

KIC 012302530

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})
012302530-01	OBS	0438.01	5.931192	133.279237	1000.2	2.557	79.9	85.4	0.54	3984	2.04	23.57
012302530-02	OBS	0438.02	52.661496	183.521605	1040.4	3.205	30.6	32.7	0.54	3984	1.94	1.28
012302530-03	OBS	No	552.124919	274.158127	1000.5	9.844	16.6	15.1	0.54	3984	1.92	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012302530-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012302530-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012302530-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

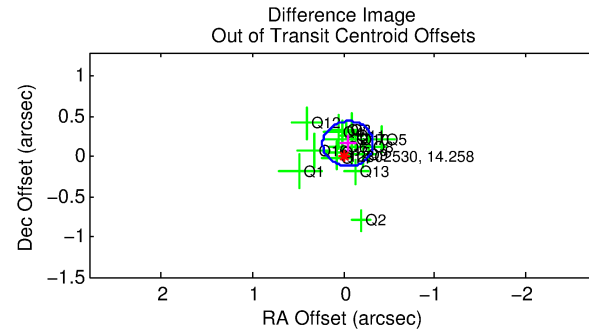
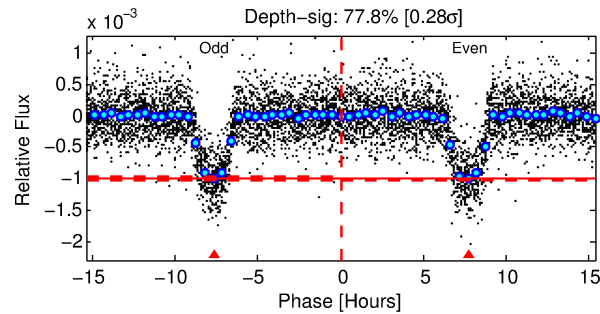
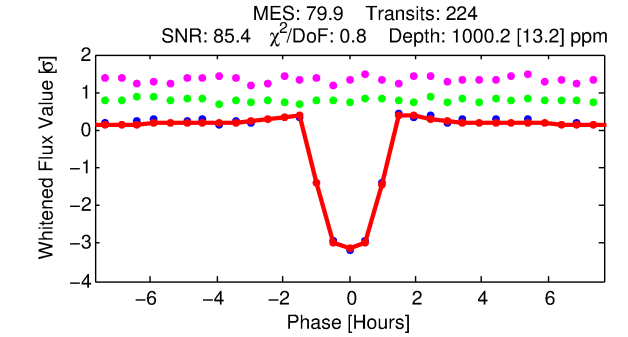
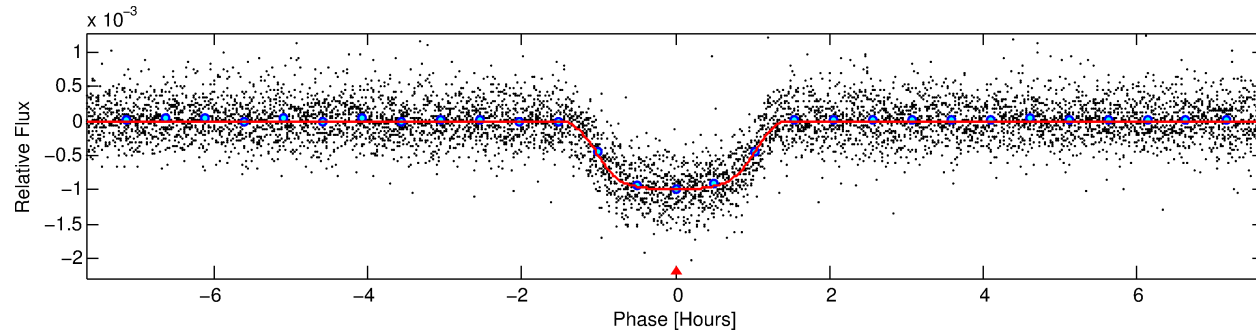
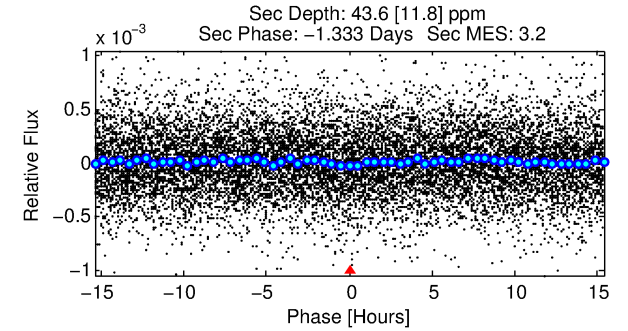
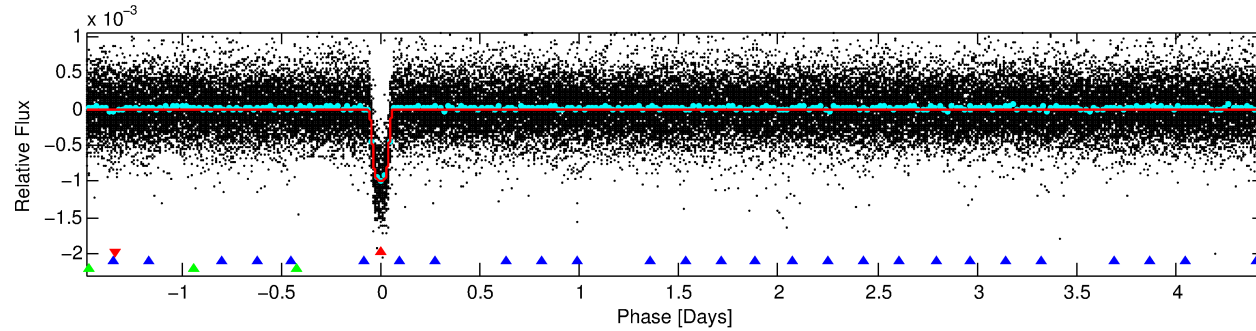
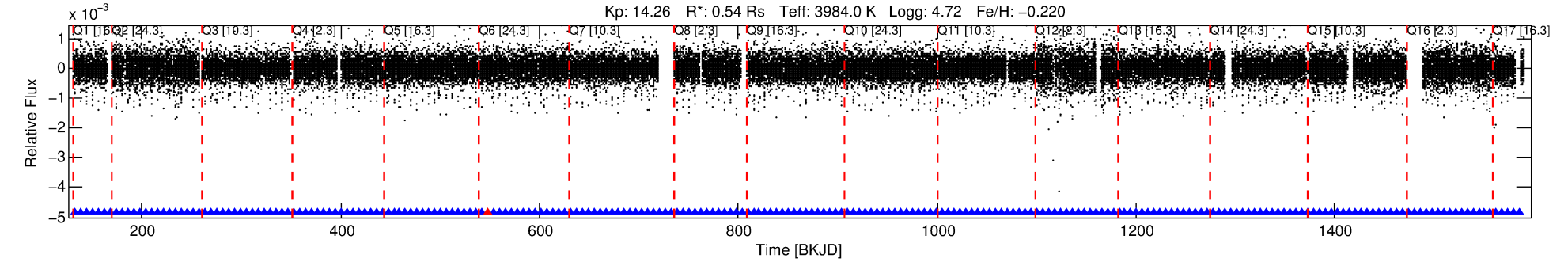
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012302530-01

No Significant Match Found

DV One-Page Summary

KIC: 12302530 Candidate: 1 of 3 Period: 5.931 d
KOI: K00438.01 Name: Kepler-155b Corr: 0.965



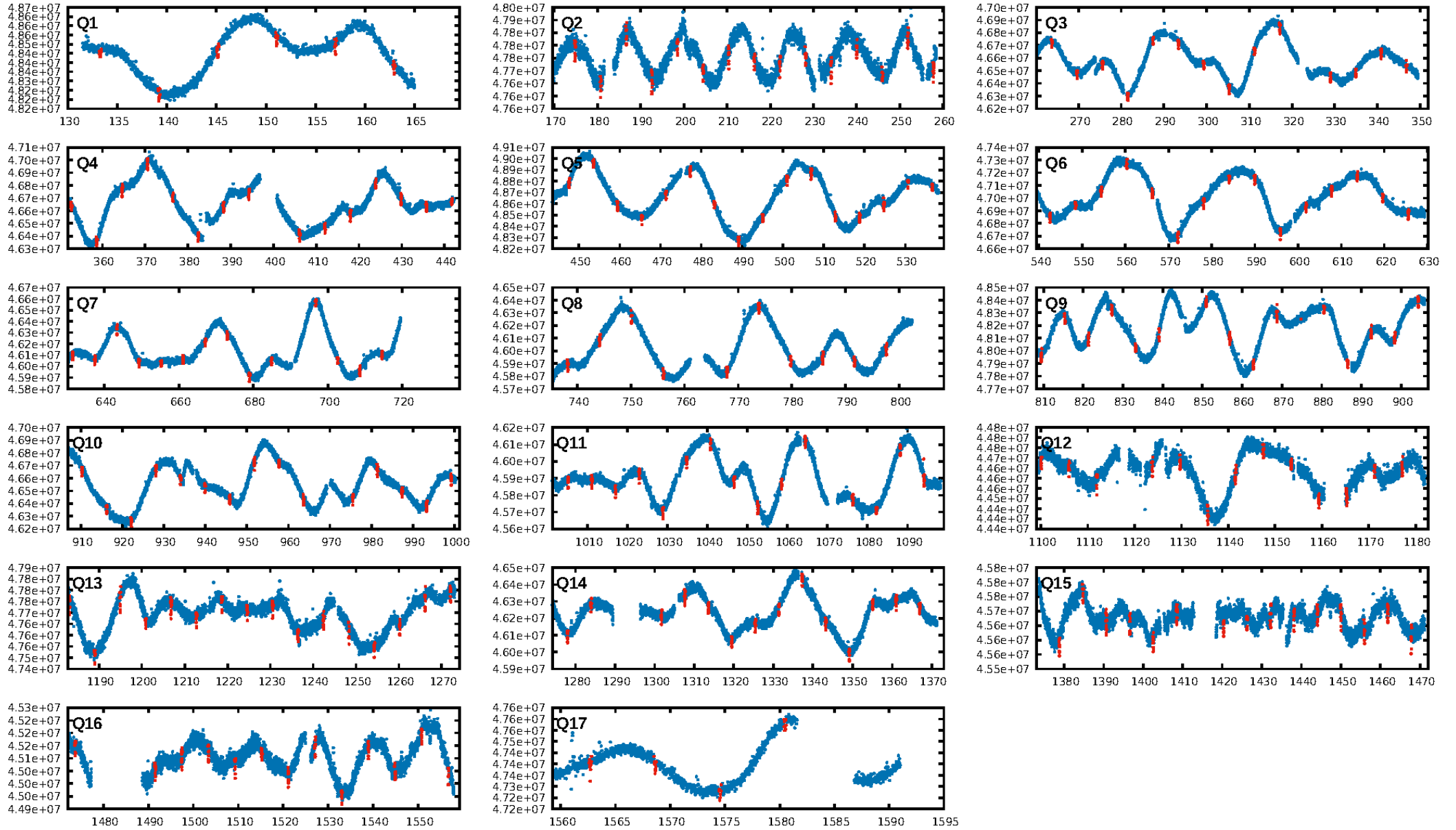
DV Fit Results:

Period = 5.93119 [0.00000] d
Epoch = 133.2792 [0.0005] BKJD
Rp/R* = 0.0348 [0.0009]
a/R* = 8.95 [0.92]
b = 0.90 [0.02]
Seff = 23.57 [2.52]
Teff = 562 [15] K
Rp = 2.04 [0.14] Re
a = 0.0527 [0.0026] AU
Ag = 15.96 [4.52] [3.31 σ]
Teffp = 1736 [126] K [9.28 σ]

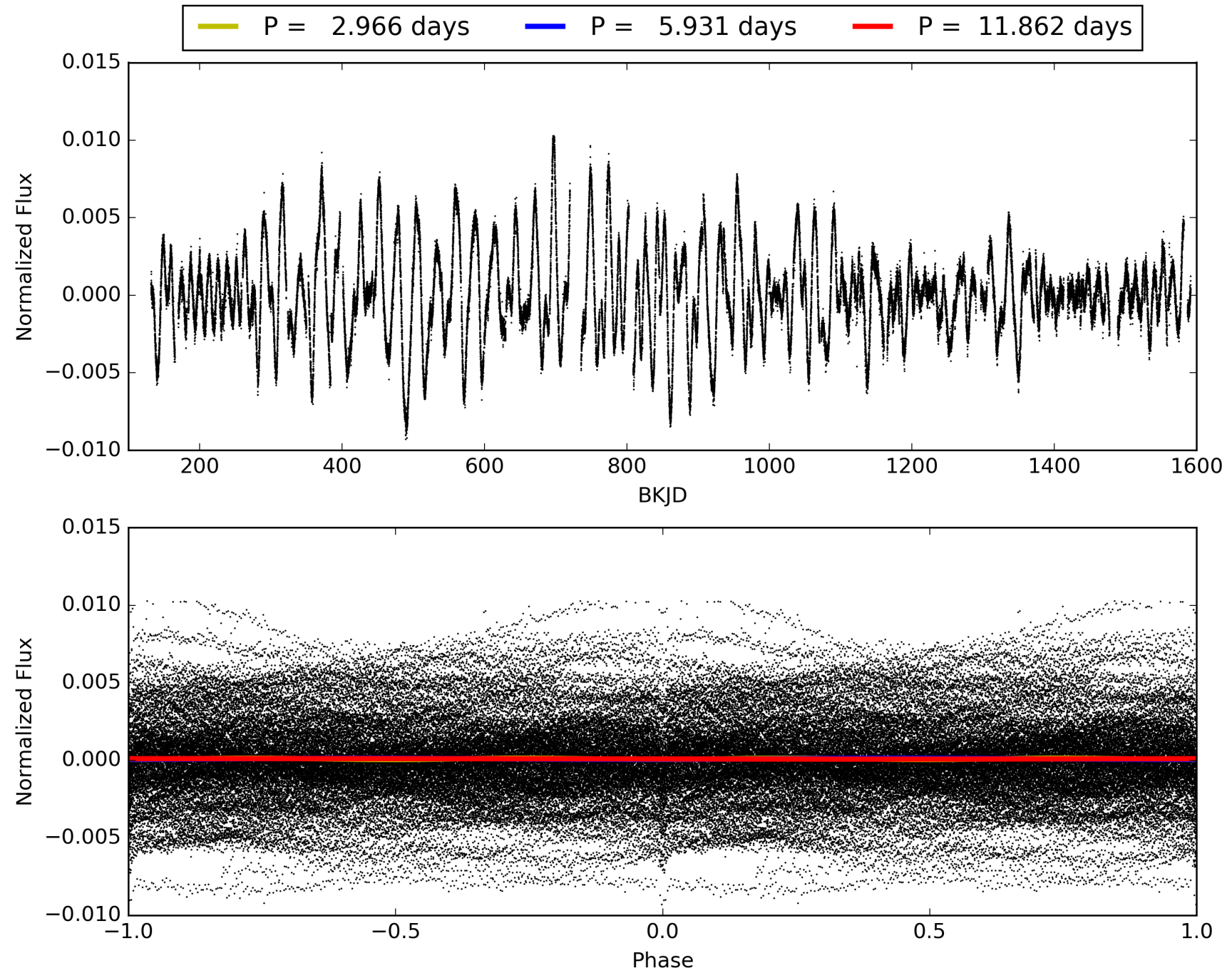
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [273.55 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [213/214]
GhostDiagnostic-chr: 3.904
Centroid-sig: 0.1%
Centroid-so: 0.691 arcsec [4.18 σ]
OotOffset-rm: 0.168 arcsec [1.81 σ]
KicOffset-rm: 0.197 arcsec [2.24 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012302530-01, PDC Light Curves

