

KIC 001573174

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})
001573174-01	OBS	No	0.979807	131.995291	0.9	0.754	16.0	0.0	1.96	7159	0.20	18349.34
001573174-02	OBS	No	0.634916	131.817243	546.2	1.130	14.5	9.4	1.96	7159	5.35	32722.95
001573174-03	OBS	No	0.634927	132.020832	299.9	1.452	13.2	6.1	1.96	7159	3.45	32722.26
001573174-04	OBS	No	0.634924	131.604944	1008.9	2.000	9.9	-1.0	1.96	7159	6.32	32722.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001573174-01	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
001573174-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
001573174-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
001573174-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

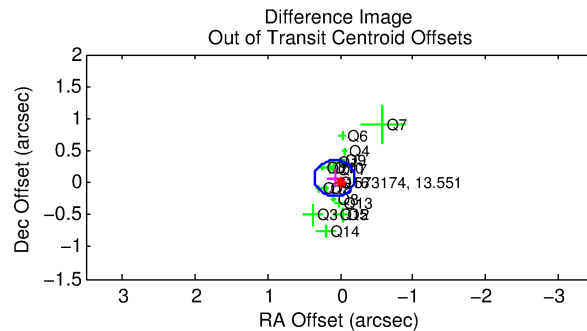
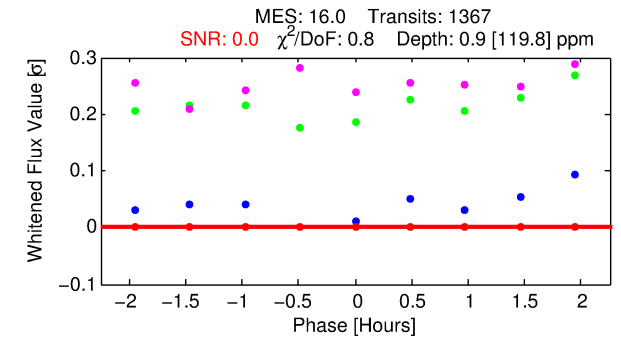
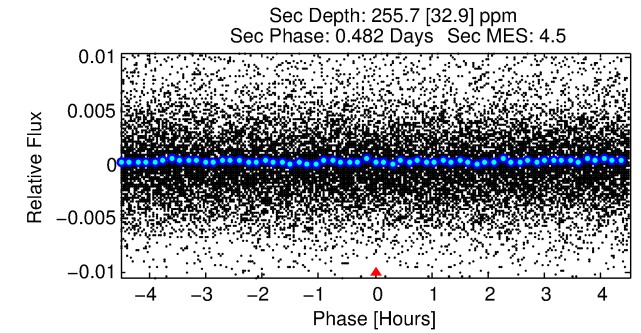
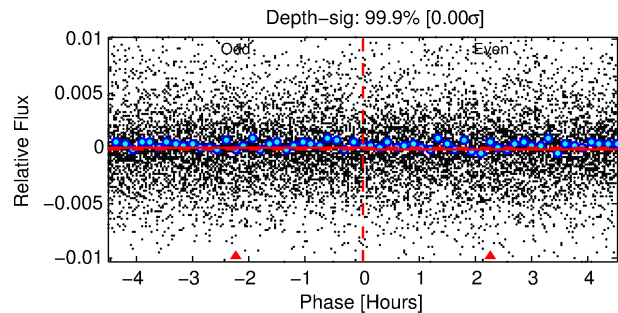
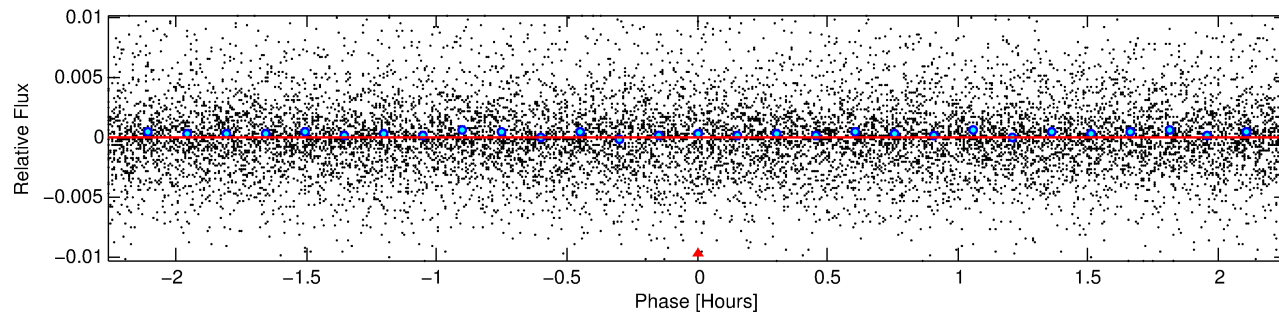
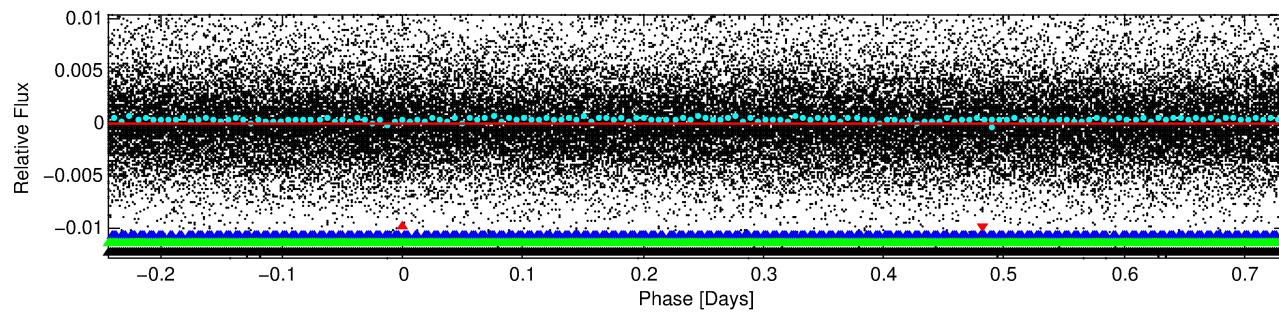
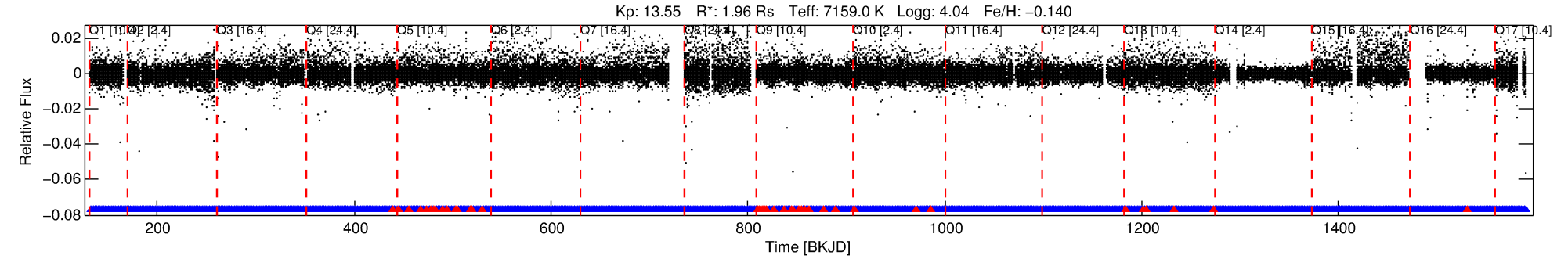
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001573174-01

No Significant Match Found

DV One-Page Summary

KIC: 1573174 Candidate: 1 of 4 Period: 0.980 d



DV Fit Results:

Period = 0.97981 [0.01331] d
Epoch = 131.9953 [1.5439] BKJD
Rp/R* = 0.0010 [0.0686]
a/R* = 6.45 [815.16]
b = 0.77 [71.52]
Seff = 18349.34 [7621.35]
Teq = 2968 [308] K
Rp = 0.20 [14.66] Re
a = 0.0222 [0.0055] AU
Ag = 1654.35 [237033.93] [0.01σ]
Teffp = 29264 [1048303] K [0.03σ]

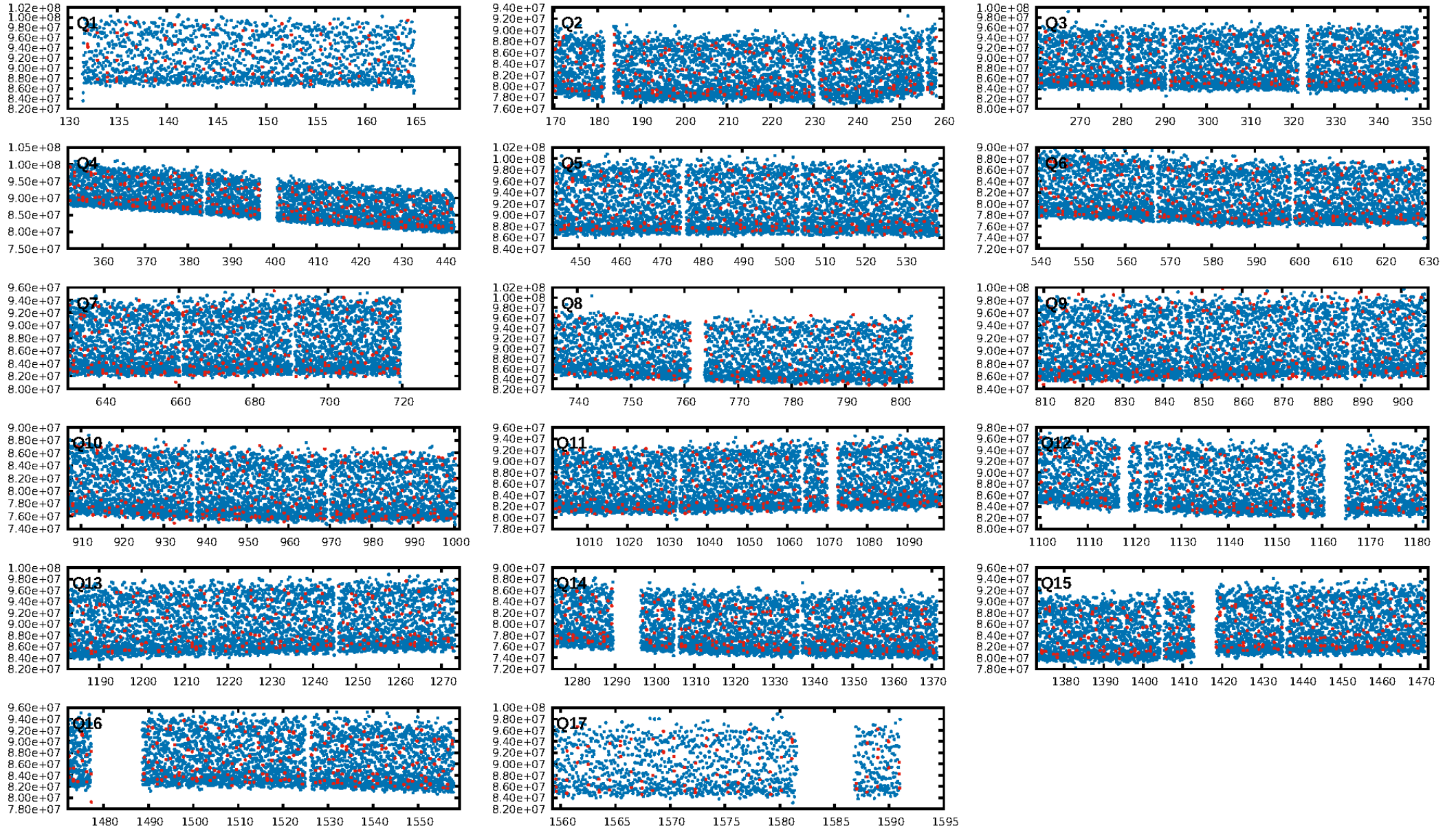
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.06σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [1260/1305]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.104 arcsec [1.12σ]
KicOffset-rm: 0.016 arcsec [0.13σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 0.00 [0/17]

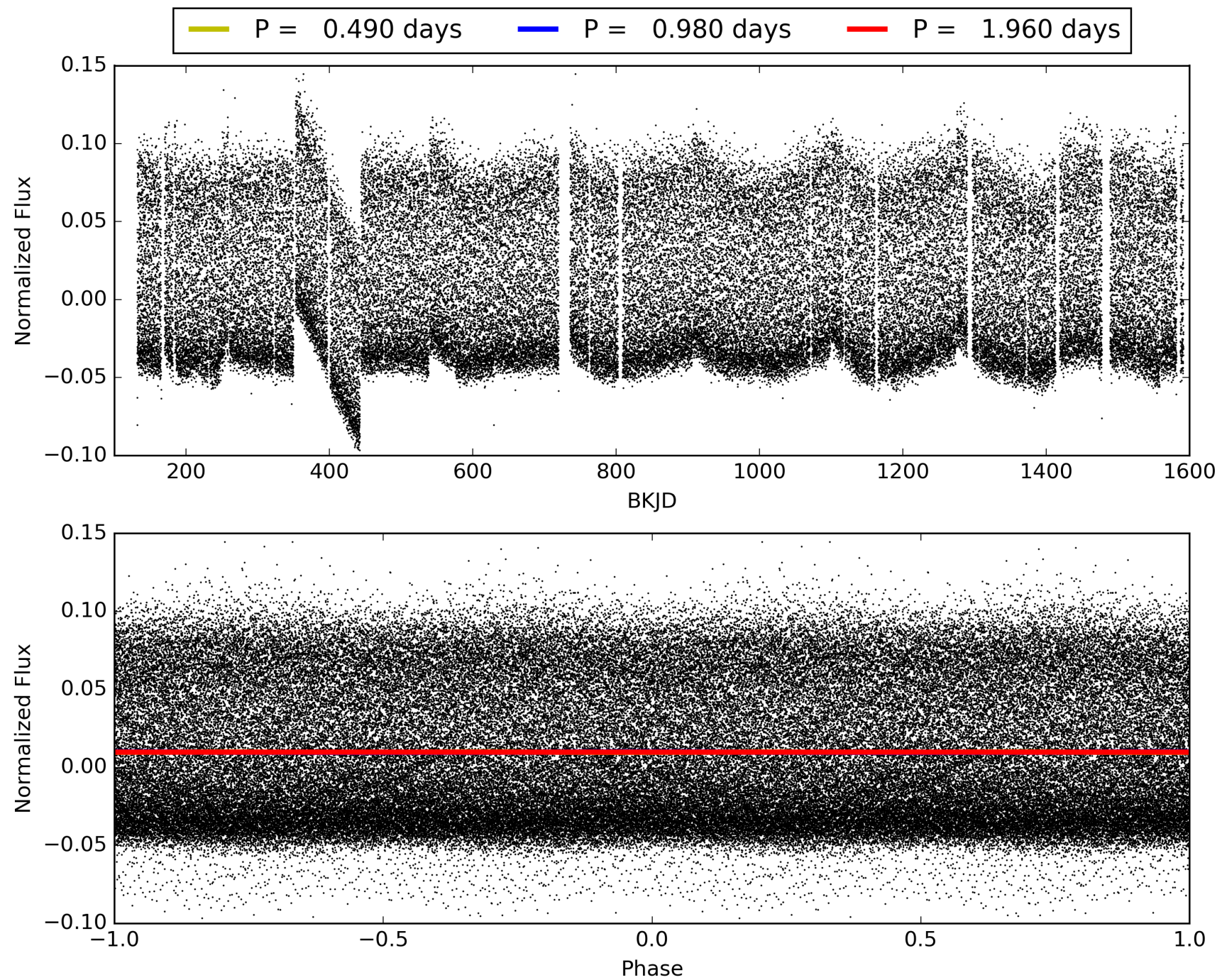
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 01:12:08 Z

