

KIC 008257205

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})
008257205-01	OBS	1986.01	148.459822	151.387346	1530.4	5.622	27.9	27.9	0.82	5159	3.67	1.56
008257205-02	OBS	1986.02	7.127658	136.006865	229.9	2.668	13.5	15.0	0.82	5159	1.45	89.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008257205-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
008257205-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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 008257205-01

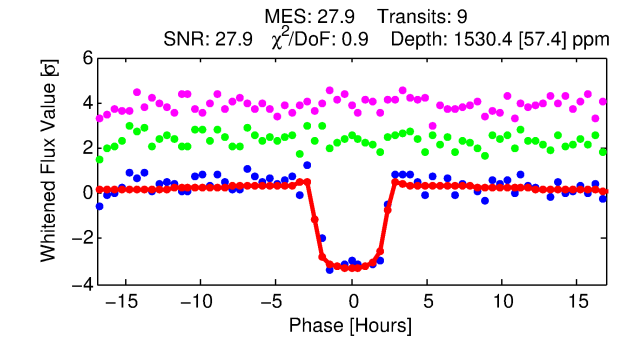
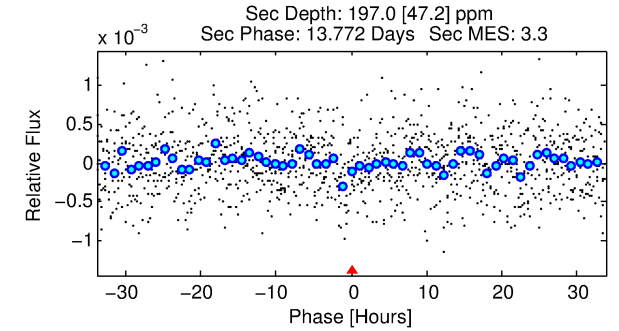
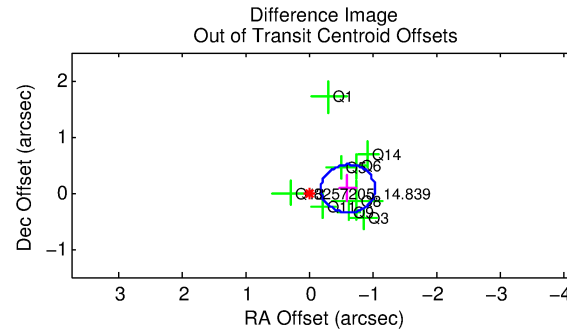
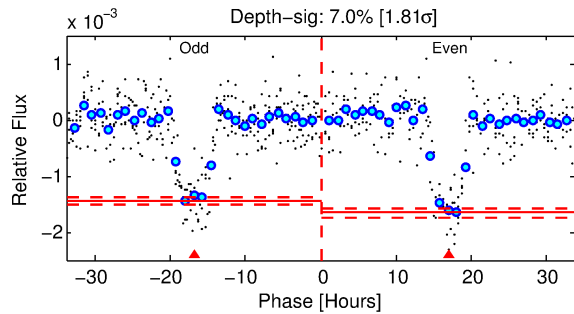
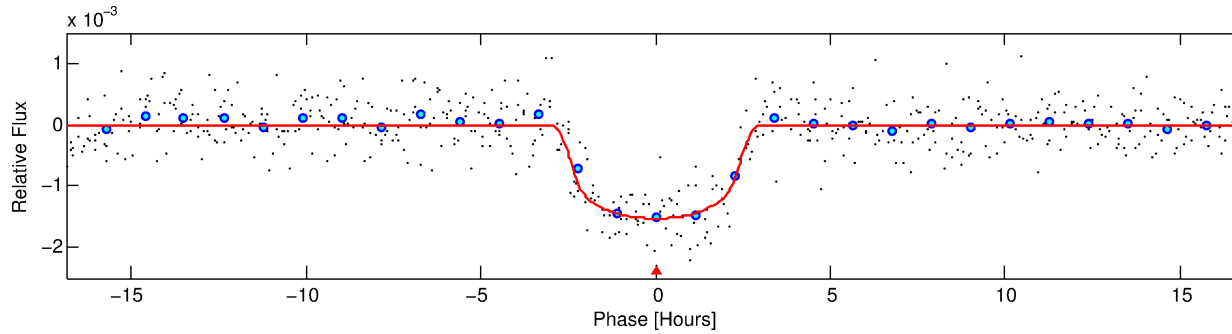
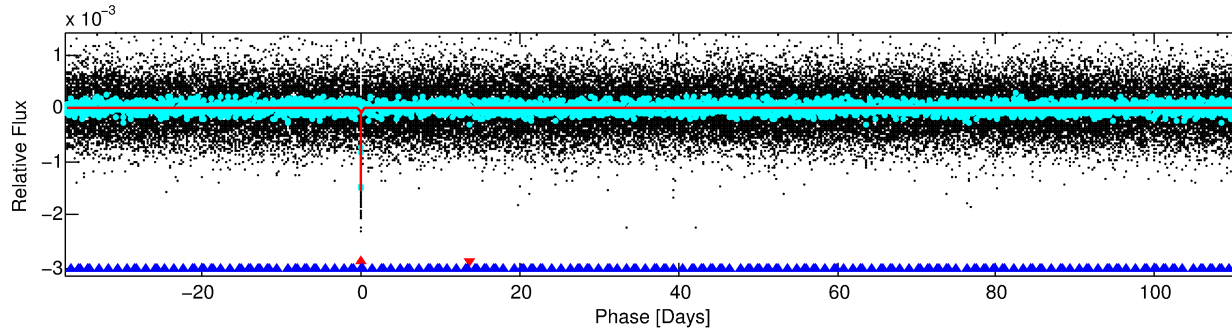
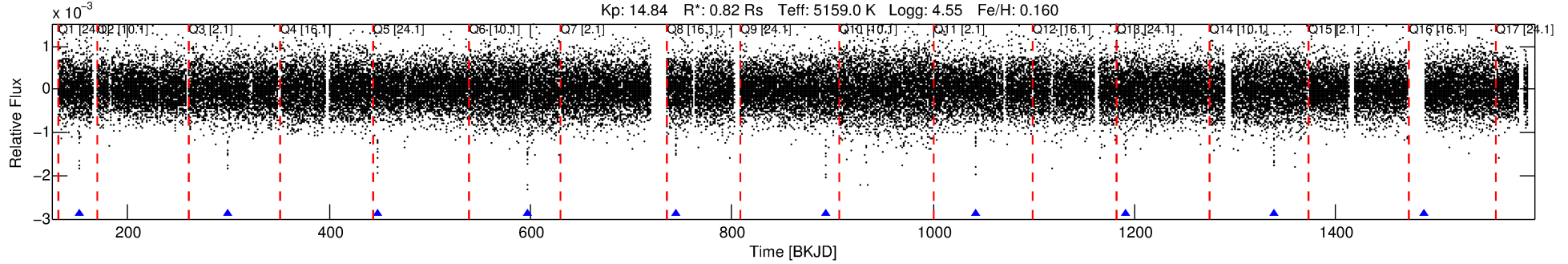
No Significant Match Found

DV One-Page Summary

KIC: 8257205 Candidate: 1 of 2 Period: 148.460 d

KOI: K01986.01 Corr: 0.979

Kp: 14.84 R*: 0.82 Rs Teff: 5159.0 K Logg: 4.55 Fe/H: 0.160



DV Fit Results:

Period = 148.45982 [0.00076] d
Epoch = 151.3873 [0.0035] BKJD
Rp/R* = 0.0409 [0.0033]
a/R* = 126.72 [36.06]
b = 0.83 [0.11]
Seff = 1.56 [0.19]
Teq = 285 [9] K
Rp = 3.67 [0.38] Re
a = 0.5236 [0.0345] AU
Ag = 2211.91 [681.33] [3.24σ]
Teffp = 3022 [224] K [12.23σ]

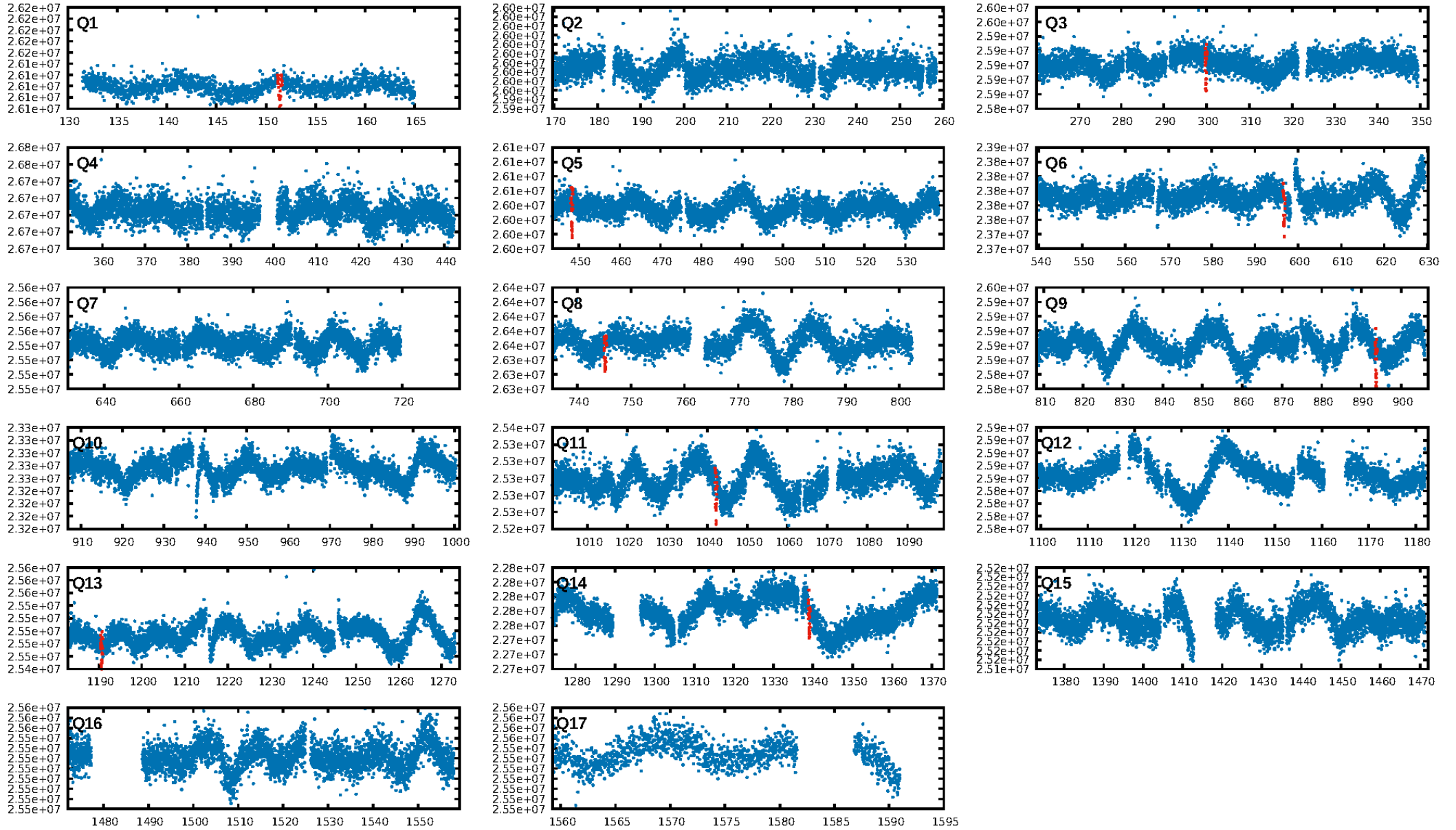
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [545.09σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 73.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 4.87e-158
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 6.775
Centroid-sig: 71.2%
Centroid-so: 0.415 arcsec [1.10σ]
OotOffset-rm: 0.605 arcsec [4.24σ]
KicOffset-rm: 0.609 arcsec [4.41σ]
OotOffset-st: 2/2/1/4 [9]
KicOffset-st: 2/2/1/4 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.78 [7/9]

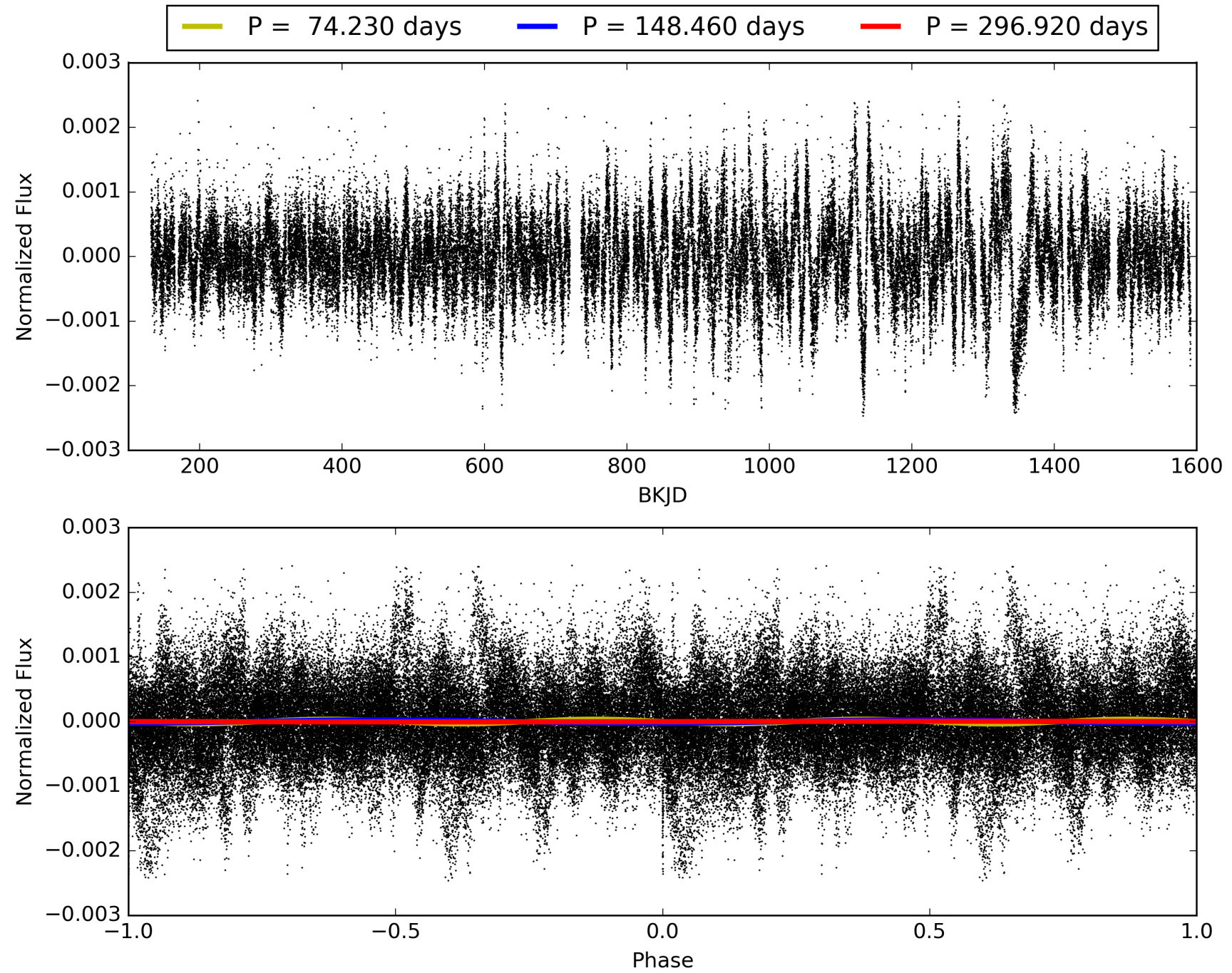
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:31:28 Z