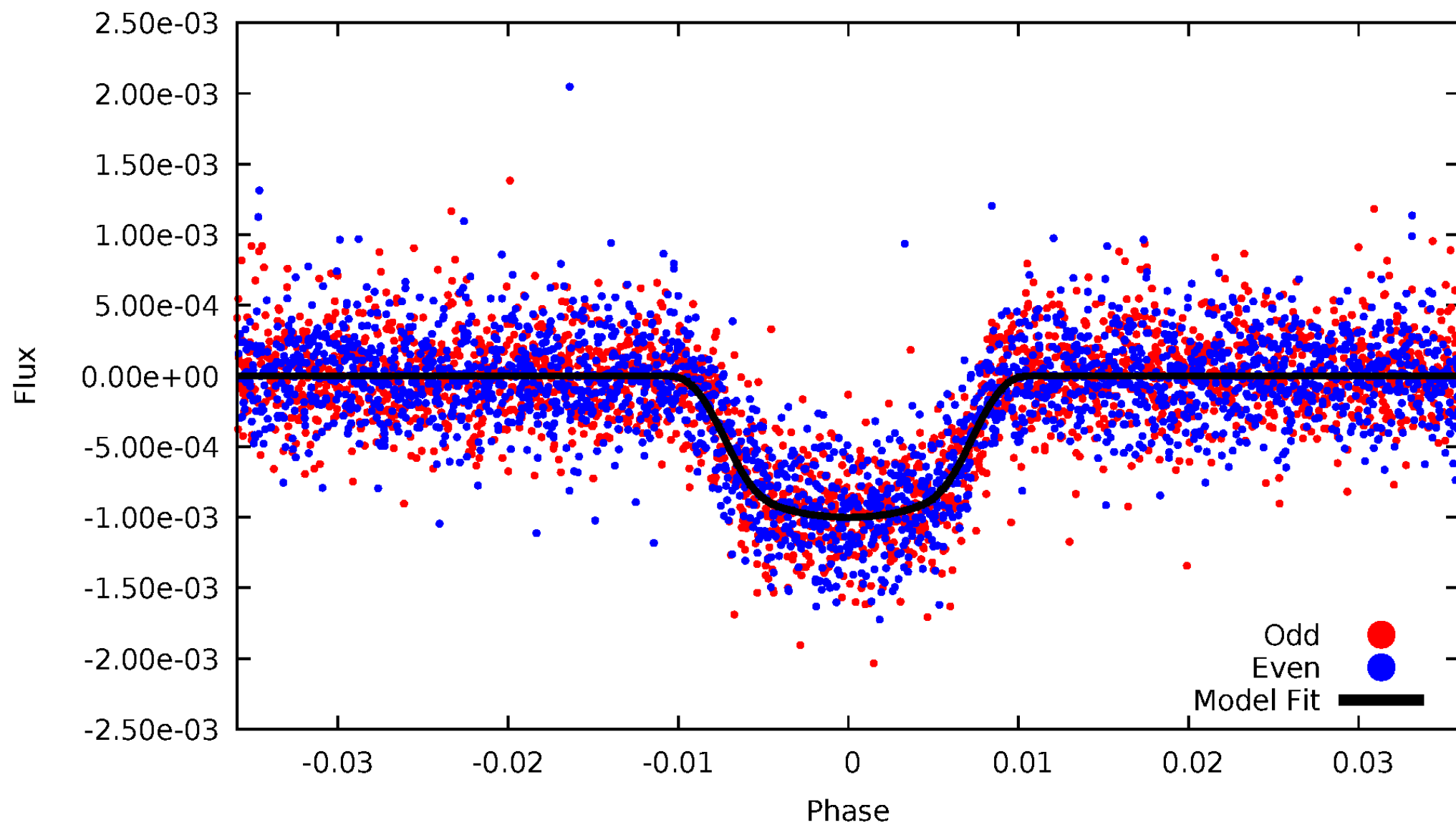


TCE 012302530-01



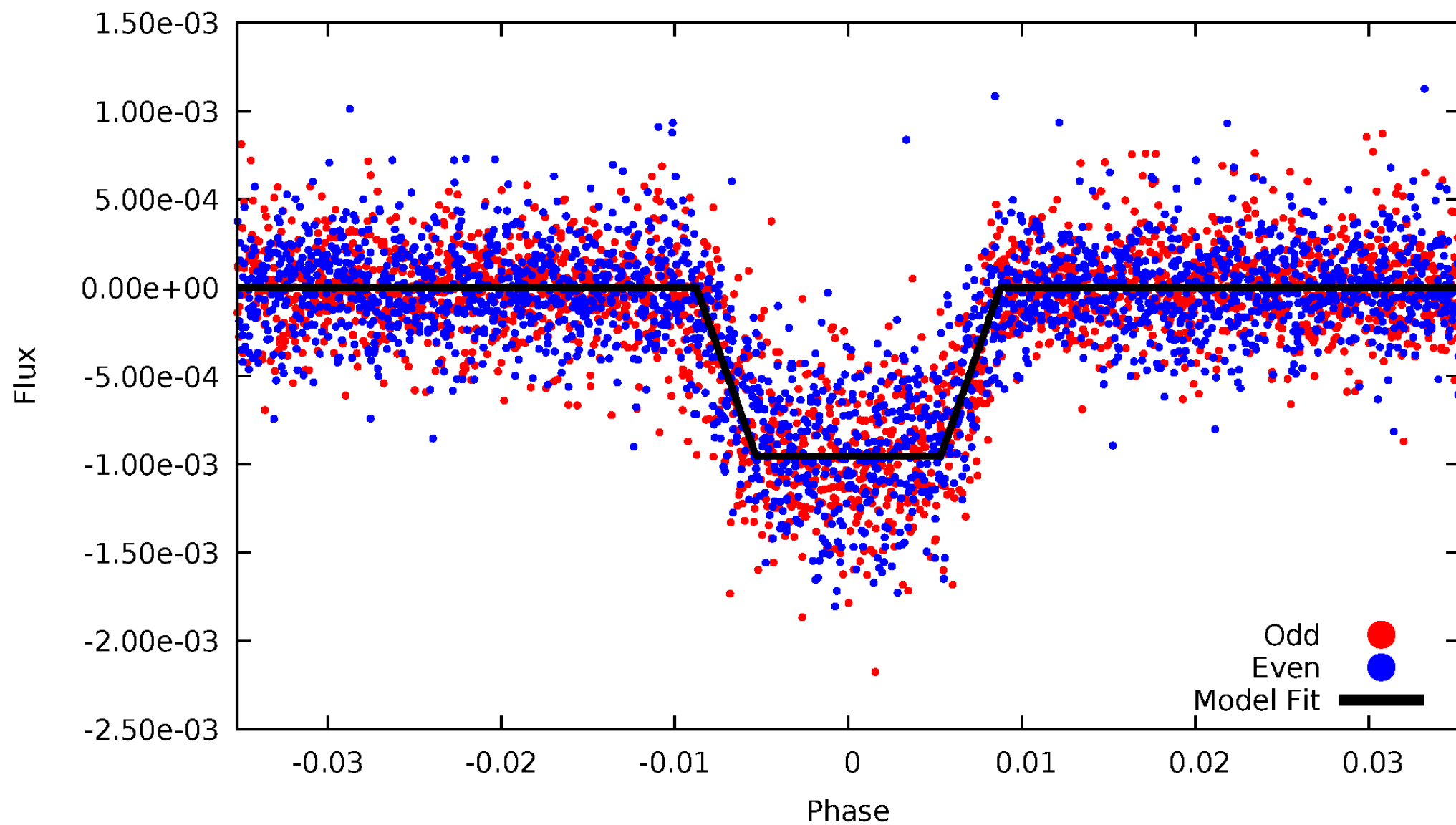
DV Odd/Even

TCE 012302530-01



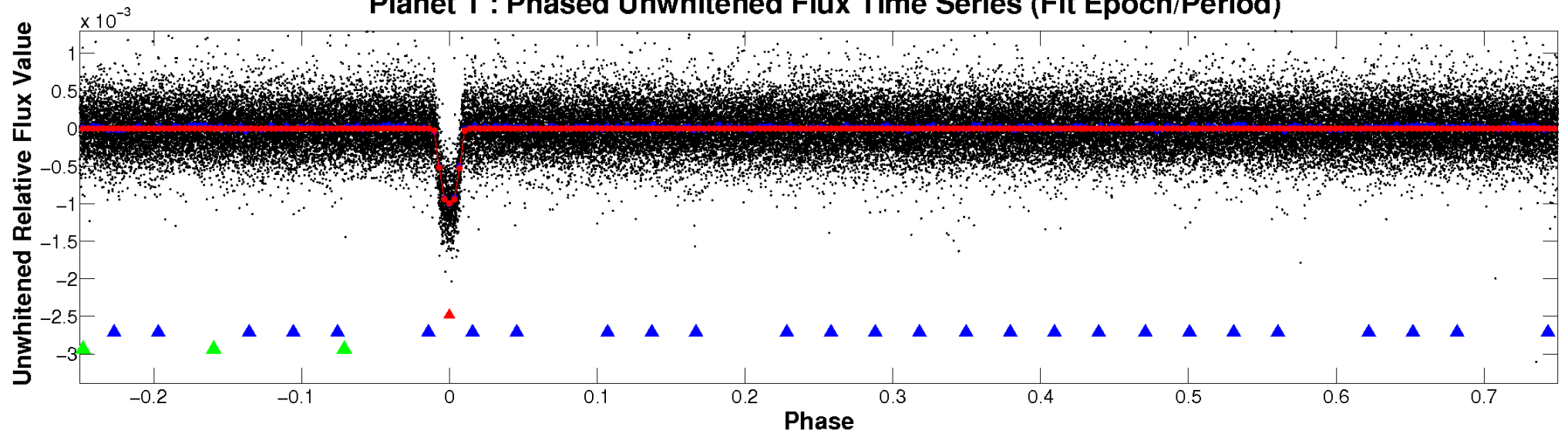
ALT Odd/Even

TCE 012302530-01

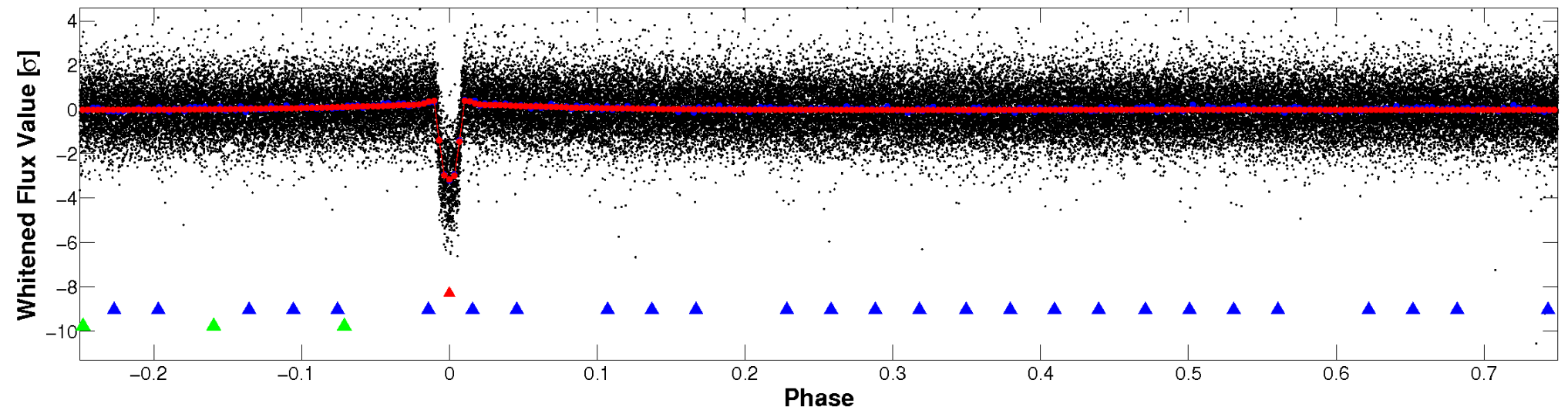


Non-Whitened Vs. Whitened Light Curve

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

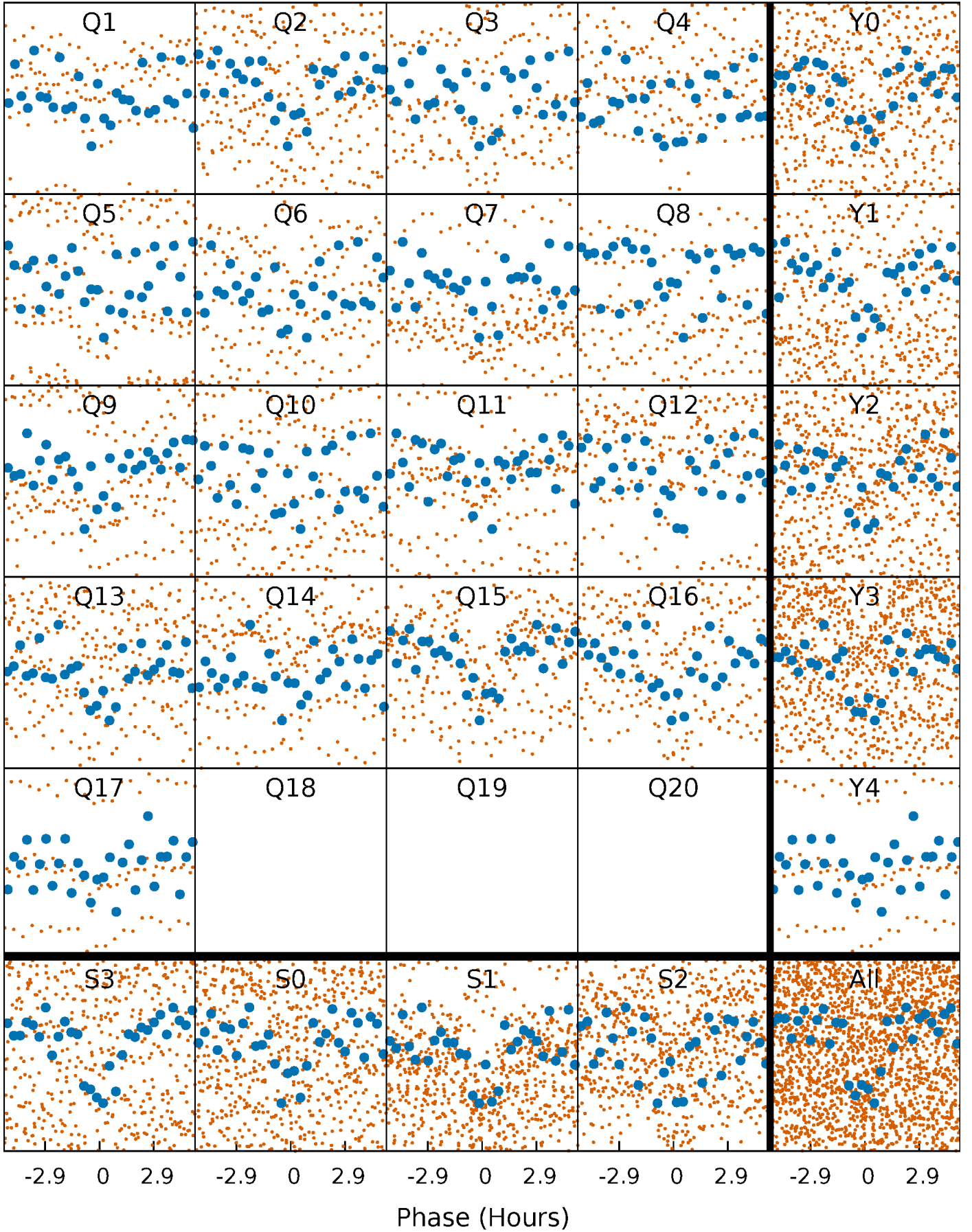


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



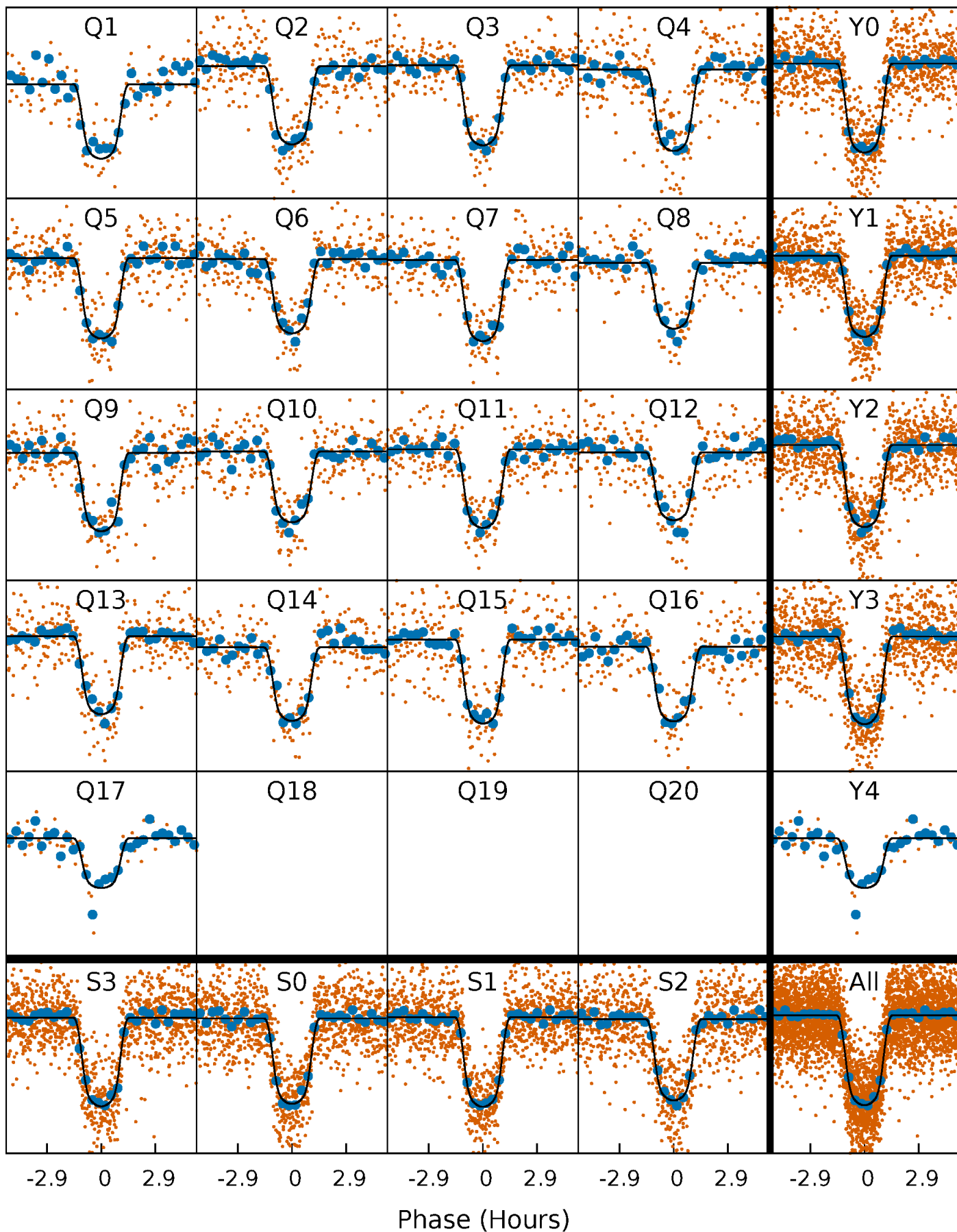
PDC Quarter-Phased Transit Curves

TCE 012302530-01 P= 5.931192 Days $T_0=133.279237$ (BKJD)



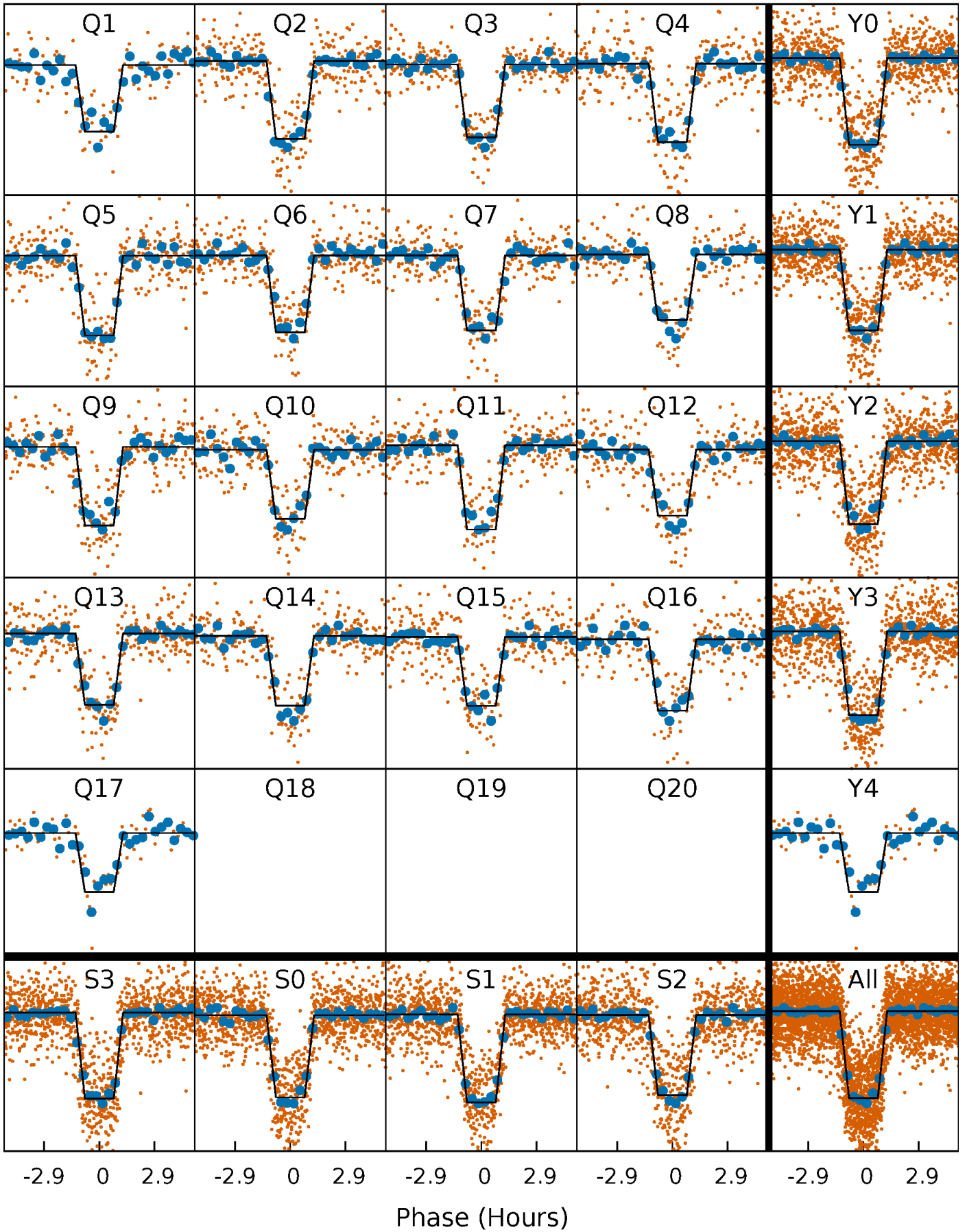
DV Quarter-Phased Transit Curves

TCE 012302530-01 P= 5.931192 Days $T_0=133.279237$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

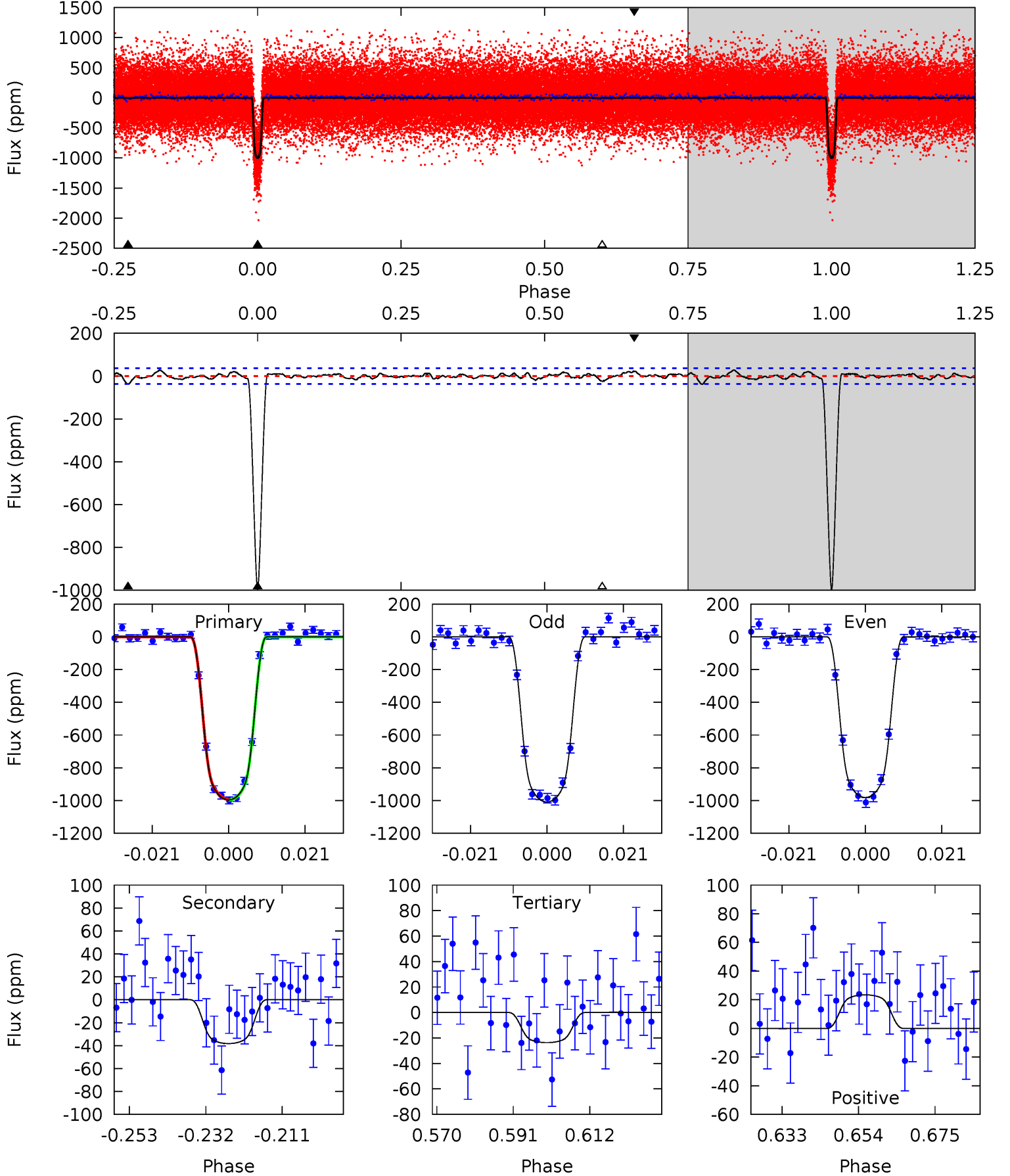
TCE 012302530-01 P= 5.931184 Days $T_0=133.280026$ (BKJD)



DV Model-Shift Uniqueness Test

012302530-01, P = 5.931192 Days, E = 127.348045 Days

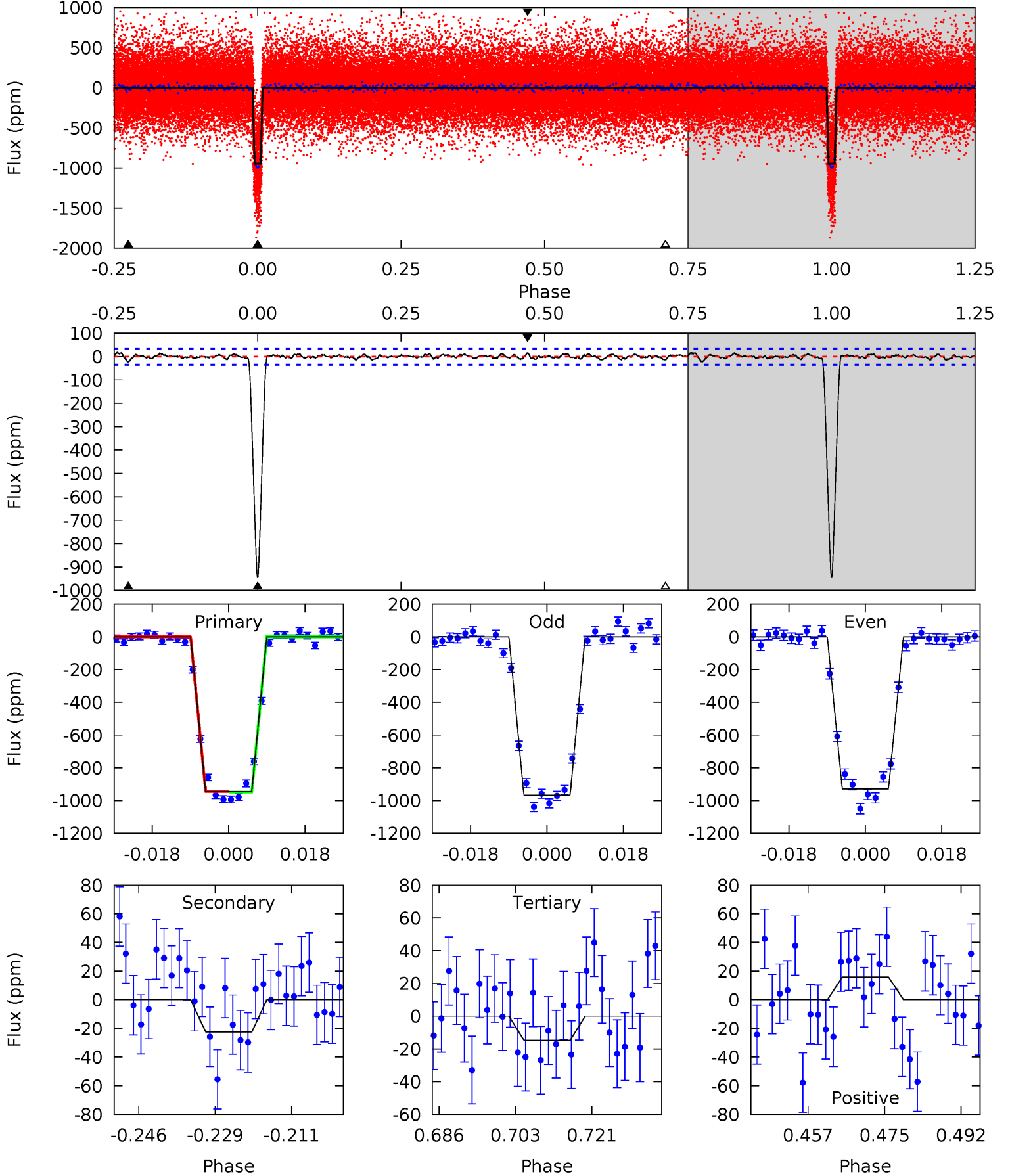
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
131.0	5.03	3.11	3.08	4.88	2.31	1.16	127.9	127.9	1.92	1.95	1.81	1.00	0.03	0.34



Alt Model-Shift Uniqueness Test

012302530-01, P = 5.931184 Days, E = 127.348842 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
132.6	3.15	2.07	2.22	4.92	2.37	0.80	130.5	130.4	1.08	0.94	2.75	0.98	0.02	0.33



Stellar Parameters For KIC 012302530

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3984^{+71}_{-86}	$4.720^{+0.030}_{-0.030}$	$-0.220^{+0.150}_{-0.150}$	$0.539^{+0.031}_{-0.035}$	$0.557^{+0.030}_{-0.036}$	$5.005^{+0.749}_{-0.596}$
	+2%/-2%	+1%/-1%	+68%/-68%	+6%/-6%	+5%/-6%	+15%/-12%
Source	SPE5	SPE5	SPE5	DSEP		

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

Secondary Eclipse Parameters for KIC 012302530-01 / KOI 0438.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-38 ± 8	$2.05^{+0.08}_{-0.09}$	784^{+18}_{-20}	2417^{+69}_{-72}	14^{+3}_{-3}
Alt.	-22 ± 7	$1.82^{+0.08}_{-0.08}$	786^{+17}_{-19}	2337^{+88}_{-109}	11^{+4}_{-4}

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

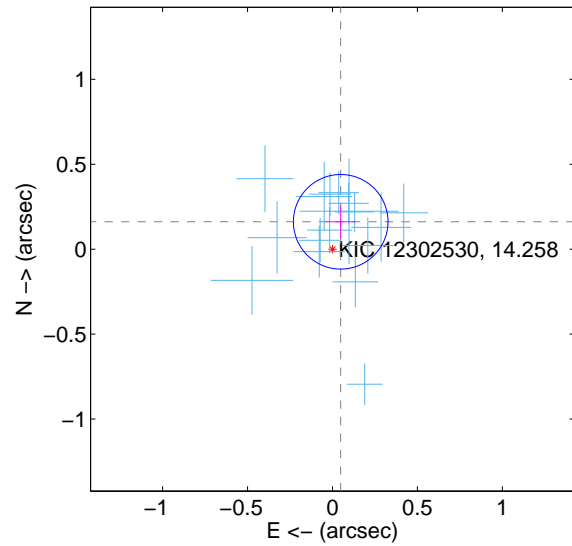
Supplemental centroid analysis for 012302530-01. Kepler magnitude: 14.26. Transit SNR 85.37

There are 17 quarters with good PRF difference image offsets

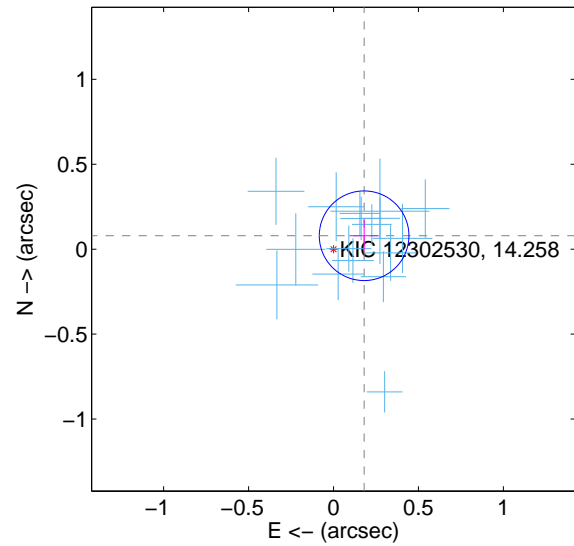
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.168 ± 0.093	1.81	-0.048 ± 0.087	0.161 ± 0.093
PRF-fit source offset from KIC position	0.197 ± 0.088	2.24	-0.180 ± 0.087	0.079 ± 0.095
photometric centroid source offset	0.69 ± 0.17	4.18	-0.09 ± 0.14	0.68 ± 0.17

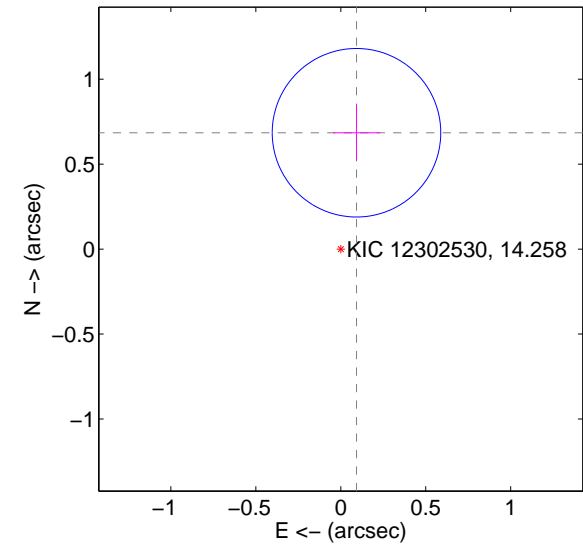
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

