

KIC 003869326

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})
003869326-01	OBS	5991.01	8.585954	136.217057	754.9	3.122	28.1	32.4	13.94	4805	80.29	6846.66
003869326-02	OBS	No	8.586057	133.329511	454.9	3.392	12.0	19.0	13.94	4805	63.50	6846.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003869326-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003869326-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 003869326-01

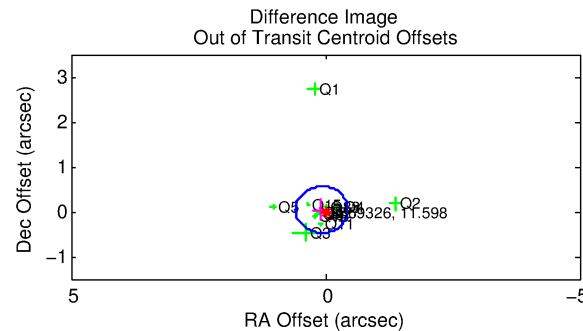
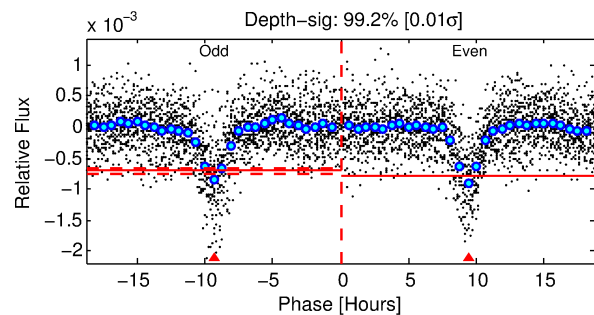
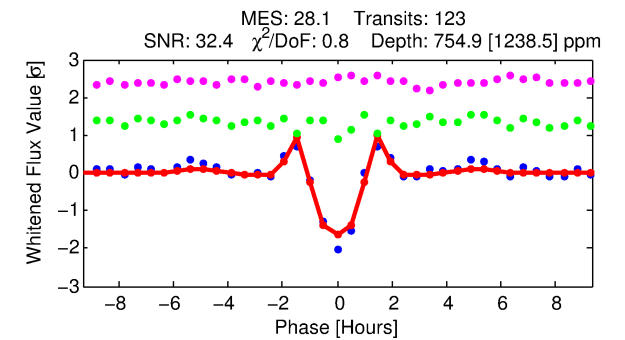
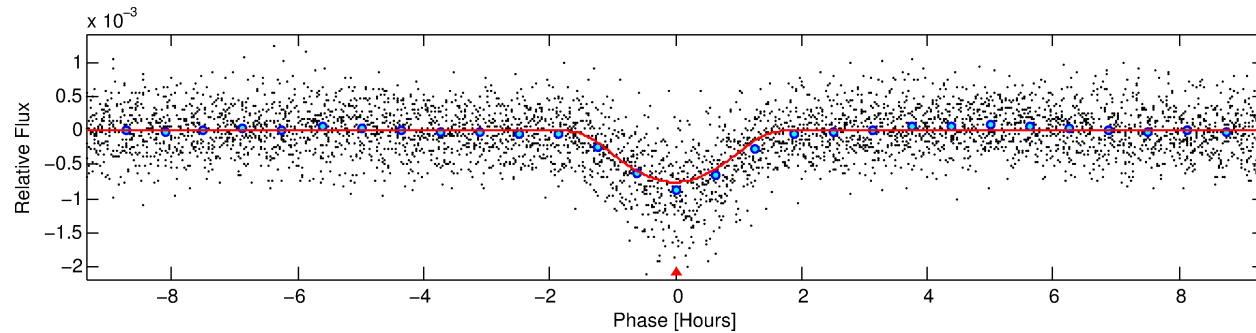
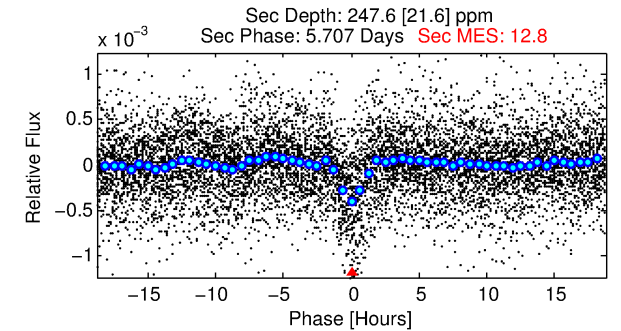
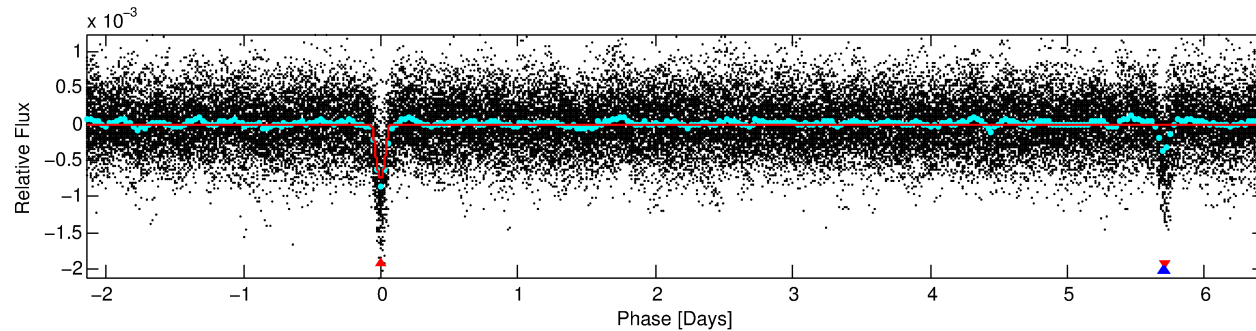
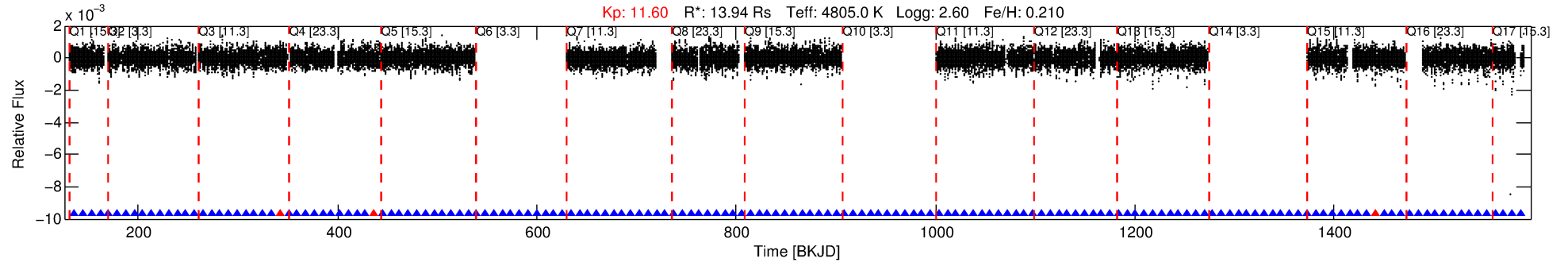
No Significant Match Found

DV One-Page Summary

KIC: 3869326 Candidate: 1 of 2 Period: 8.586 d

KOI: K05991.01 Corr: 0.971

Kp: 11.60 R*: 13.94 Rs Teff: 4805.0 K Logg: 2.60 Fe/H: 0.210



DV Fit Results:

Period = 8.58595 [0.00001] d
Epoch = 136.2171 [0.0011] BKJD
Rp/R* = 0.0528 [0.0172]
a/R* = 6.99 [0.52]
b = 1.00 [0.03]
Seff = 6846.67 [1407.96]
Teq = 2320 [119] K
Rp = 80.29 [32.81] Re
a = 0.1164 [0.0194] AU
Ag = 0.29 [0.19] [-3.67σ]
Teffp = 2624 [437] K [0.67σ]

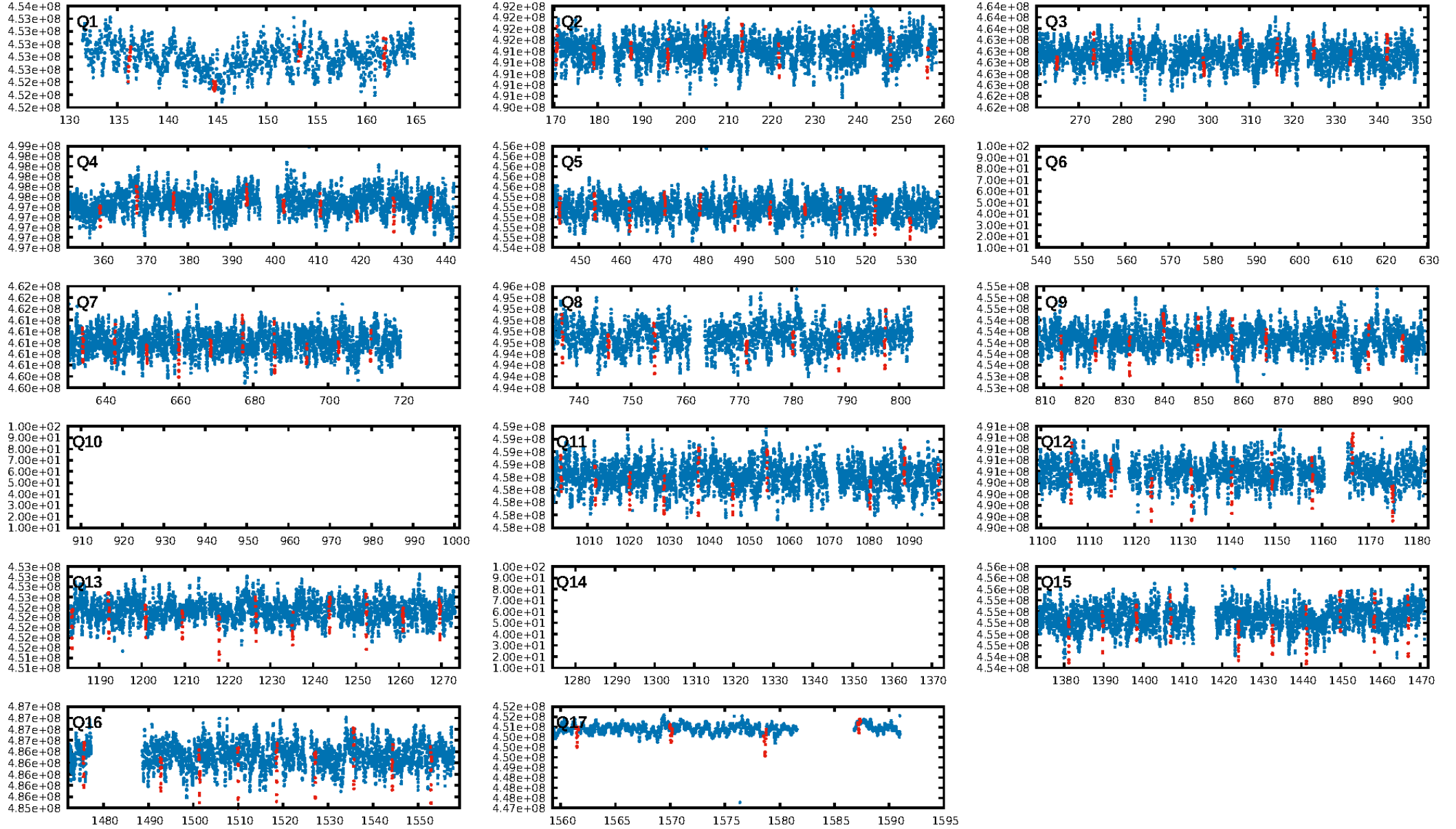
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.33e-152
RollingBand-fgt: 0.97 [112/115]
GhostDiagnostic-chr: 1.803
Centroid-sig: N/A
Centroid-so: 0.033 arcsec [0.47σ]
OotOffset-rm: 0.086 arcsec [0.50σ]
KicOffset-rm: 0.098 arcsec [0.61σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

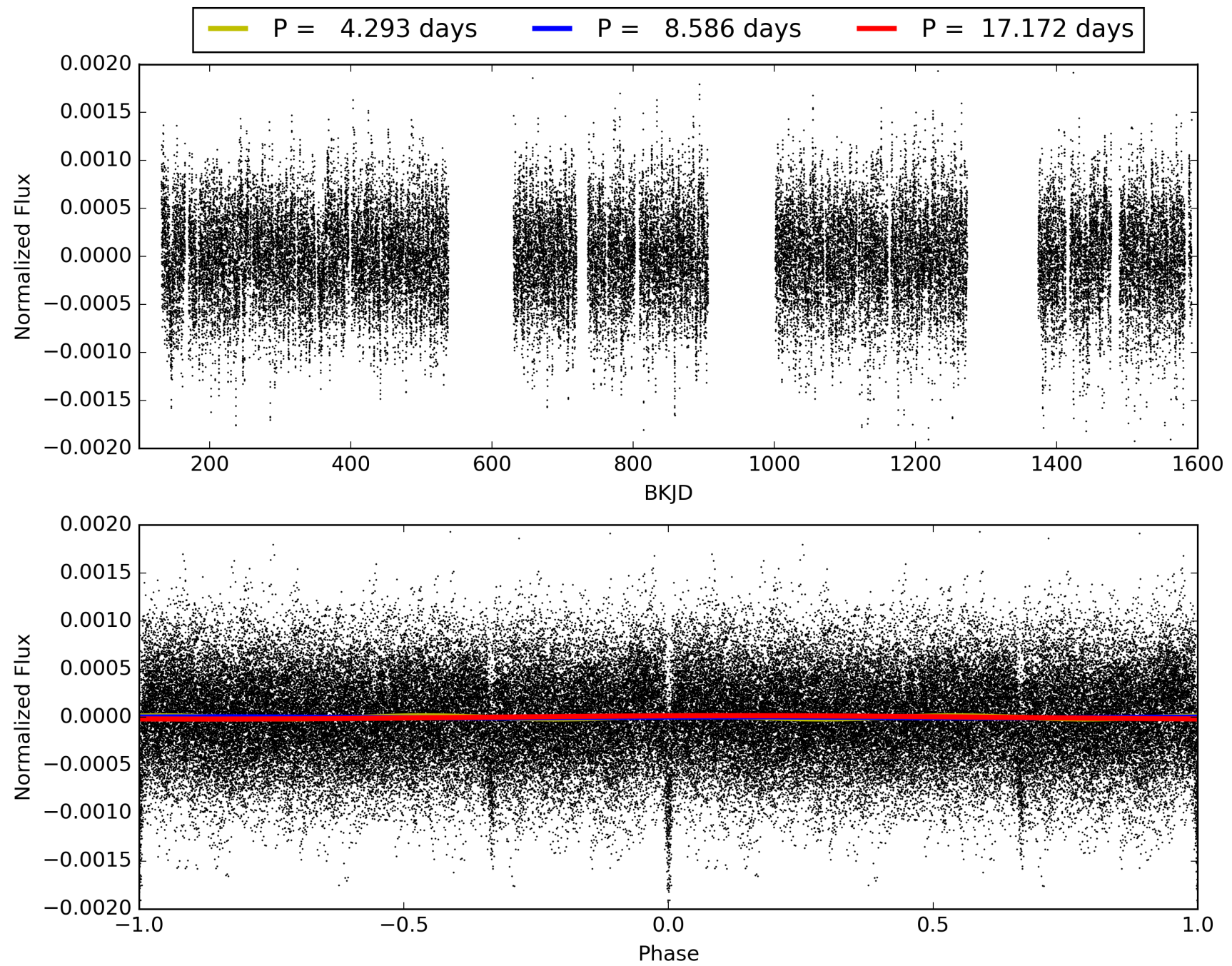
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:15:16 Z