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

TCE 001573174-01, PDC Light Curves

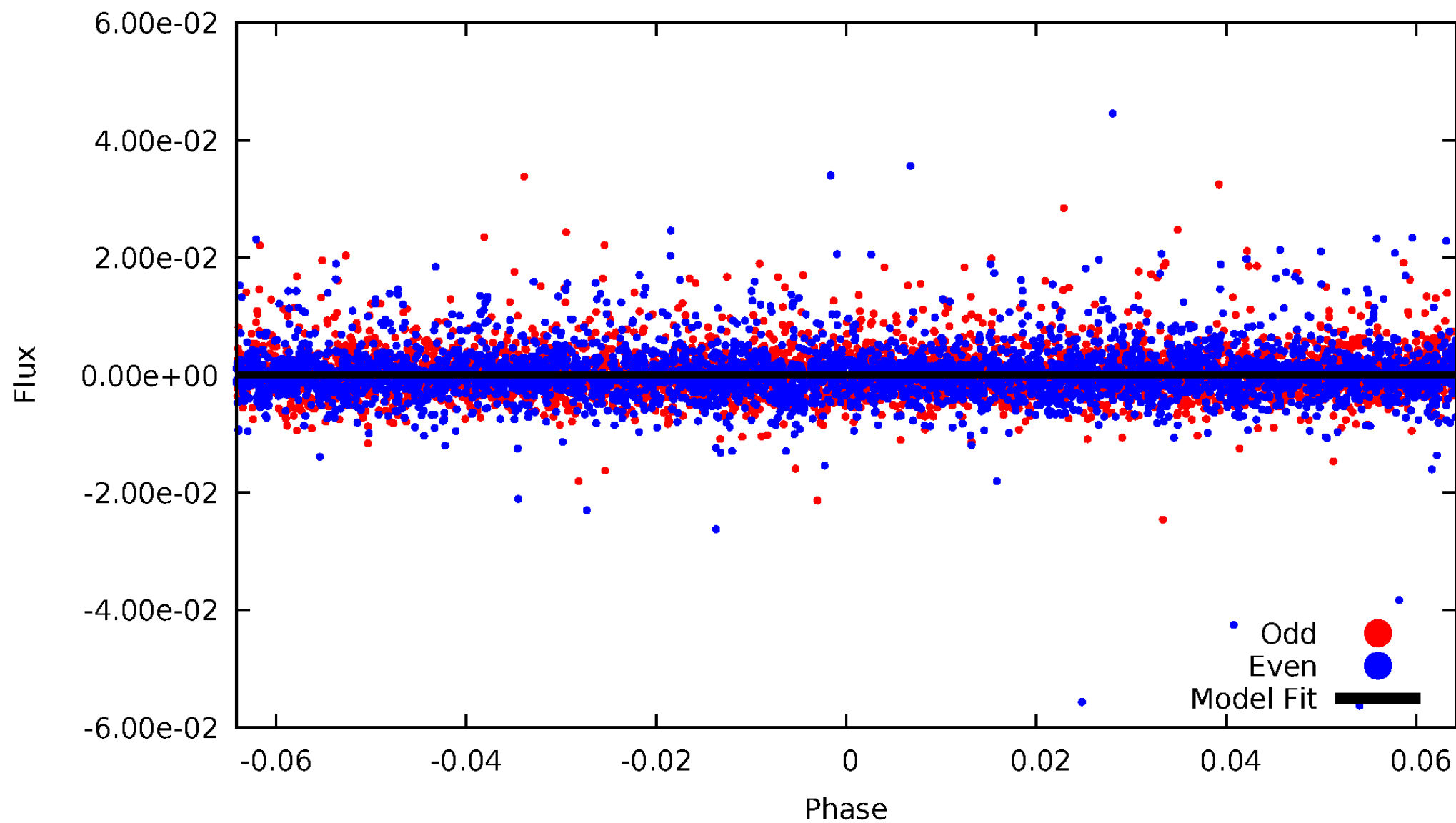


TCE 001573174-01



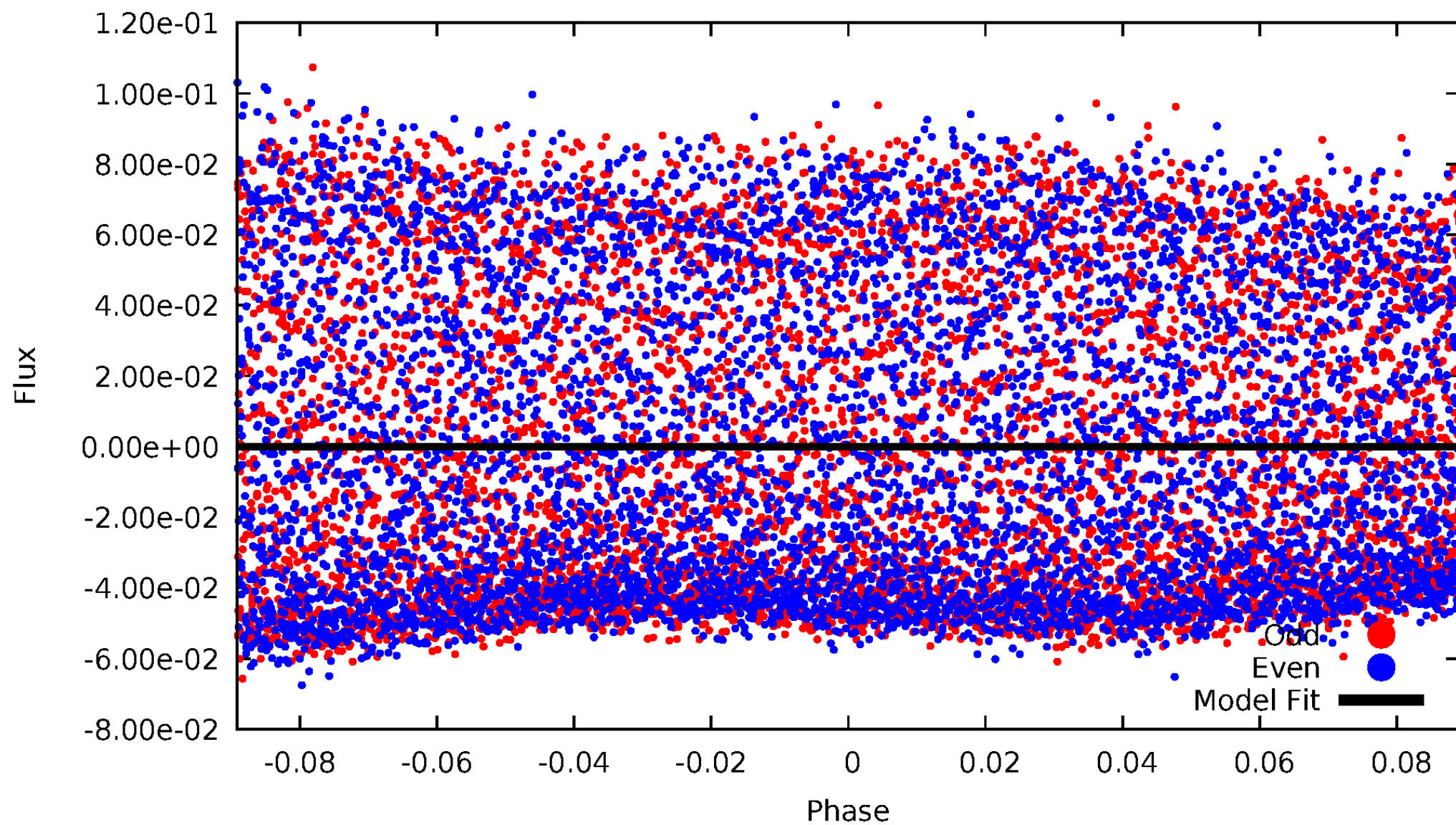
DV Odd/Even

TCE 001573174-01



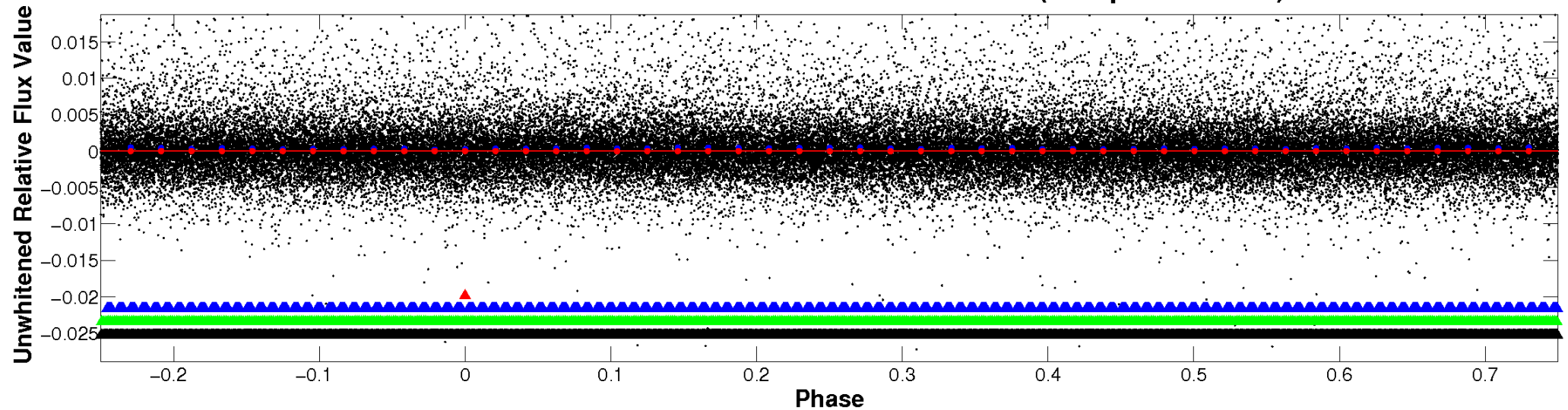
ALT Odd/Even

TCE 001573174-01

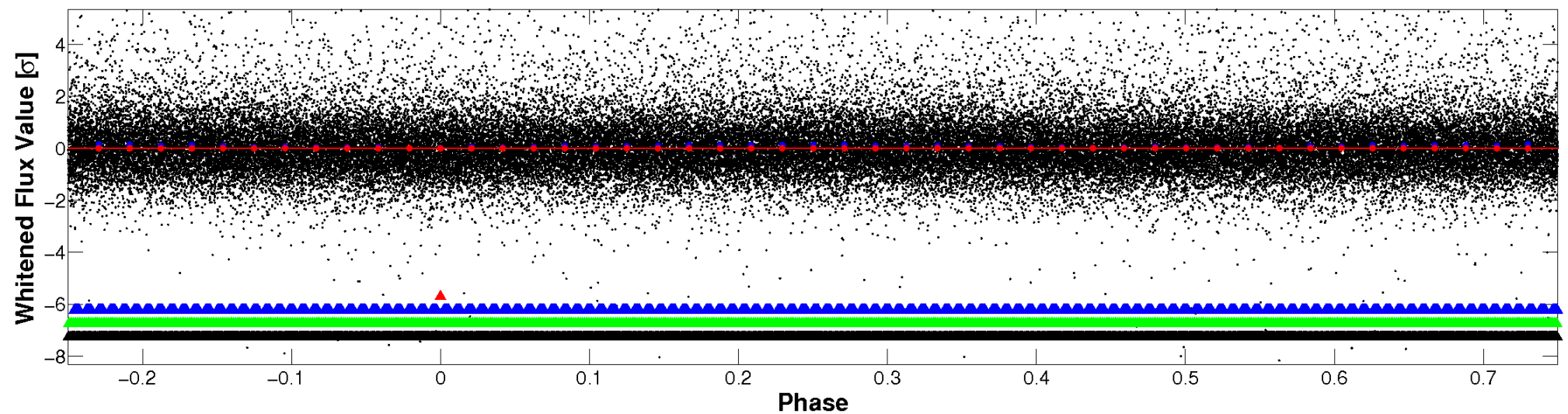


Non-Whitened Vs. Whitened Light Curve

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

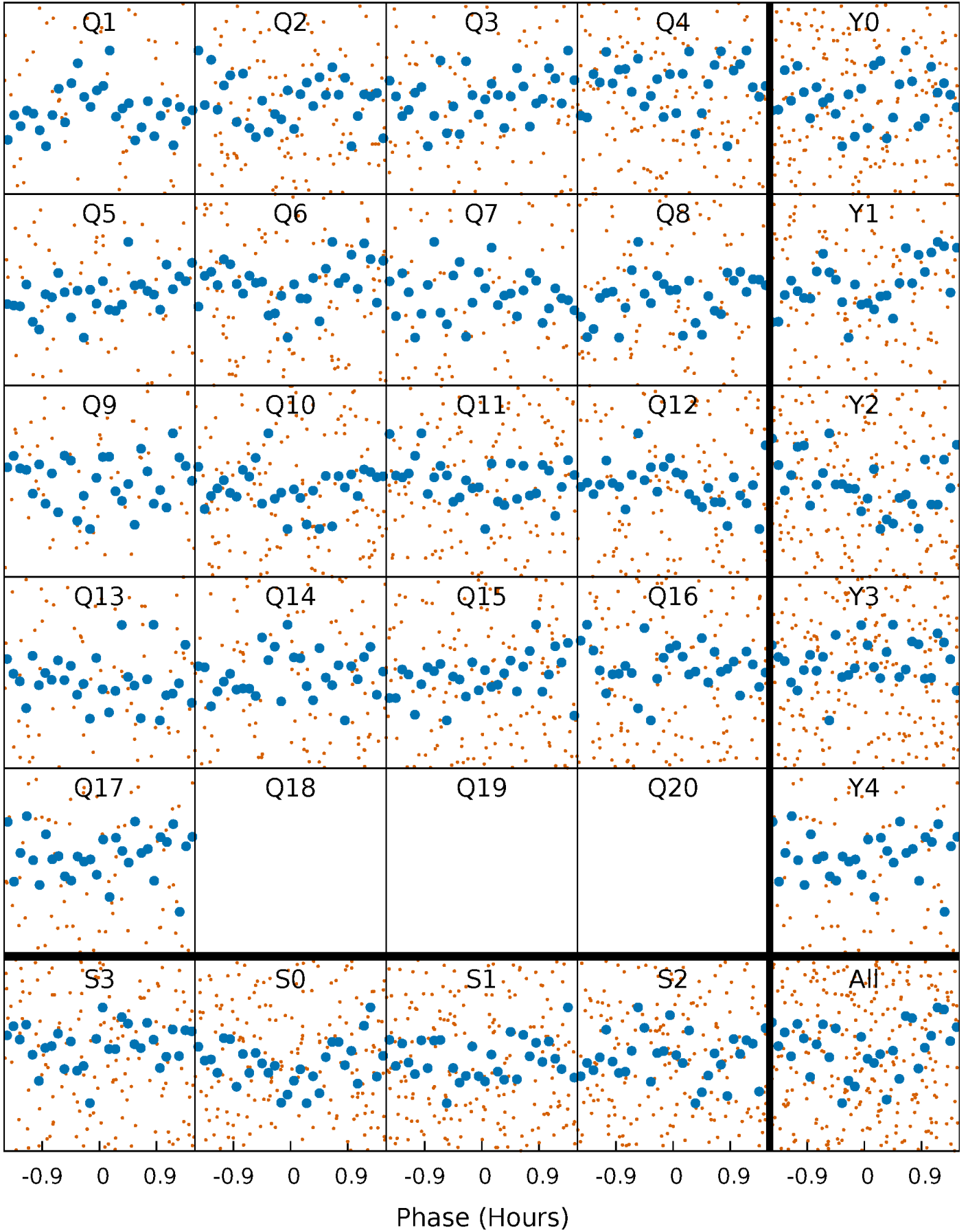


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



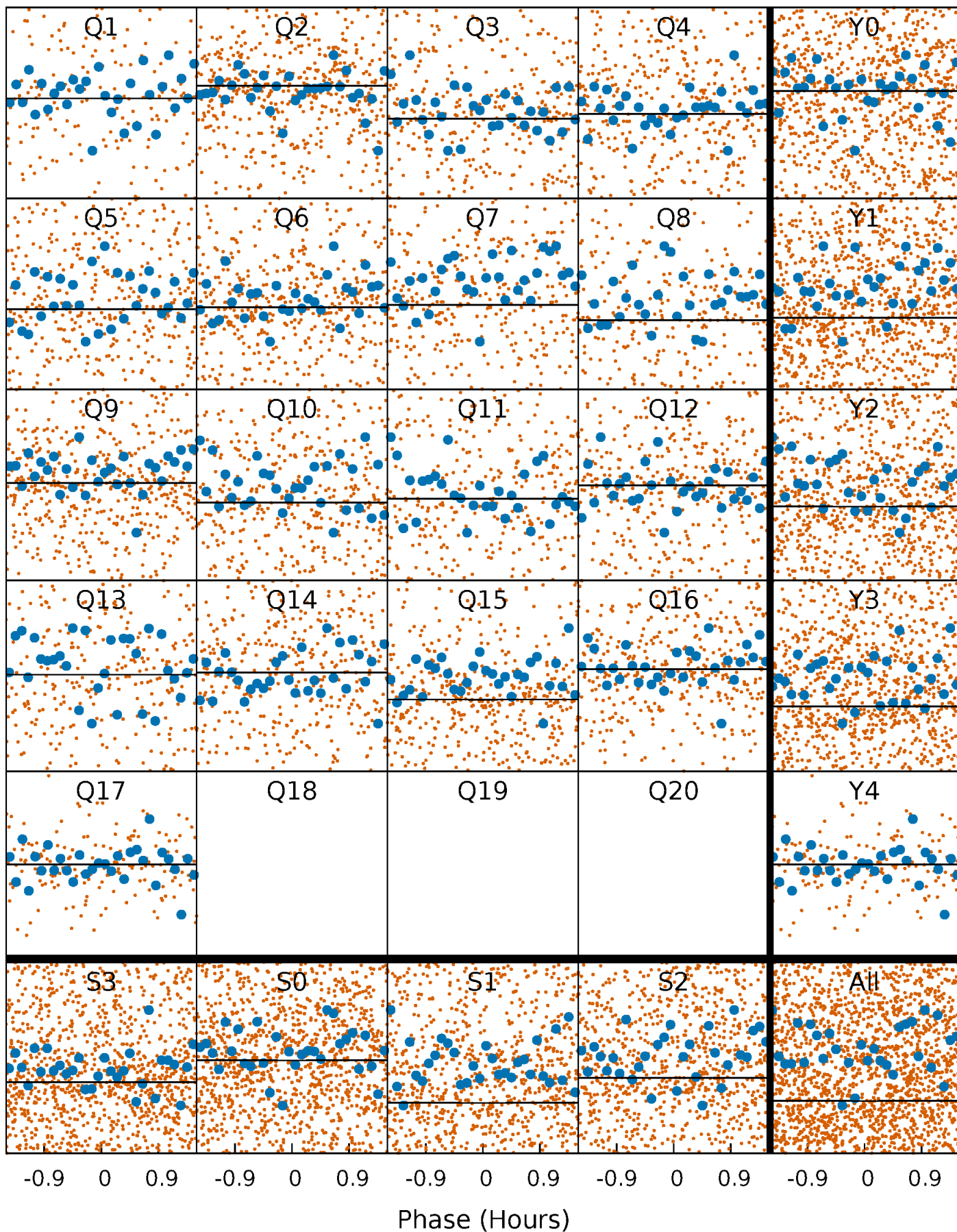
PDC Quarter-Phased Transit Curves

TCE 001573174-01 P= 0.979807 Days $T_0=131.995291$ (BKJD)



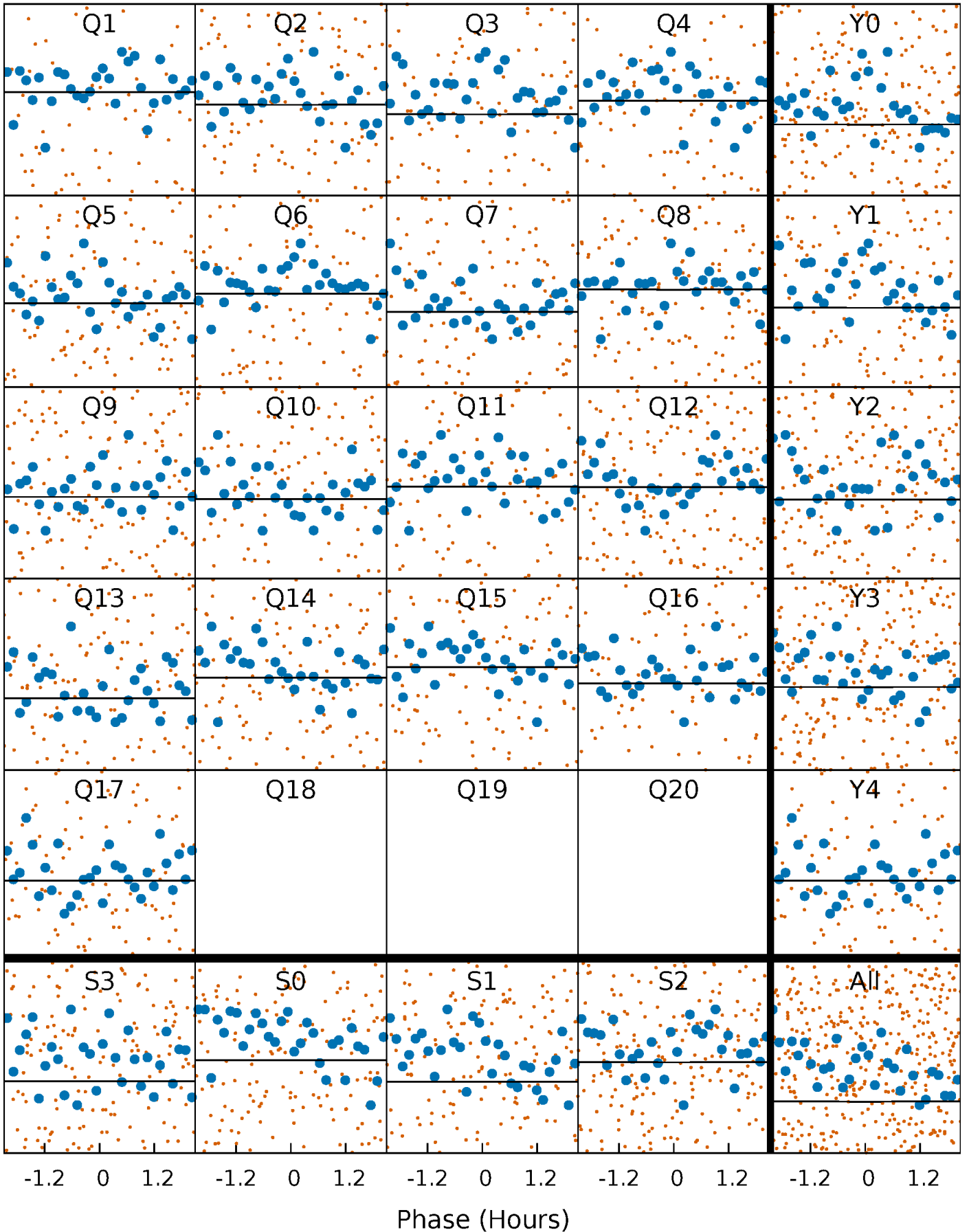
DV Quarter-Phased Transit Curves

TCE 001573174-01 P= 0.979807 Days $T_0=131.995291$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

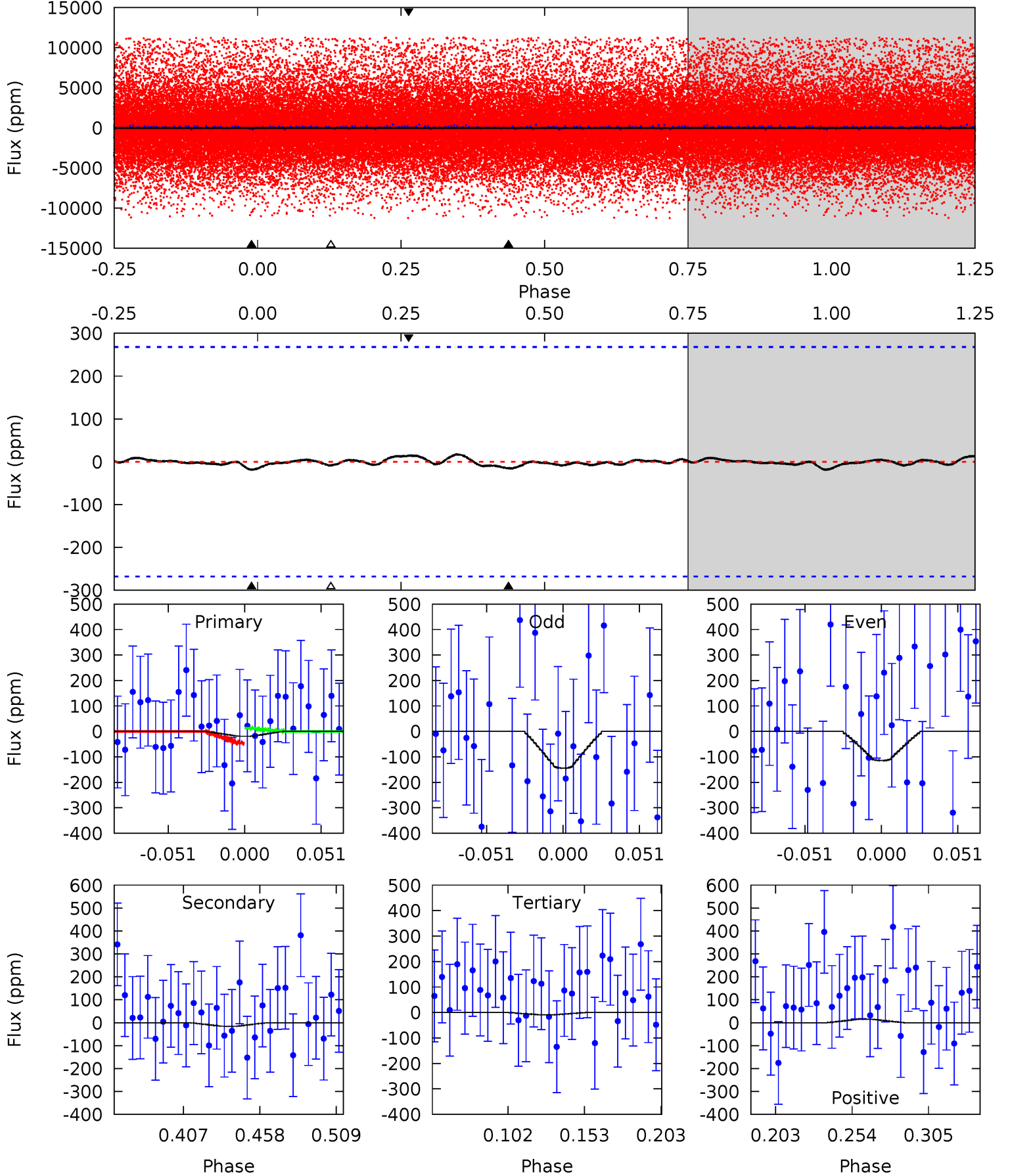
TCE 001573174-01 P= 0.979326 Days $T_0=131.980974$ (BKJD)



DV Model-Shift Uniqueness Test

001573174-01, P = 0.979807 Days, E = 131.015484 Days

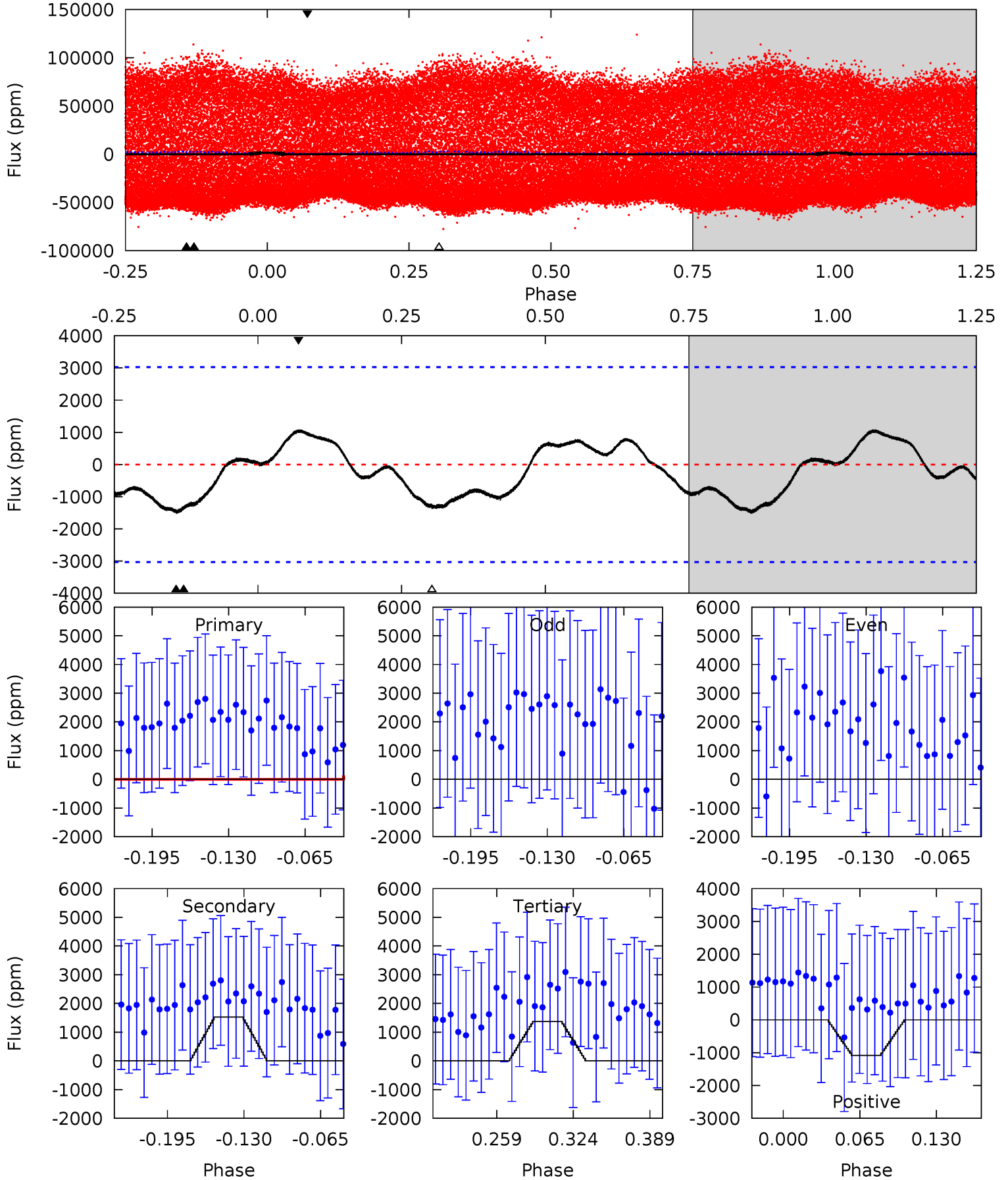
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.33	0.28	0.16	0.26	4.70	1.95	0.11	0.18	0.07	0.12	0.02	0.27	3.89	0.48	0.30



Alt Model-Shift Uniqueness Test

001573174-01, P = 0.979326 Days, E = 131.001648 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.15	2.34	2.12	1.67	4.65	1.85	1.05	0.04	0.48	0.23	0.67	0.80	-0.41	0.42	0.05



Stellar Parameters For KIC 001573174

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7159^{+225}_{-325}	$4.035^{+0.209}_{-0.171}$	$-0.140^{+0.250}_{-0.350}$	$1.960^{+0.560}_{-0.560}$	$1.517^{+0.209}_{-0.279}$	$0.284^{+0.388}_{-0.134}$
	+3%/-5%	+5%/-4%	+179%/-250%	+29%/-29%	+14%/-18%	+137%/-47%
Source	PHO1	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 001573174-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 57	$9.13^{+12.01}_{-5.99}$	4124^{+317}_{-349}	-3670^{+7074}_{-461}	$0.017^{+0.462}_{-0.180}$
Alt.	-1525 ± 651	$10.44^{+10.37}_{-6.97}$	4121^{+345}_{-309}	5927^{+6727}_{-1904}	$3.441^{+30.593}_{-2.684}$

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

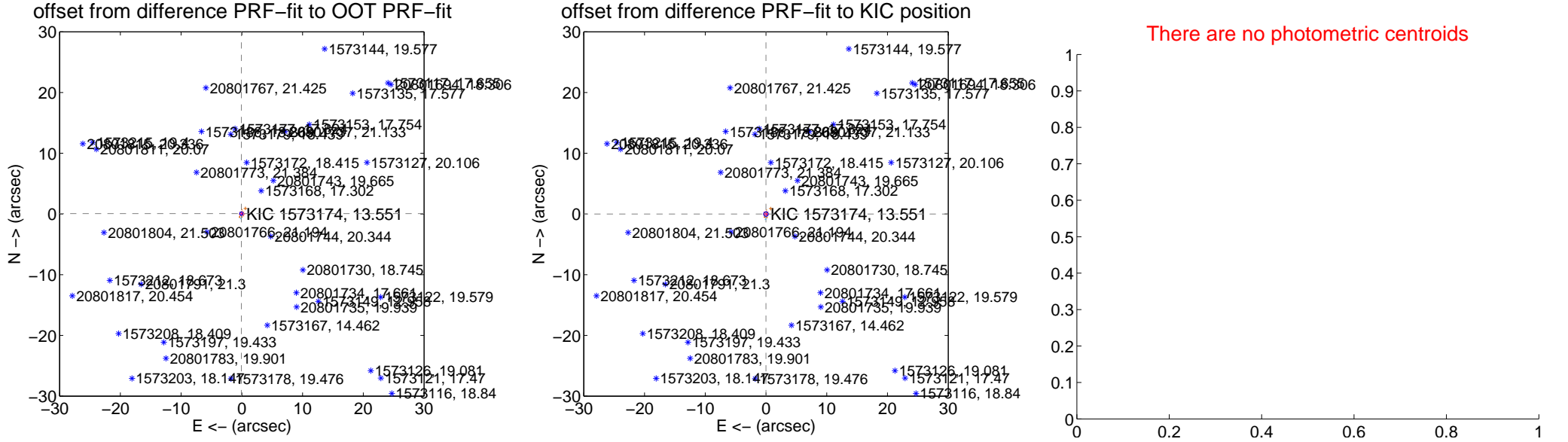
DV Centroid Data

Supplemental centroid analysis for 001573174-01. Kepler magnitude: 13.55. Transit SNR 0.01