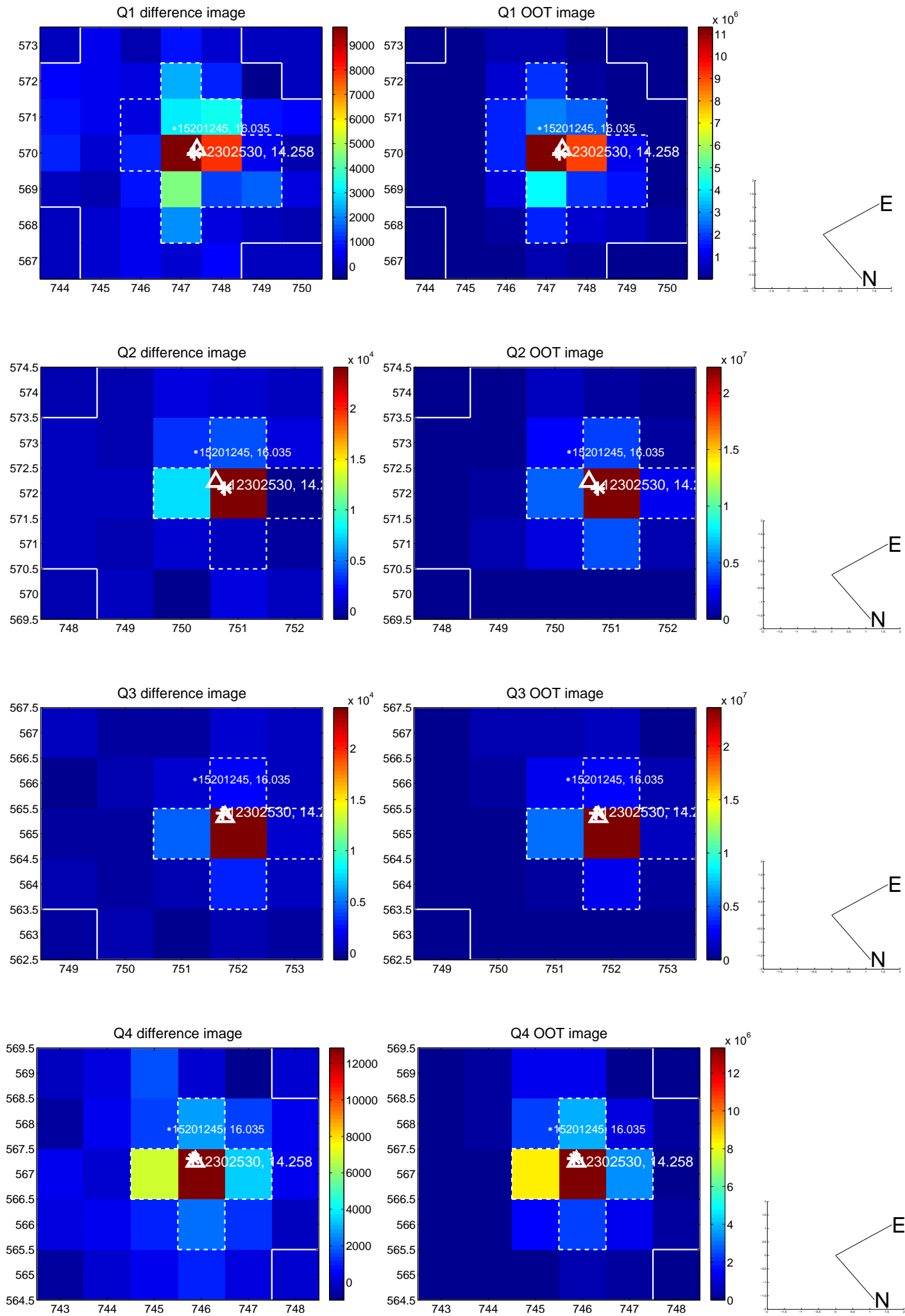


offset from photometric centroids

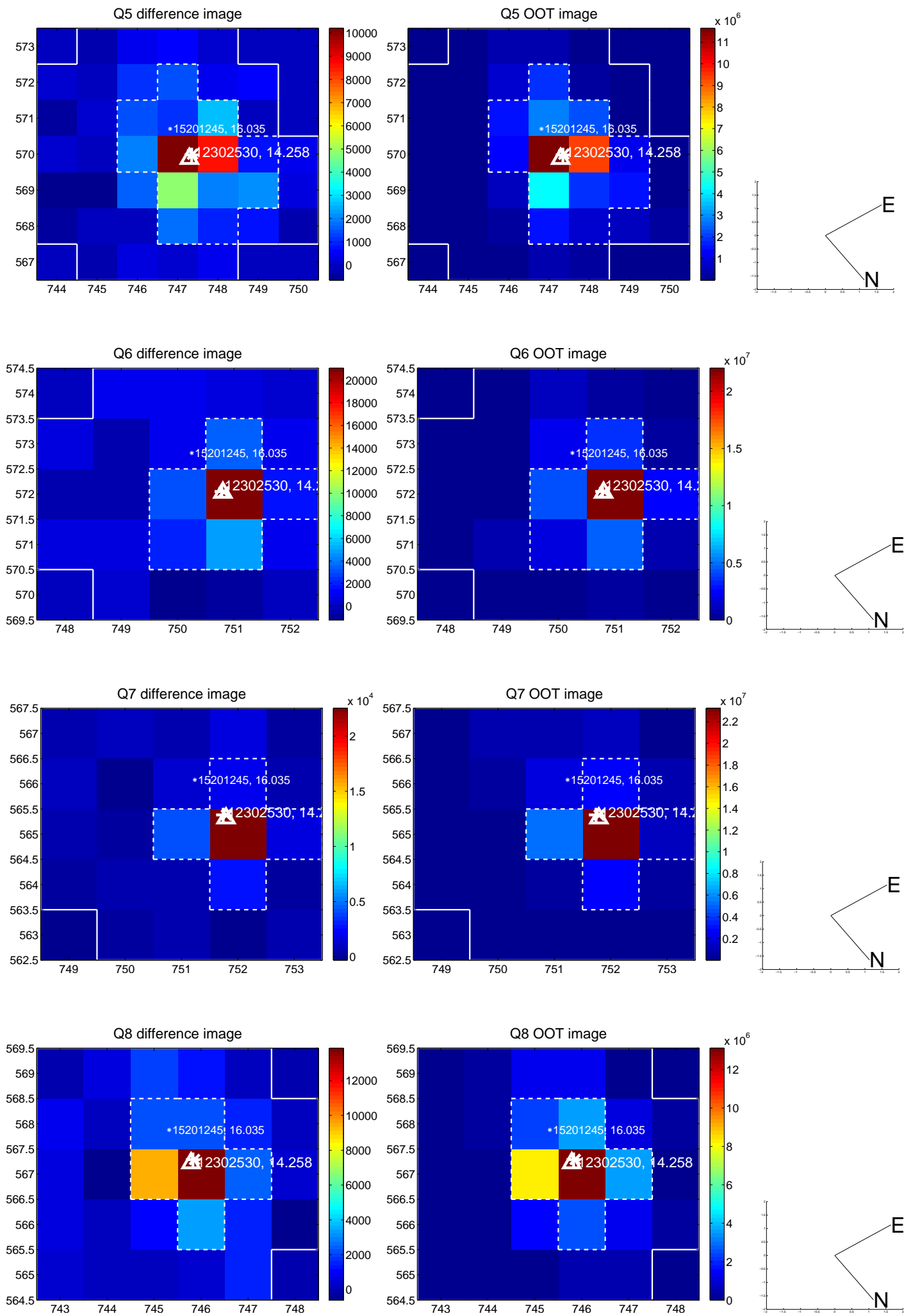


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

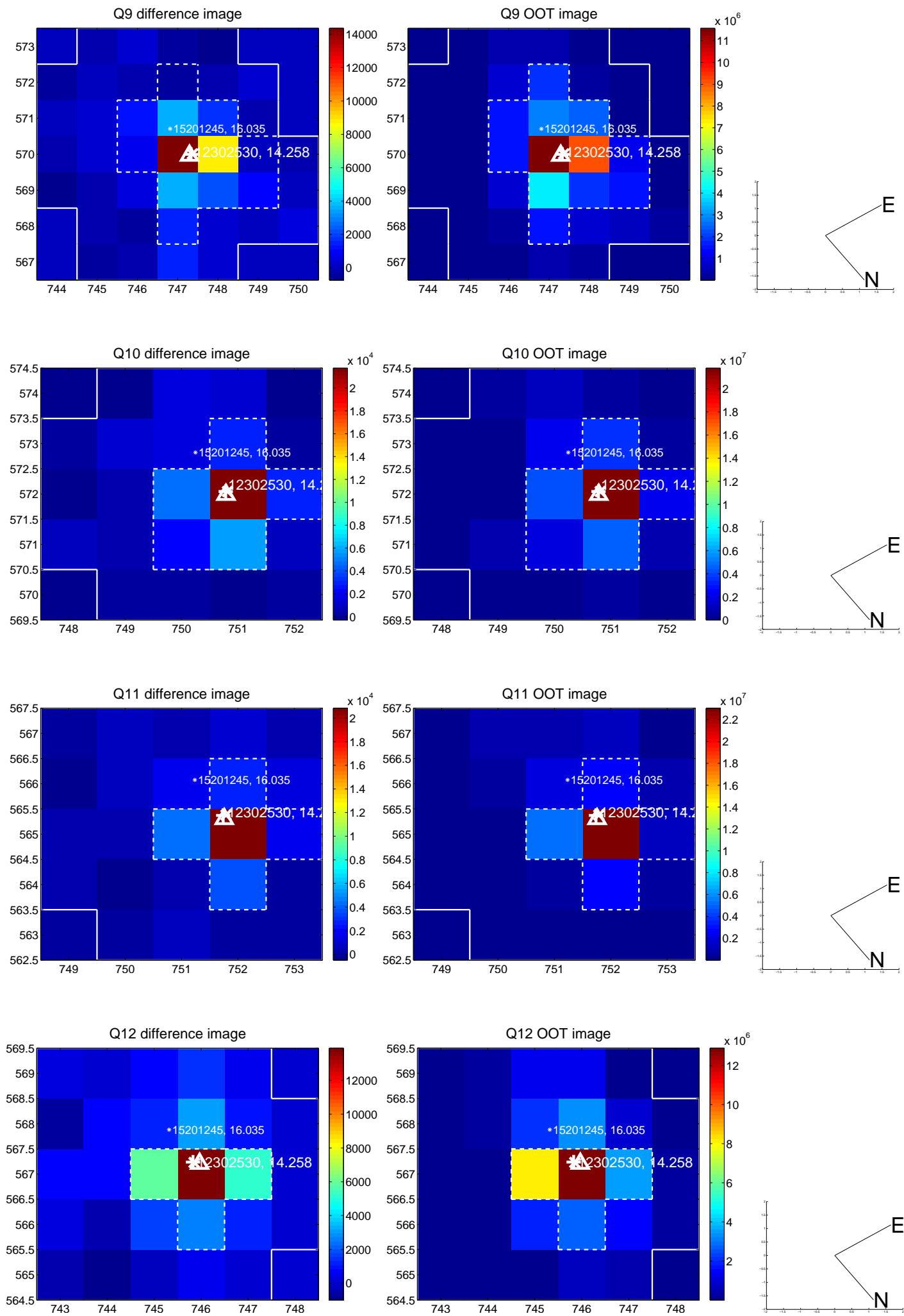
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



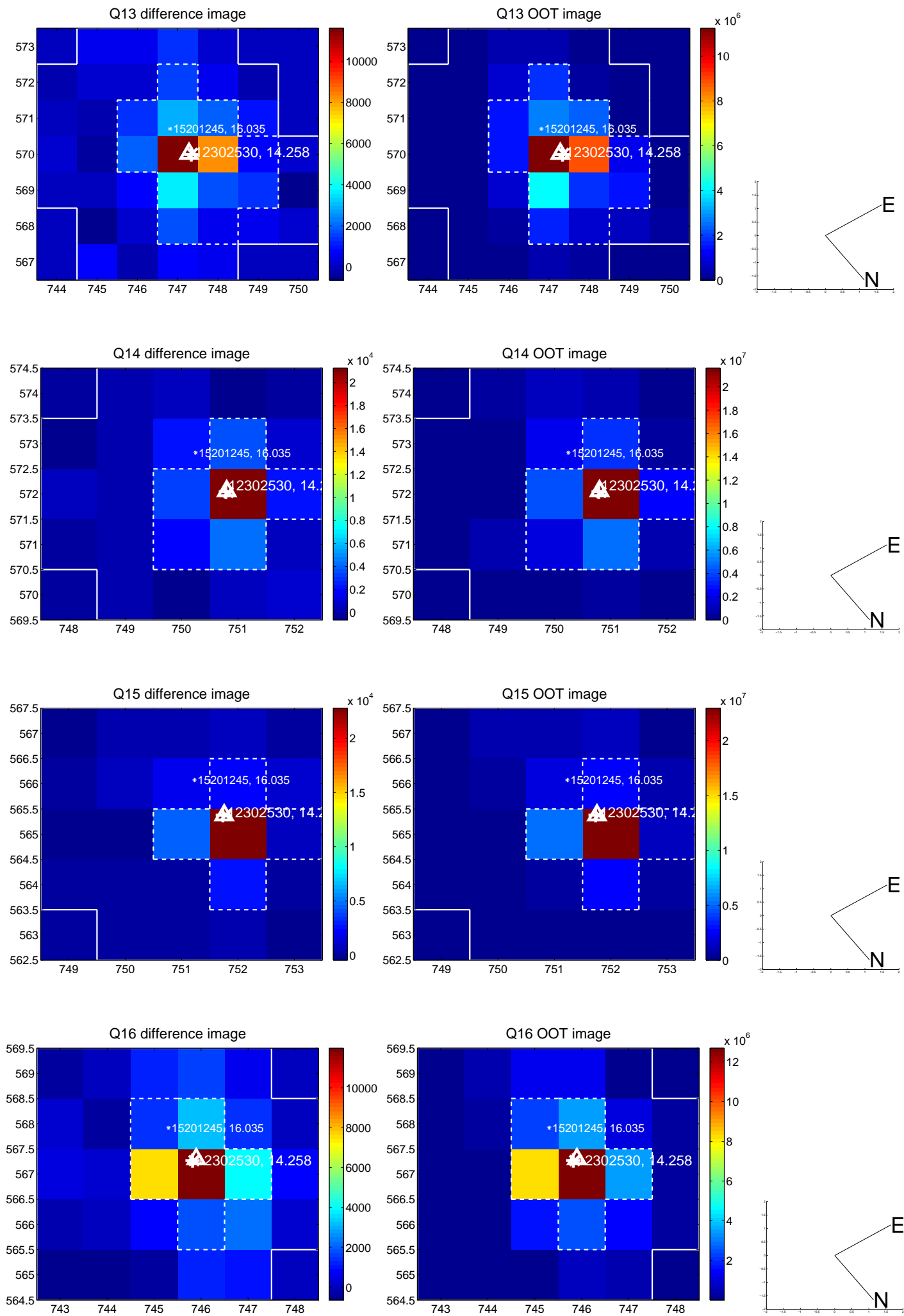
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



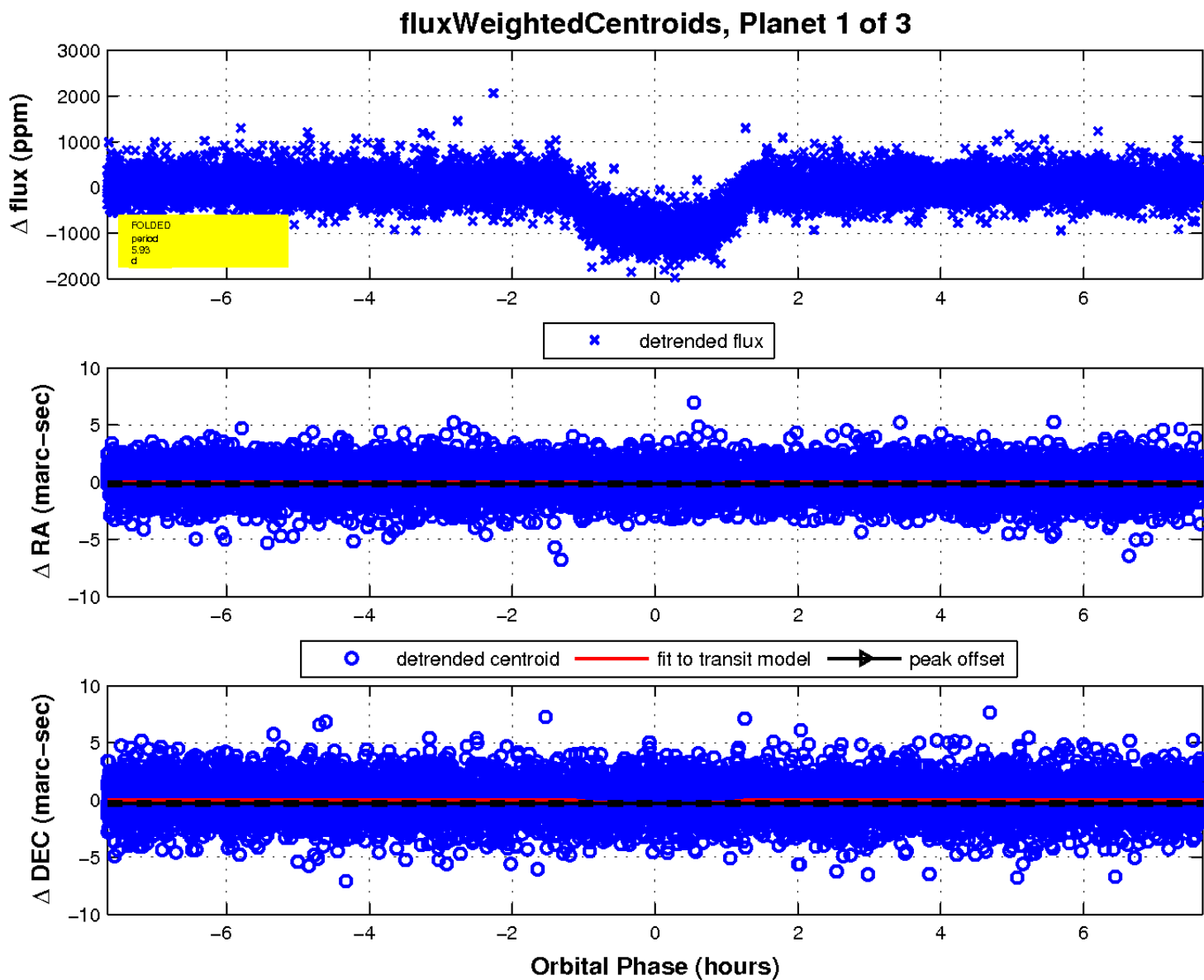
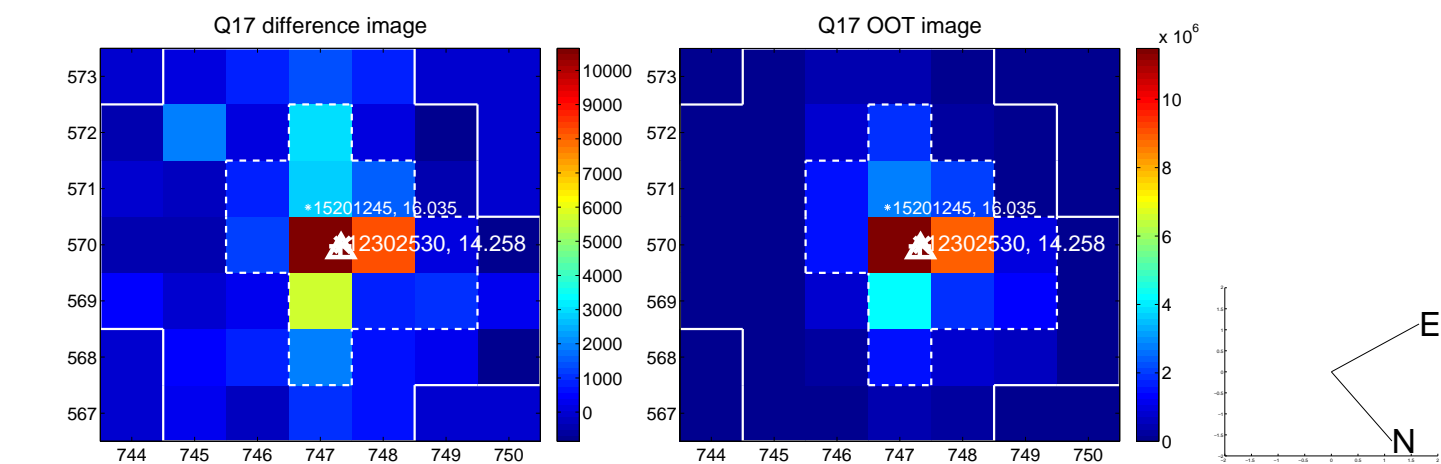
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



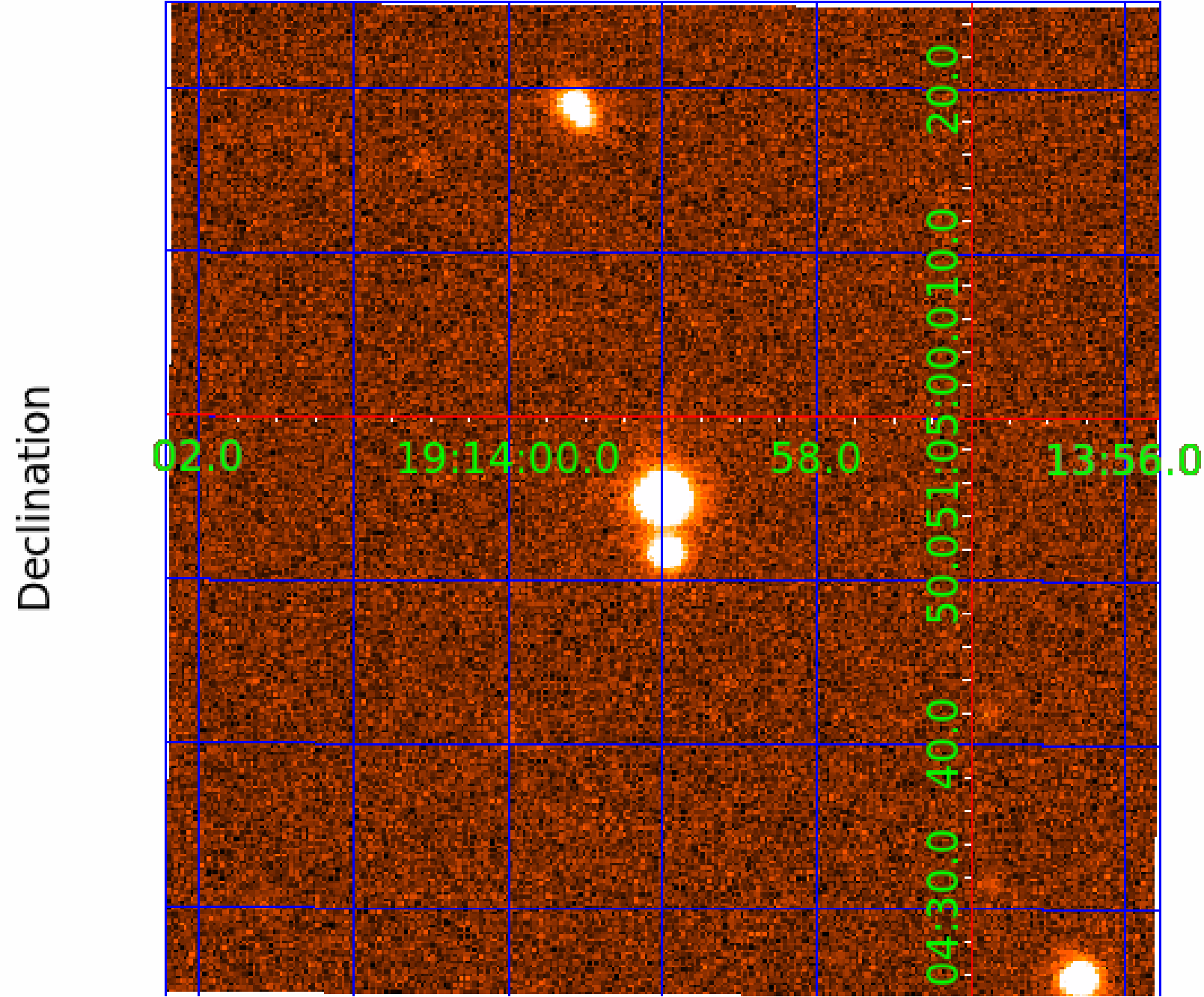
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 012302530

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})
012302530-01	OBS	0438.01	5.931192	133.279237	1000.2	2.557	79.9	85.4	0.54	3984	2.04	23.57
012302530-02	OBS	0438.02	52.661496	183.521605	1040.4	3.205	30.6	32.7	0.54	3984	1.94	1.28
012302530-03	OBS	No	552.124919	274.158127	1000.5	9.844	16.6	15.1	0.54	3984	1.92	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012302530-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012302530-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012302530-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

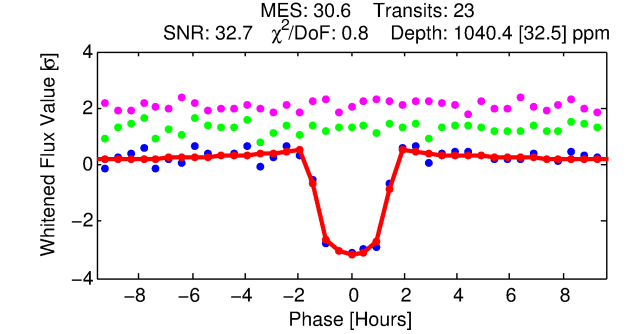
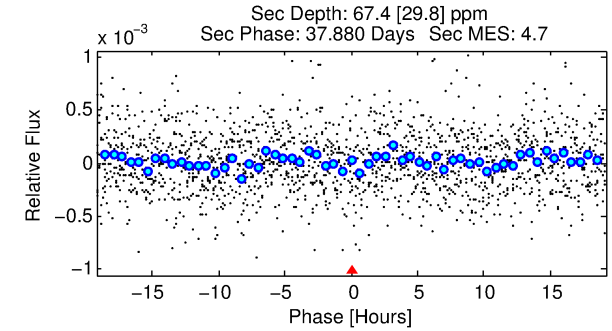
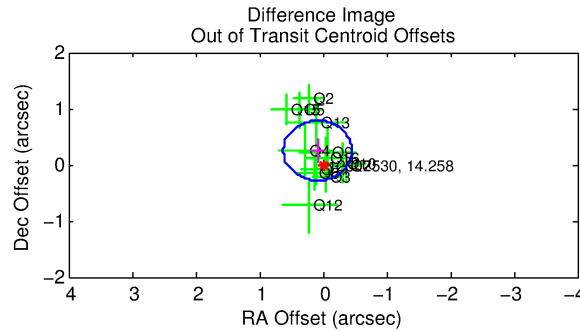
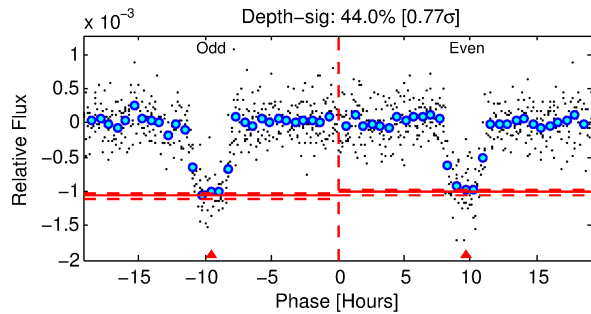
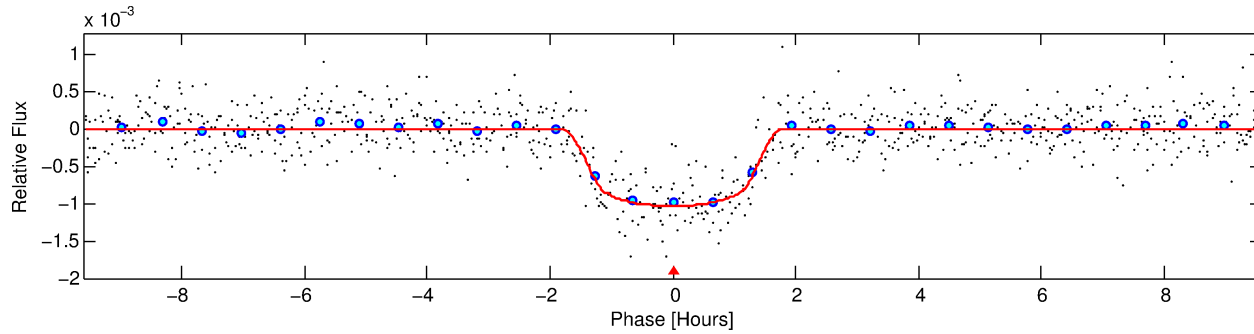
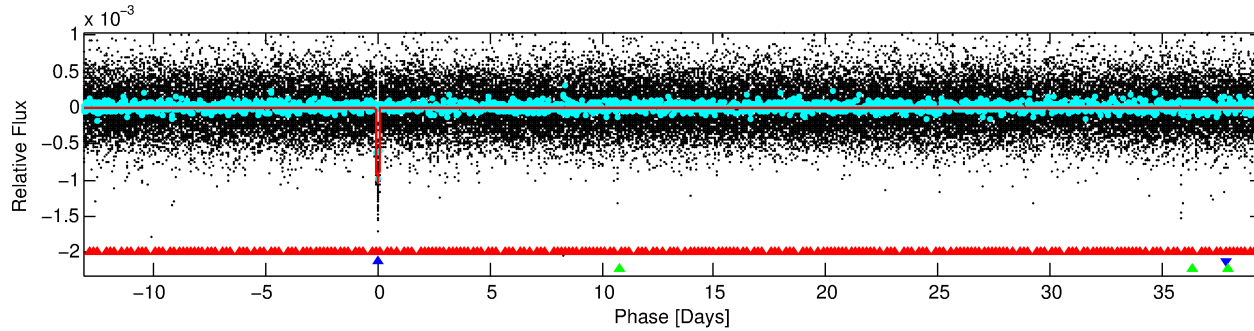
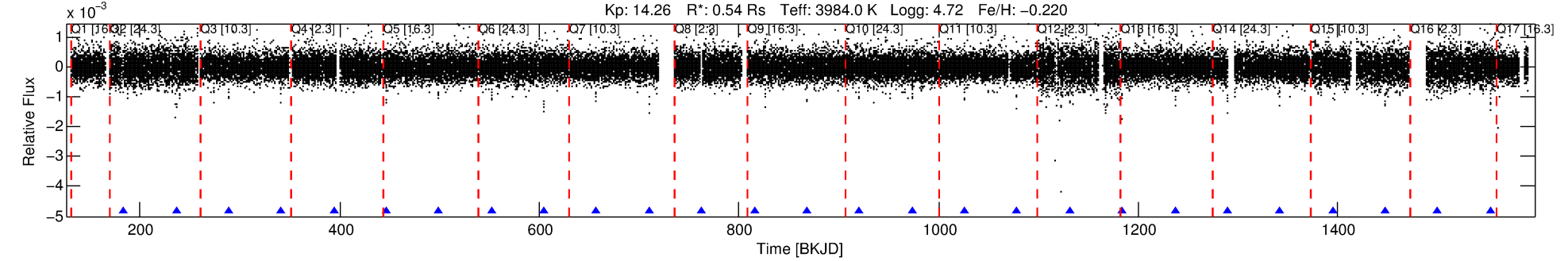
Ephemeris Match Information For 012302530-02

