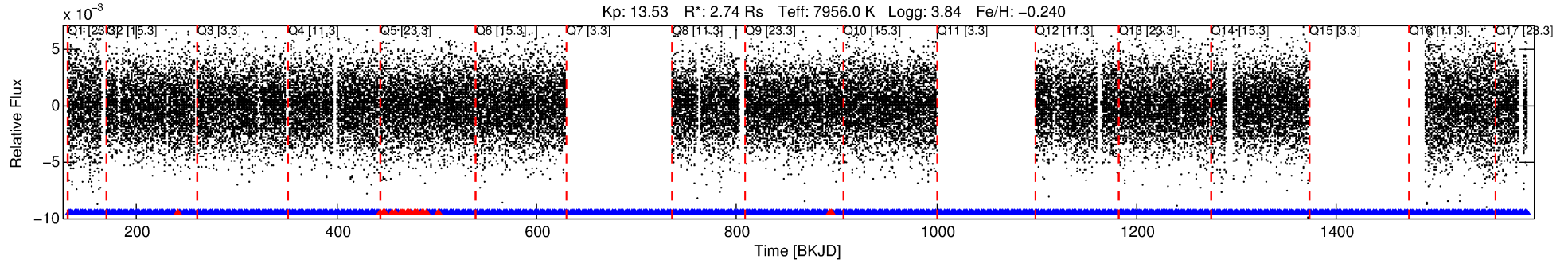
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010489265-01

No Significant Match Found

DV One-Page Summary

KIC: 10489265 Candidate: 1 of 2 Period: 1.976 d



DV Fit Results:

Period = 1.97608 [0.00003] d
Epoch = 132.0245 [0.0075] BKJD
Rp/R* = 0.0209 [0.0025]
a/R* = 1.65 [0.36]
b = 0.97 [0.03]
Seff = 18453.79 [11576.86]
Teq = 2972 [466] K
Rp = 6.24 [2.67] Re
a = 0.0383 [0.0147] AU
Ag = 2.85 [2.07] [0.89 σ]
Teffp = 5971 [647] K [3.76 σ]

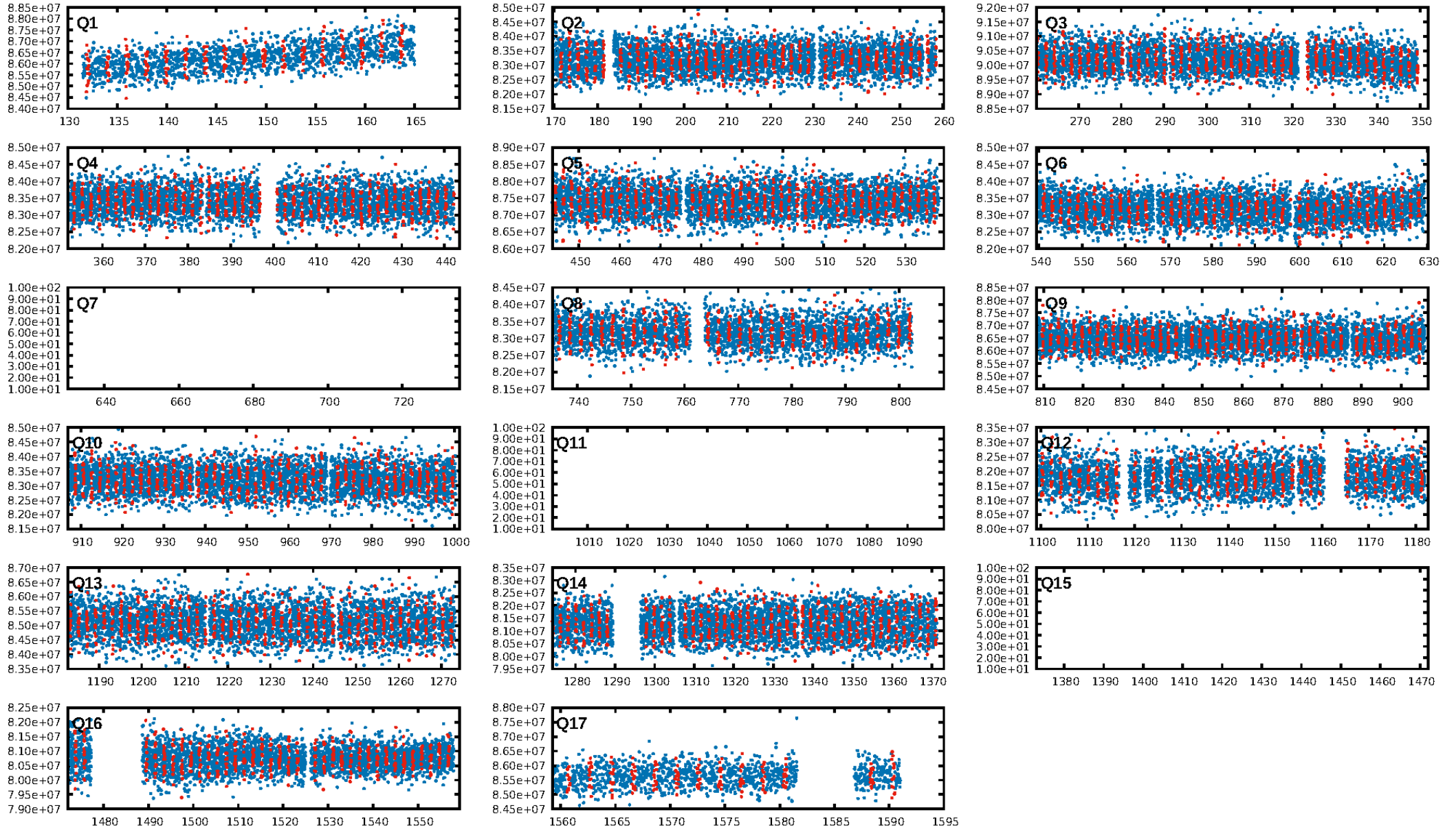
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.31 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.77e-21
RollingBand-fgt: 0.96 [490/511]
GhostDiagnostic-chr: 1.021
Centroid-sig: 73.0%
Centroid-so: 0.191 arcsec [1.16 σ]
OotOffset-rm: 0.070 arcsec [0.18 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.077 arcsec [0.33 σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 0.00 [0/14]

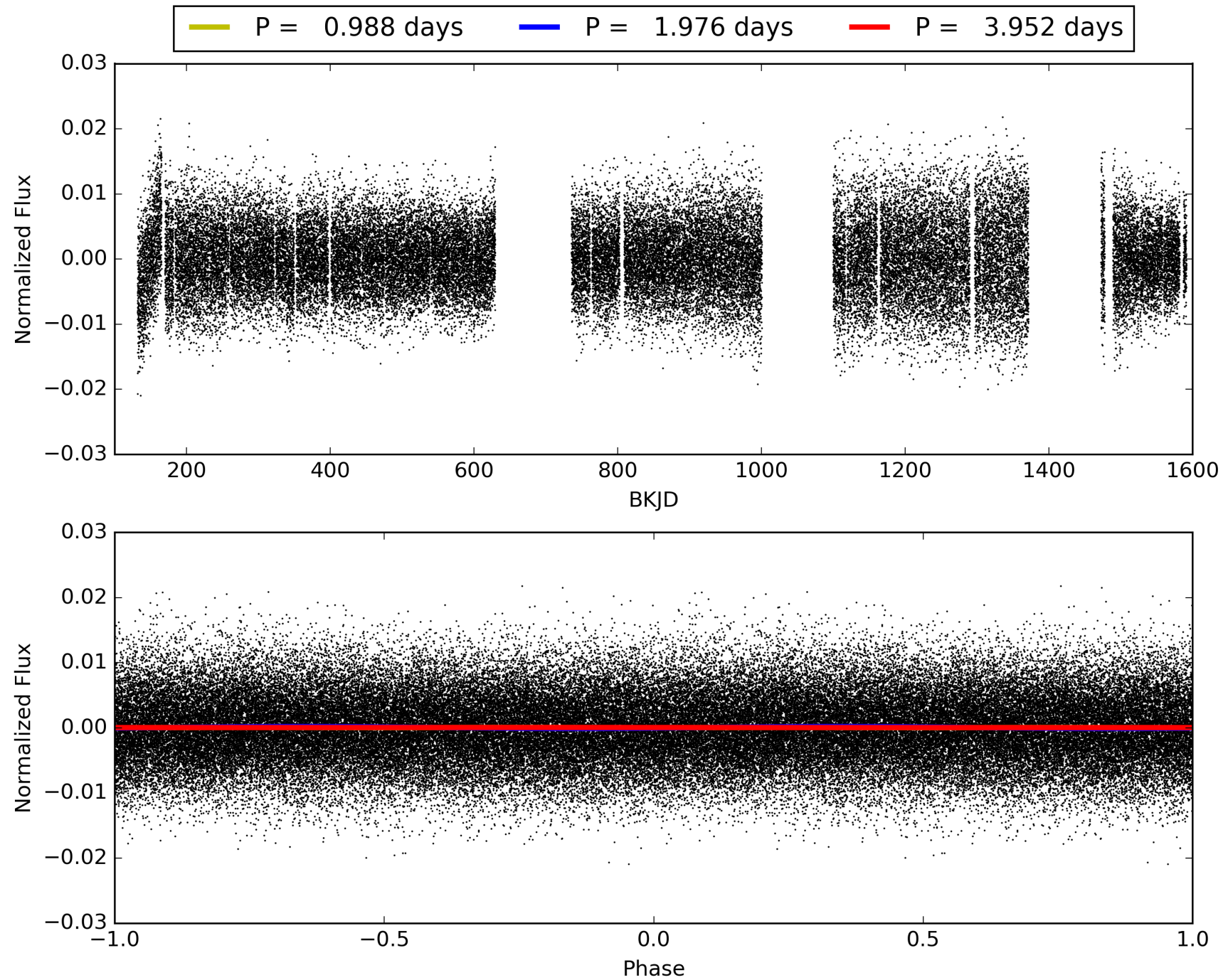
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:45:54 Z