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

TCE 003869326-01, PDC Light Curves

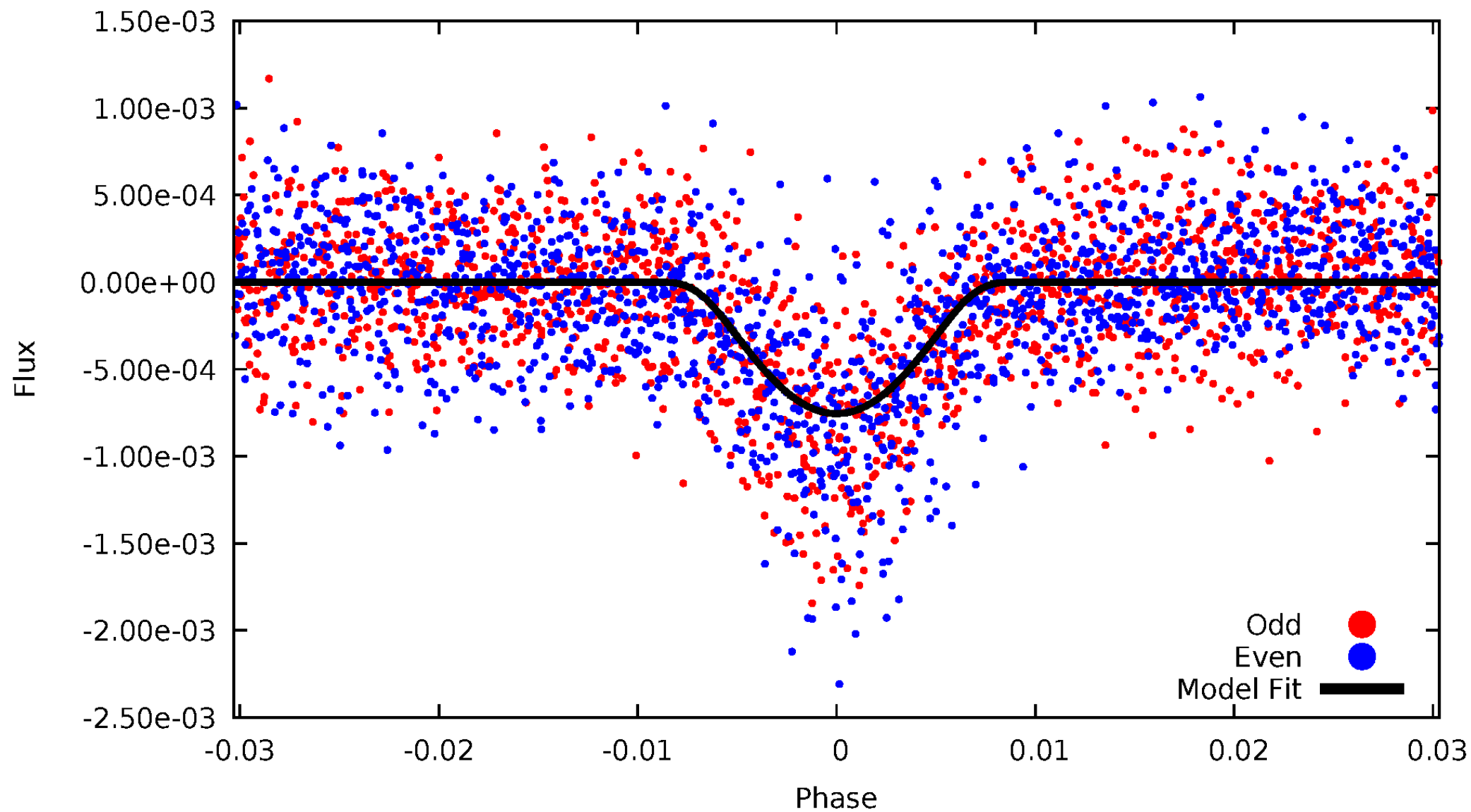


TCE 003869326-01



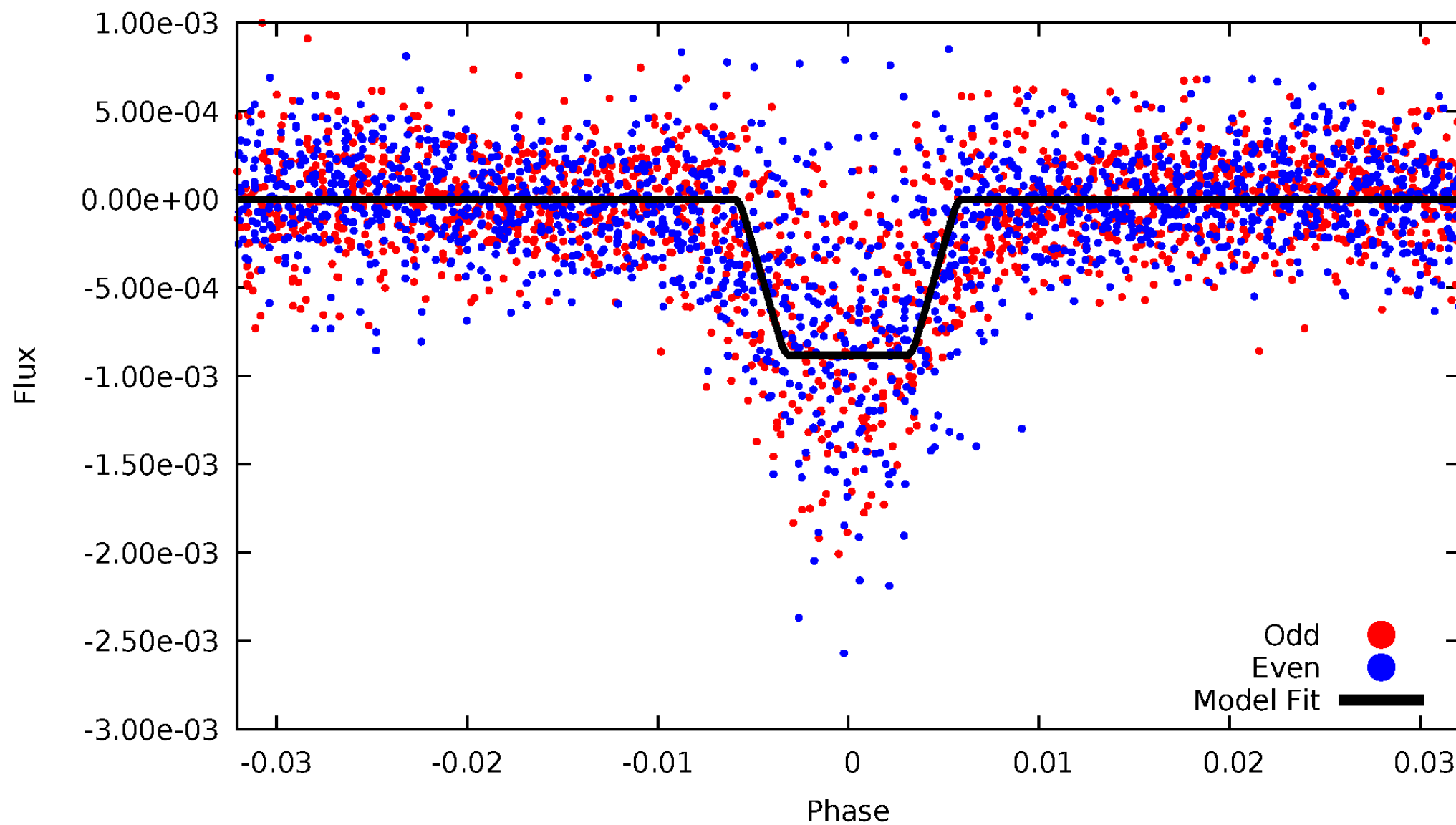
DV Odd/Even

TCE 003869326-01

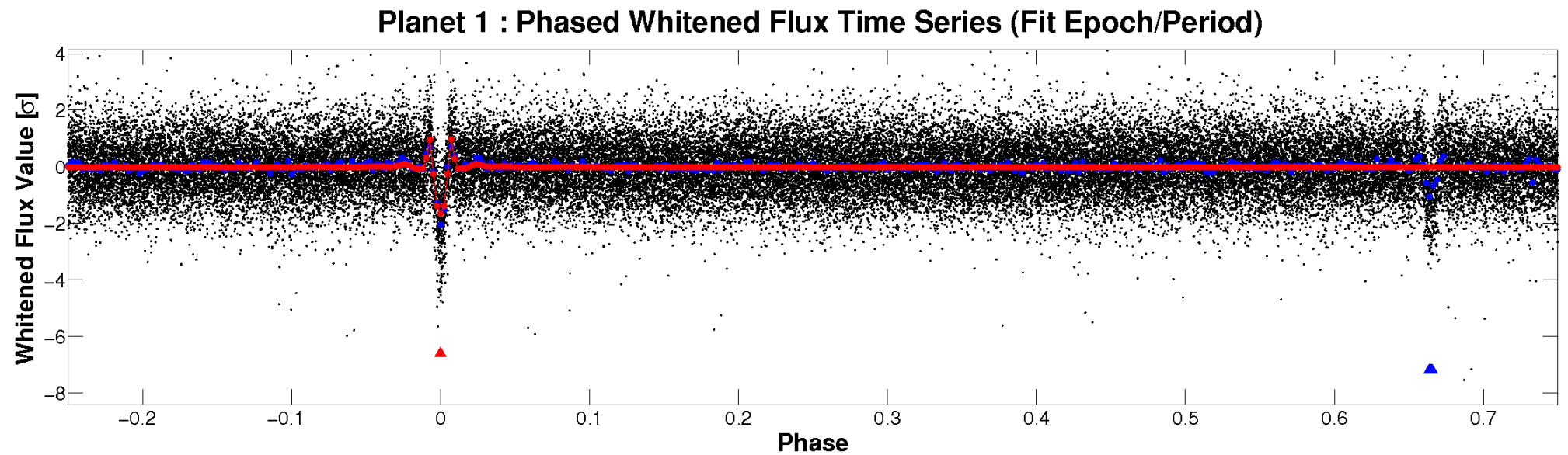
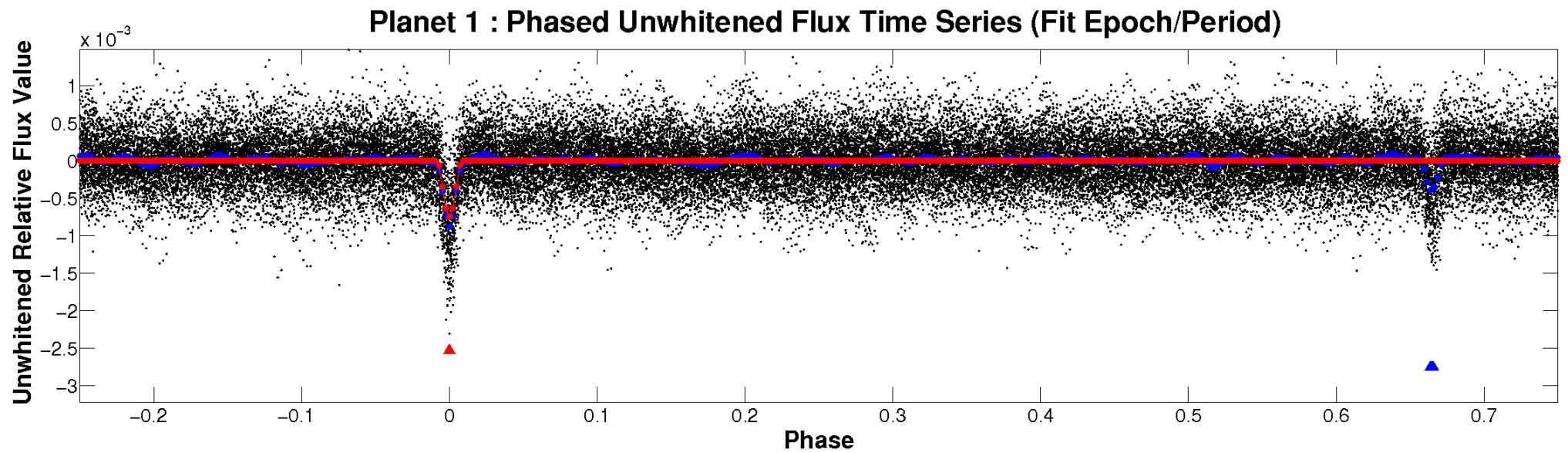


ALT Odd/Even

TCE 003869326-01

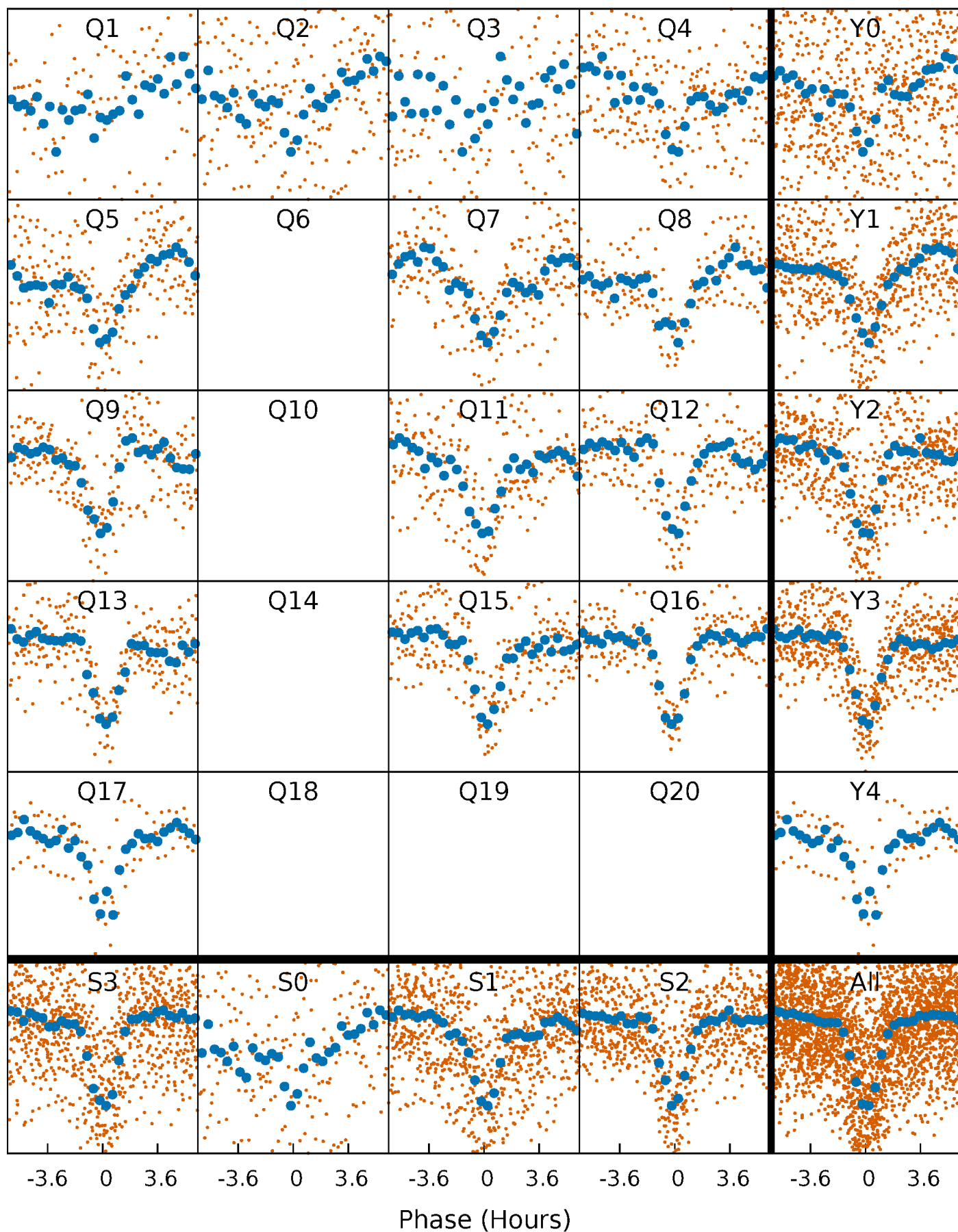


Non-Whitened Vs. Whitened Light Curve



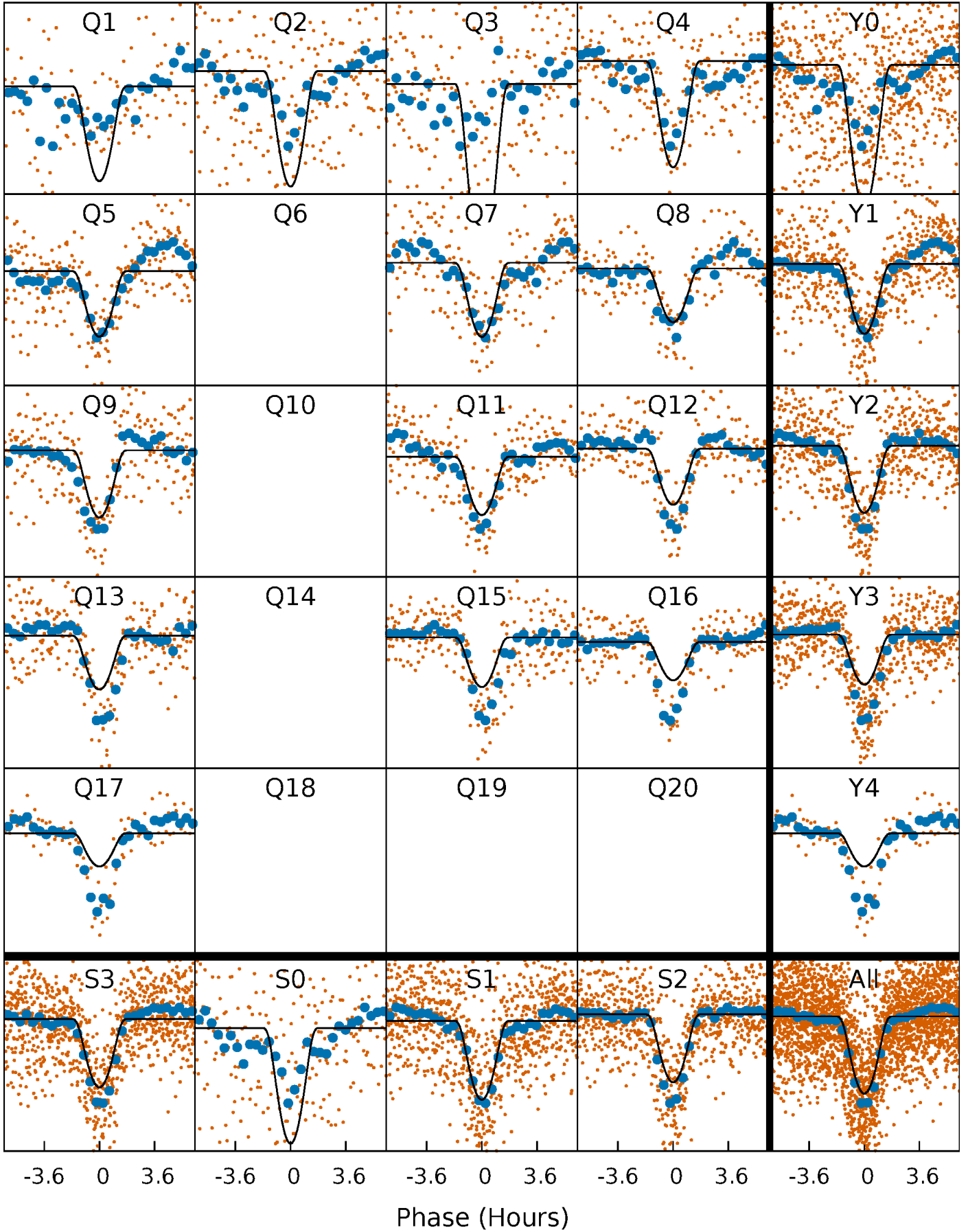
PDC Quarter-Phased Transit Curves

TCE 003869326-01 P= 8.585954 Days $T_0=136.217057$ (BKJD)



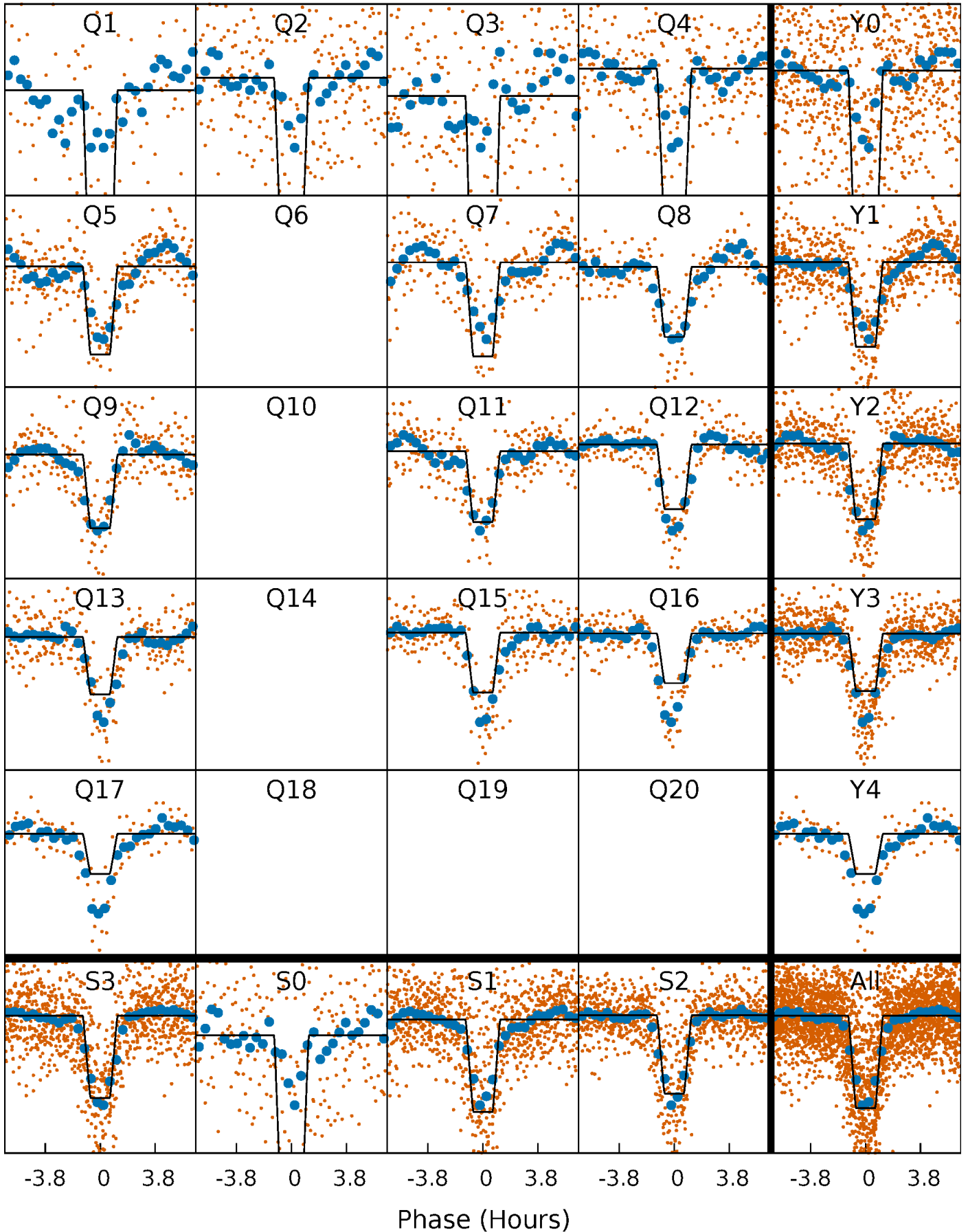
DV Quarter-Phased Transit Curves

TCE 003869326-01 P= 8.585954 Days $T_0=136.217057$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

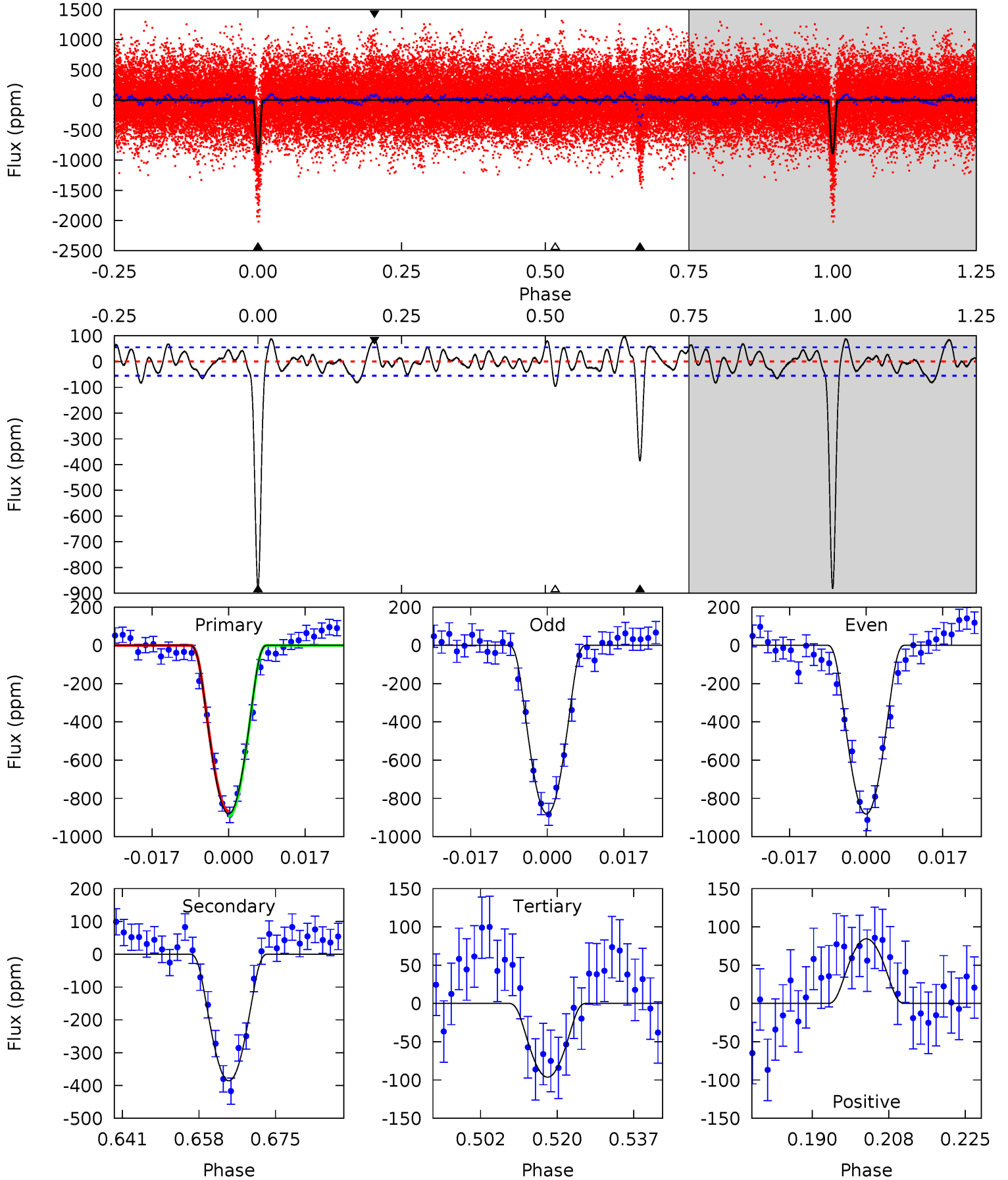
TCE 003869326-01 P= 8.585991 Days $T_0=136.214134$ (BKJD)