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

TCE 008257205-01, PDC Light Curves

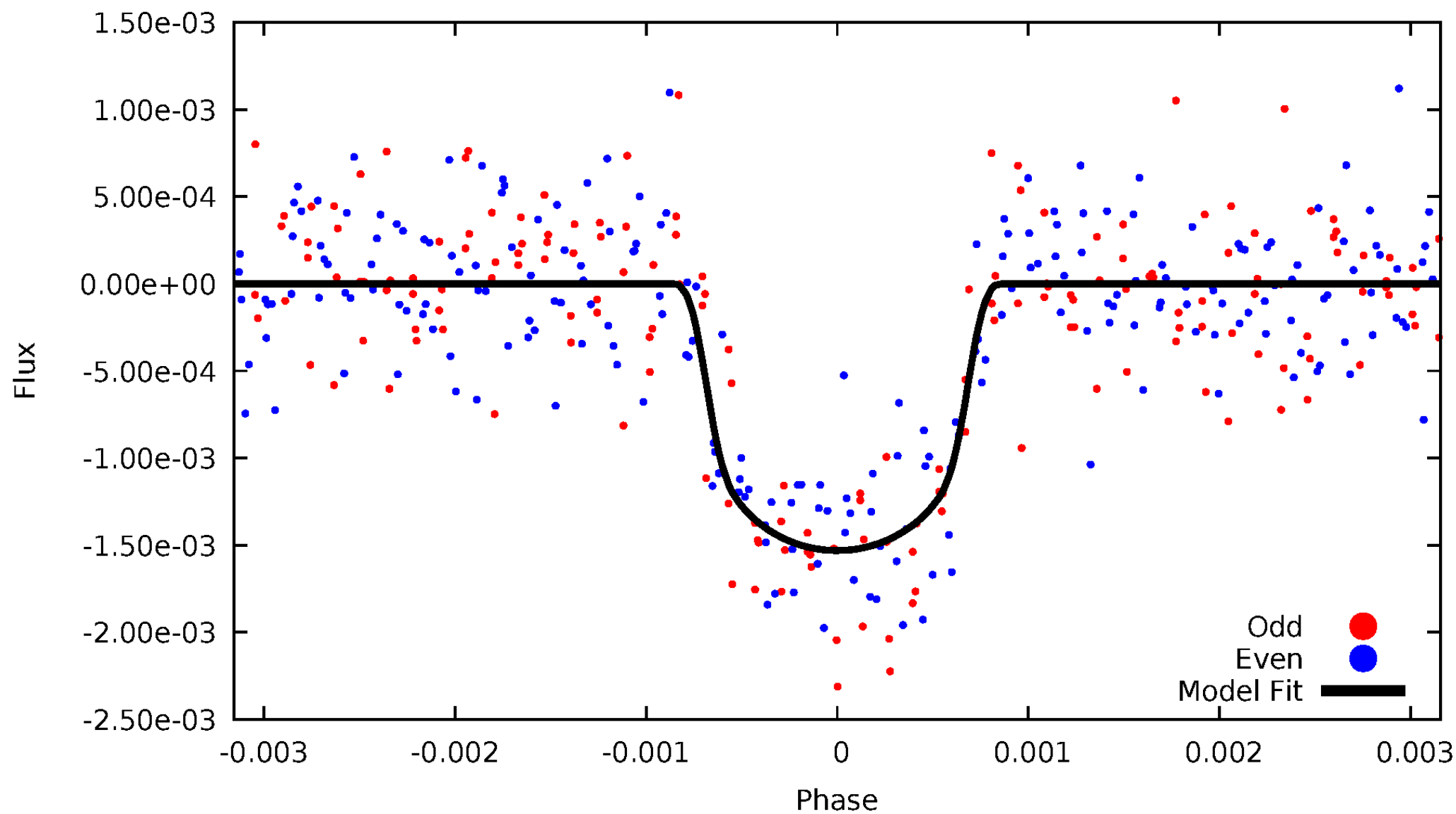


TCE 008257205-01



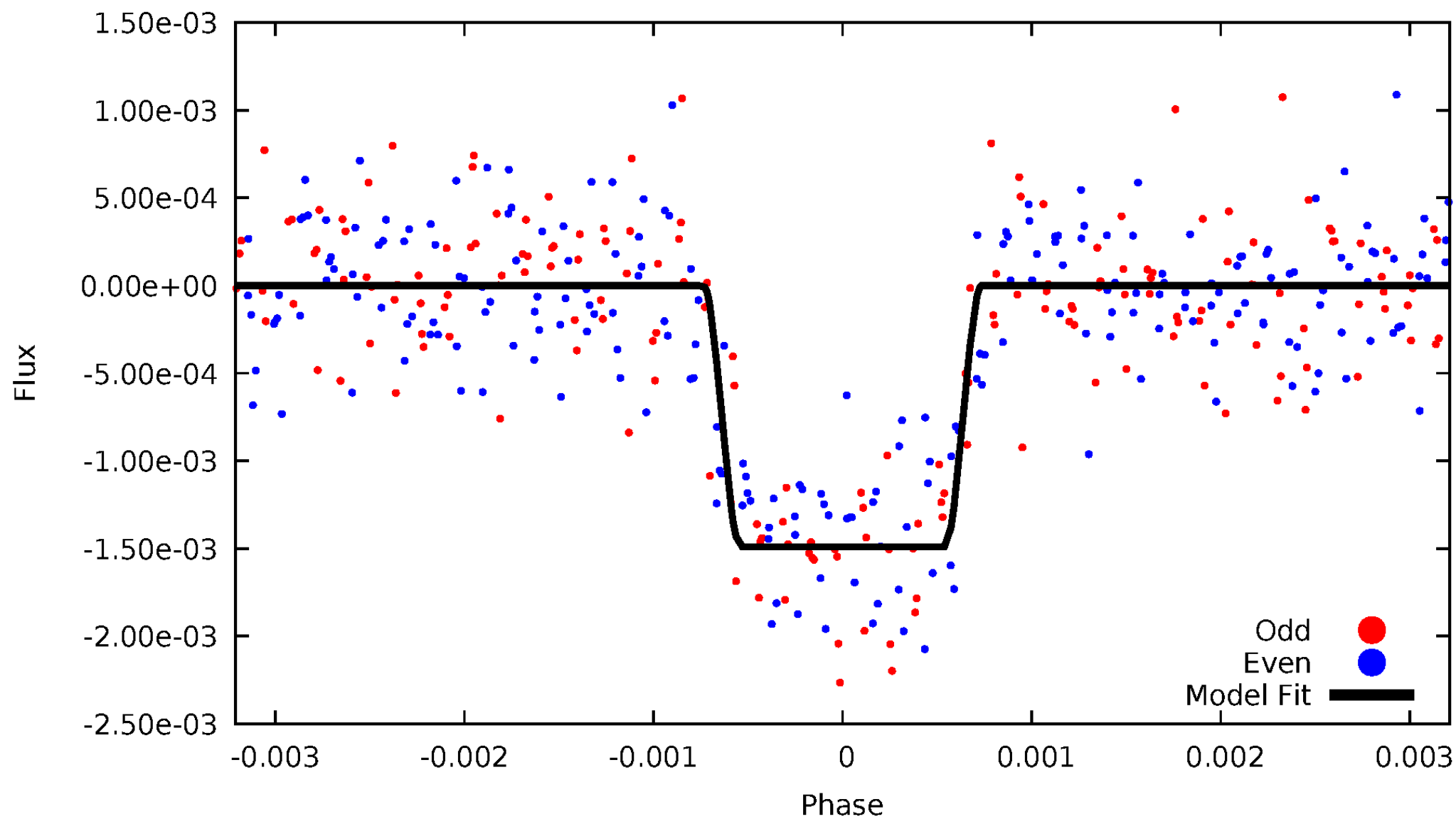
DV Odd/Even

TCE 008257205-01



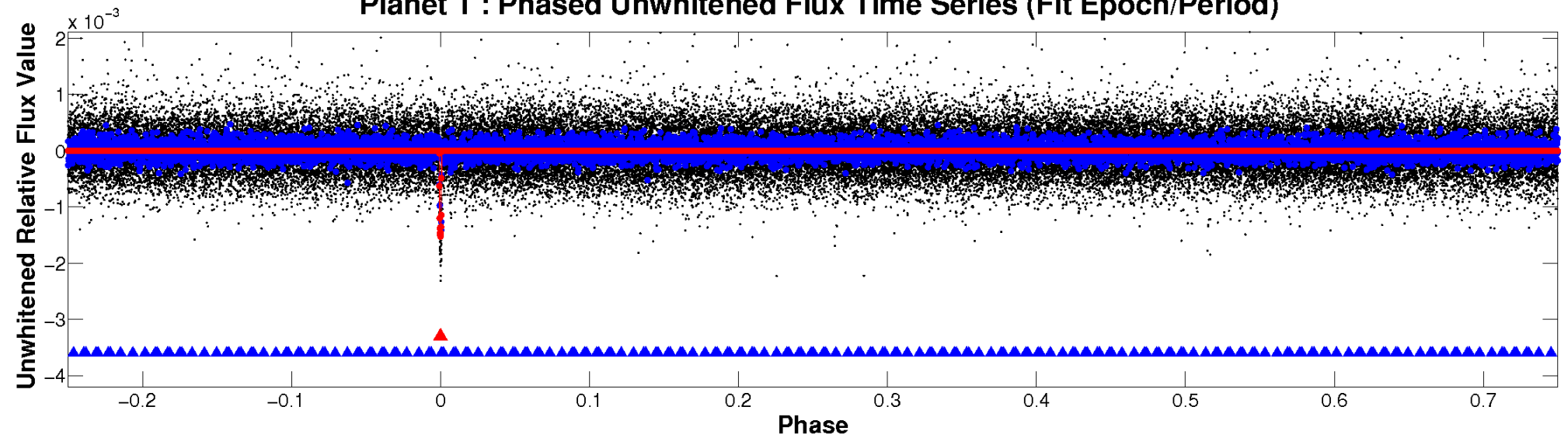
ALT Odd/Even

TCE 008257205-01

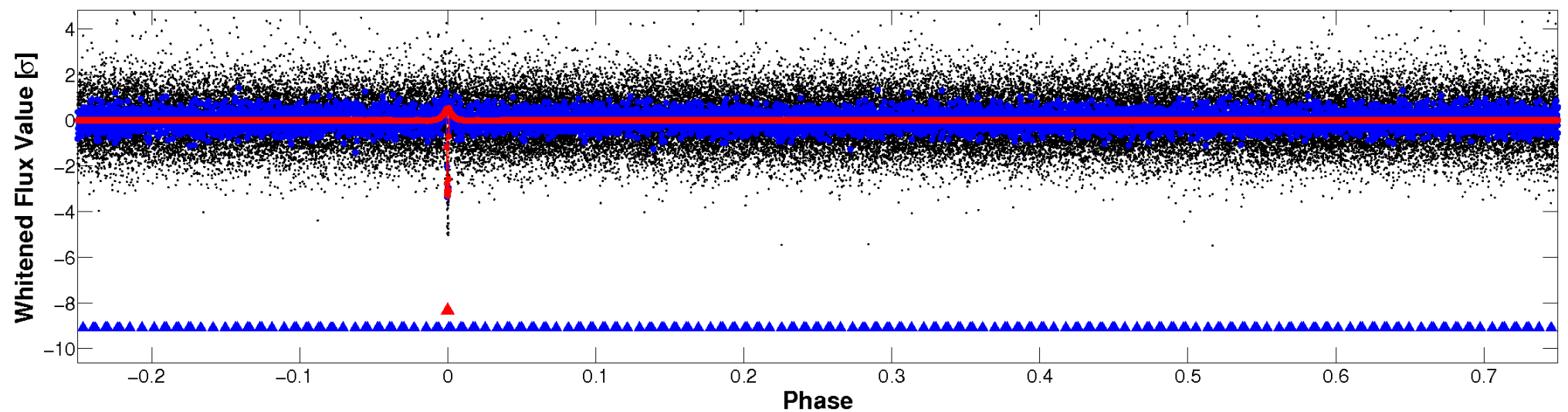


Non-Whitened Vs. Whitened Light Curve

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

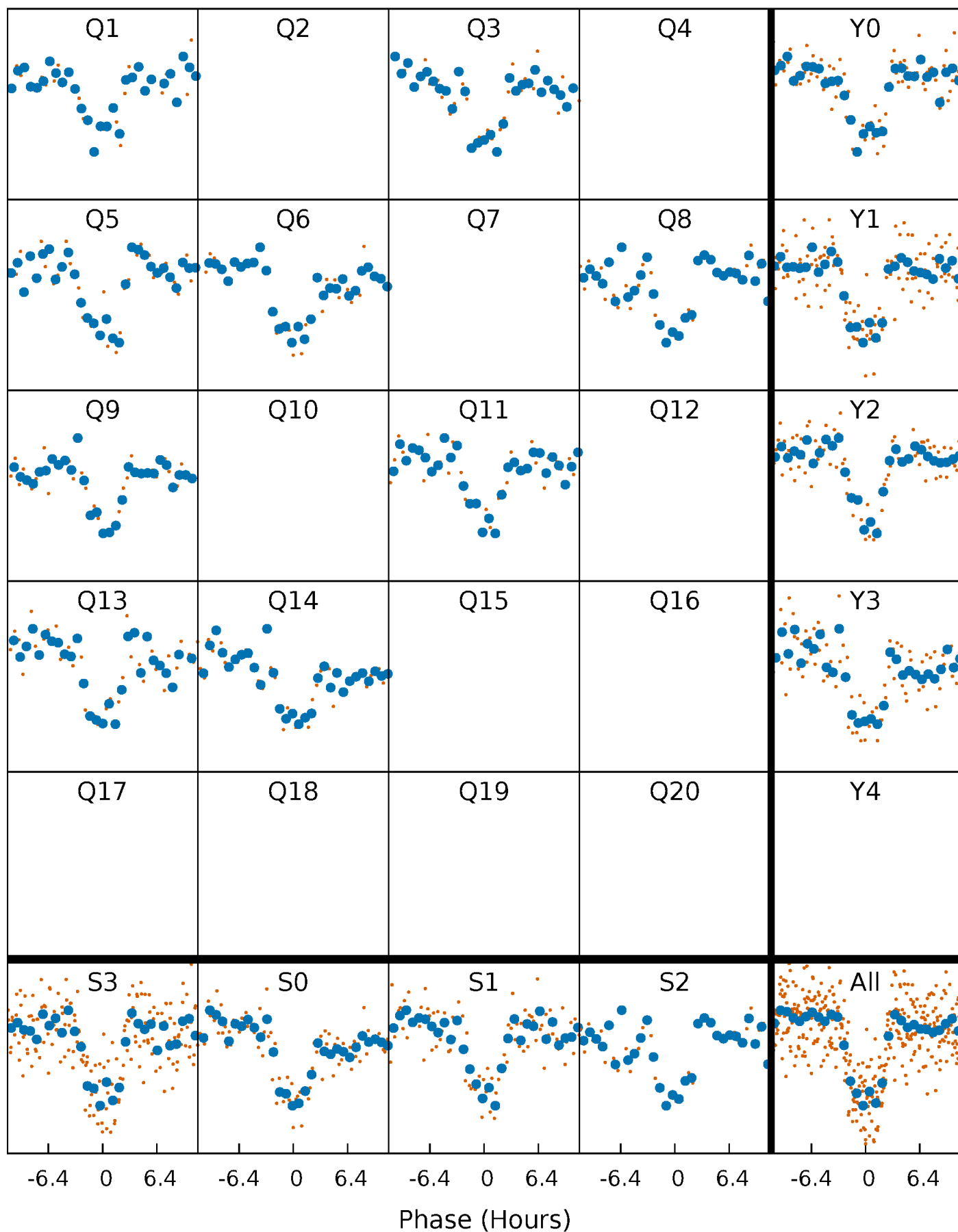


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



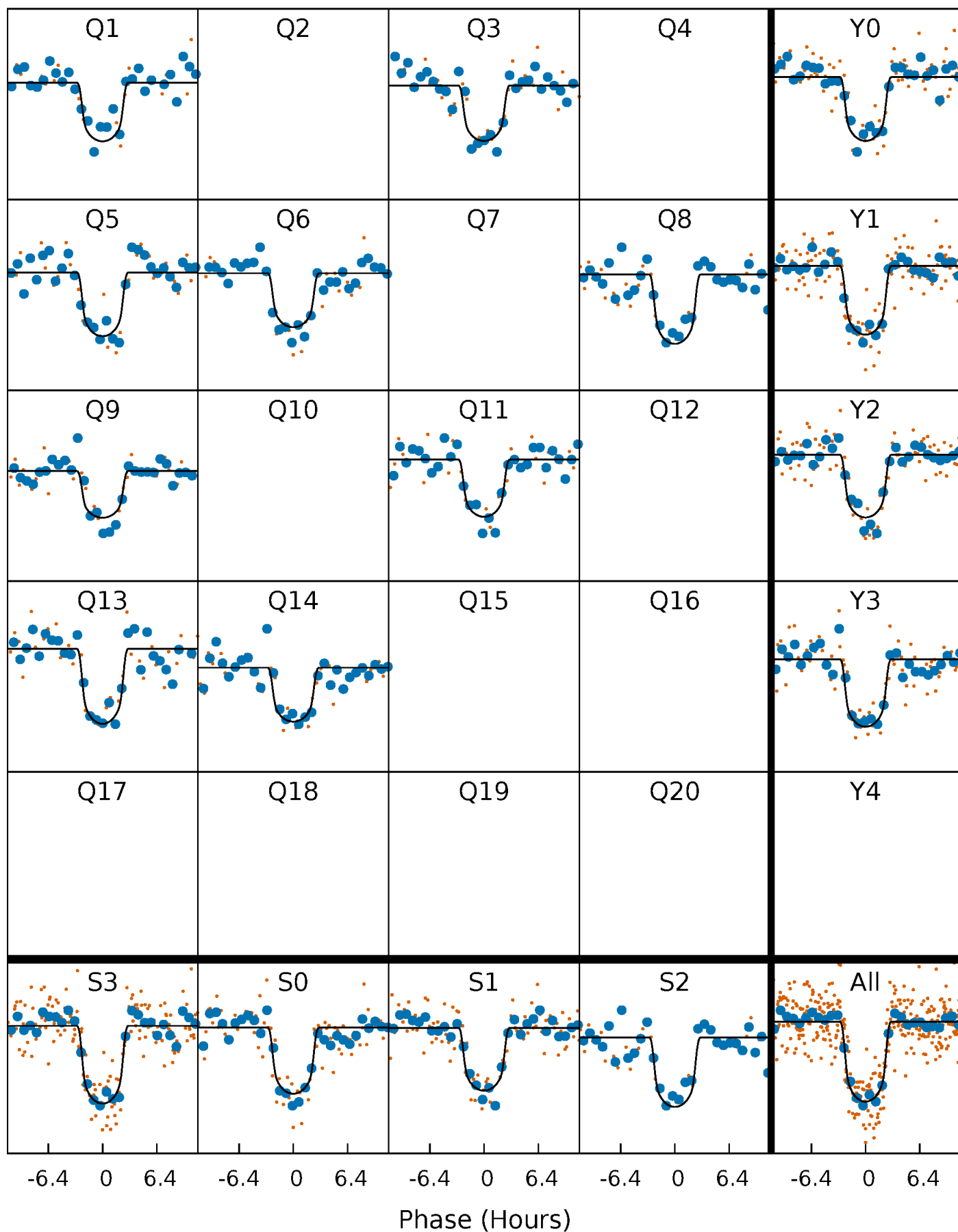
PDC Quarter-Phased Transit Curves

TCE 008257205-01 P=148.459822 Days $T_0=151.387346$ (BKJD)



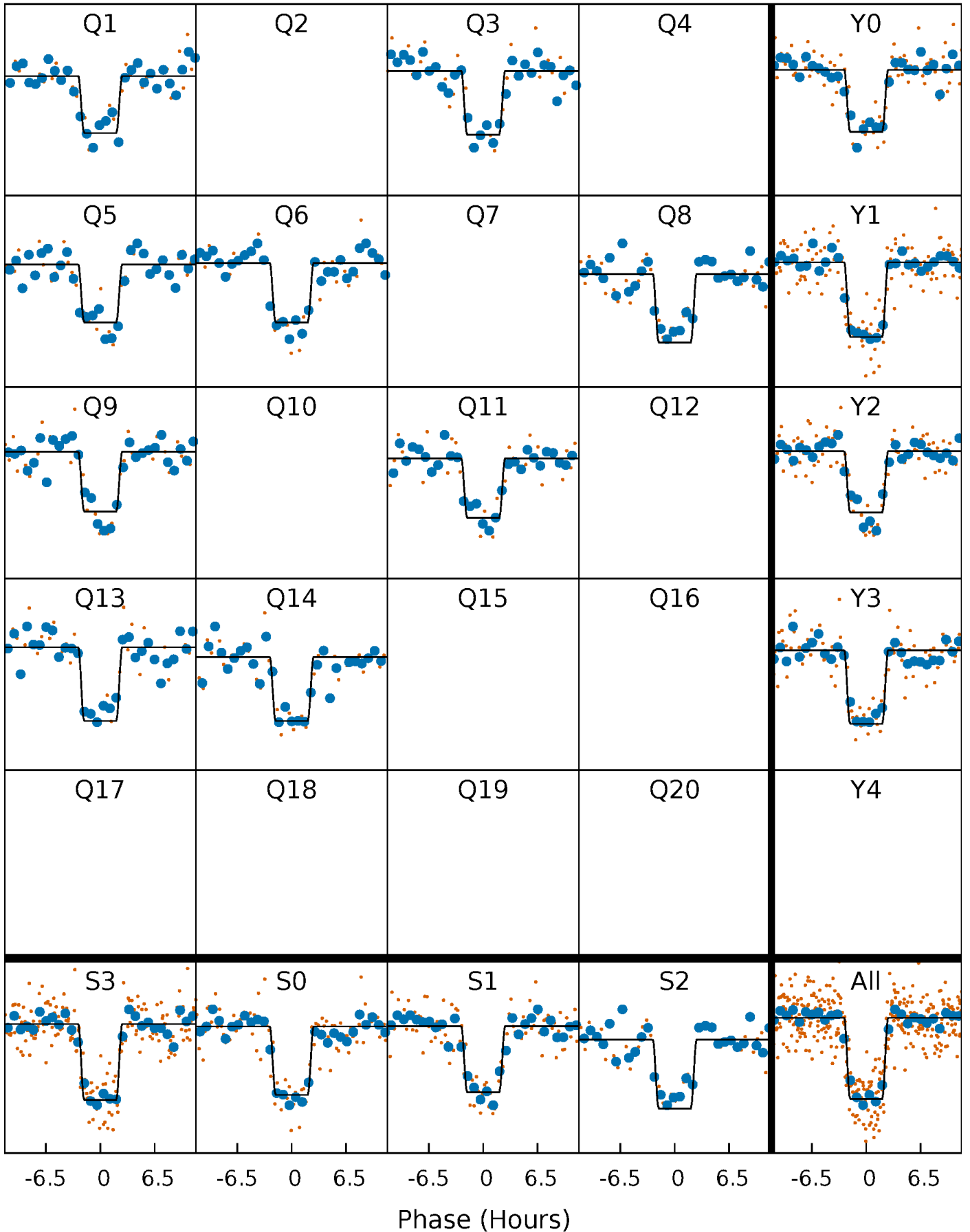
DV Quarter-Phased Transit Curves

TCE 008257205-01 P=148.459822 Days $T_0=151.387346$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

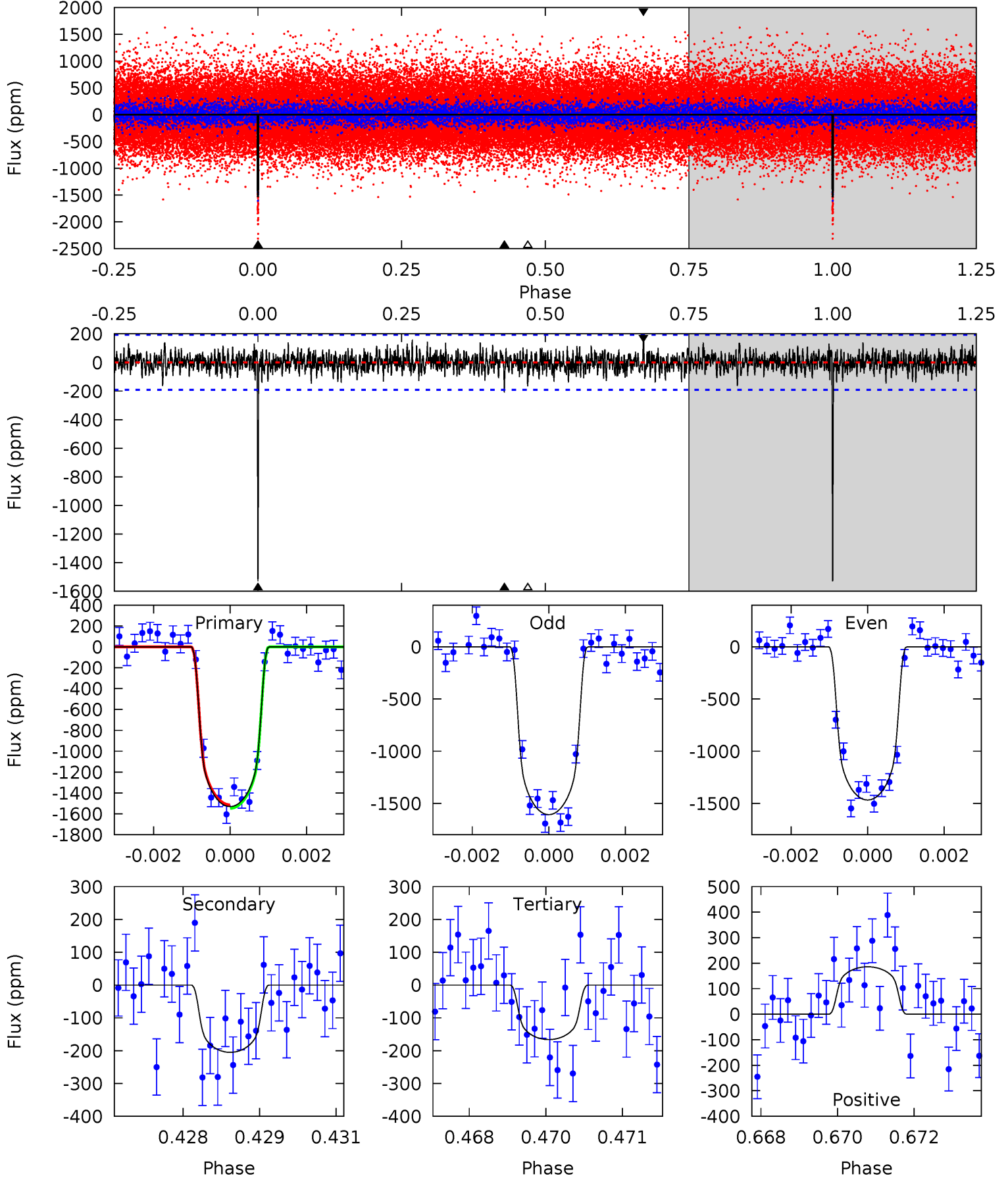
TCE 008257205-01 P=148.460076 Days $T_0=151.388786$ (BKJD)