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

TCE 010489265-01, PDC Light Curves

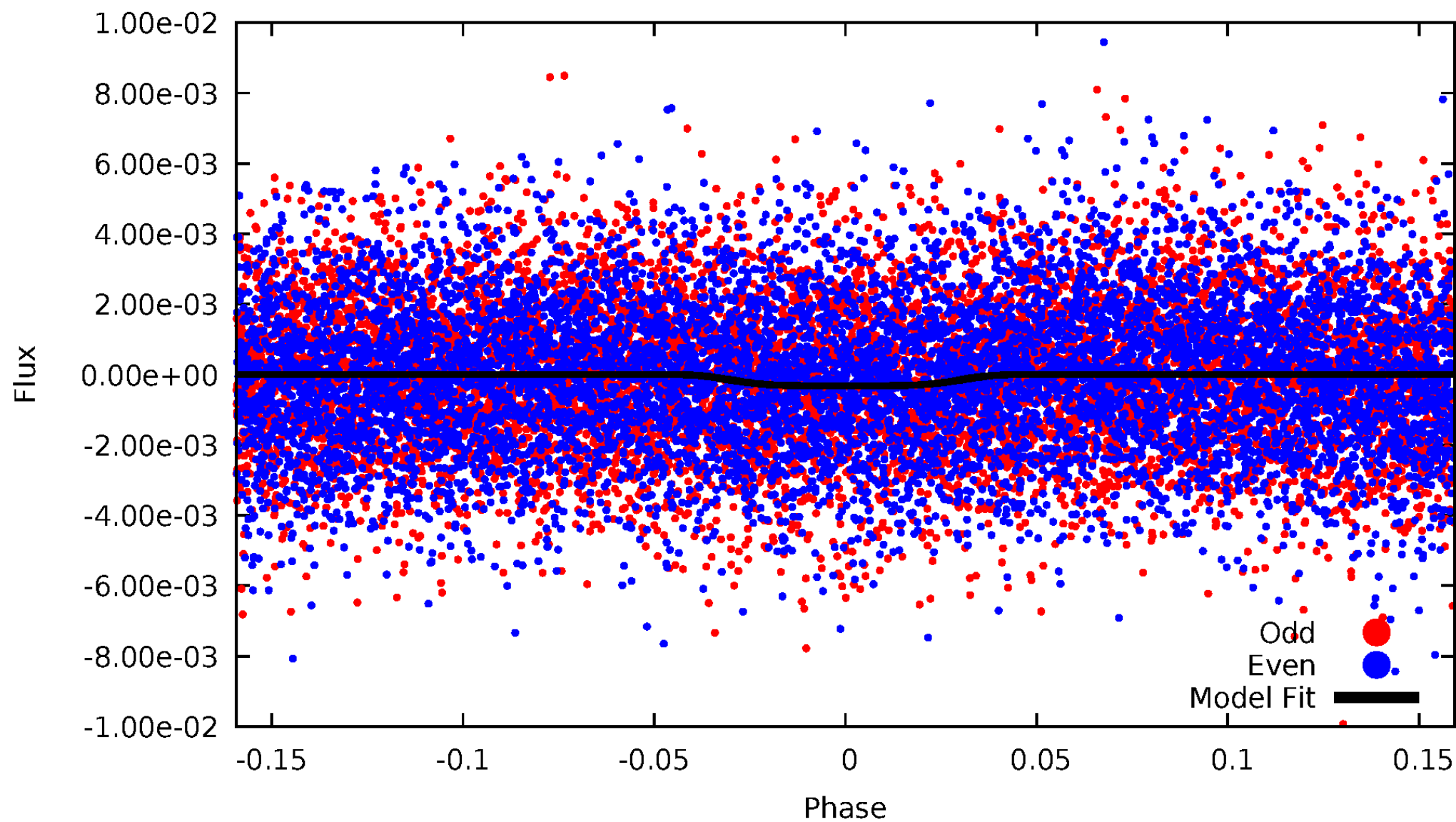


TCE 010489265-01



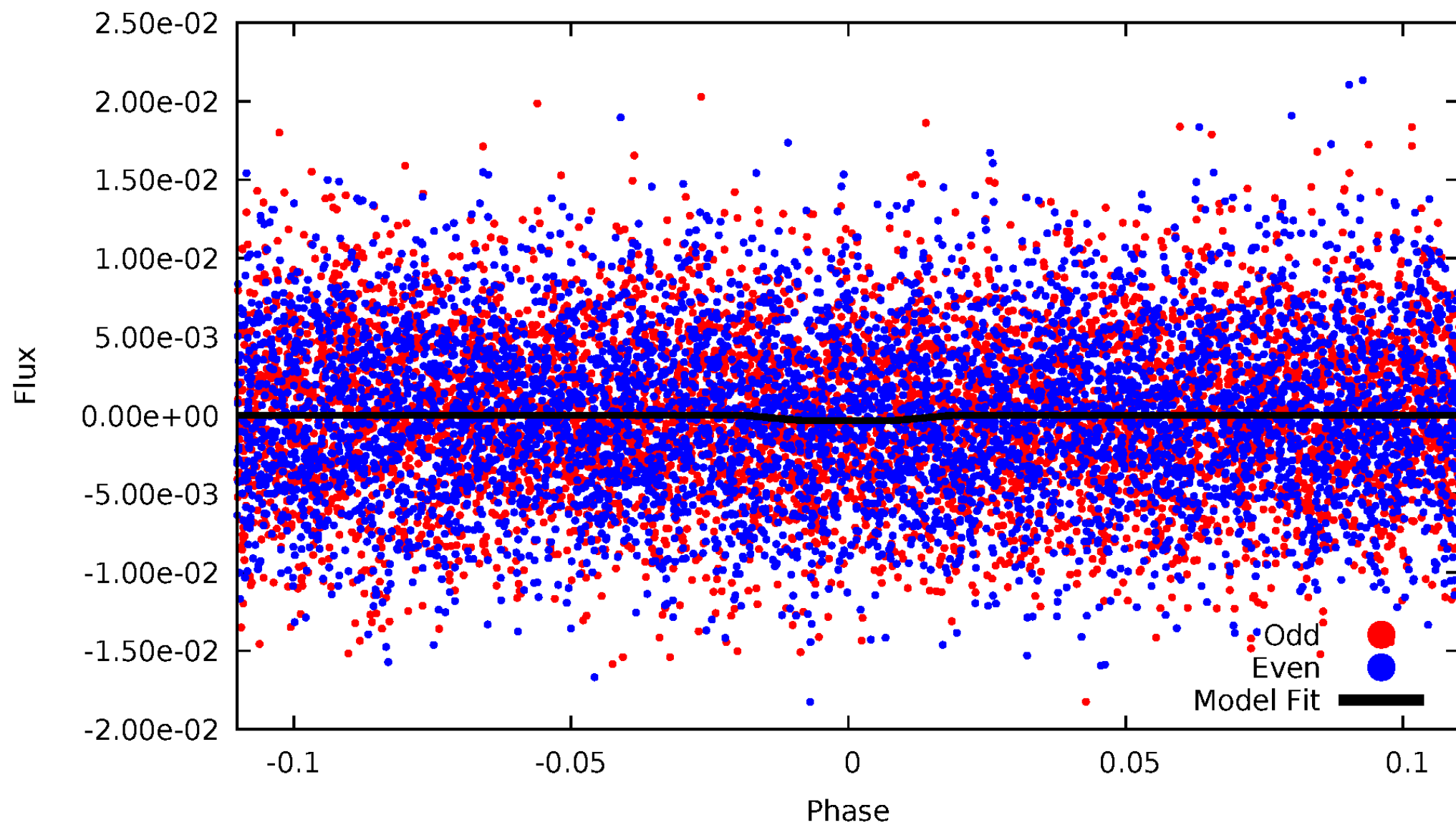
DV Odd/Even

TCE 010489265-01



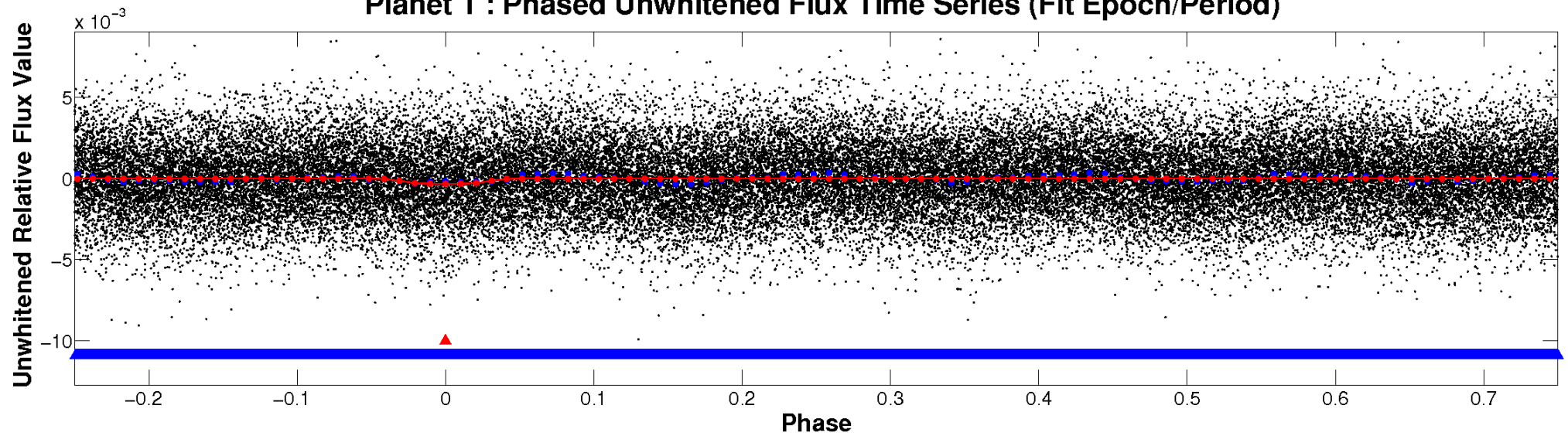
ALT Odd/Even

TCE 010489265-01

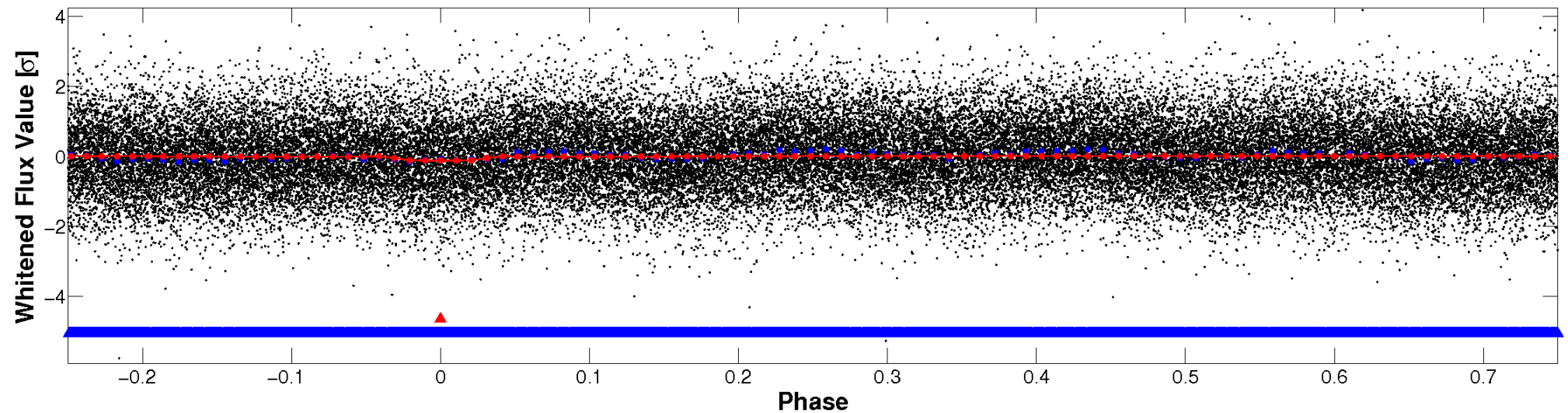


Non-Whitened Vs. Whitened Light Curve

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

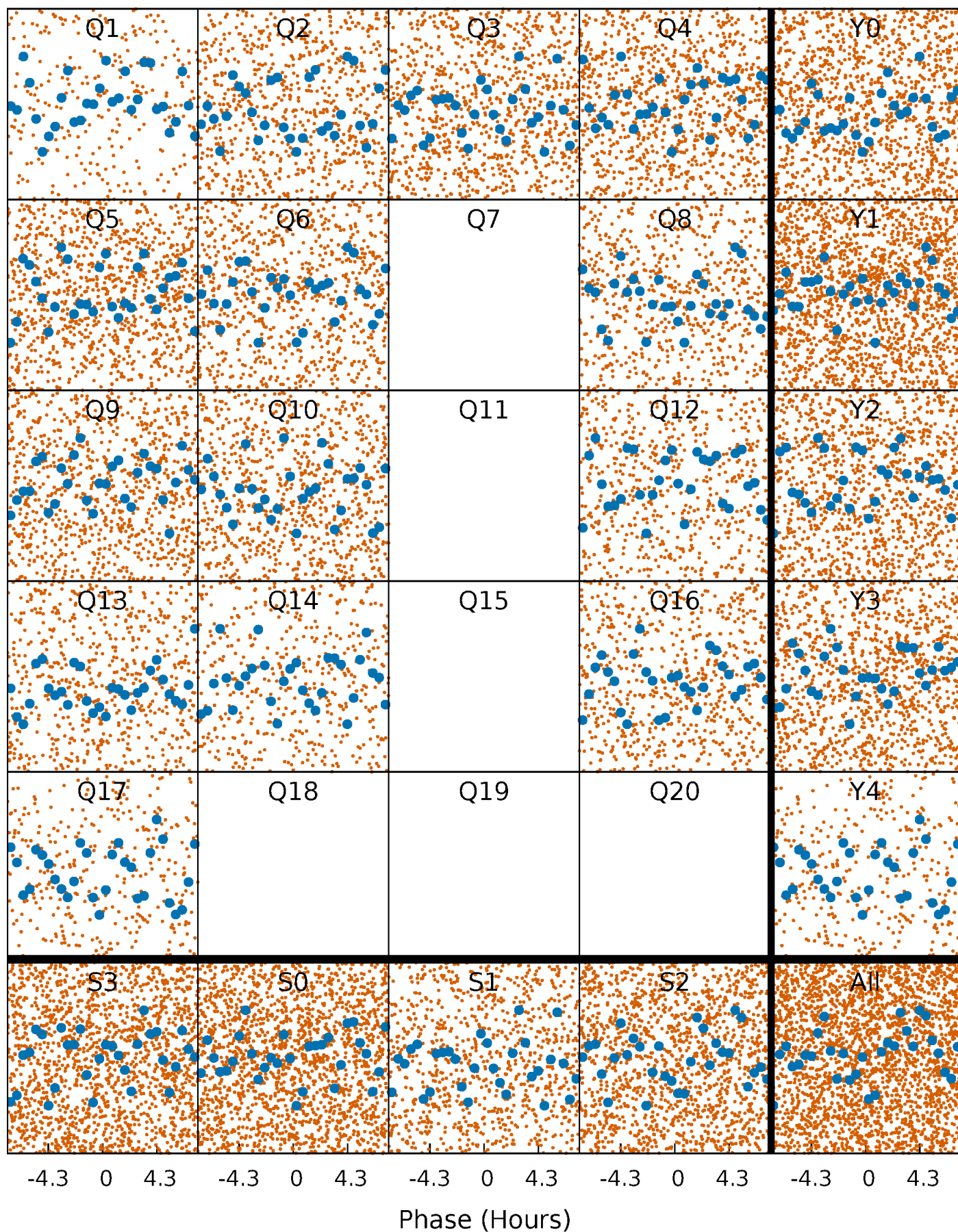


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



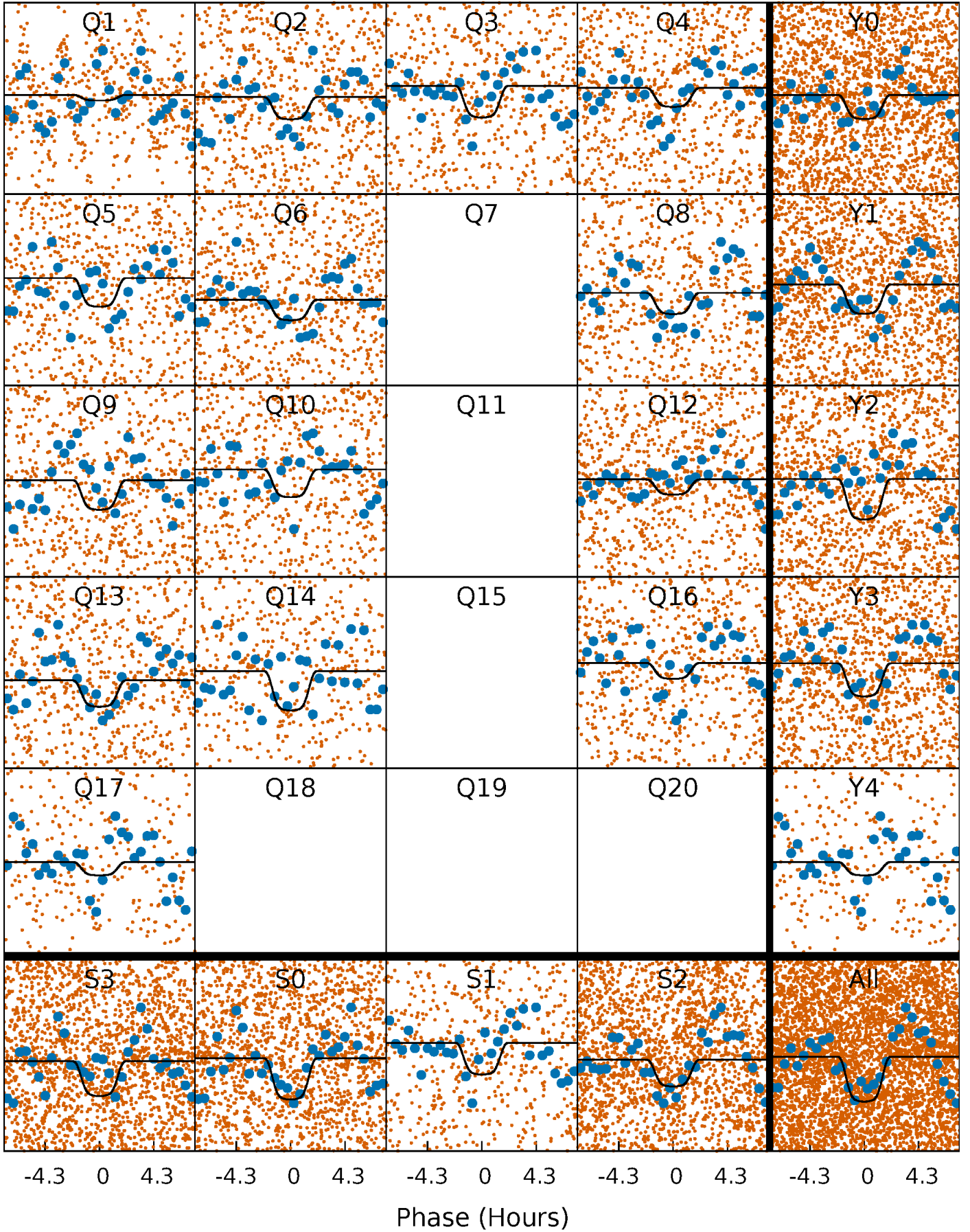
PDC Quarter-Phased Transit Curves

TCE 010489265-01 P= 1.976077 Days $T_0=132.024451$ (BKJD)



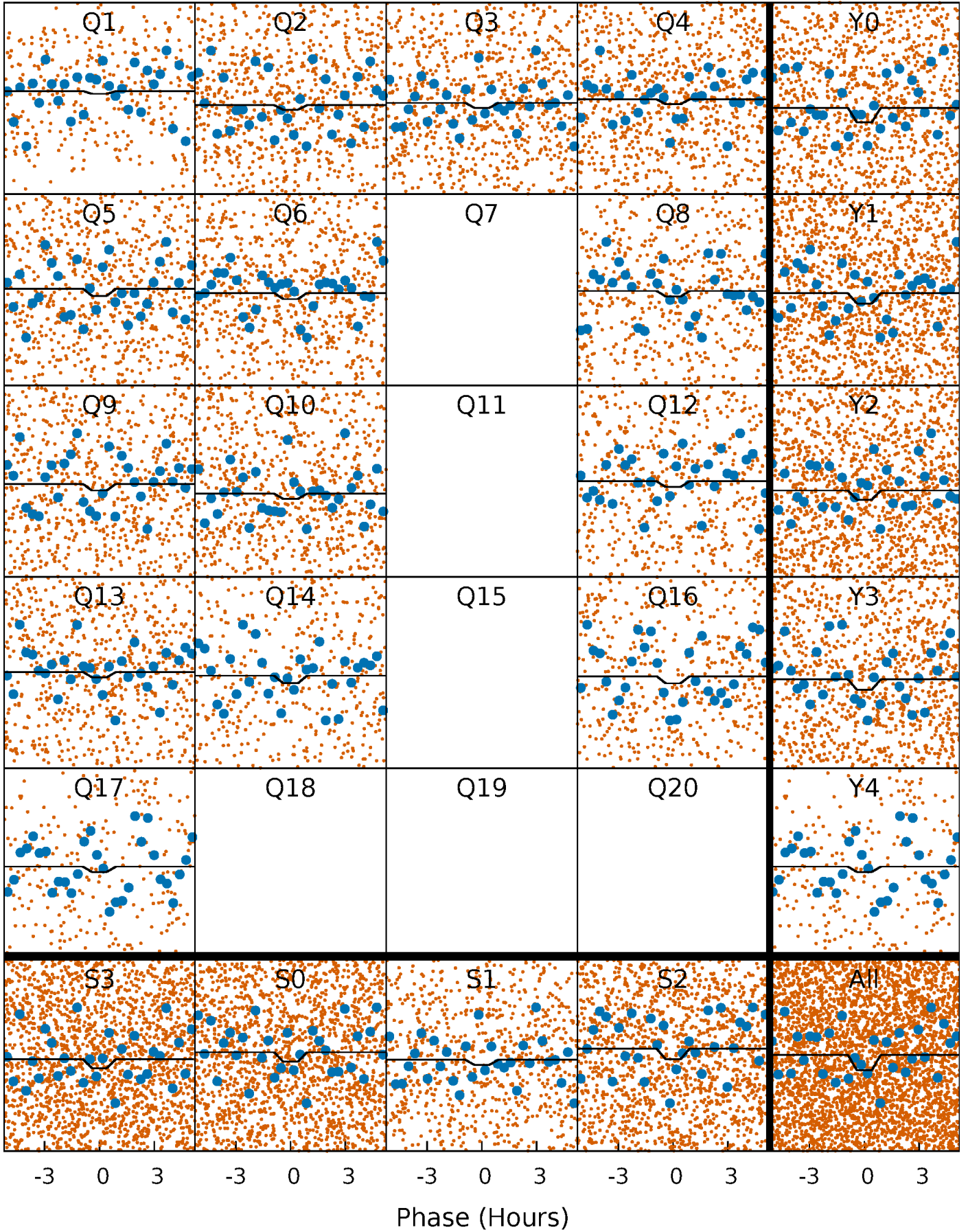
DV Quarter-Phased Transit Curves

TCE 010489265-01 P= 1.976077 Days $T_0=132.024451$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

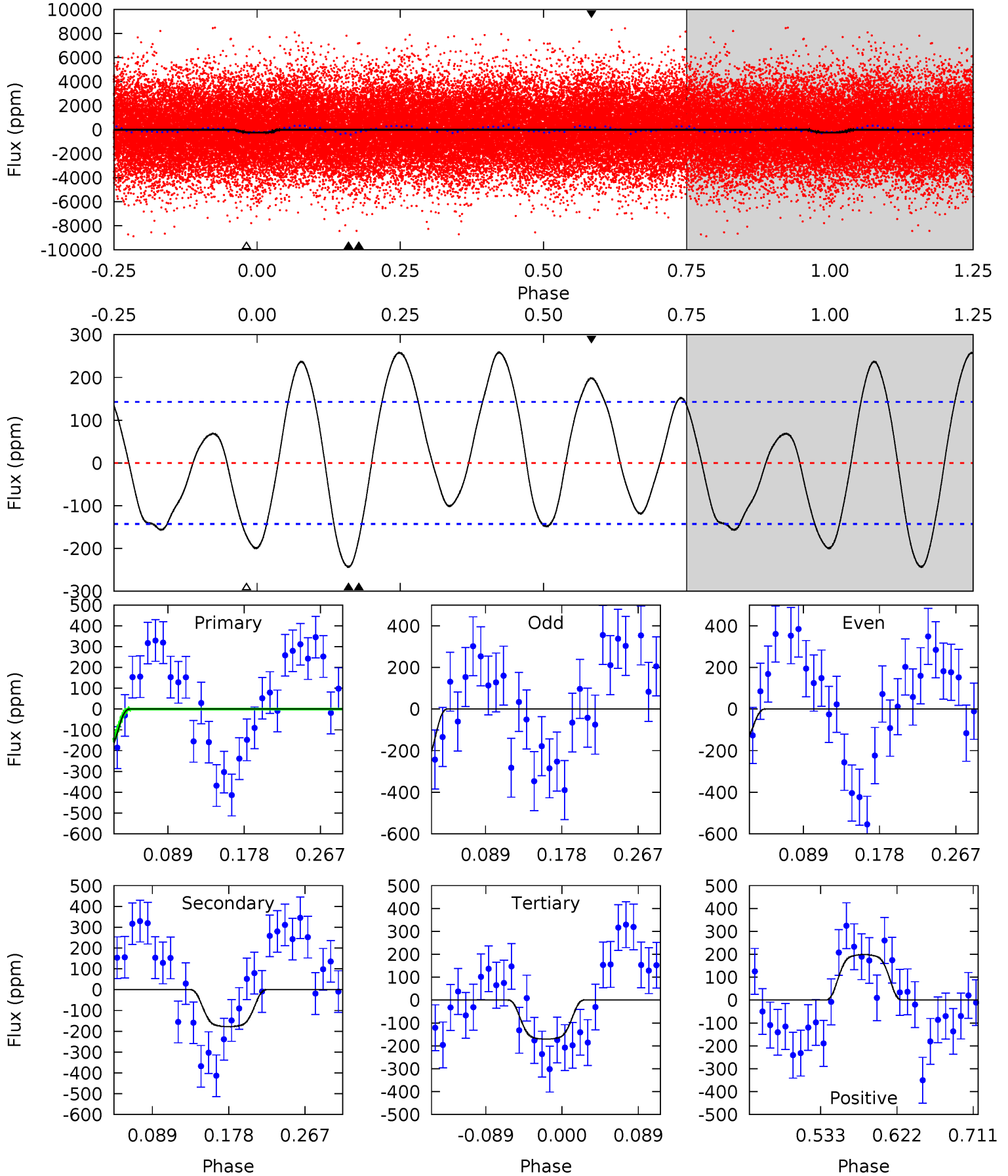
TCE 010489265-01 P= 1.976018 Days $T_0=132.023037$ (BKJD)



DV Model-Shift Uniqueness Test

010489265-01, P = 1.976077 Days, E = 130.048374 Days

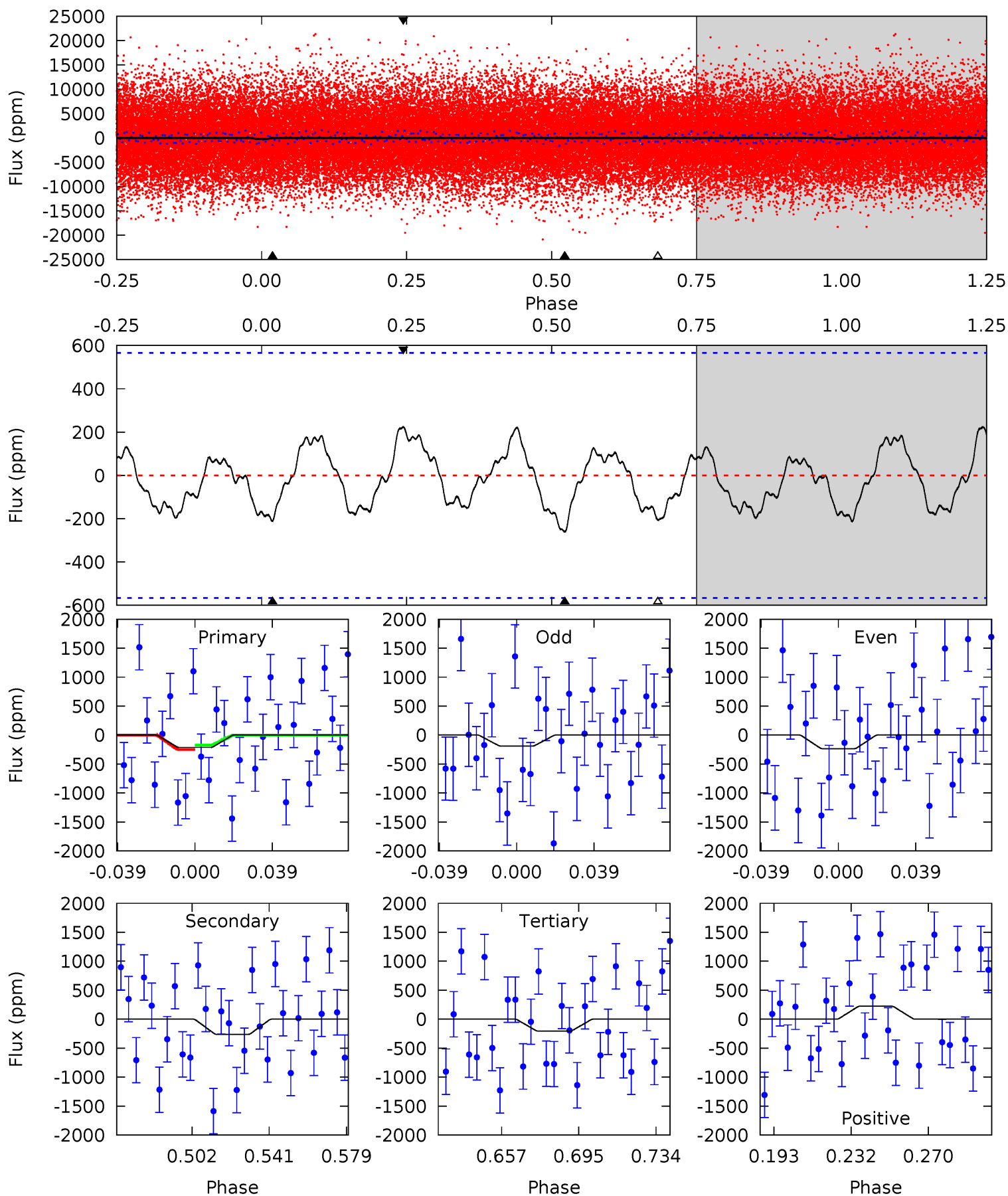
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.81	5.72	5.49	6.38	4.59	1.70	3.91	2.33	1.43	0.23	-0.66	1.78	0.90	0.52	0.85



Alt Model-Shift Uniqueness Test

010489265-01, P = 1.976018 Days, E = 130.047019 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.78	2.20	1.73	1.88	4.76	2.07	0.96	0.05	-0.09	0.47	0.32	0.19	0.55	0.46	0.32



Stellar Parameters For KIC 010489265

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7956^{+216}_{-325}	$3.843^{+0.352}_{-0.088}$	$-0.240^{+0.200}_{-0.350}$	$2.743^{+0.375}_{-1.126}$	$1.911^{+0.078}_{-0.468}$	$0.130^{+0.382}_{-0.038}$
	+3%/-4%	+9%/-2%	+83%/-146%	+14%/-41%	+4%/-24%	+293%/-30%
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 010489265-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-178 ± 31	$5.77^{+1.12}_{-1.30}$	4017^{+286}_{-409}	6065^{+515}_{-511}	$4.246^{+2.717}_{-1.434}$
Alt.	-262 ± 119	$5.01^{+0.99}_{-1.17}$	4023^{+264}_{-403}	7254^{+1274}_{-1143}	$7.984^{+6.835}_{-3.784}$