No Significant Match Found

DV One-Page Summary

KIC: 12302530 Candidate: 2 of 3 Period: 52.661 d
KOI: K00438.02 Name: Kepler-155c Corr: 0.966

Kp: 14.26 R*: 0.54 Rs Teff: 3984.0 K Logg: 4.72 Fe/H: -0.220



DV Fit Results:

Period = 52.66150 [0.00014] d
Epoch = 183.5216 [0.0022] BKJD
Rp/R* = 0.0330 [0.0042]
a/R* = 81.00 [44.67]
b = 0.81 [0.24]
Seff = 1.28 [0.14]
Teq = 271 [7] K
Rp = 1.94 [0.28] Re
a = 0.2262 [0.0111] AU
Ag = 504.50 [259.62] [1.94σ]
Teffp = 1988 [257] K [6.67σ]

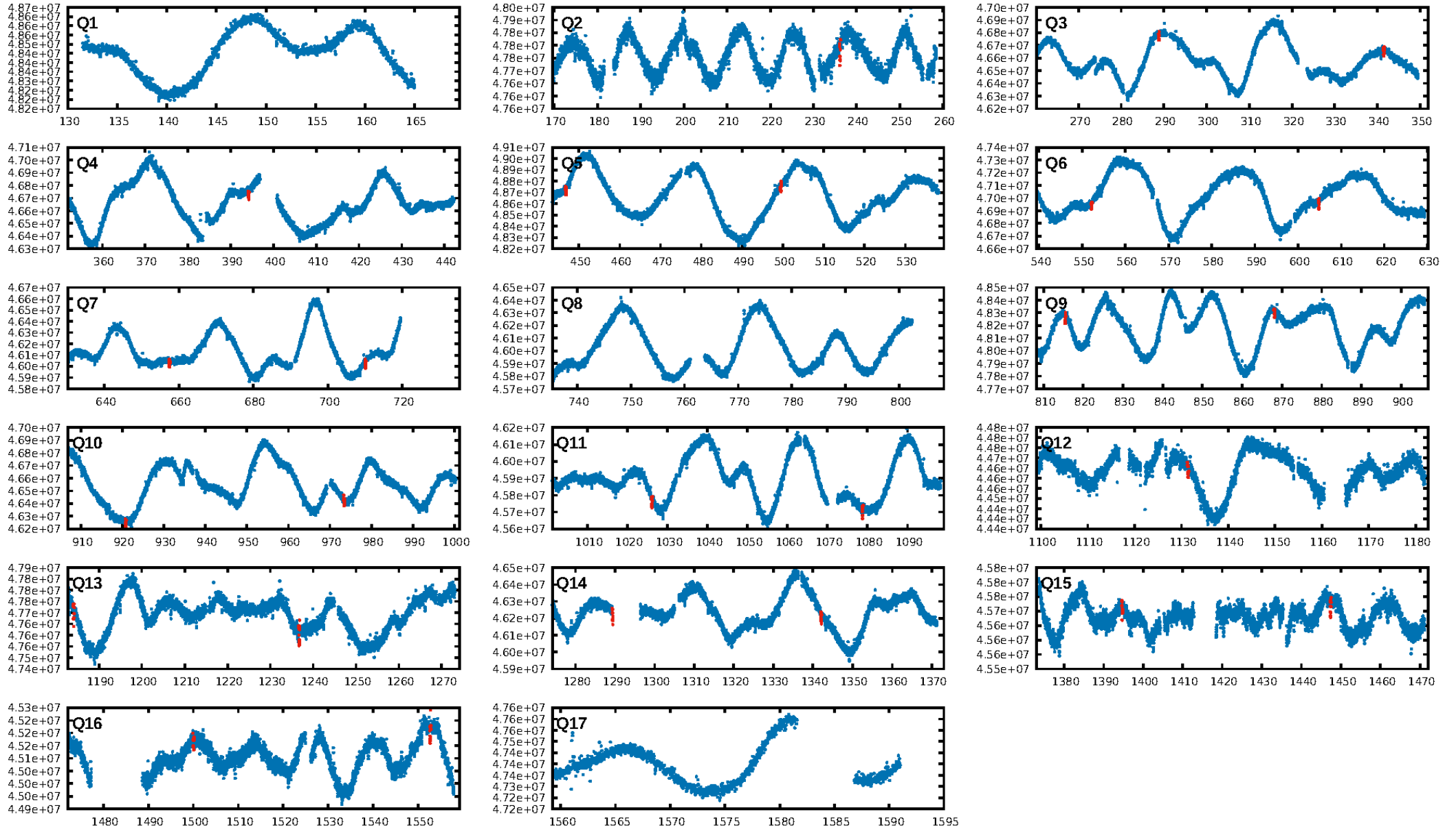
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [273.55σ]
LongPeriod-sig: 100.0% [1157.88σ]
ModelChiSquare2-sig: 46.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.52e-148
RollingBand-fgt: 1.00 [23/23]
GhostDiagnostic-chr: 3.643
Centroid-sig: 0.0%
Centroid-so: 1.469 arcsec [3.66σ]
OotOffset-rm: 0.265 arcsec [1.48σ]
KicOffset-rm: 0.185 arcsec [0.98σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 0.93 [13/14]

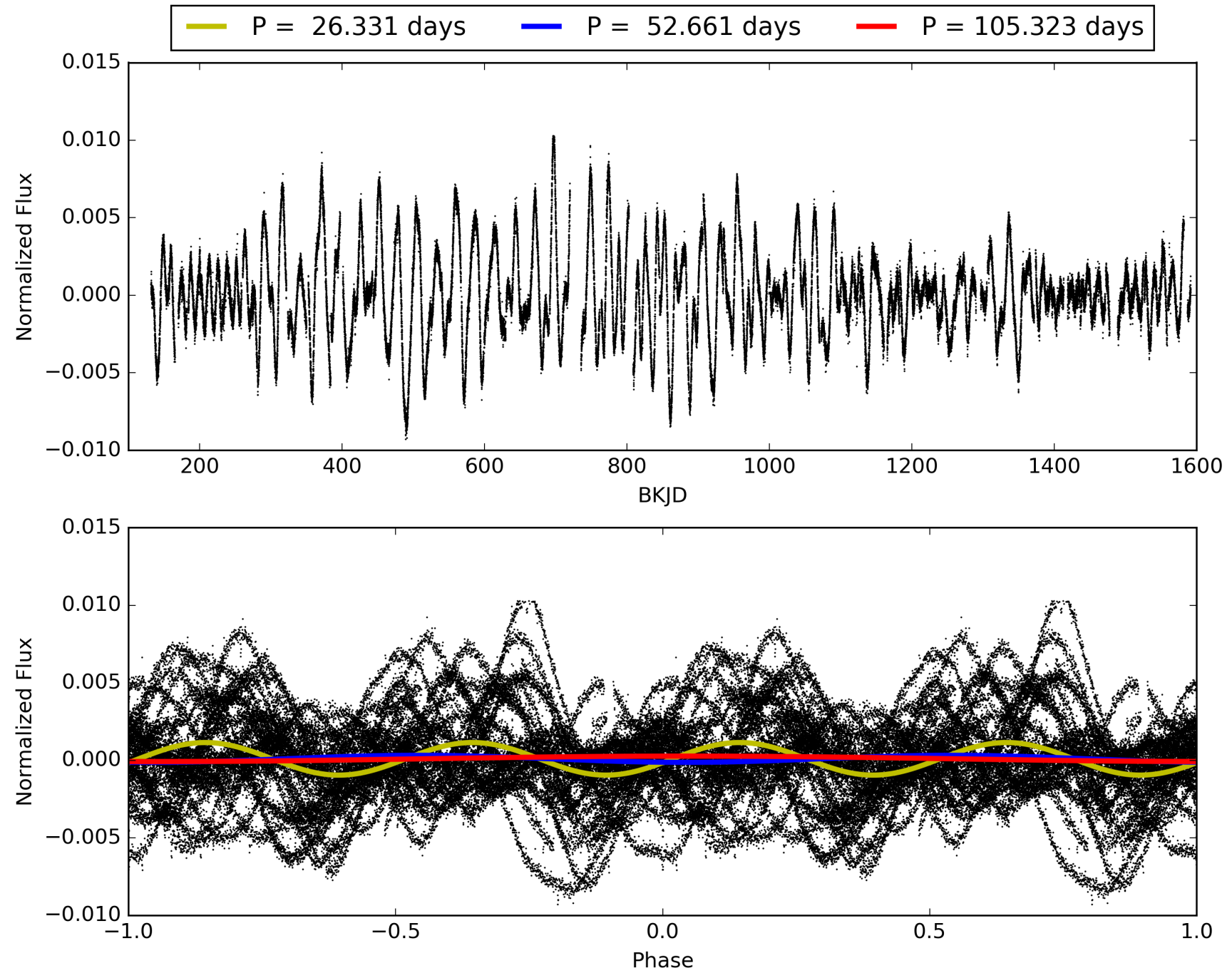
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:36:48 Z

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

TCE 012302530-02, PDC Light Curves

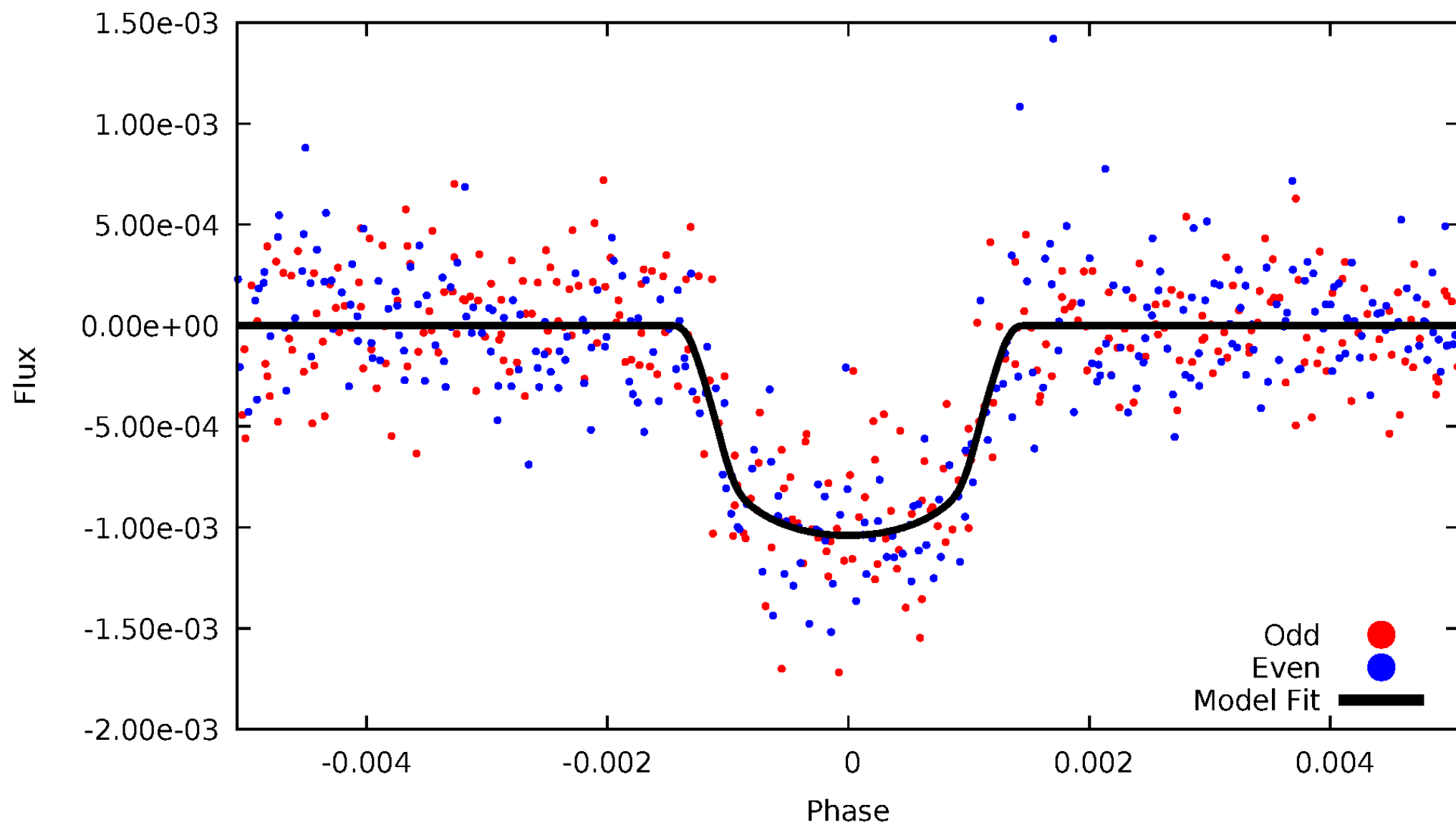


TCE 012302530-02



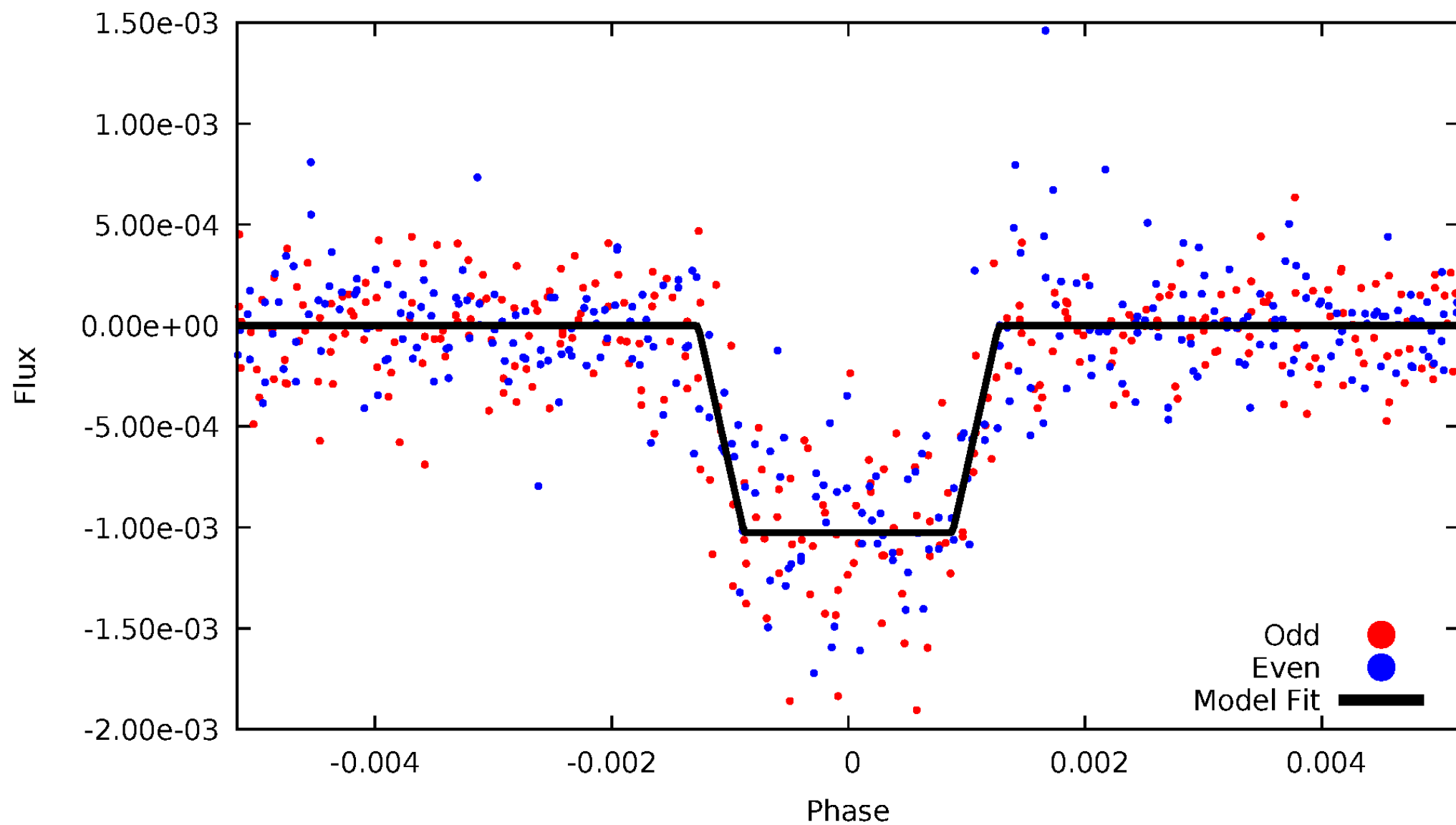
DV Odd/Even

TCE 012302530-02



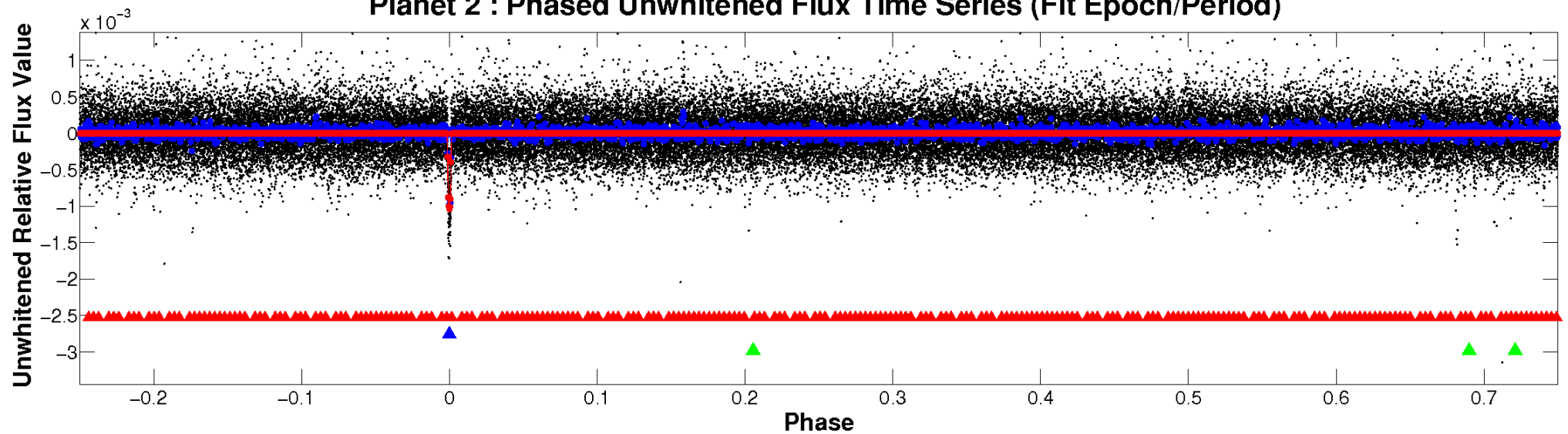
ALT Odd/Even

TCE 012302530-02

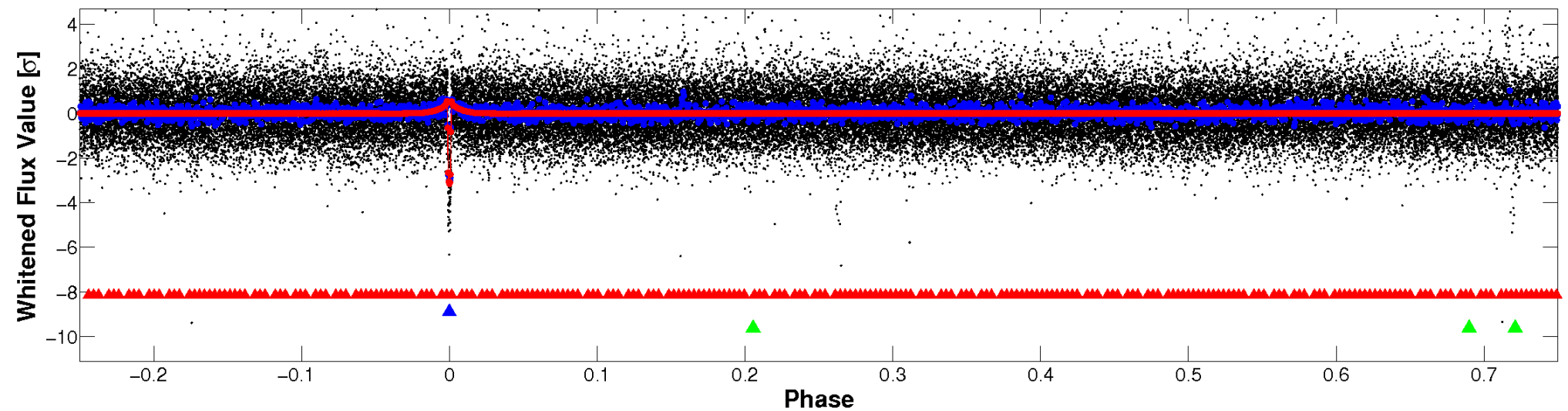


Non-Whitened Vs. Whitened Light Curve

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

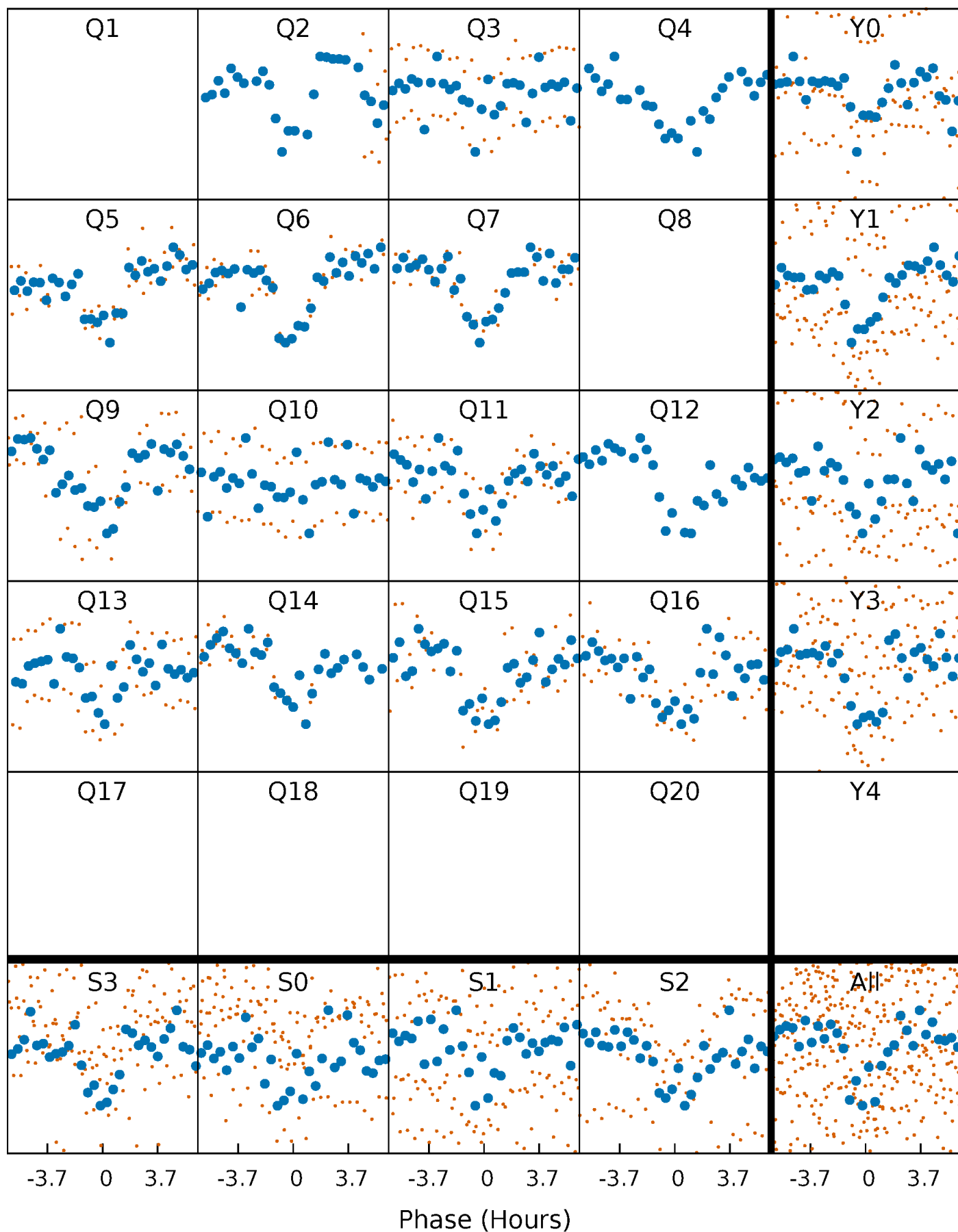


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



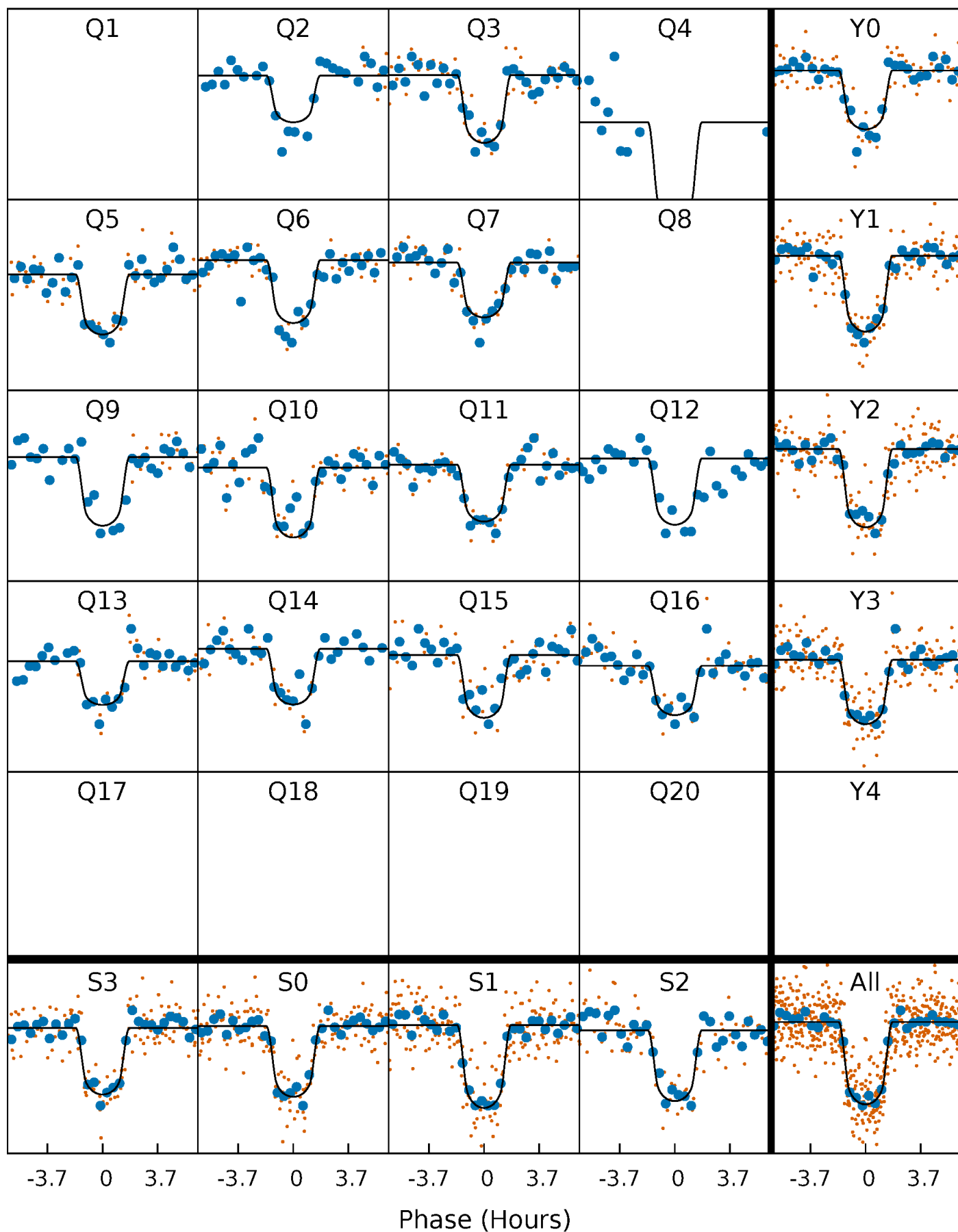
PDC Quarter-Phased Transit Curves

TCE 012302530-02 P= 52.661496 Days $T_0=183.521605$ (BKJD)