DV Model-Shift Uniqueness Test

008257205-01, P = 148.459822 Days, E = 2.927524 Days

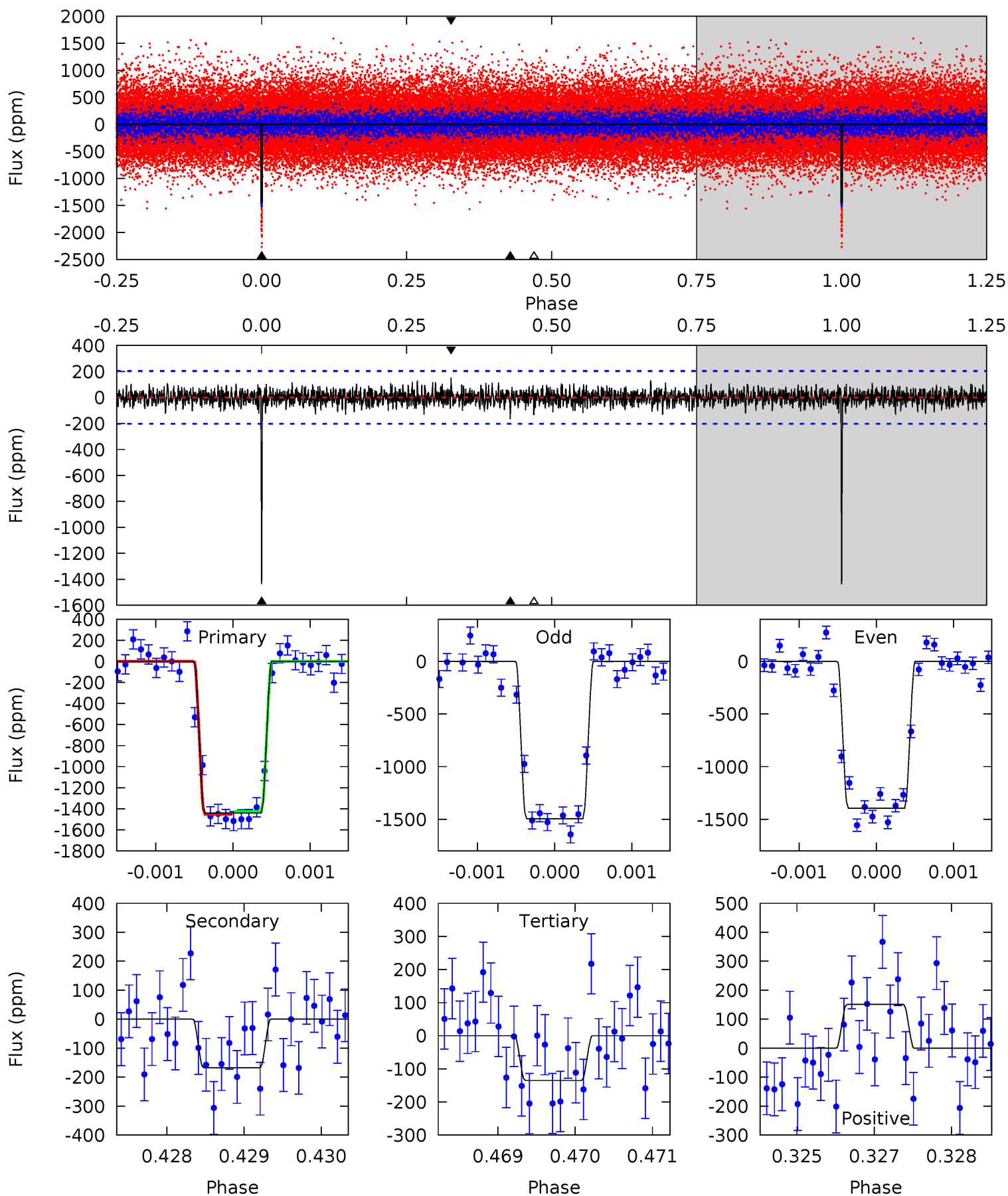
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.7	5.72	4.63	5.19	5.36	3.14	1.33	38.1	37.5	1.08	0.53	1.95	1.00	0.11	0.46



Alt Model-Shift Uniqueness Test

008257205-01, P = 148.460076 Days, E = 2.928710 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.2	4.45	3.59	4.01	5.38	3.18	1.07	34.6	34.2	0.86	0.44	1.34	1.00	0.10	0.39



Stellar Parameters For KIC 008257205

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5159^{+82}_{-82}	$4.548^{+0.032}_{-0.063}$	$0.160^{+0.150}_{-0.150}$	$0.821^{+0.055}_{-0.039}$	$0.868^{+0.035}_{-0.049}$	$2.208^{+0.264}_{-0.418}$
	+2%/-2%	+1%/-1%	+94%/-94%	+7%/-5%	+4%/-6%	+12%/-19%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 008257205-01 / KOI 1986.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-205 ± 36	$3.69^{+0.36}_{-0.34}$	400^{+9}_{-8}	3501^{+139}_{-137}	2264^{+624}_{-514}
Alt.	-168 ± 38	$3.50^{+0.32}_{-0.33}$	401^{+9}_{-8}	3452^{+161}_{-154}	2081^{+639}_{-570}

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

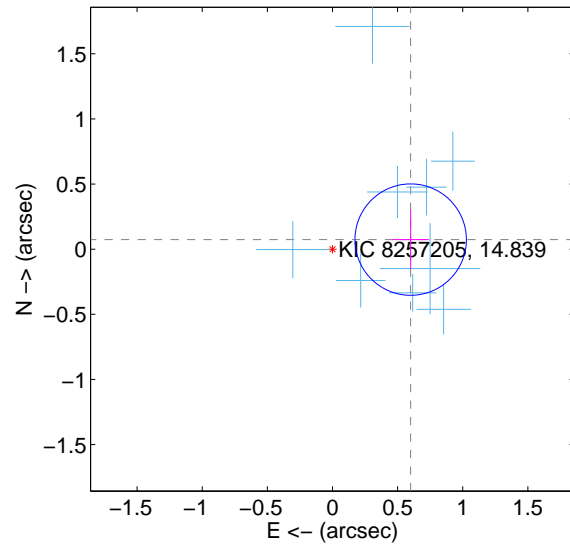
Supplemental centroid analysis for 008257205-01. Kepler magnitude: 14.84. Transit SNR 27.86

There are 9 quarters with good PRF difference image offsets

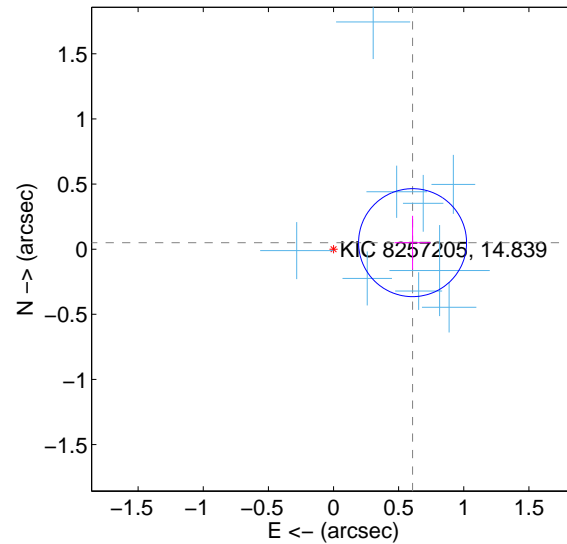
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.605 ± 0.143	4.24	-0.600 ± 0.141	0.073 ± 0.227
PRF-fit source offset from KIC position	0.609 ± 0.138	4.41	-0.607 ± 0.138	0.050 ± 0.206
photometric centroid source offset	0.41 ± 0.38	1.10	0.41 ± 0.38	0.05 ± 0.39

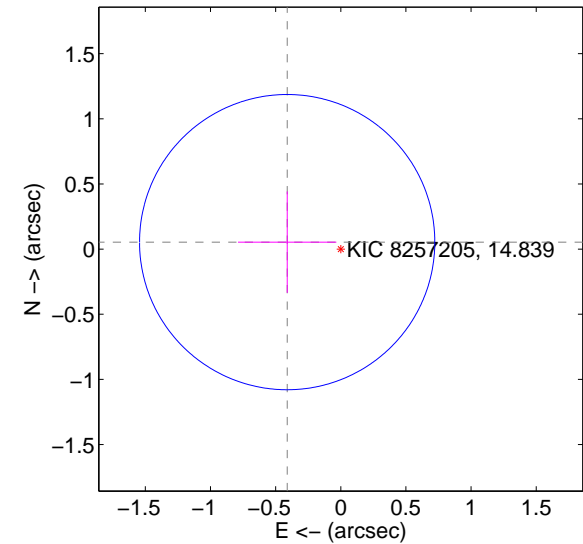
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

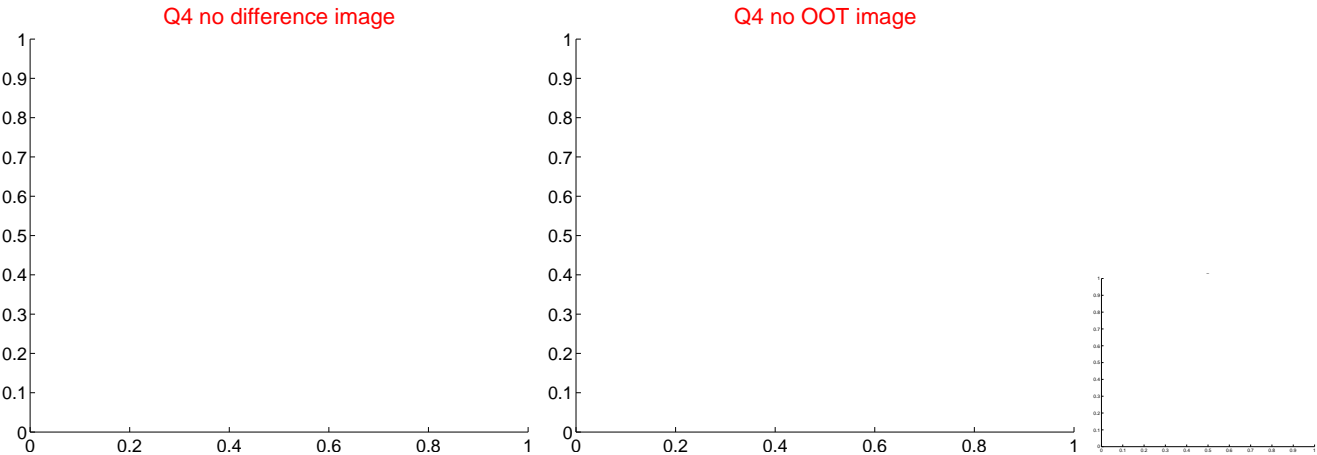
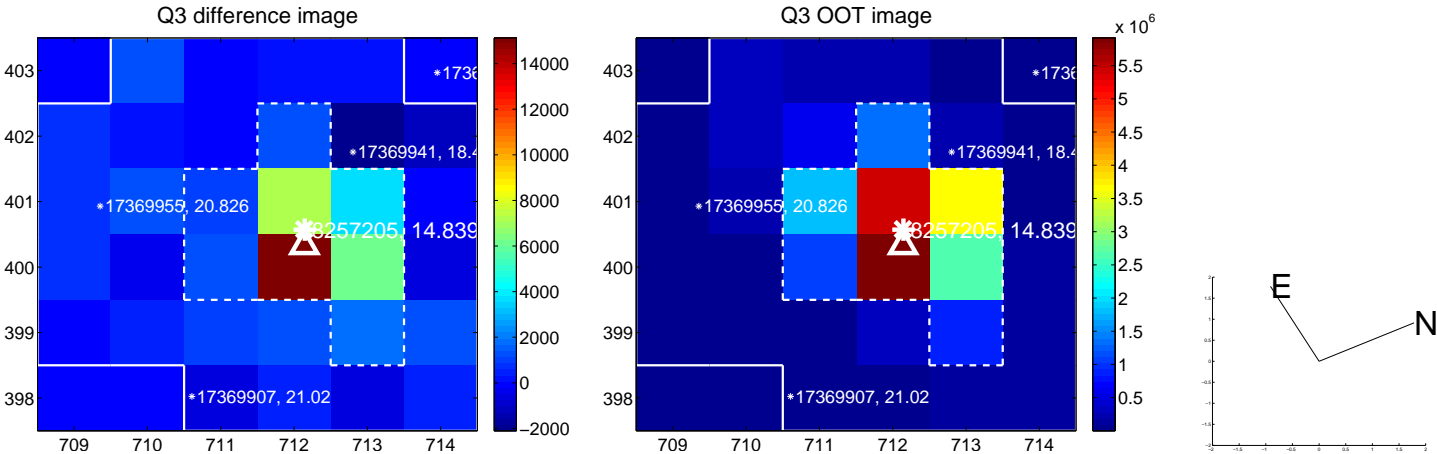
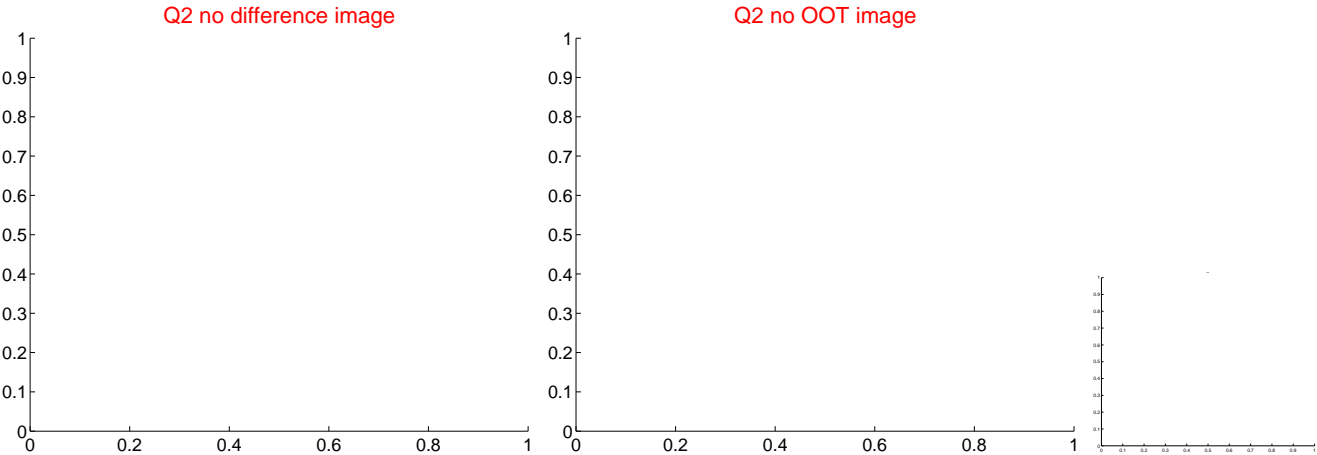
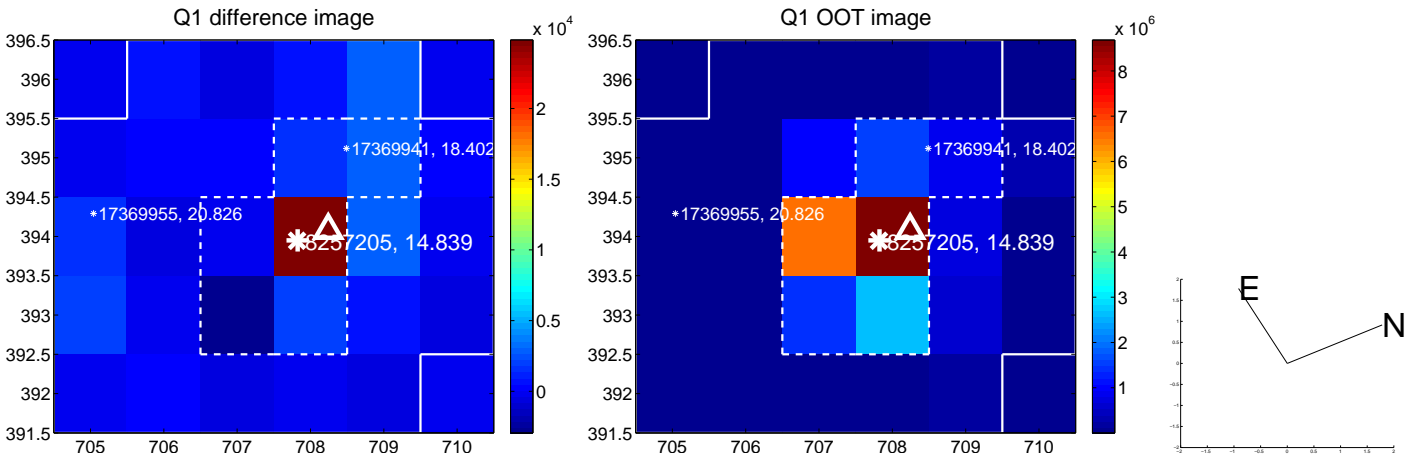