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 $A_{obs} \gg 1.0$

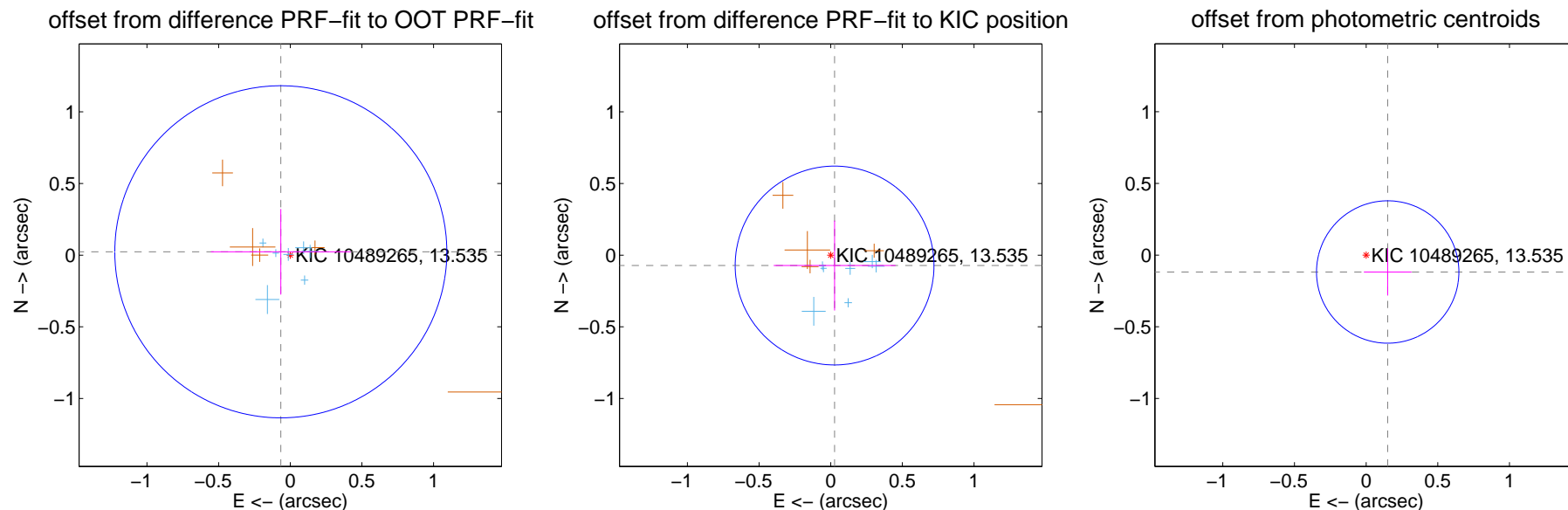
DV Centroid Data

Supplemental centroid analysis for 010489265-01. Kepler magnitude: 13.54. Transit SNR 6.15

There are 8 quarters with good PRF difference image offsets

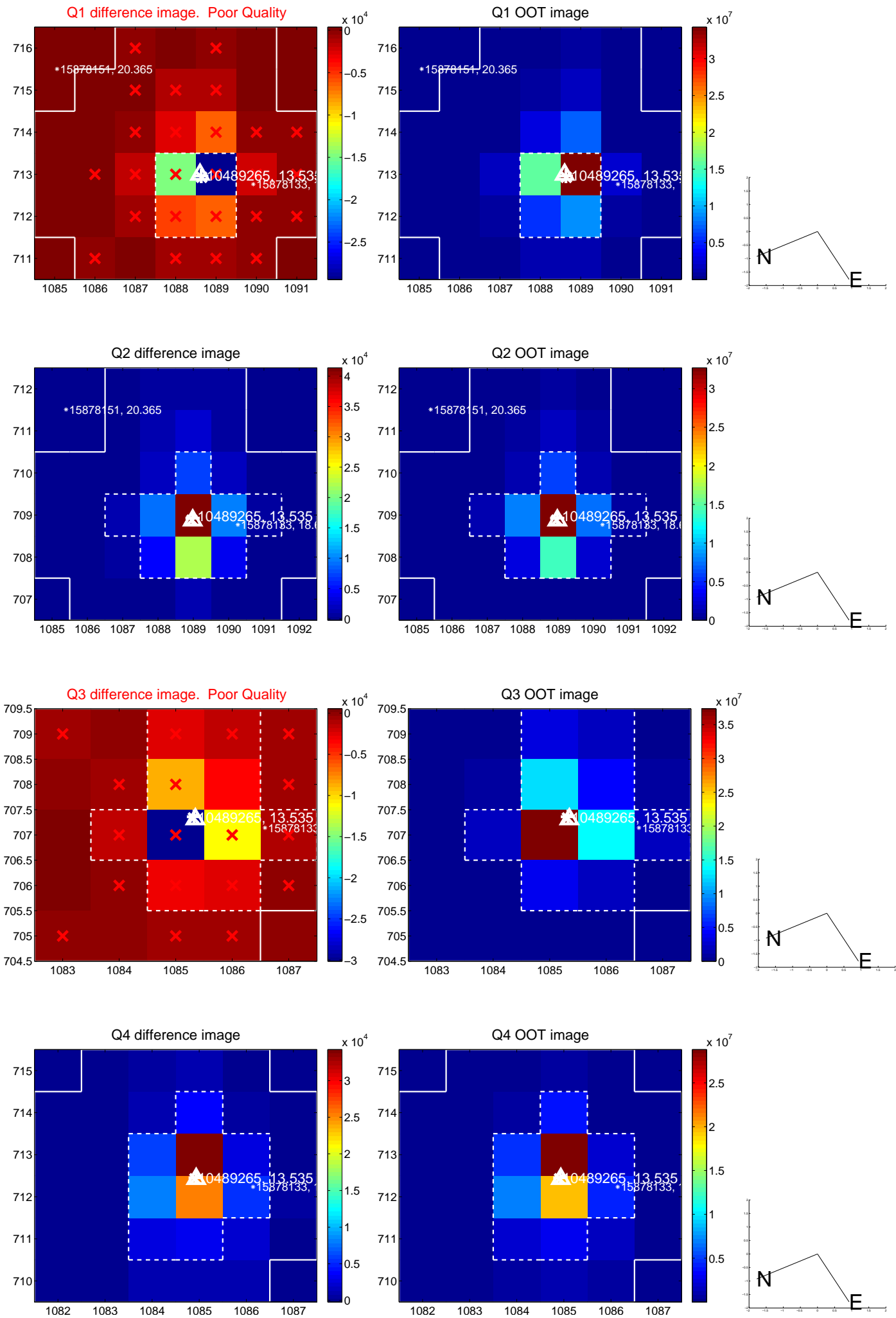
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.070 ± 0.386	0.18	0.066 ± 0.488	0.023 ± 0.299
PRF-fit source offset from KIC position	0.077 ± 0.231	0.33	-0.027 ± 0.425	-0.072 ± 0.314
photometric centroid source offset	0.19 ± 0.17	1.16	-0.15 ± 0.17	-0.12 ± 0.16

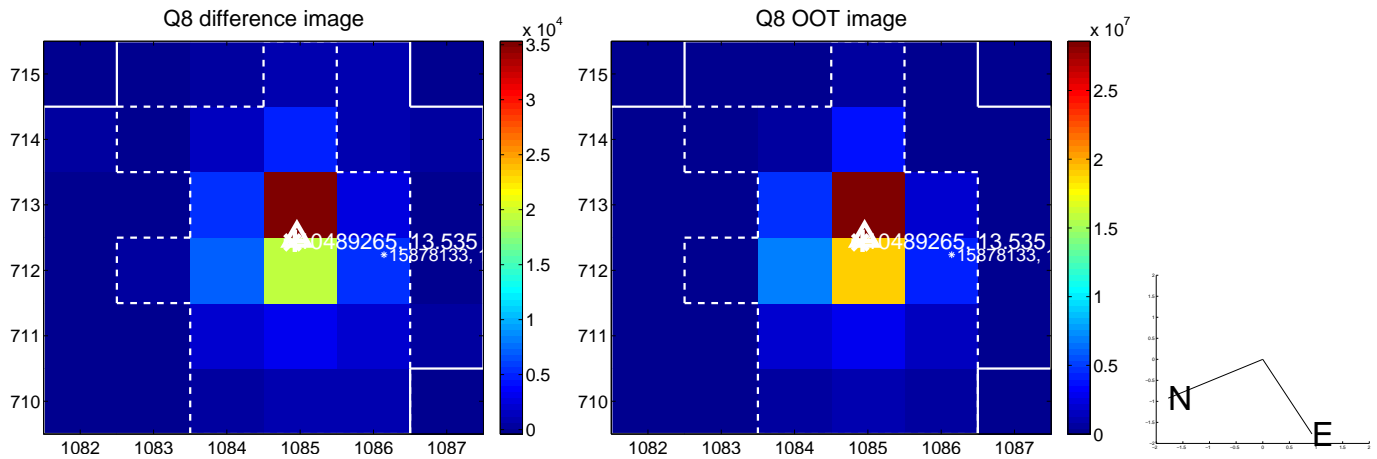
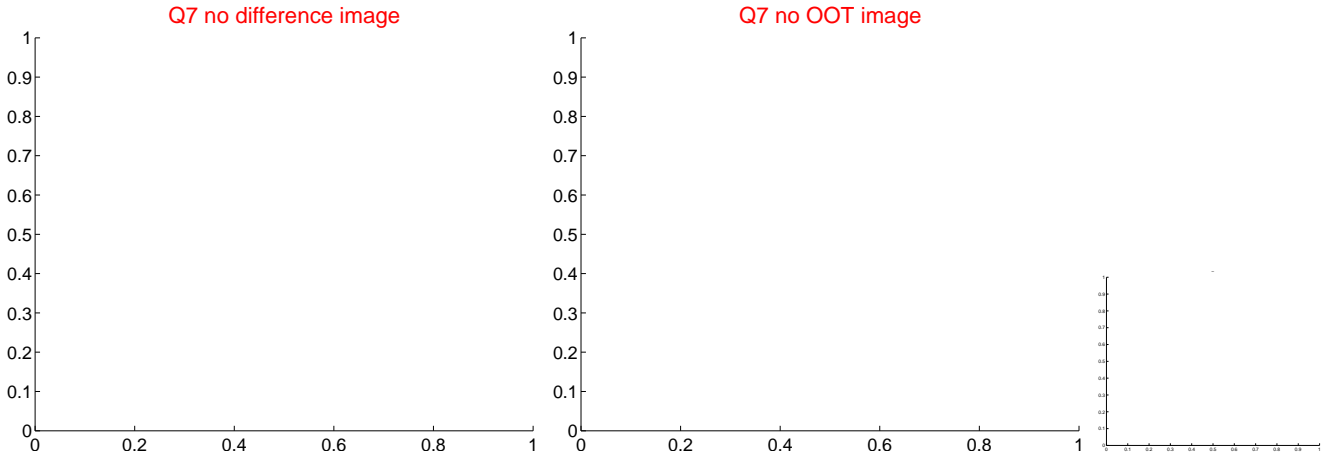
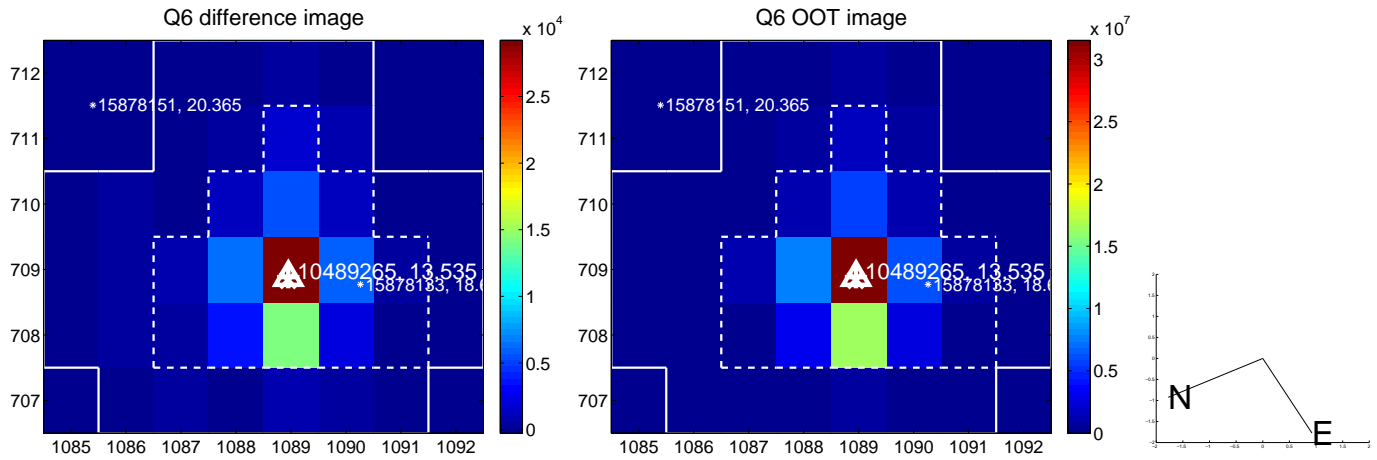
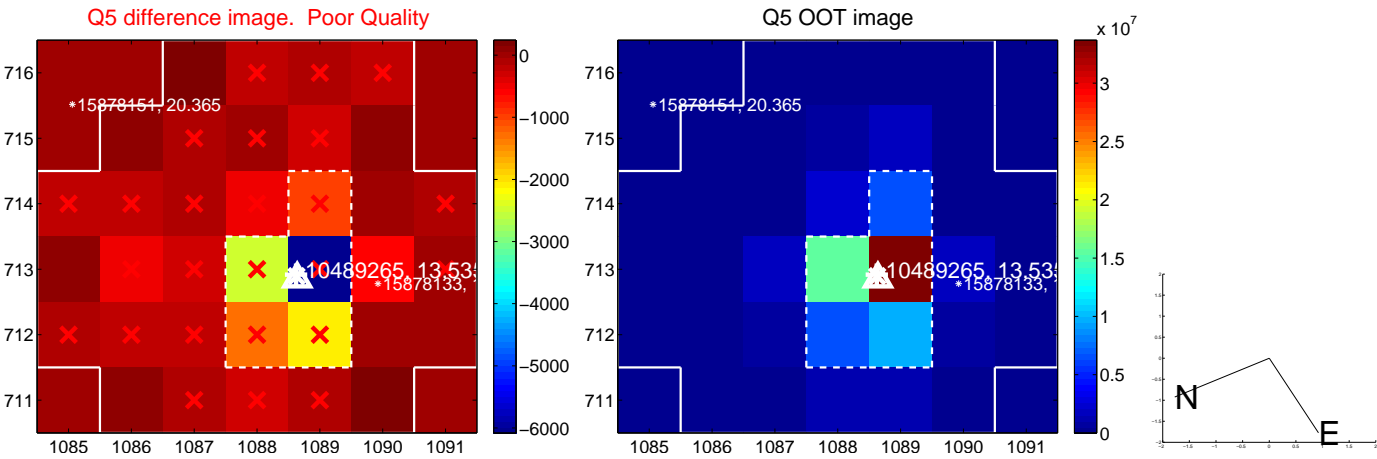


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

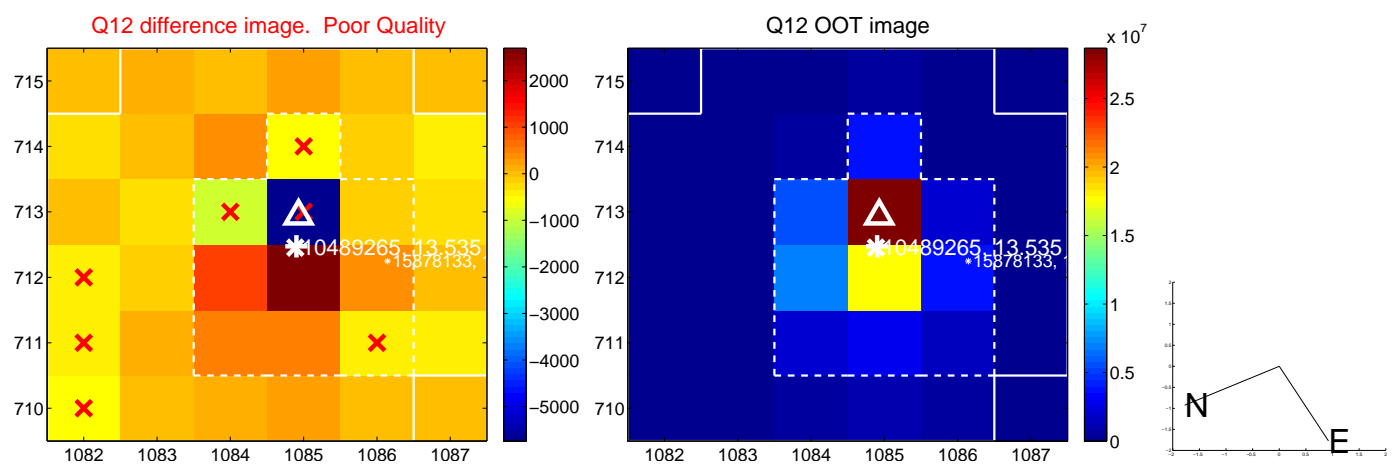
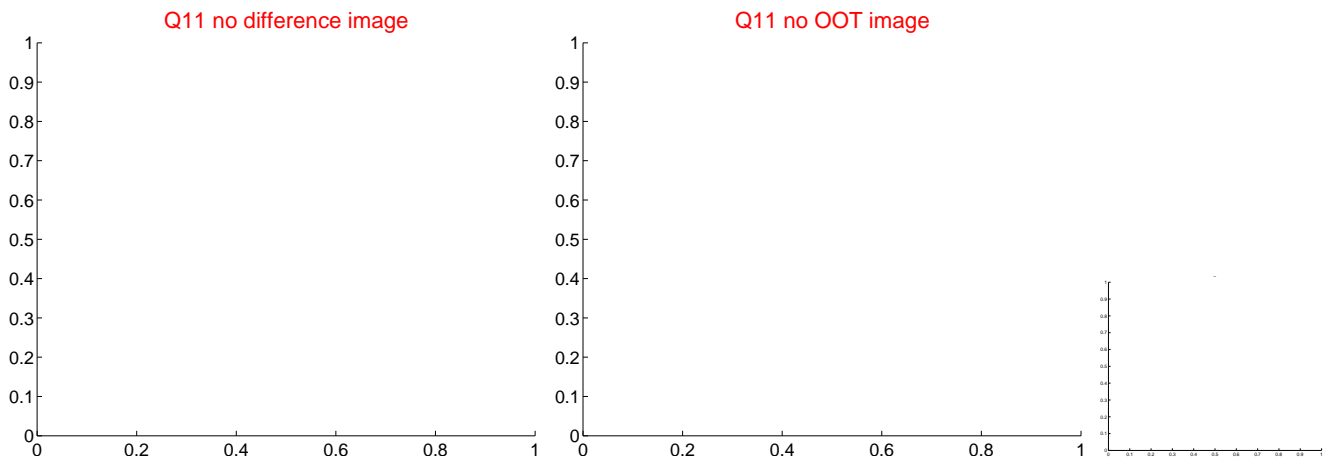
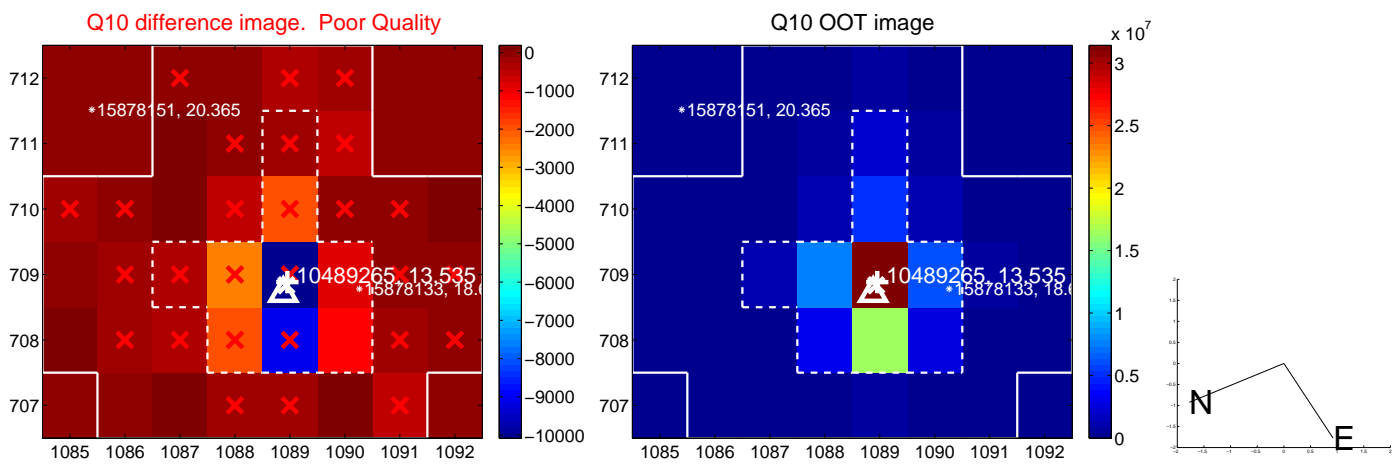
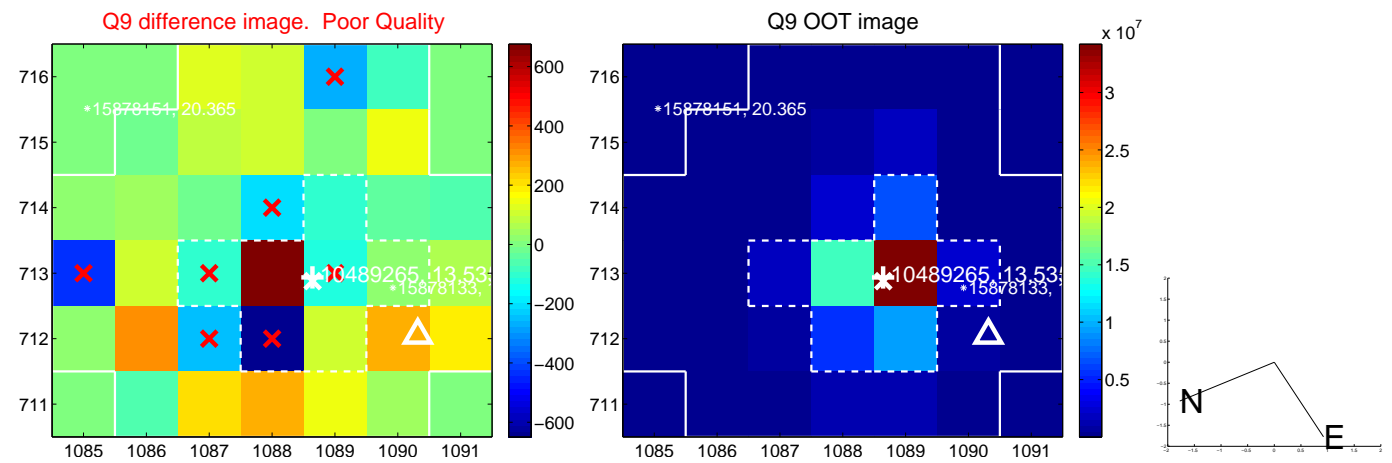
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