There are 8 quarters with good PRF difference image offsets

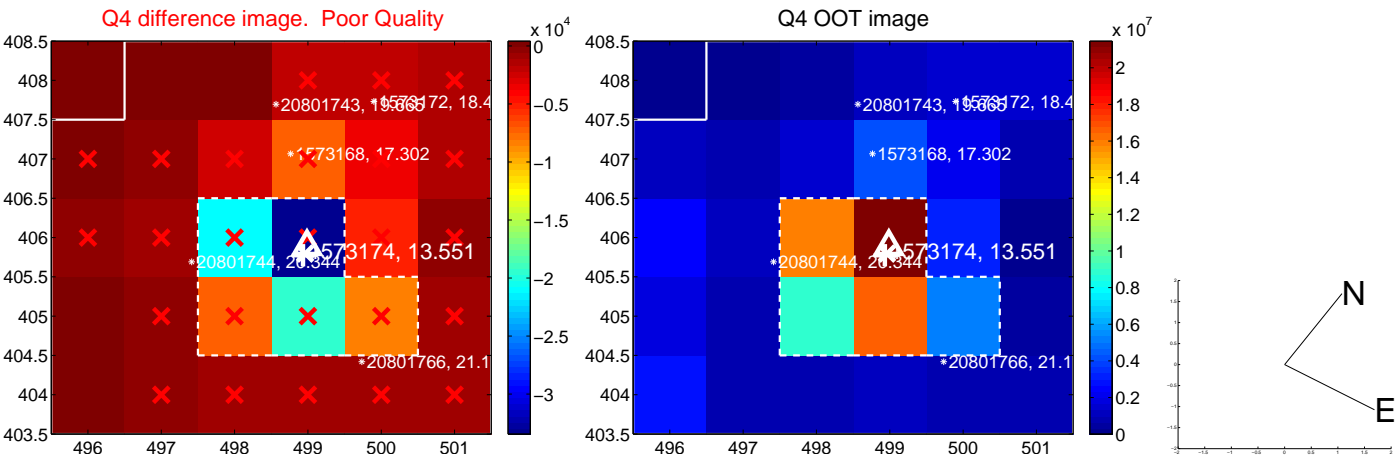
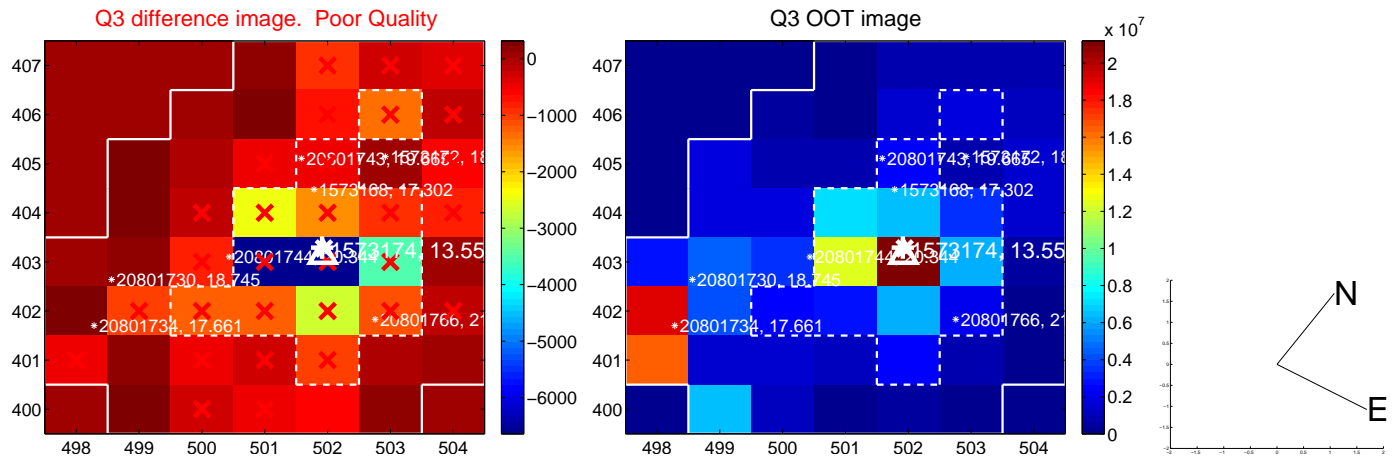
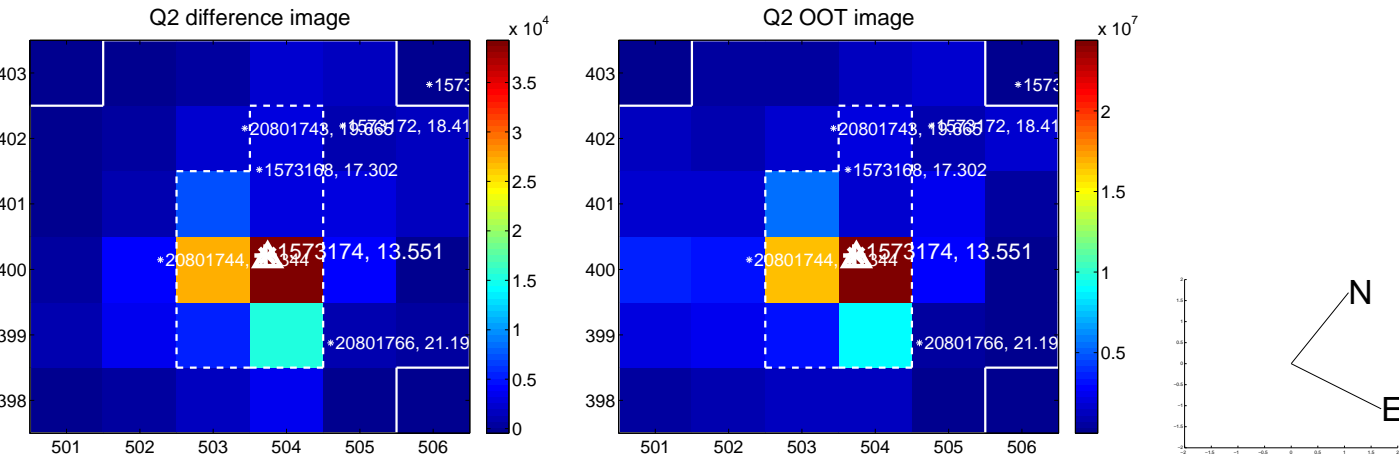
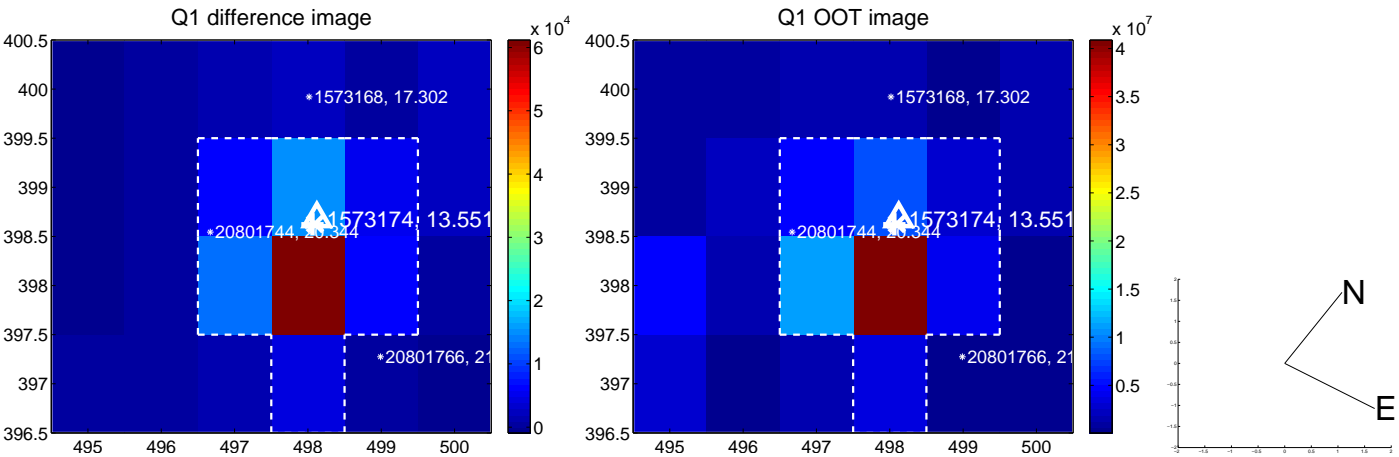
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.104 ± 0.093	1.12	0.077 ± 0.084	0.070 ± 0.133
PRF-fit source offset from KIC position	0.016 ± 0.126	0.13	0.012 ± 0.085	-0.011 ± 0.132
photometric centroid source offset	—	—	—	—

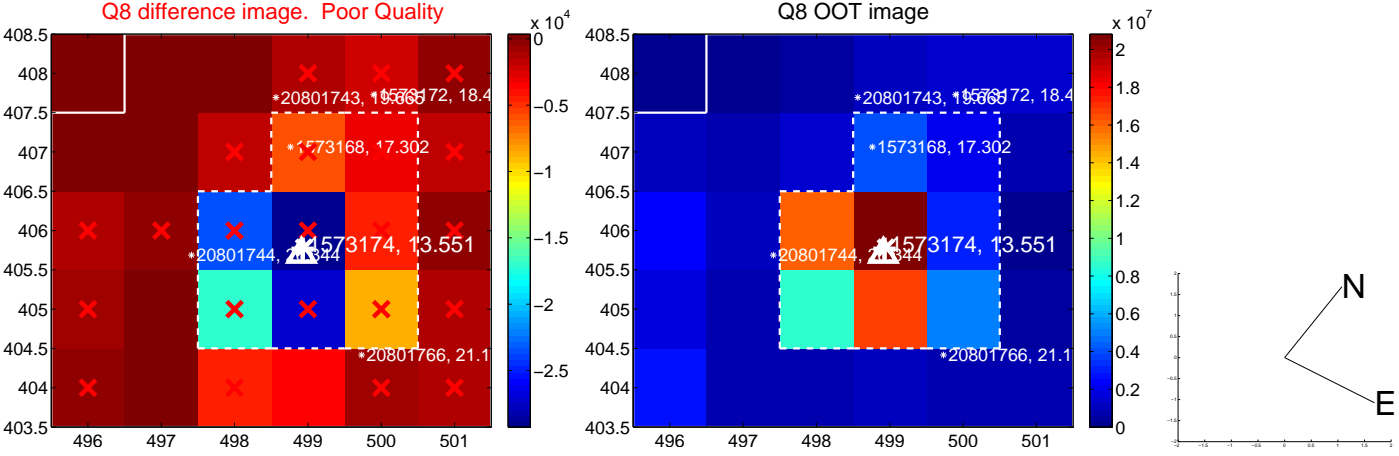
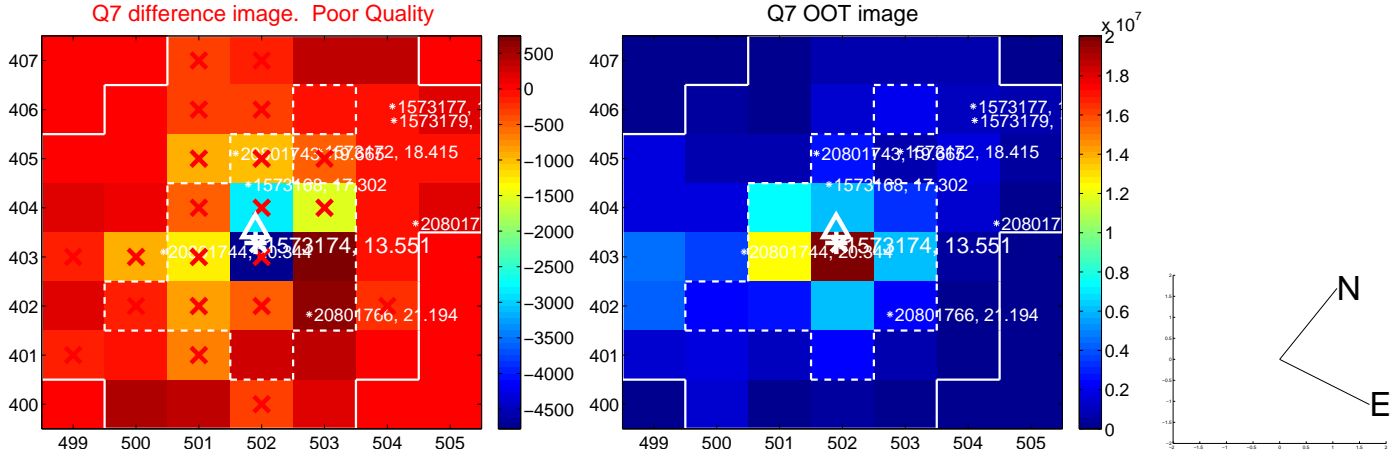
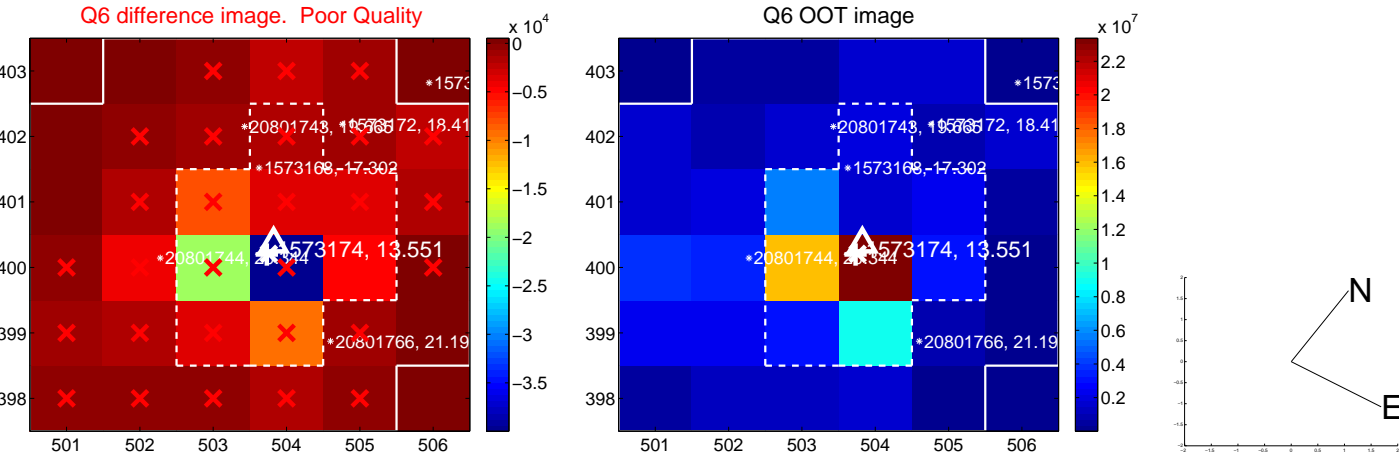
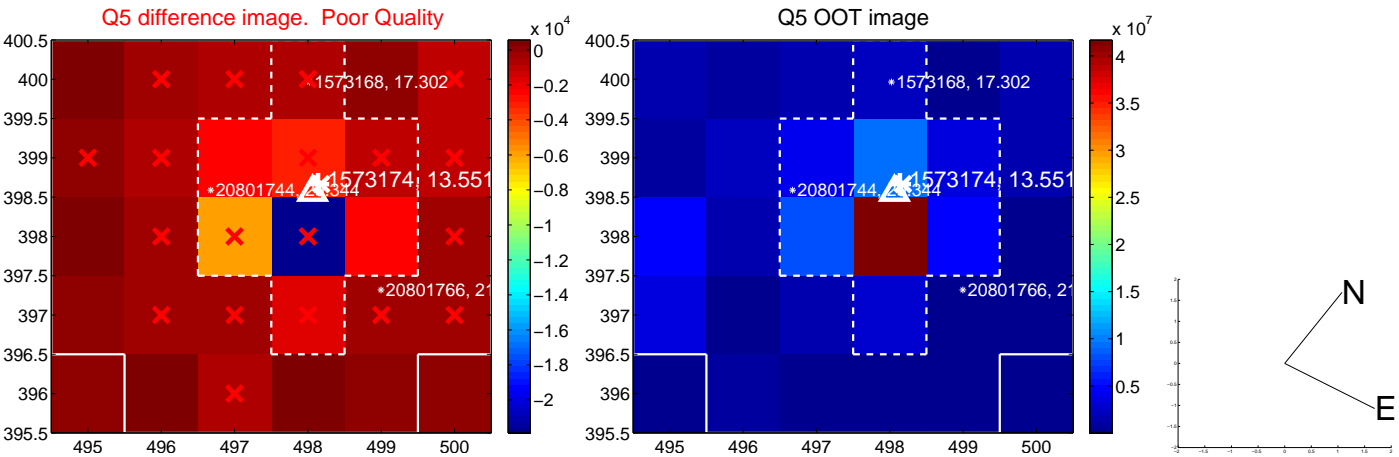


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

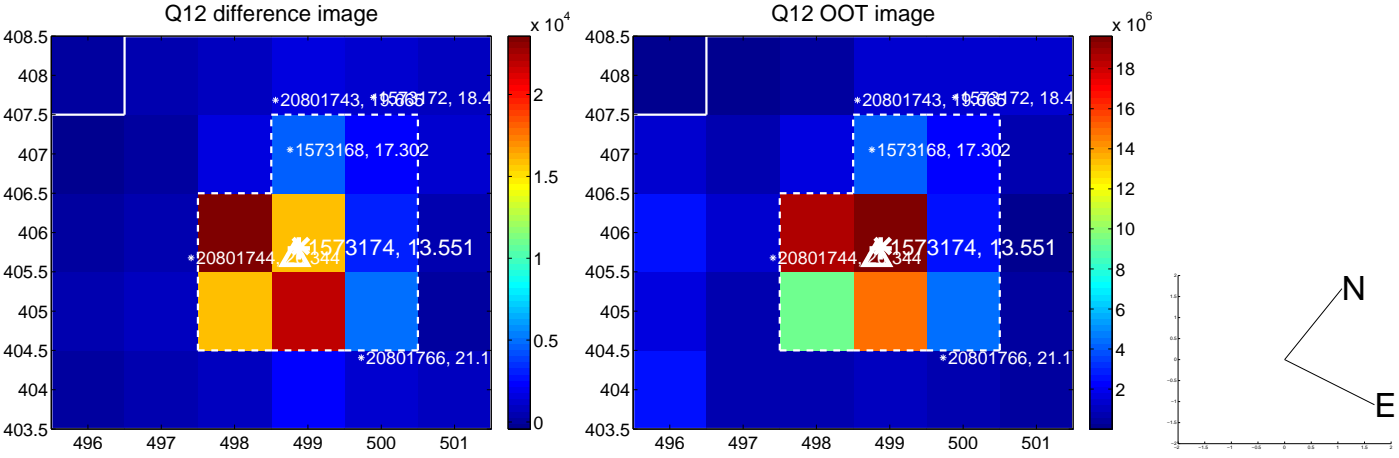
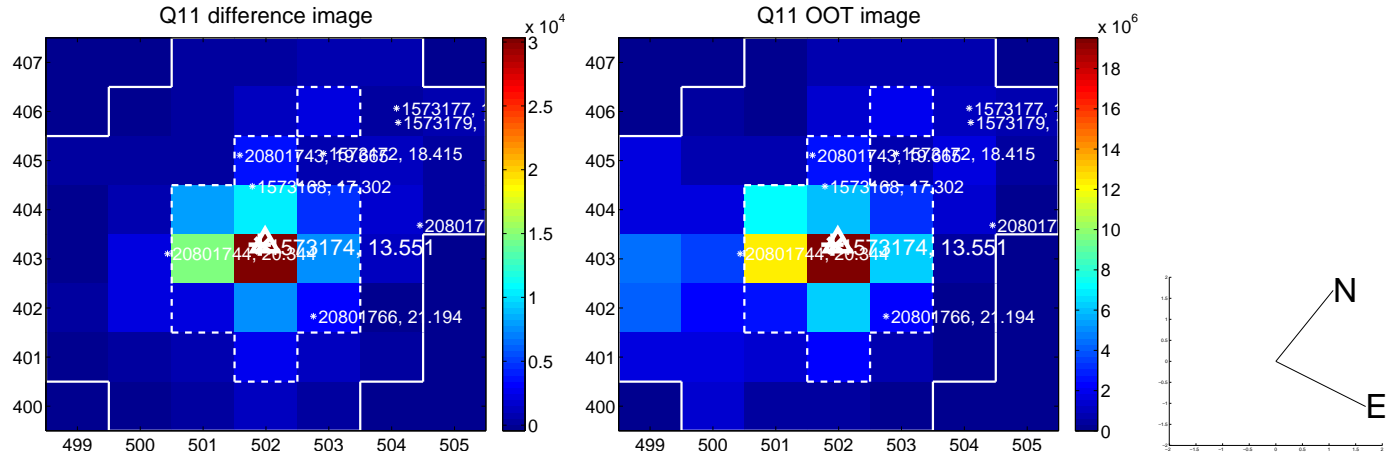
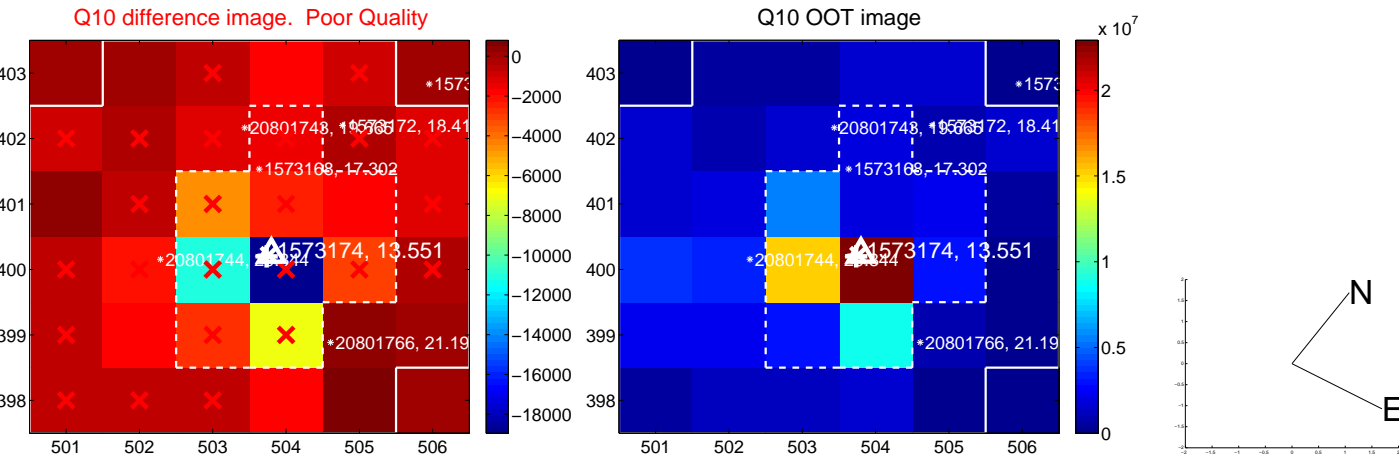
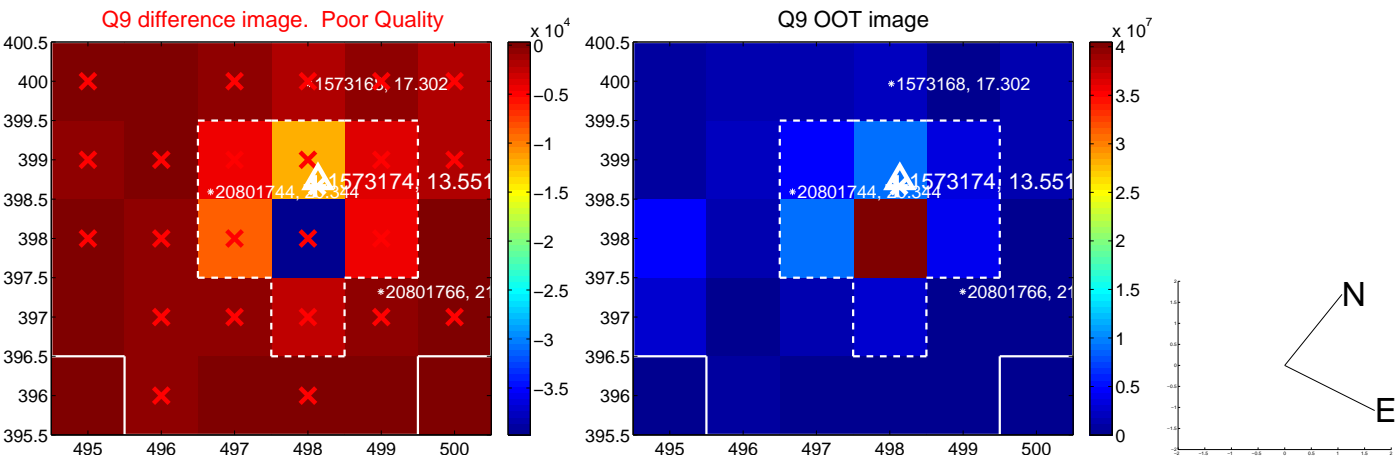
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