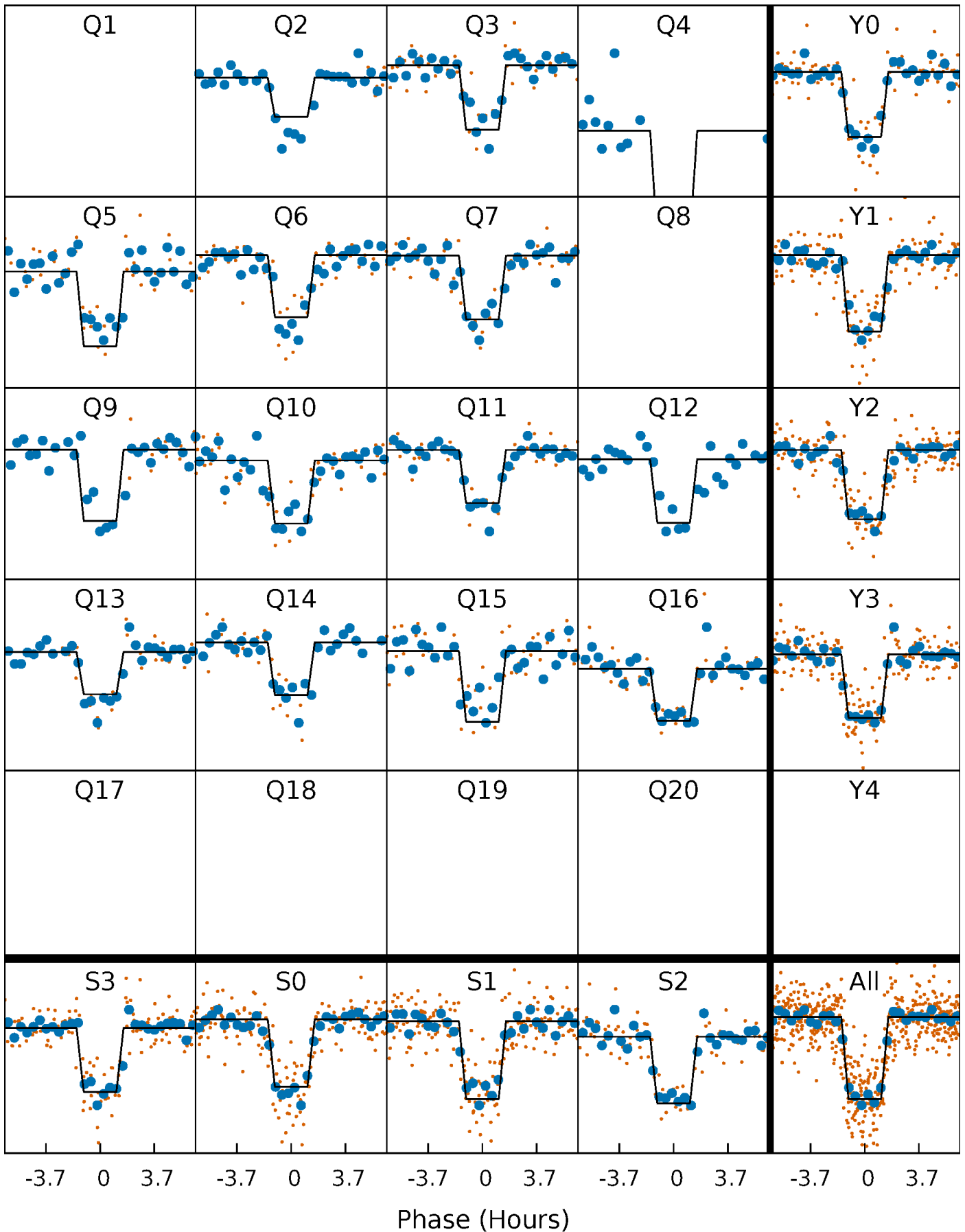
DV Quarter-Phased Transit Curves

TCE 012302530-02 P= 52.661496 Days $T_0=183.521605$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

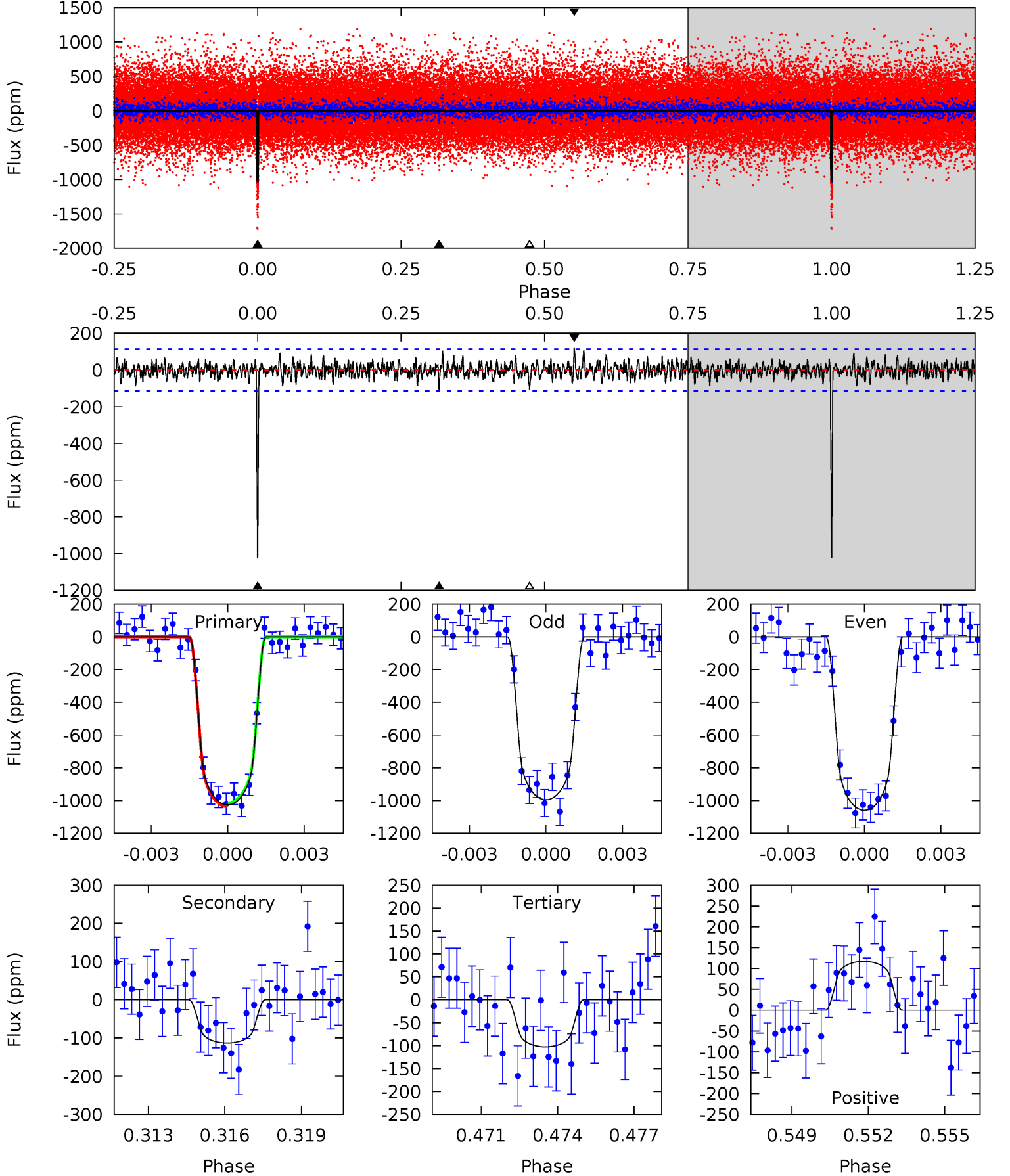
TCE 012302530-02 P= 52.661696 Days $T_0=183.518263$ (BKJD)



DV Model-Shift Uniqueness Test

012302530-02, P = 52.661496 Days, E = 130.860109 Days

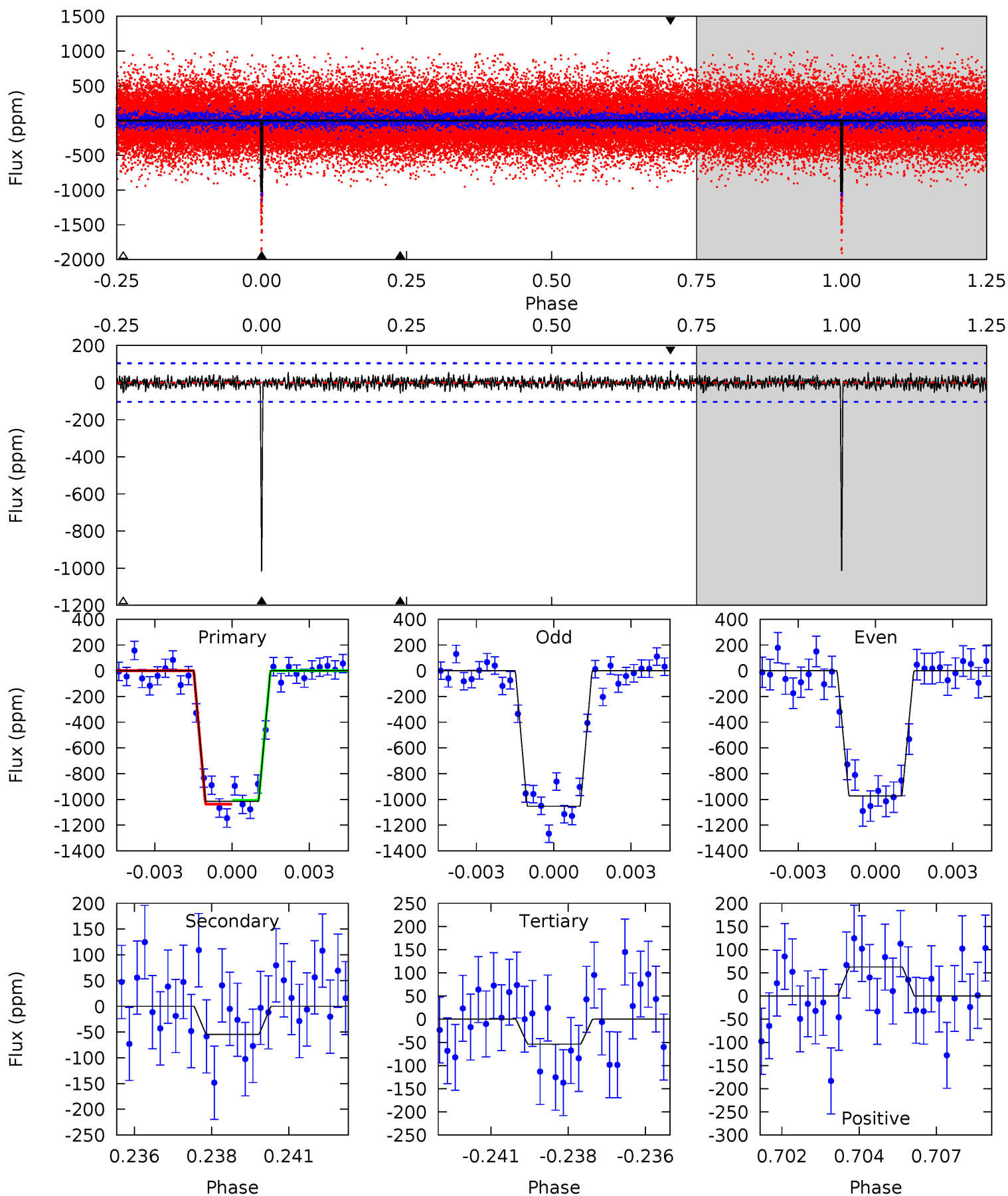
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.9	5.30	4.80	5.48	5.26	2.98	1.40	43.1	42.4	0.49	-0.18	1.49	0.99	0.10	0.55



Alt Model-Shift Uniqueness Test

012302530-02, P = 52.661696 Days, E = 130.856567 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.6	2.76	2.74	3.18	5.28	3.02	0.85	48.8	48.4	0.02	-0.42	2.07	1.05	0.06	0.74



Stellar Parameters For KIC 012302530

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3984^{+71}_{-86}	$4.720^{+0.030}_{-0.030}$	$-0.220^{+0.150}_{-0.150}$	$0.539^{+0.031}_{-0.035}$	$0.557^{+0.030}_{-0.036}$	$5.005^{+0.749}_{-0.596}$
	+2%/-2%	+1%/-1%	+68%/-68%	+6%/-6%	+5%/-6%	+15%/-12%
Source	SPE5	SPE5	SPE5	DSEP		

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

Secondary Eclipse Parameters for KIC 012302530-02 / KOI 0438.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-113 ± 21	$1.96^{+0.26}_{-0.28}$	379^{+8}_{-9}	2811^{+138}_{-131}	830^{+353}_{-241}
Alt.	-54 ± 20	$1.91^{+0.24}_{-0.27}$	379^{+8}_{-9}	2573^{+137}_{-157}	418^{+215}_{-167}

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

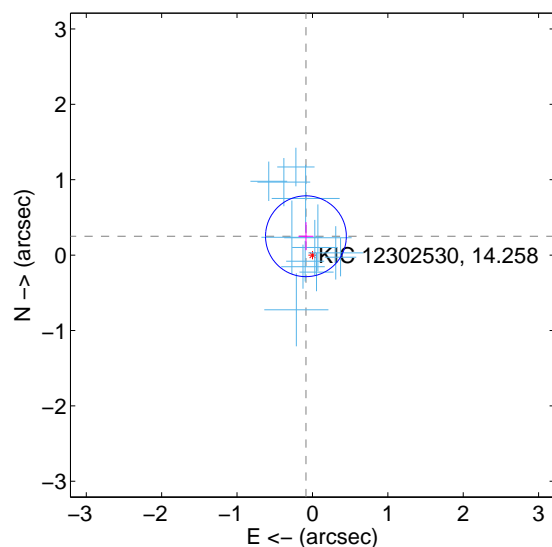
Supplemental centroid analysis for 012302530-02. Kepler magnitude: 14.26. Transit SNR 32.73

There are 13 quarters with good PRF difference image offsets

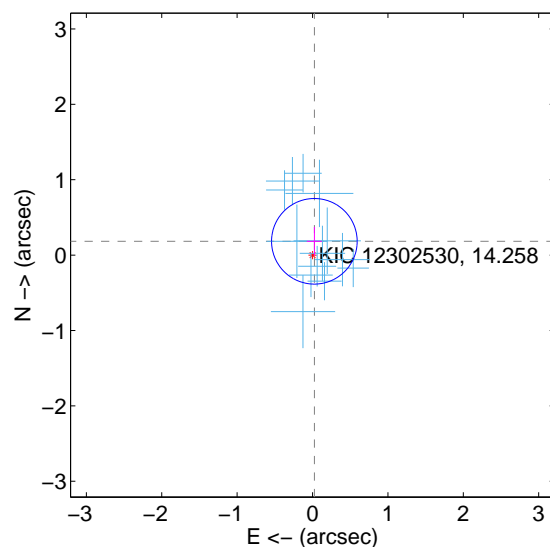
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.265 ± 0.179	1.48	0.086 ± 0.099	0.250 ± 0.186
PRF-fit source offset from KIC position	0.185 ± 0.189	0.98	-0.024 ± 0.100	0.183 ± 0.190
photometric centroid source offset	1.47 ± 0.40	3.66	-0.67 ± 0.33	1.31 ± 0.42

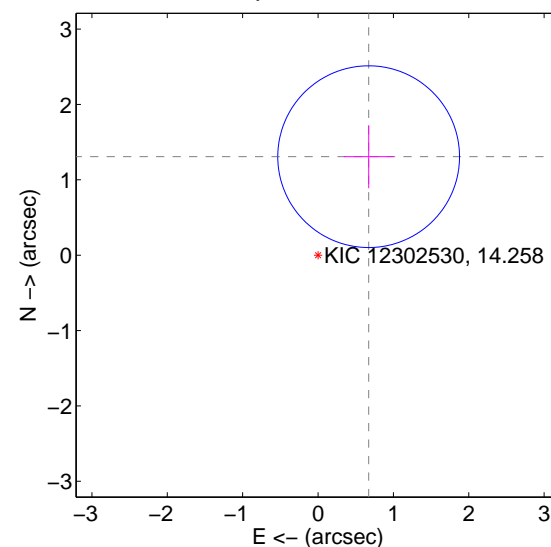
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

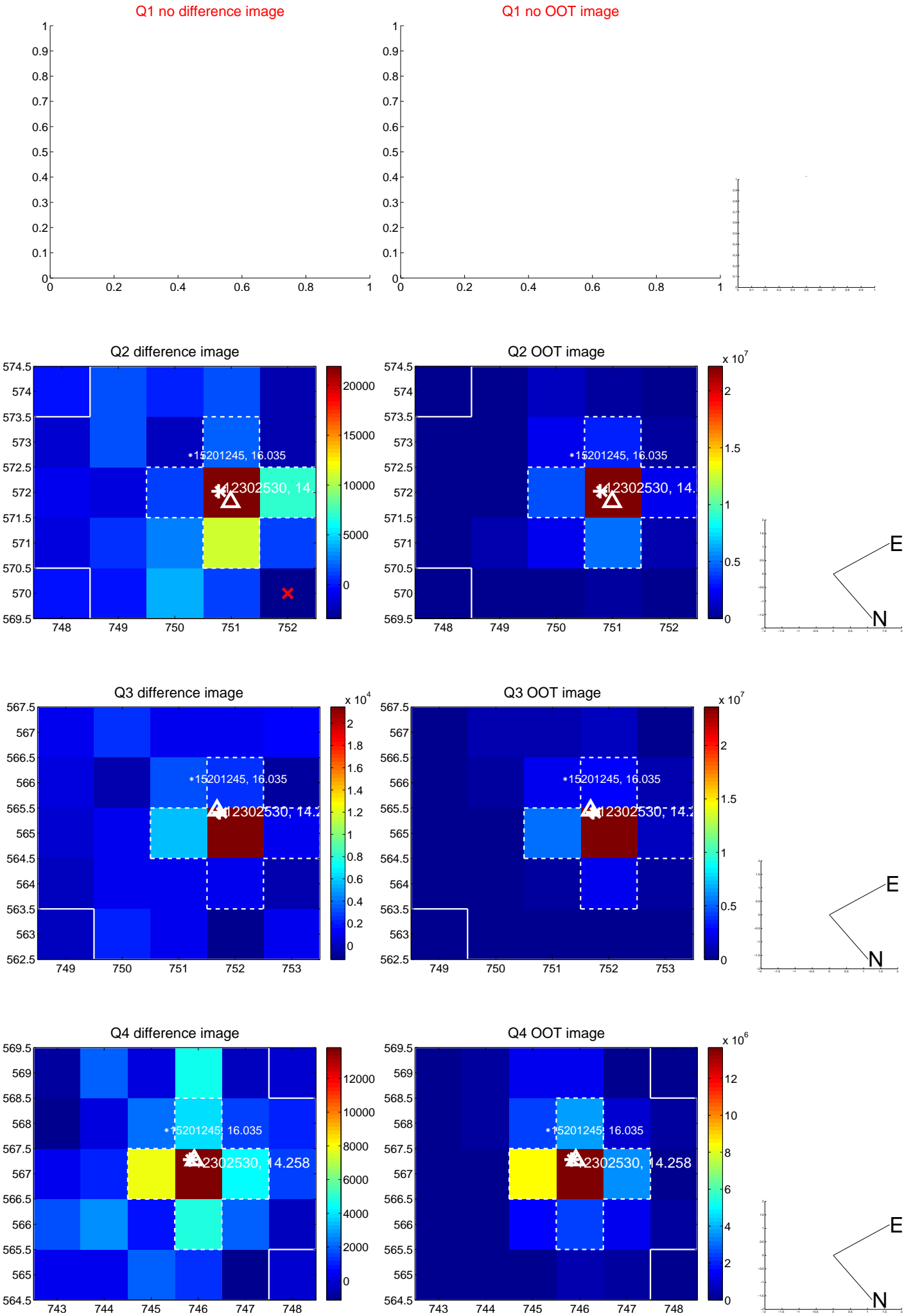


offset from photometric centroids

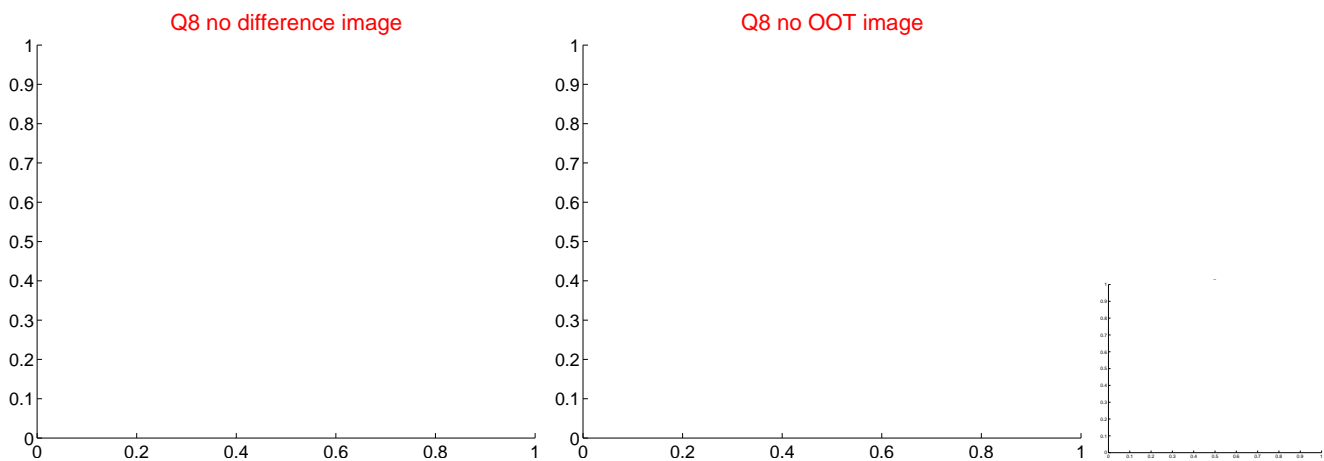
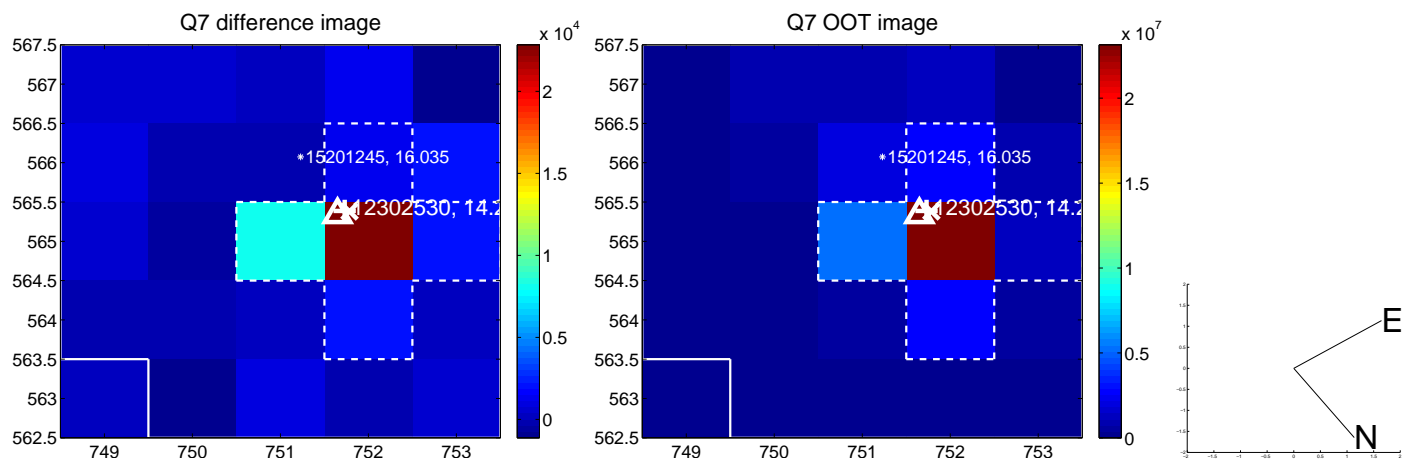
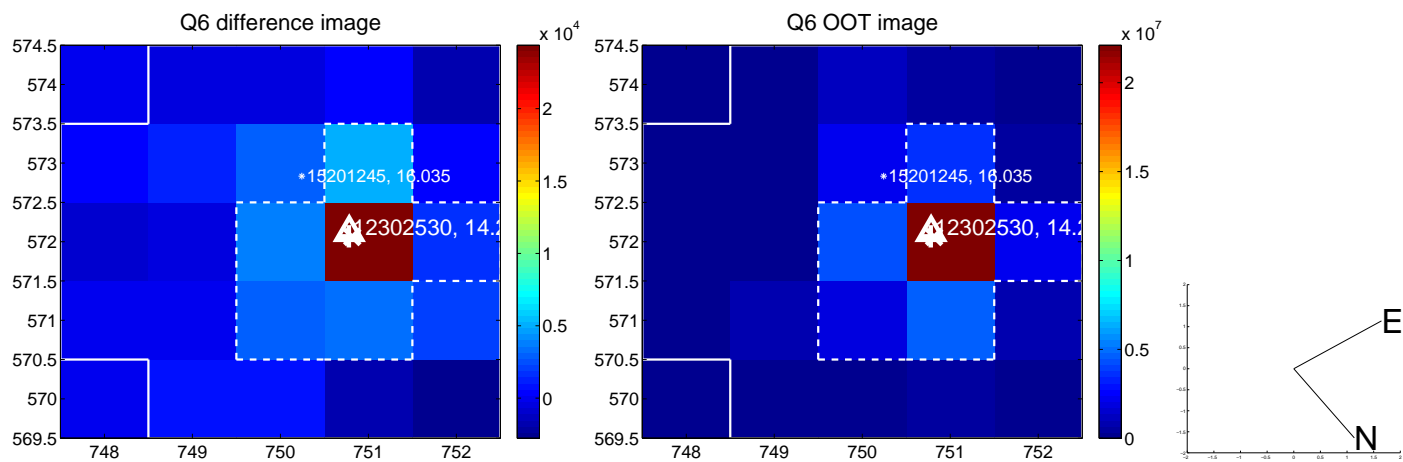
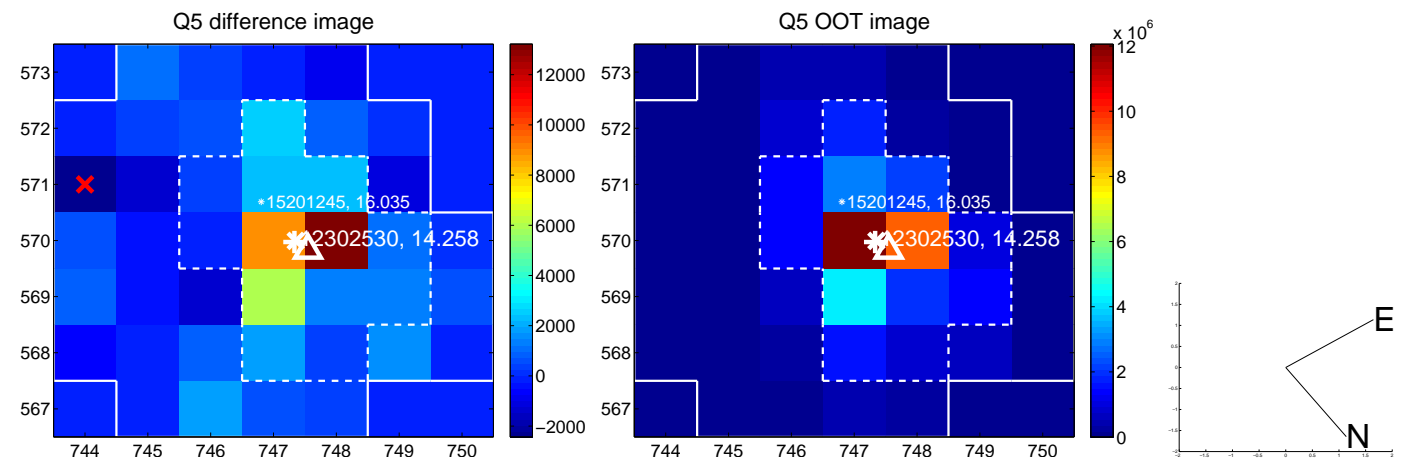