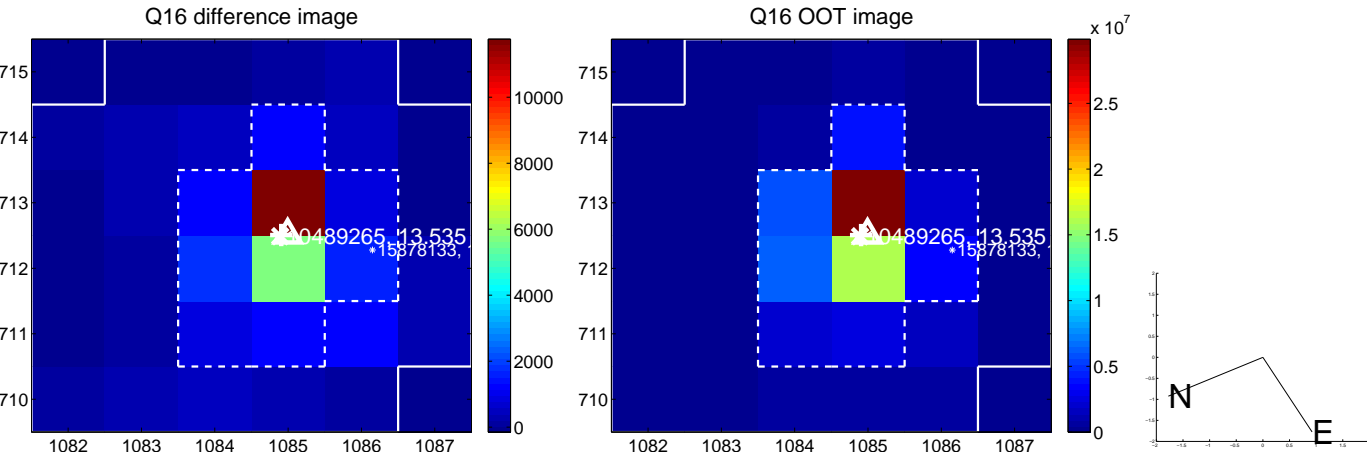
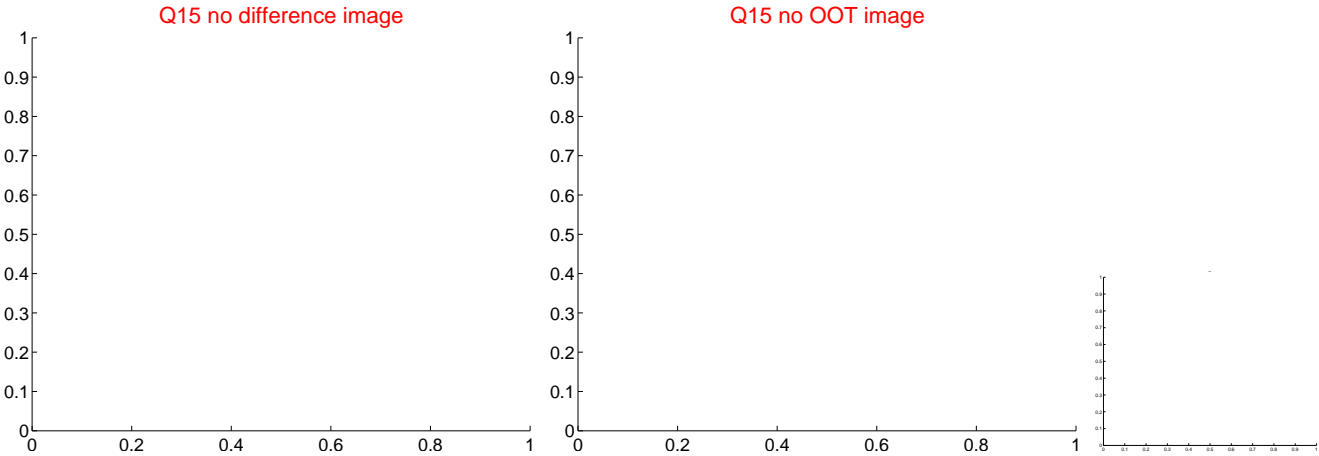
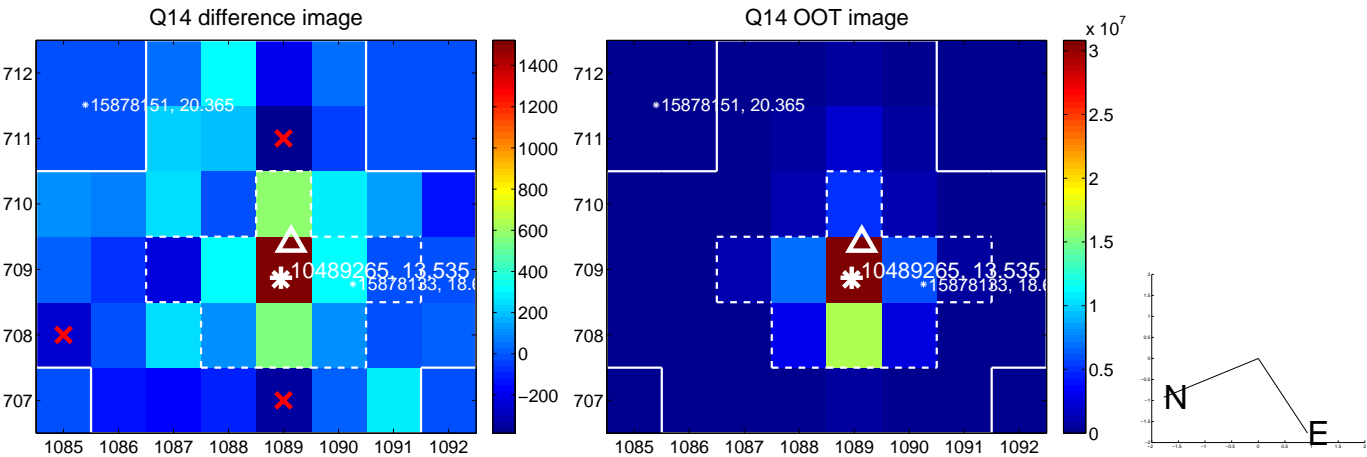
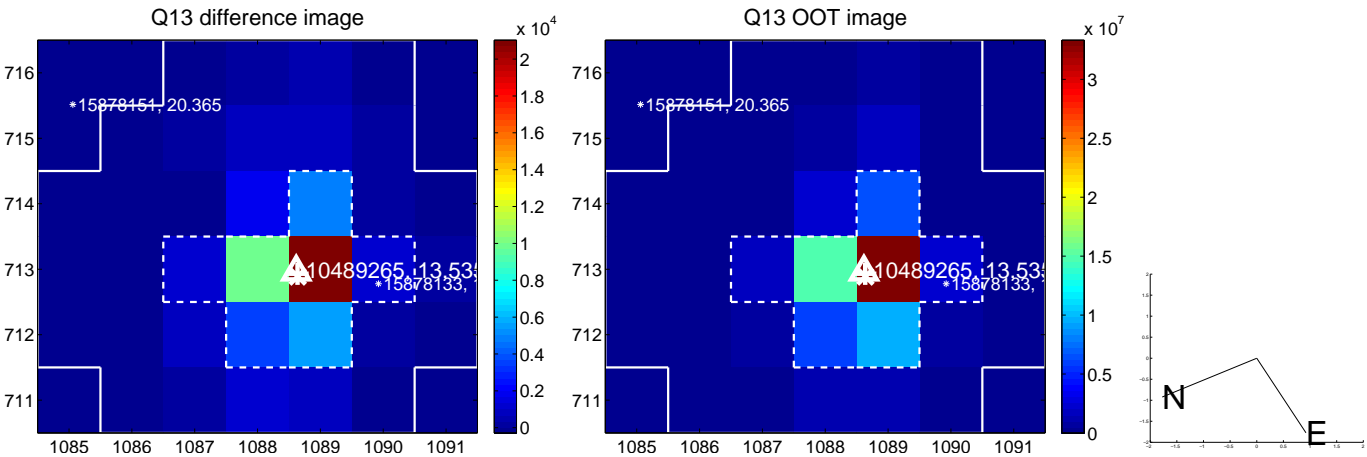
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



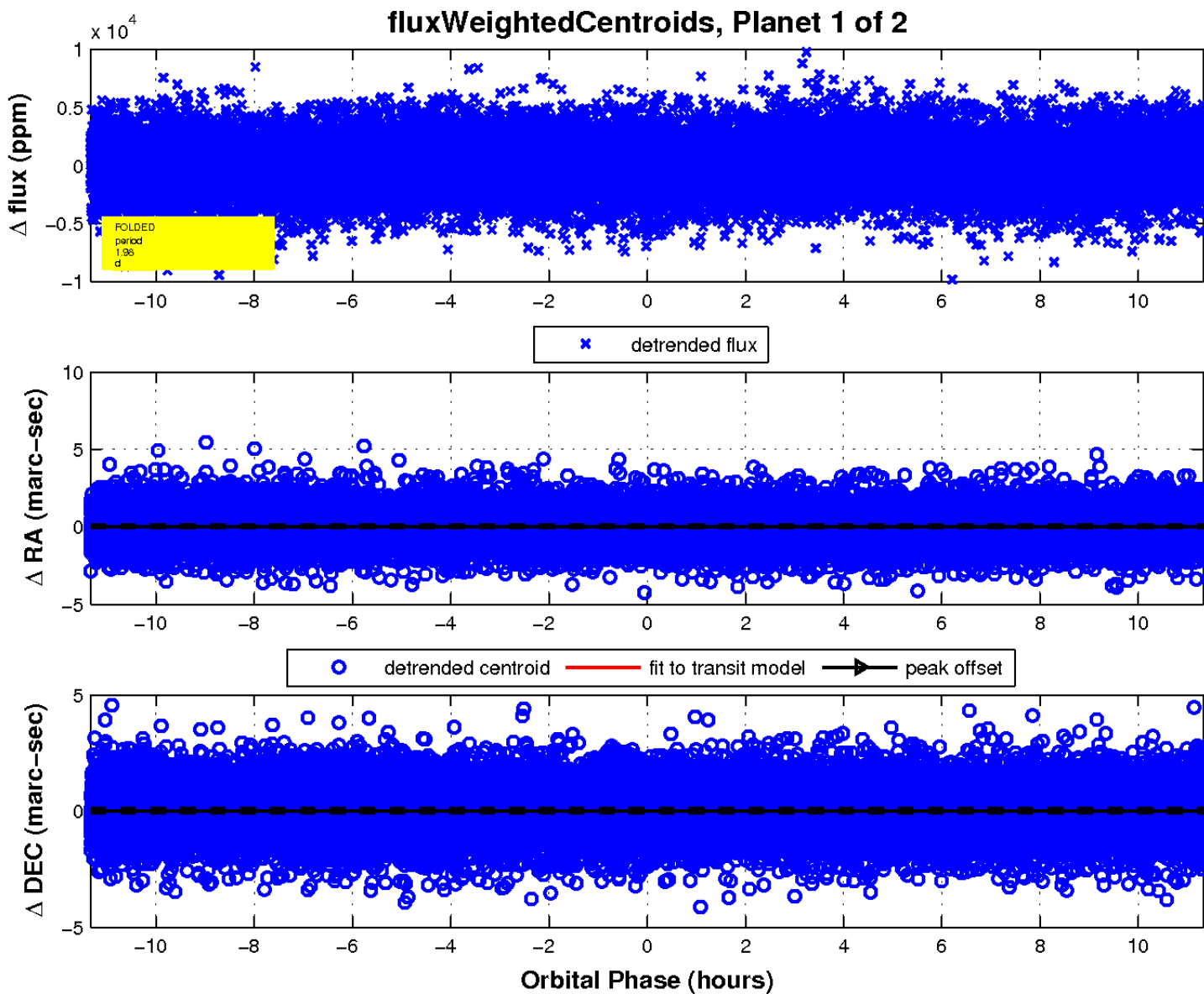
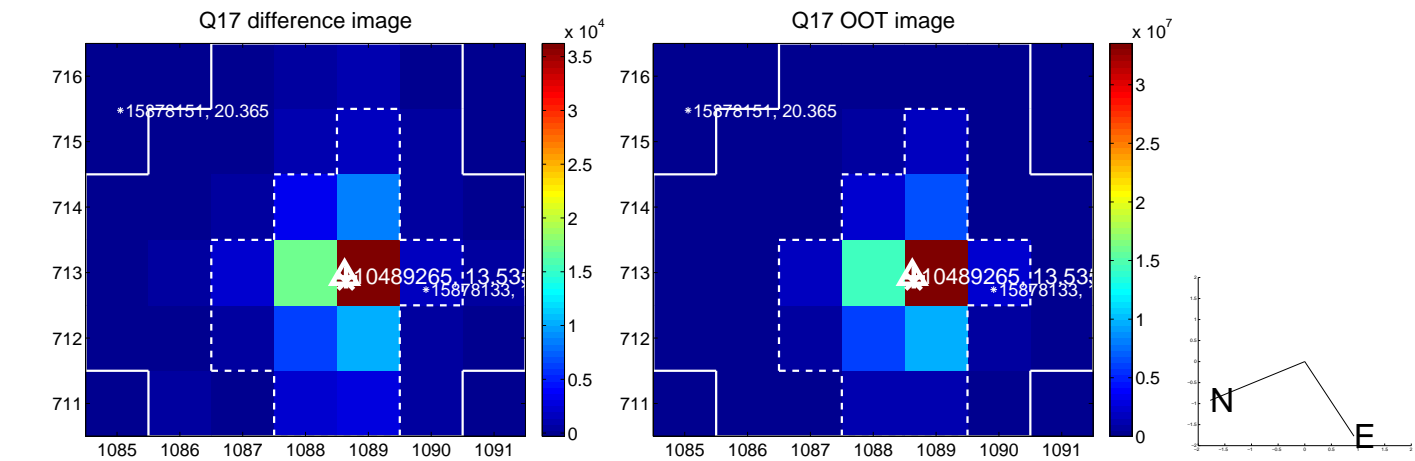
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

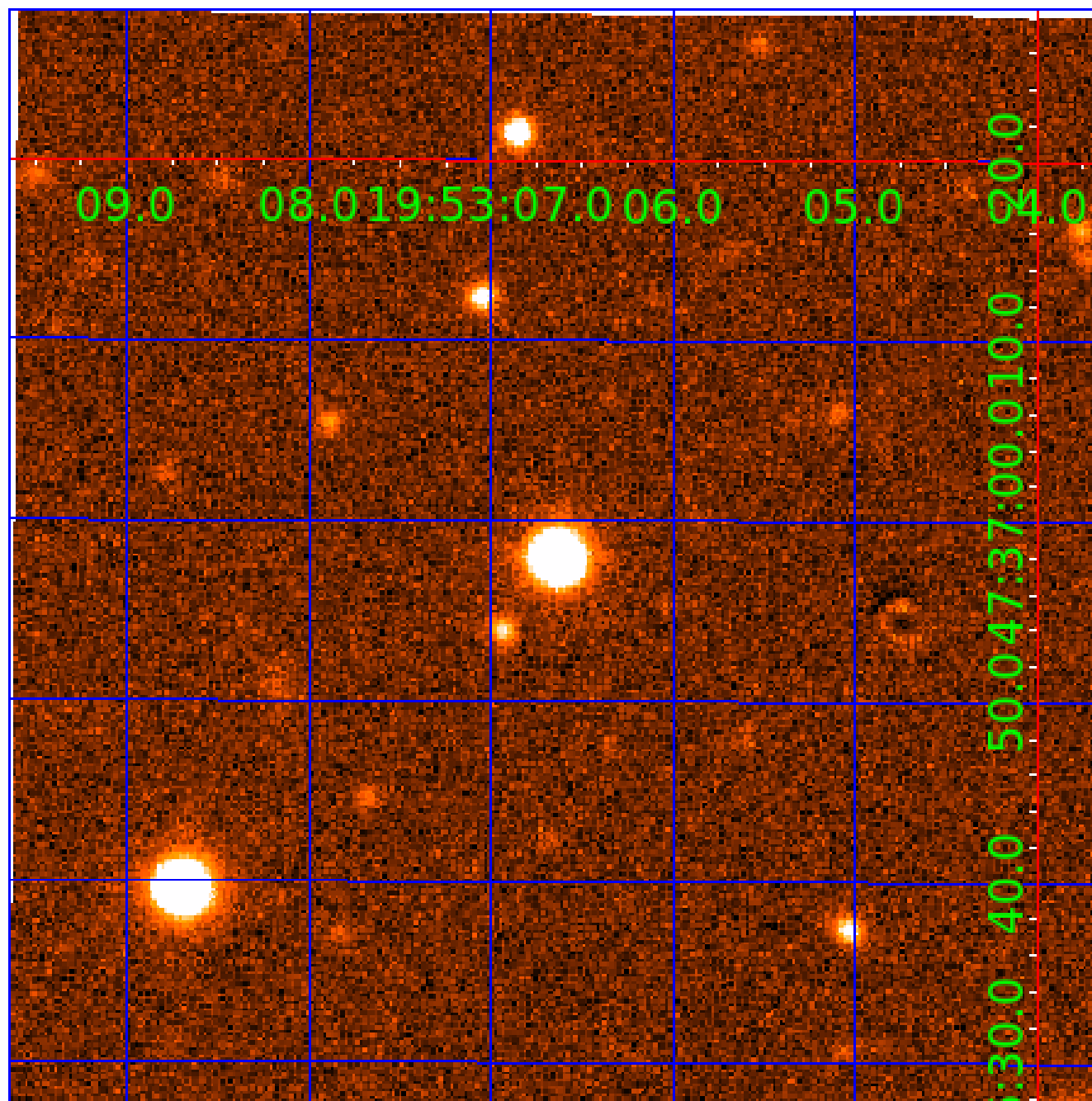


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010489265

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})
010489265-01	OBS	No	1.976077	132.024451	321.6	3.775	9.6	6.1	2.74	7956	6.24	18453.79
010489265-02	OBS	No	0.739365	131.820677	444.4	1.500	8.5	9.3	2.74	7956	6.77	68445.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010489265-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010489265-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