offset from photometric centroids

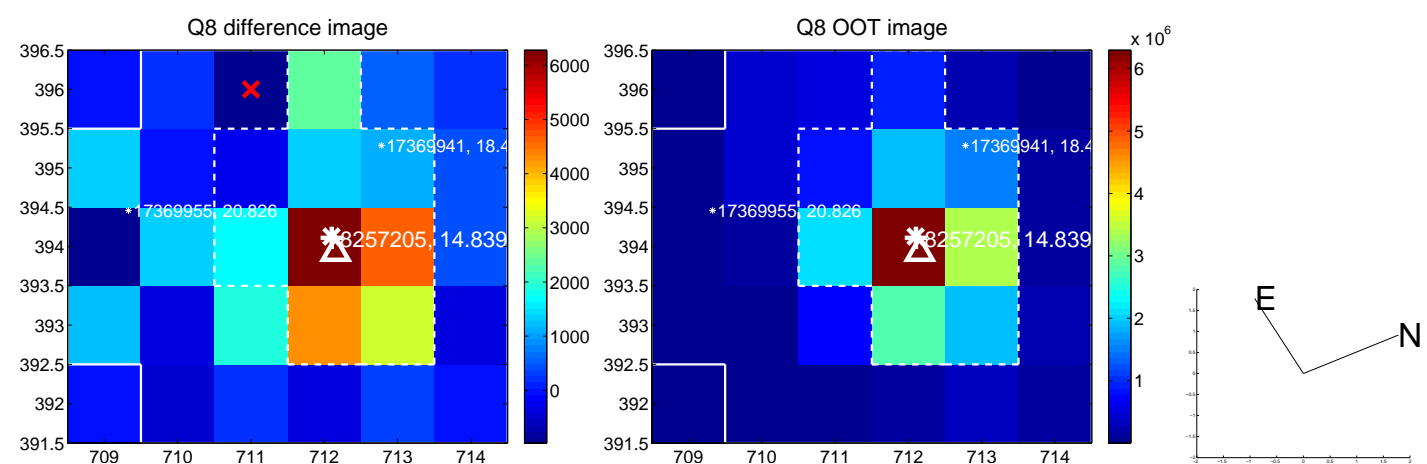
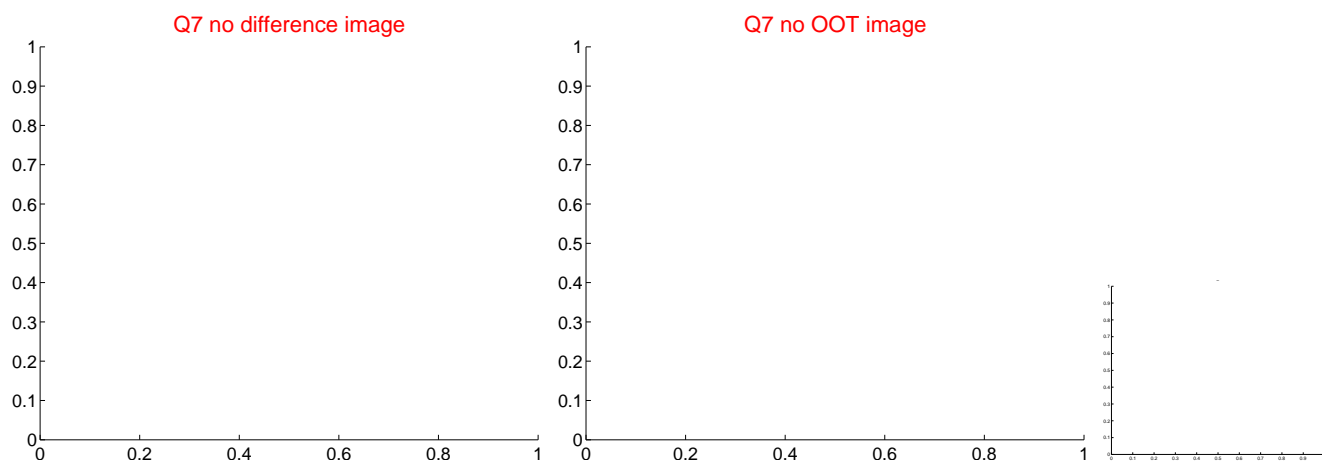
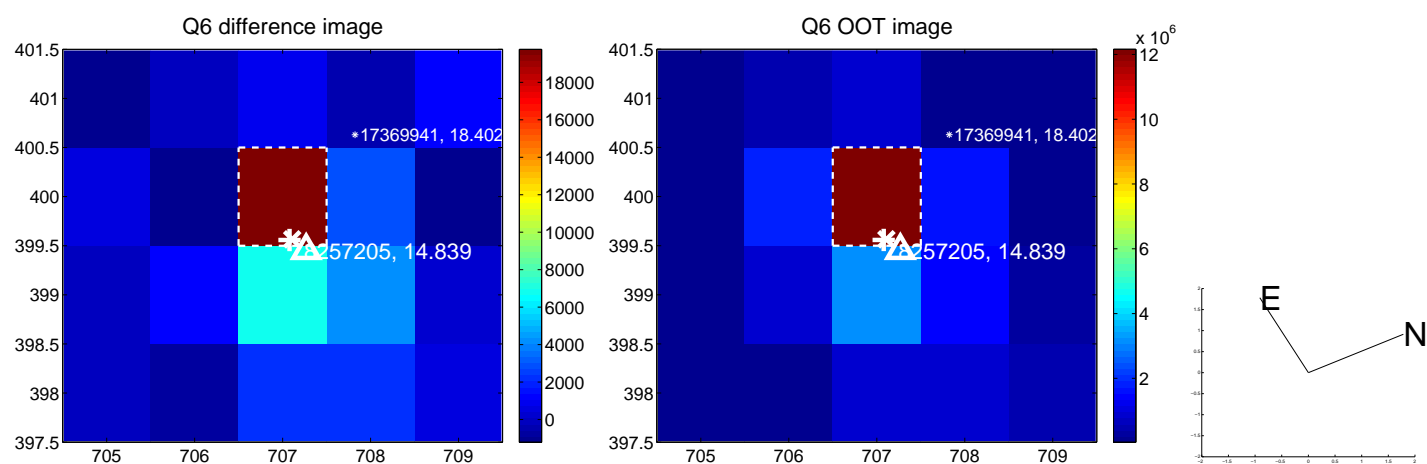
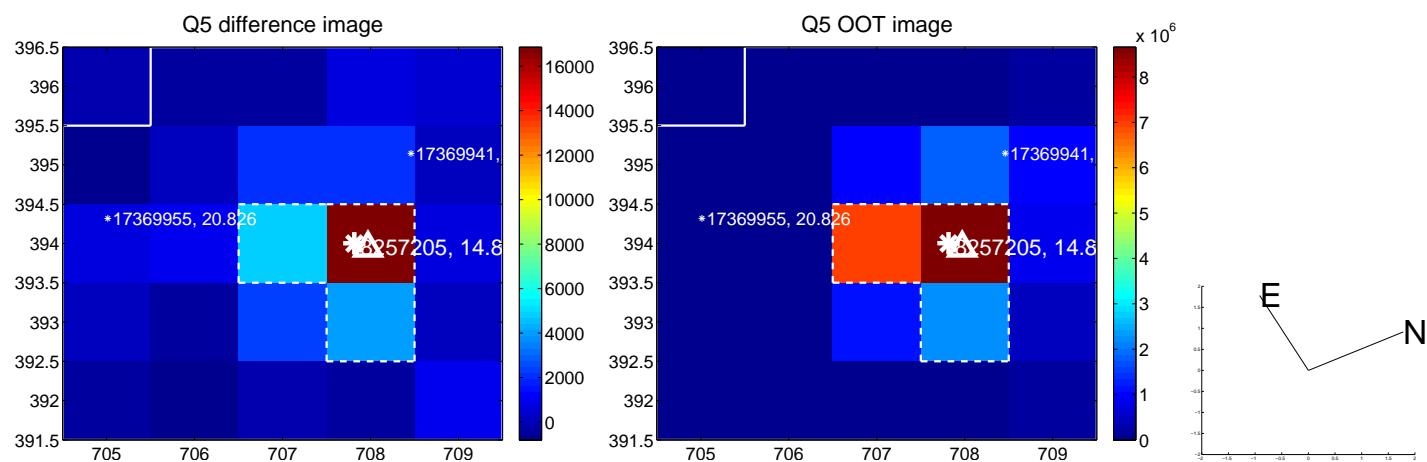


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

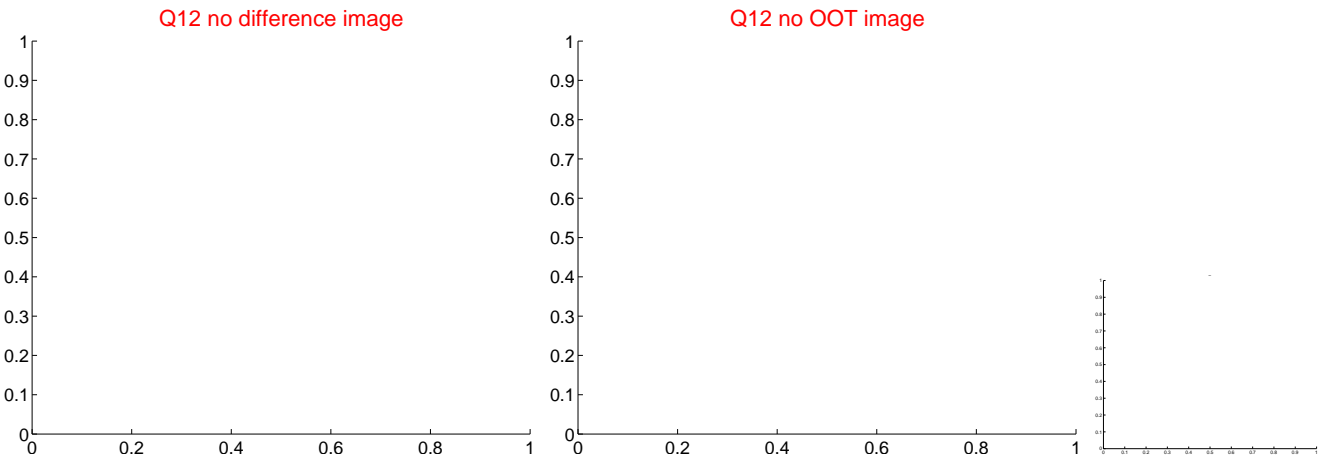
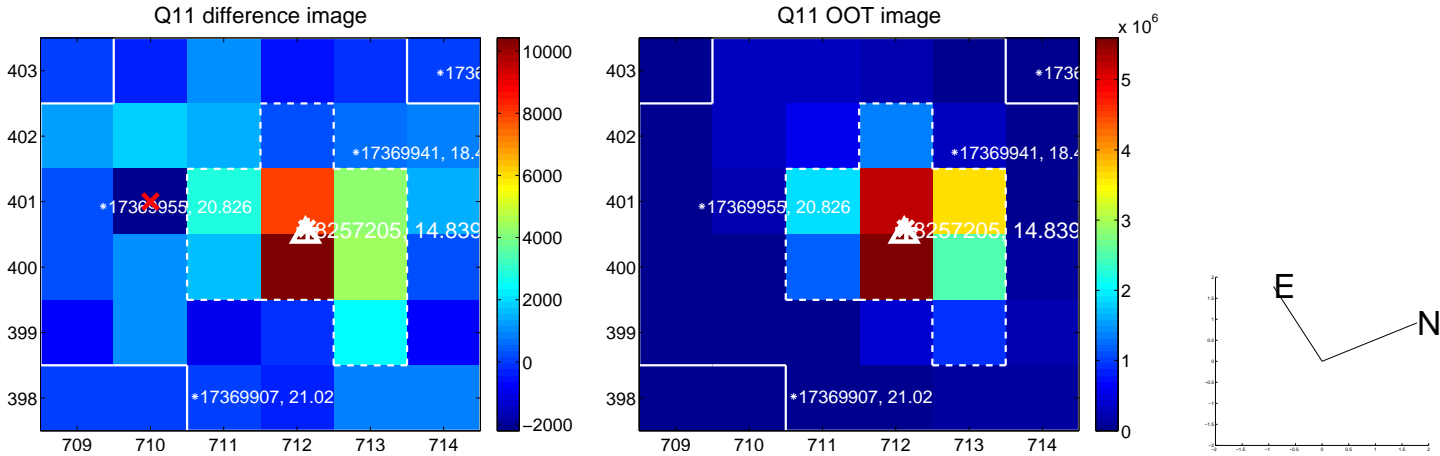
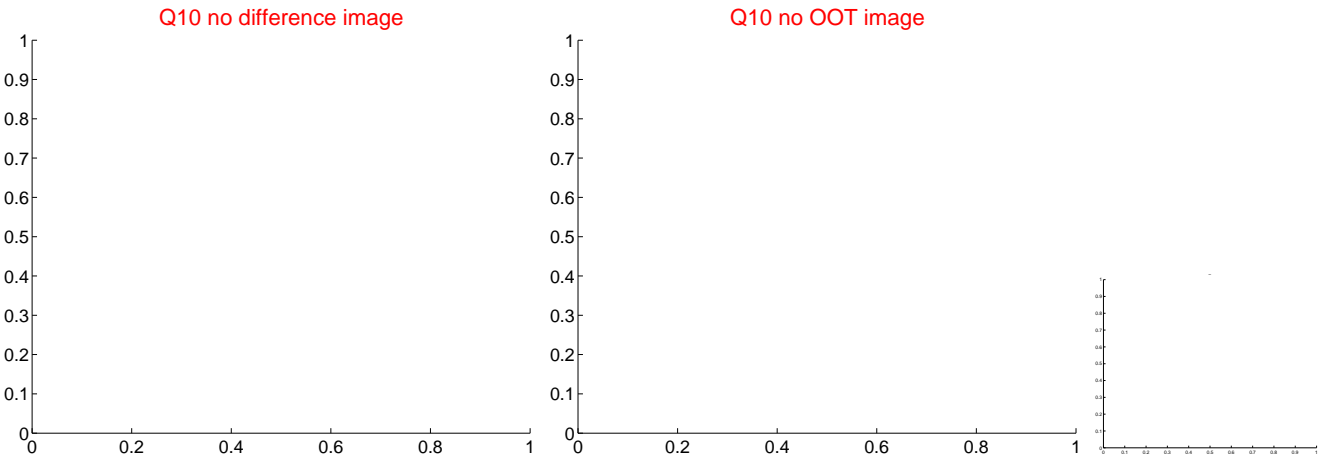
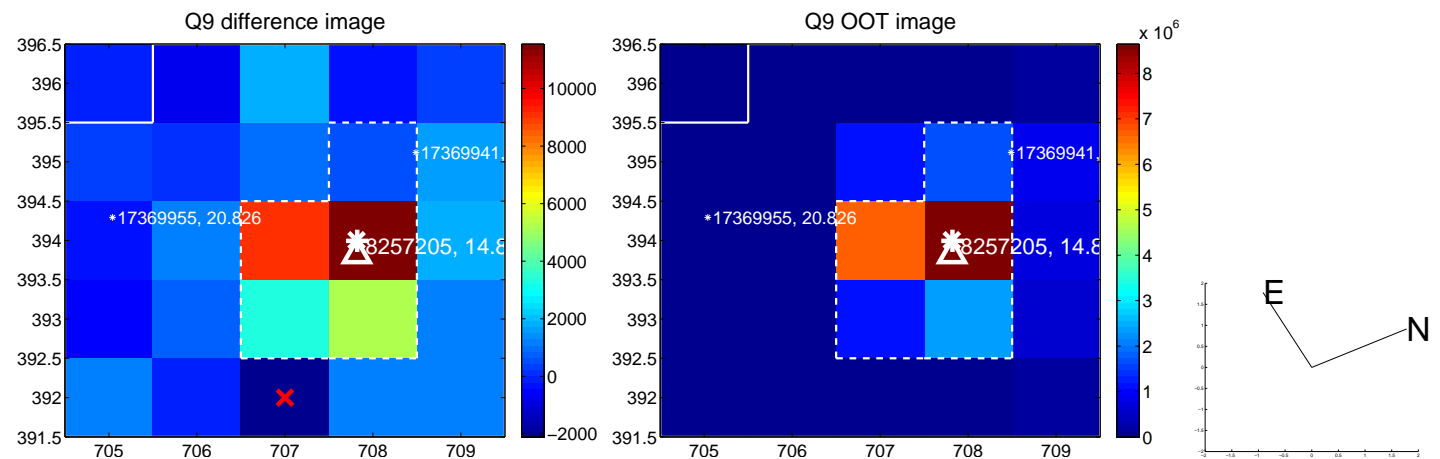
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



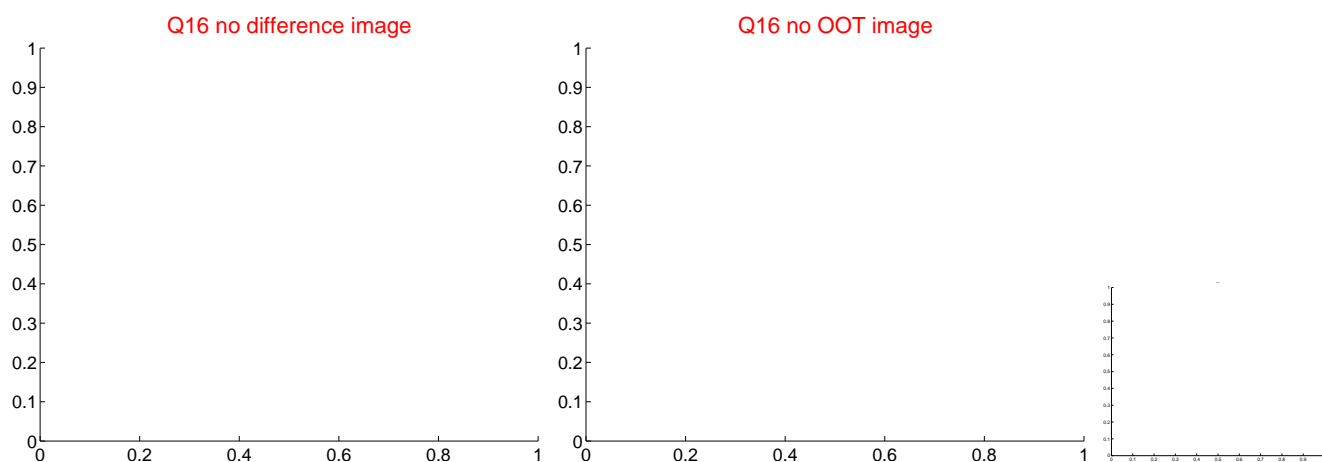
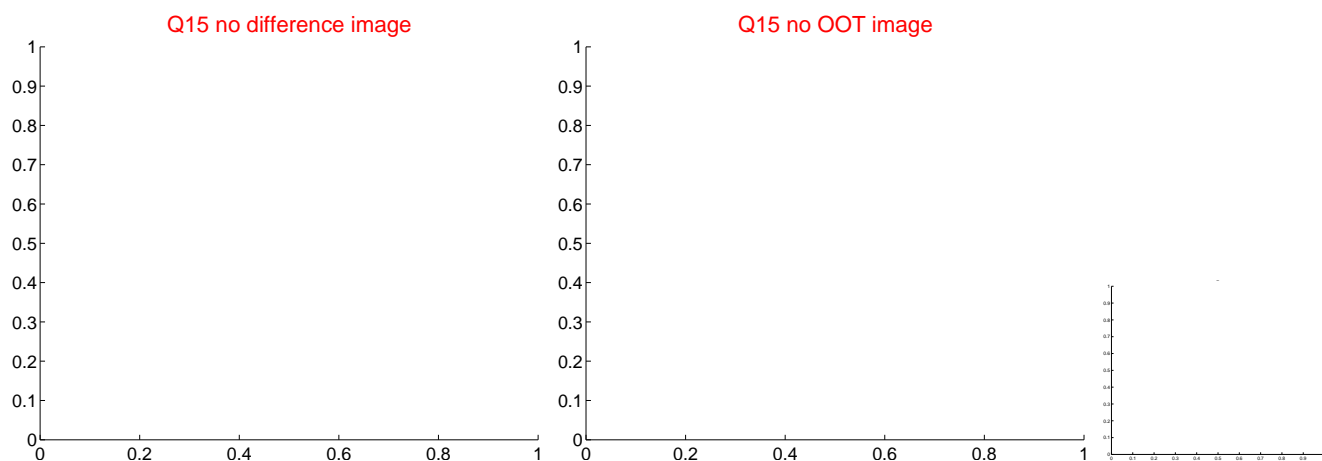
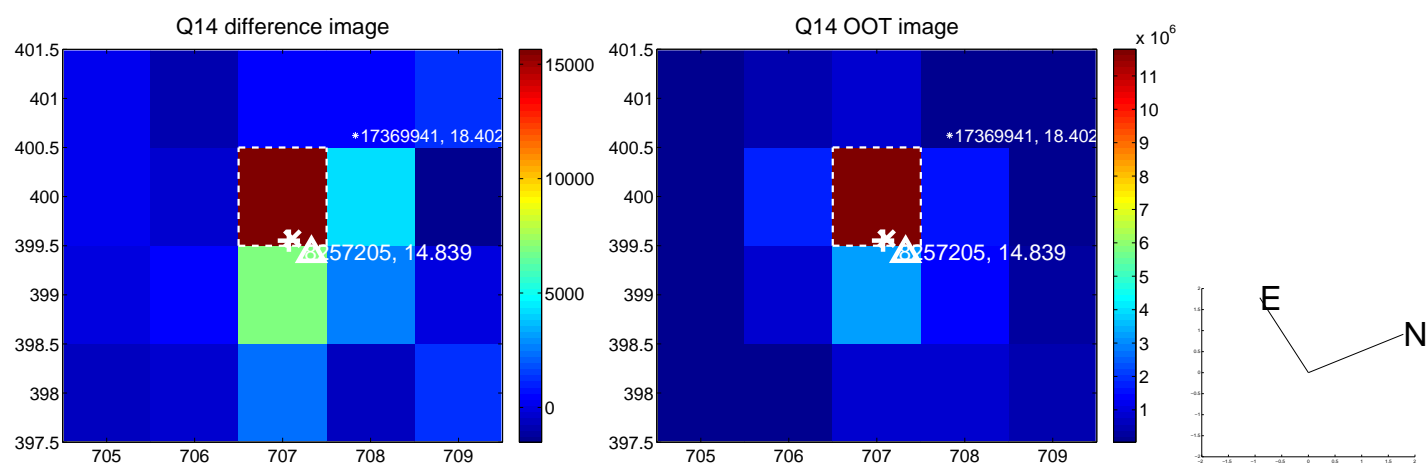
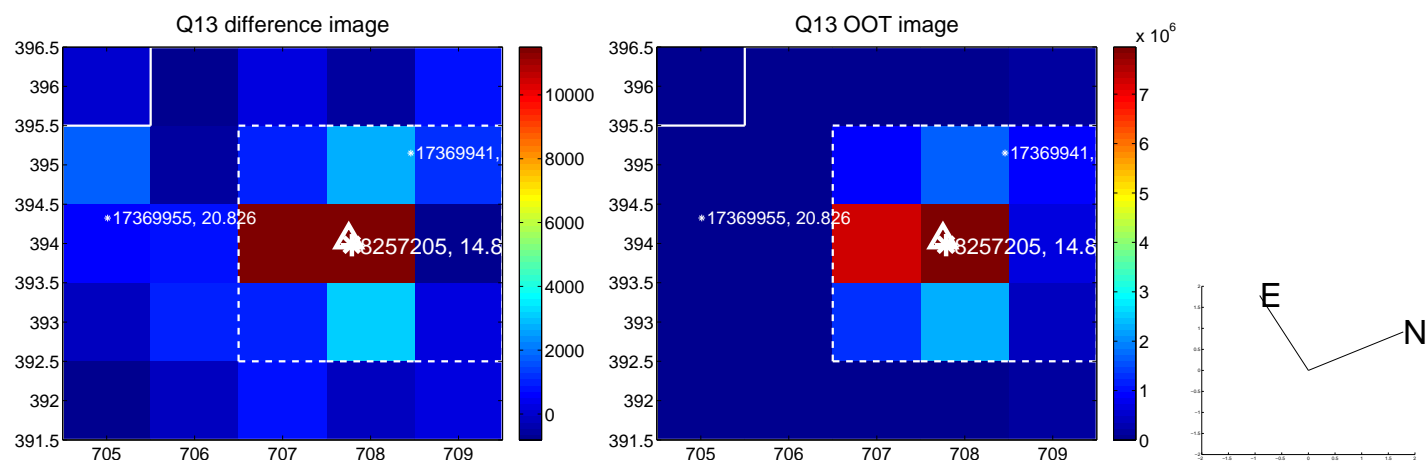
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