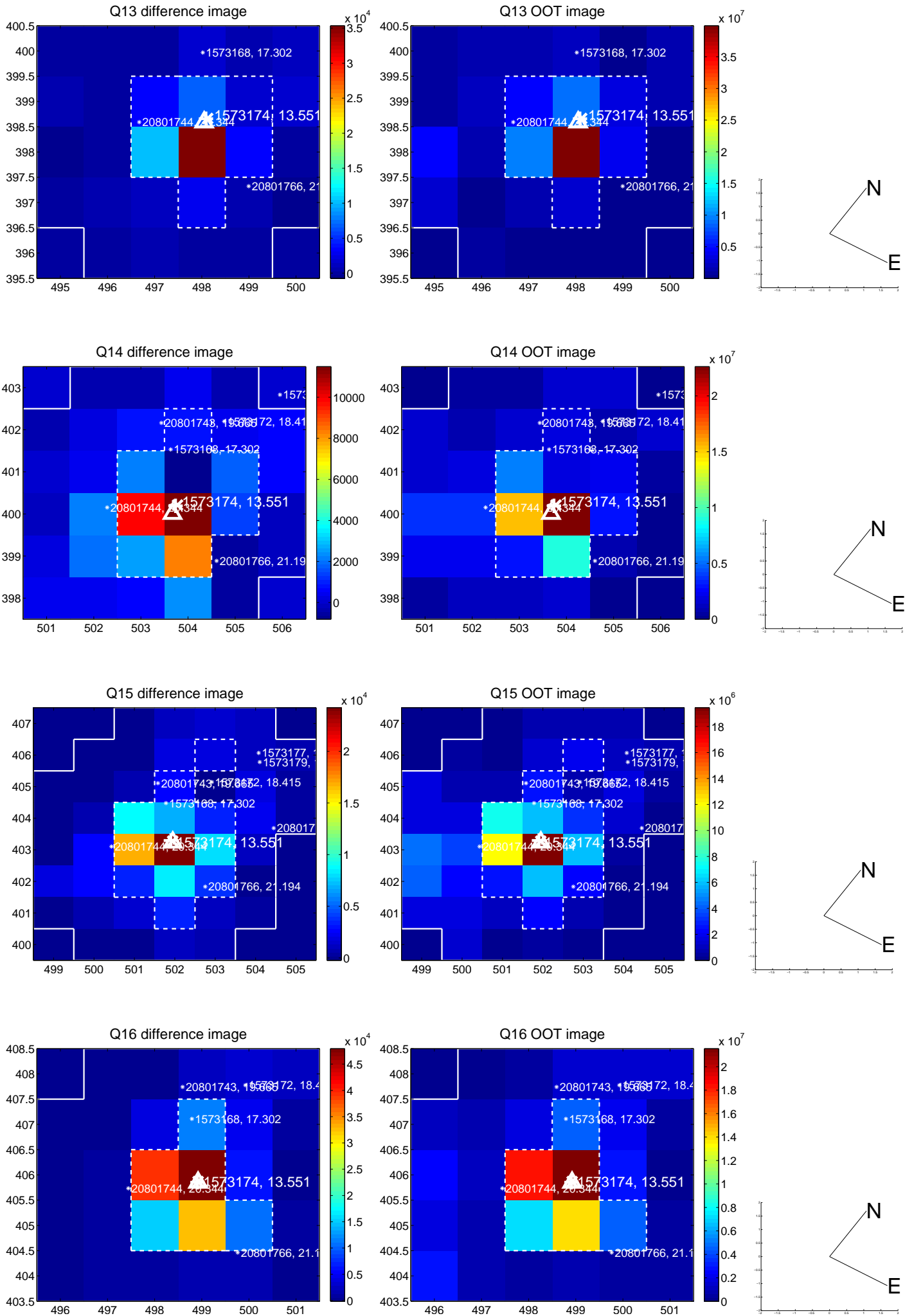
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



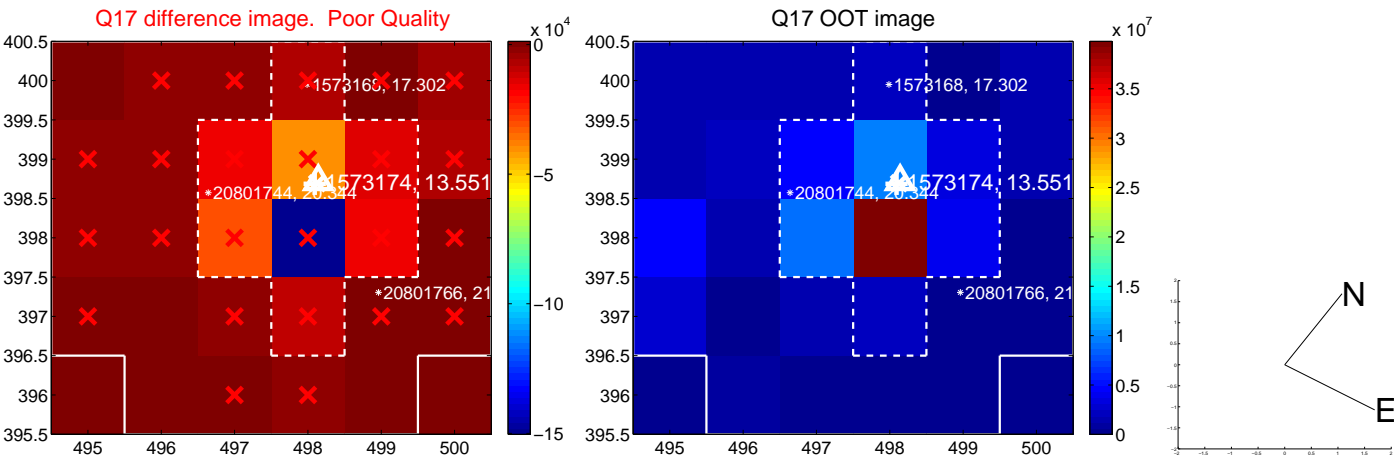
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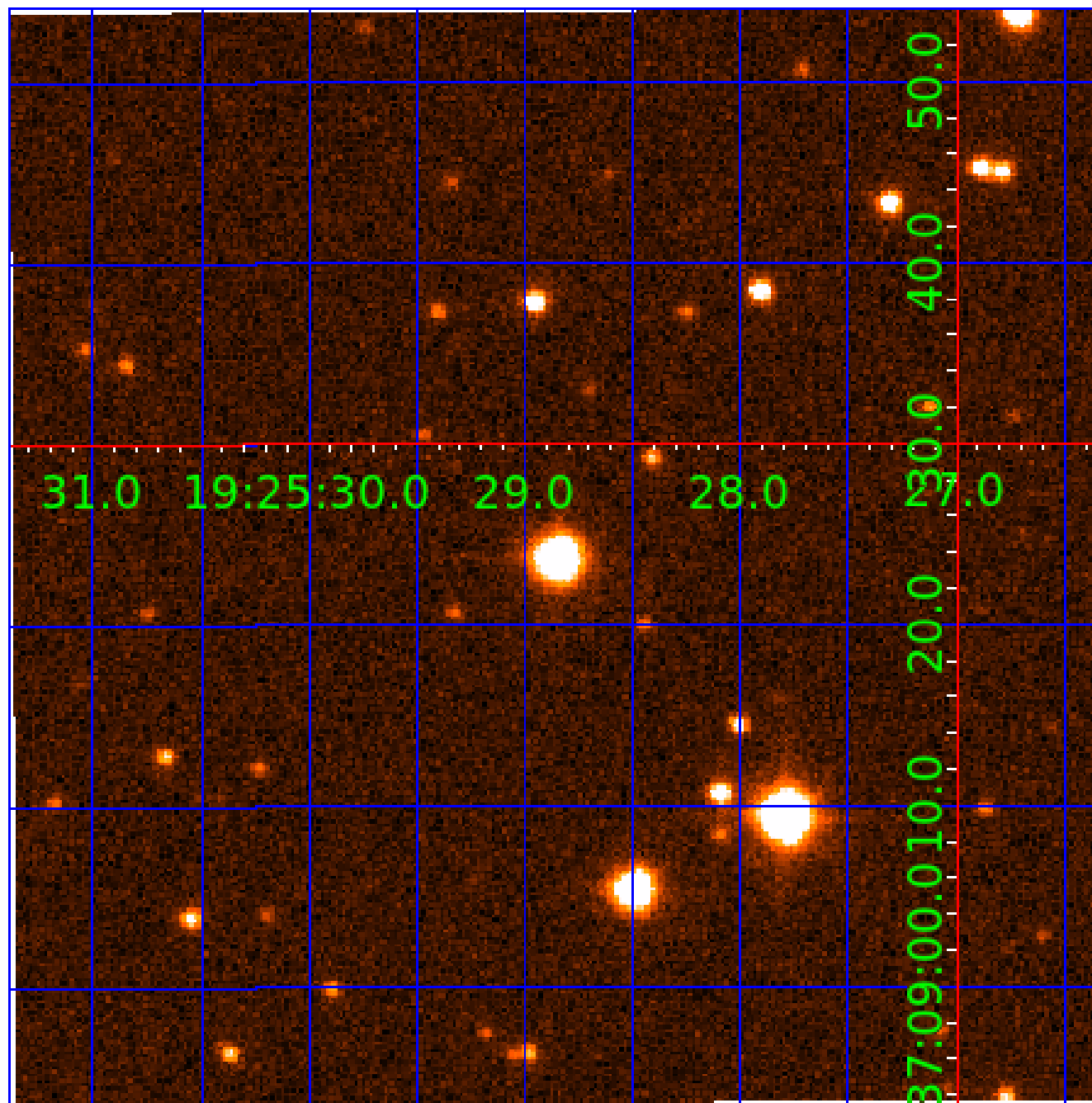
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 001573174

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})
001573174-01	OBS	No	0.979807	131.995291	0.9	0.754	16.0	0.0	1.96	7159	0.20	18349.34
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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001573174-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
001573174-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
001573174-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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.

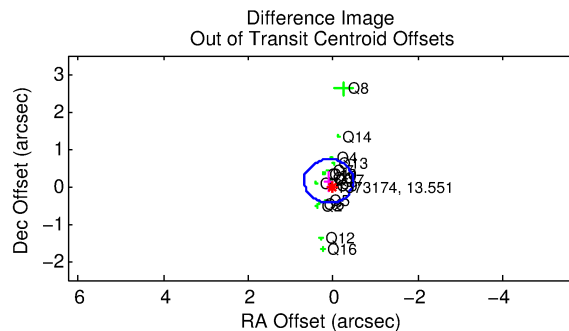
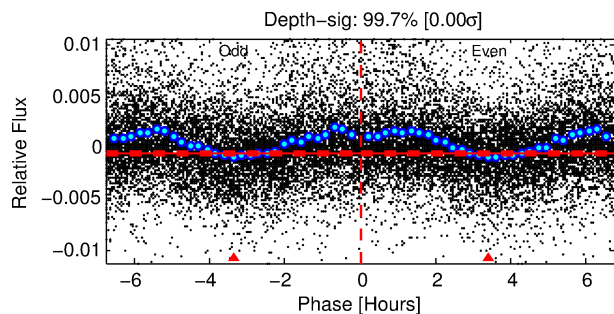
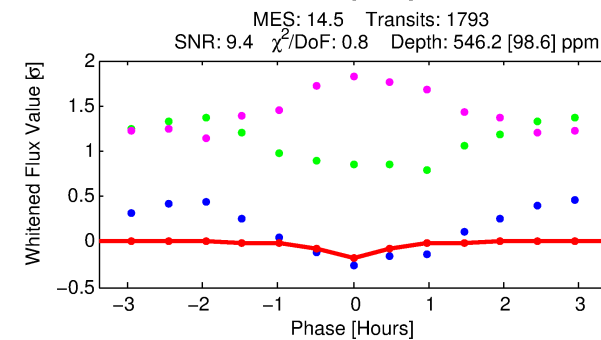
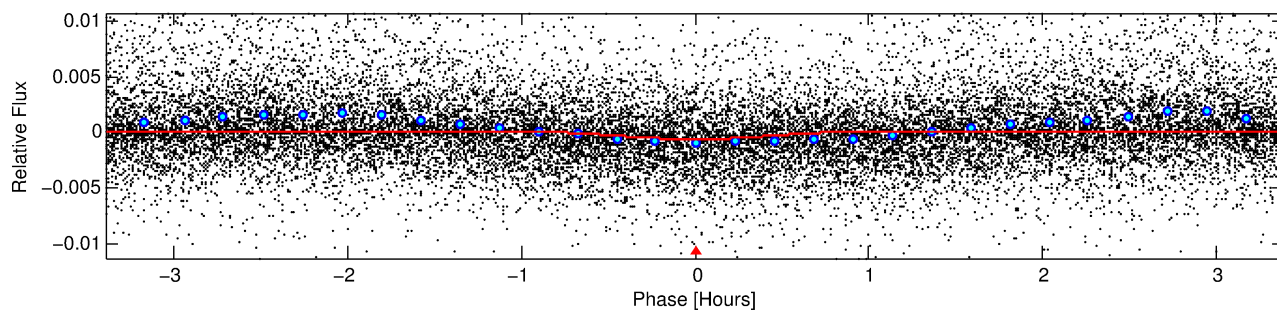
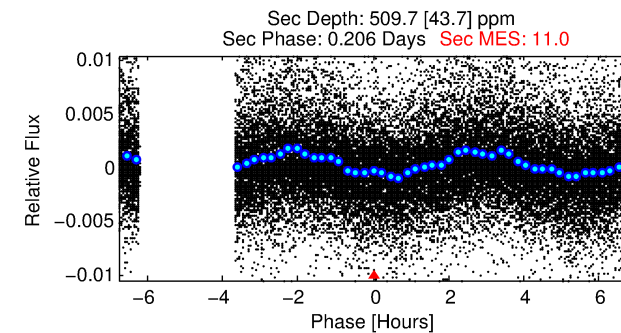
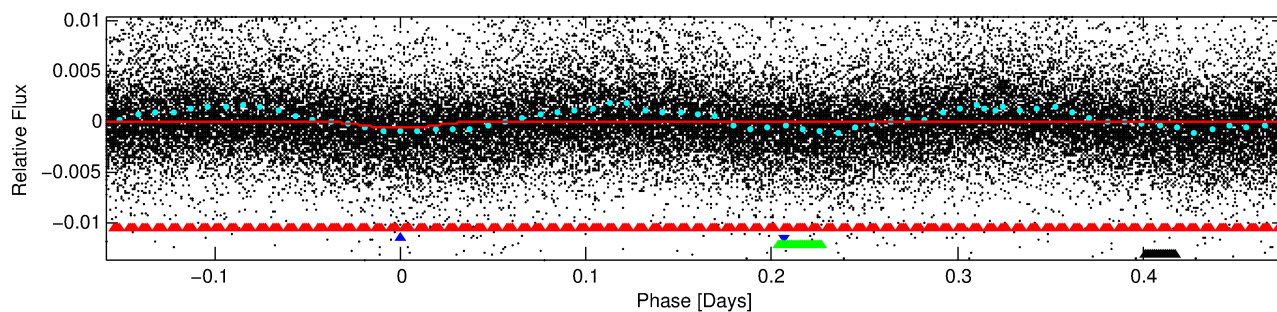
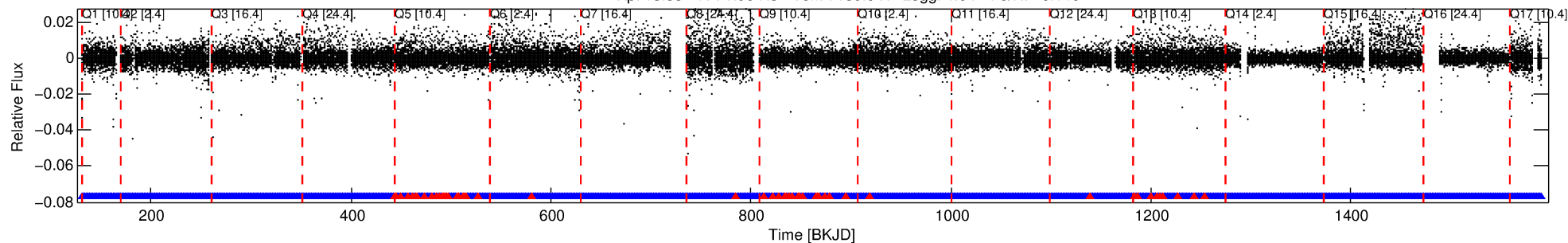
Ephemeris Match Information For 001573174-02

No Significant Match Found

DV One-Page Summary

KIC: 1573174 Candidate: 2 of 4 Period: 0.635 d

Kp: 13.55 R*: 1.96 Rs Teff: 7159.0 K Logg: 4.04 Fe/H: -0.140



DV Fit Results:

Period = 0.63492 [0.00001] d
Epoch = 131.8172 [0.0020] BKJD
Rp/R* = 0.0250 [0.0126]
a/R* = 2.31 [5.56]
b = 0.90 [0.64]
Seff = 32722.95 [13578.48]
Teff = 3430 [356] K
Rp = 5.35 [3.09] Re
a = 0.0166 [0.0041] AU
Ag = 2.71 [2.91] [0.59σ]
Teffp = 6802 [1742] K [1.90σ]

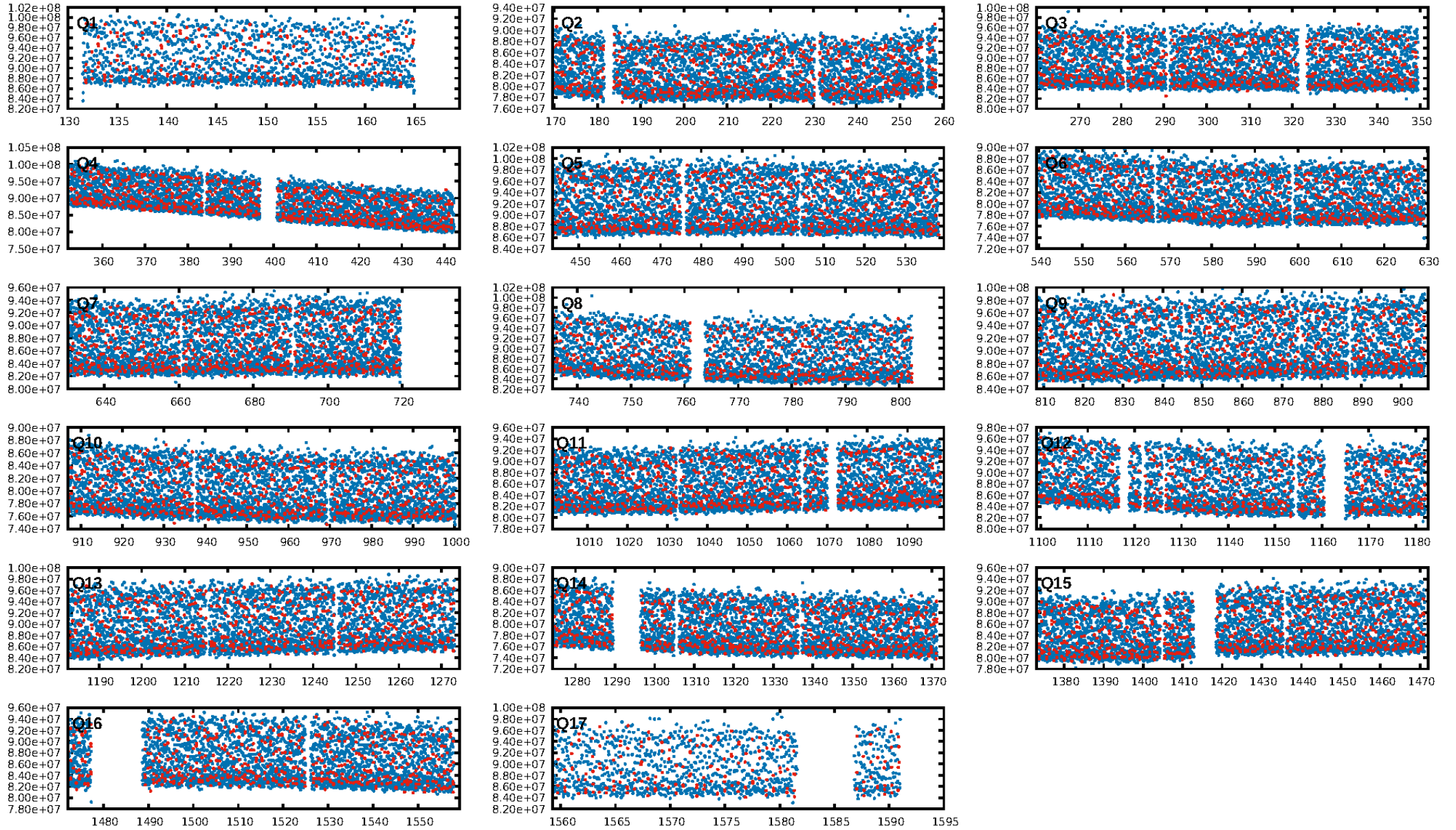
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [1654/1713]
GhostDiagnostic-chr: 3.684
Centroid-sig: 0.0%
Centroid-so: 0.750 arcsec [6.51σ]
OotOffset-rm: 0.170 arcsec [0.88σ]
KicOffset-rm: 0.075 arcsec [0.34σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

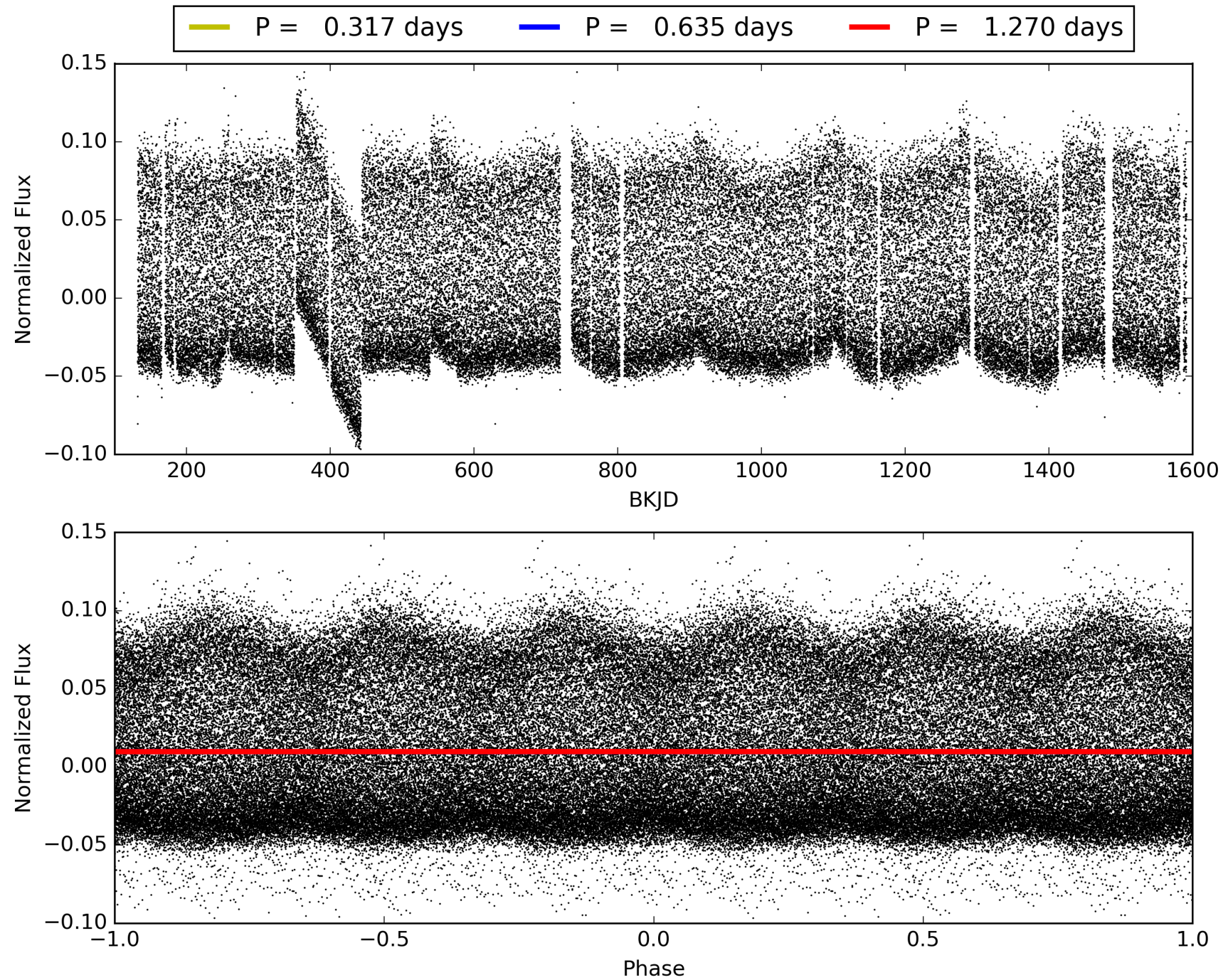
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 01:12:16 Z