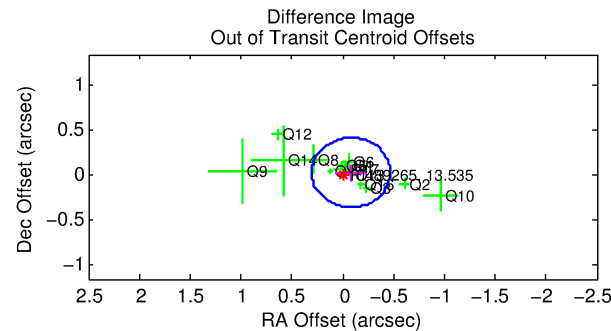
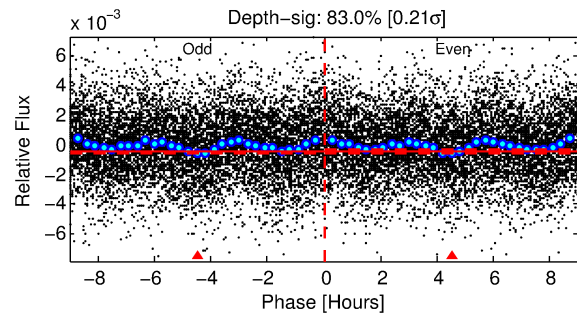
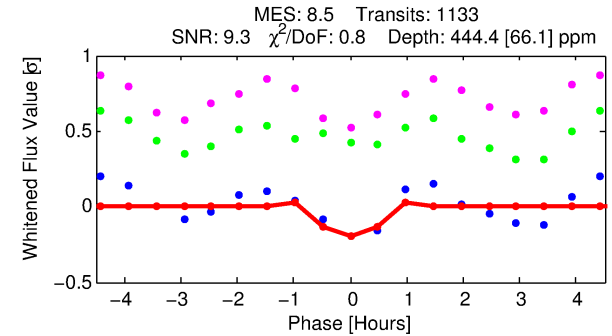
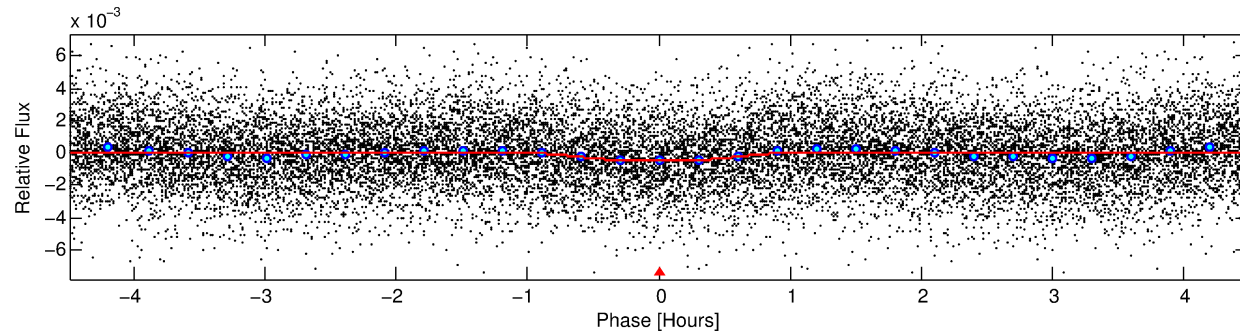
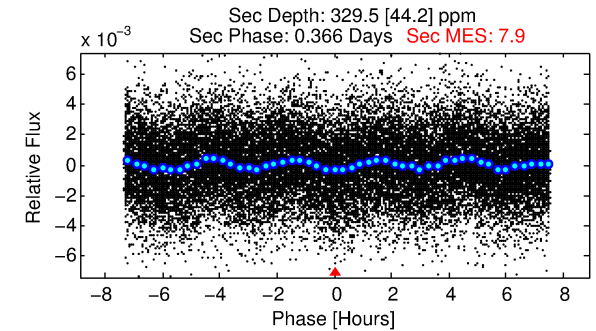
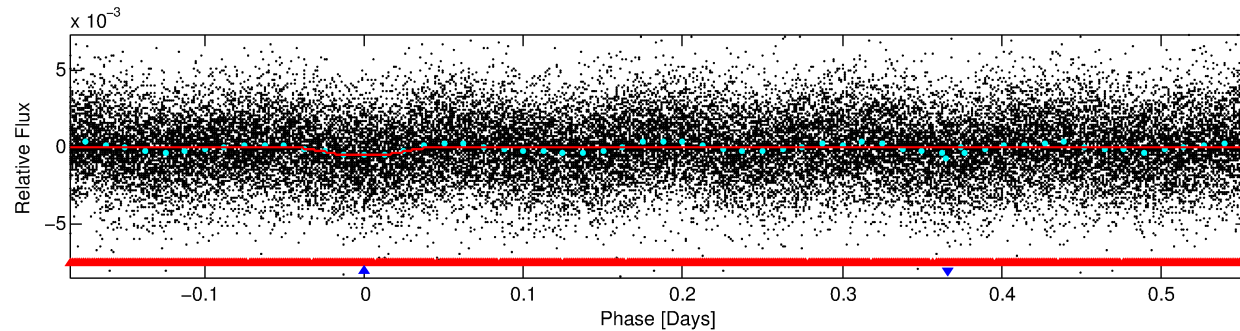
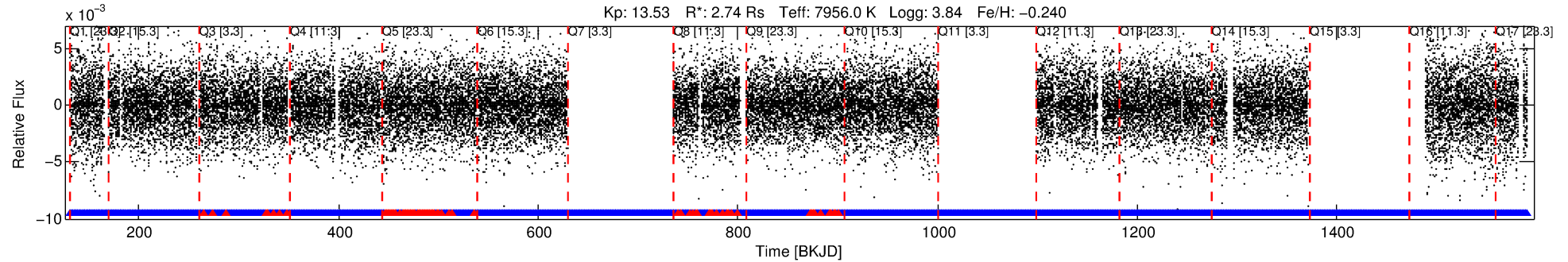
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010489265-02

No Significant Match Found

DV One-Page Summary

KIC: 10489265 Candidate: 2 of 2 Period: 0.739 d



DV Fit Results:

Period = 0.73936 [0.00001] d
Epoch = 131.8207 [0.0019] BKJD
Rp/R* = 0.0226 [0.0086]
a/R* = 2.07 [3.35]
b = 0.90 [0.46]
Seff = 68445.59 [42938.89]
Teq = 4124 [647] K
Rp = 6.77 [3.79] Re
a = 0.0199 [0.0076] AU
Ag = 1.56 [1.53] [0.36σ]
Teffp = 7126 [1409] K [1.94σ]

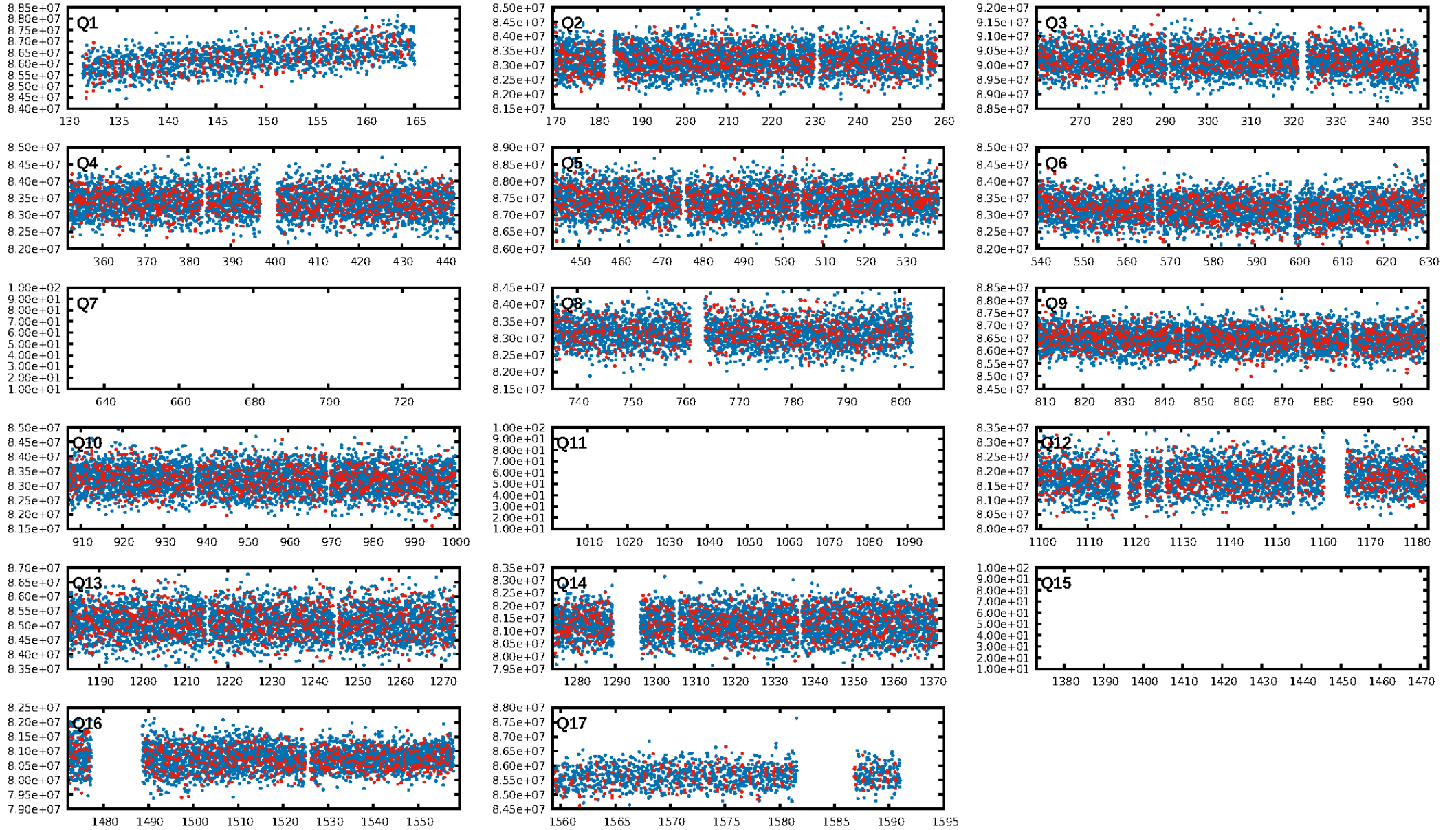
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [7.31σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.08e-14
RollingBand-fgt: 0.92 [977/1064]
GhostDiagnostic-chr: 0.5591
Centroid-sig: 42.8%
Centroid-so: 0.157 arcsec [1.49σ]
OotOffset-rm: 0.088 arcsec [0.69σ]
KicOffset-rm: 0.244 arcsec [1.51σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 1.00 [14/14]

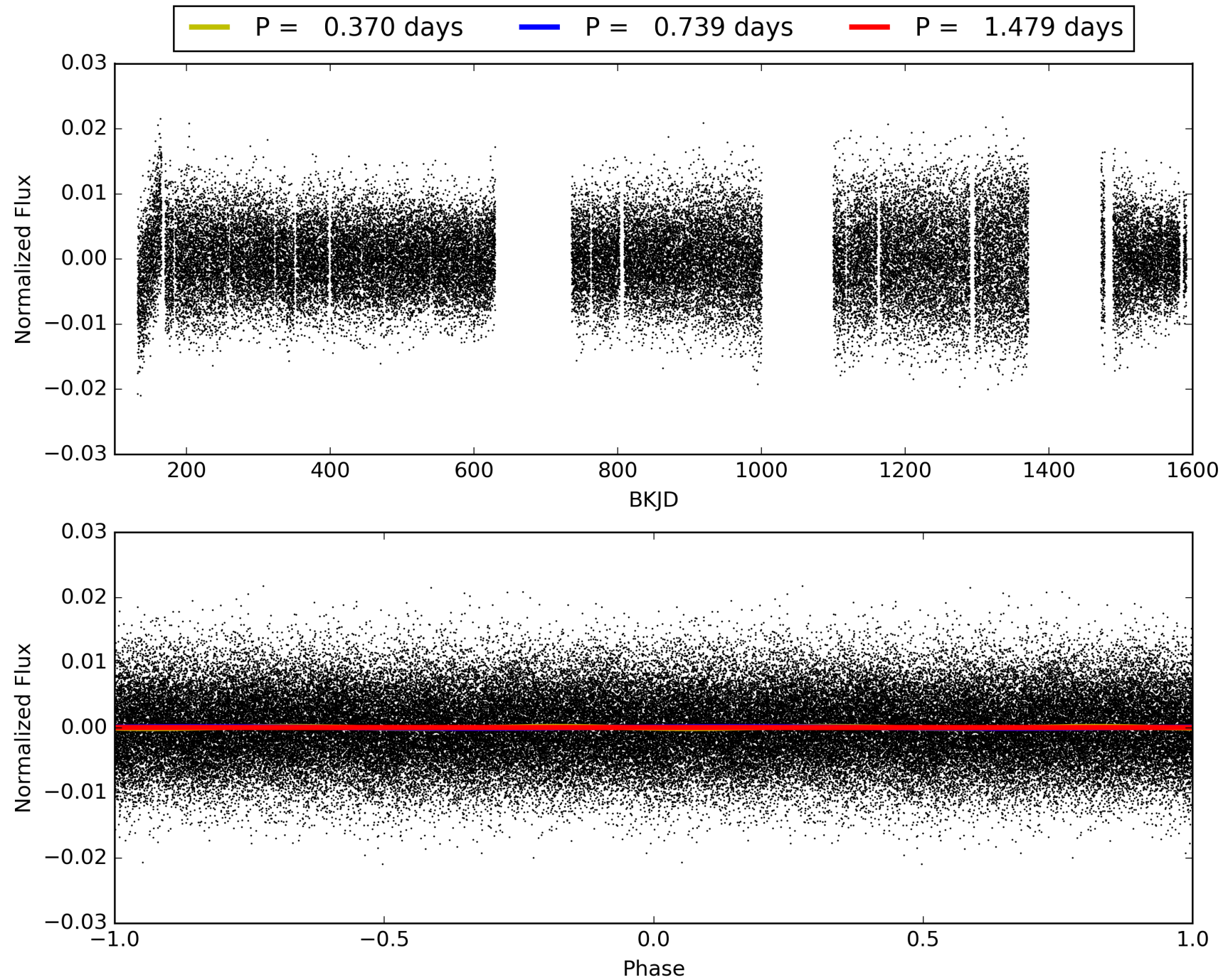
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:46:03 Z