DV Model-Shift Uniqueness Test

003869326-01, P = 8.585954 Days, E = 127.631103 Days

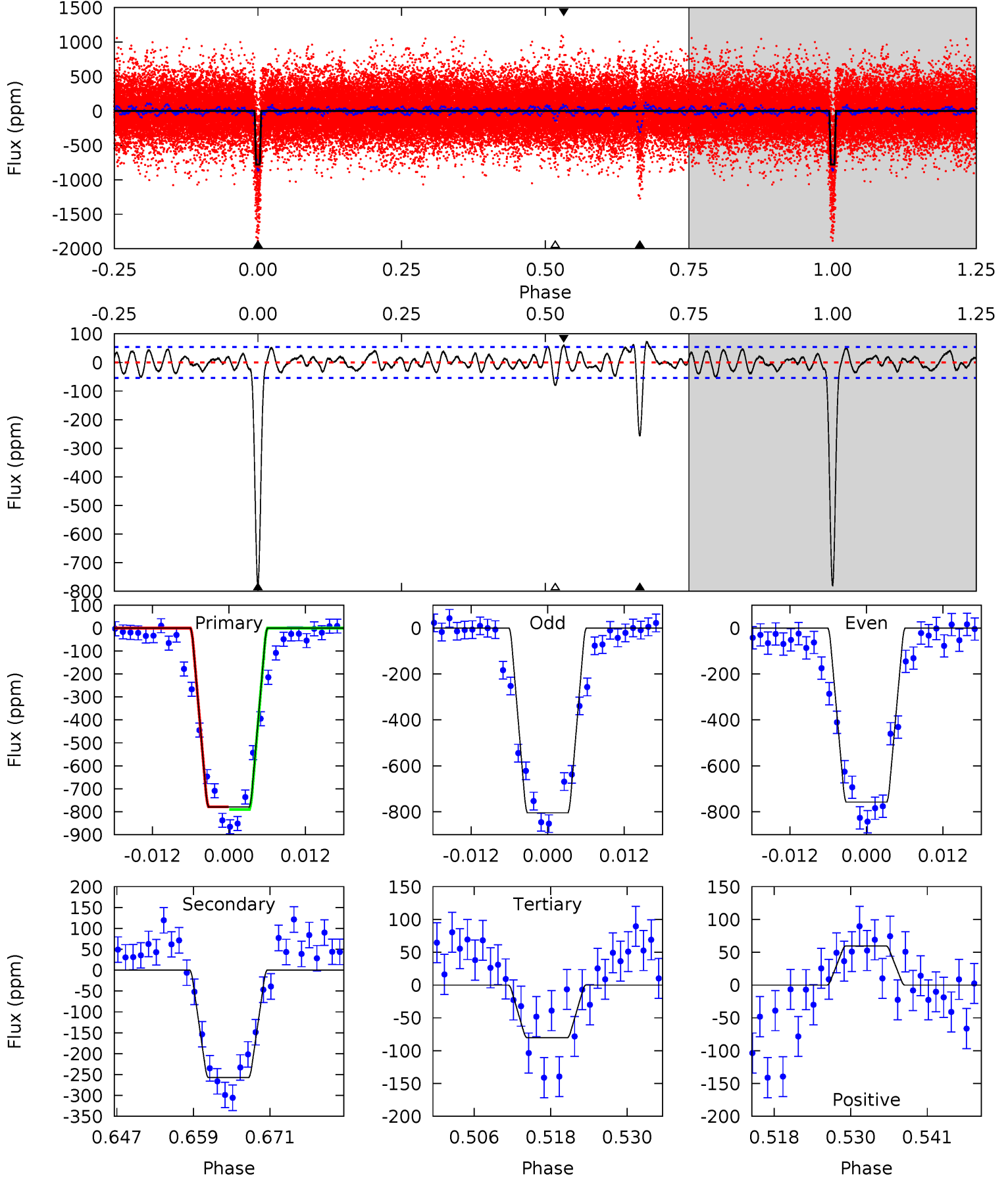
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.1	34.2	8.54	7.49	4.92	2.38	3.07	69.6	70.6	25.7	26.7	0.06	0.98	0.10	1.14



Alt Model-Shift Uniqueness Test

003869326-01, P = 8.585991 Days, E = 127.628143 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.8	23.7	7.39	5.50	4.99	2.52	2.12	64.4	66.3	16.3	18.2	2.15	1.00	0.09	0.52



Stellar Parameters For KIC 003869326

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4805^{+38}_{-135}	$2.605^{+0.030}_{-0.033}$	$0.210^{+0.200}_{-0.200}$	$13.941^{+0.860}_{-3.442}$	$2.853^{+0.220}_{-1.249}$	$0.001^{+0.000}_{-0.000}$
	+1%/-3%	+1%/-1%	+95%/-95%	+6%/-25%	+8%/-44%	+31%/-12%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 003869326-01 / KOI 5991.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-386 ± 11	$80.52^{+28.94}_{-26.57}$	3237^{+61}_{-101}	2846^{+733}_{-5384}	$0.447^{+0.502}_{-0.205}$
Alt.	-257 ± 11	$45.45^{+24.48}_{-22.81}$	3234^{+61}_{-96}	3548^{+1272}_{-863}	$0.906^{+2.899}_{-0.514}$

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 $A_{obs} \gg 1.0$

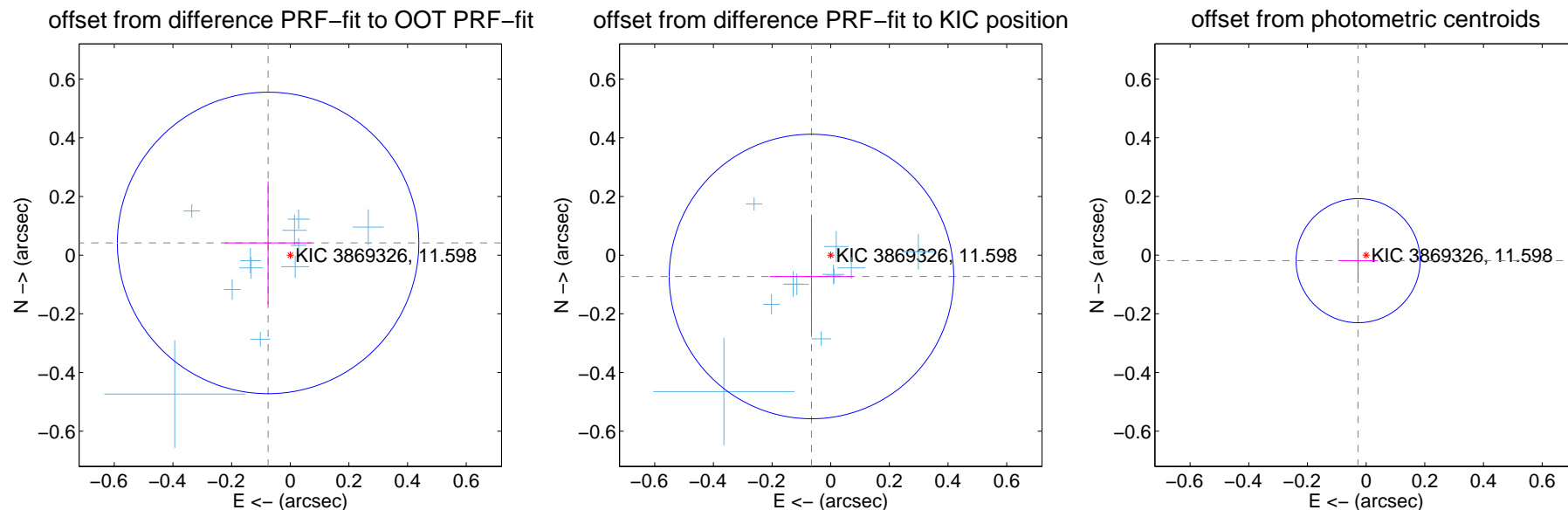
DV Centroid Data

Supplemental centroid analysis for 003869326-01. **Kepler magnitude: 11.60.** Transit SNR 32.41

There are 14 quarters with good PRF difference image offsets

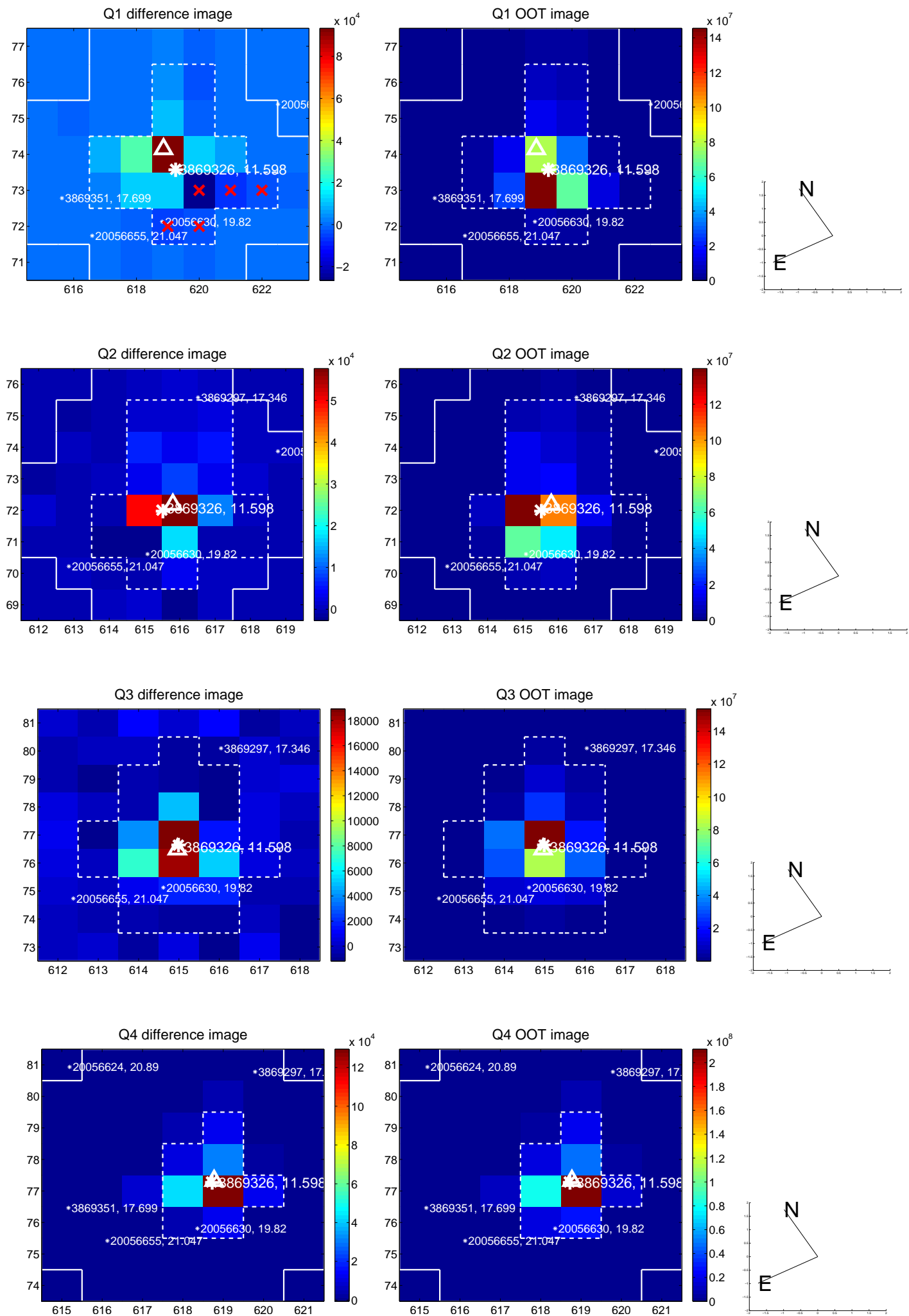
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.086 ± 0.171	0.50	0.076 ± 0.148	0.042 ± 0.210
PRF-fit source offset from KIC position	0.098 ± 0.162	0.61	0.066 ± 0.143	-0.073 ± 0.197
photometric centroid source offset	0.03 ± 0.07	0.47	0.03 ± 0.07	-0.02 ± 0.08

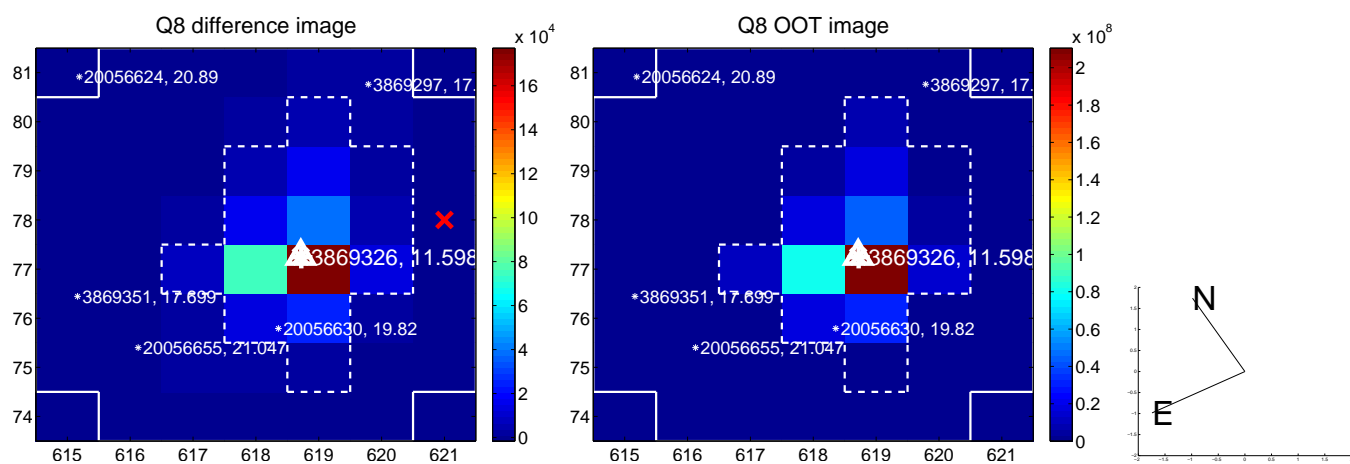
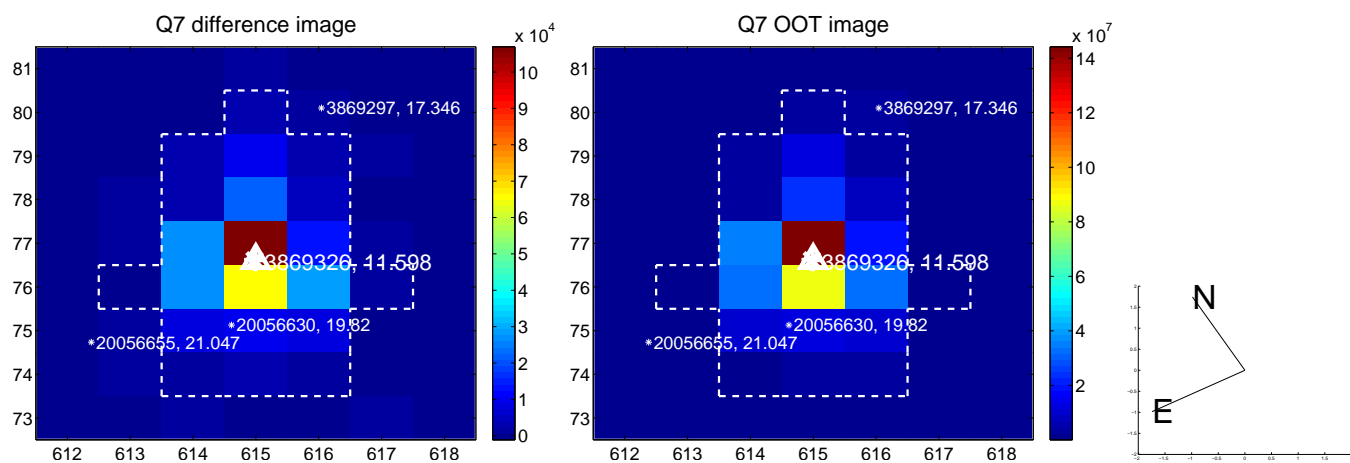
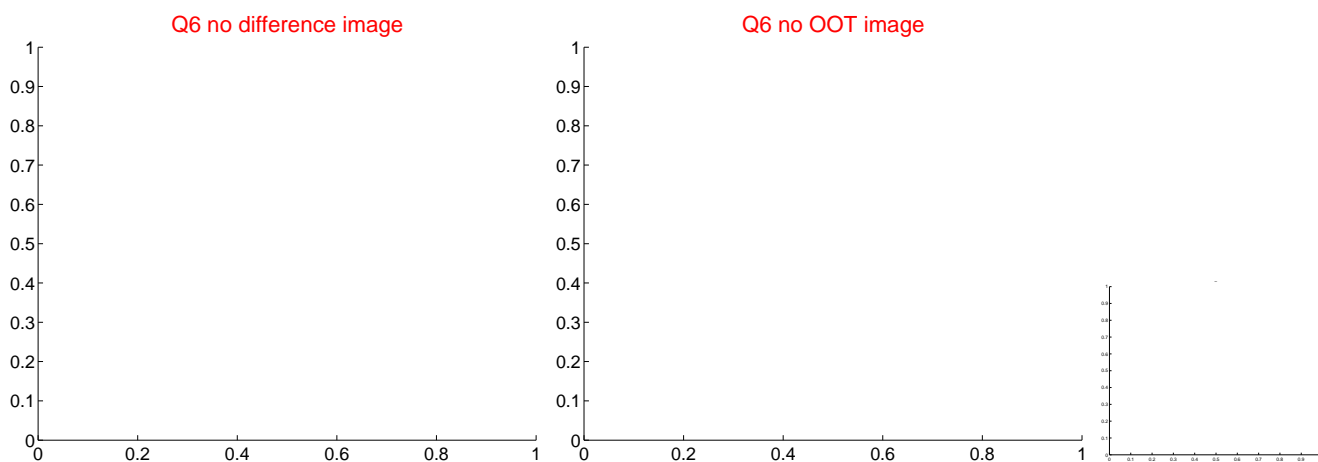
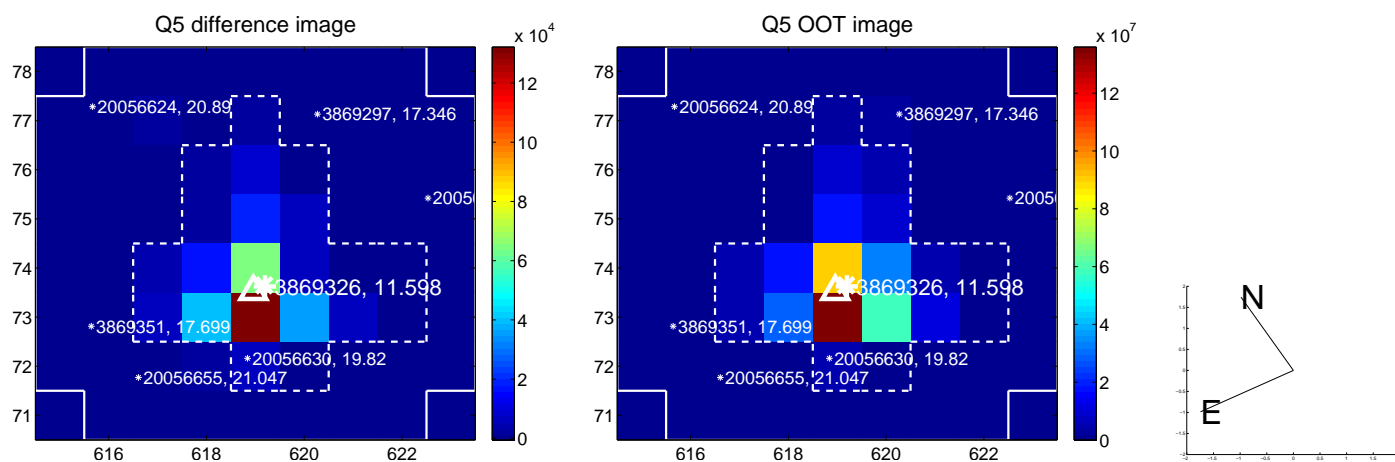