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

TCE 001573174-02, PDC Light Curves

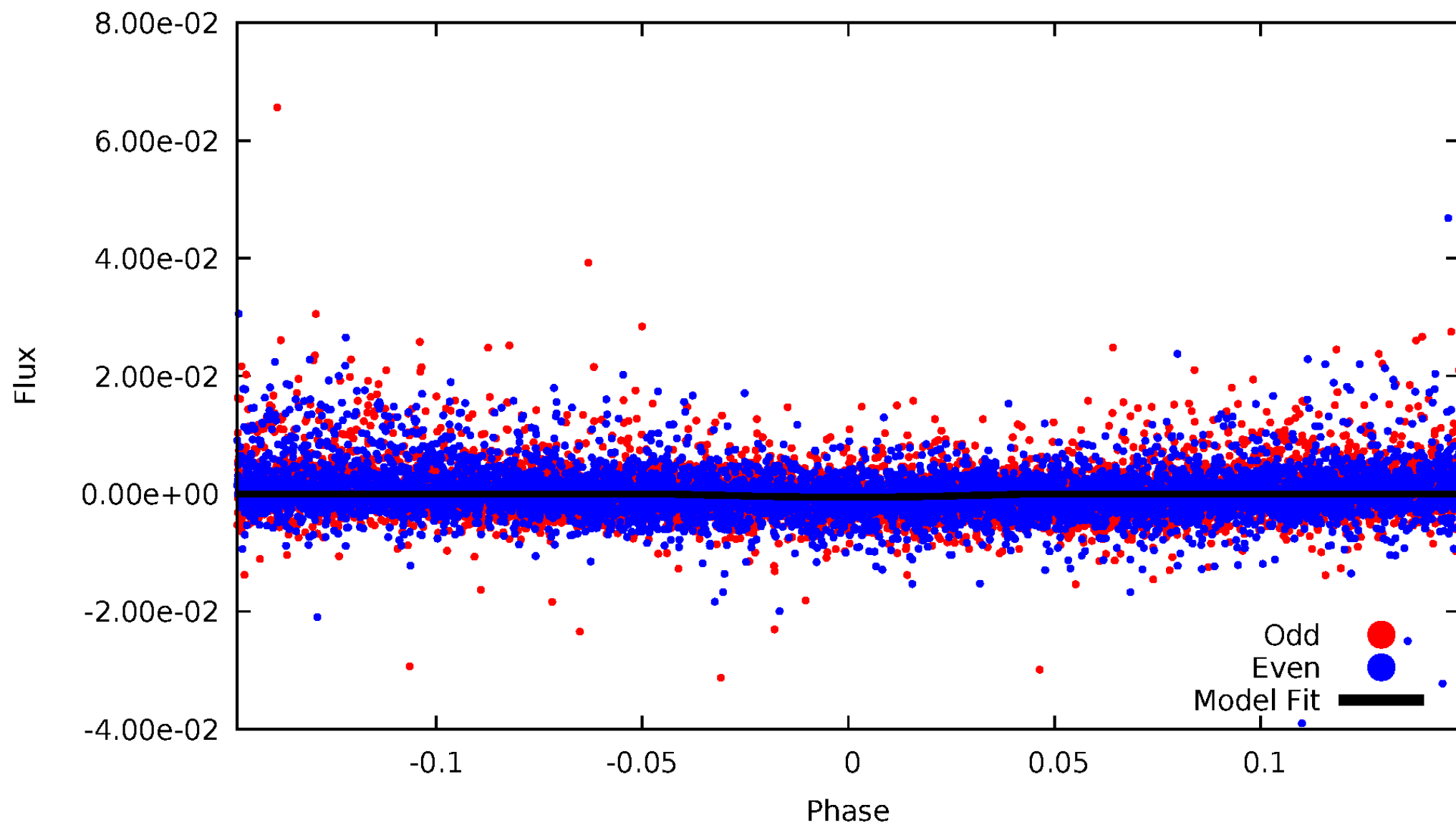


TCE 001573174-02



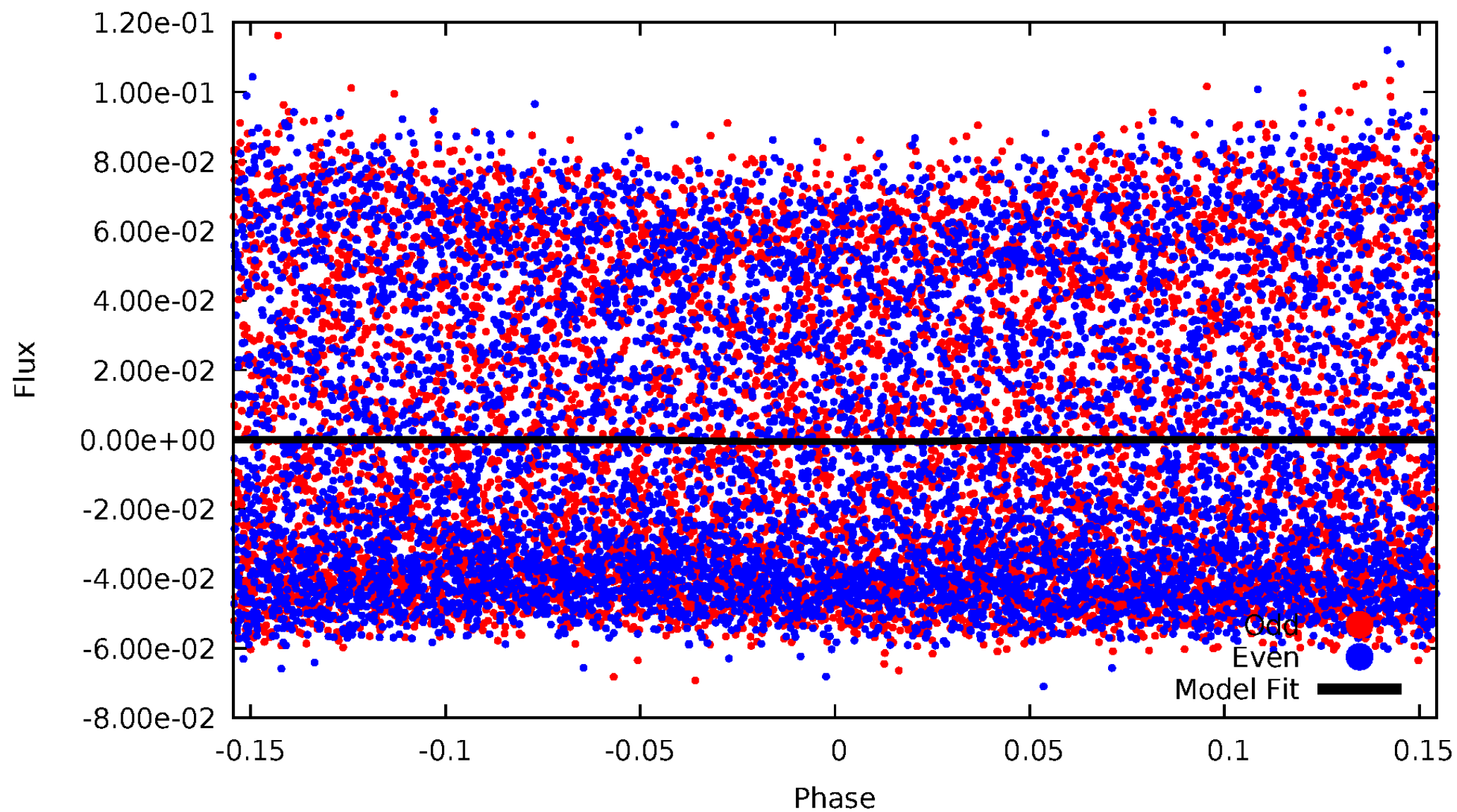
DV Odd/Even

TCE 001573174-02



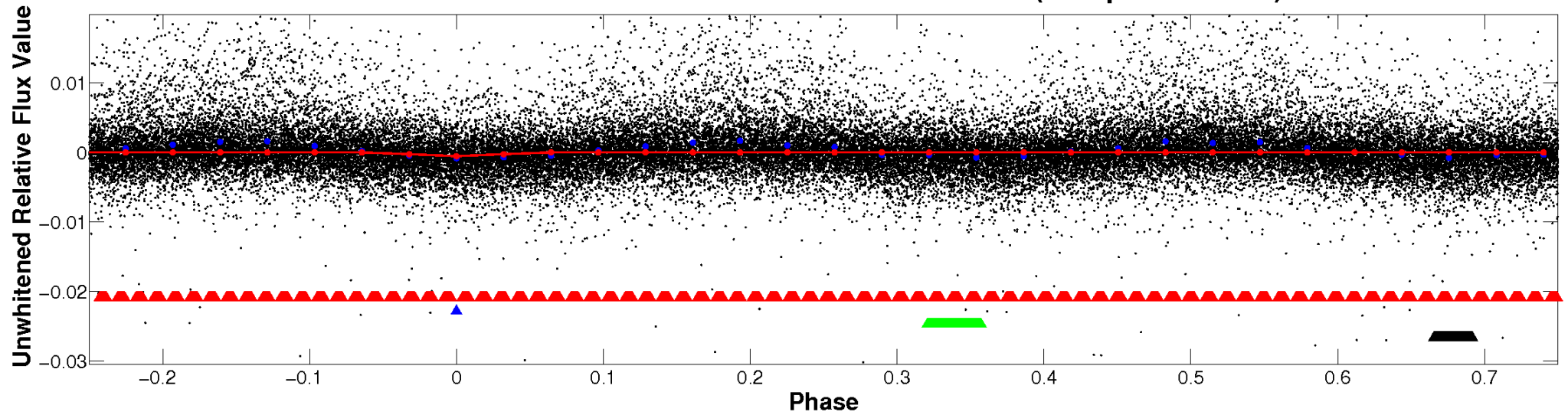
ALT Odd/Even

TCE 001573174-02

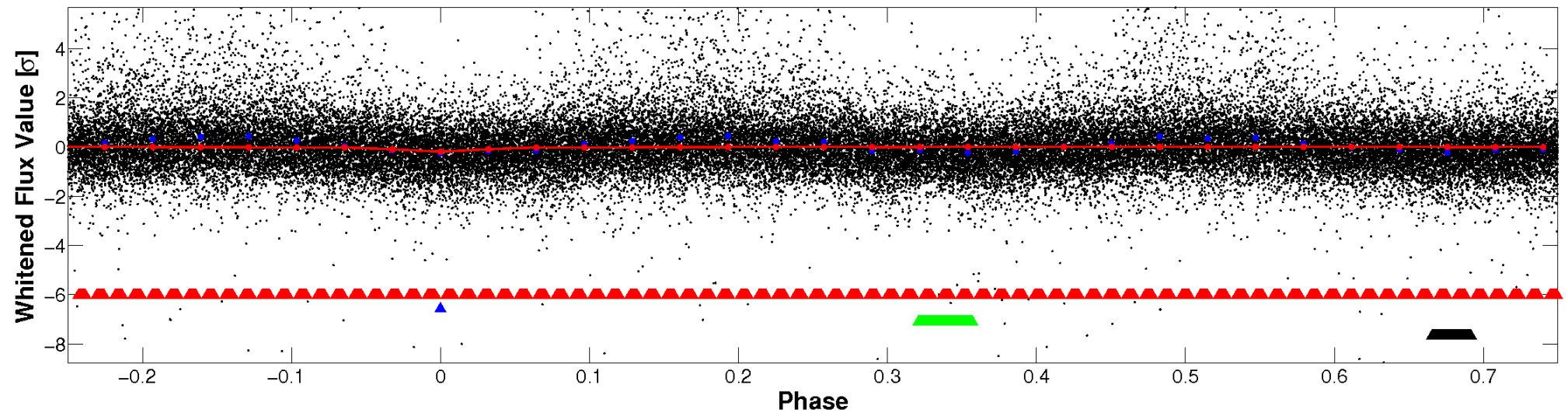


Non-Whitened Vs. Whitened Light Curve

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

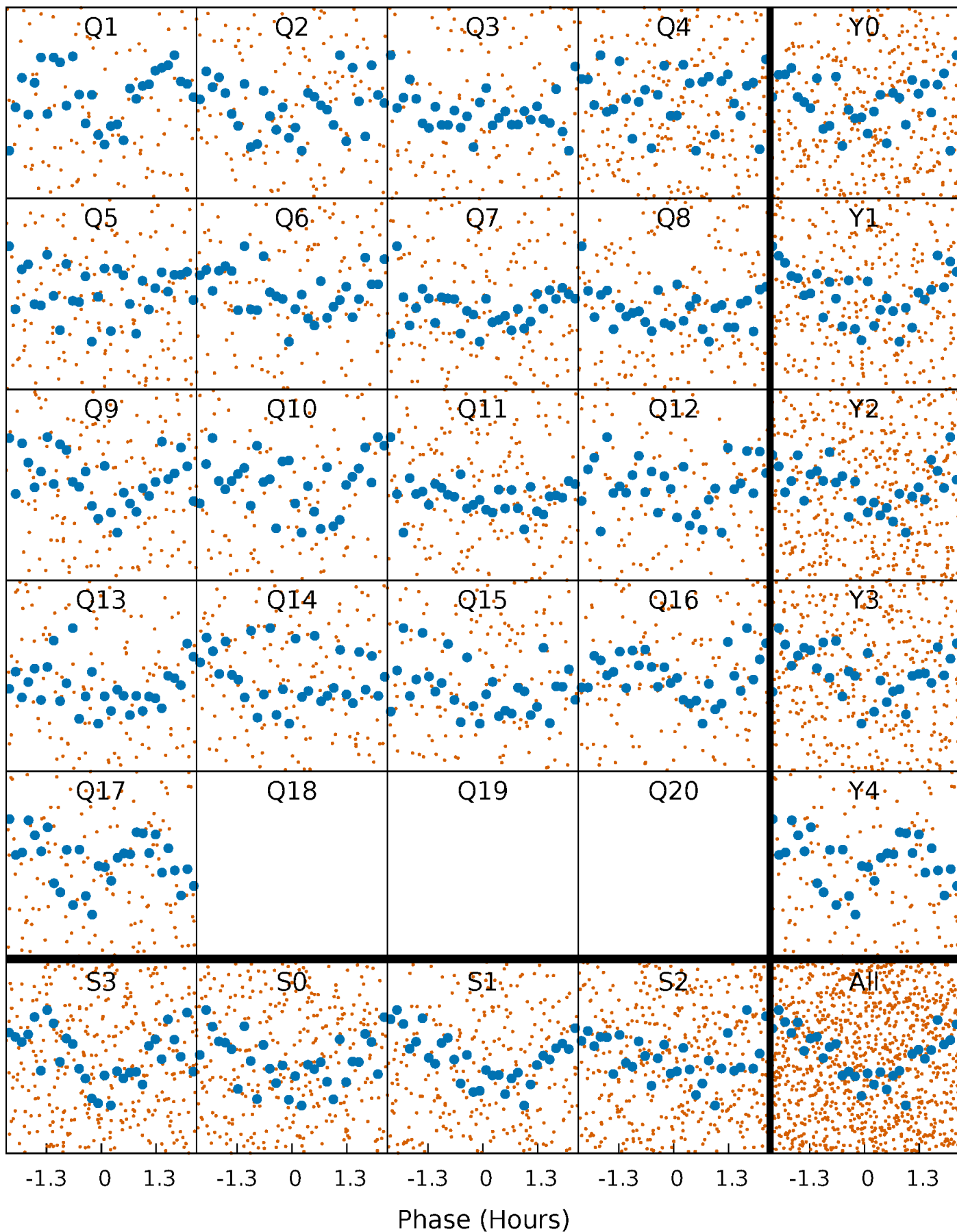


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



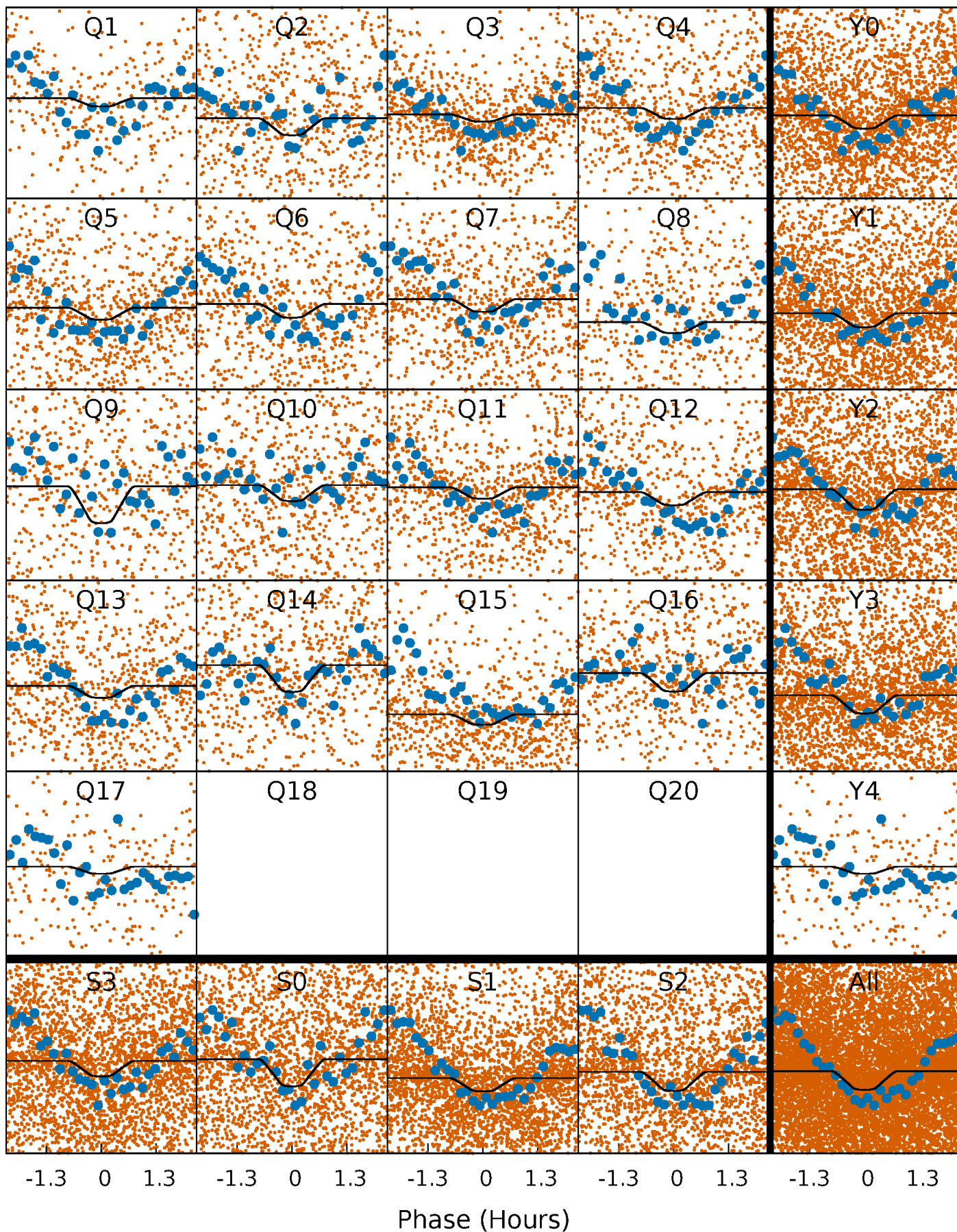
PDC Quarter-Phased Transit Curves

TCE 001573174-02 P= 0.634916 Days $T_0=131.817243$ (BKJD)



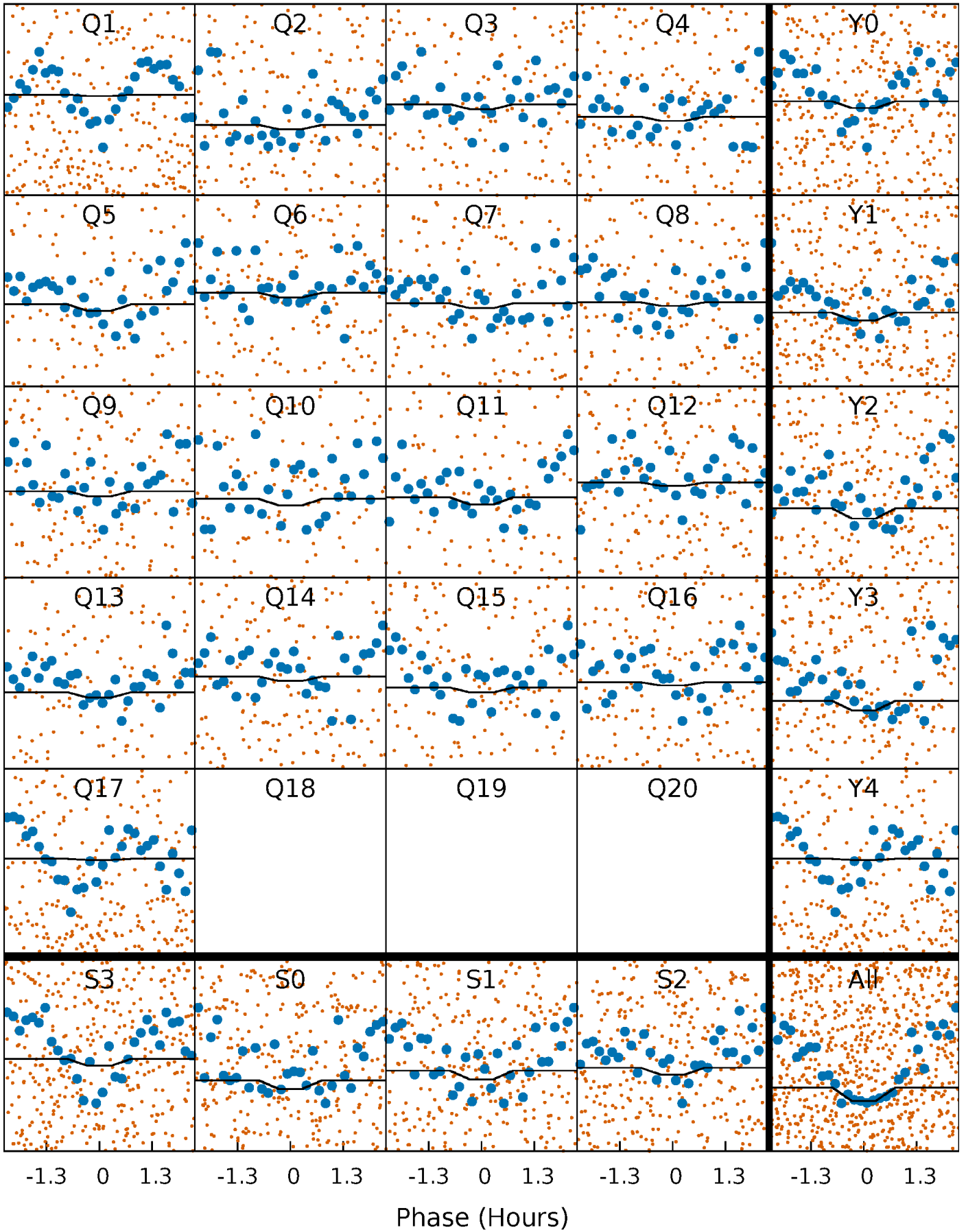
DV Quarter-Phased Transit Curves

TCE 001573174-02 P= 0.634916 Days $T_0=131.817243$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

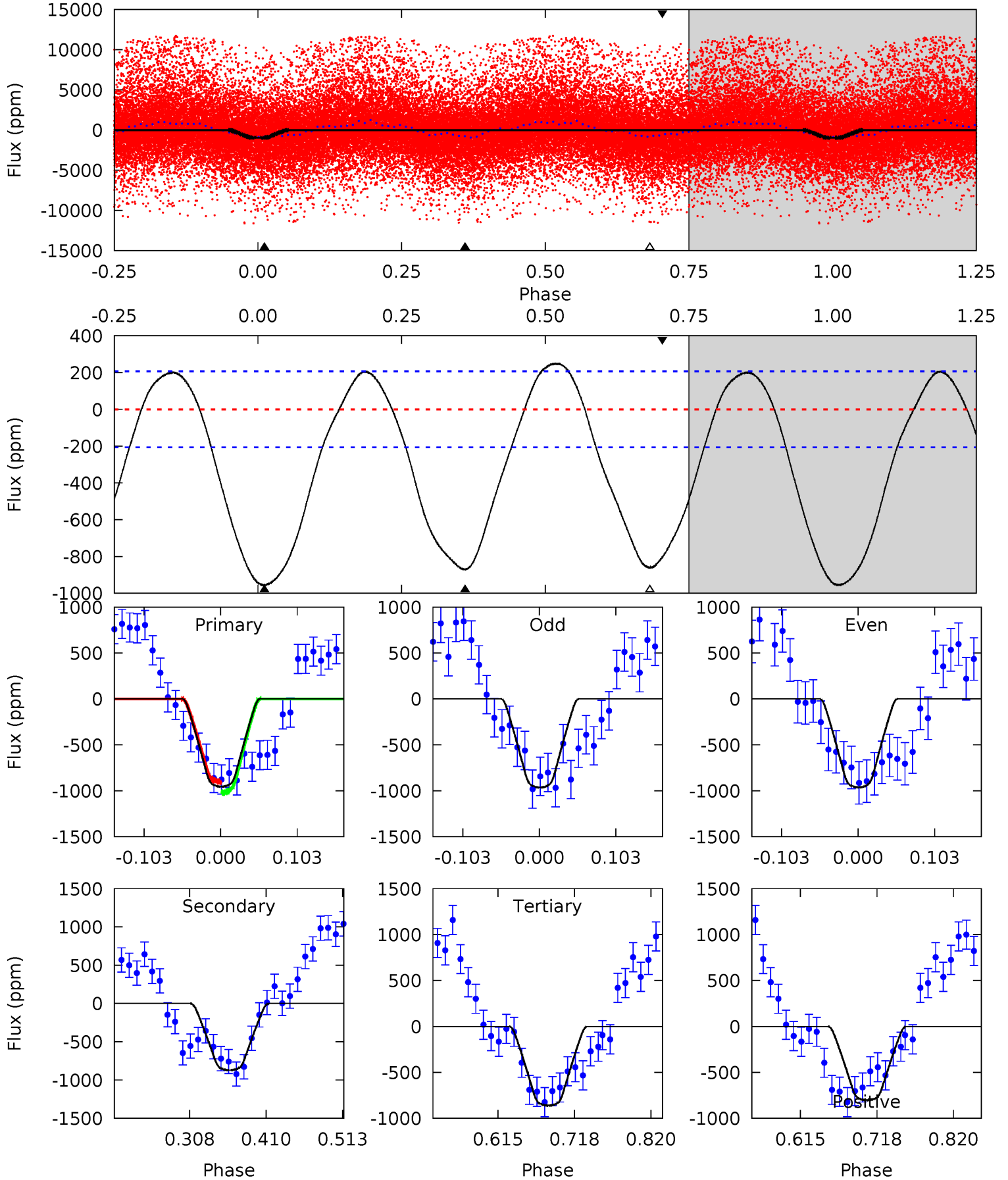
TCE 001573174-02 $P = 0.634928$ Days $T_0 = 131.817542$ (BKJD)