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

TCE 010489265-02, PDC Light Curves

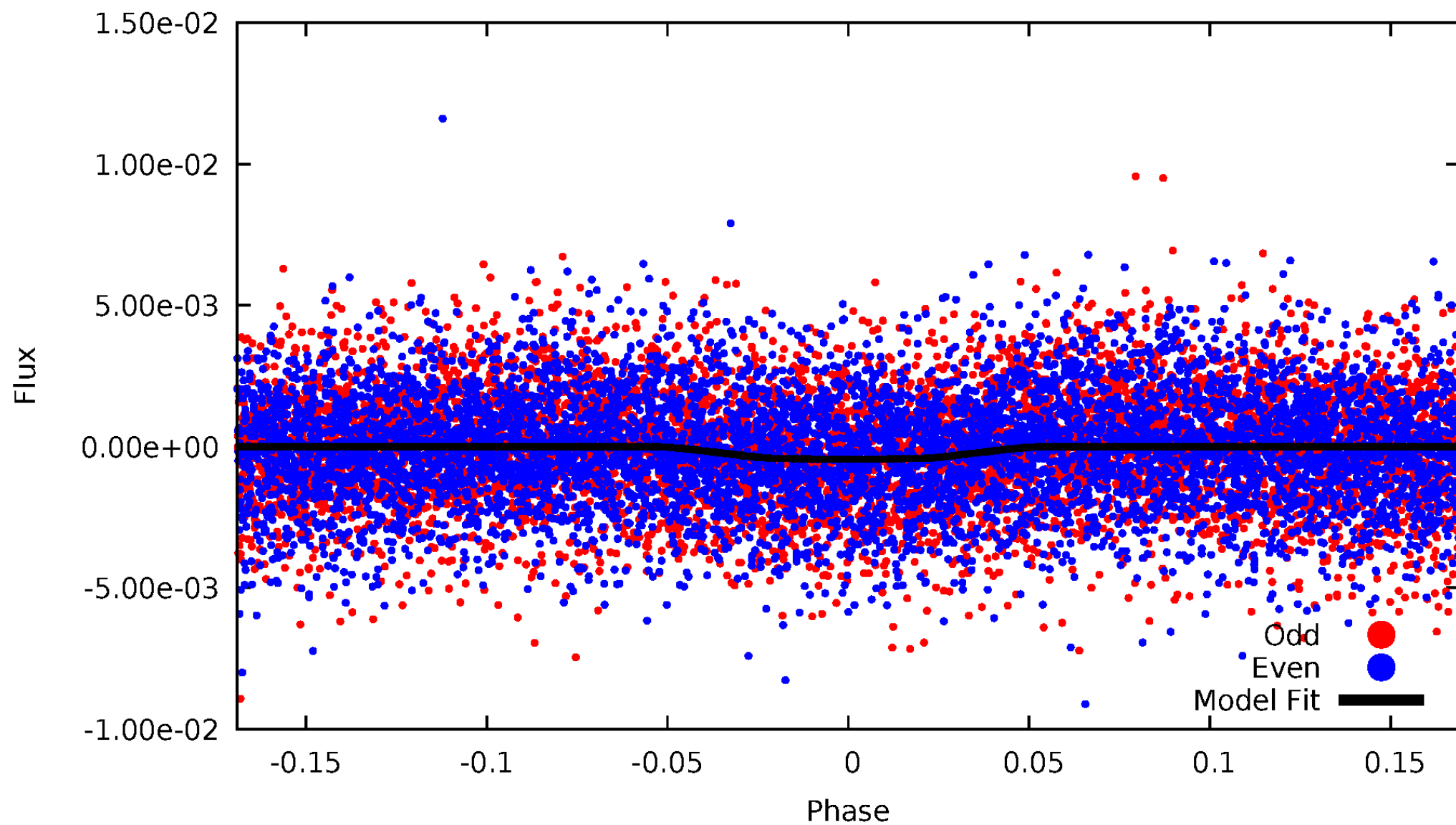


TCE 010489265-02



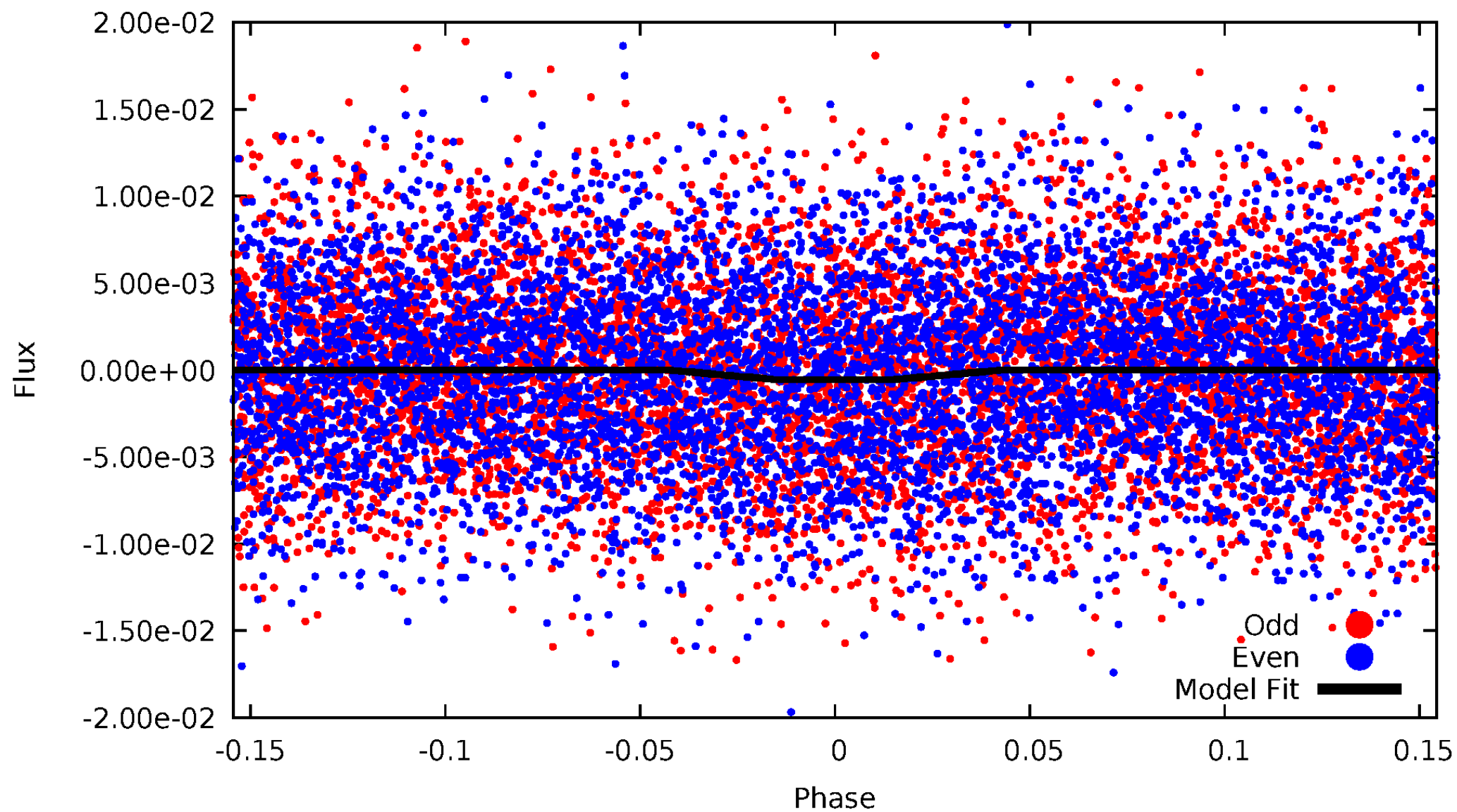
DV Odd/Even

TCE 010489265-02



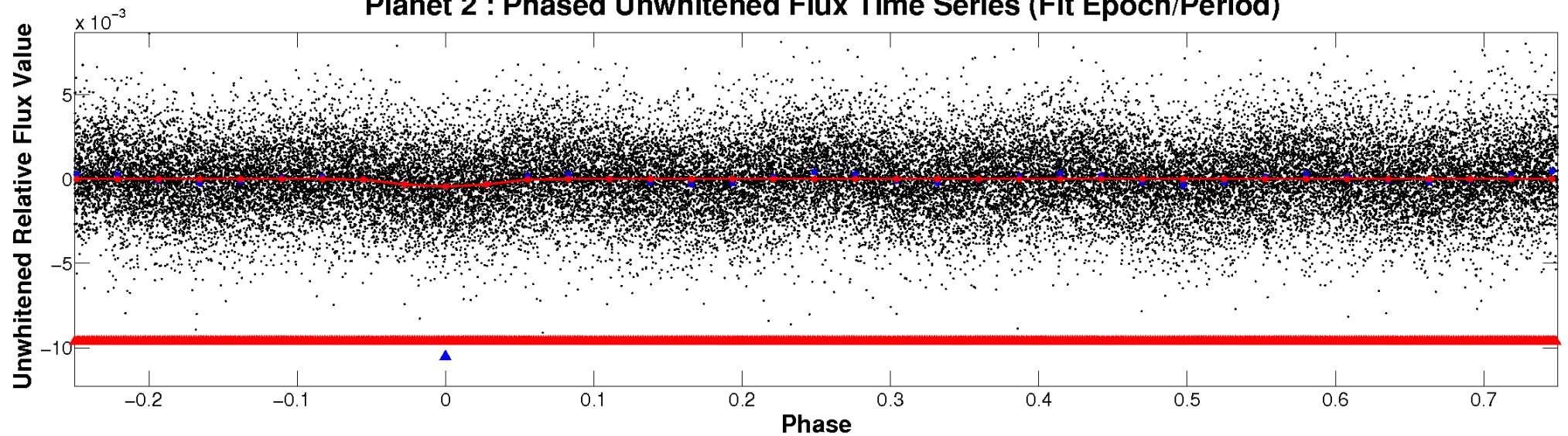
ALT Odd/Even

TCE 010489265-02

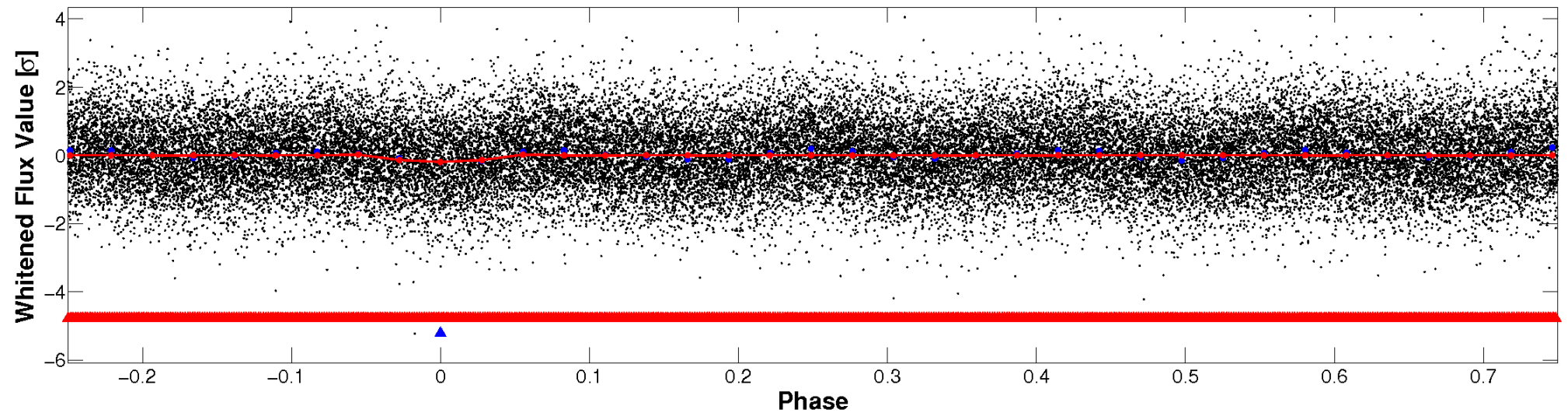


Non-Whitened Vs. Whitened Light Curve

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

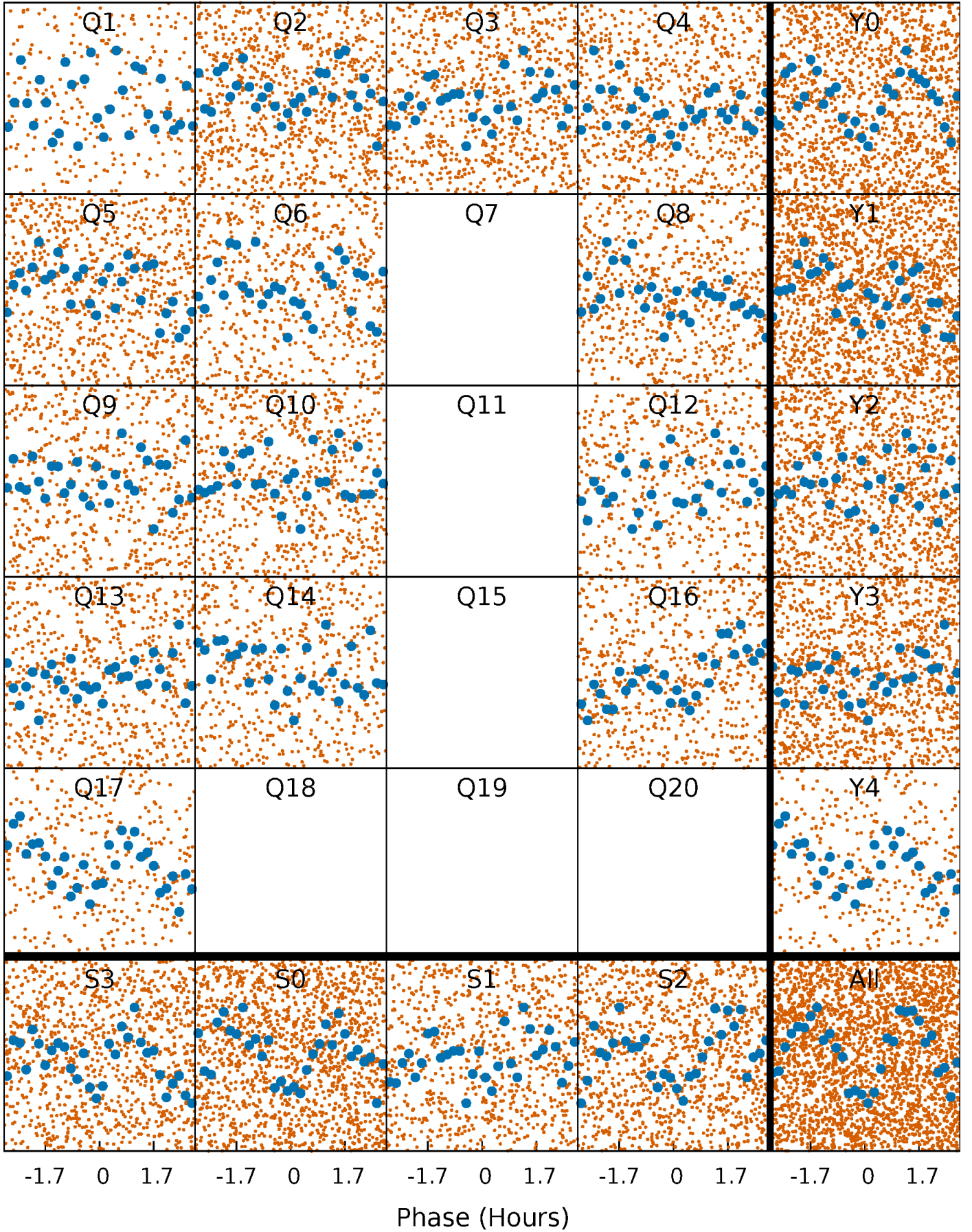


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



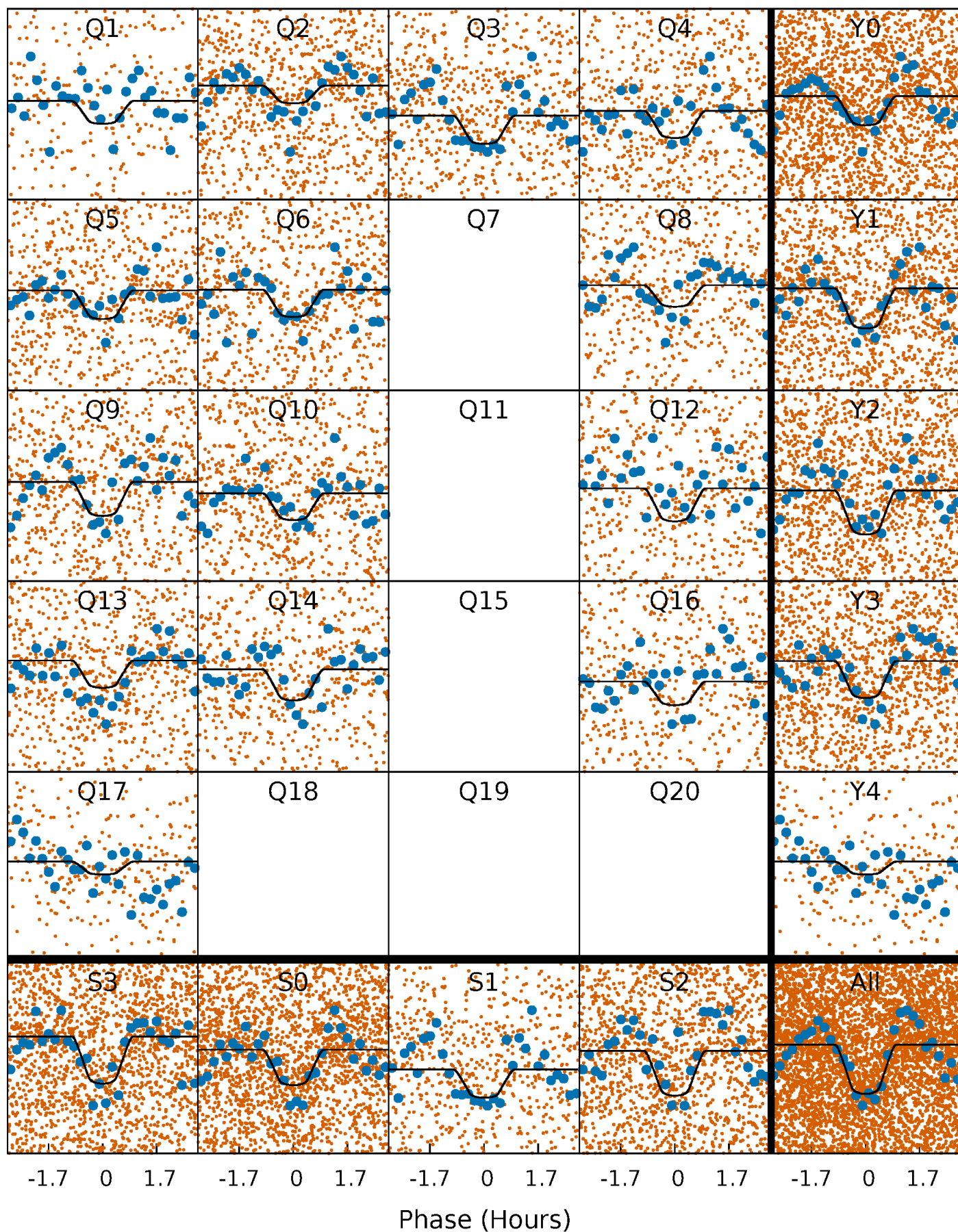
PDC Quarter-Phased Transit Curves

TCE 010489265-02 P= 0.739365 Days $T_0=131.820677$ (BKJD)



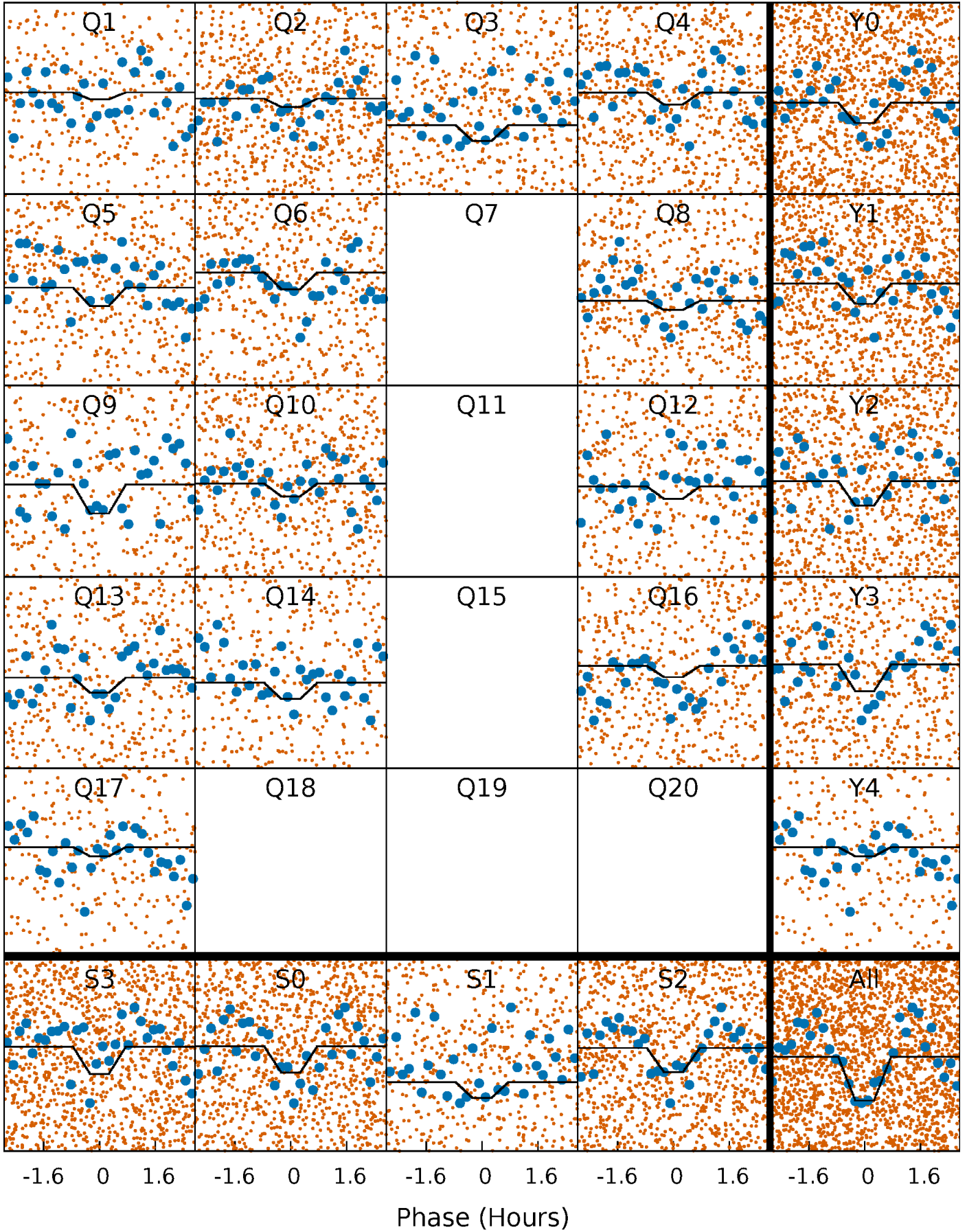
DV Quarter-Phased Transit Curves

TCE 010489265-02 P= 0.739365 Days $T_0=131.820677$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

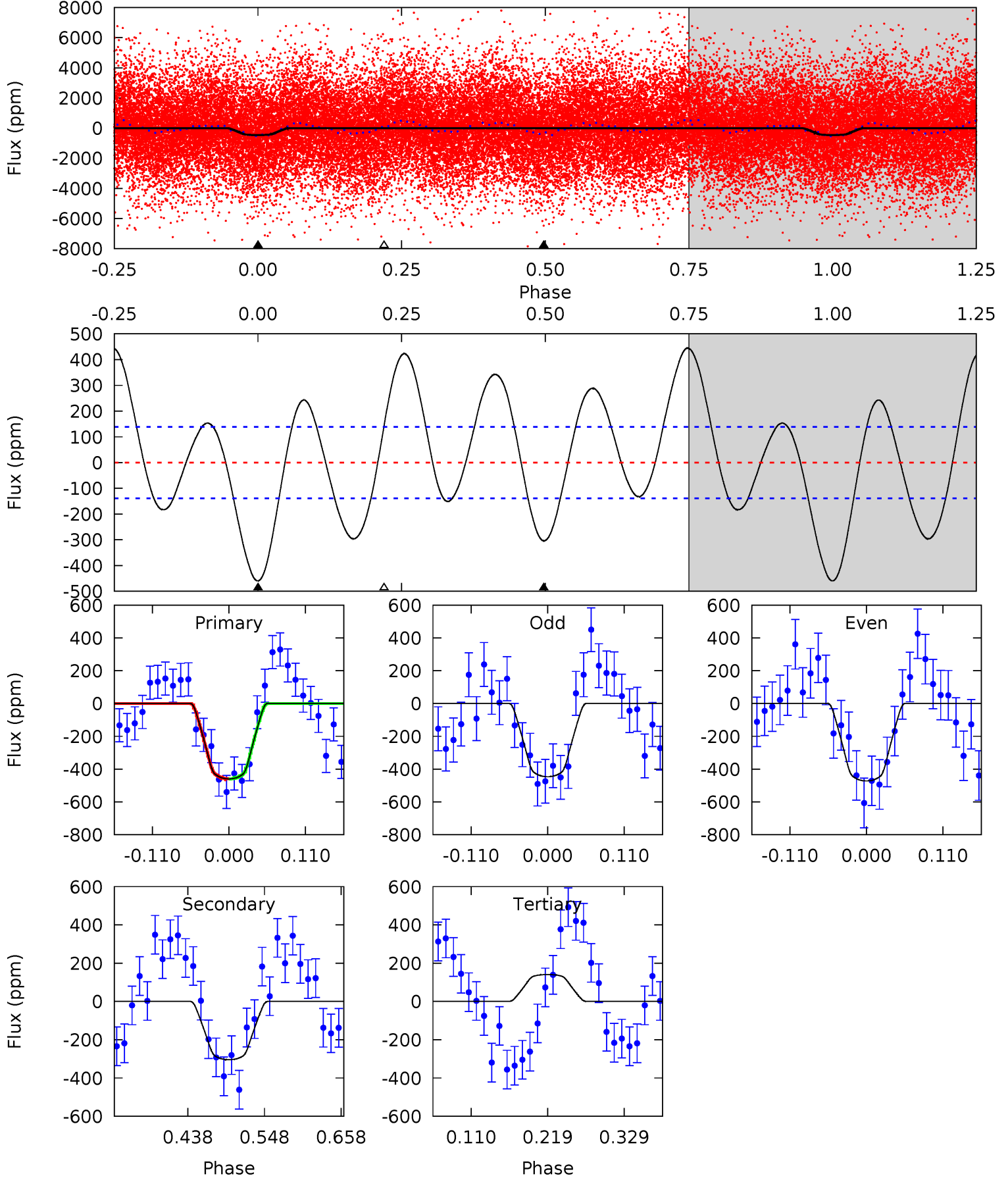
TCE 010489265-02 P= 0.739368 Days $T_0=131.816054$ (BKJD)