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

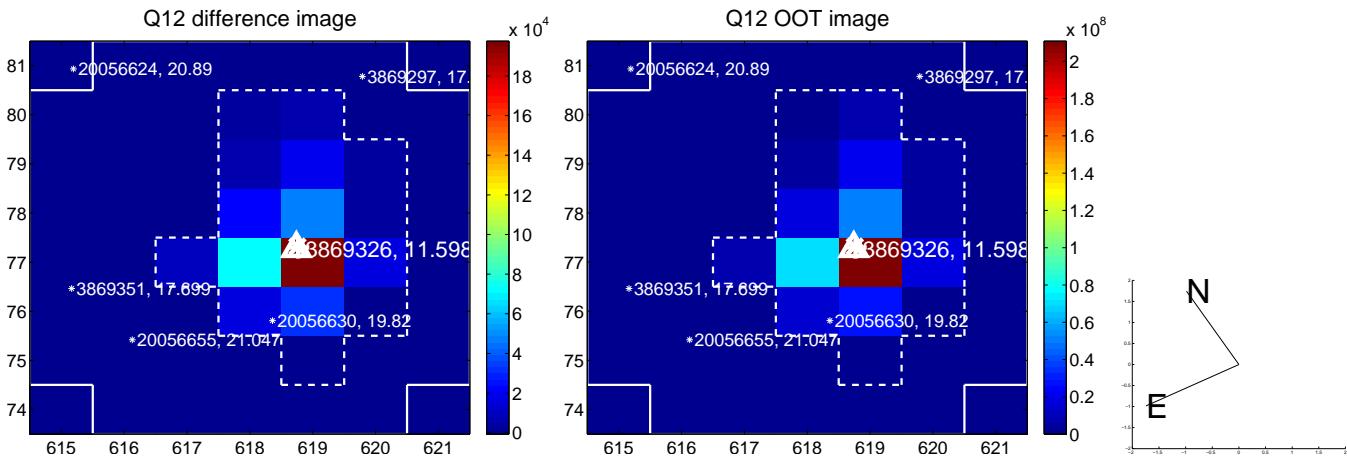
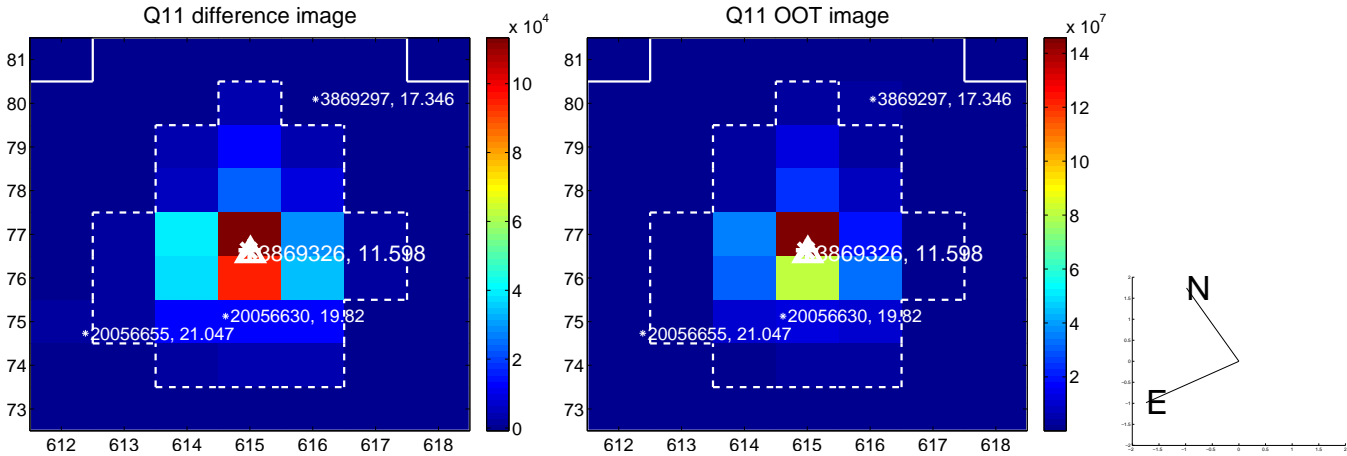
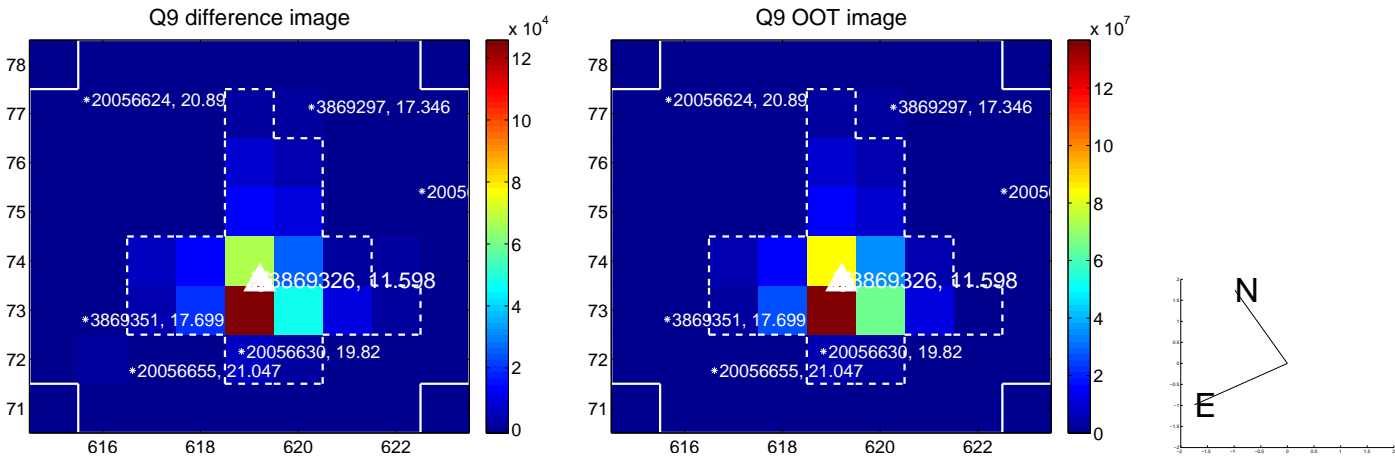
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



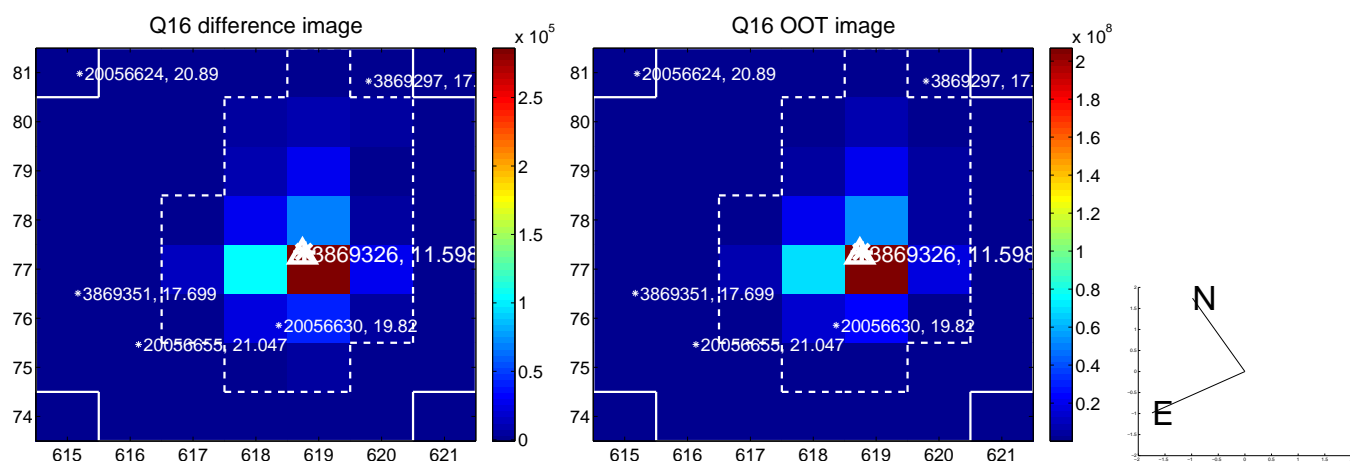
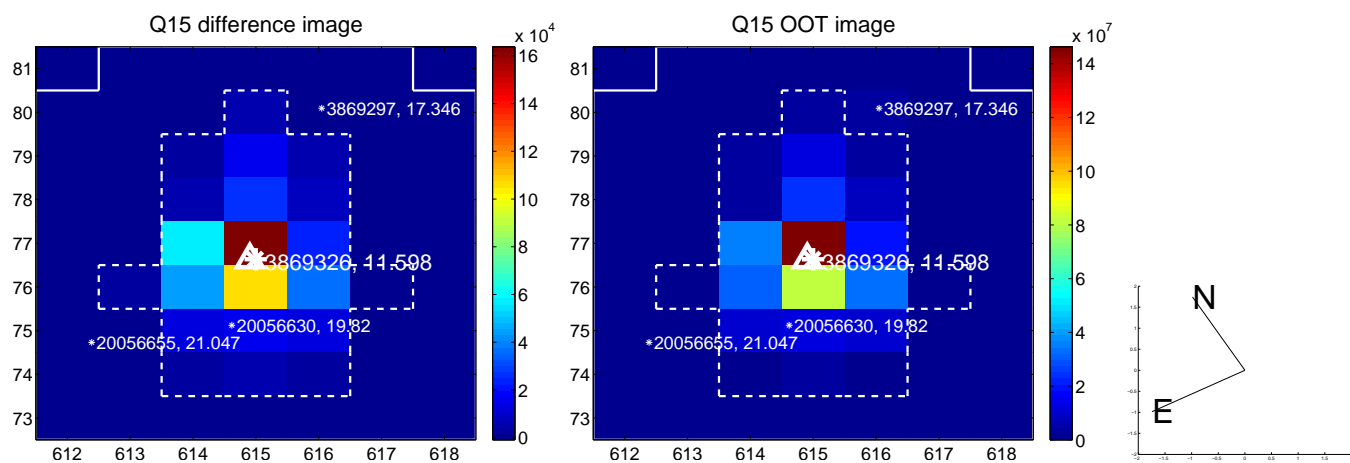
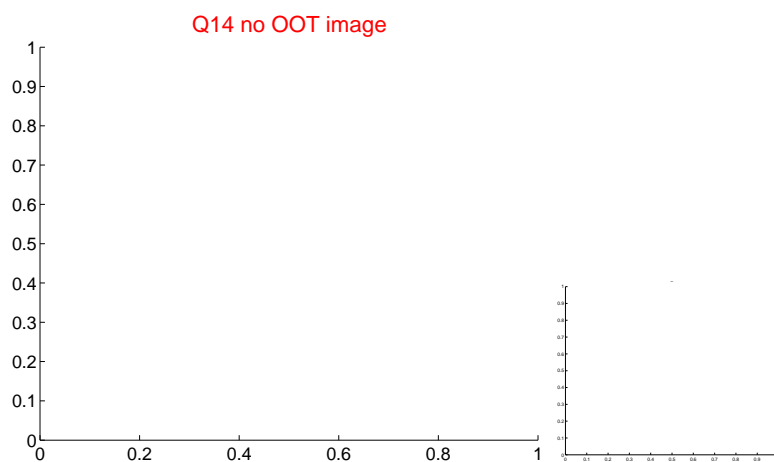
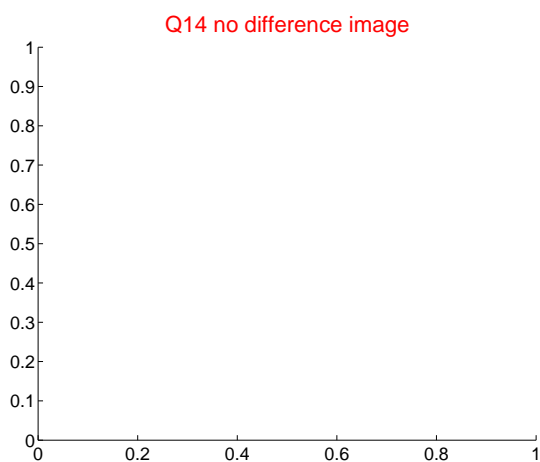
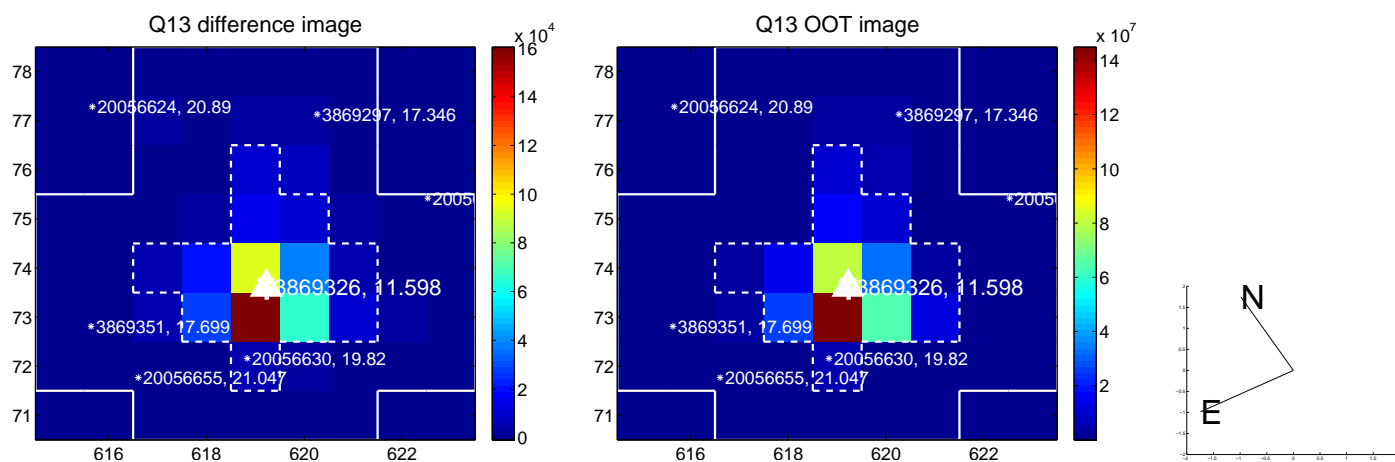
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



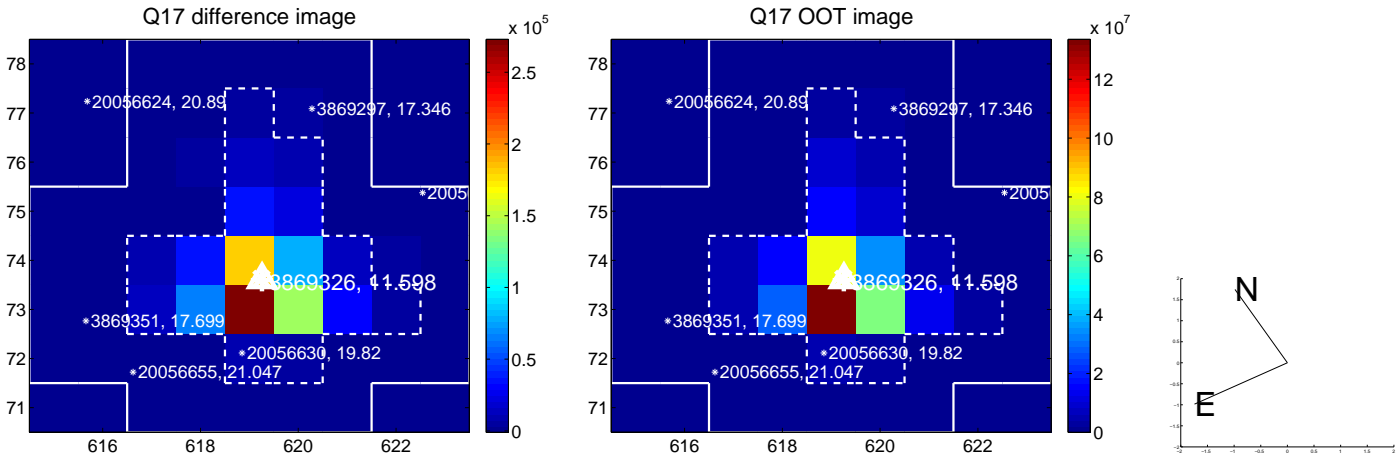
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