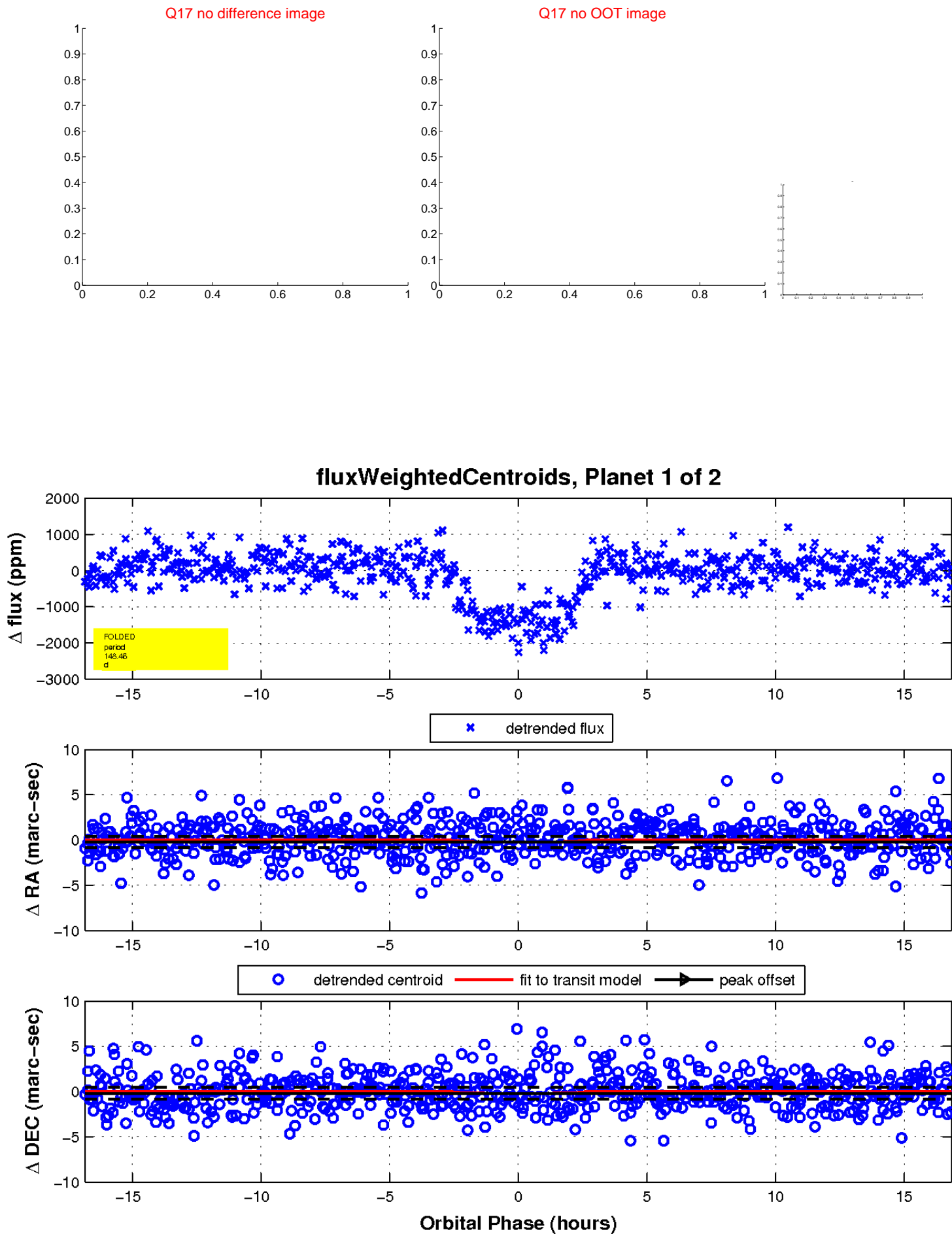
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

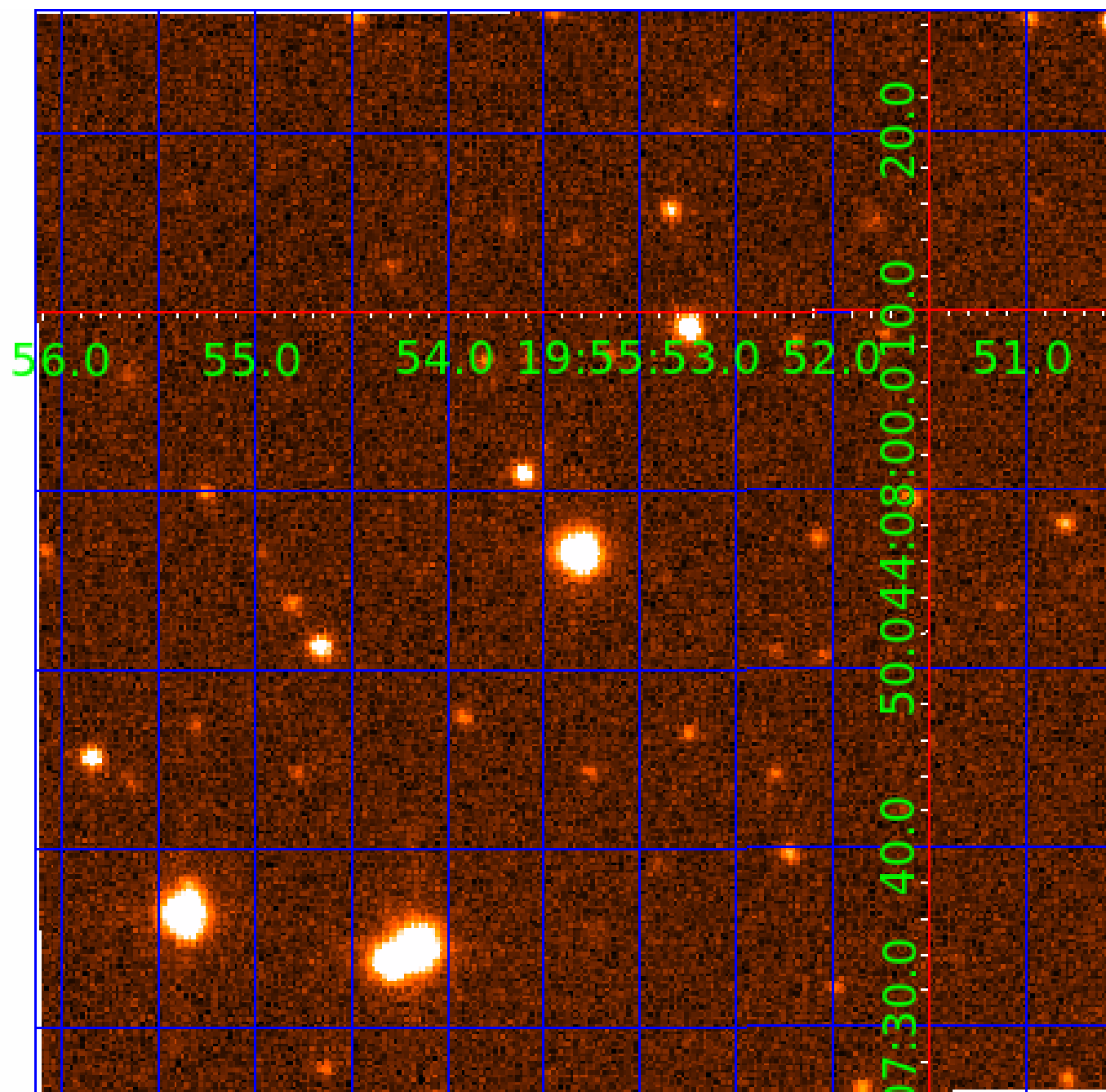


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008257205

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})
008257205-01	OBS	1986.01	148.459822	151.387346	1530.4	5.622	27.9	27.9	0.82	5159	3.67	1.56
008257205-02	OBS	1986.02	7.127658	136.006865	229.9	2.668	13.5	15.0	0.82	5159	1.45	89.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008257205-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
008257205-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

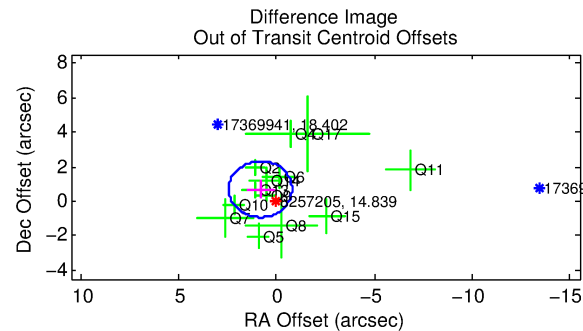
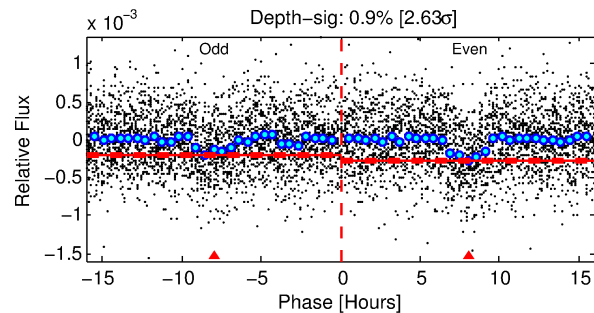
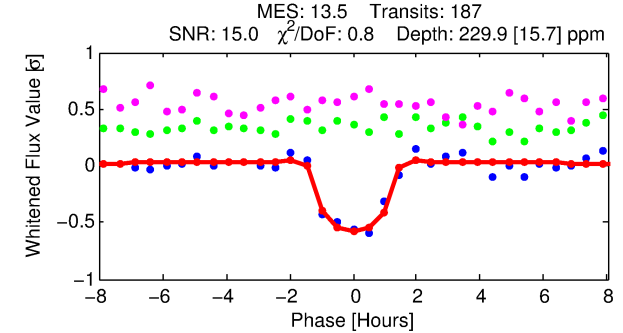
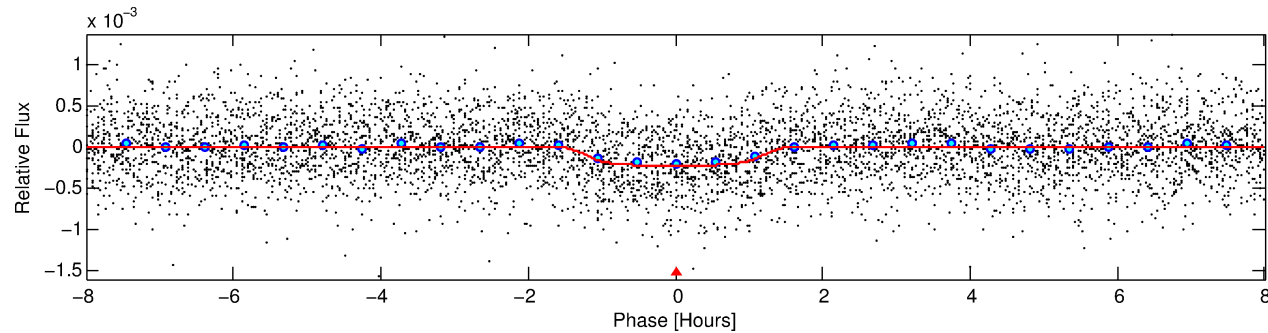
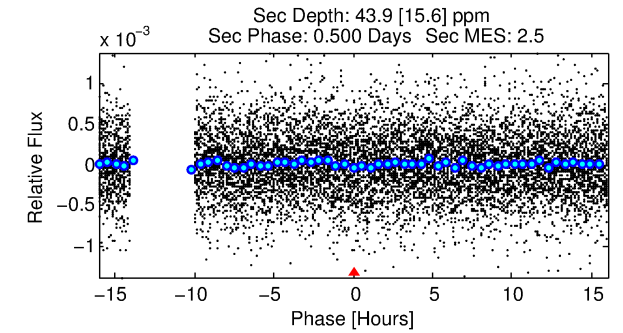
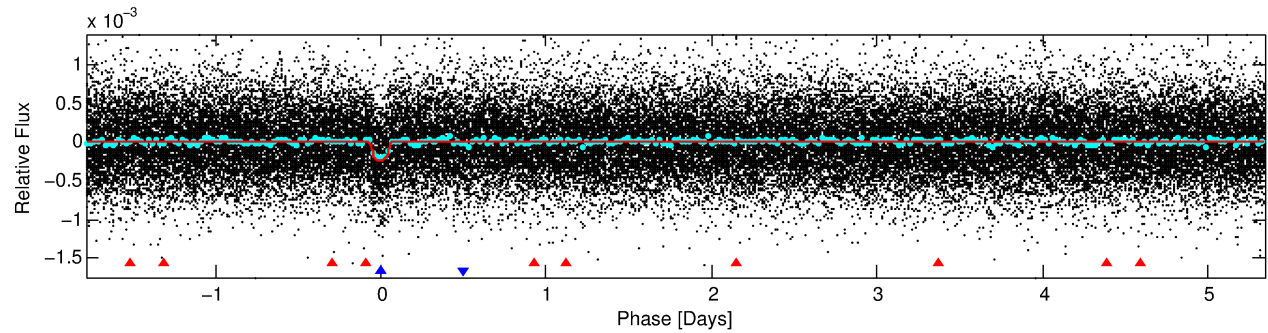
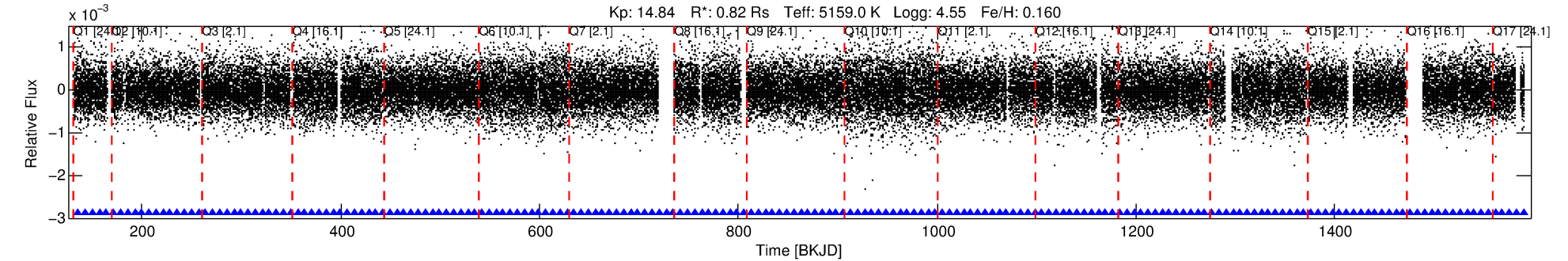
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008257205-02

No Significant Match Found

DV One-Page Summary

KIC: 8257205 Candidate: 2 of 2 Period: 7.128 d
KOI: K01986.02 Corr: 0.958



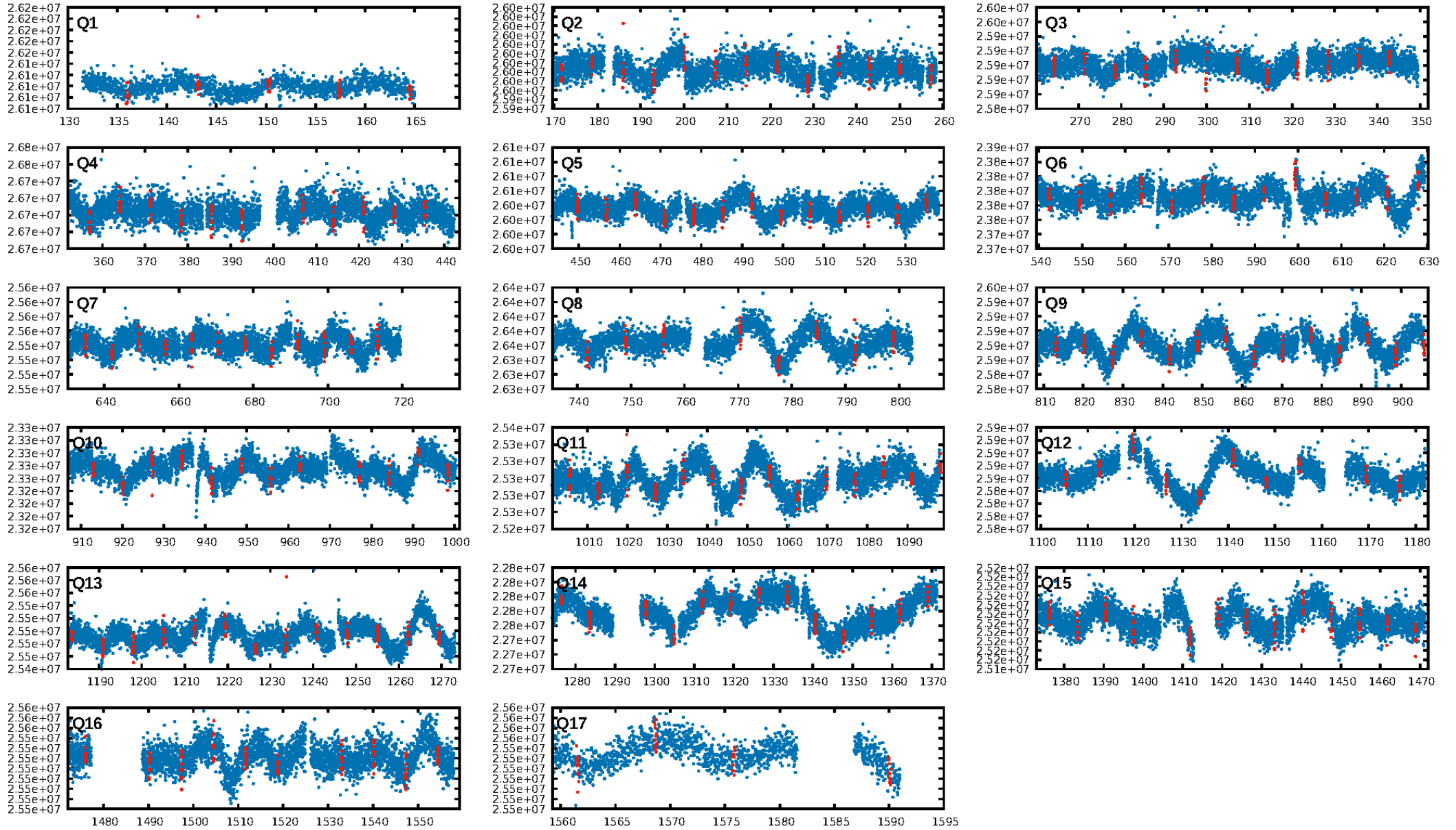
DV Fit Results:

Period = 7.12766 [0.00003] d
Epoch = 136.0069 [0.0035] BKJD
Rp/R* = 0.0162 [0.0105]
a/R* = 11.22 [28.09]
b = 0.86 [0.81]
Seff = 89.42 [11.09]
Teff = 784 [24] K
Rp = 1.45 [0.95] Re
a = 0.0692 [0.0046] AU
Ag = 55.07 [74.63] [0.72σ]
Teffp = 3303 [1117] K [2.25σ]

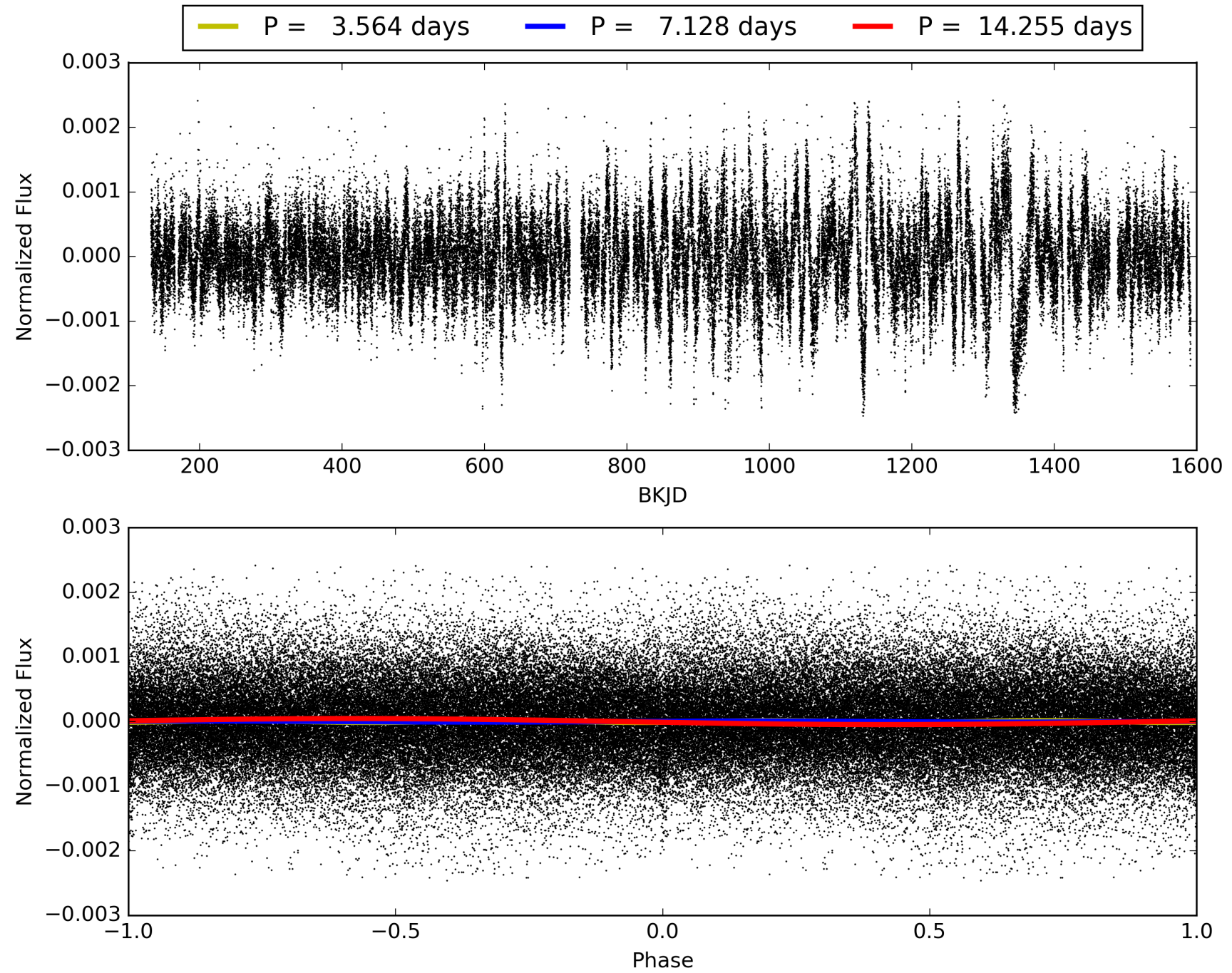
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [545.09σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.93e-40
RollingBand-fgt: 1.00 [178/178]
GhostDiagnostic-chr: 1.565
Centroid-sig: 1.2%
Centroid-so: 1.125 arcsec [1.46σ]
OotOffset-rm: 1.079 arcsec [2.00σ]
KicOffset-rm: 1.003 arcsec [2.03σ]
OotOffset-st: 4/3/2/4 [13]
KicOffset-st: 4/3/2/4 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008257205-02, PDC Light Curves