DV Model-Shift Uniqueness Test

001573174-02, P = 0.634916 Days, E = 131.182327 Days

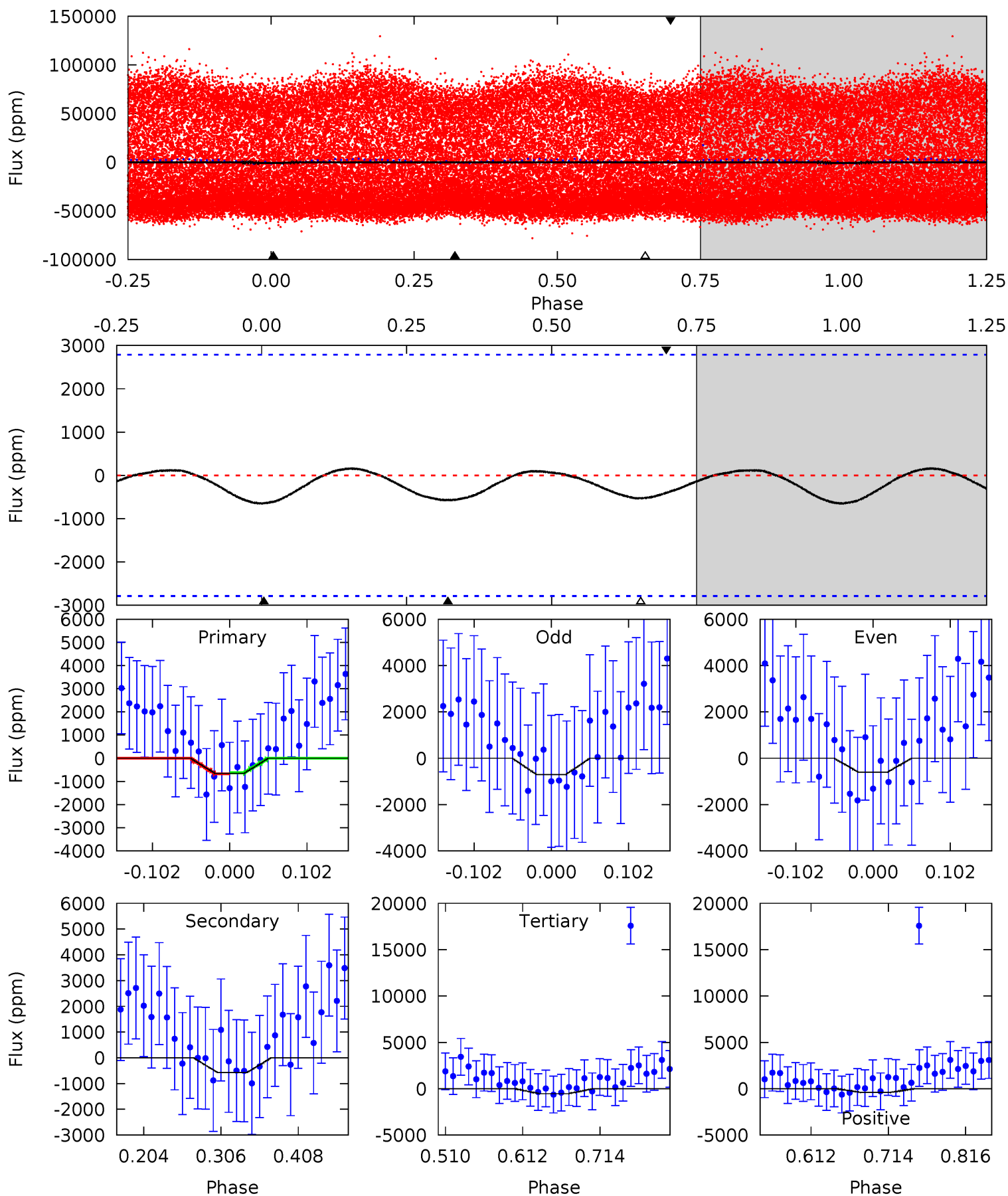
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	19.2	19.0	-17.7	4.56	1.63	7.83	2.08	38.8	0.21	37.0	0.02	1.01	0.21	1.33



Alt Model-Shift Uniqueness Test

001573174-02, P = 0.634928 Days, E = 131.182614 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.07	0.94	0.87	-0.65	4.56	1.64	0.35	0.20	1.72	0.07	1.59	0.09	0.12	0.20	0.04



Stellar Parameters For KIC 001573174

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7159^{+225}_{-325}	$4.035^{+0.209}_{-0.171}$	$-0.140^{+0.250}_{-0.350}$	$1.960^{+0.560}_{-0.560}$	$1.517^{+0.209}_{-0.279}$	$0.284^{+0.388}_{-0.134}$
	+3%/-5%	+5%/-4%	+179%/-250%	+29%/-29%	+14%/-18%	+137%/-47%
Source	PHO1	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 001573174-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-871 ± 45	$5.23^{+2.88}_{-2.56}$	4742^{+382}_{-408}	7608^{+4673}_{-1614}	$4.723^{+13.390}_{-2.721}$
Alt.	-575 ± 611	$5.31^{+2.80}_{-2.49}$	4743^{+387}_{-371}	6341^{+4152}_{-10857}	$2.491^{+9.272}_{-2.625}$

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

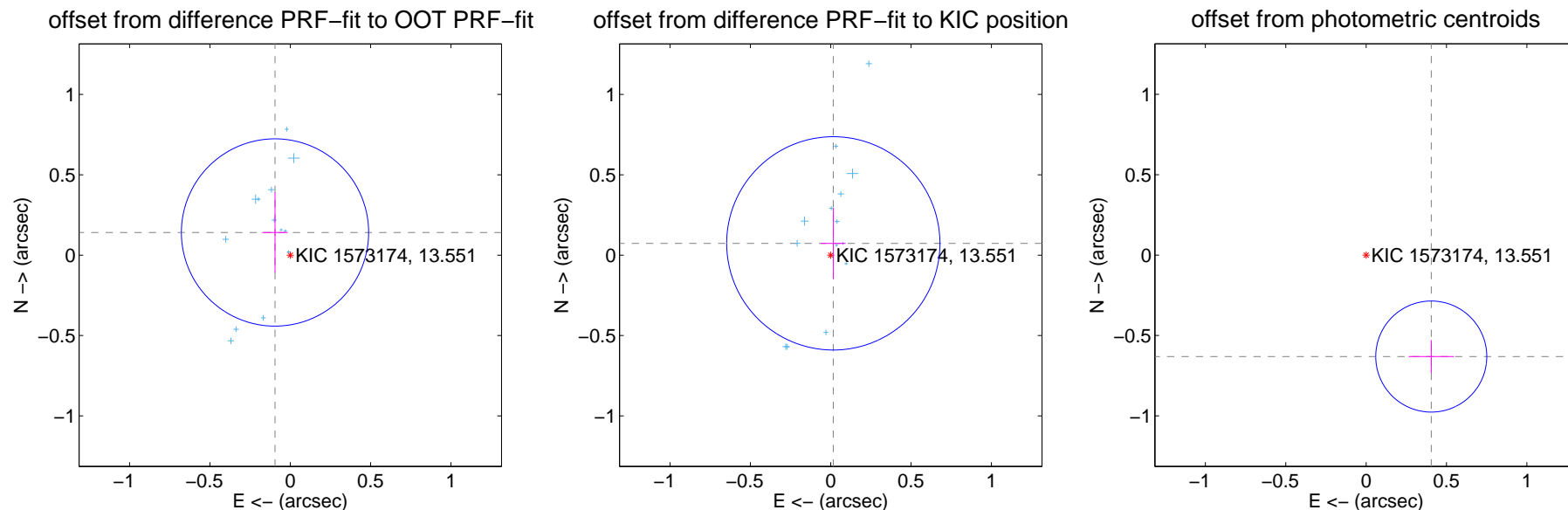
DV Centroid Data

Supplemental centroid analysis for 001573174-02. Kepler magnitude: 13.55. Transit SNR 9.38

There are 17 quarters with good PRF difference image offsets

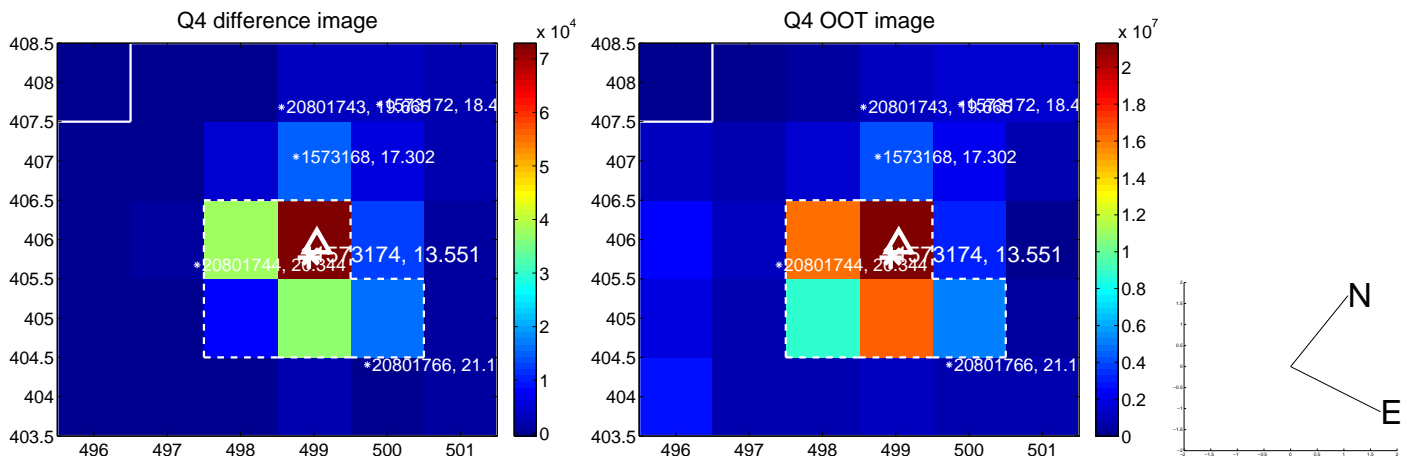
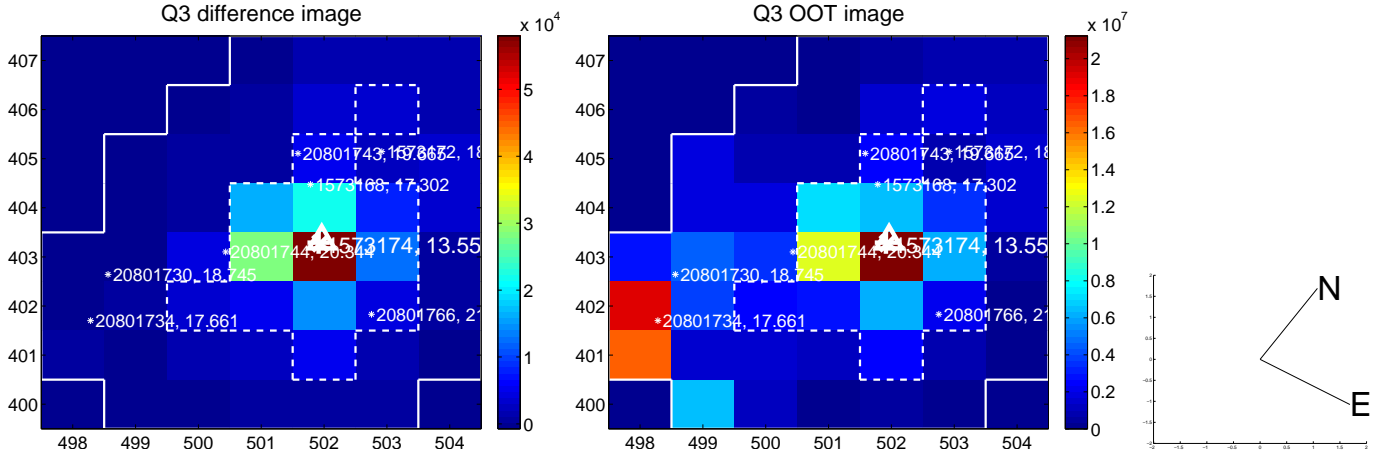
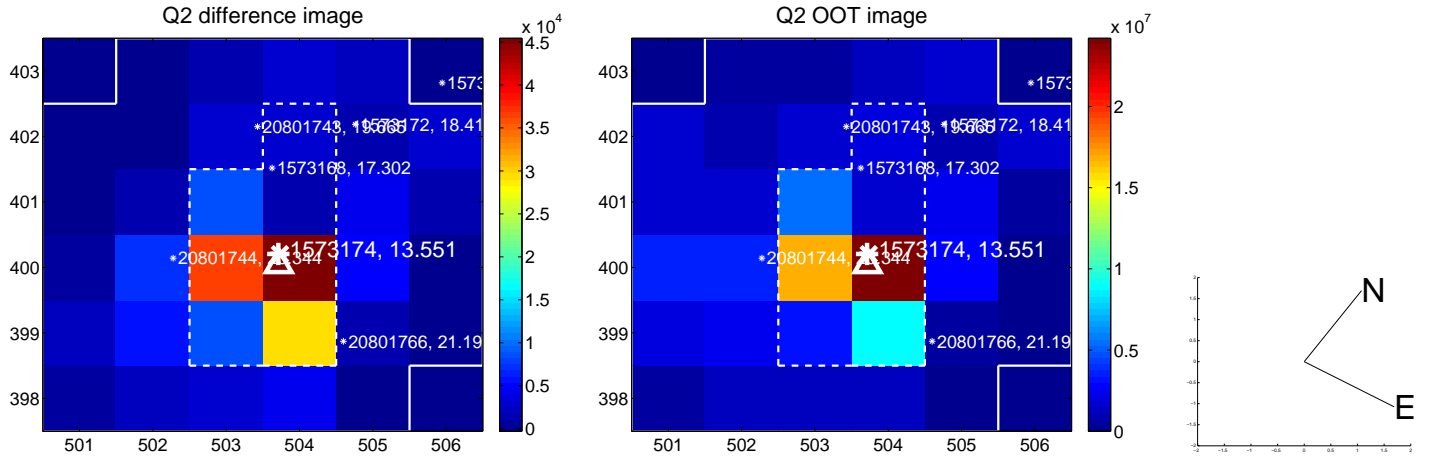
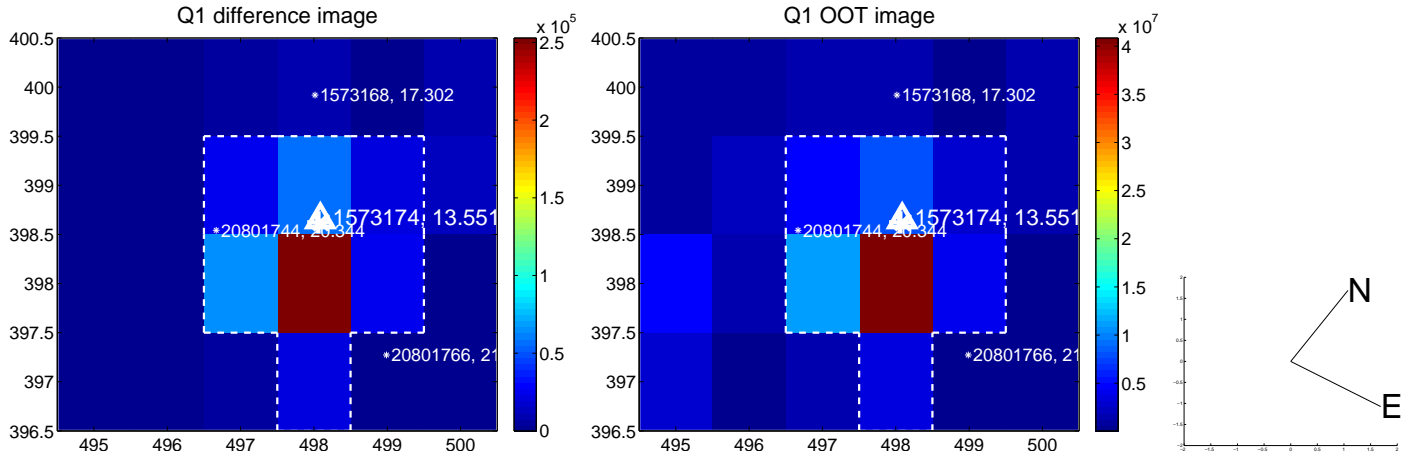
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.170 ± 0.194	0.88	0.095 ± 0.079	0.141 ± 0.250
PRF-fit source offset from KIC position	0.075 ± 0.221	0.34	-0.016 ± 0.077	0.073 ± 0.220
photometric centroid source offset	0.75 ± 0.12	6.51	-0.41 ± 0.14	-0.63 ± 0.10

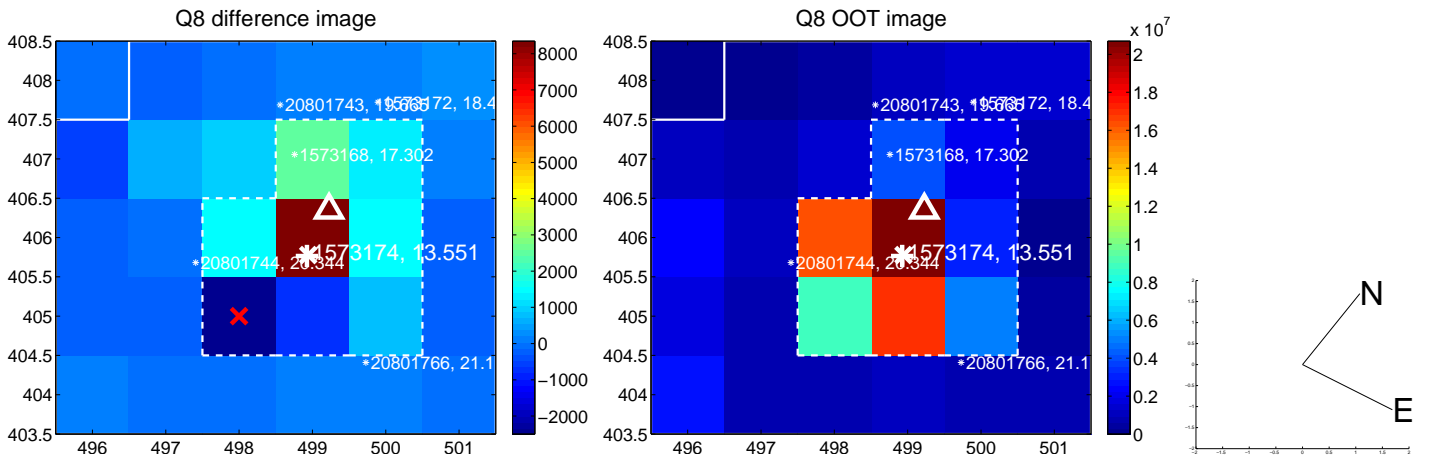
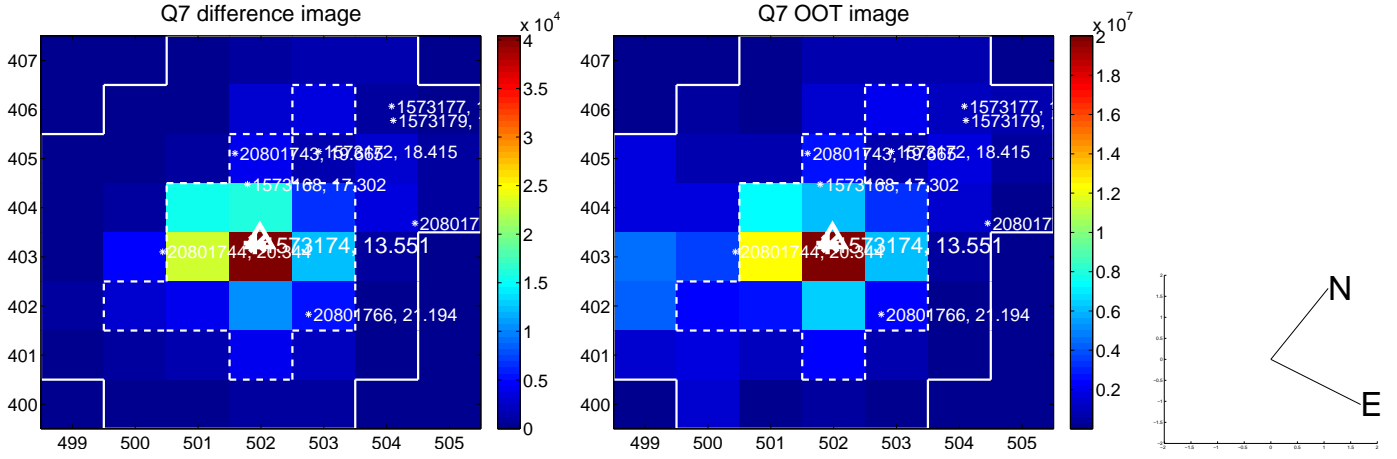
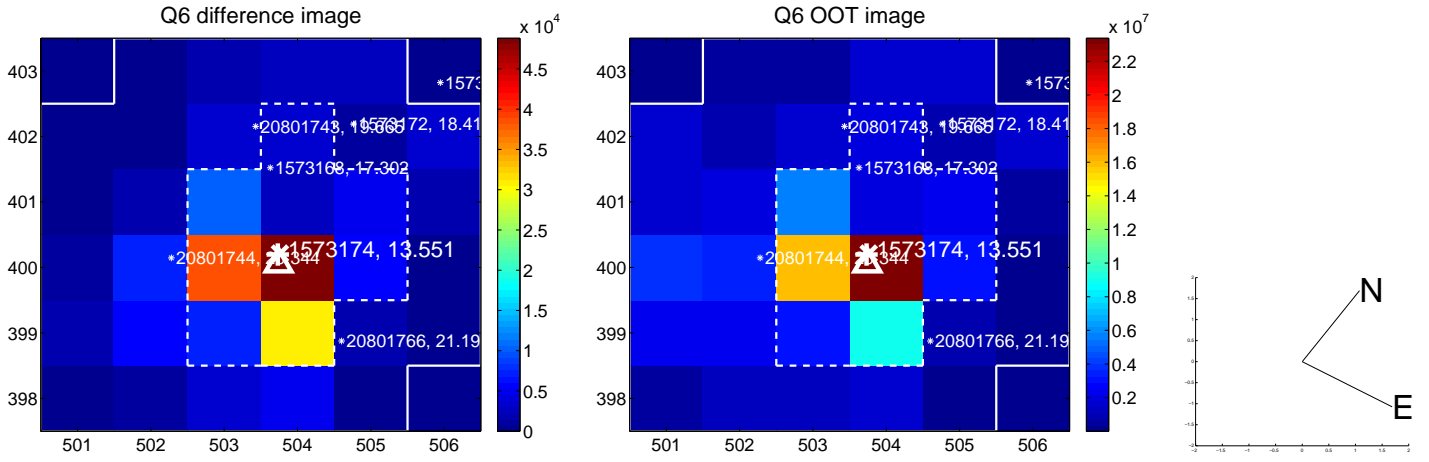
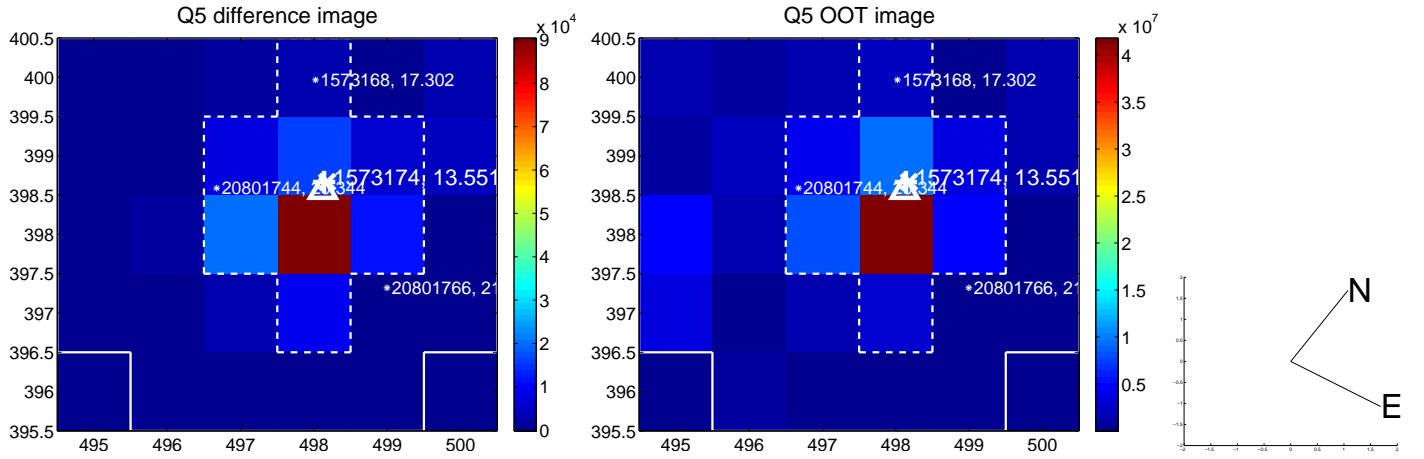