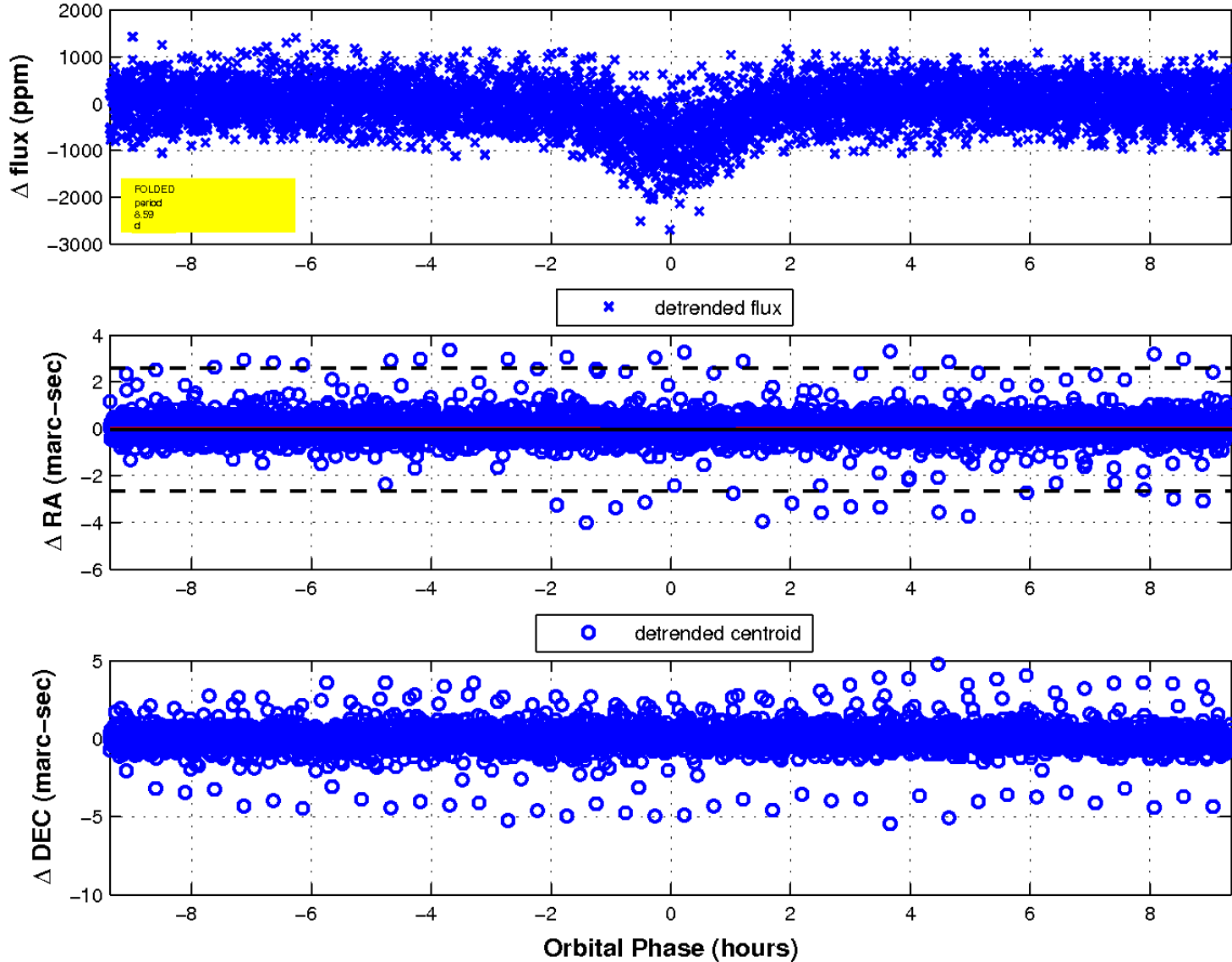
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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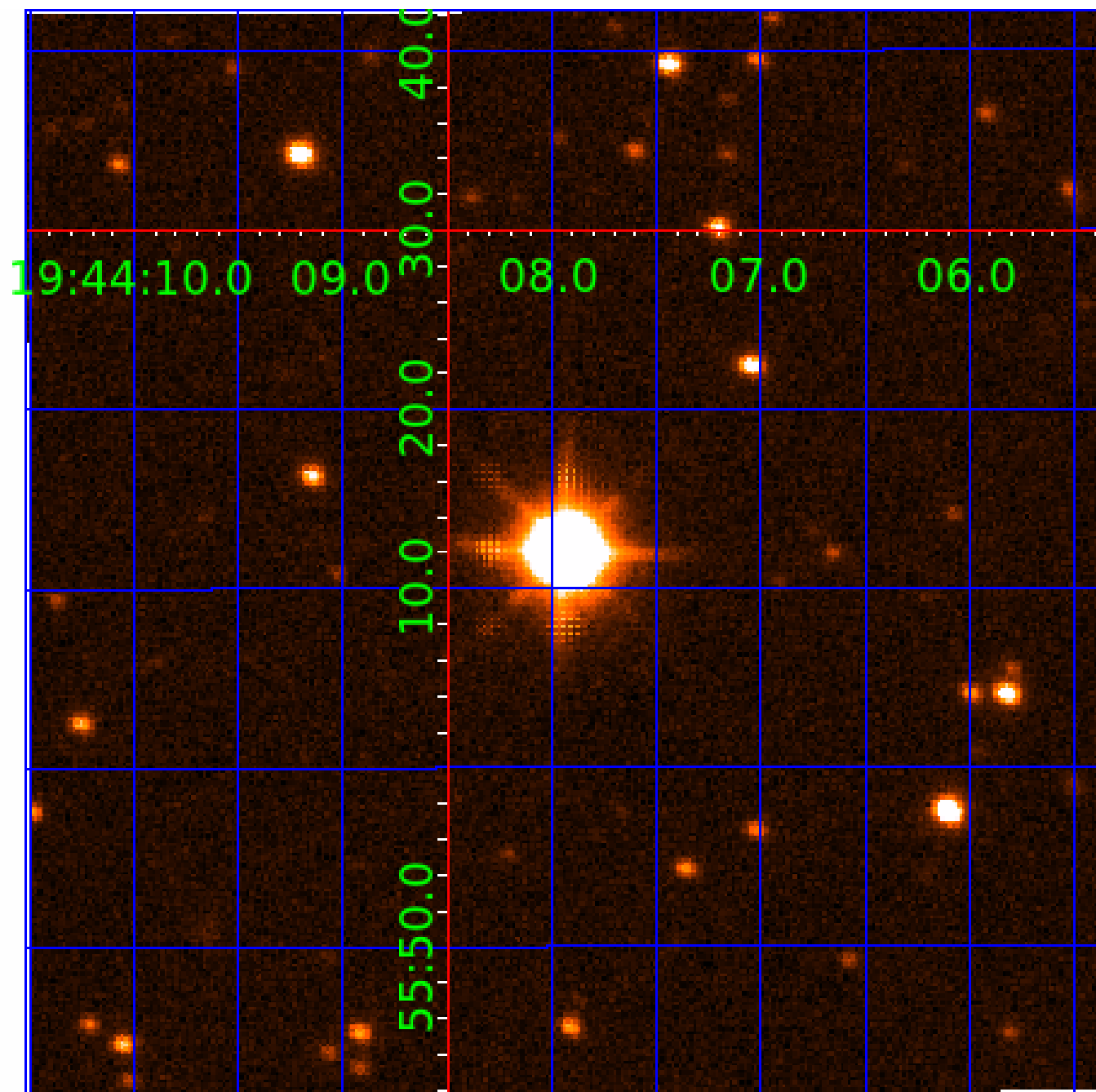


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003869326

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})
003869326-01	OBS	5991.01	8.585954	136.217057	754.9	3.122	28.1	32.4	13.94	4805	80.29	6846.66
003869326-02	OBS	No	8.586057	133.329511	454.9	3.392	12.0	19.0	13.94	4805	63.50	6846.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003869326-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003869326-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 003869326-02

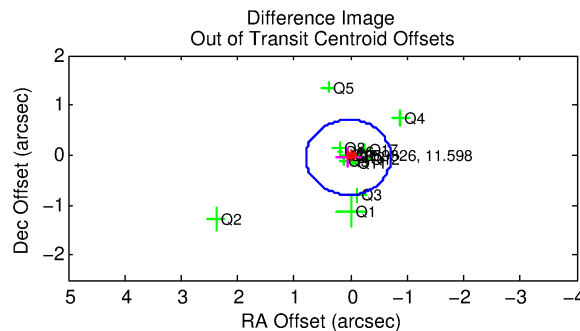
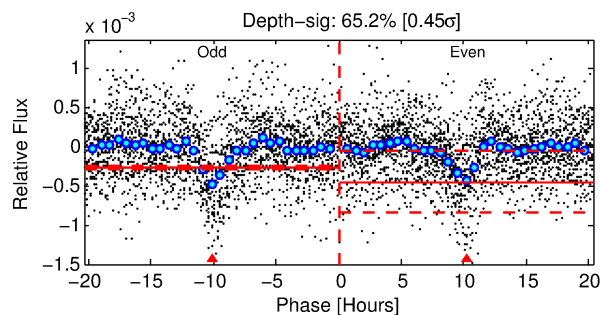
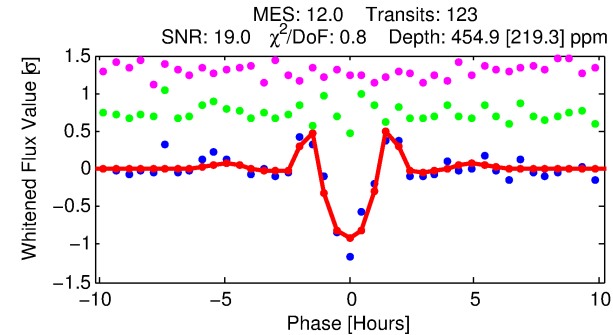
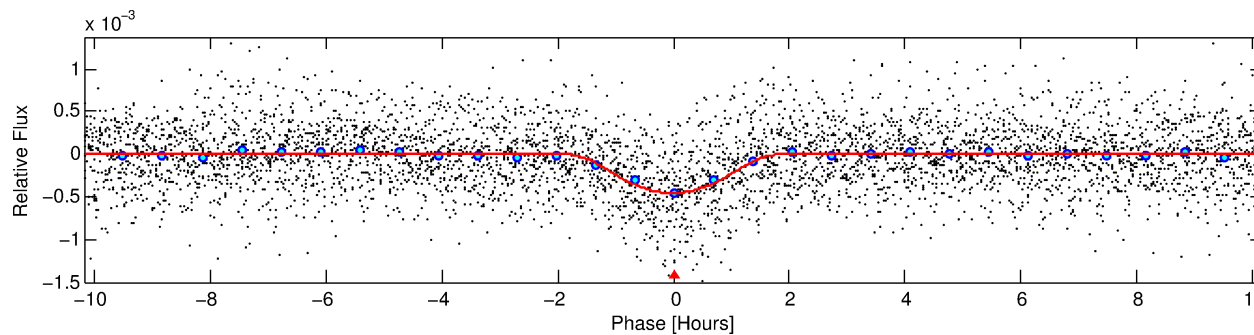
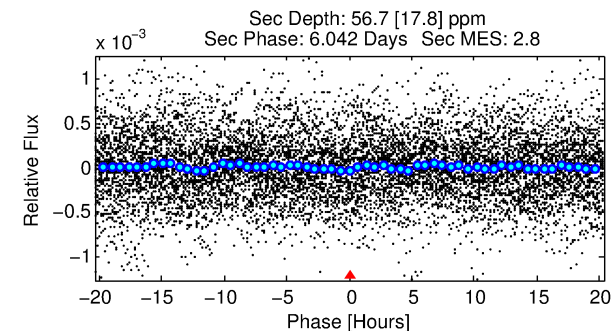
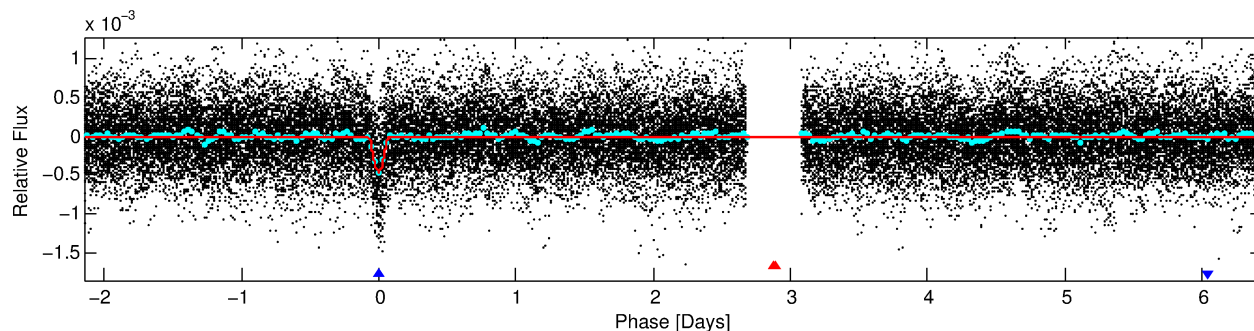
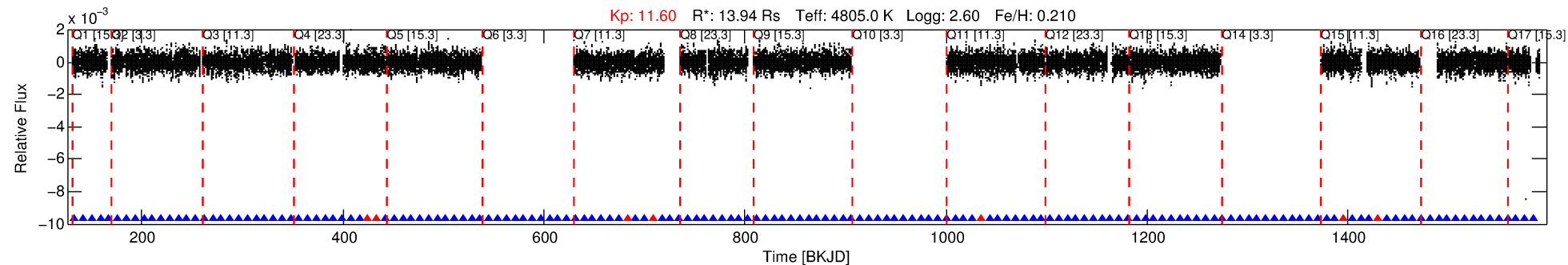
No Significant Match Found

DV One-Page Summary

KIC: 3869326 Candidate: 2 of 2 Period: 8.586 d

KOI: K05991 Corr: No Ephemeris Match

Kp: 11.60 R*: 13.94 Rs Teff: 4805.0 K Logg: 2.60 Fe/H: 0.210



DV Fit Results:

Period = 8.58606 [0.00002] d
Epoch = 133.3295 [0.0019] BKJD
Rp/R* = 0.0417 [0.0201]
a/R* = 5.74 [0.64]
b = 1.00 [0.02]
Seff = 6846.56 [1407.94]
Teq = 2319 [119] K
Rp = 63.50 [34.36] Re
a = 0.1164 [0.0194] AU
Ag = 0.10 [0.11] [-8.31σ]
Teffp = 2041 [520] K [-0.52σ]

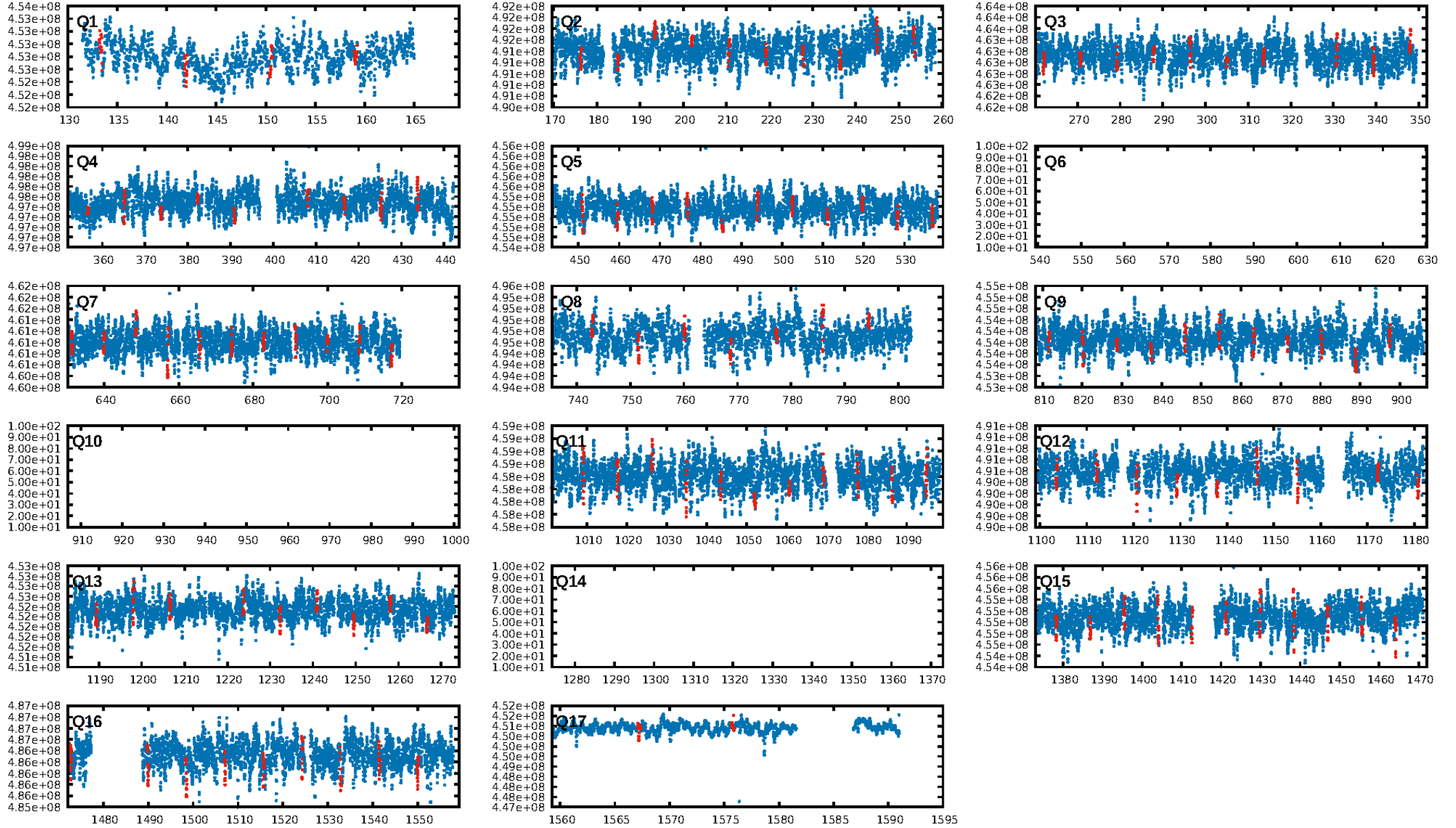
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 63.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.53e-29
RollingBand-fgt: 0.94 [110/117]
GhostDiagnostic-chr: 2.654
Centroid-sig: N/A
Centroid-so: 0.127 arcsec [1.03σ]
OotOffset-rm: 0.059 arcsec [0.23σ]
KicOffset-rm: 0.068 arcsec [0.41σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [14/14]

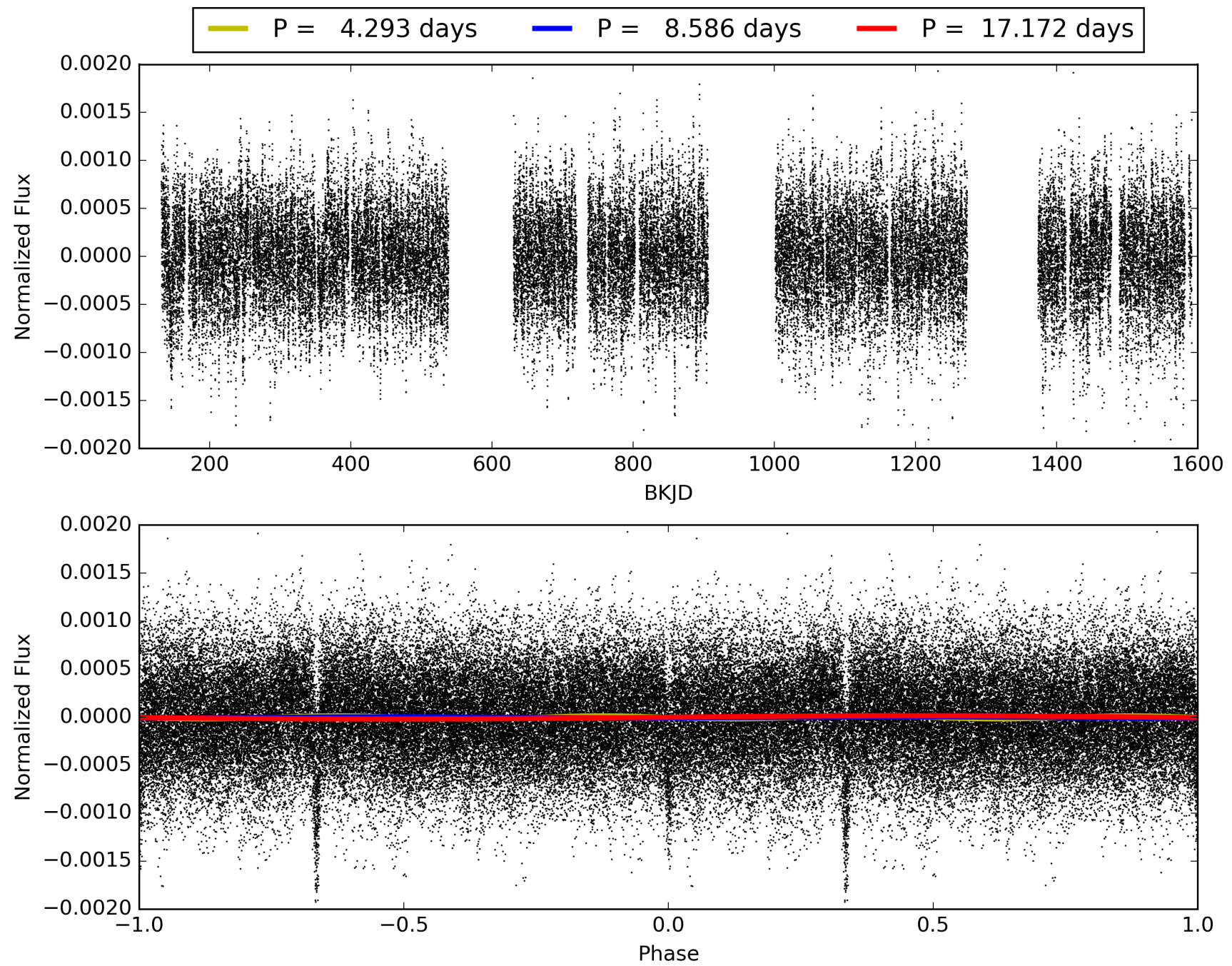
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:15:22 Z