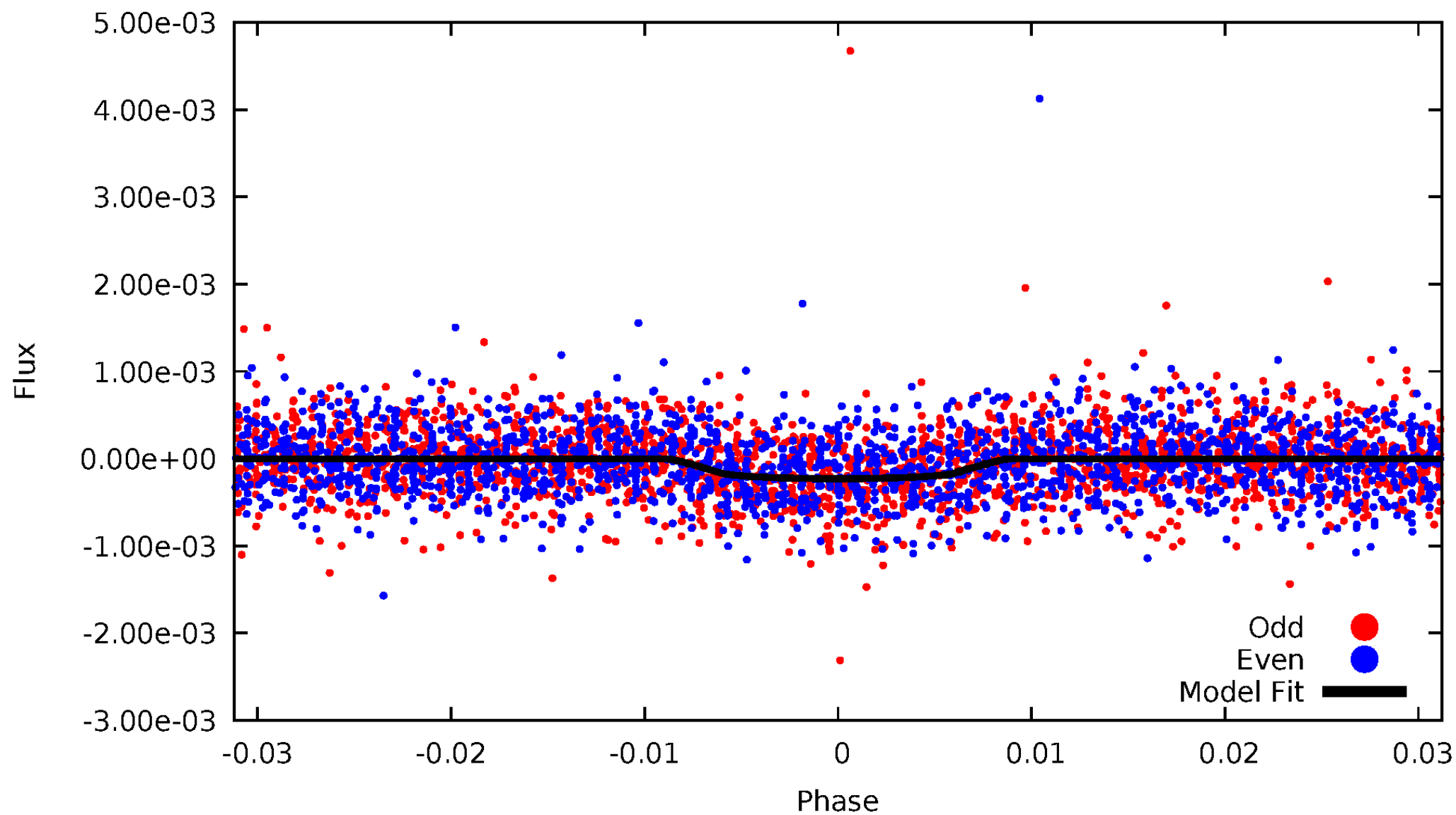


TCE 008257205-02



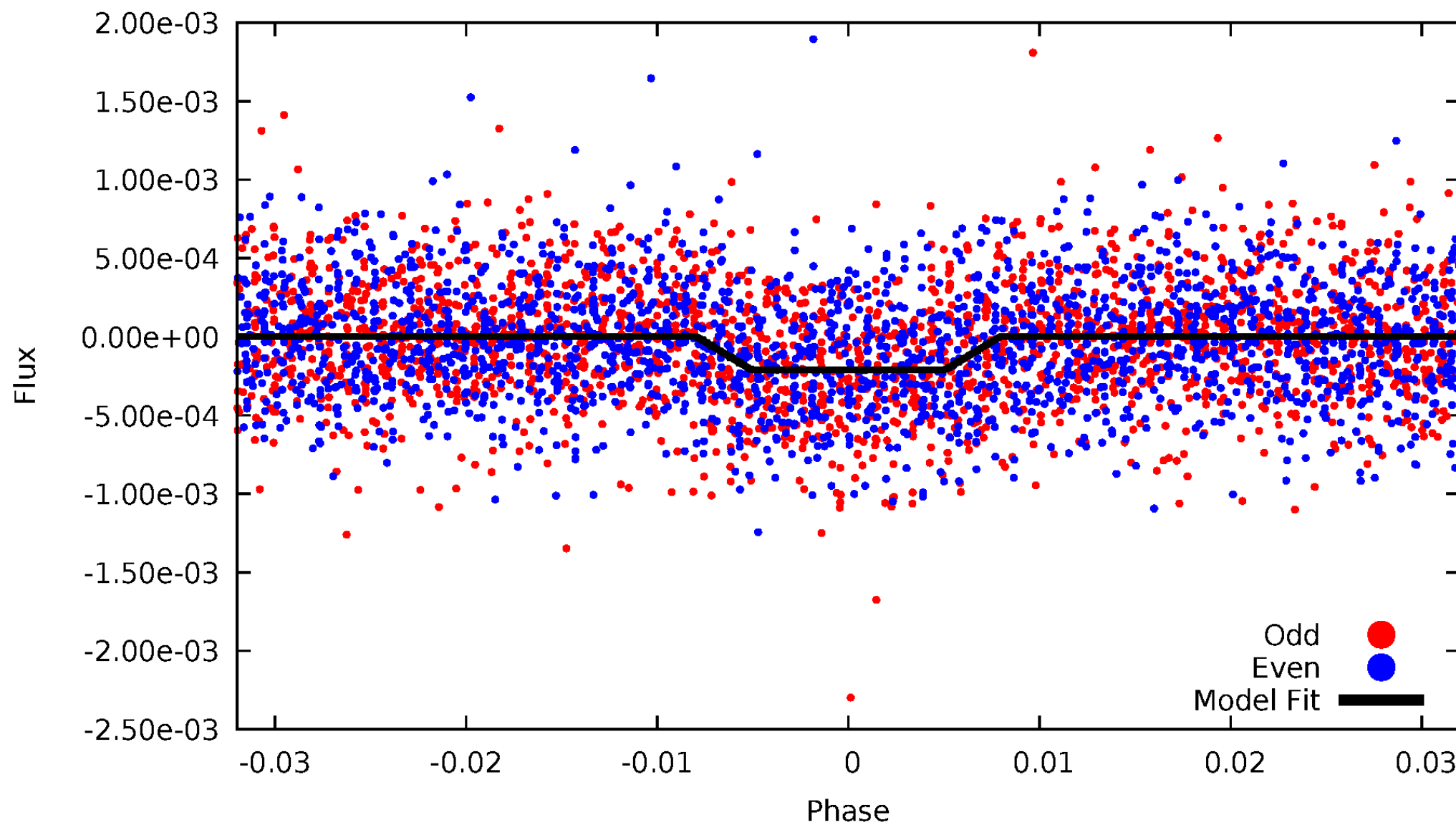
DV Odd/Even

TCE 008257205-02



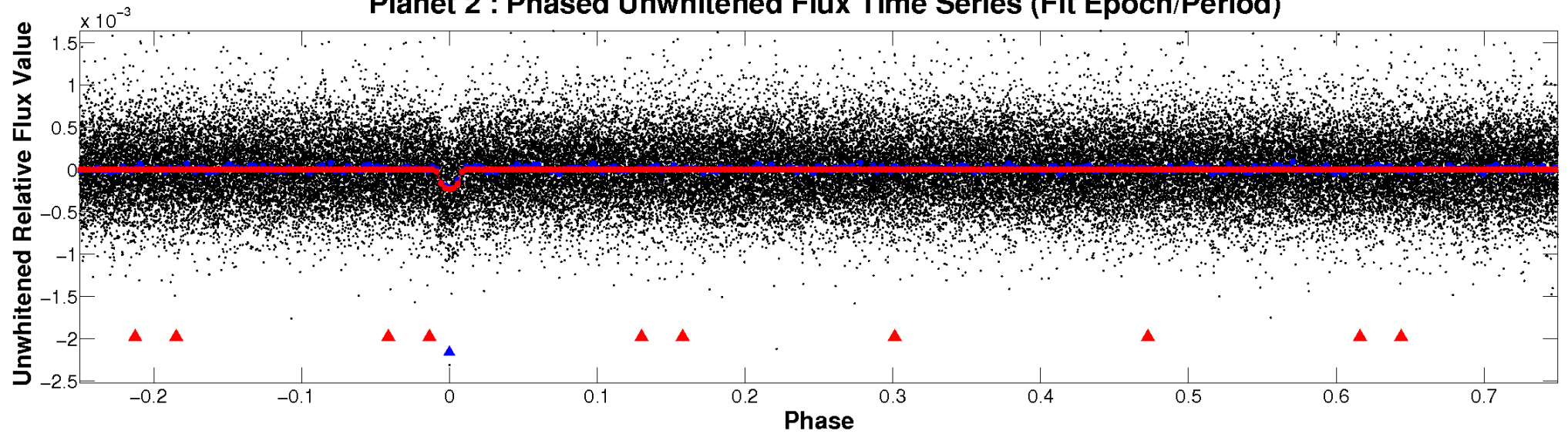
ALT Odd/Even

TCE 008257205-02

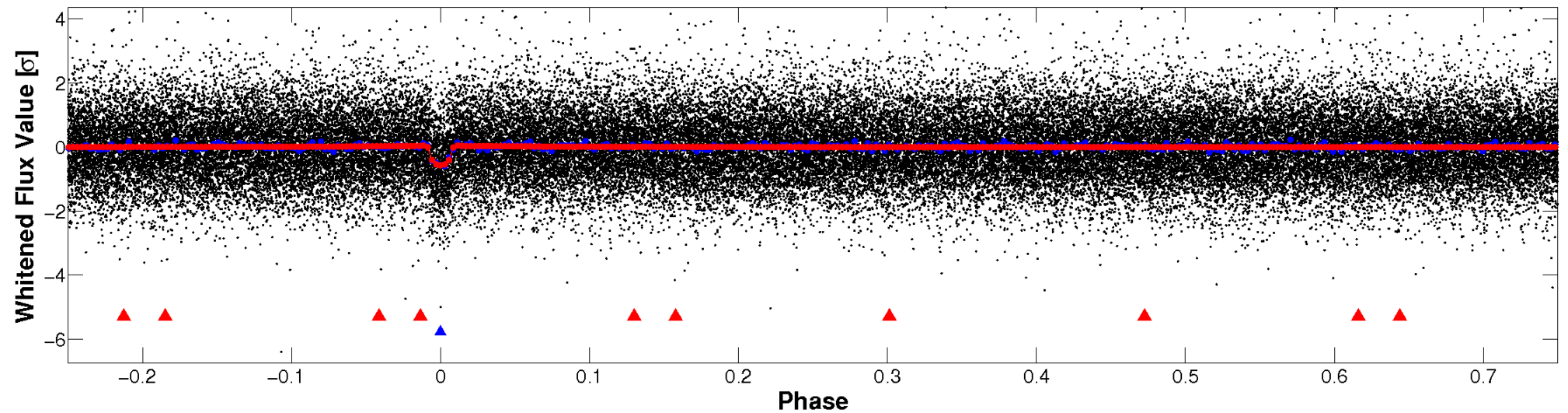


Non-Whitened Vs. Whitened Light Curve

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

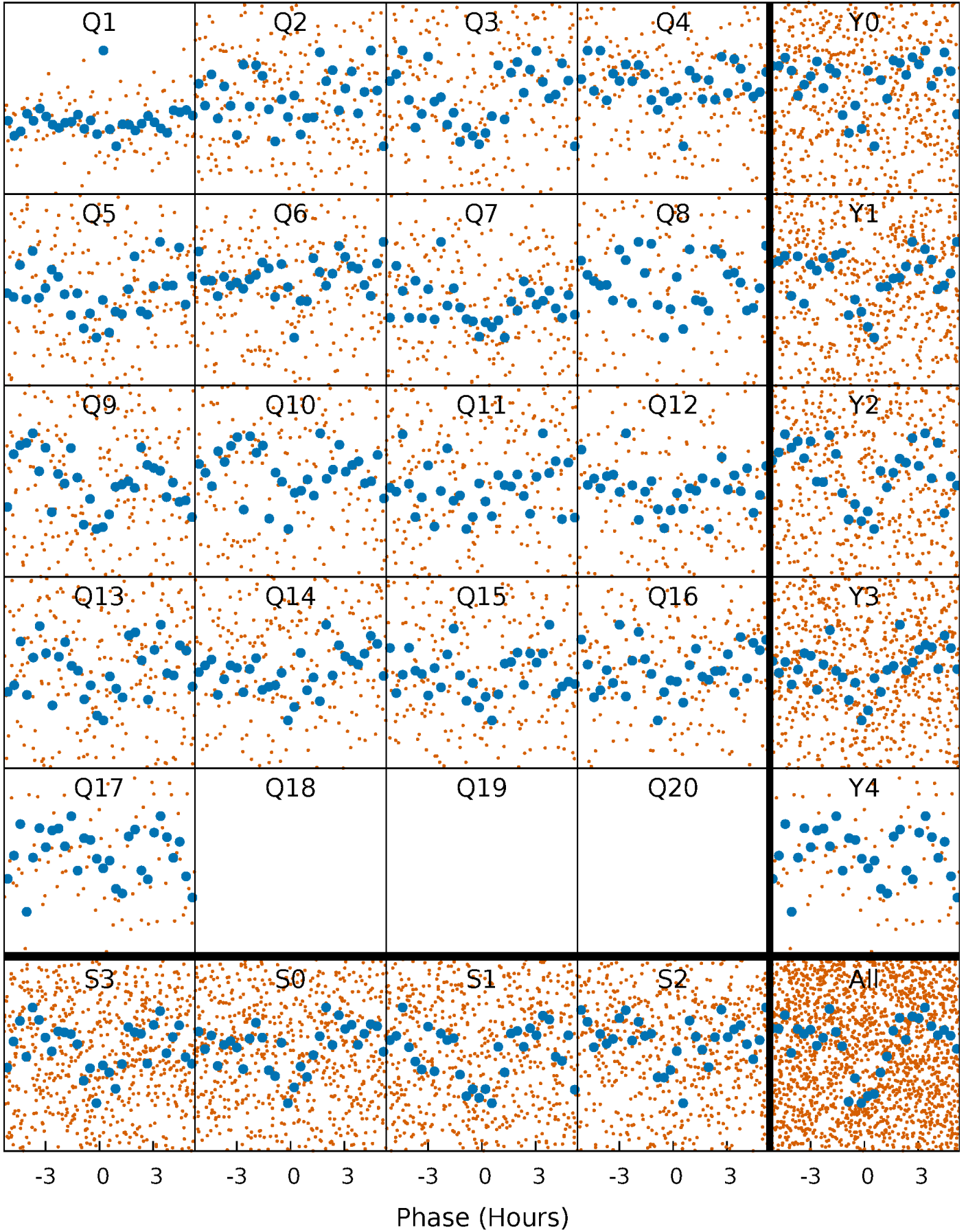


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



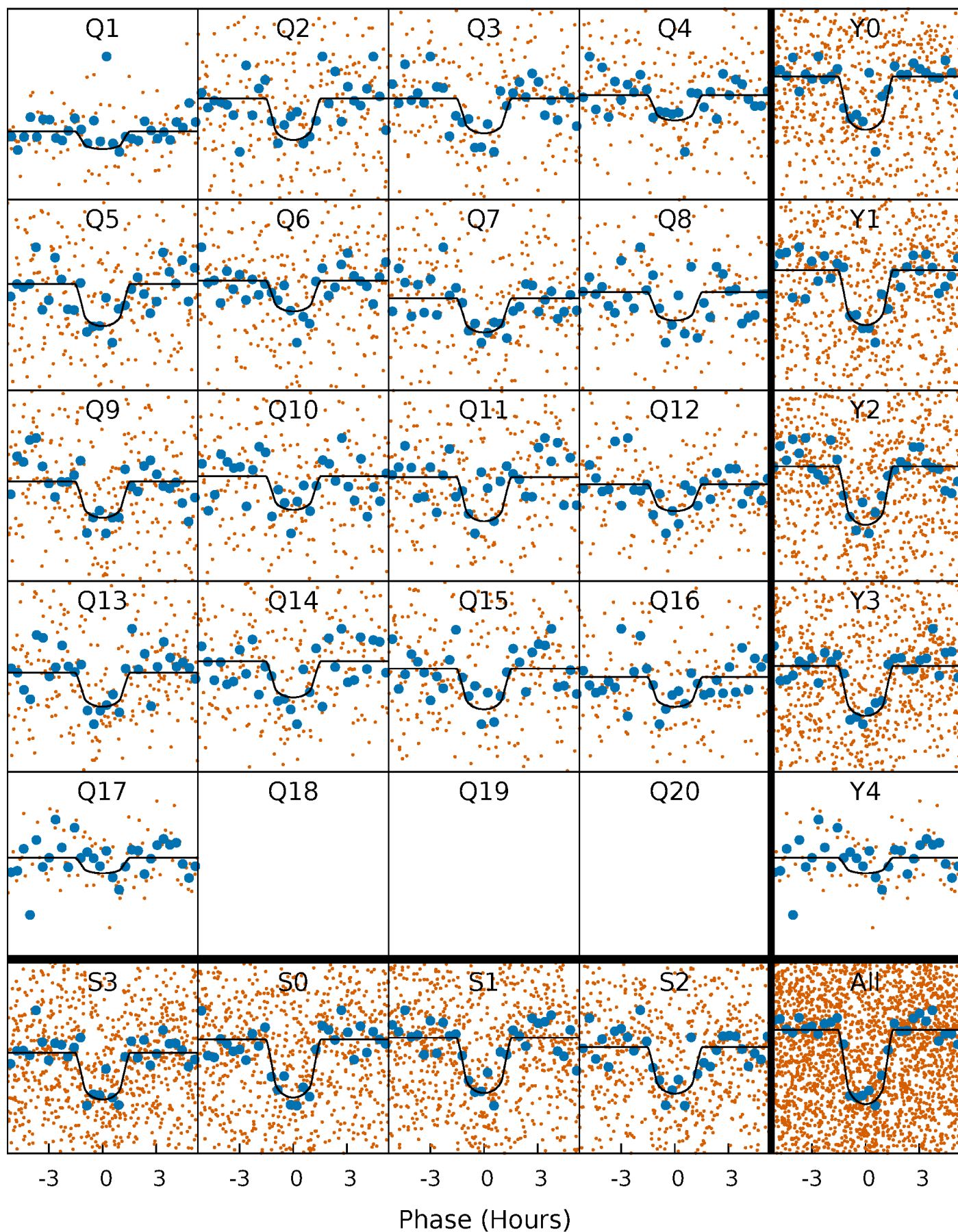
PDC Quarter-Phased Transit Curves

TCE 008257205-02 P= 7.127658 Days $T_0=136.006865$ (BKJD)



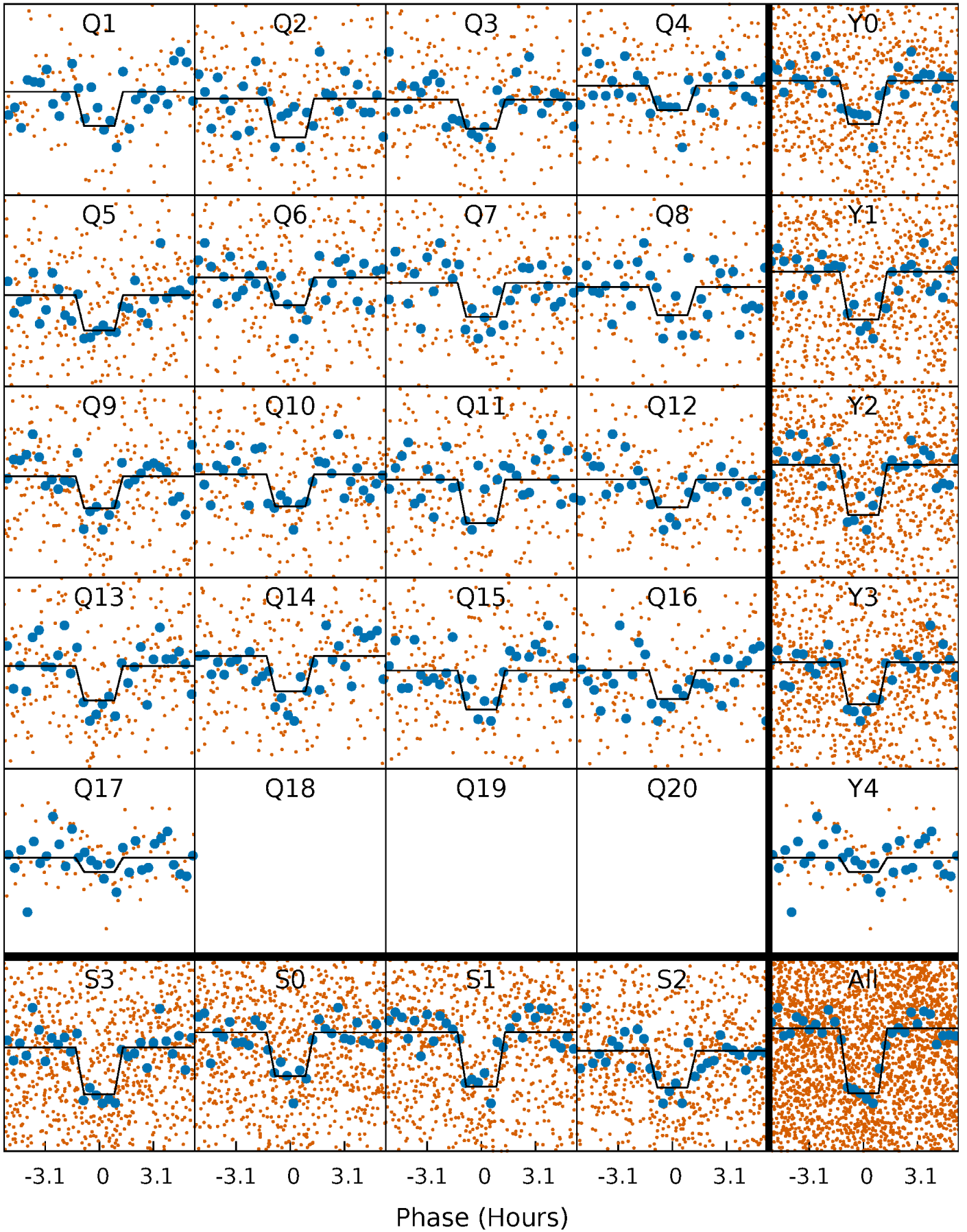
DV Quarter-Phased Transit Curves

TCE 008257205-02 P= 7.127658 Days $T_0=136.006865$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

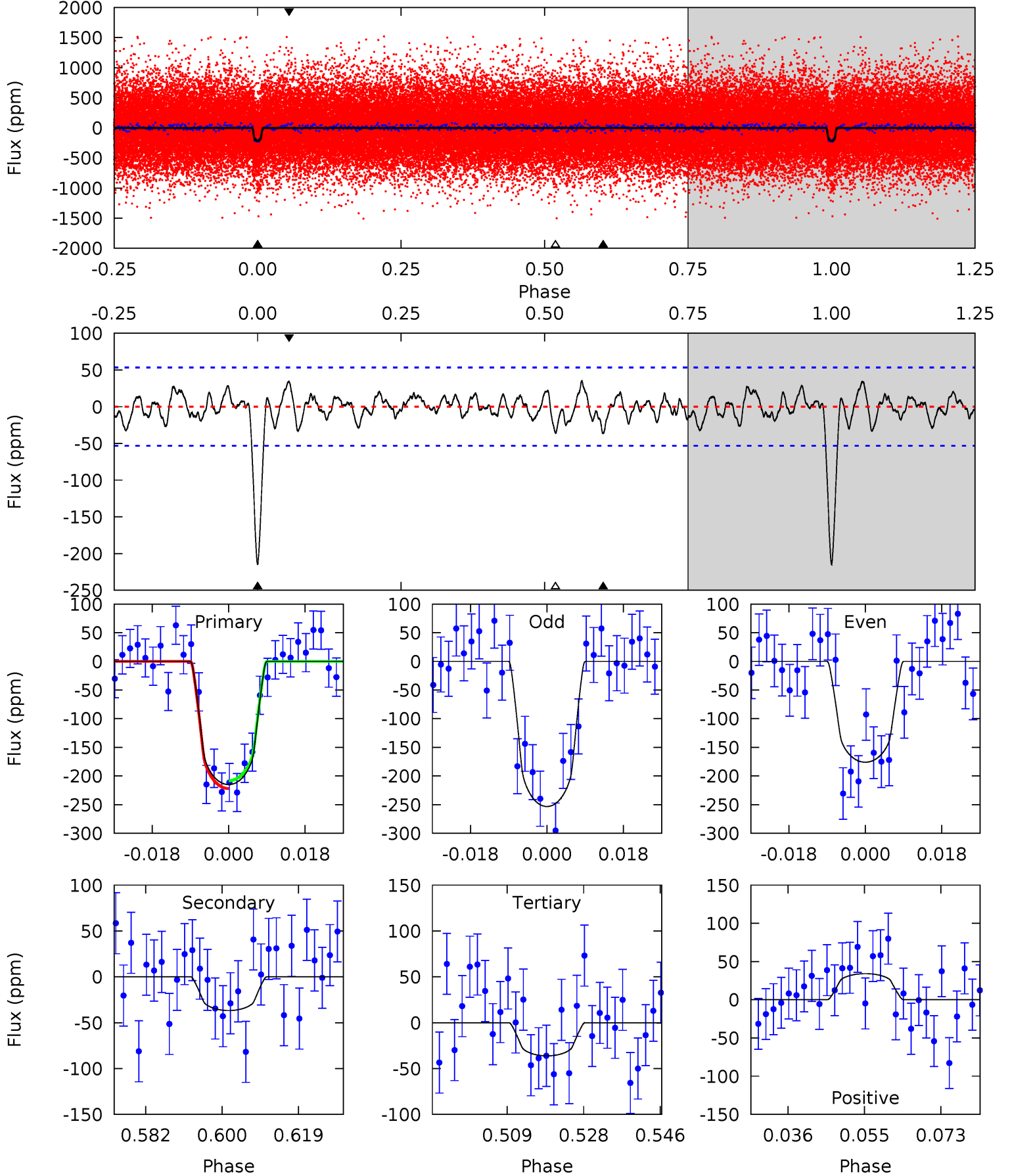
TCE 008257205-02 P= 7.127657 Days $T_0=136.006997$ (BKJD)



DV Model-Shift Uniqueness Test

008257205-02, P = 7.127658 Days, E = 128.879207 Days

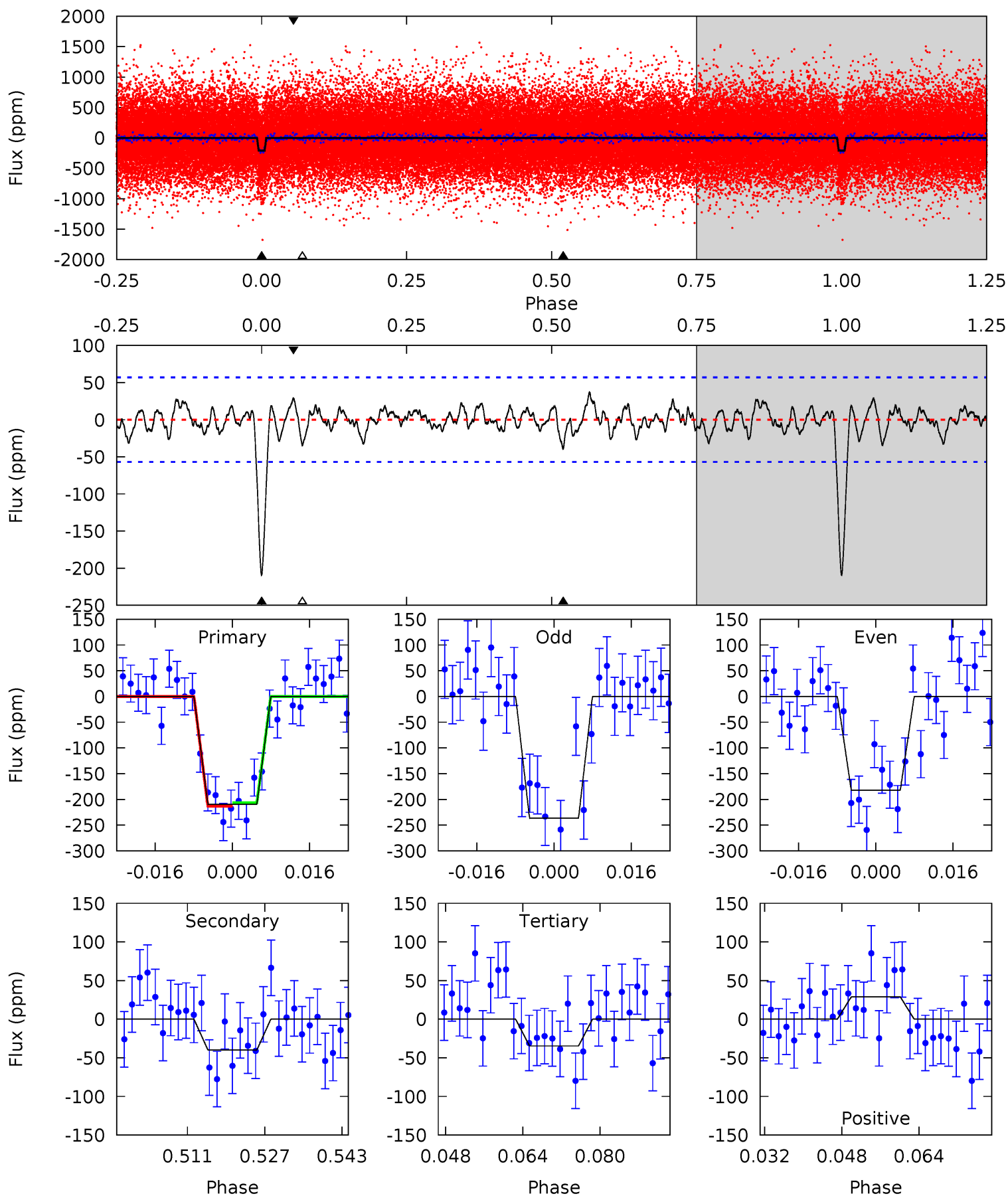
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	3.38	3.33	3.14	4.91	2.36	1.22	16.5	16.7	0.05	0.24	3.57	0.98	0.14	0.63



Alt Model-Shift Uniqueness Test

008257205-02, P = 7.127657 Days, E = 128.879340 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	3.45	3.00	2.51	4.94	2.41	1.08	15.2	15.7	0.45	0.94	2.35	1.01	0.15	0.30



Stellar Parameters For KIC 008257205

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5159^{+82}_{-82}	$4.548^{+0.032}_{-0.063}$	$0.160^{+0.150}_{-0.150}$	$0.821^{+0.055}_{-0.039}$	$0.868^{+0.035}_{-0.049}$	$2.208^{+0.264}_{-0.418}$
	+2%/-2%	+1%/-1%	+94%/-94%	+7%/-5%	+4%/-6%	+12%/-19%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 008257205-02 / KOI 1986.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-37 ± 11	$1.49^{+0.95}_{-0.83}$	1101^{+24}_{-23}	3520^{+1147}_{-507}	41^{+164}_{-26}
Alt.	-40 ± 12	$1.38^{+0.86}_{-0.79}$	1101^{+26}_{-25}	3673^{+1443}_{-567}	54^{+256}_{-36}

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

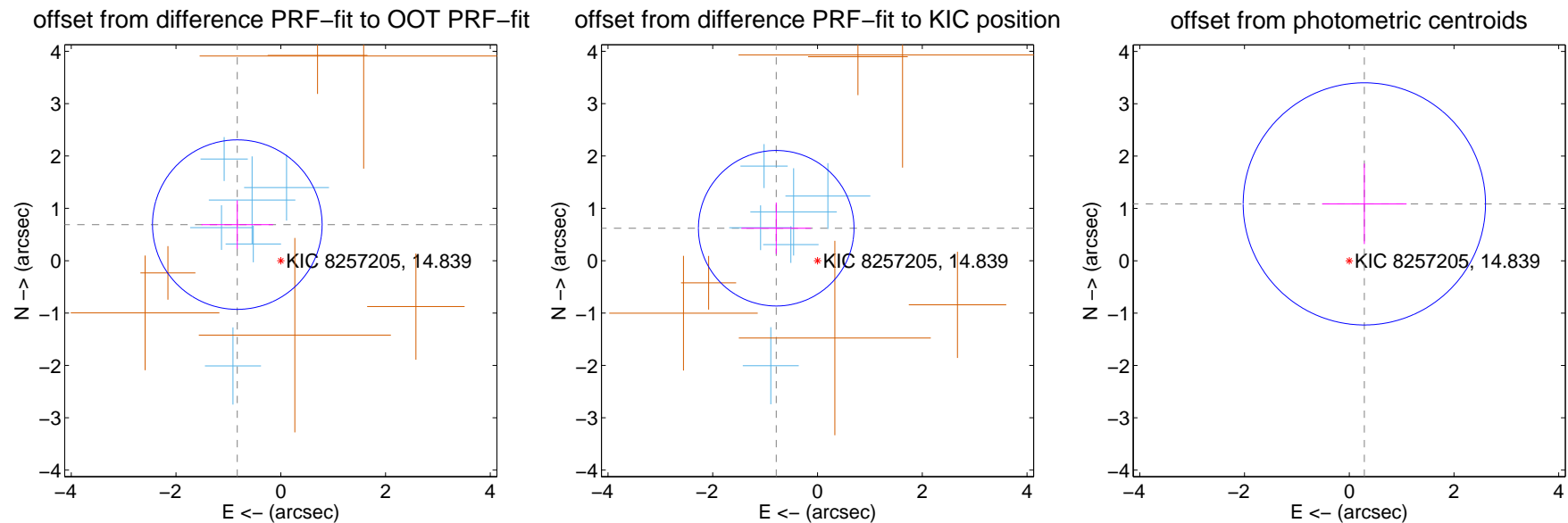
DV Centroid Data

Supplemental centroid analysis for 008257205-02. Kepler magnitude: 14.84. Transit SNR 14.99