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

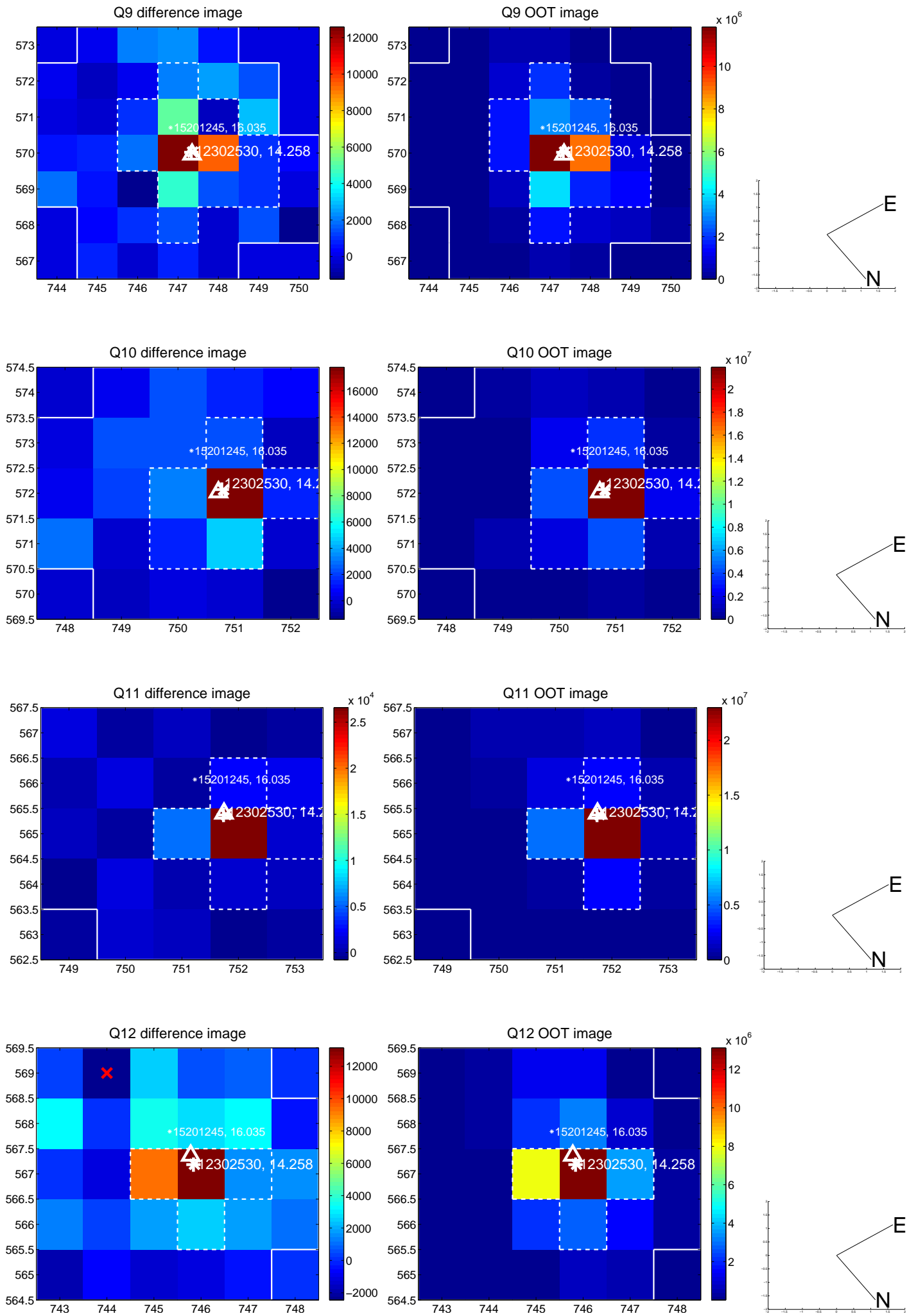
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



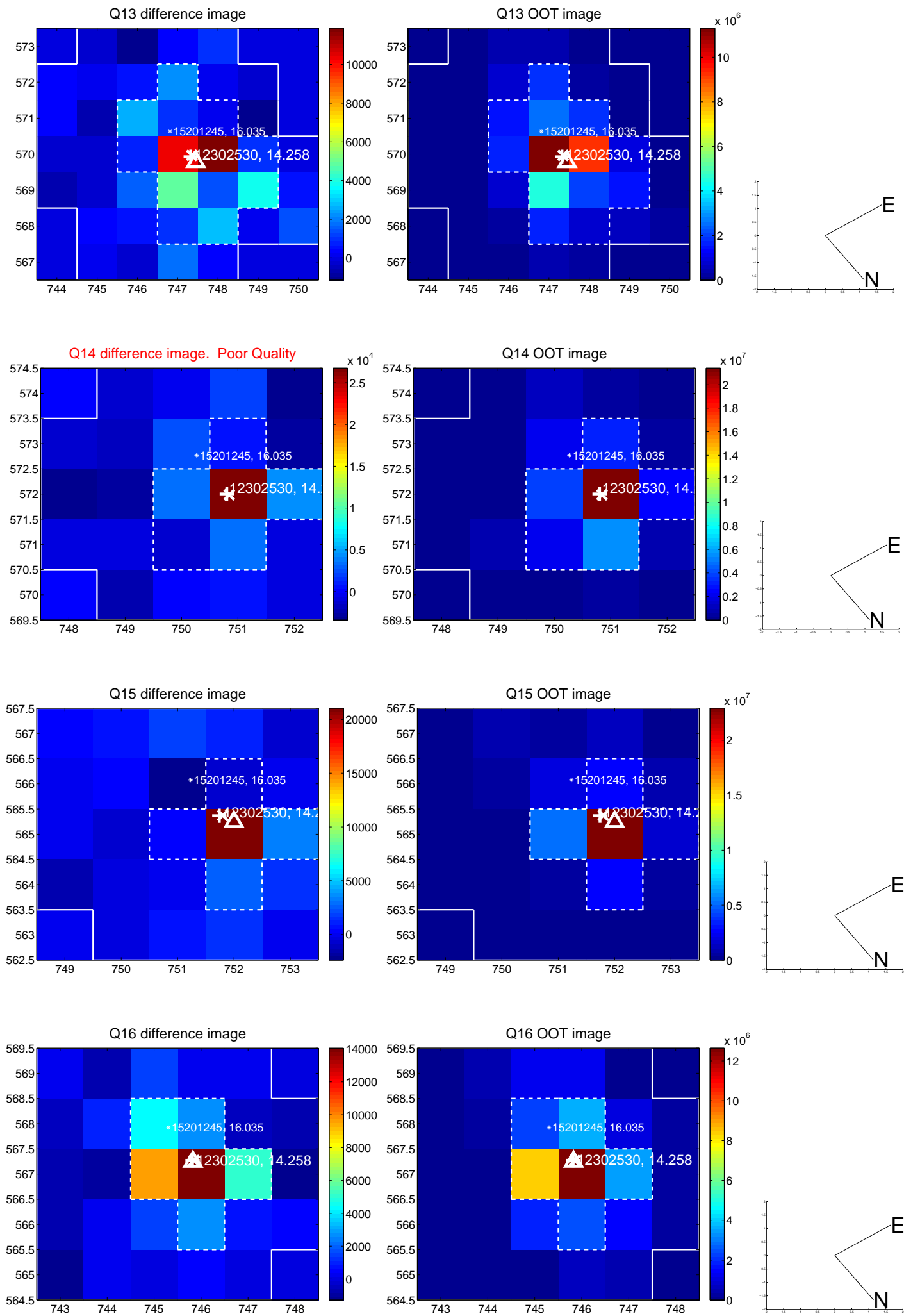
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



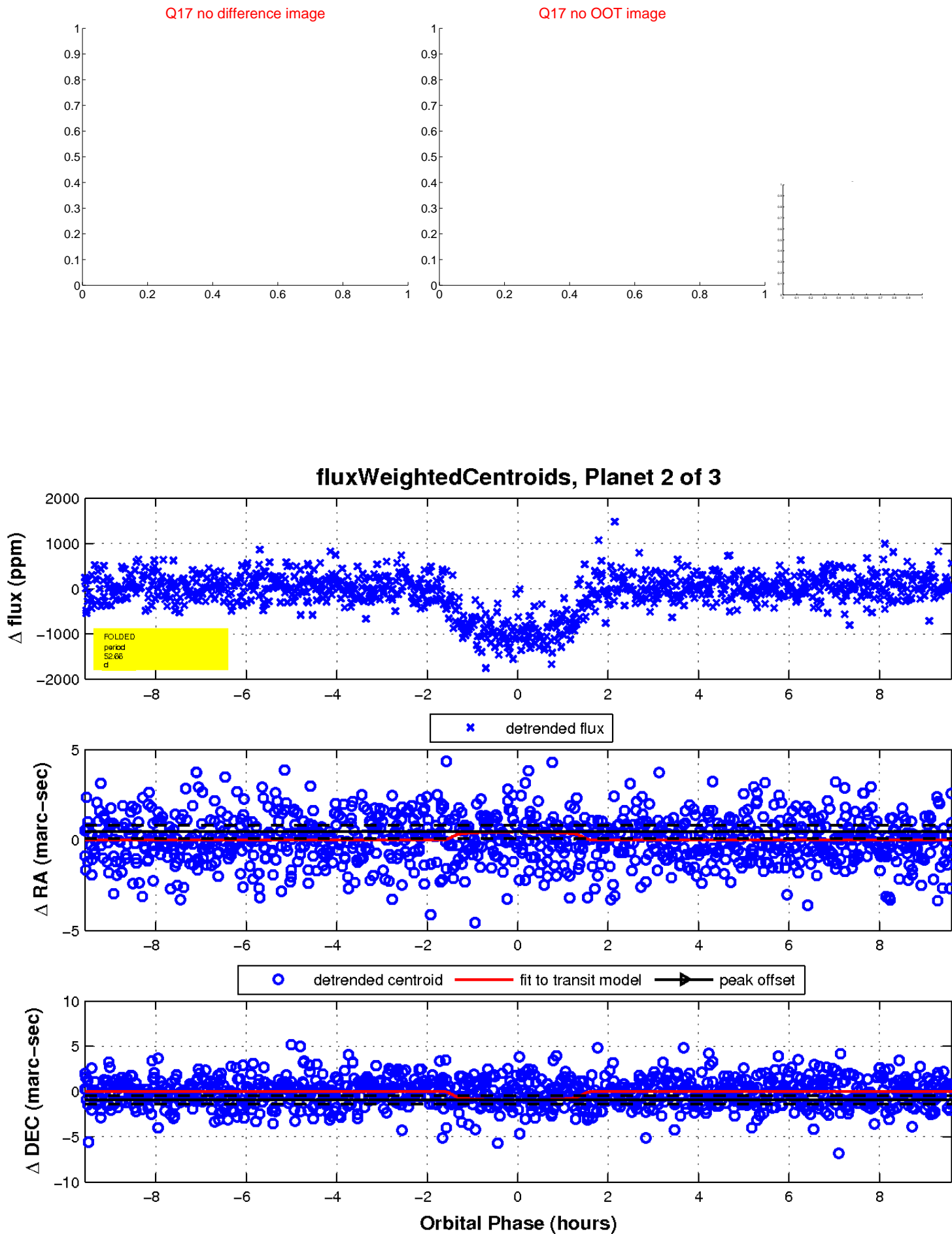
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



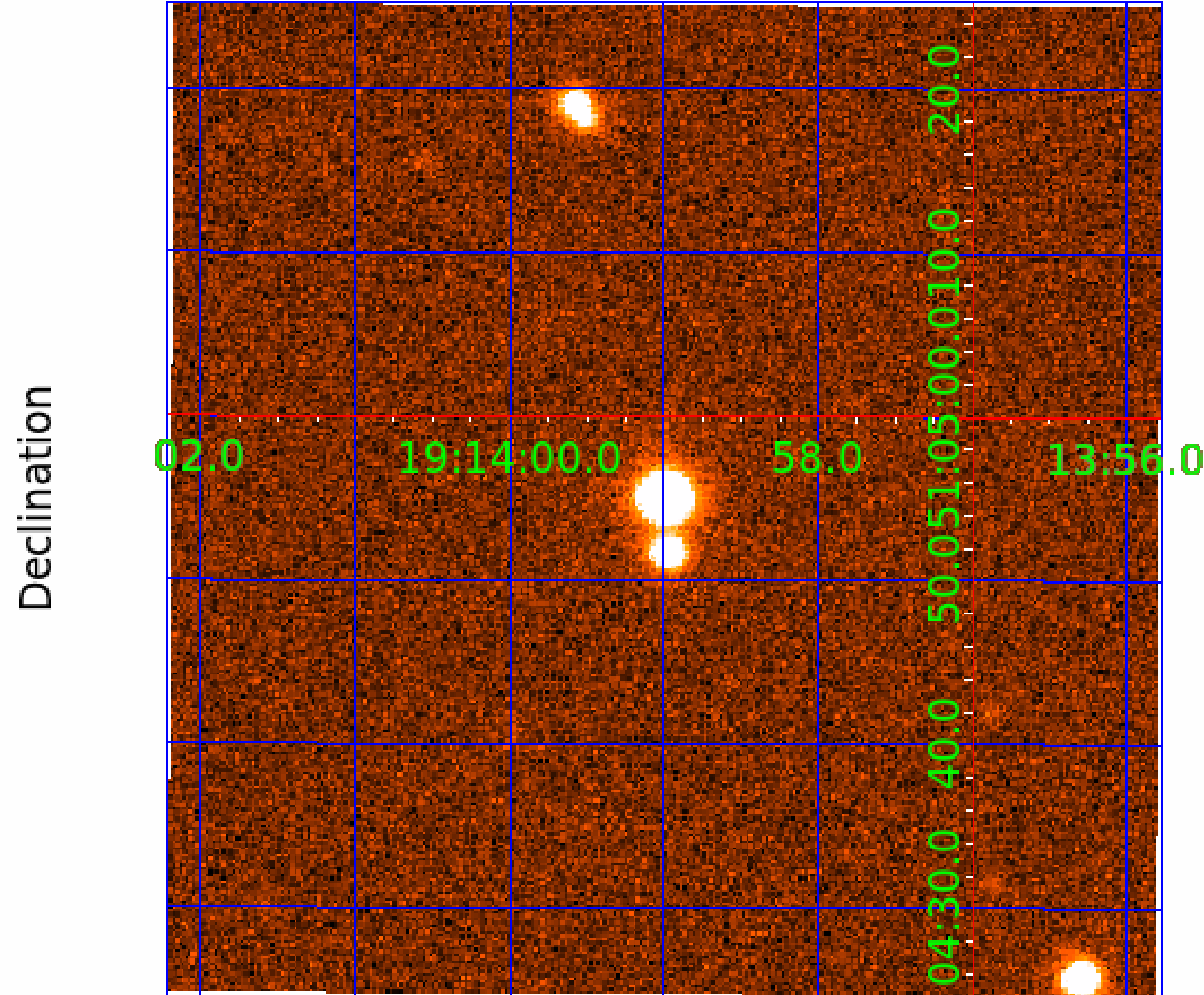
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 012302530

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})
012302530-01	OBS	0438.01	5.931192	133.279237	1000.2	2.557	79.9	85.4	0.54	3984	2.04	23.57
012302530-02	OBS	0438.02	52.661496	183.521605	1040.4	3.205	30.6	32.7	0.54	3984	1.94	1.28
012302530-03	OBS	No	552.124919	274.158127	1000.5	9.844	16.6	15.1	0.54	3984	1.92	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012302530-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012302530-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012302530-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

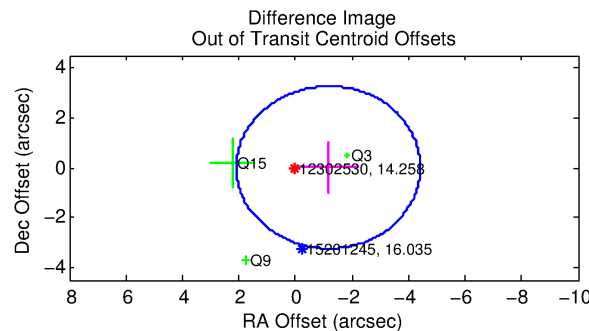
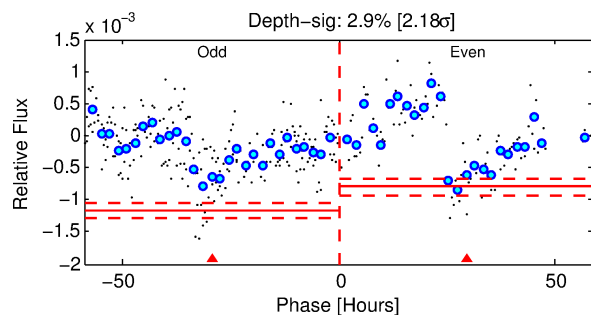
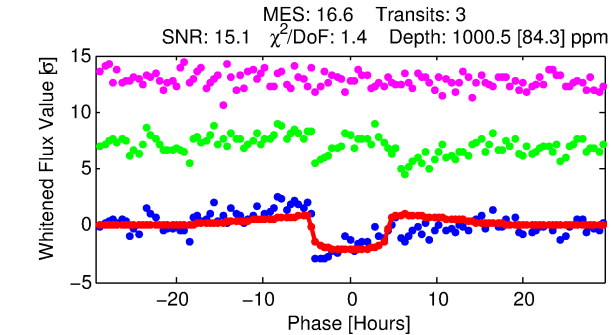
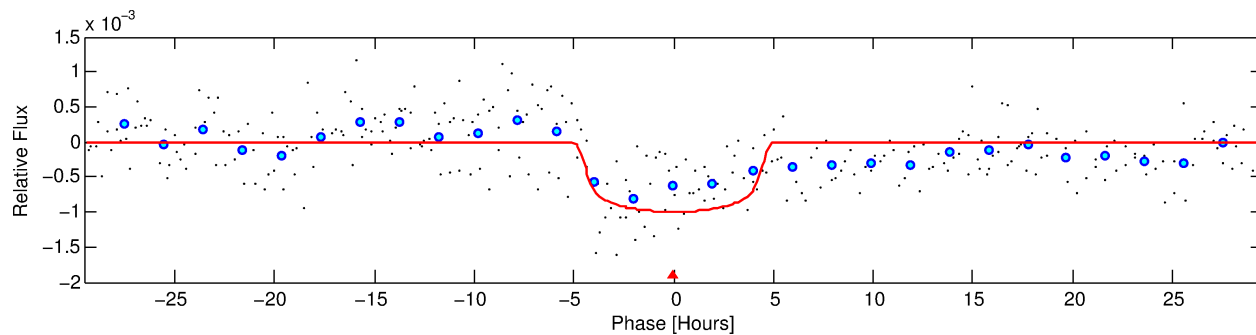
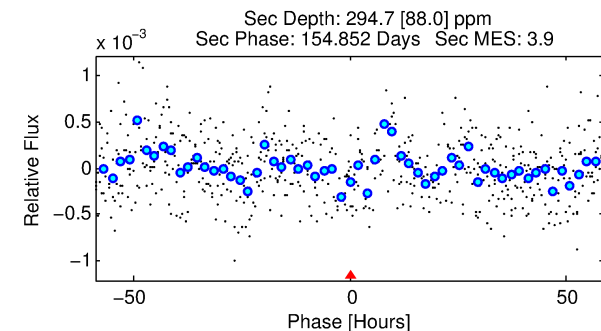
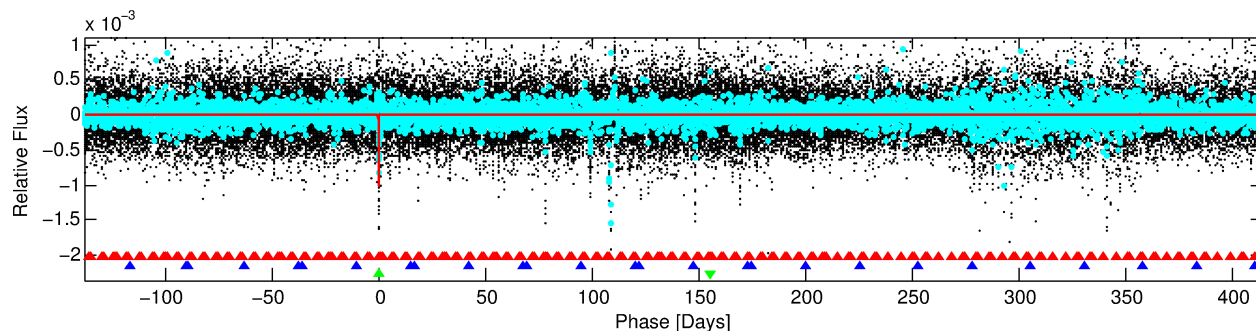
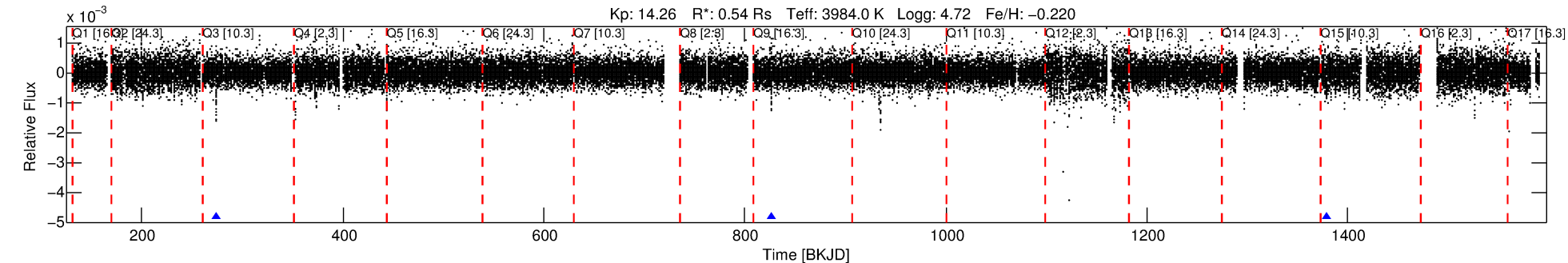
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012302530-03

No Significant Match Found

DV One-Page Summary

KIC: 12302530 Candidate: 3 of 3 Period: 552.125 d
KOI: K00438 Name: Kepler-155 Corr: No Ephemeris Match



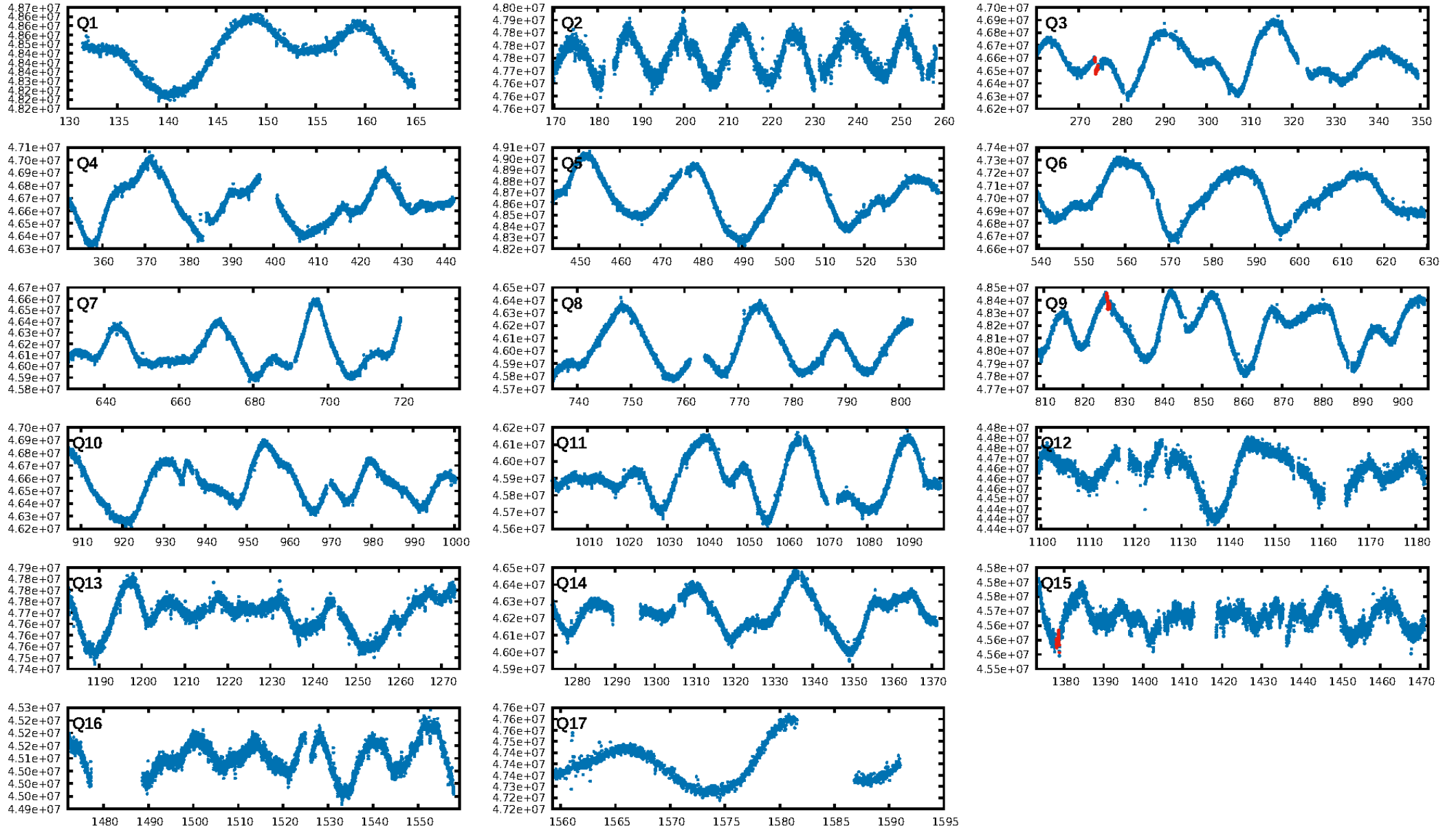
DV Fit Results:

Period = 552.12492 [0.00782] d
Epoch = 274.1581 [0.0088] BKJD
Rp/R* = 0.0326 [0.0041]
a/R* = 266.51 [133.55]
b = 0.82 [0.20]
Seff = 0.06 [0.01]
Teq = 124 [3] K
Rp = 1.92 [0.27] Re
a = 1.0834 [0.0531] AU
Ag = 51740.05 [20471.13] [2.53σ]
Teffp = 2891 [289] K [9.57σ]

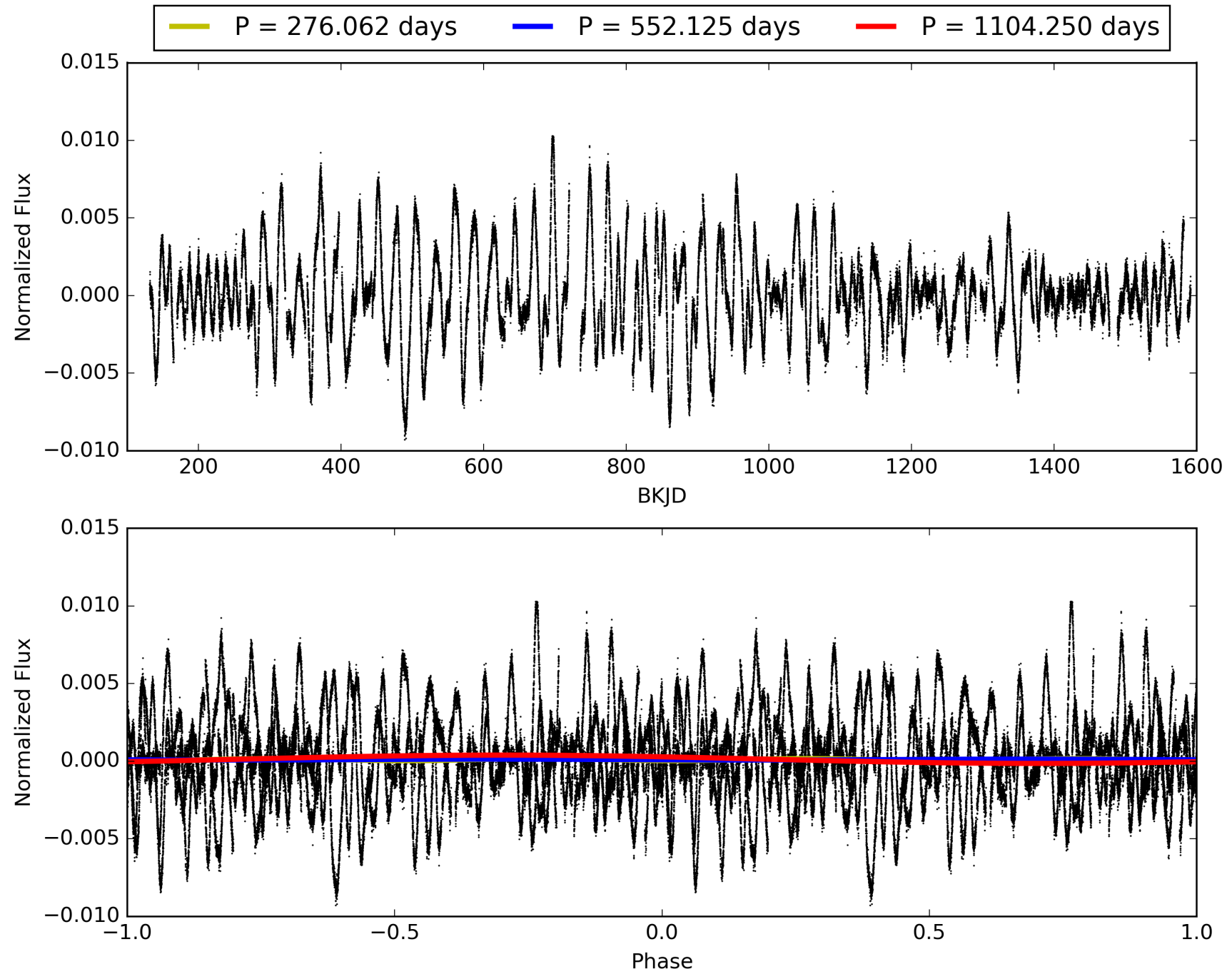
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1157.88σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 56.4%
Bootstrap-pfa: 9.60e-27
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.382
Centroid-sig: 58.7%
Centroid-so: 0.963 arcsec [1.31σ]
OotOffset-rm: 1.164 arcsec [1.07σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-rm: 1.351 arcsec [1.23σ]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 012302530-03, PDC Light Curves

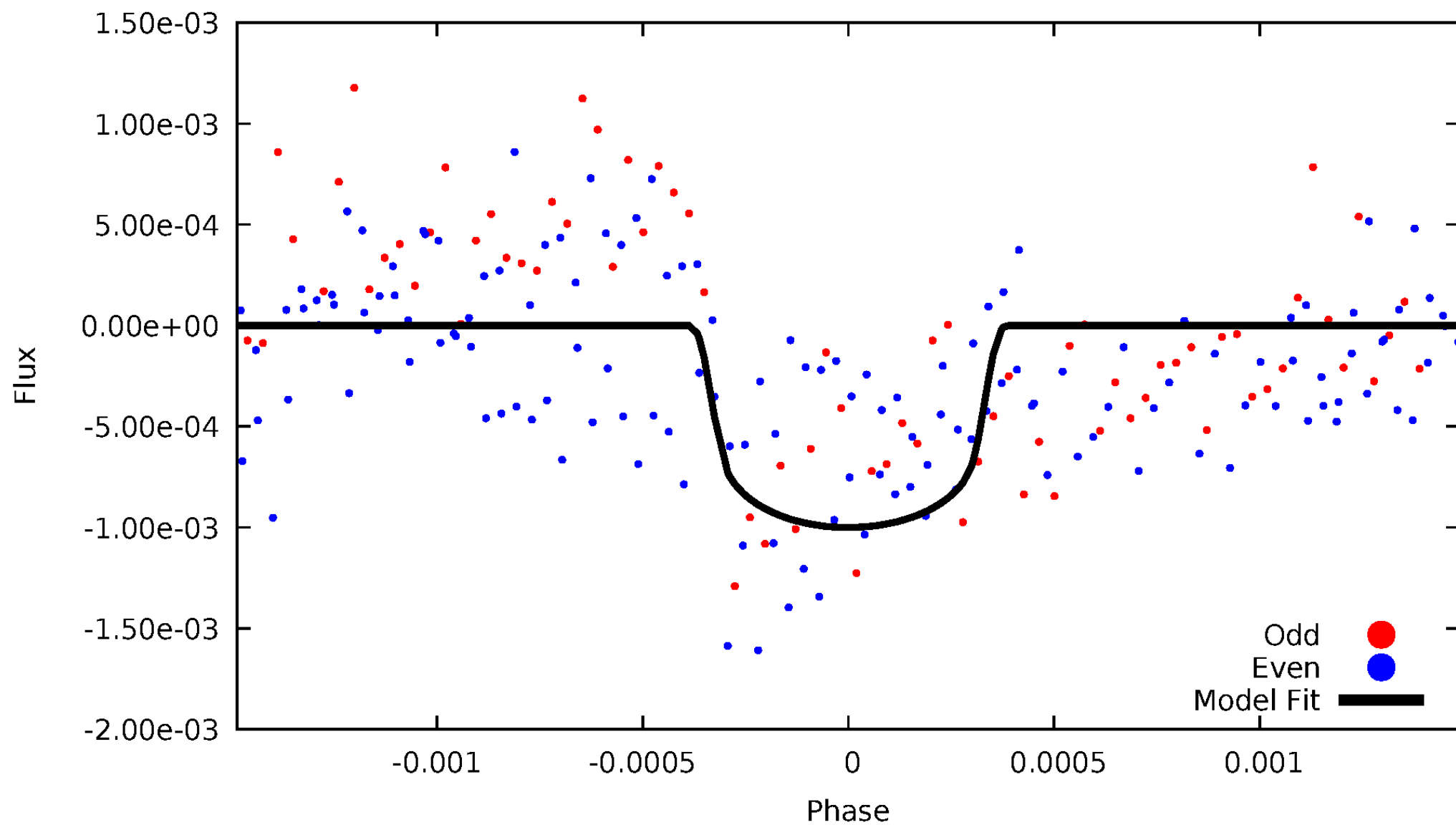


TCE 012302530-03



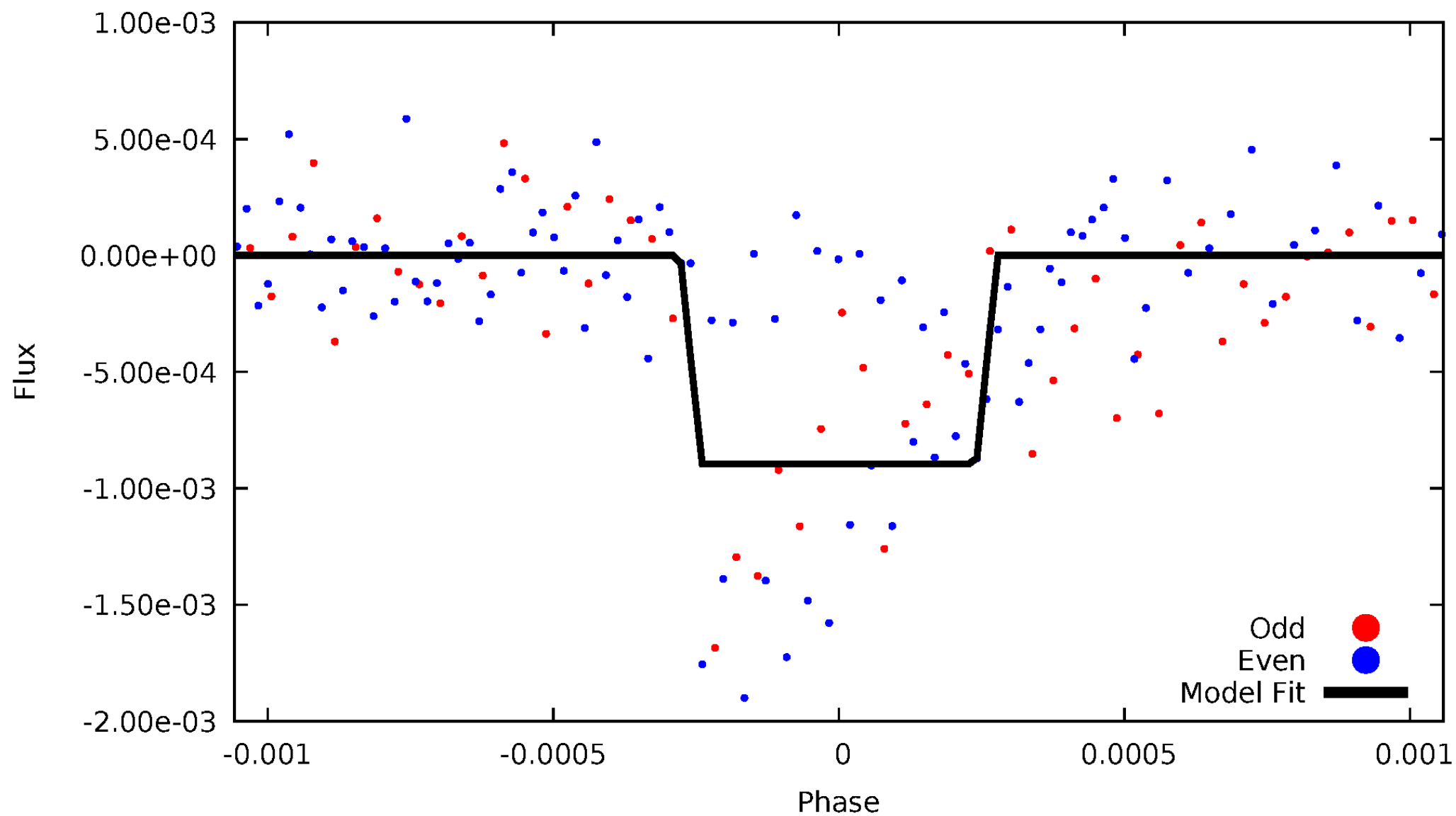
DV Odd/Even

TCE 012302530-03



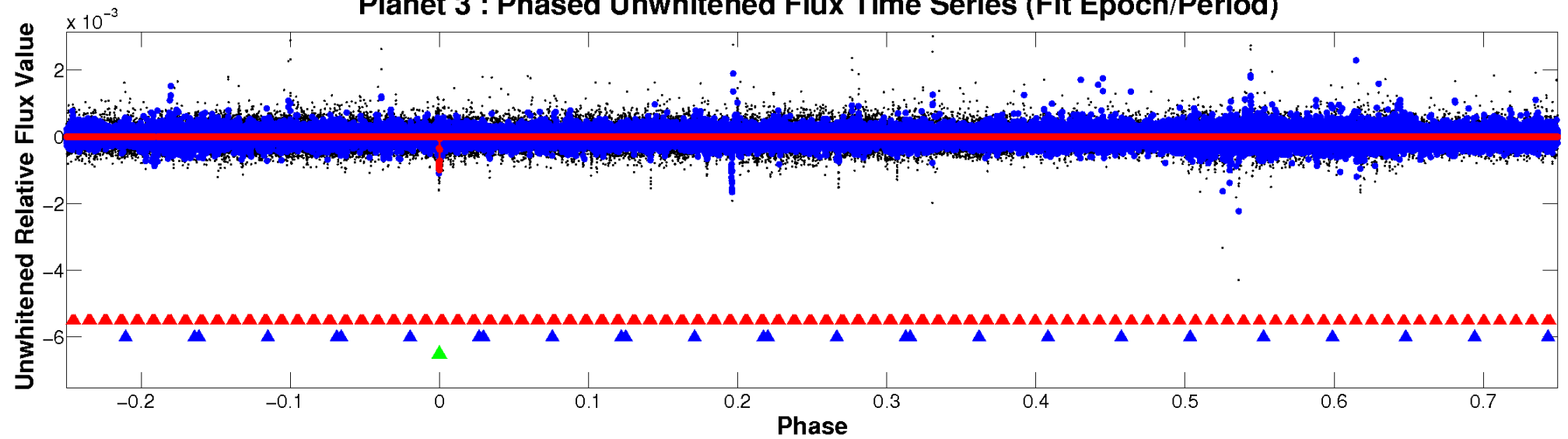
ALT Odd/Even

TCE 012302530-03

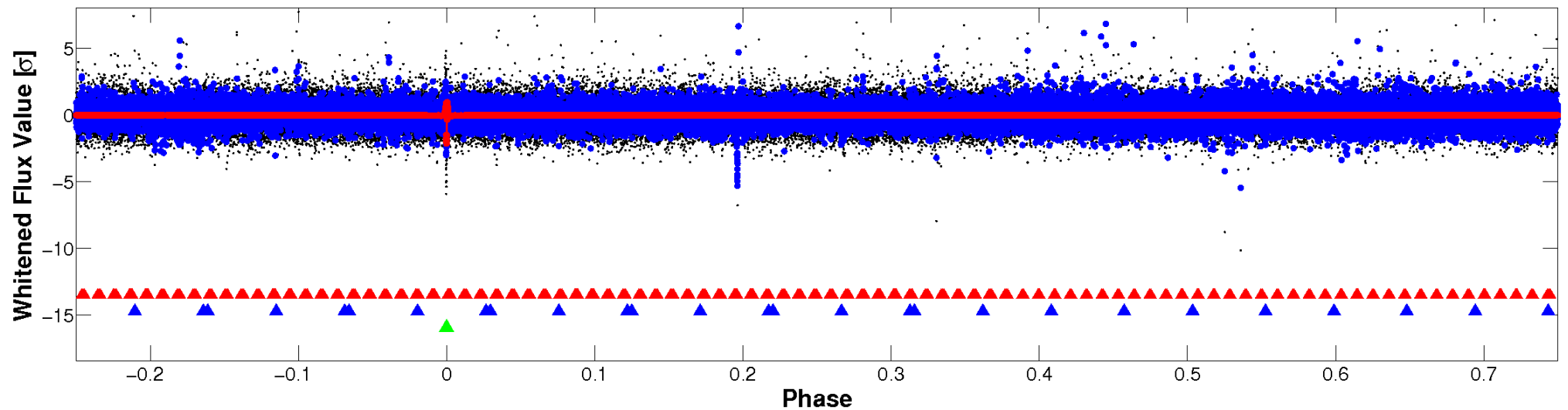


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

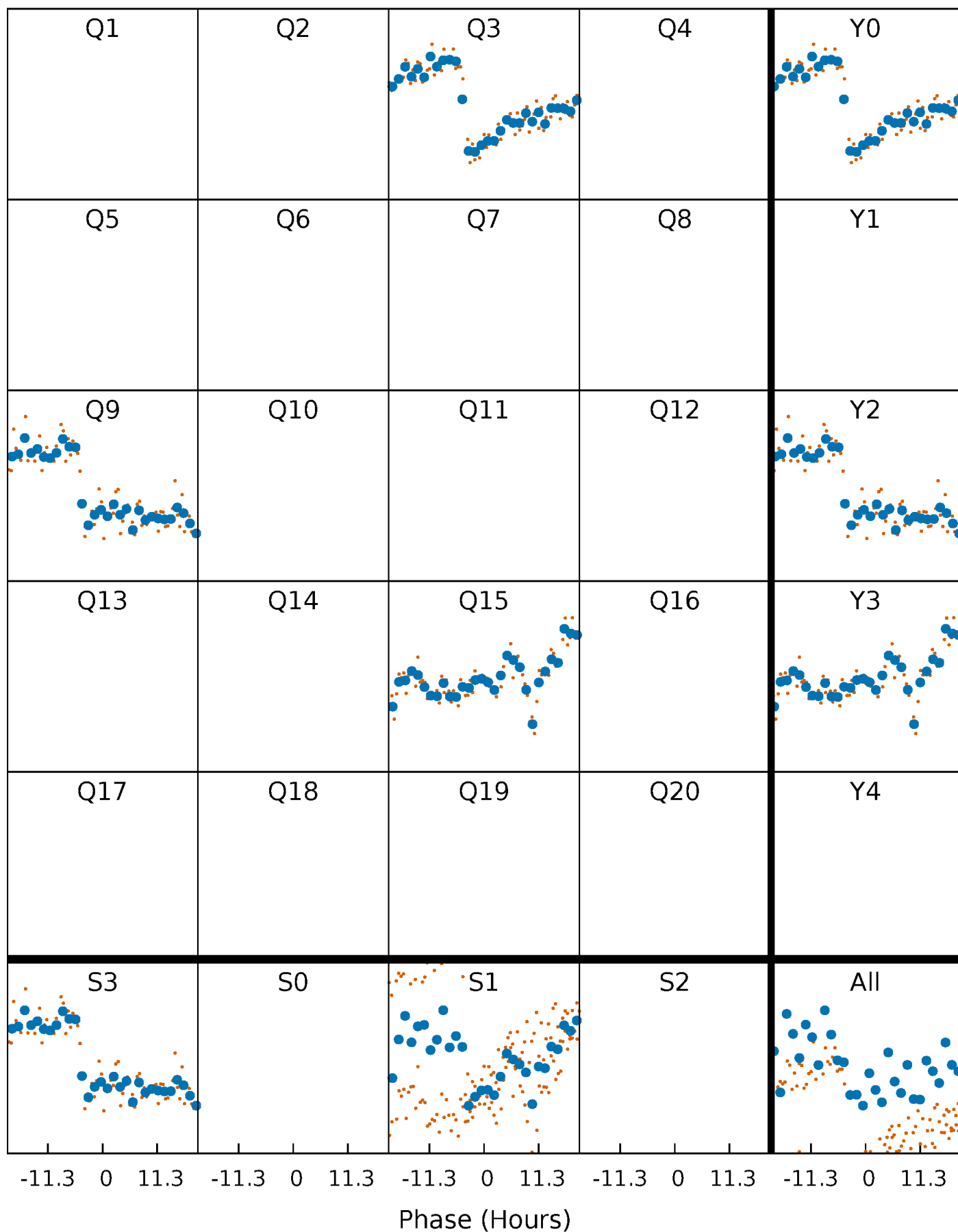


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



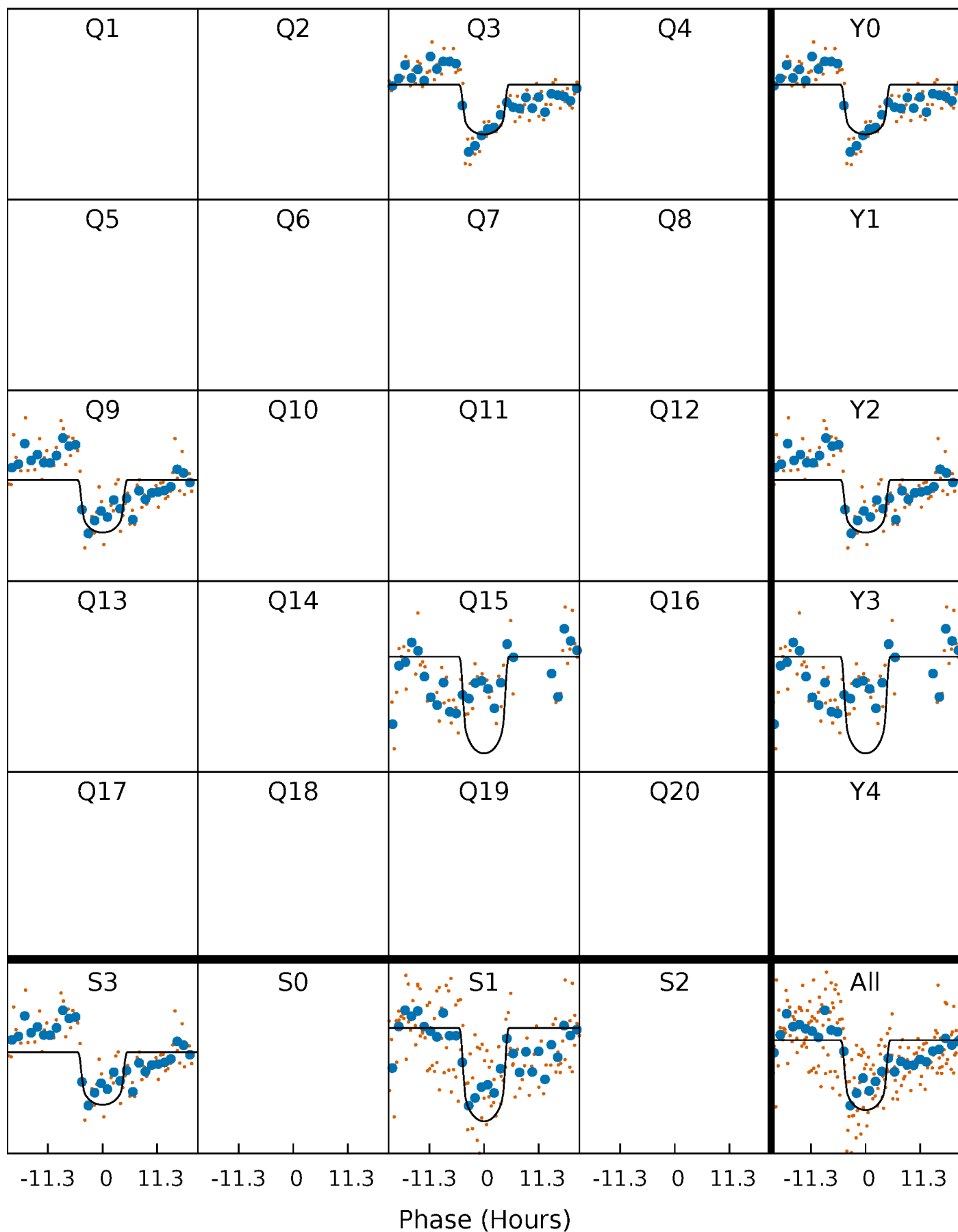
PDC Quarter-Phased Transit Curves

TCE 012302530-03 $P=552.124919$ Days $T_0=274.158126$ (BKJD)



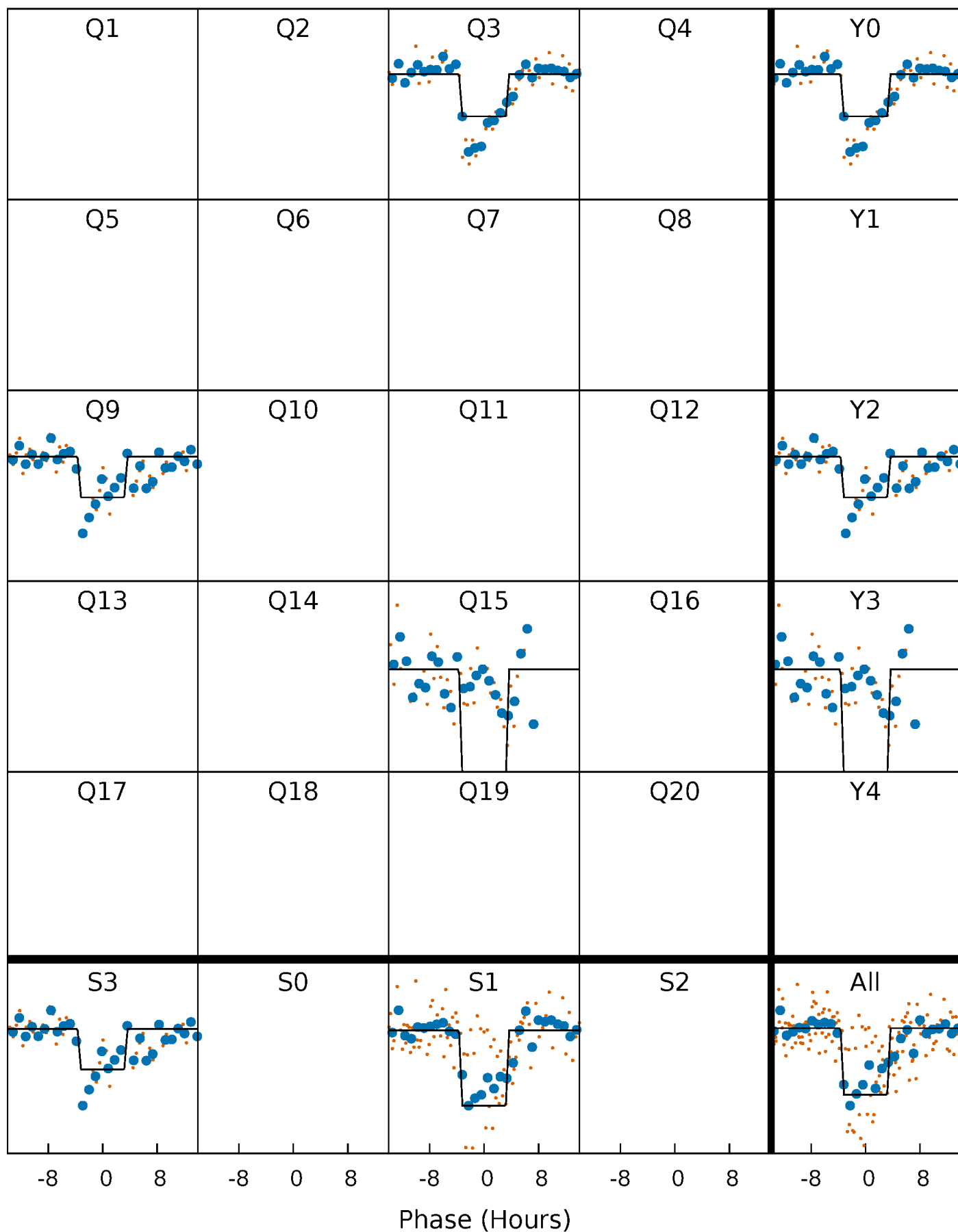
DV Quarter-Phased Transit Curves

TCE 012302530-03 $P=552.124919$ Days $T_0=274.158126$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