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

TCE 003869326-02, PDC Light Curves

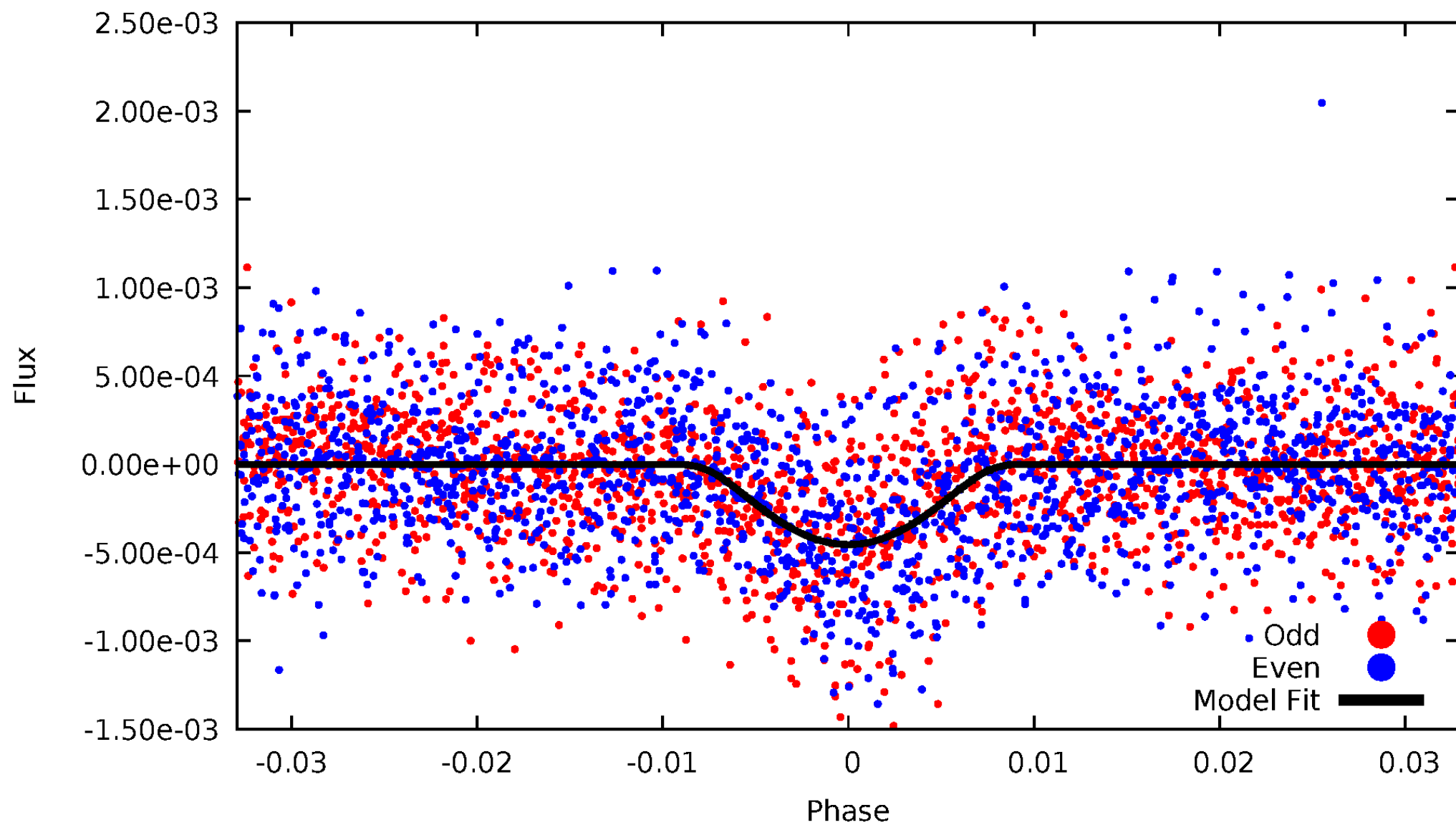


TCE 003869326-02



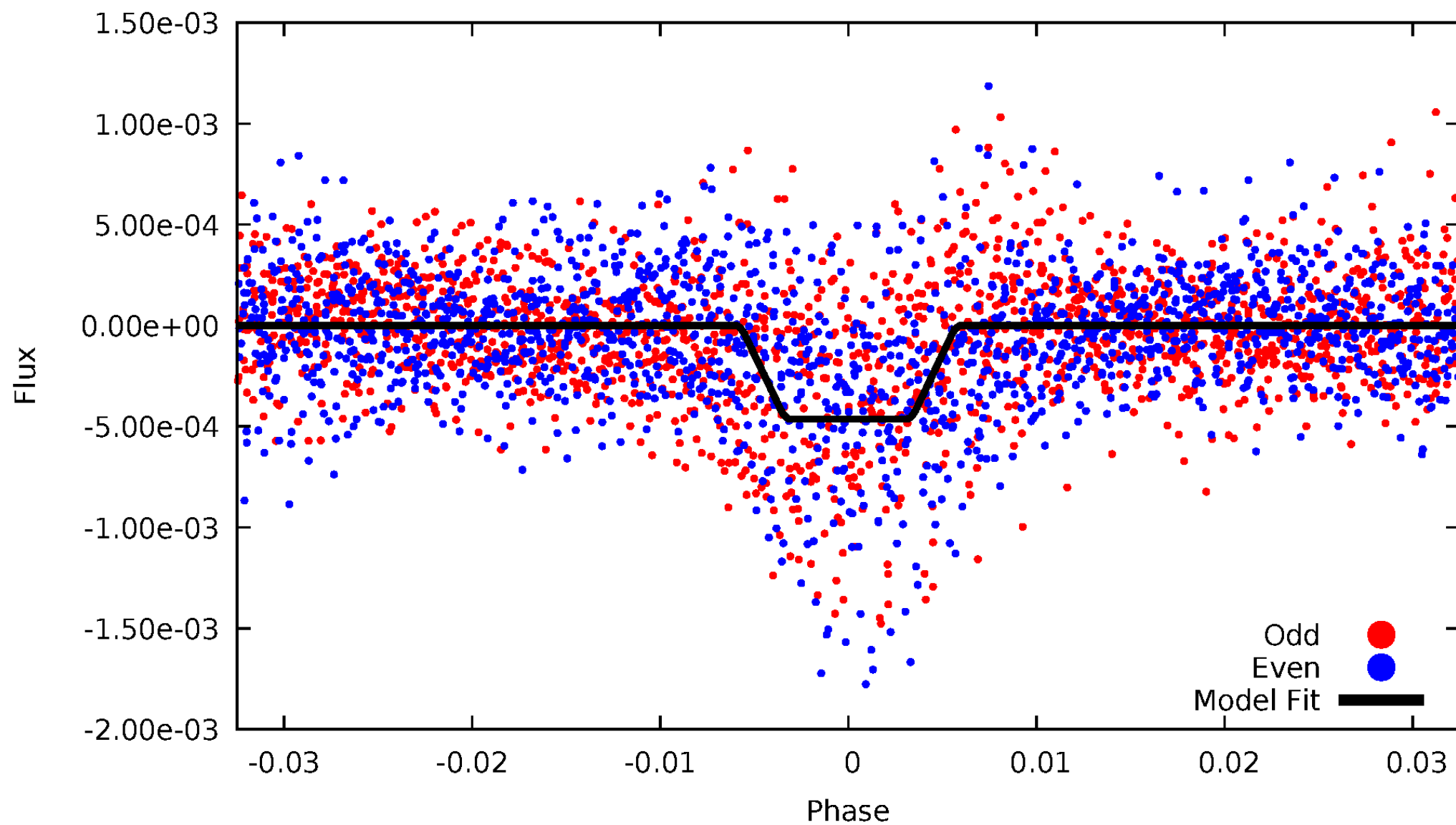
DV Odd/Even

TCE 003869326-02



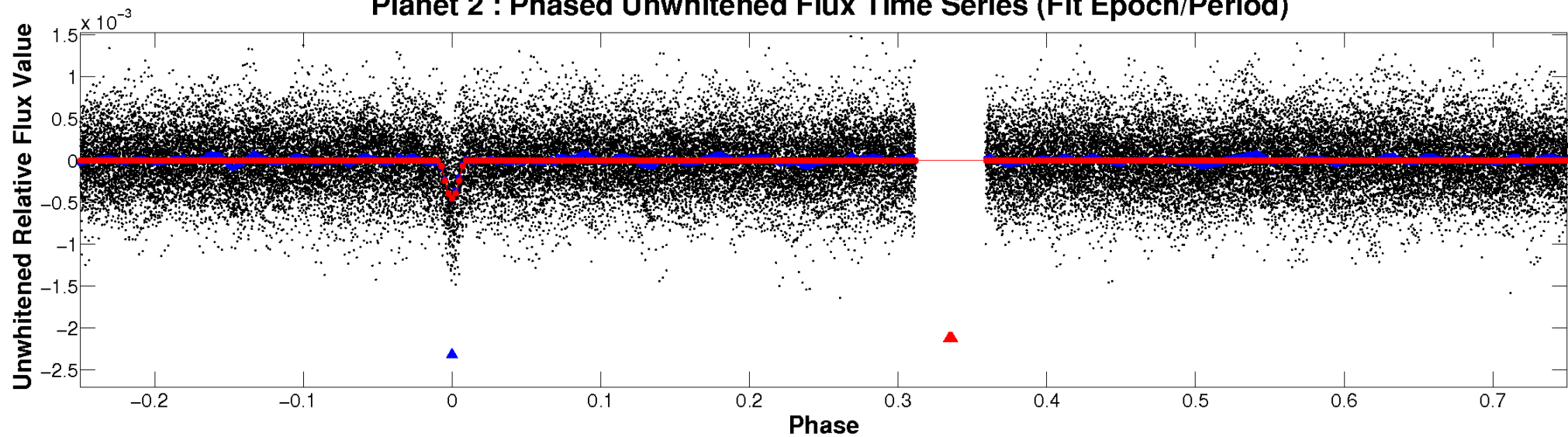
ALT Odd/Even

TCE 003869326-02

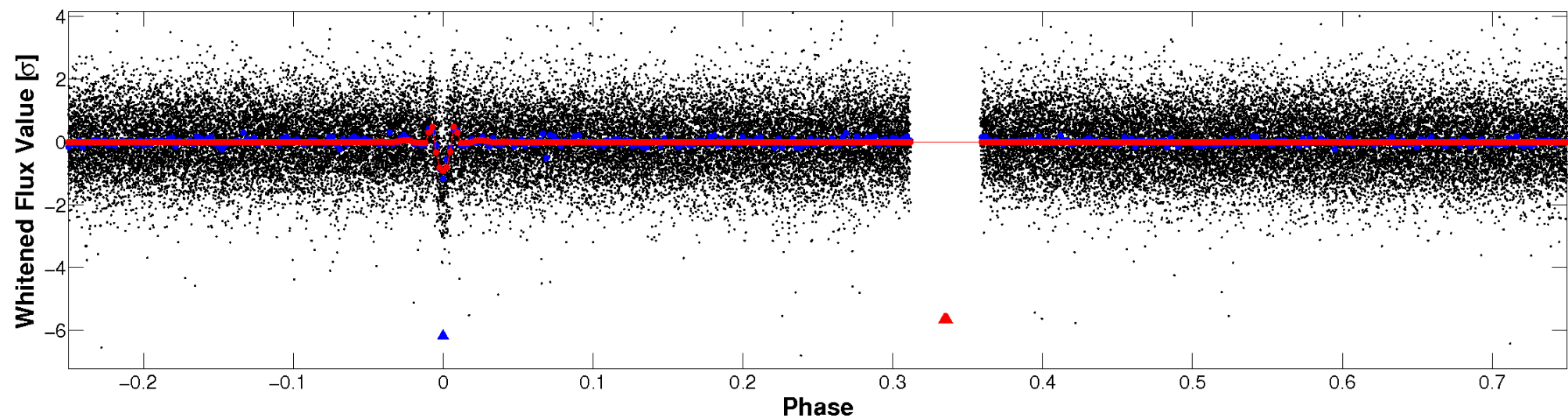


Non-Whitened Vs. Whitened Light Curve

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

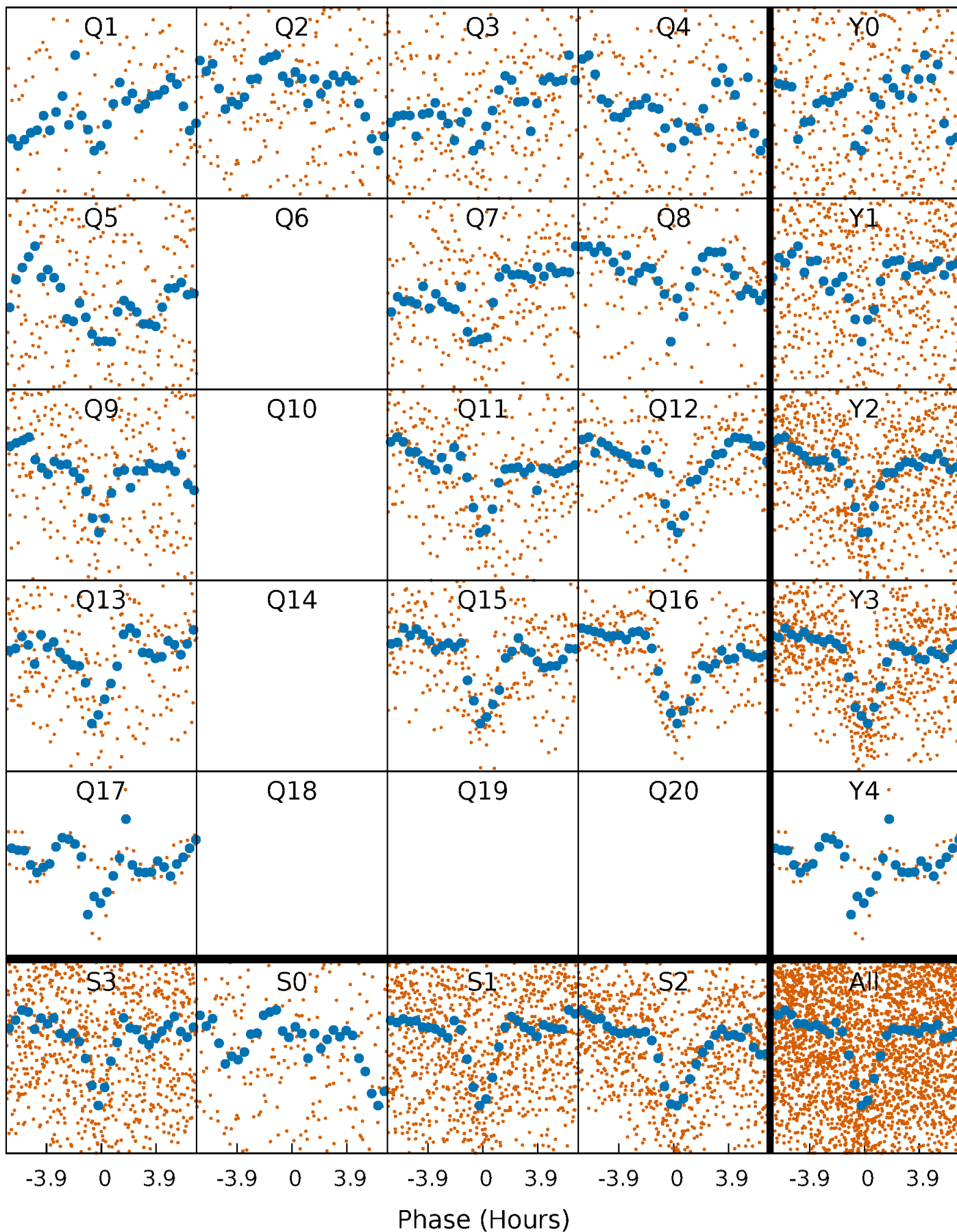


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



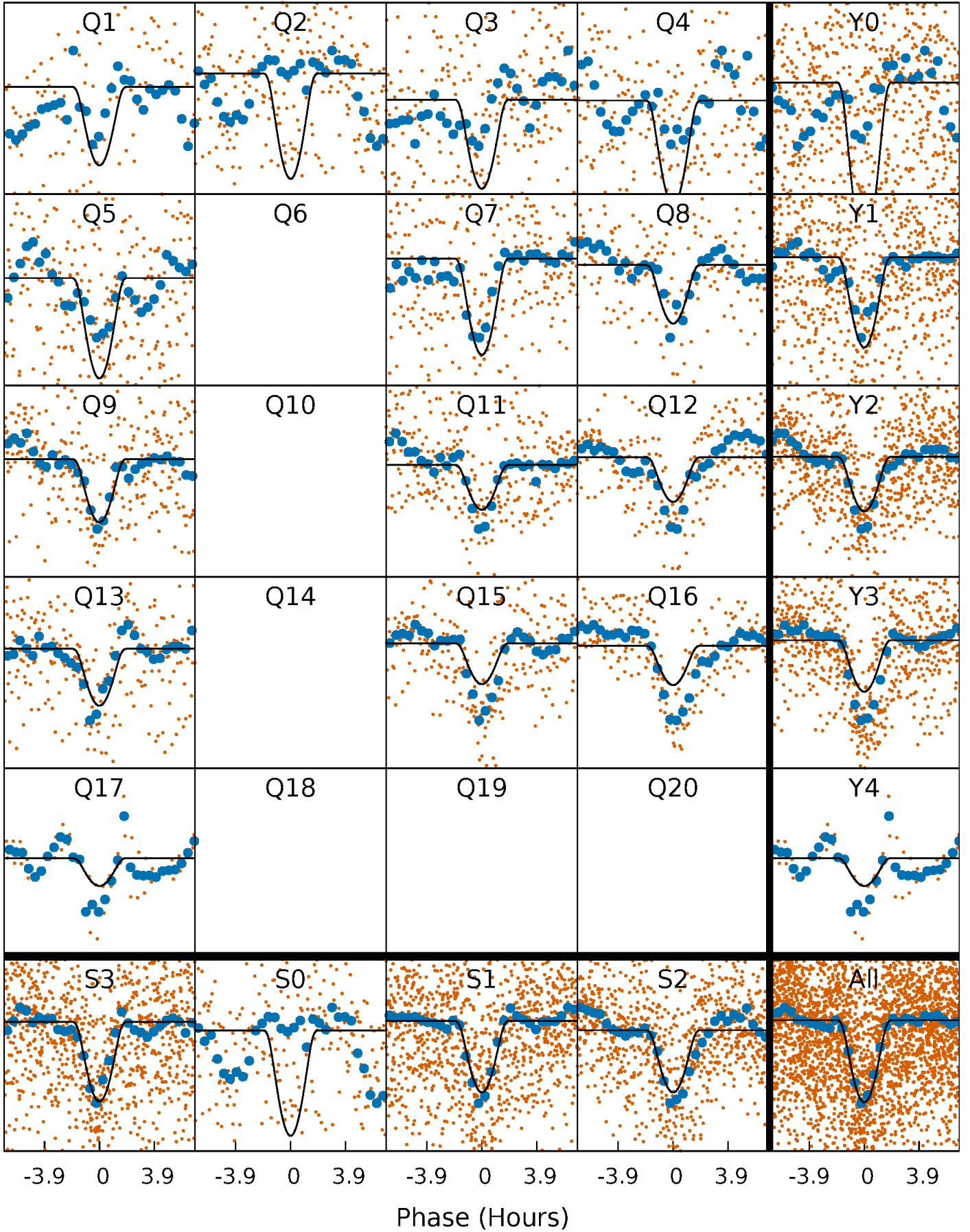
PDC Quarter-Phased Transit Curves

TCE 003869326-02 P= 8.586057 Days $T_0=133.329511$ (BKJD)



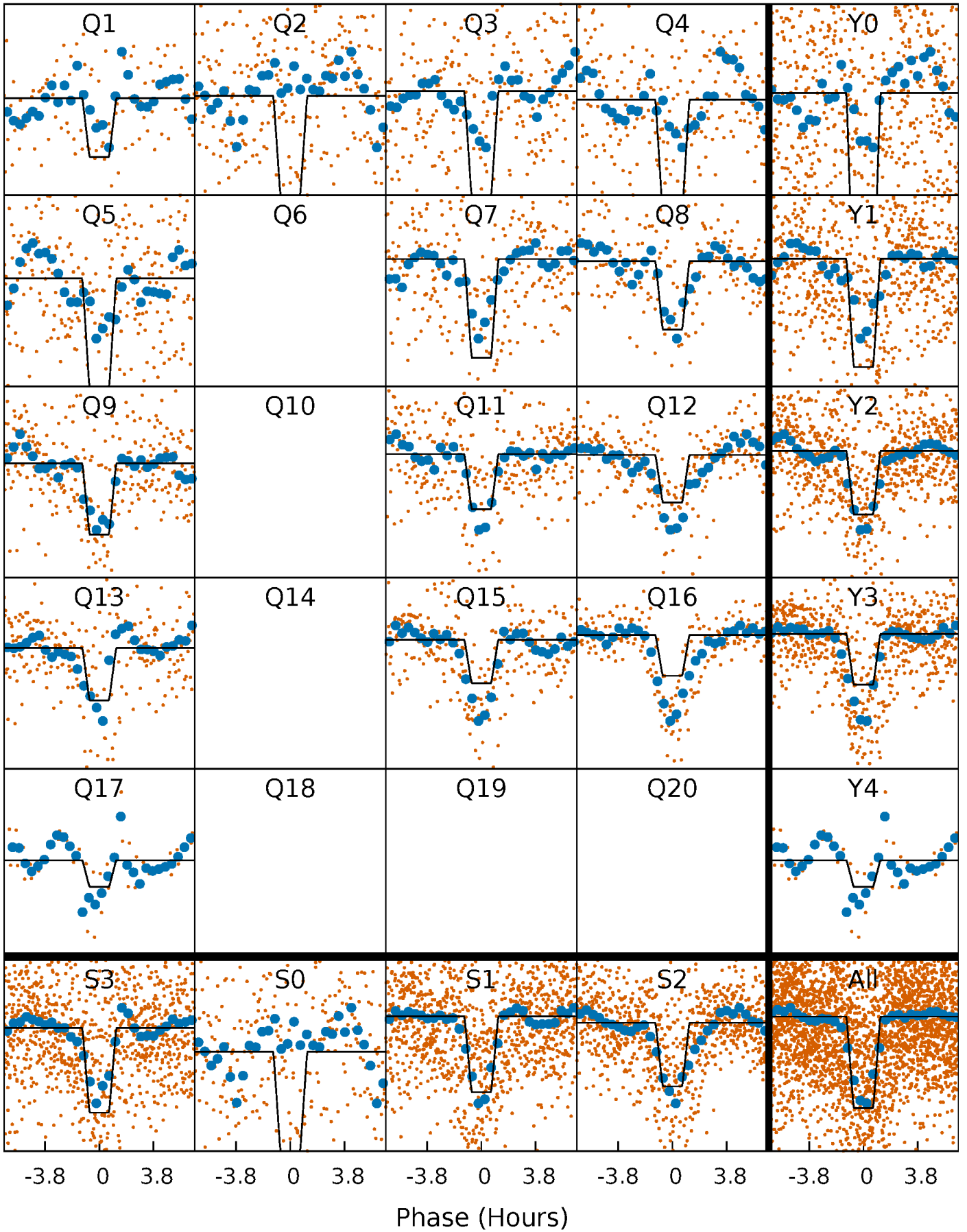
DV Quarter-Phased Transit Curves

TCE 003869326-02 P= 8.586057 Days $T_0=133.329511$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