There are 6 quarters with good PRF difference image offsets

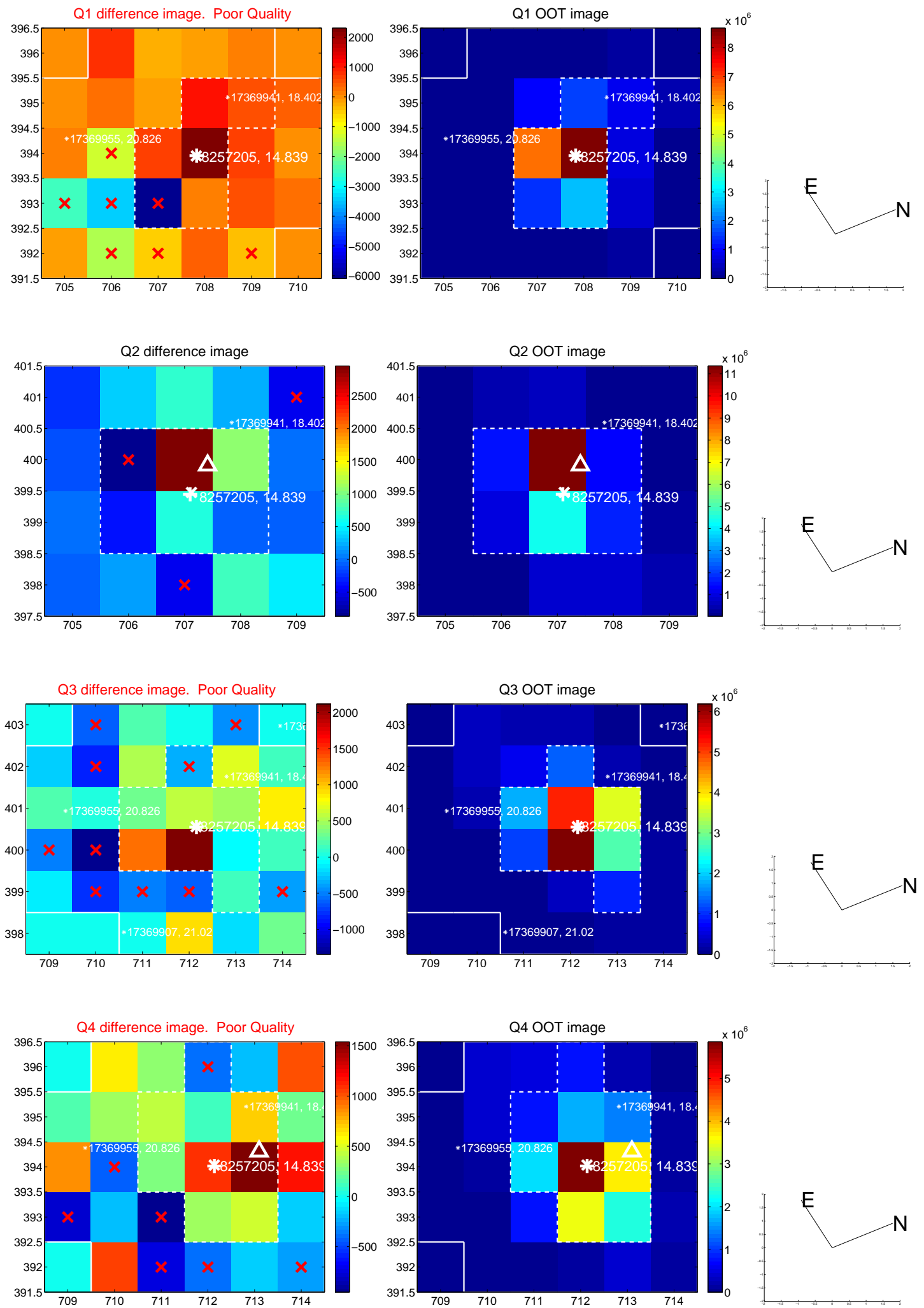
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.079 ± 0.540	2.00	0.830 ± 0.684	0.689 ± 0.464
PRF-fit source offset from KIC position	1.003 ± 0.495	2.03	0.788 ± 0.666	0.620 ± 0.493
photometric centroid source offset	1.12 ± 0.77	1.46	-0.29 ± 0.81	1.09 ± 0.77

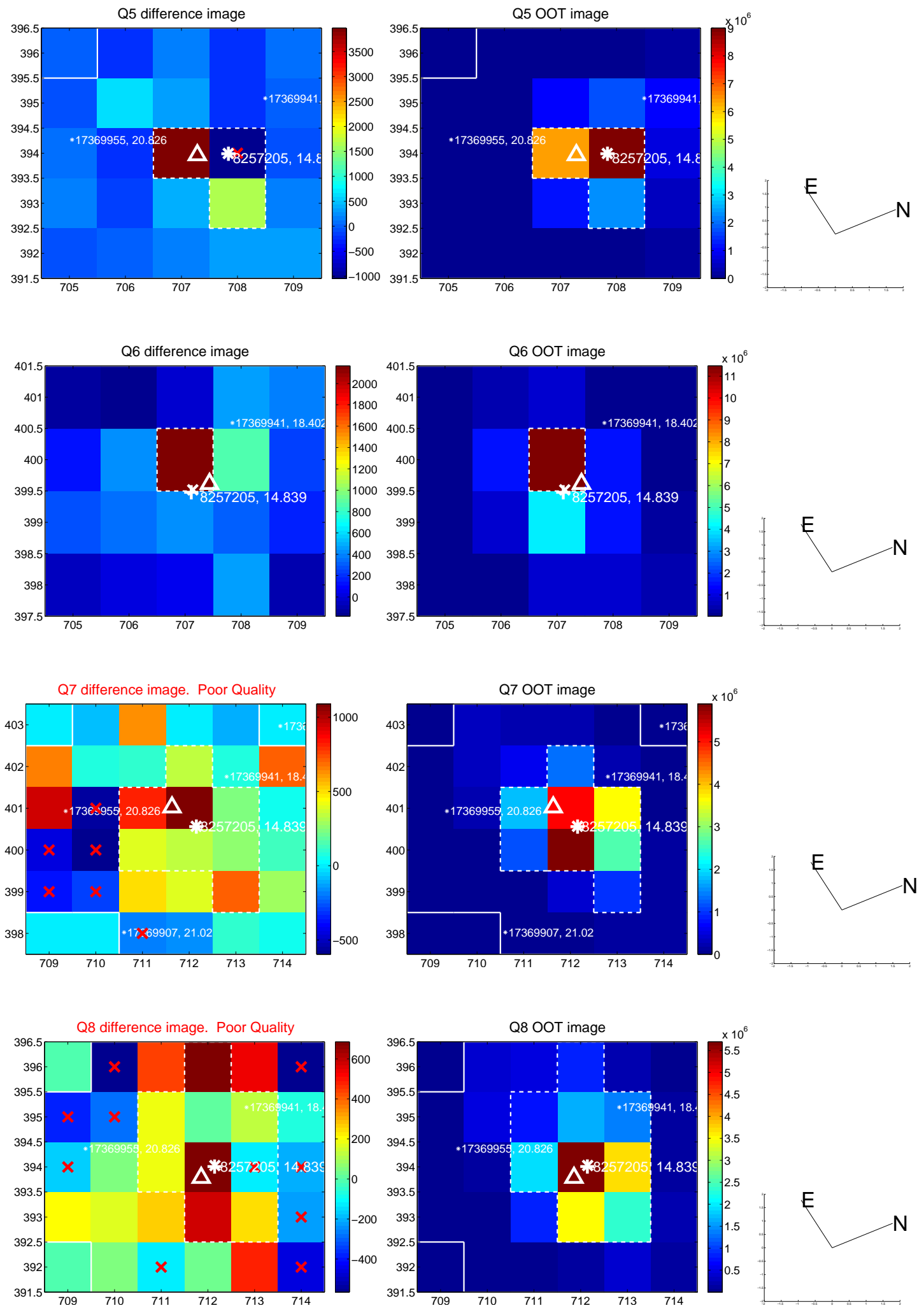


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

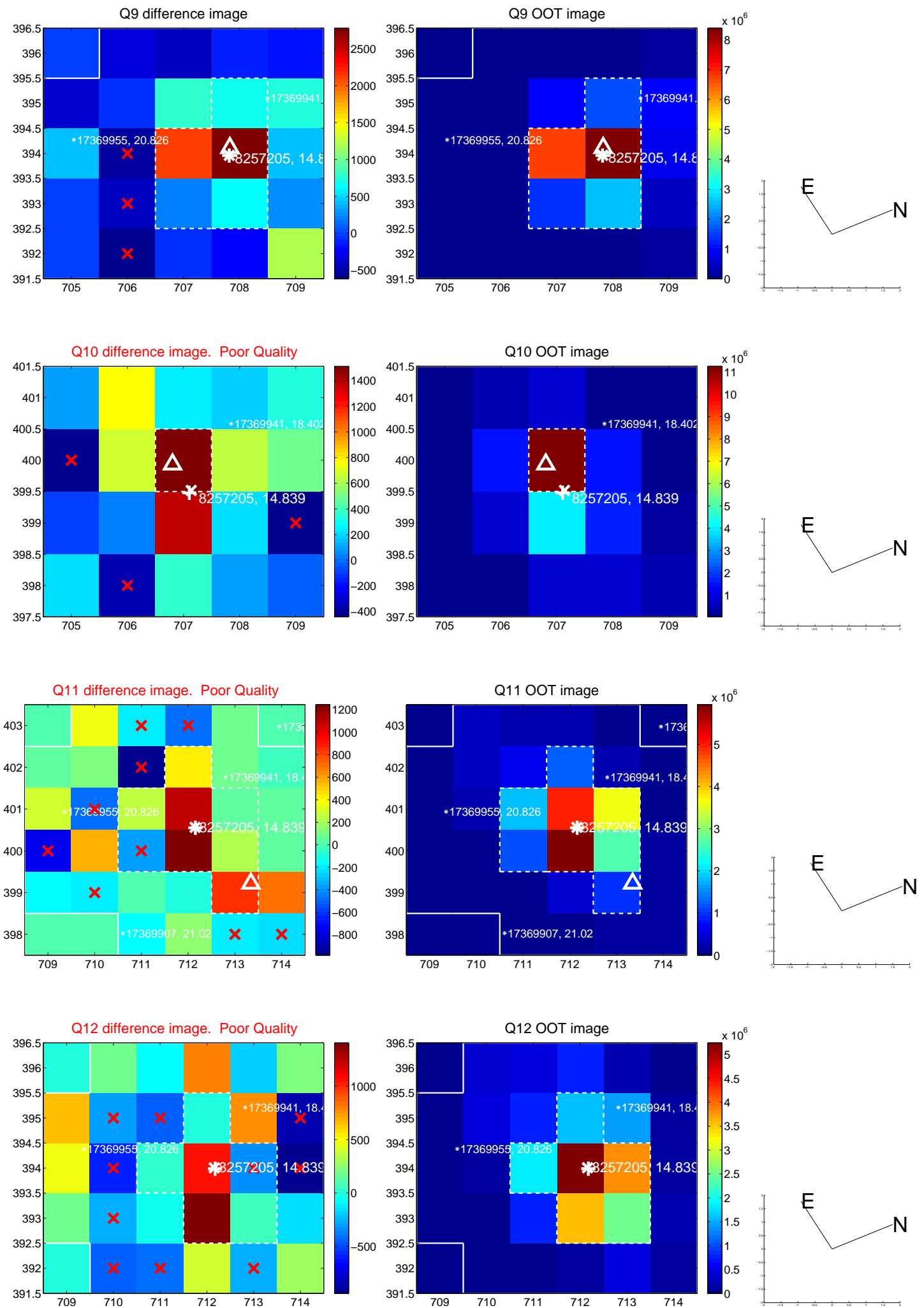
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



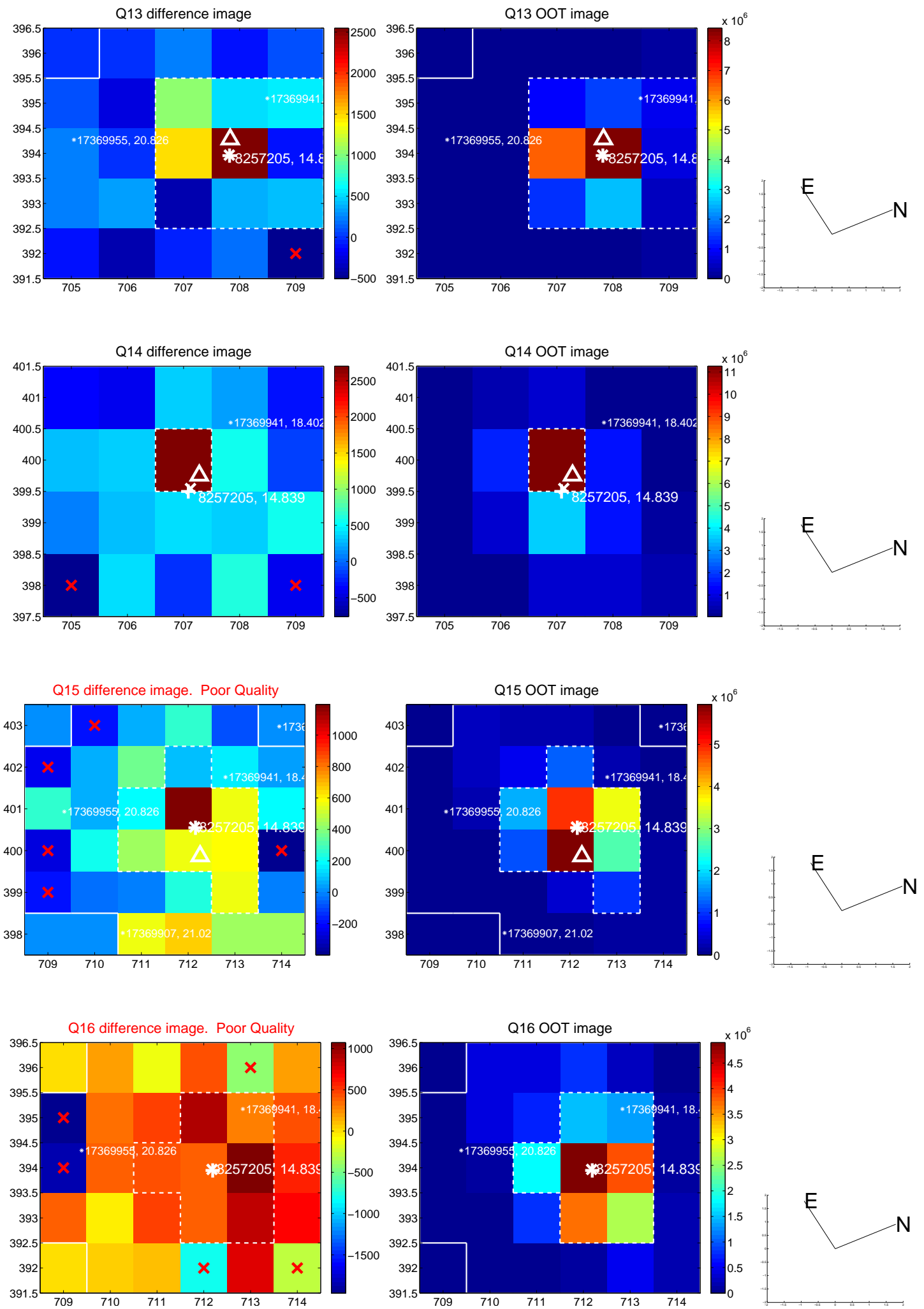
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



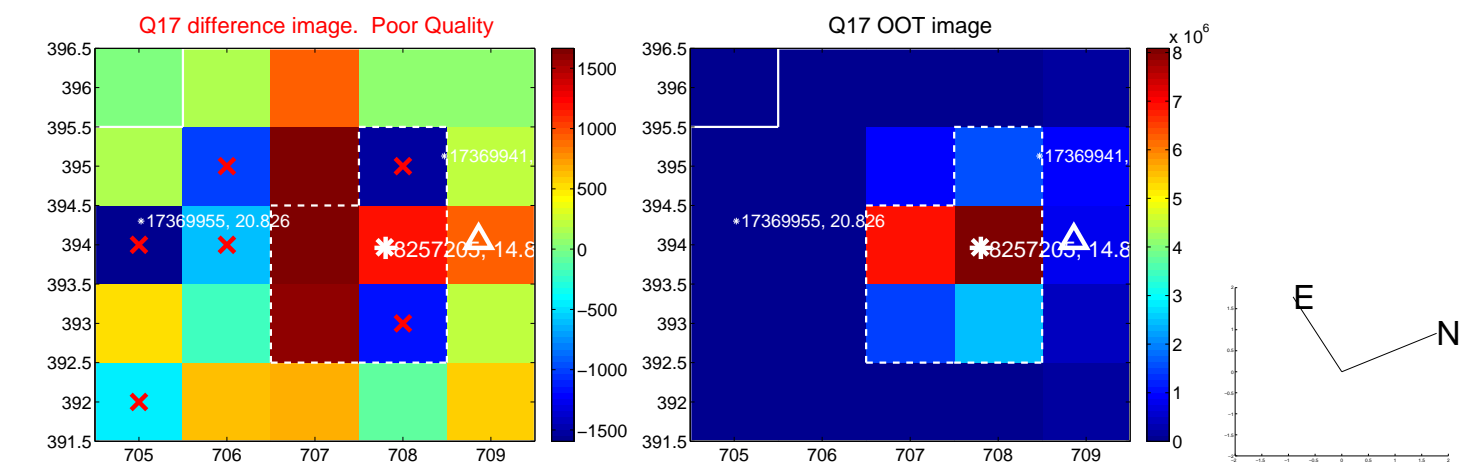
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



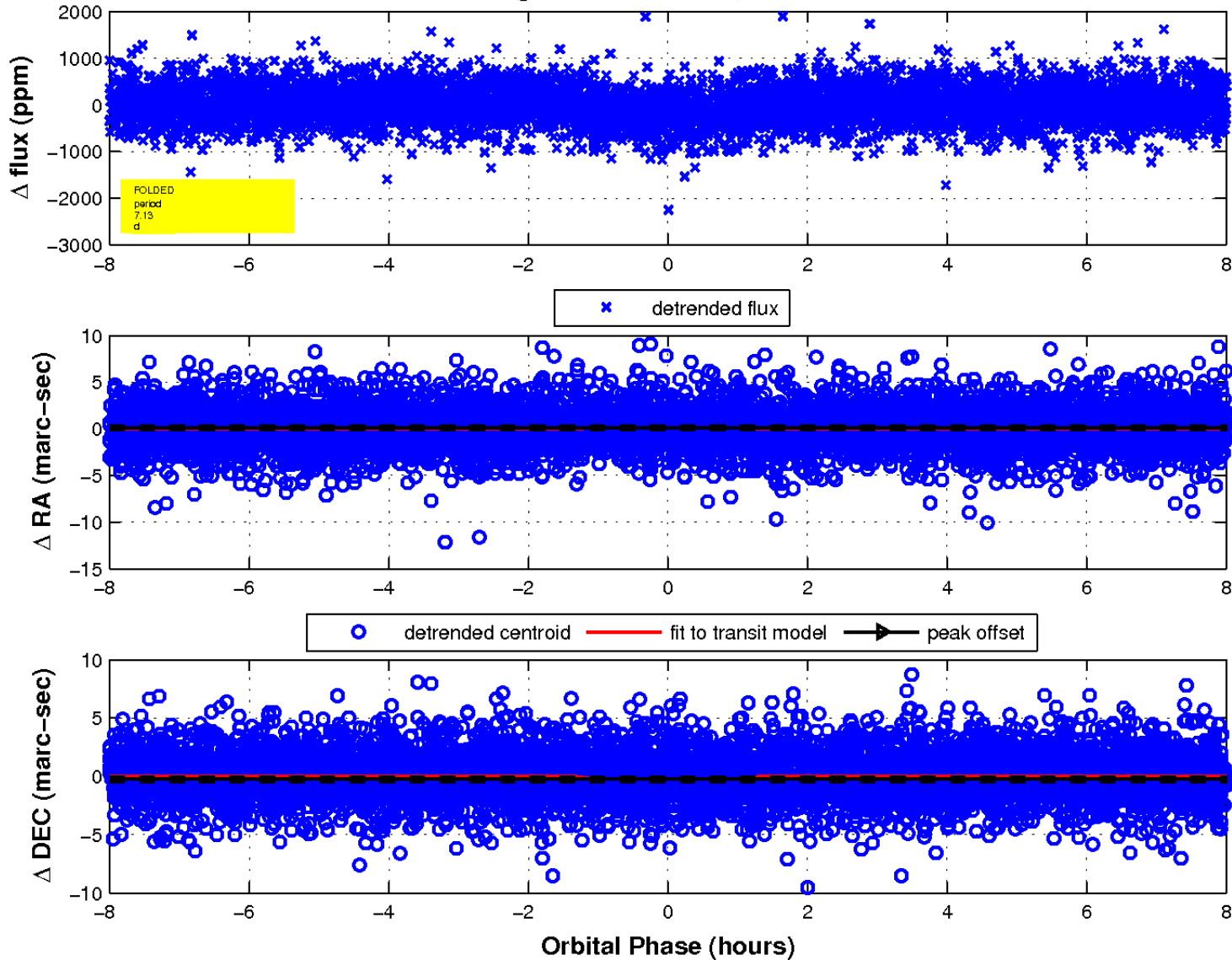
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