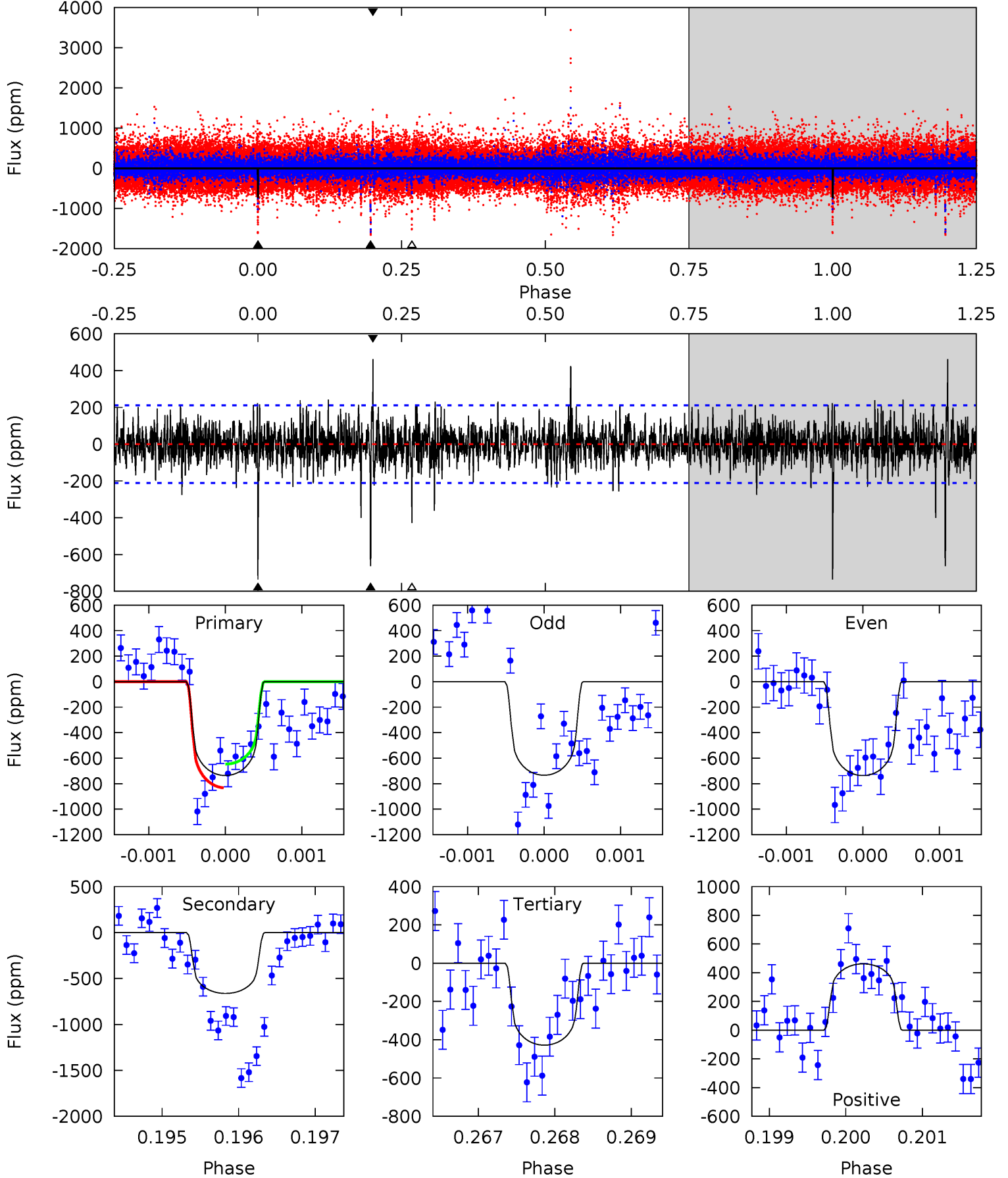
TCE 012302530-03 P=552.121602 Days $T_0=274.128400$ (BKJD)



DV Model-Shift Uniqueness Test

012302530-03, P = 552.124919 Days, E = 274.158126 Days

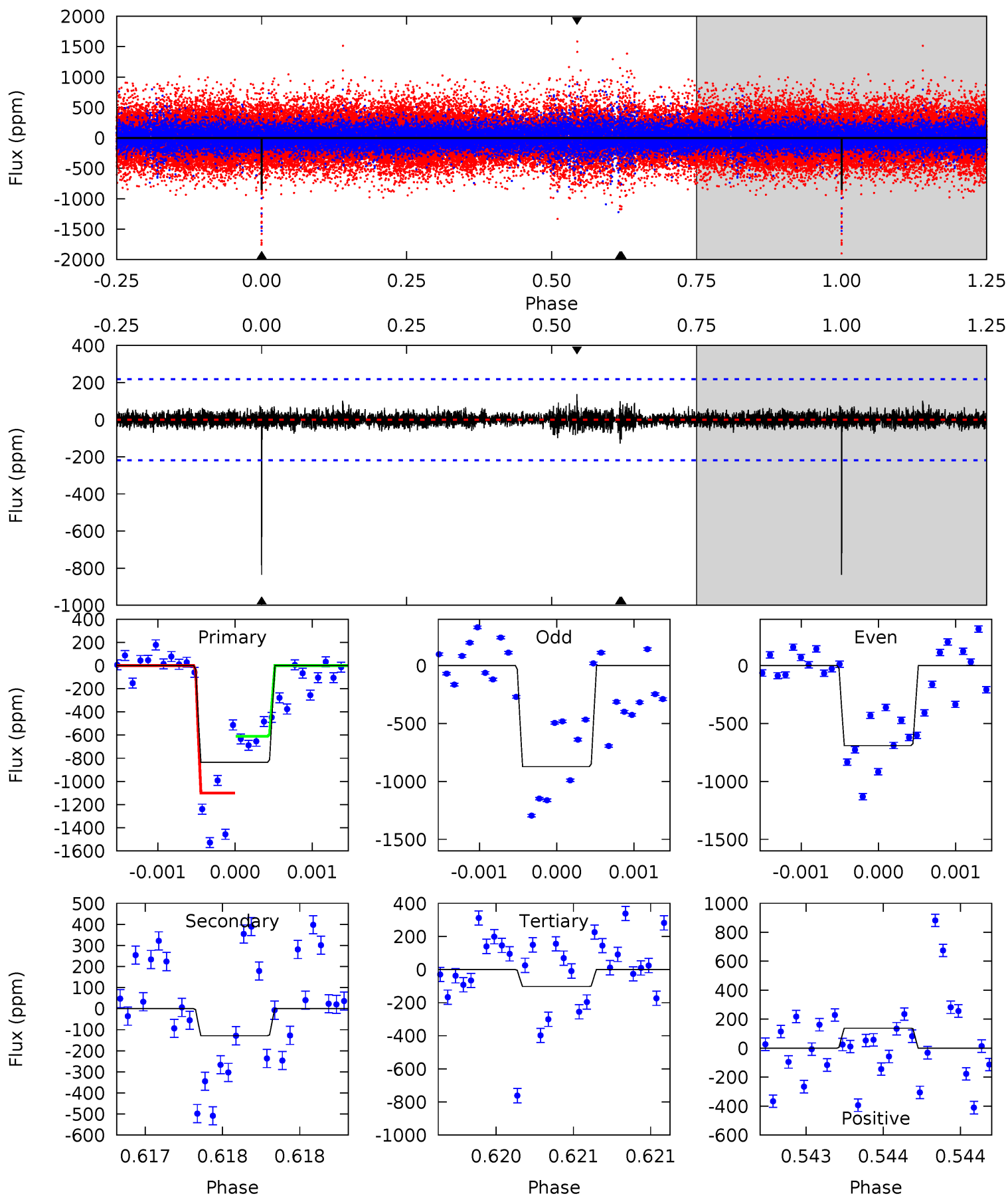
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	17.3	11.2	12.0	5.50	3.37	1.93	8.01	7.13	6.10	5.23	0.04	1.00	0.39	2.41



Alt Model-Shift Uniqueness Test

012302530-03, P = 552.121602 Days, E = 274.128400 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	3.26	2.61	3.50	5.56	3.46	0.50	18.6	17.7	0.65	-0.24	2.29	0.88	0.14	6.19



Stellar Parameters For KIC 012302530

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3984^{+71}_{-86}	$4.720^{+0.030}_{-0.030}$	$-0.220^{+0.150}_{-0.150}$	$0.539^{+0.031}_{-0.035}$	$0.557^{+0.030}_{-0.036}$	$5.005^{+0.749}_{-0.596}$
	+2%/-2%	+1%/-1%	+68%/-68%	+6%/-6%	+5%/-6%	+15%/-12%
Source	SPE5	SPE5	SPE5	DSEP		

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

Secondary Eclipse Parameters for KIC 012302530-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-663 ± 38	$1.94^{+0.24}_{-0.27}$	173^{+4}_{-4}	3656^{+195}_{-151}	114180^{+37738}_{-24034}
Alt.	-128 ± 39	$1.76^{+0.25}_{-0.26}$	173^{+4}_{-4}	2929^{+184}_{-178}	26297^{+12827}_{-9500}

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

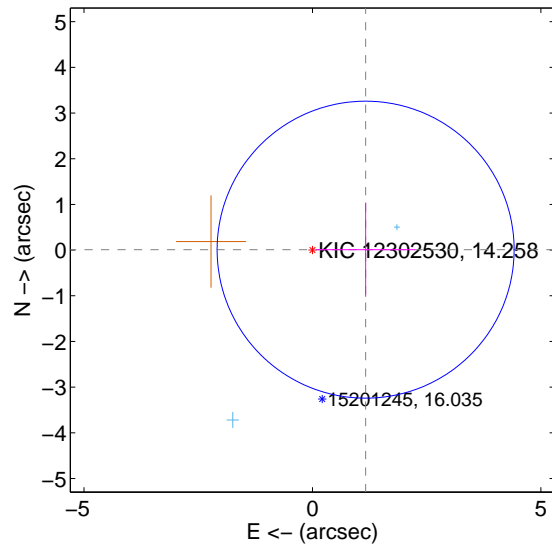
Supplemental centroid analysis for 012302530-03. Kepler magnitude: 14.26. Transit SNR 15.11

There are 2 quarters with good PRF difference image offsets

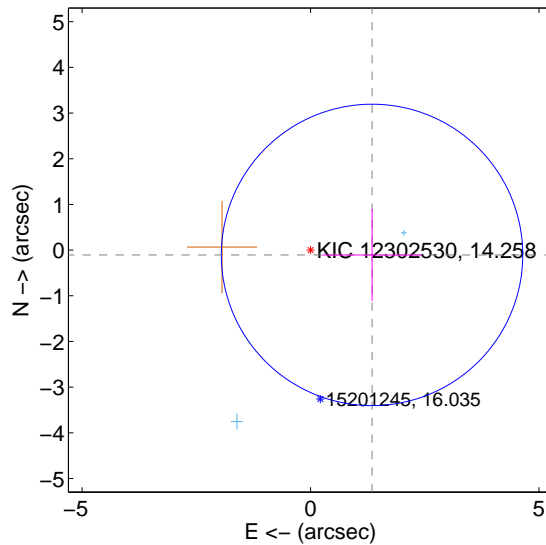
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.164 ± 1.084	1.07	-1.164 ± 1.084	0.009 ± 1.032
PRF-fit source offset from KIC position	1.351 ± 1.100	1.23	-1.347 ± 1.100	-0.106 ± 1.010
photometric centroid source offset	0.96 ± 0.74	1.31	-0.46 ± 0.54	0.85 ± 0.78

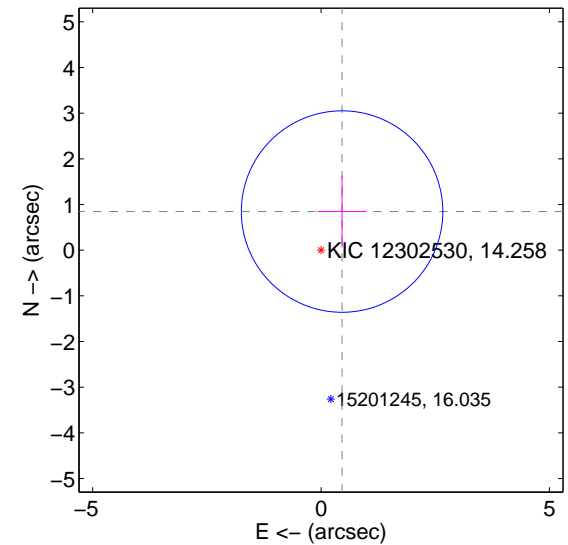
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

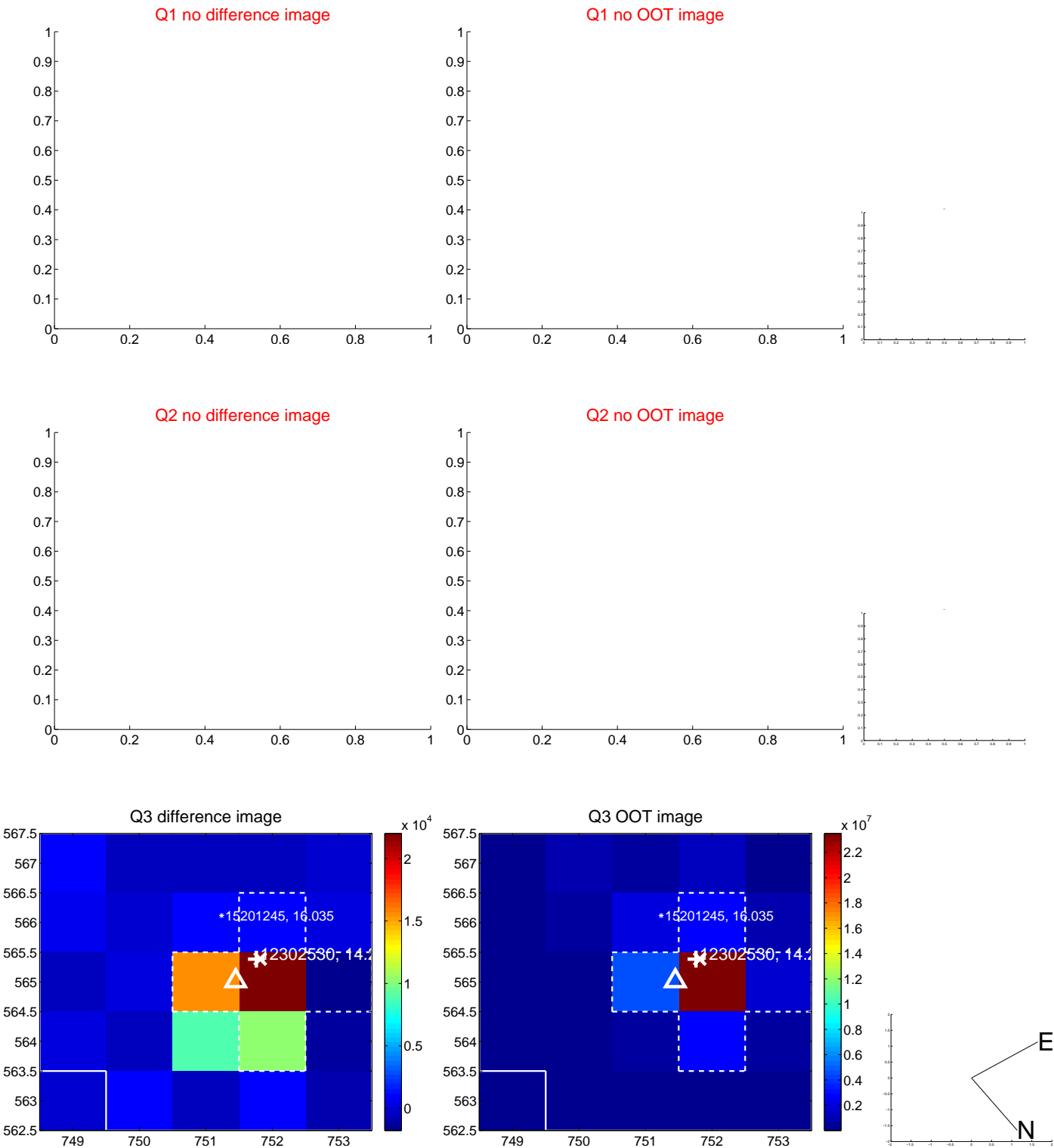


offset from photometric centroids



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.

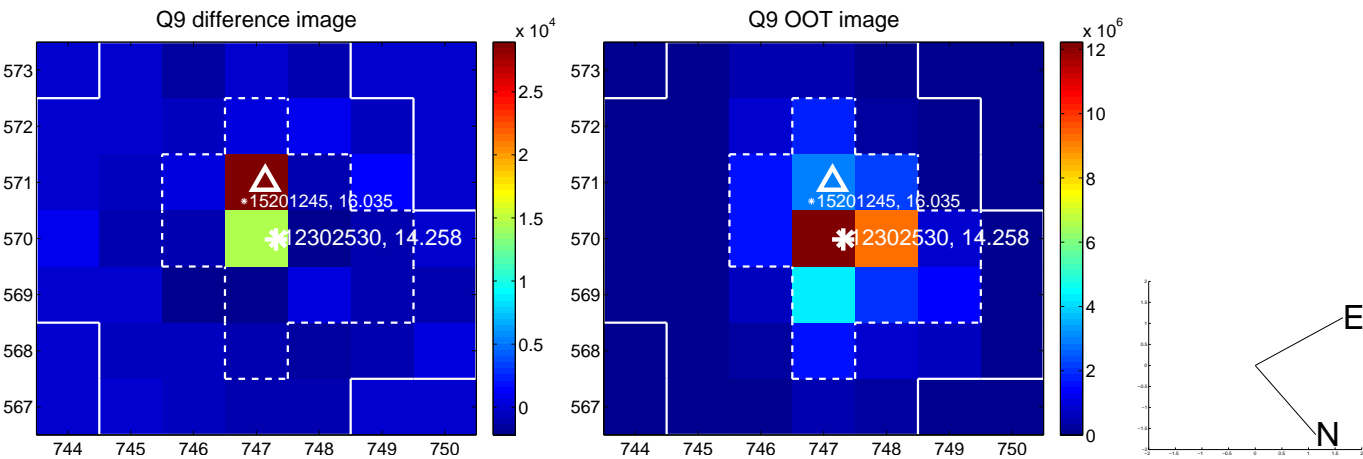
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



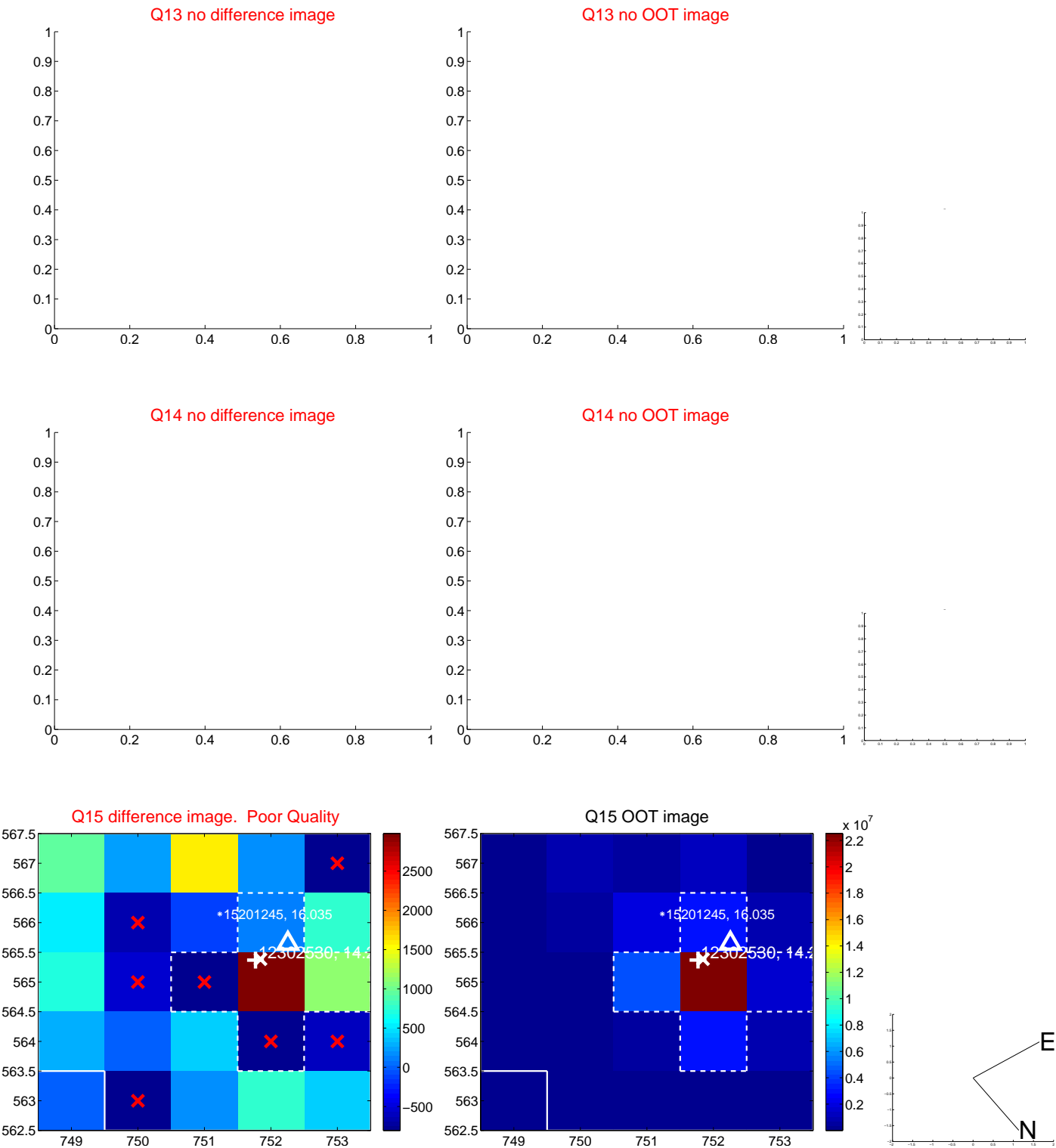
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



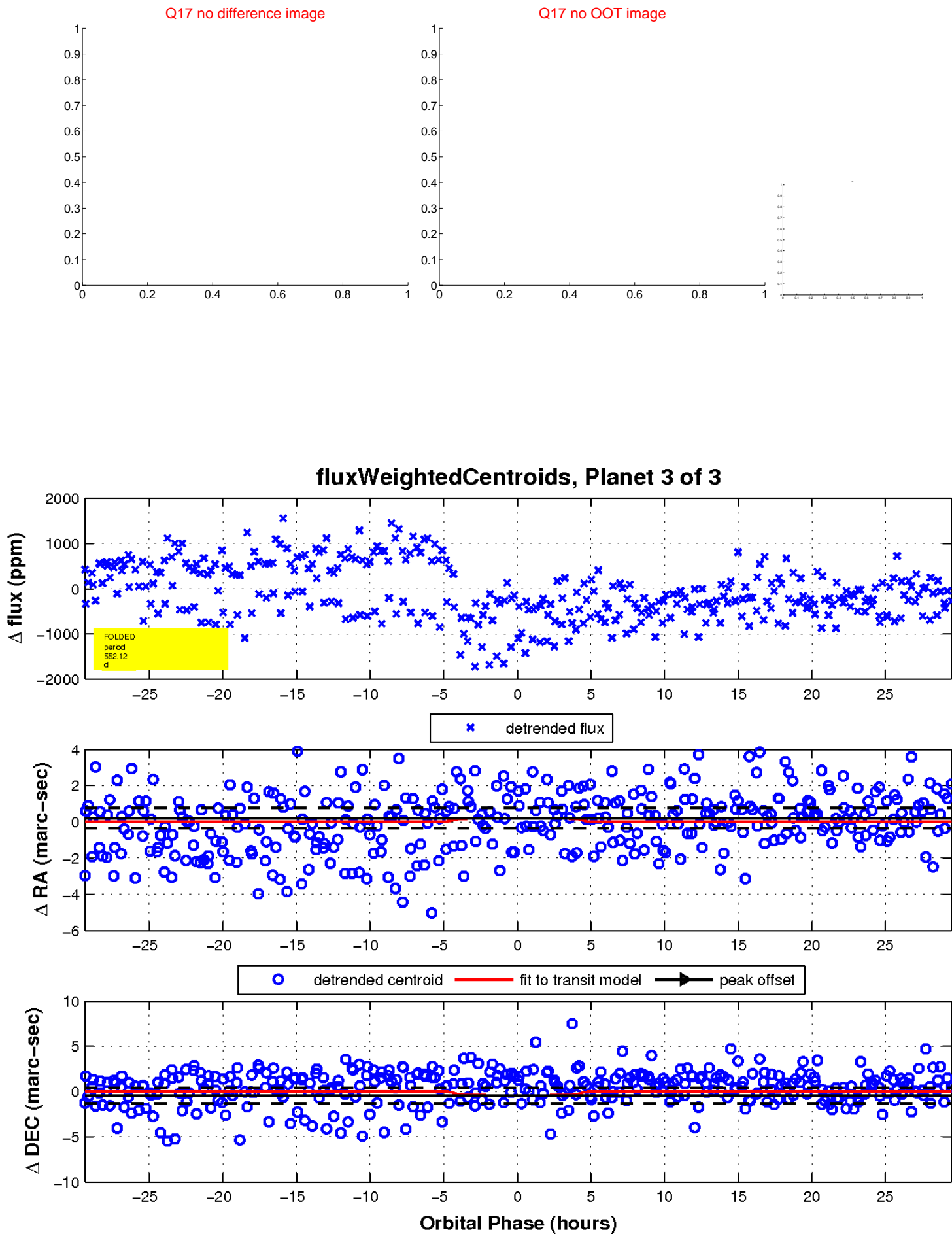
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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.



UKIRT Image