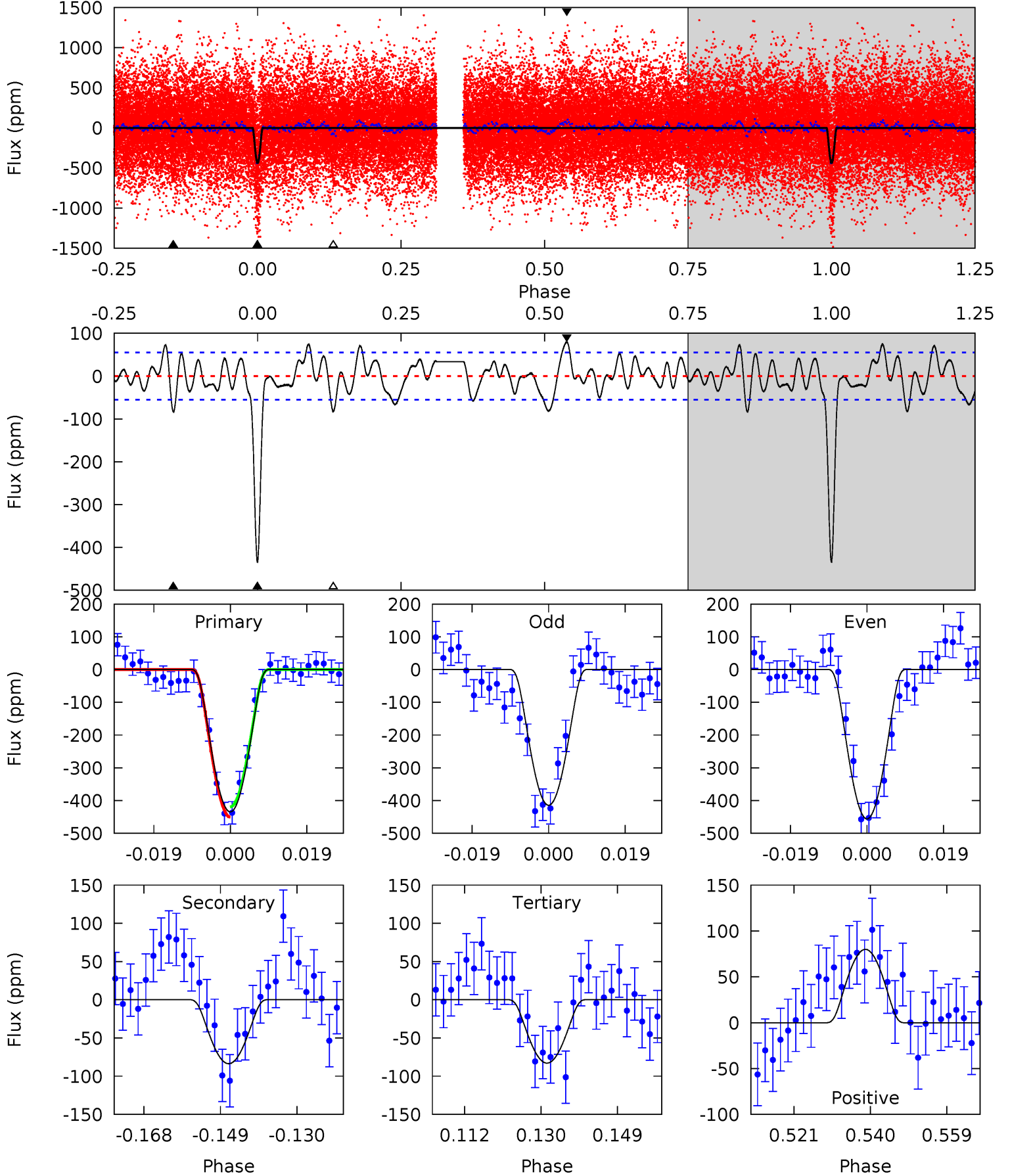
TCE 003869326-02 P= 8.586208 Days $T_0=133.312124$ (BKJD)



DV Model-Shift Uniqueness Test

003869326-02, P = 8.586057 Days, E = 124.743454 Days

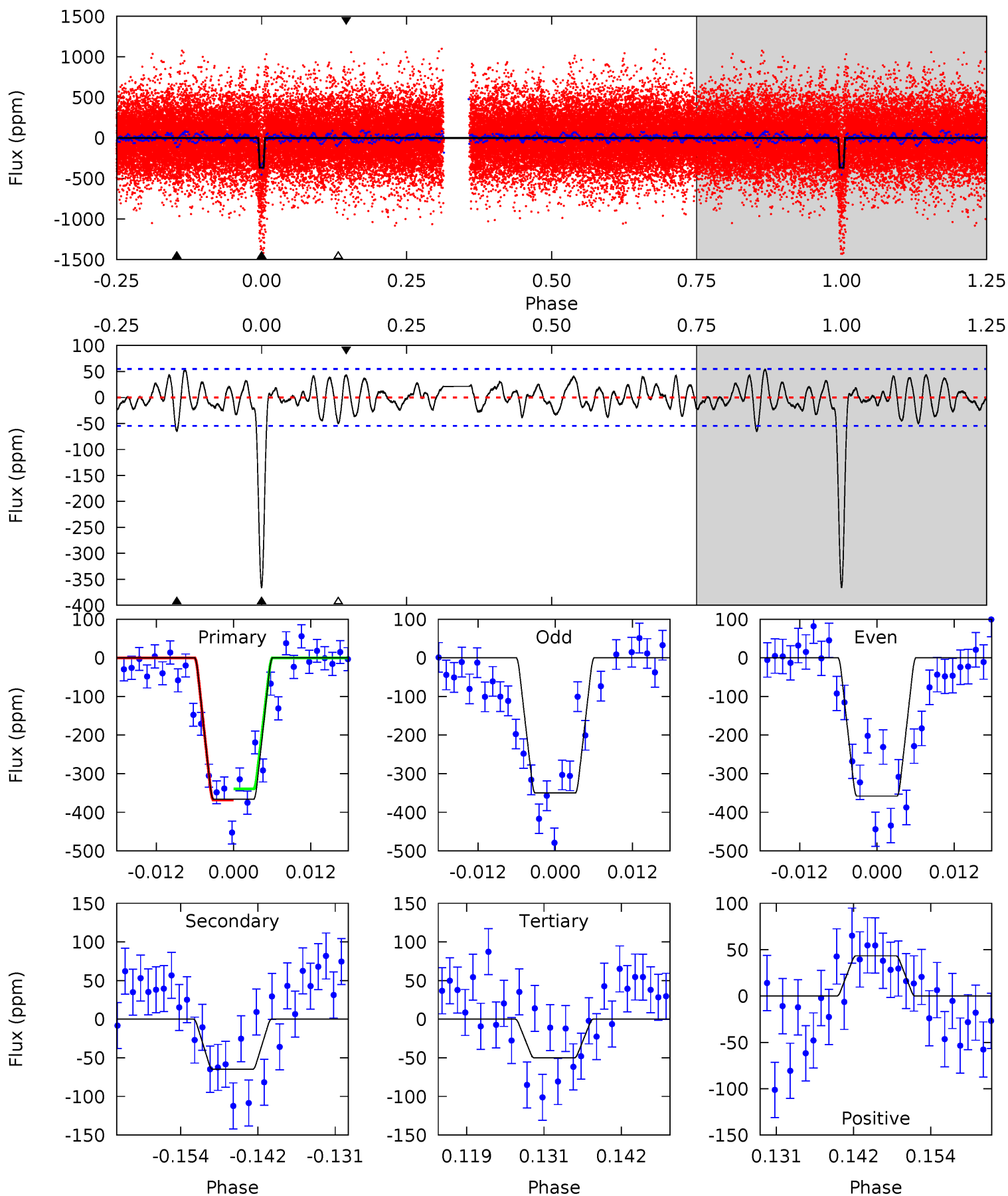
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.6	7.43	7.37	7.10	4.91	2.35	2.71	31.3	31.5	0.07	0.33	1.85	0.99	0.16	1.39



Alt Model-Shift Uniqueness Test

003869326-02, P = 8.586208 Days, E = 124.725916 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.4	5.92	4.56	3.94	4.99	2.52	1.72	28.8	29.5	1.36	1.97	0.36	1.14	0.13	1.30



Stellar Parameters For KIC 003869326

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4805^{+38}_{-135}	$2.605^{+0.030}_{-0.033}$	$0.210^{+0.200}_{-0.200}$	$13.941^{+0.860}_{-3.442}$	$2.853^{+0.220}_{-1.249}$	$0.001^{+0.000}_{-0.000}$
	+1%/-3%	+1%/-1%	+95%/-95%	+6%/-25%	+8%/-44%	+31%/-12%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 003869326-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-84 ± 11	$65.19^{+29.85}_{-31.50}$	3235^{+60}_{-100}	-2859^{+5942}_{-201}	$0.153^{+0.388}_{-0.085}$
Alt.	-65 ± 11	$37.13^{+29.07}_{-22.51}$	3240^{+57}_{-101}	2408^{+1910}_{-5375}	$0.334^{+1.720}_{-0.227}$

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

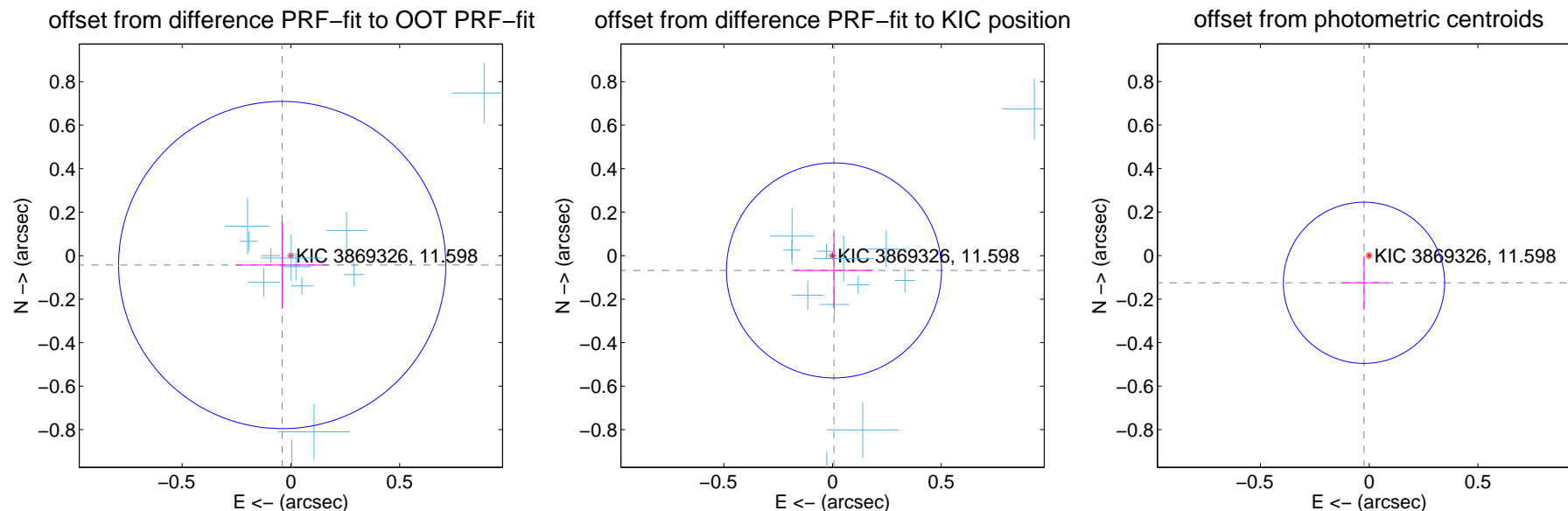
DV Centroid Data

Supplemental centroid analysis for 003869326-02. **Kepler magnitude: 11.60.** Transit SNR 19.02

There are 13 quarters with good PRF difference image offsets

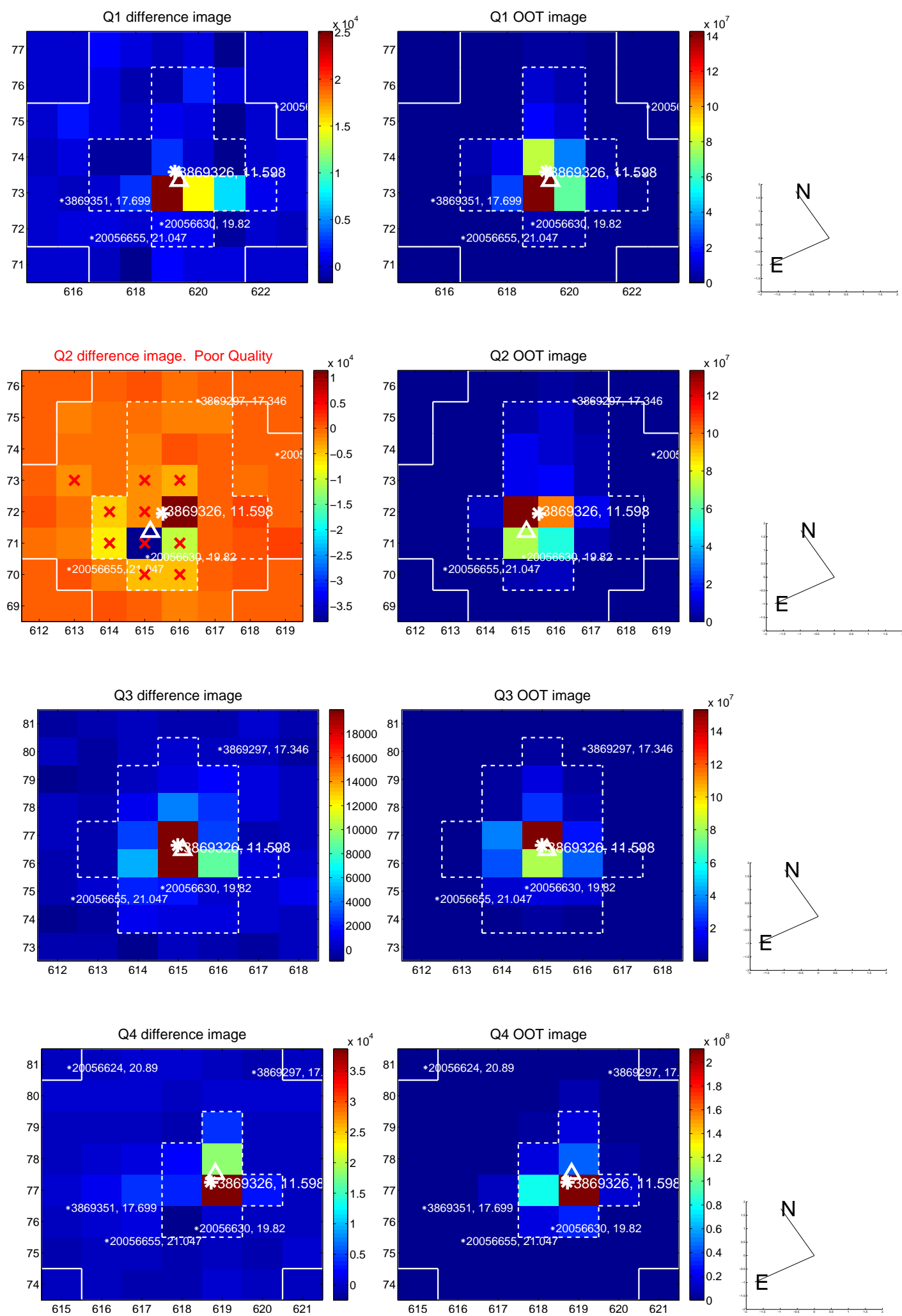
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.059 ± 0.251	0.23	0.040 ± 0.213	-0.043 ± 0.200
PRF-fit source offset from KIC position	0.068 ± 0.165	0.41	-0.006 ± 0.181	-0.068 ± 0.173
photometric centroid source offset	0.13 ± 0.12	1.03	0.02 ± 0.11	-0.13 ± 0.12

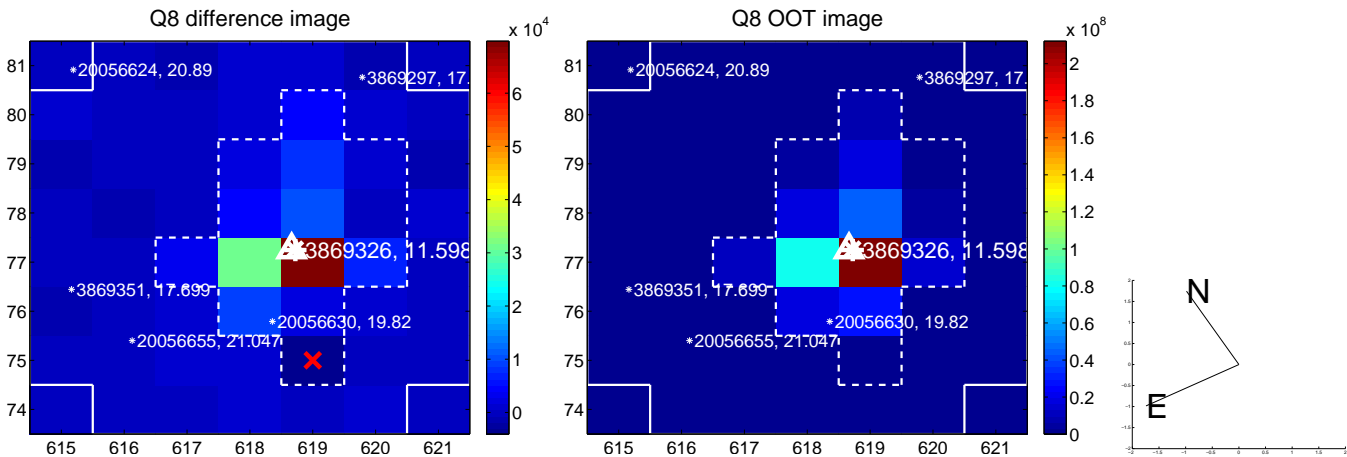
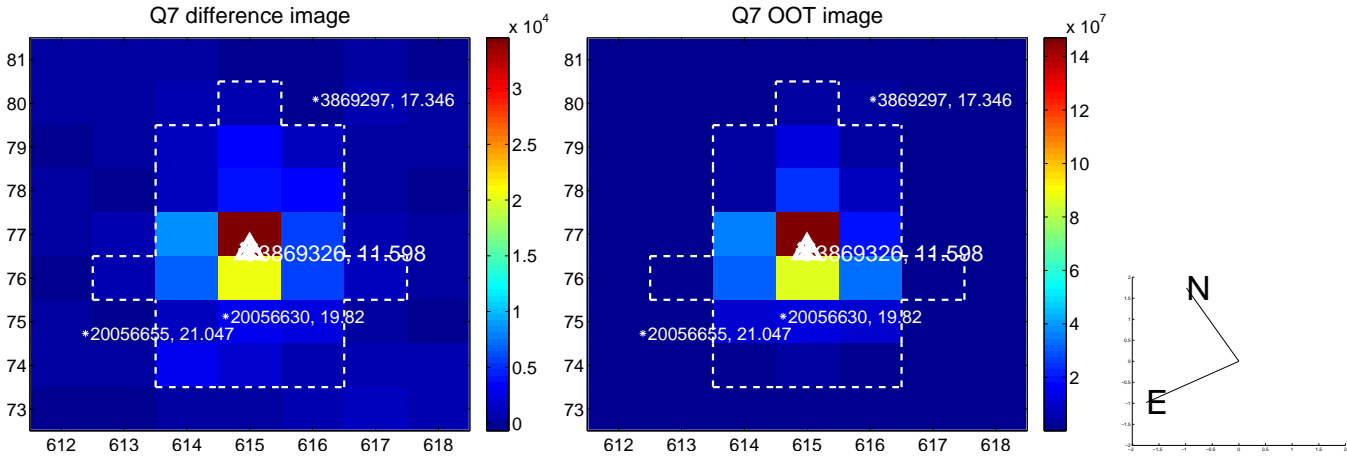
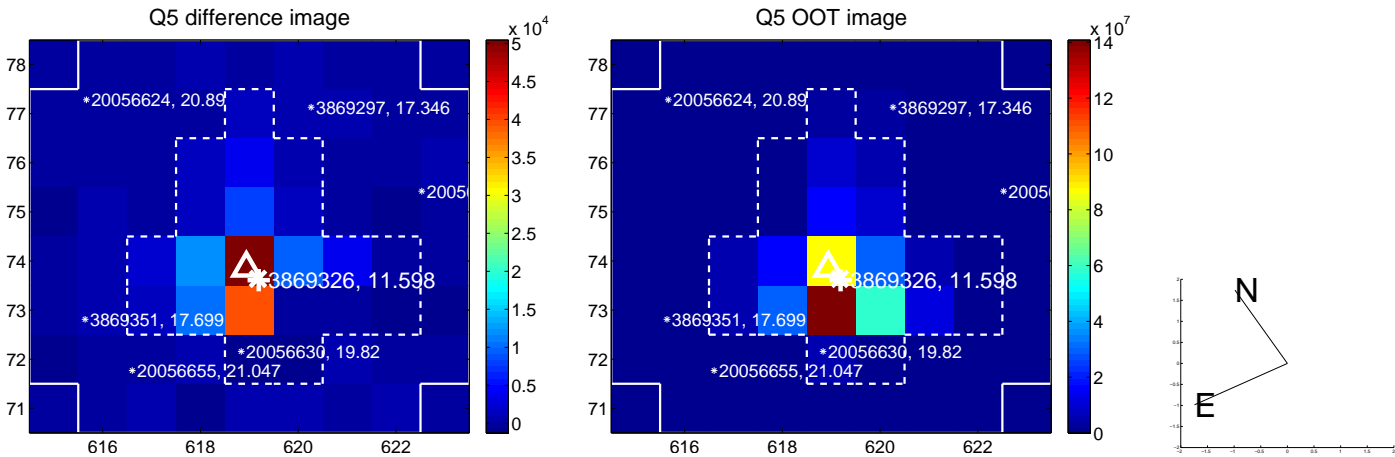