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

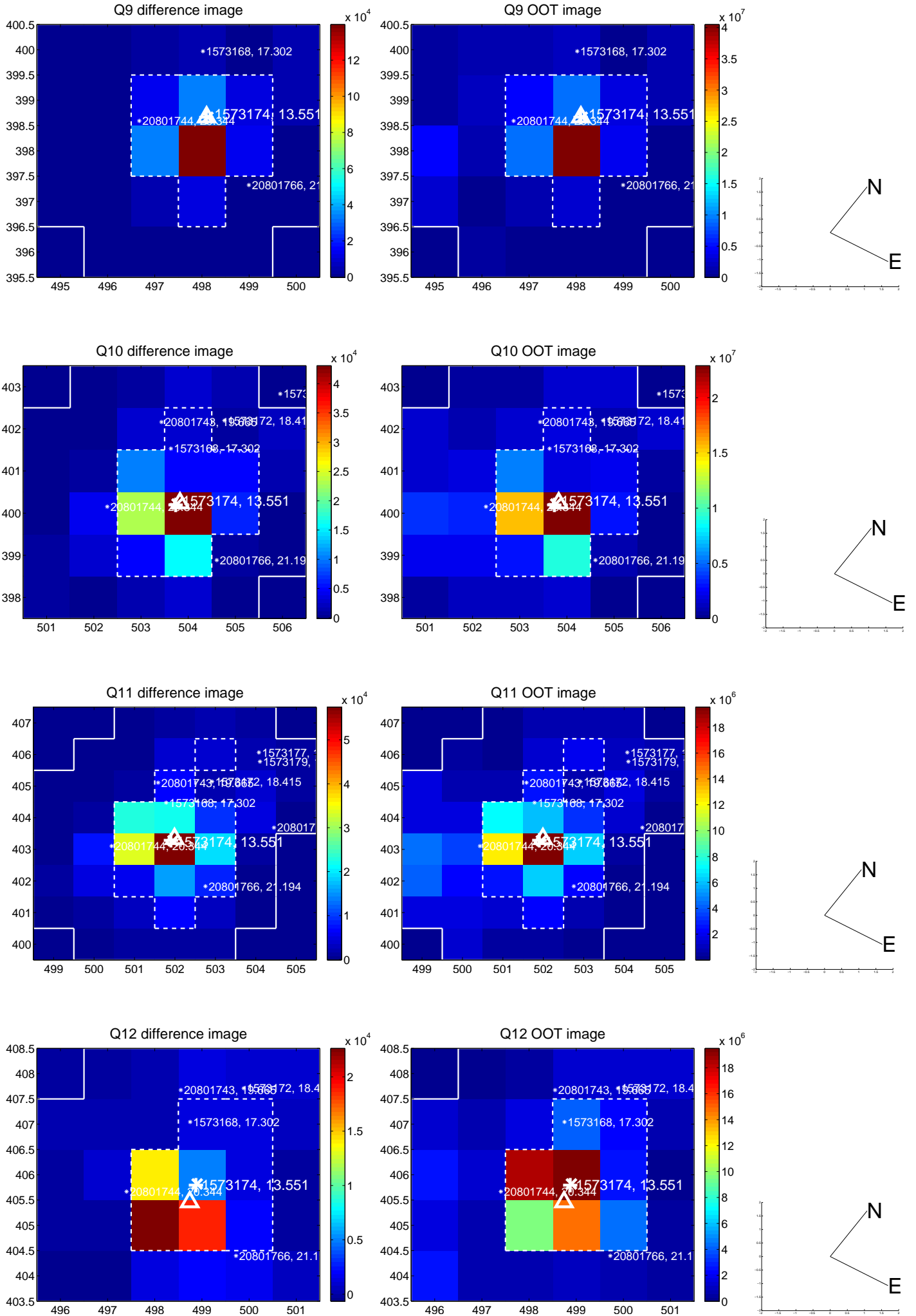
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



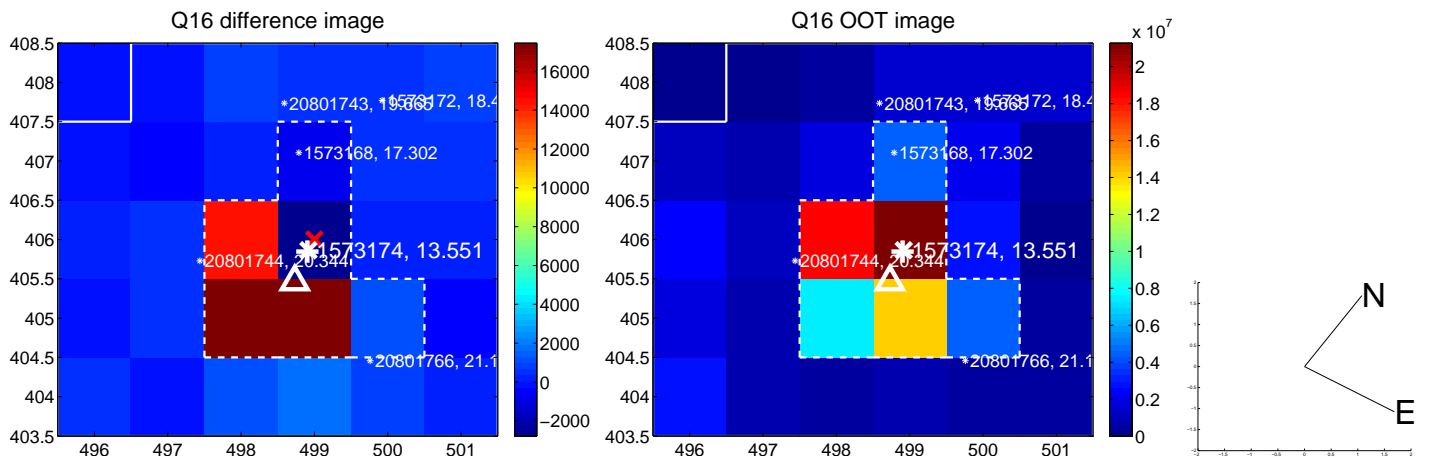
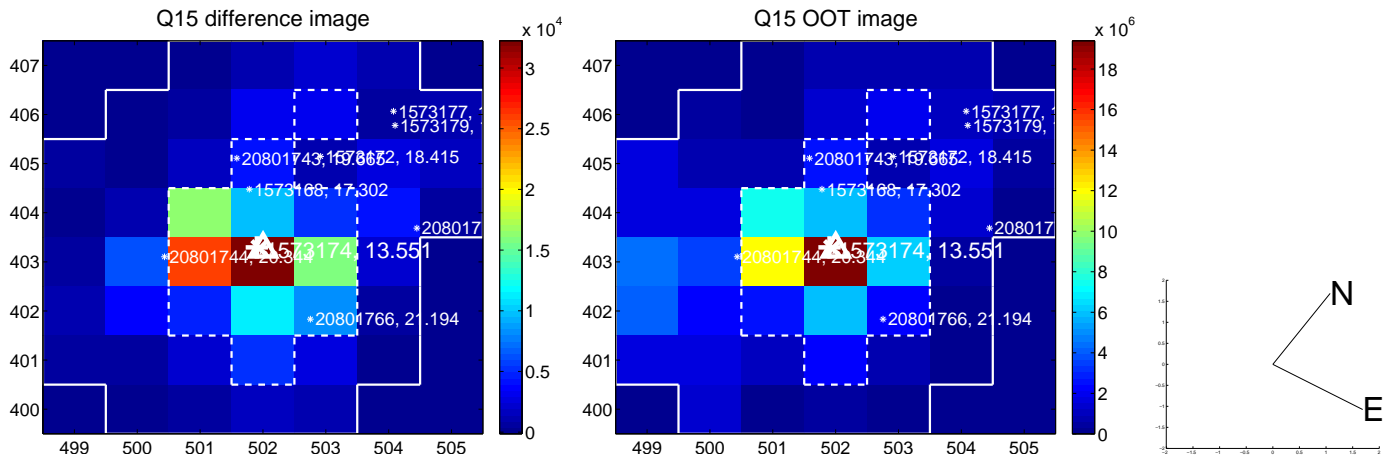
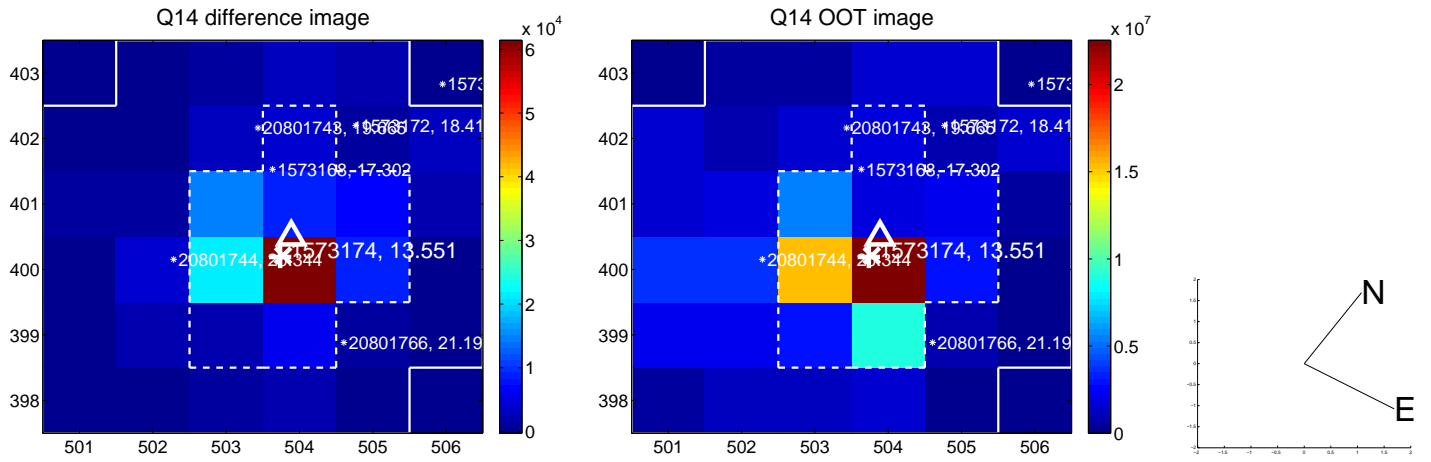
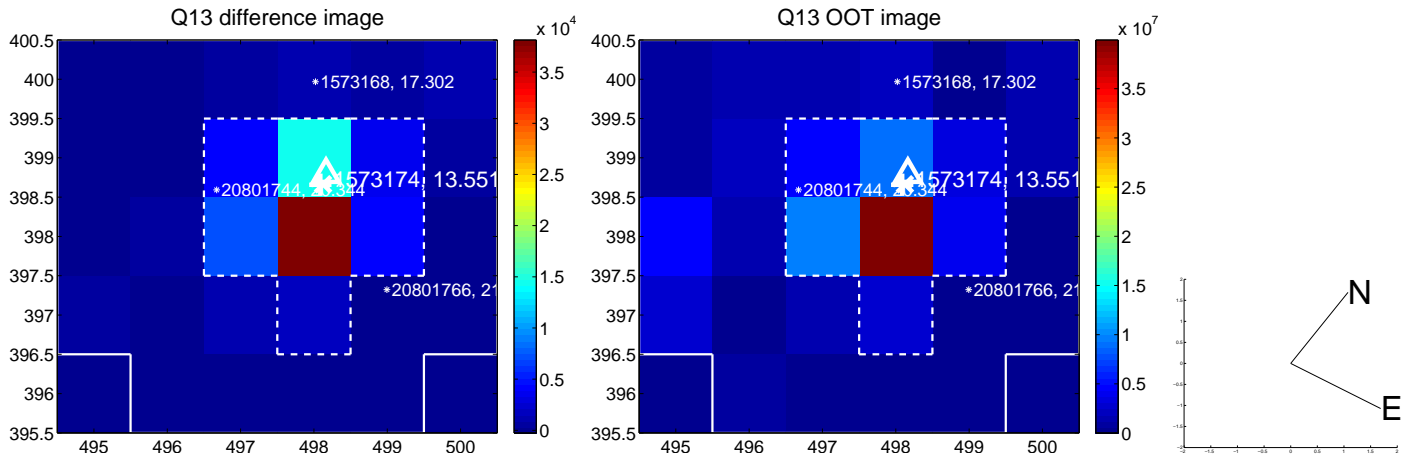
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



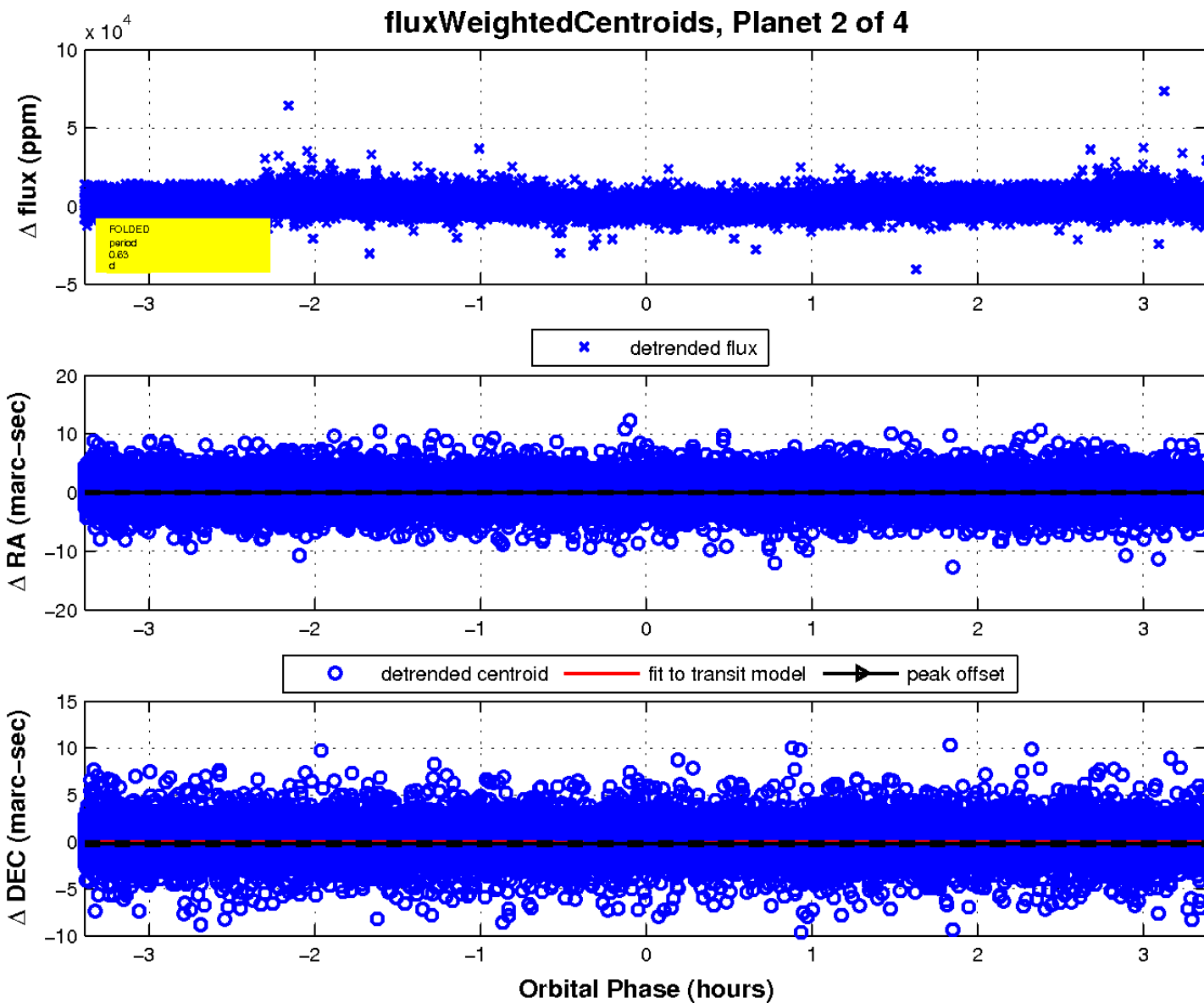
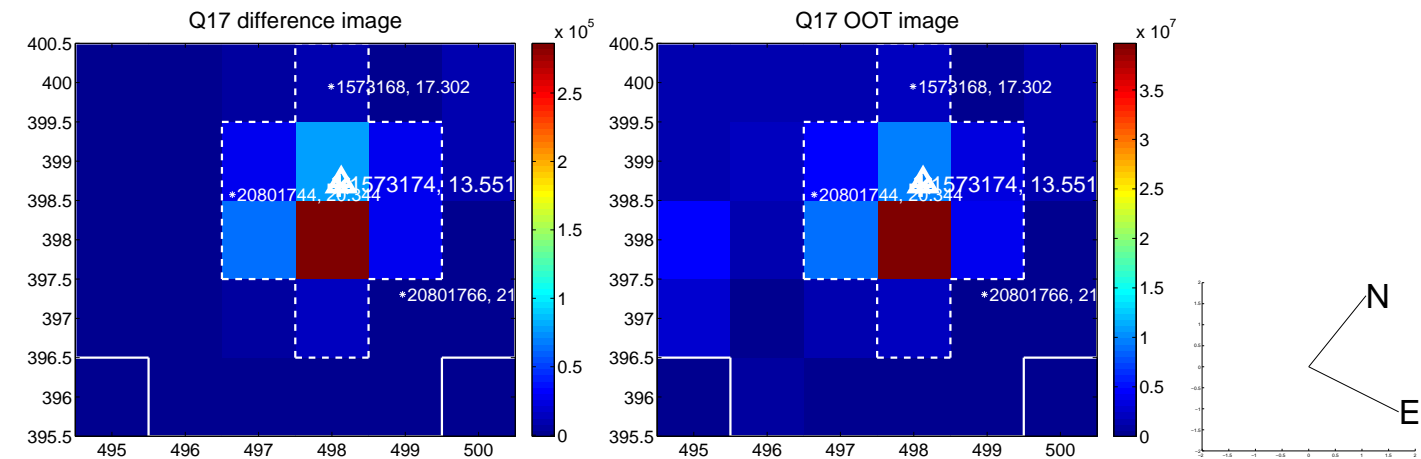
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

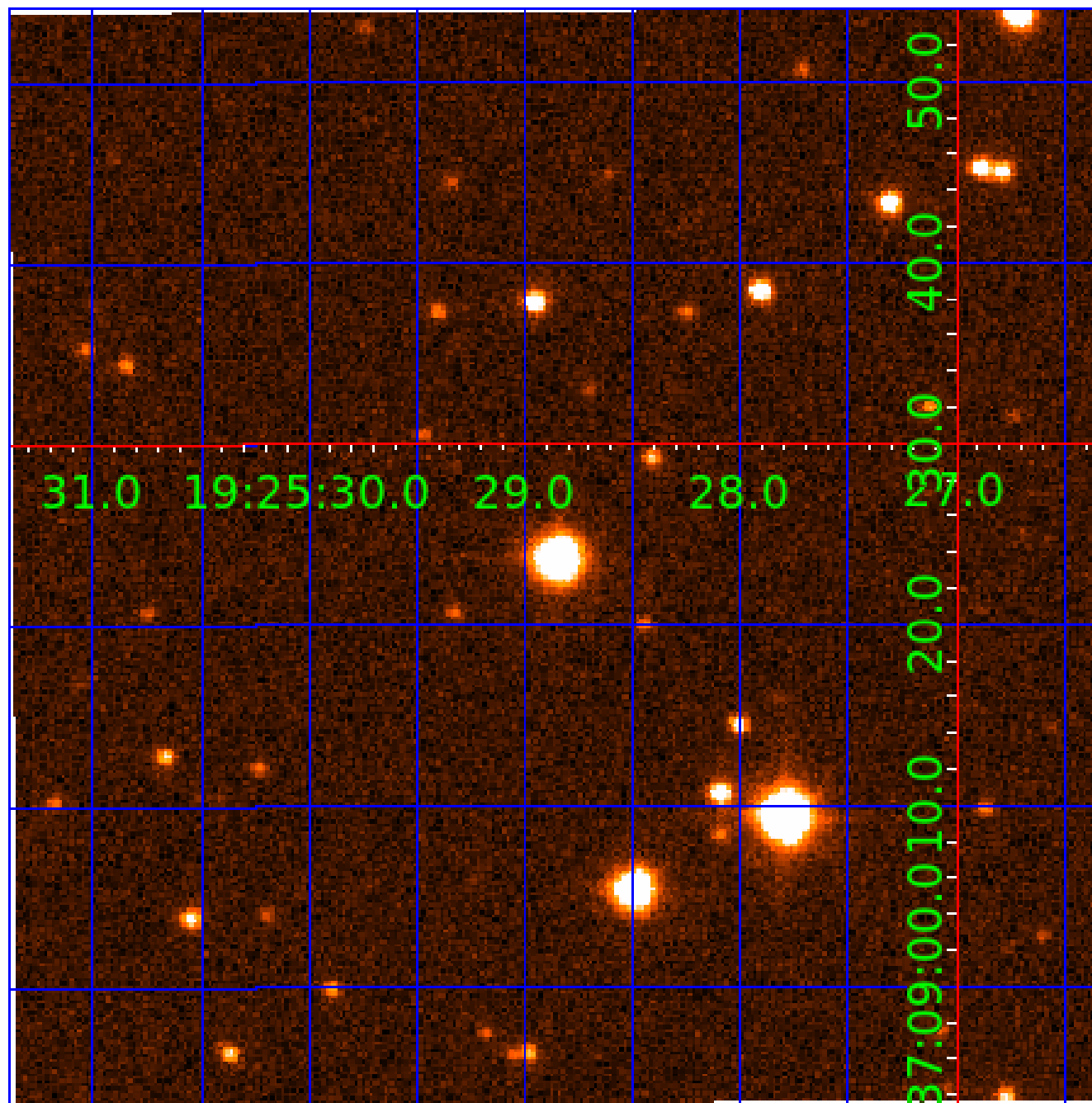


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001573174

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})
001573174-01	OBS	No	0.979807	131.995291	0.9	0.754	16.0	0.0	1.96	7159	0.20	18349.34
001573174-02	OBS	No	0.634916	131.817243	546.2	1.130	14.5	9.4	1.96	7159	5.35	32722.95
001573174-03	OBS	No	0.634927	132.020832	299.9	1.452	13.2	6.1	1.96	7159	3.45	32722.26
001573174-04	OBS	No	0.634924	131.604944	1008.9	2.000	9.9	-1.0	1.96	7159	6.32	32722.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001573174-01	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
001573174-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
001573174-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
001573174-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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.