DV Model-Shift Uniqueness Test

010489265-02, P = 0.739365 Days, E = 131.081312 Days

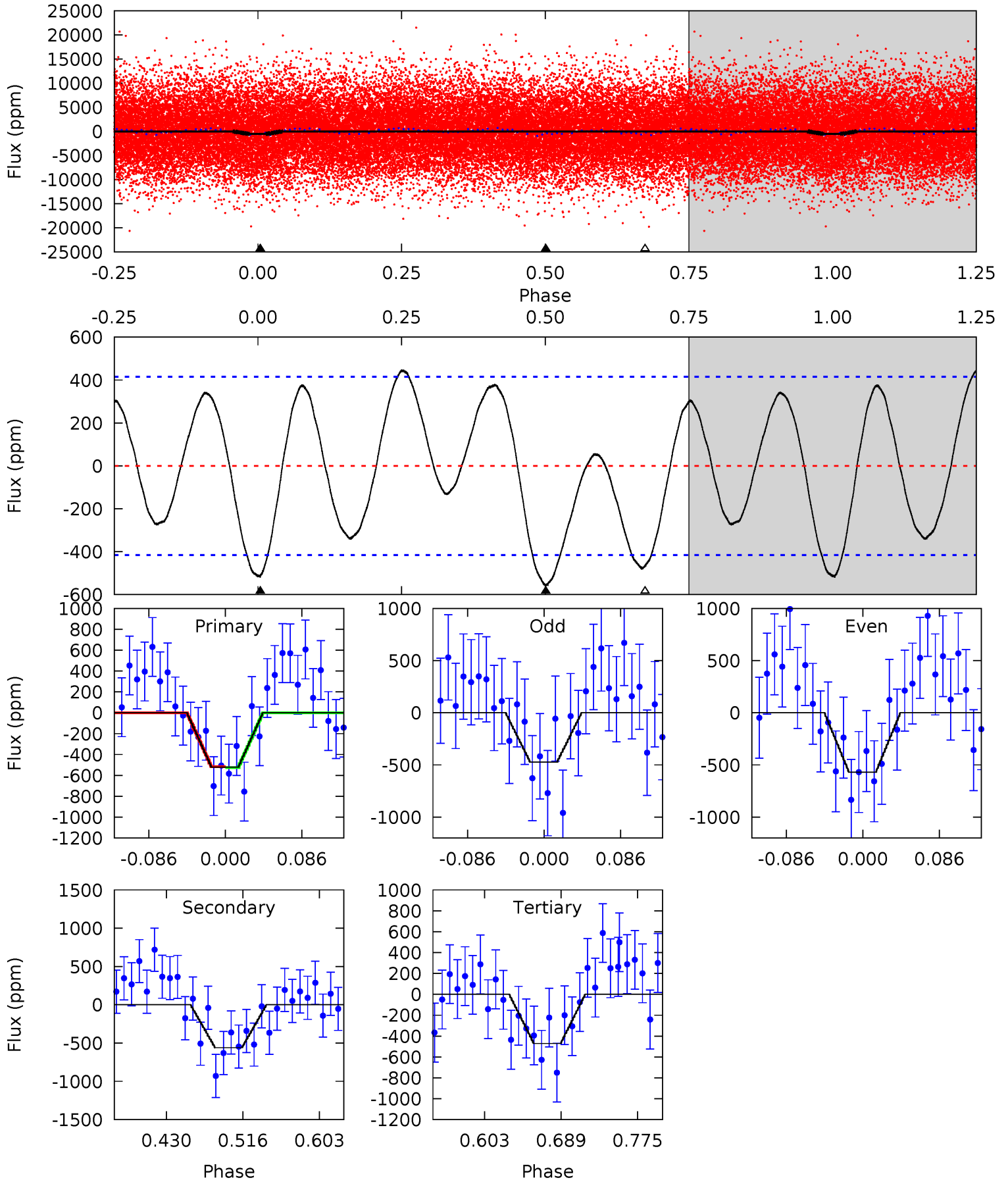
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	9.97	-4.62	0	4.55	1.60	6.85	19.7	15.1	14.6	9.97	0.42	0.99	0.49	0.03



Alt Model-Shift Uniqueness Test

010489265-02, P = 0.739368 Days, E = 131.076686 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.76	6.20	5.20	0	4.60	1.72	2.77	0.56	5.76	0.99	6.20	0.53	0.88	0.44	0.04



Stellar Parameters For KIC 010489265

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7956^{+216}_{-325}	$3.843^{+0.352}_{-0.088}$	$-0.240^{+0.200}_{-0.350}$	$2.743^{+0.375}_{-1.126}$	$1.911^{+0.078}_{-0.468}$	$0.130^{+0.382}_{-0.038}$
	+3%/-4%	+9%/-2%	+83%/-146%	+14%/-41%	+4%/-24%	+293%/-30%
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 010489265-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-304 ± 31	$6.43^{+2.66}_{-2.80}$	5610^{+382}_{-580}	6286^{+2391}_{-1194}	$1.536^{+2.942}_{-0.779}$
Alt.	-560 ± 90	$6.34^{+2.79}_{-2.47}$	5612^{+359}_{-541}	7590^{+3056}_{-1392}	$2.910^{+4.515}_{-1.533}$

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 $A_{obs} \gg 1.0$

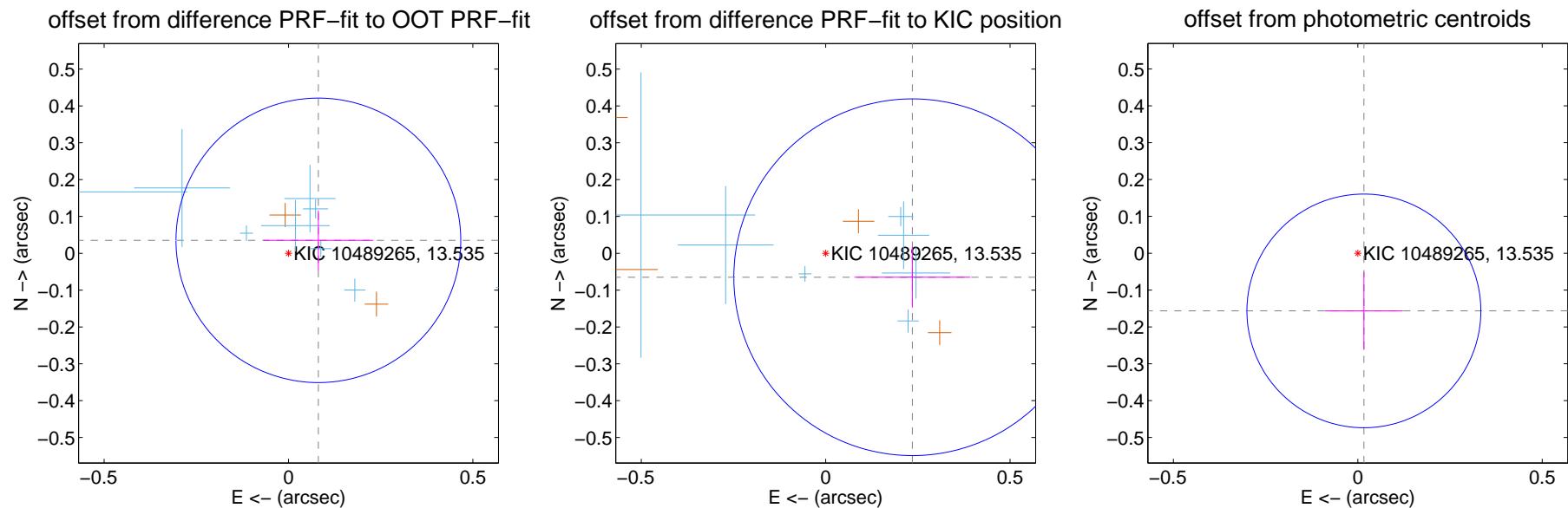
DV Centroid Data

Supplemental centroid analysis for 010489265-02. Kepler magnitude: 13.54. Transit SNR 9.28

There are 9 quarters with good PRF difference image offsets

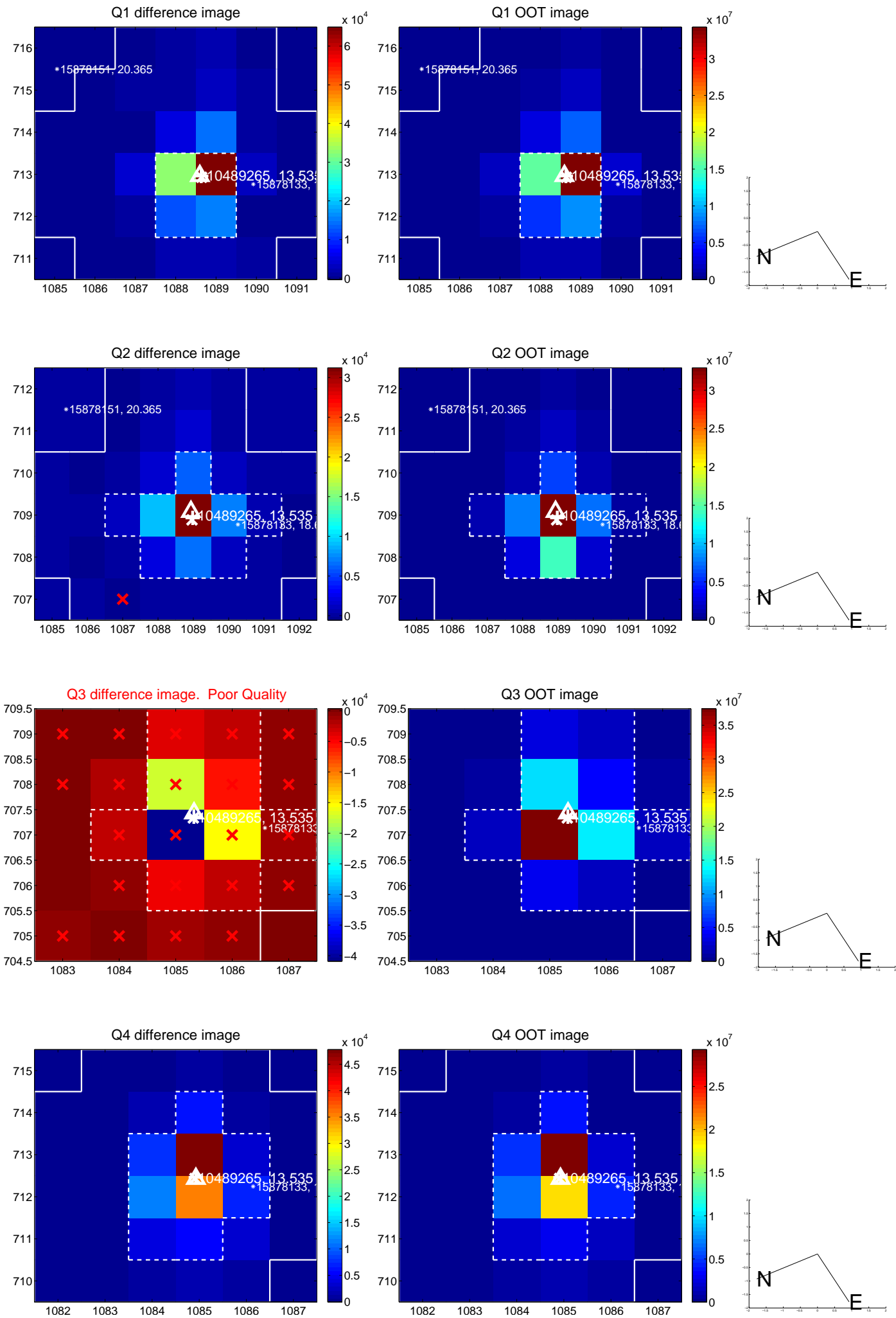
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.088 ± 0.129	0.69	-0.081 ± 0.149	0.035 ± 0.081
PRF-fit source offset from KIC position	0.244 ± 0.161	1.51	-0.235 ± 0.157	-0.065 ± 0.083
photometric centroid source offset	0.16 ± 0.11	1.49	-0.02 ± 0.11	-0.16 ± 0.11

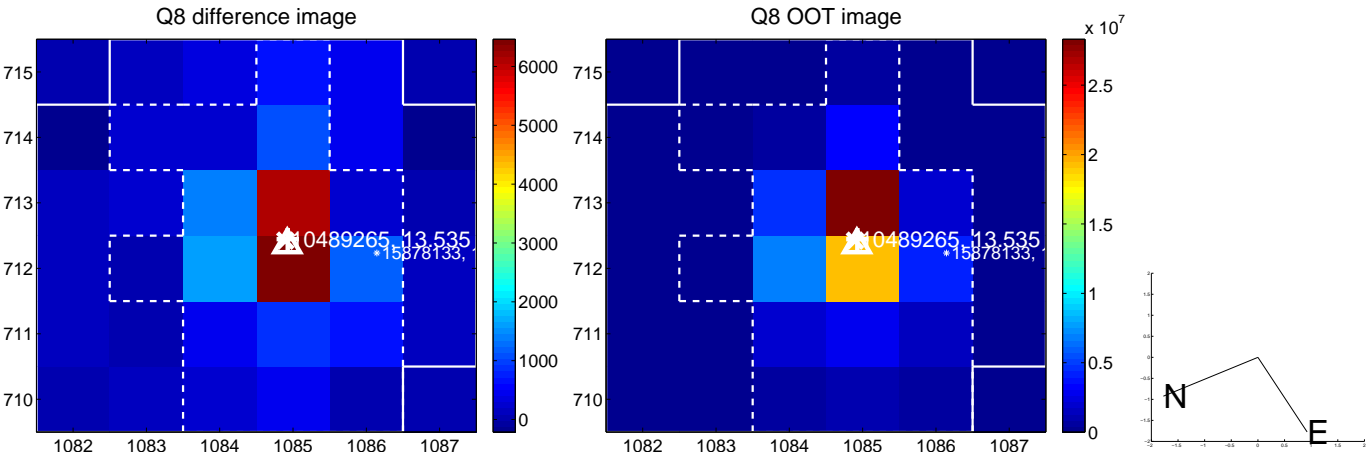
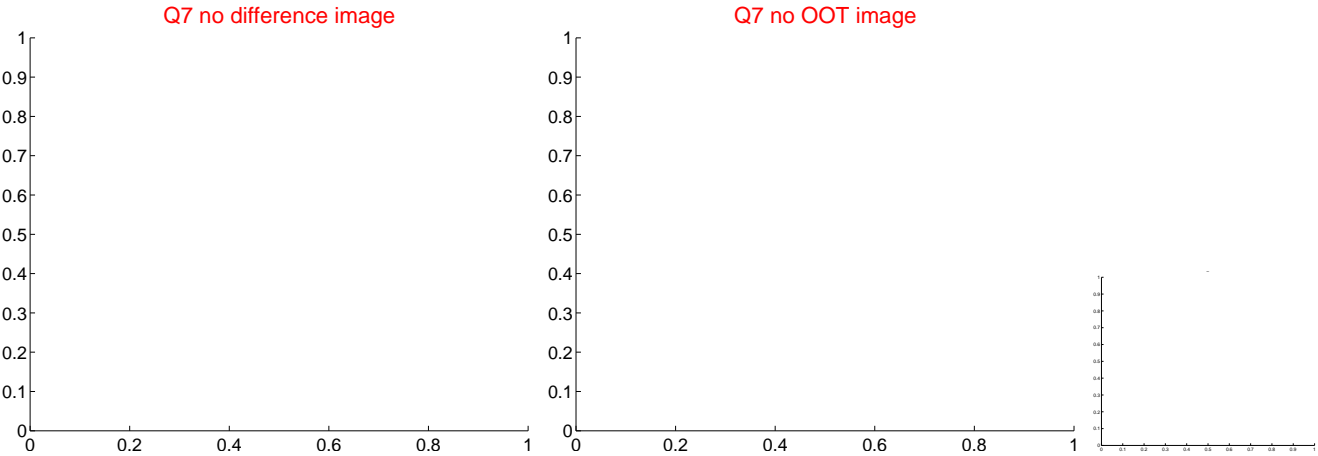
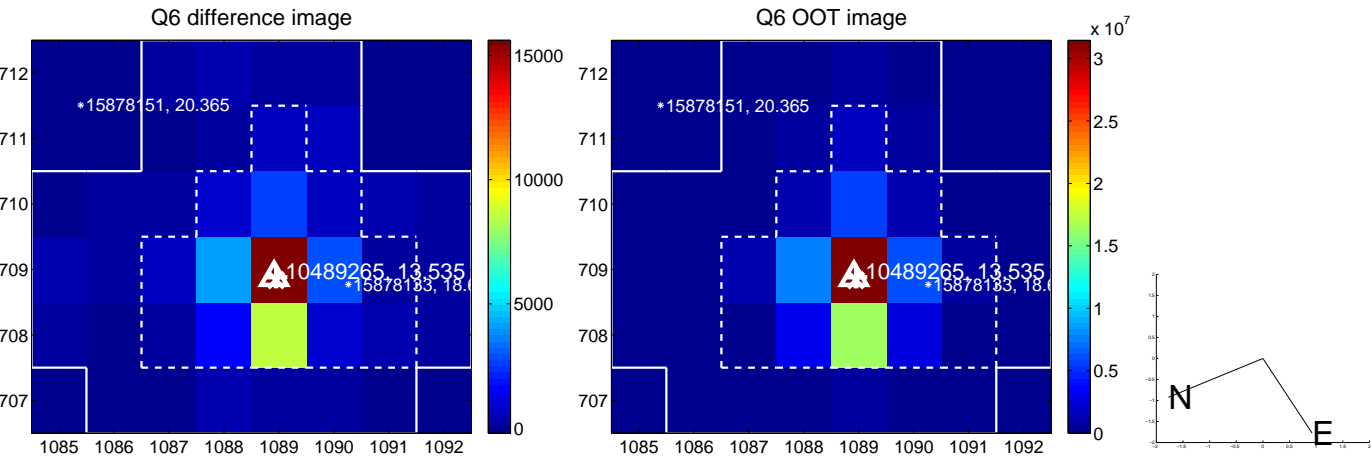
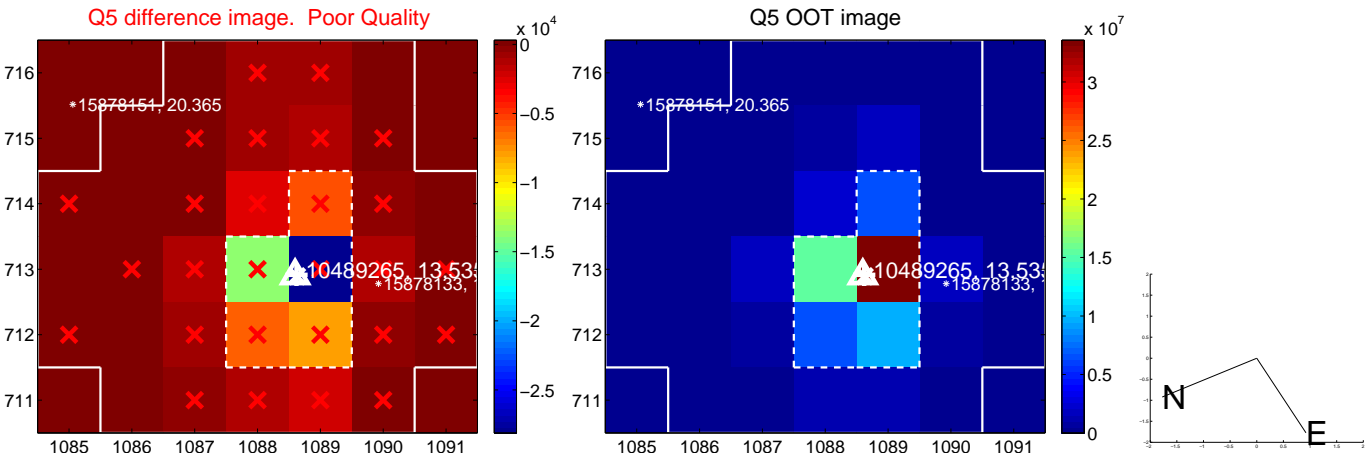