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

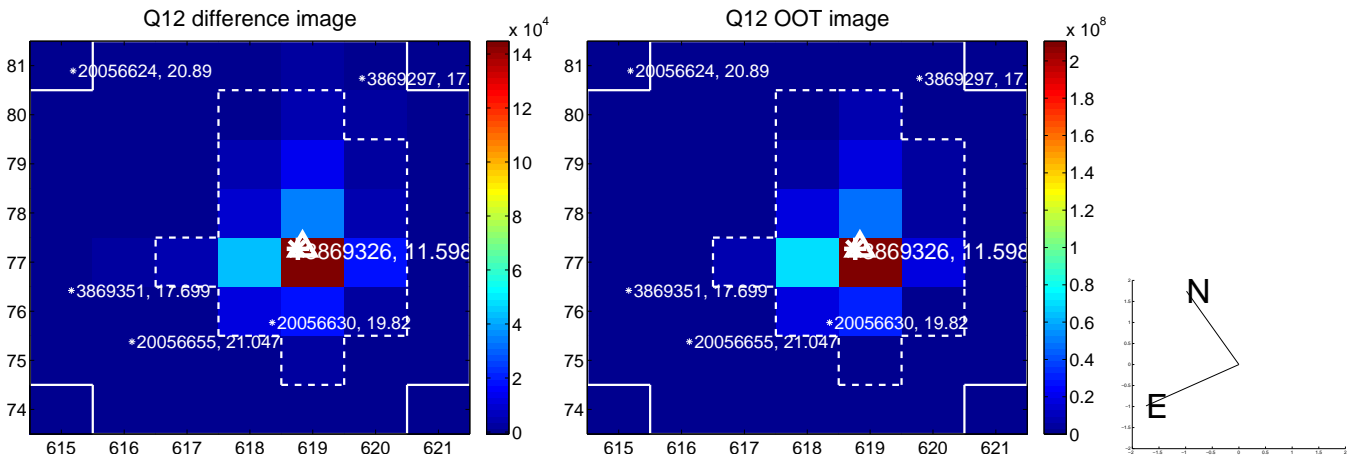
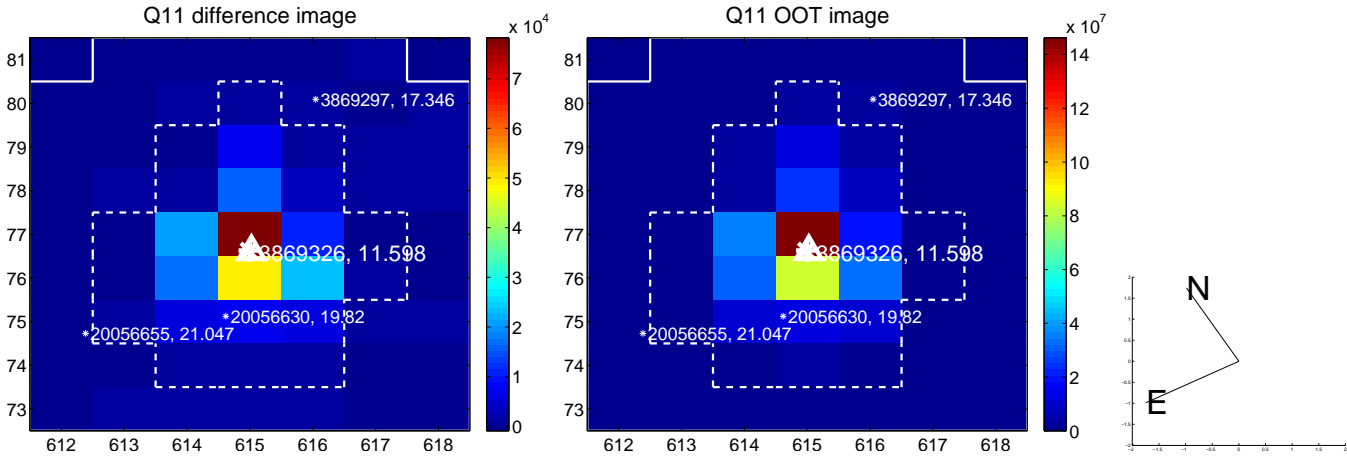
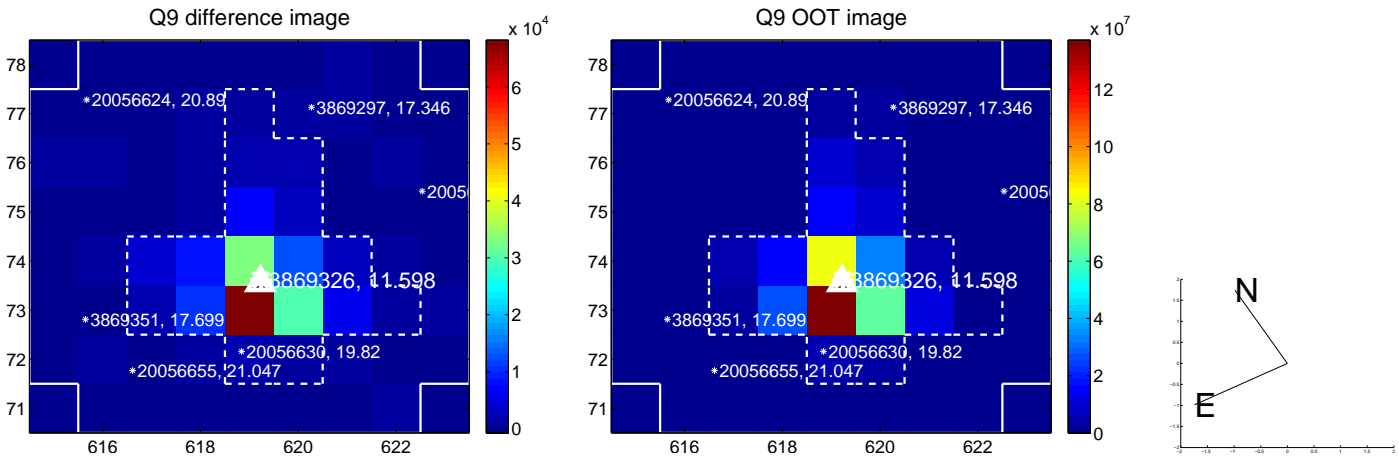
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



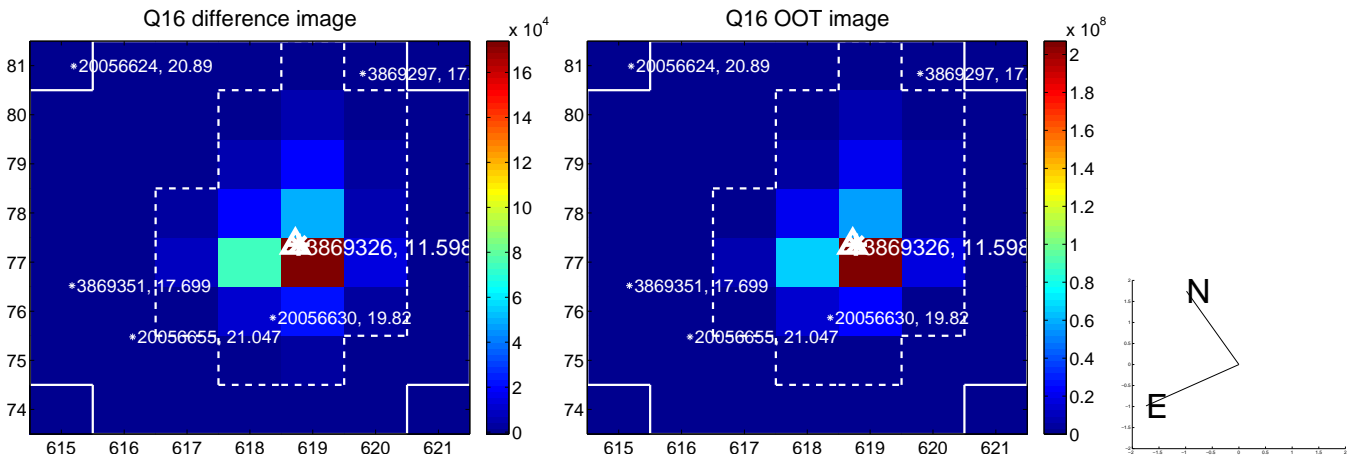
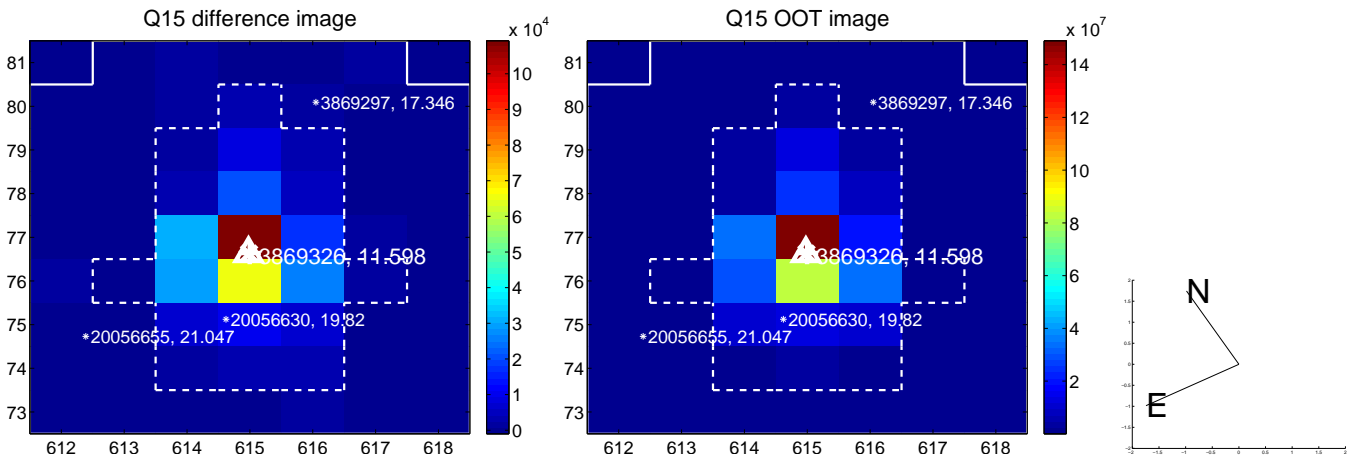
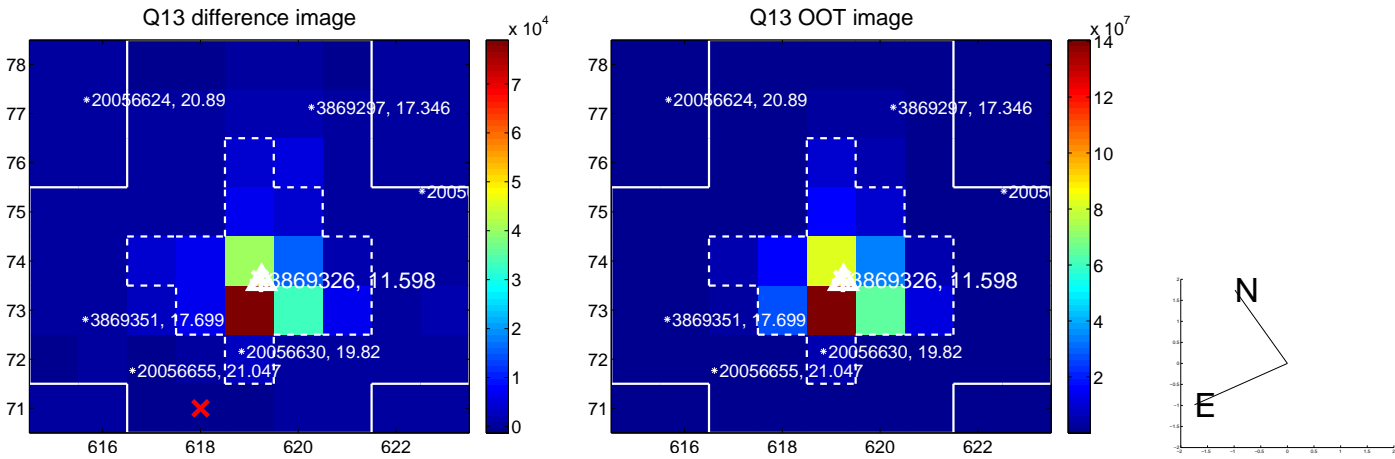
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



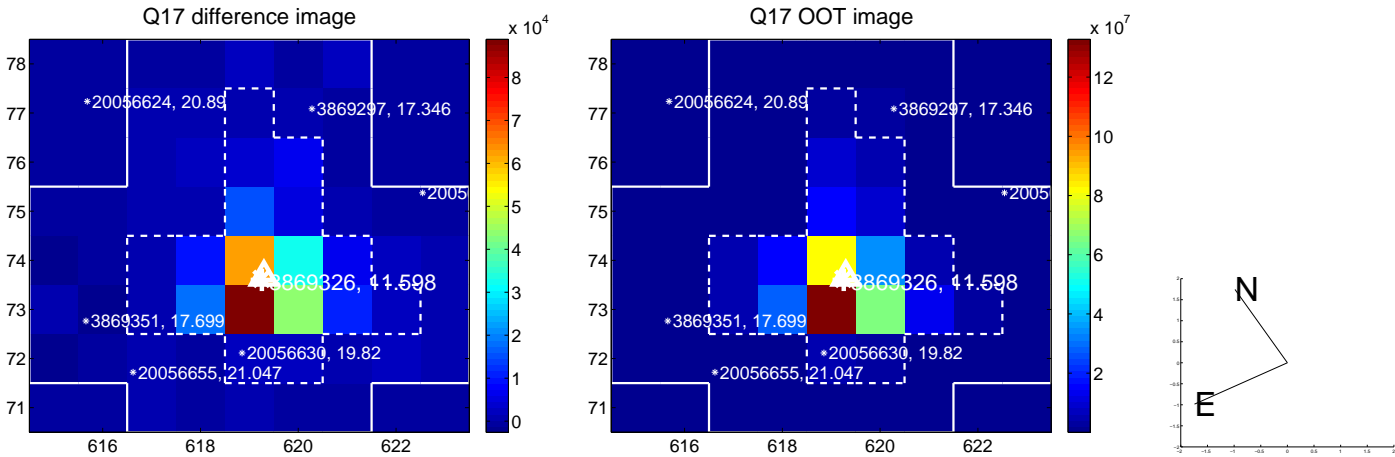
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



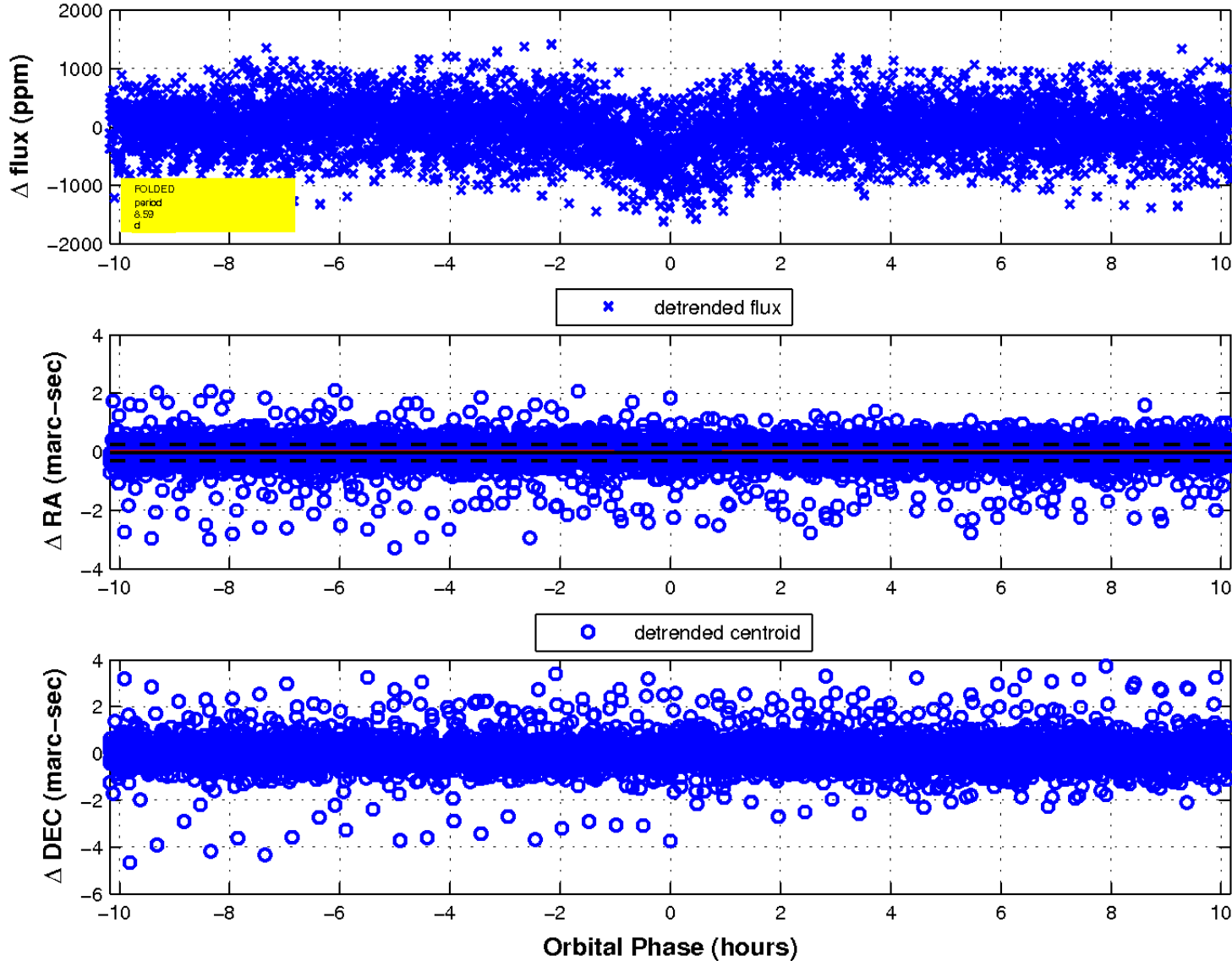
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