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

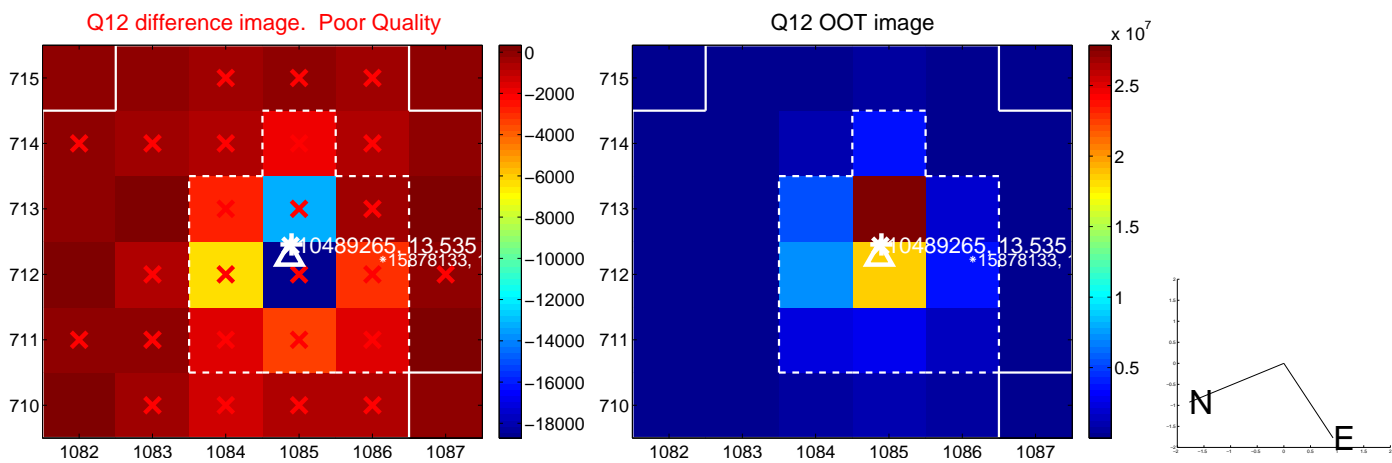
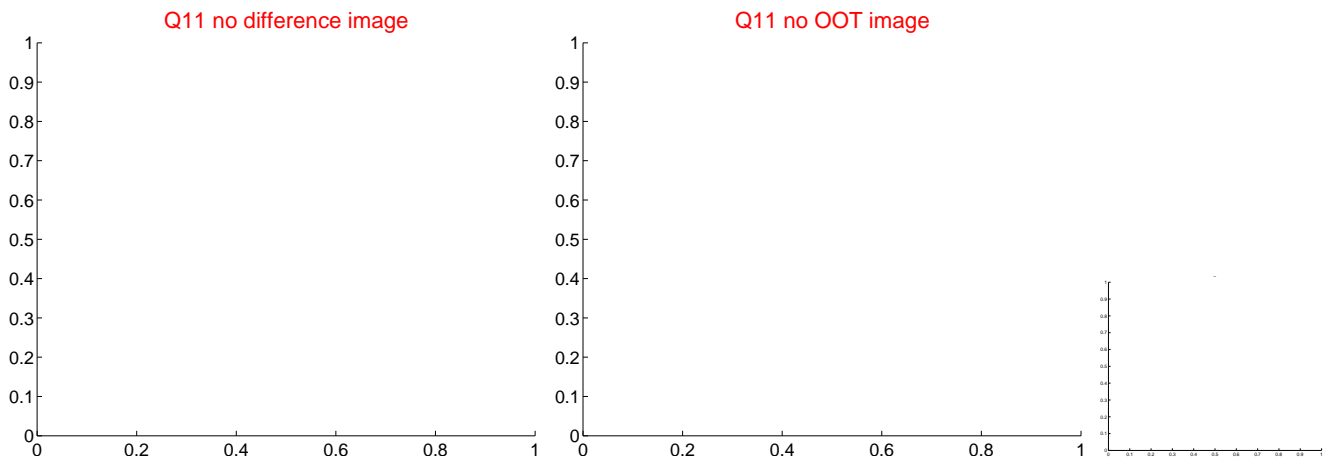
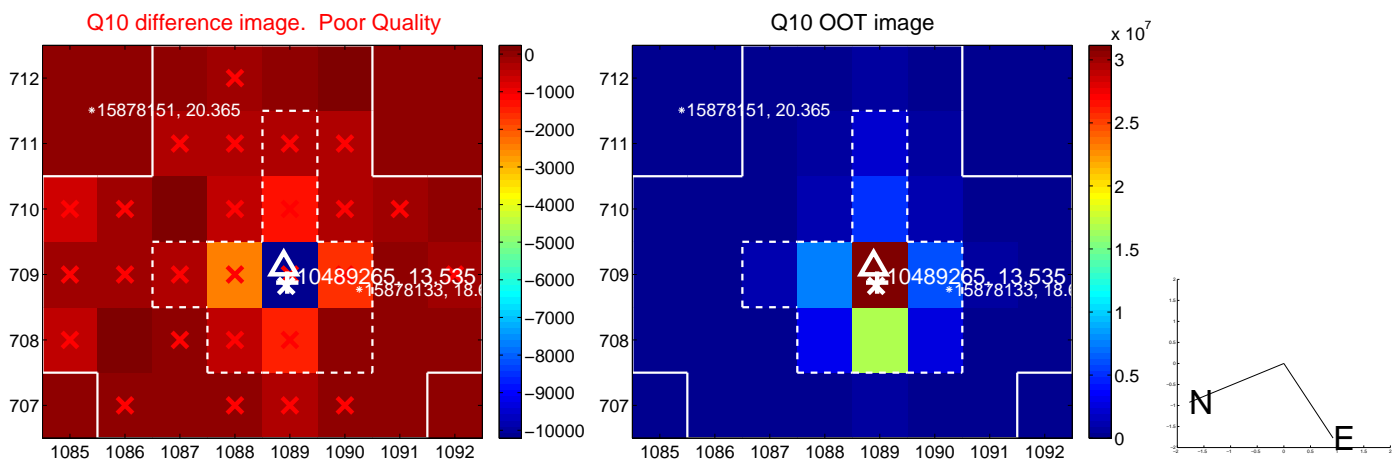
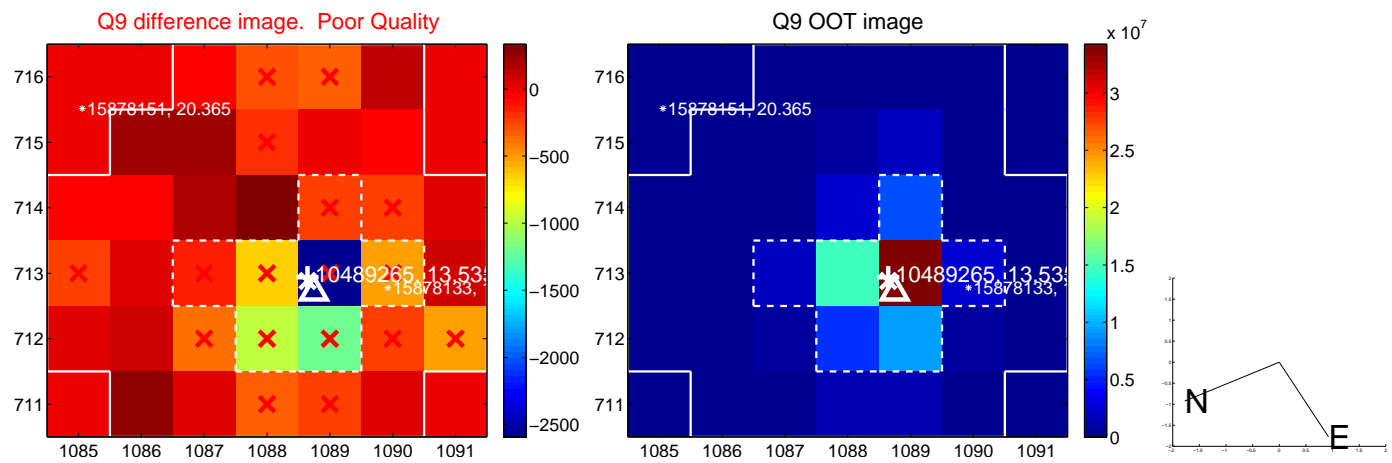
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



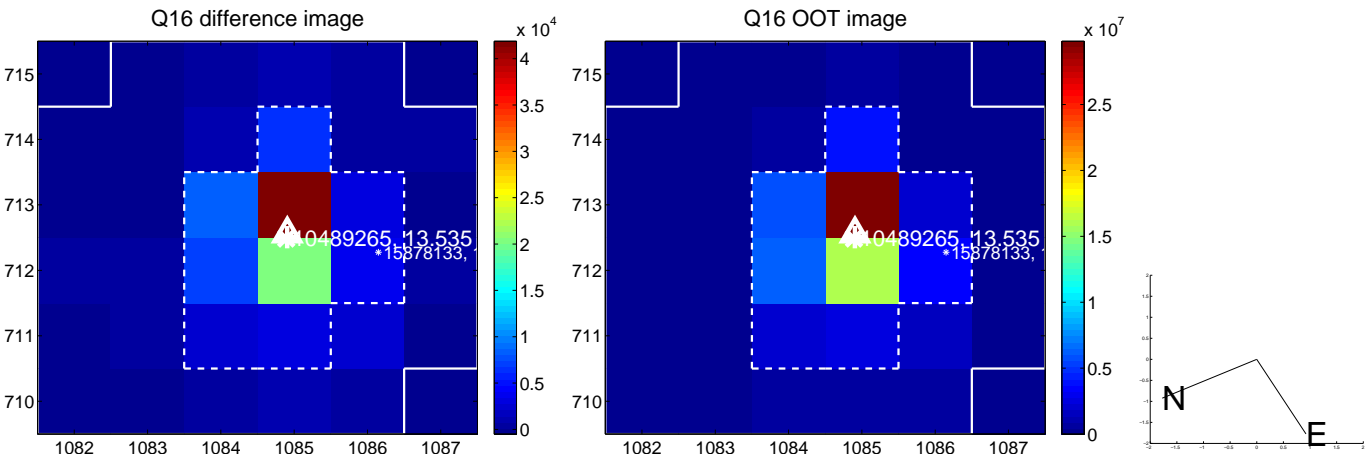
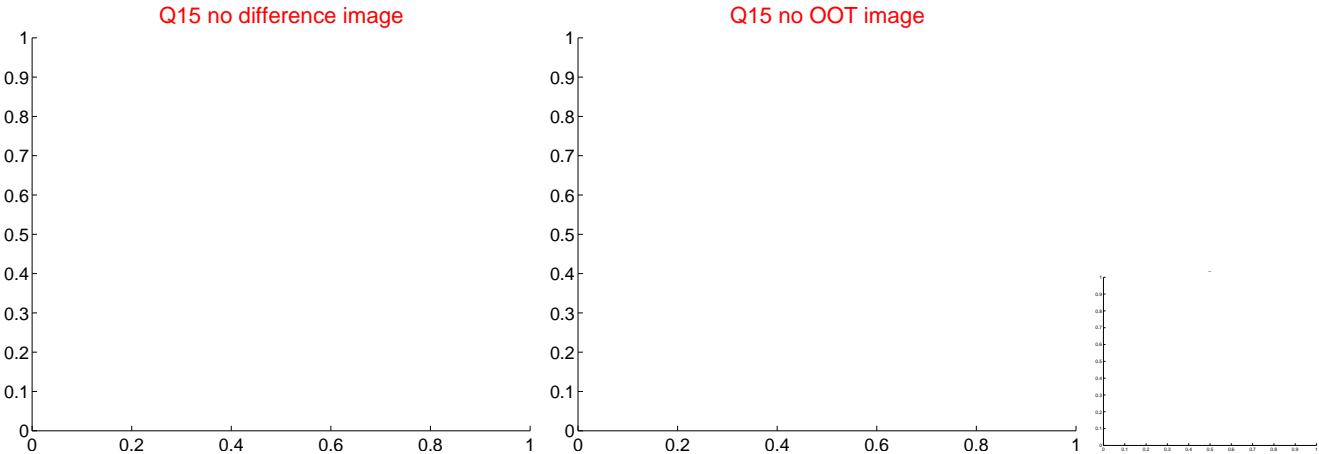
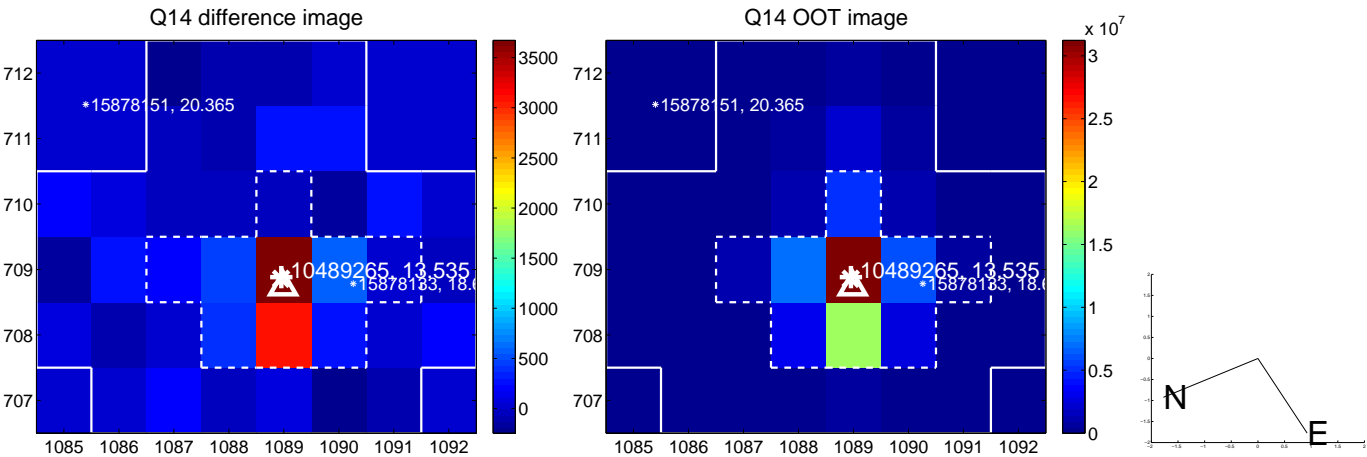
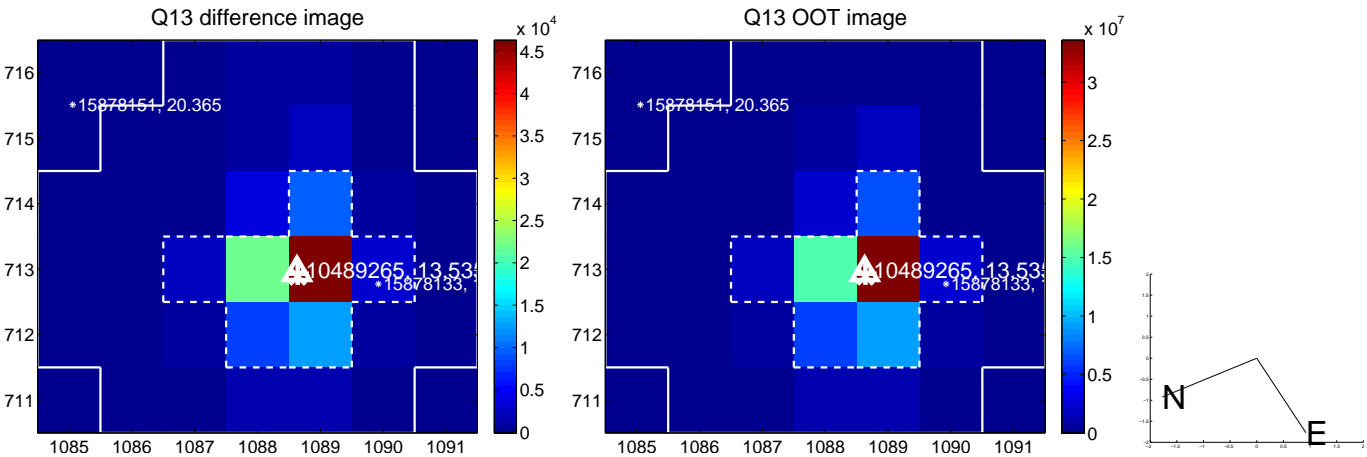
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



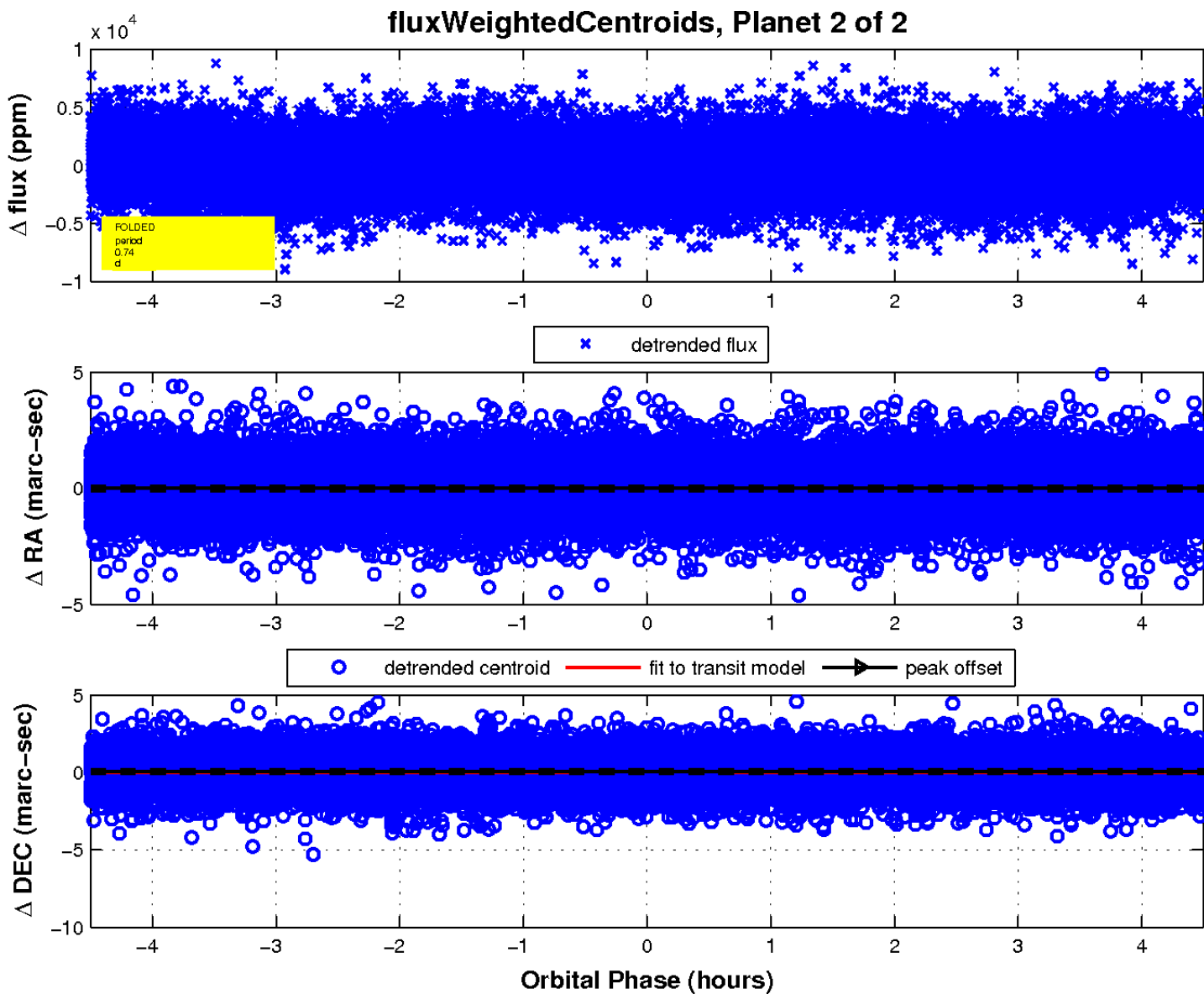
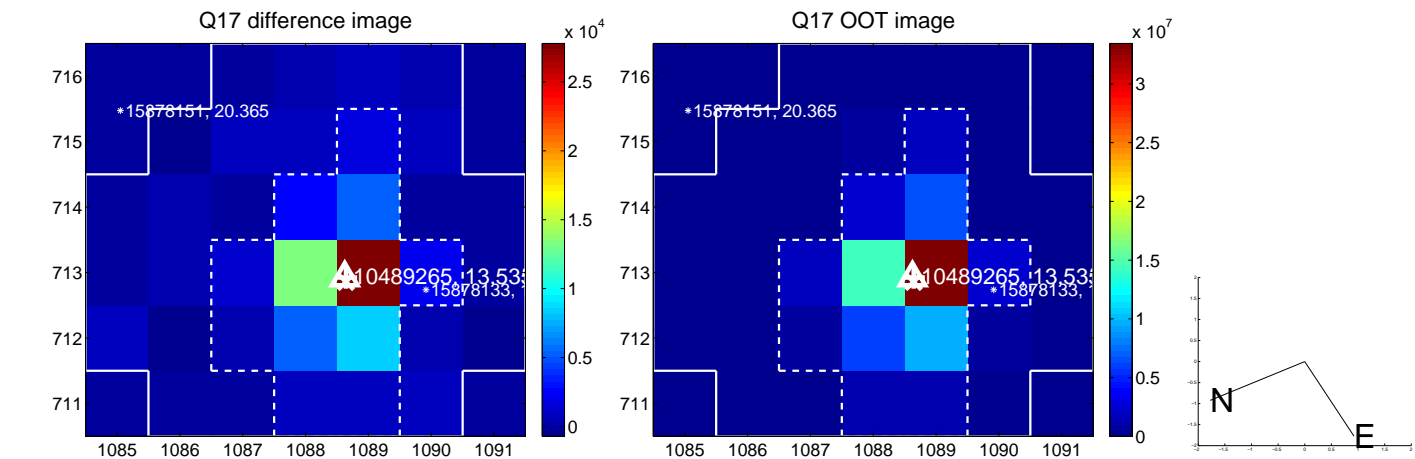
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