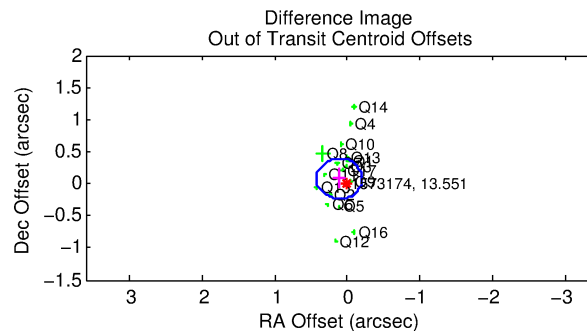
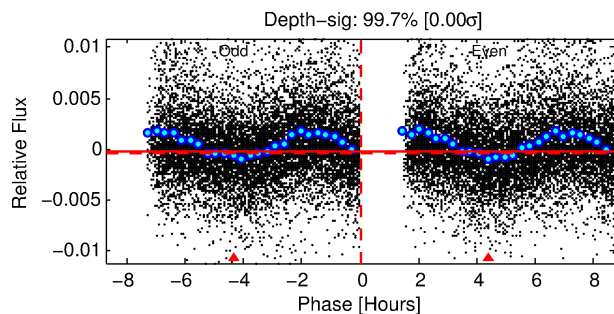
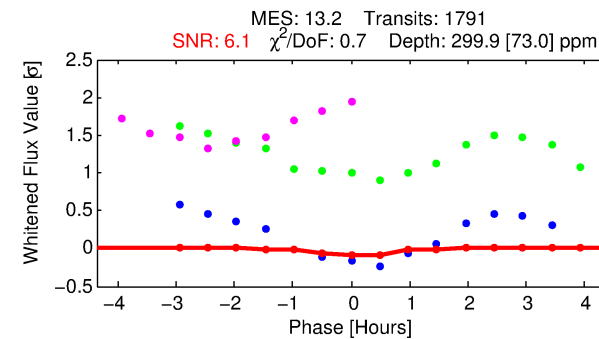
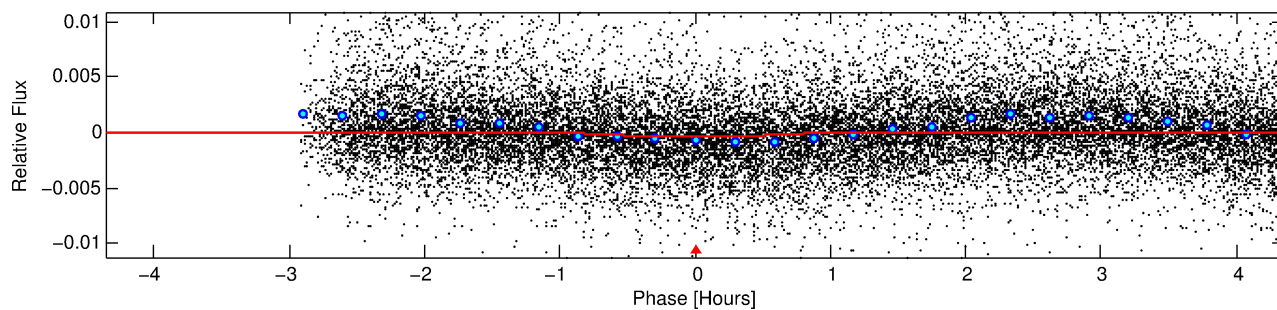
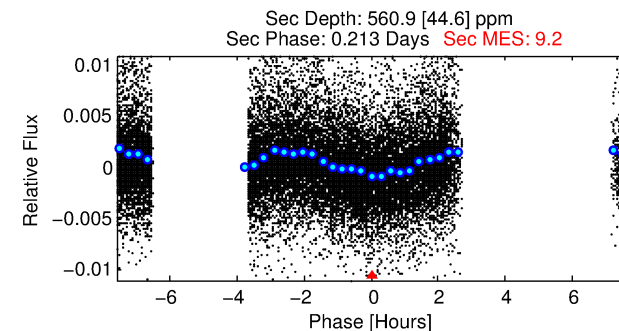
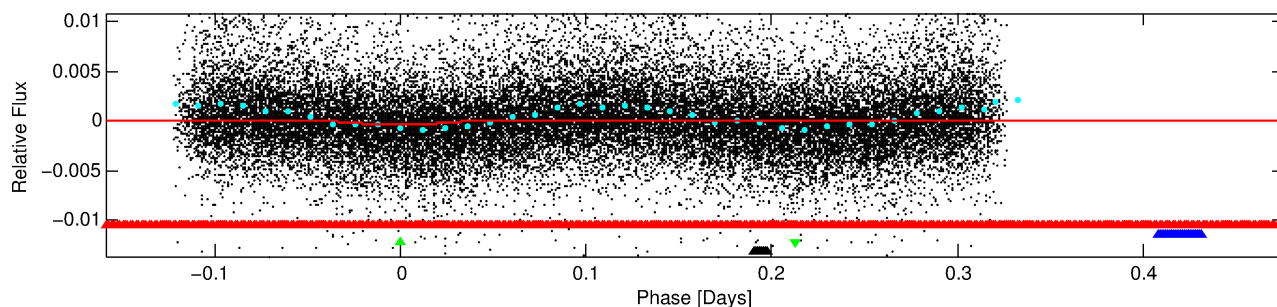
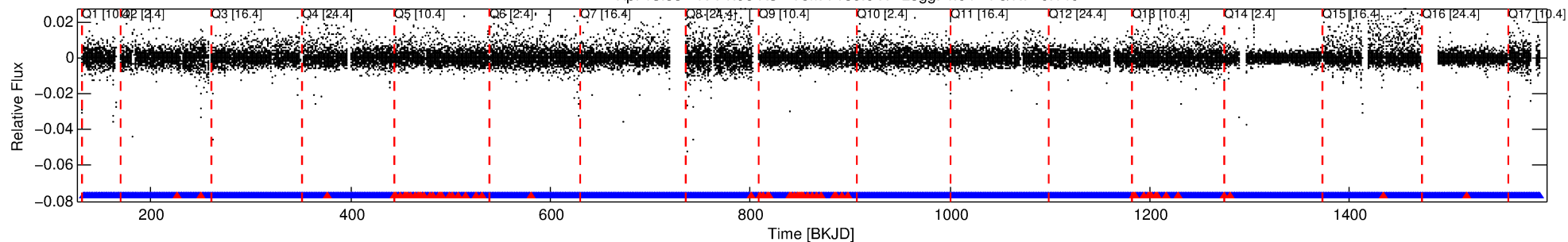
Ephemeris Match Information For 001573174-03

No Significant Match Found

DV One-Page Summary

KIC: 1573174 Candidate: 3 of 4 Period: 0.635 d

Kp: 13.55 R*: 1.96 Rs Teff: 7159.0 K Logg: 4.04 Fe/H: -0.140



DV Fit Results:

Period = 0.63493 [0.00002] d
Epoch = 132.0208 [0.0038] BKJD
Rp/R* = 0.0161 [0.0249]
a/R* = 3.44 [27.97]
b = 0.03 [257.09]
Seff = 32722.25 [13578.19]
Teq = 3430 [356] K
Rp = 3.45 [5.42] Re
a = 0.0166 [0.0041] AU
Ag = 7.18 [22.38] [0.28σ]
Teff = 8680 [6725] K [0.78σ]

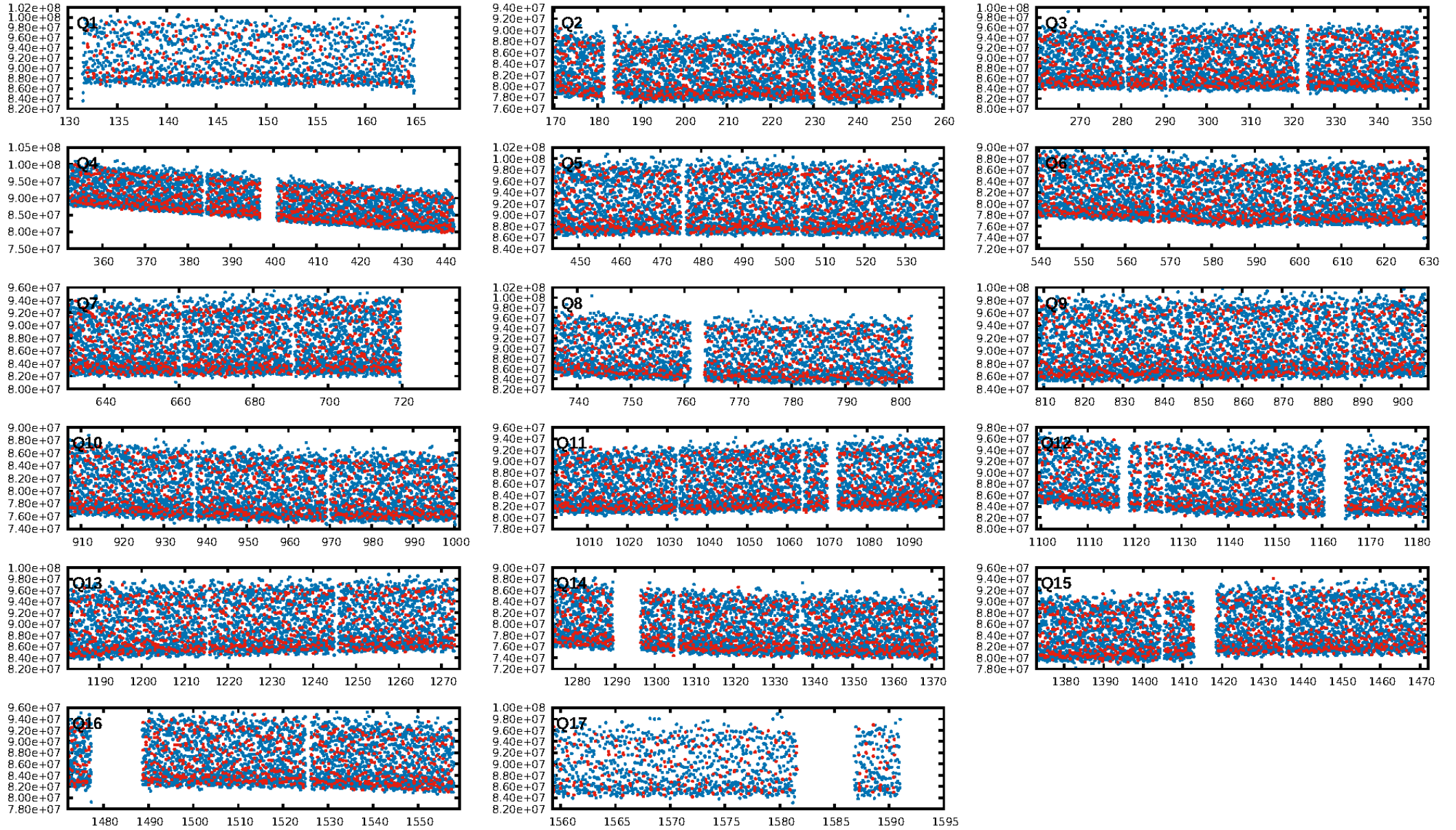
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [5.06σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [1645/1712]
GhostDiagnostic-chr: 1.335
Centroid-sig: 0.0%
Centroid-so: 0.550 arcsec [3.11σ]
OotOffset-rm: 0.135 arcsec [1.29σ]
KicOffset-rm: 0.015 arcsec [0.12σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

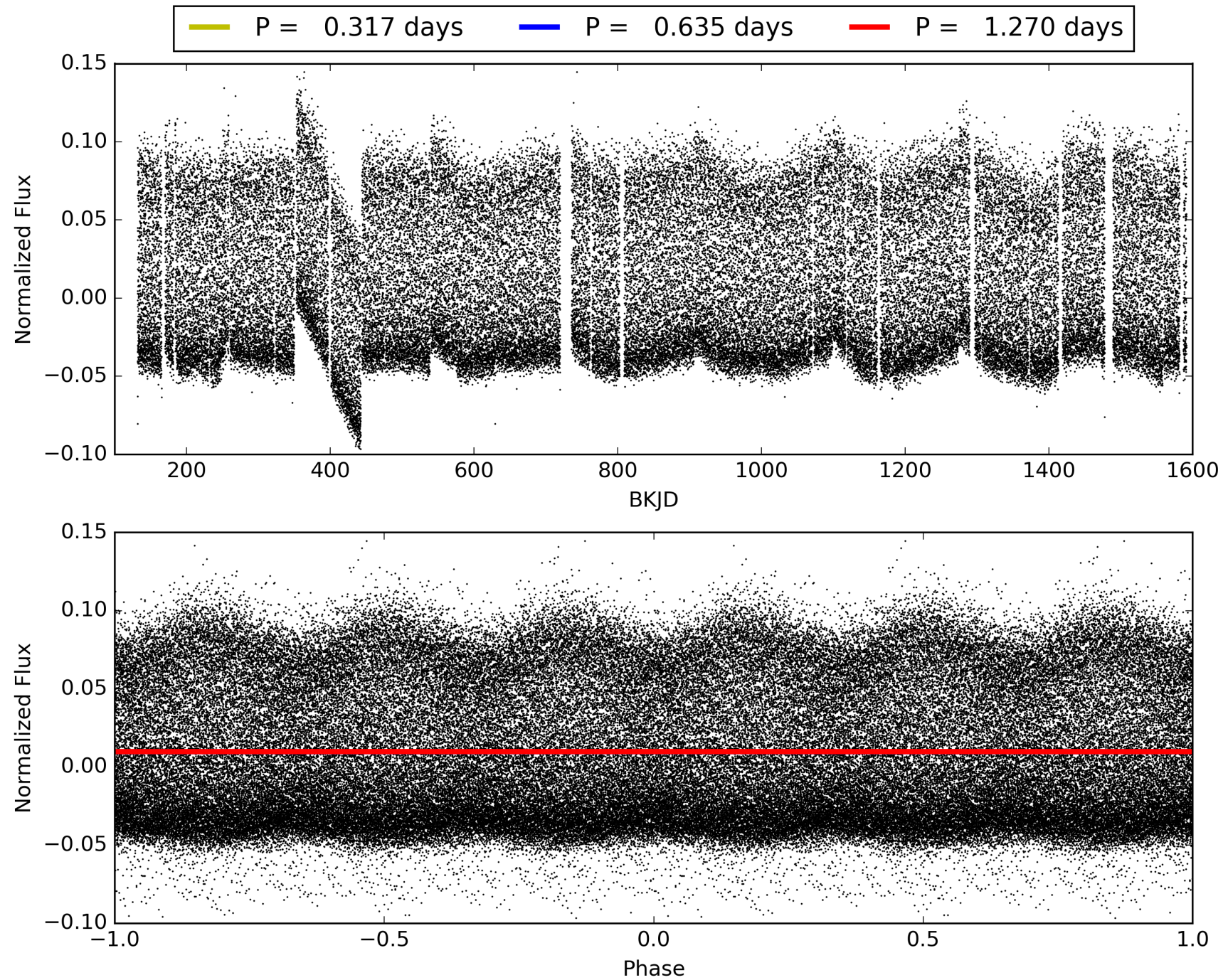
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 01:12:25 Z

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

TCE 001573174-03, PDC Light Curves

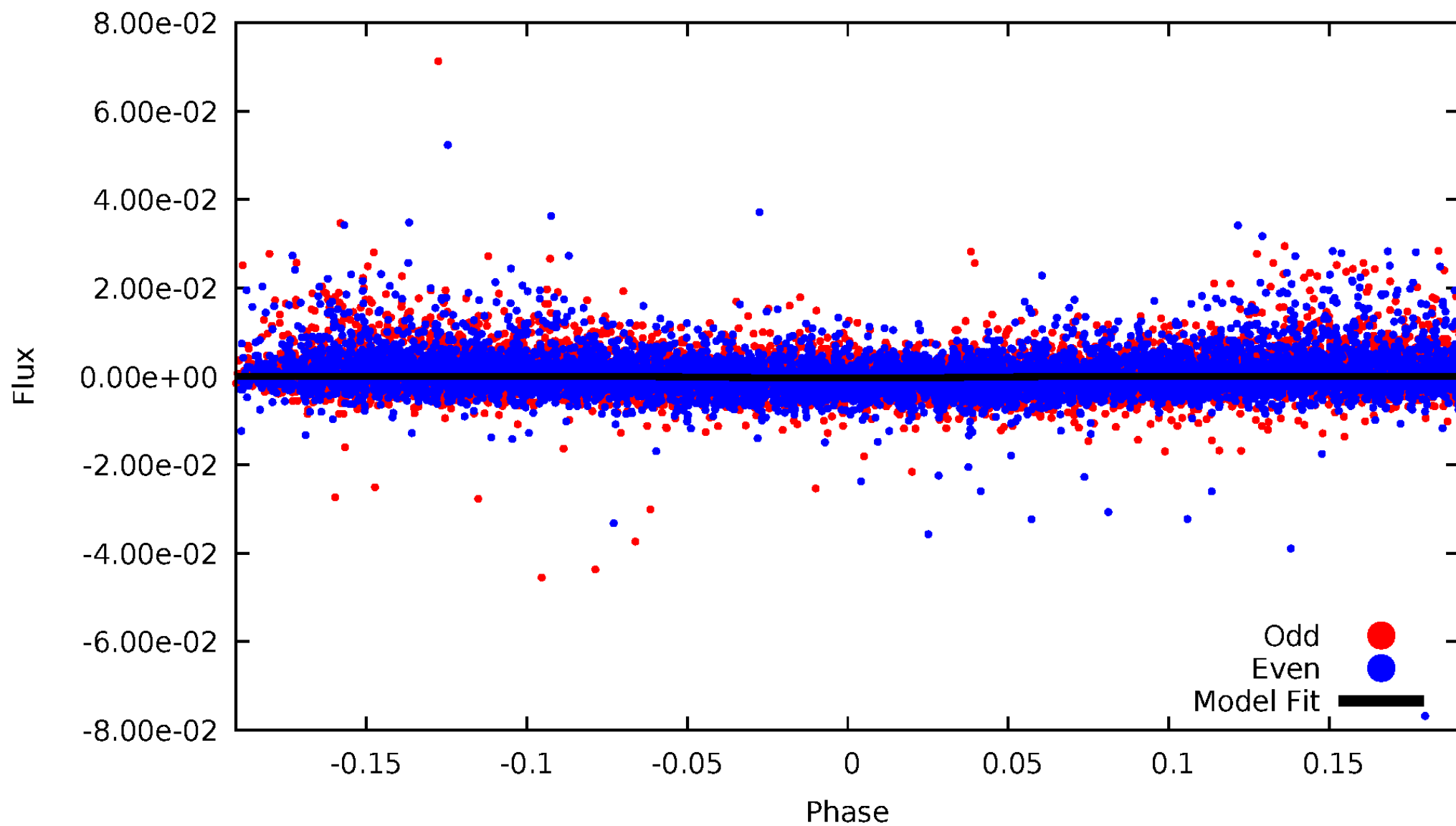


TCE 001573174-03



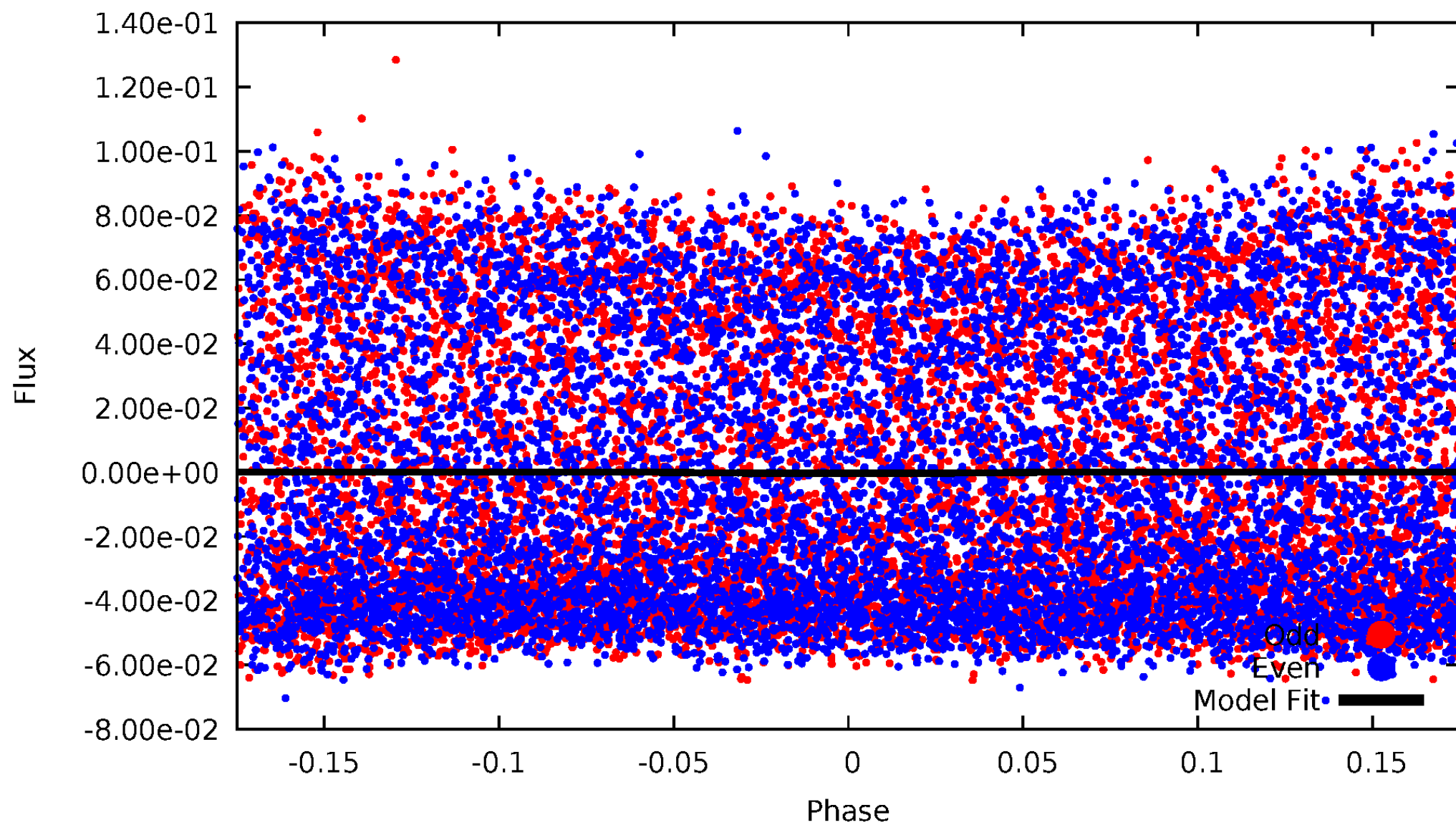
DV Odd/Even

TCE 001573174-03



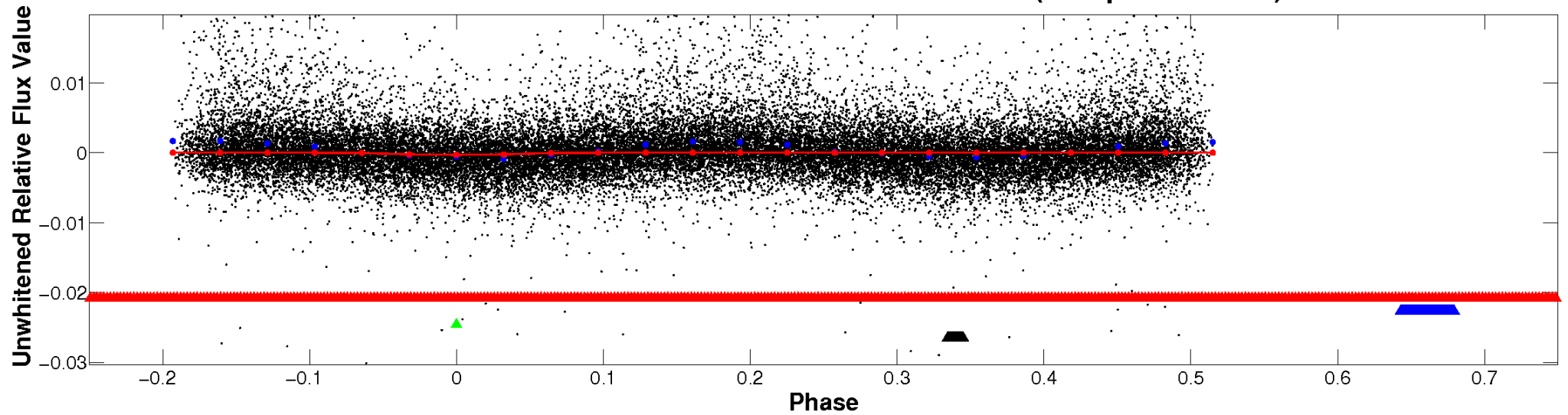
ALT Odd/Even

TCE 001573174-03

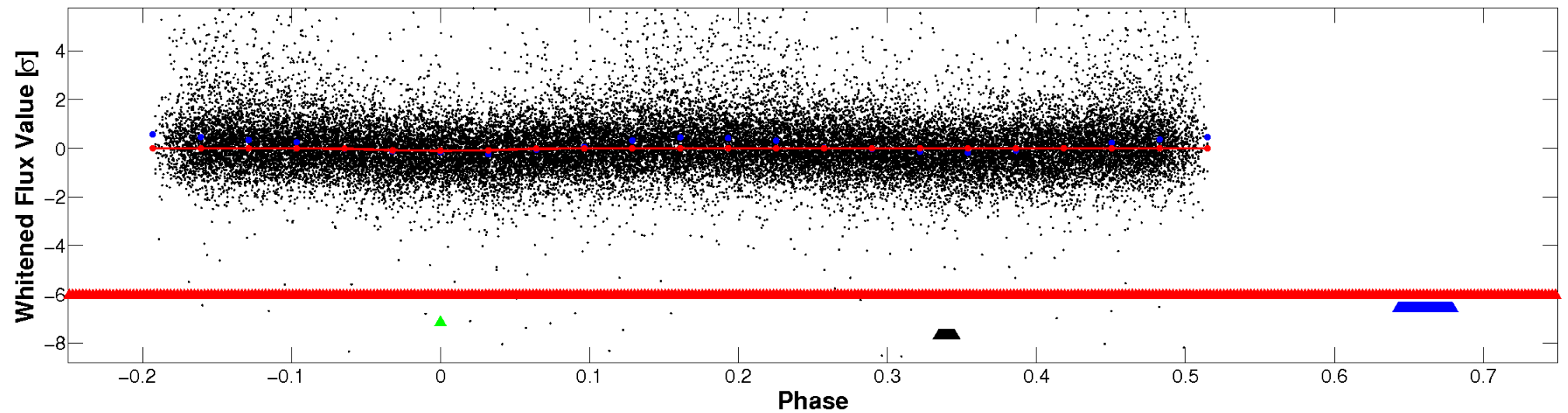


Non-Whitened Vs. Whitened Light Curve

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

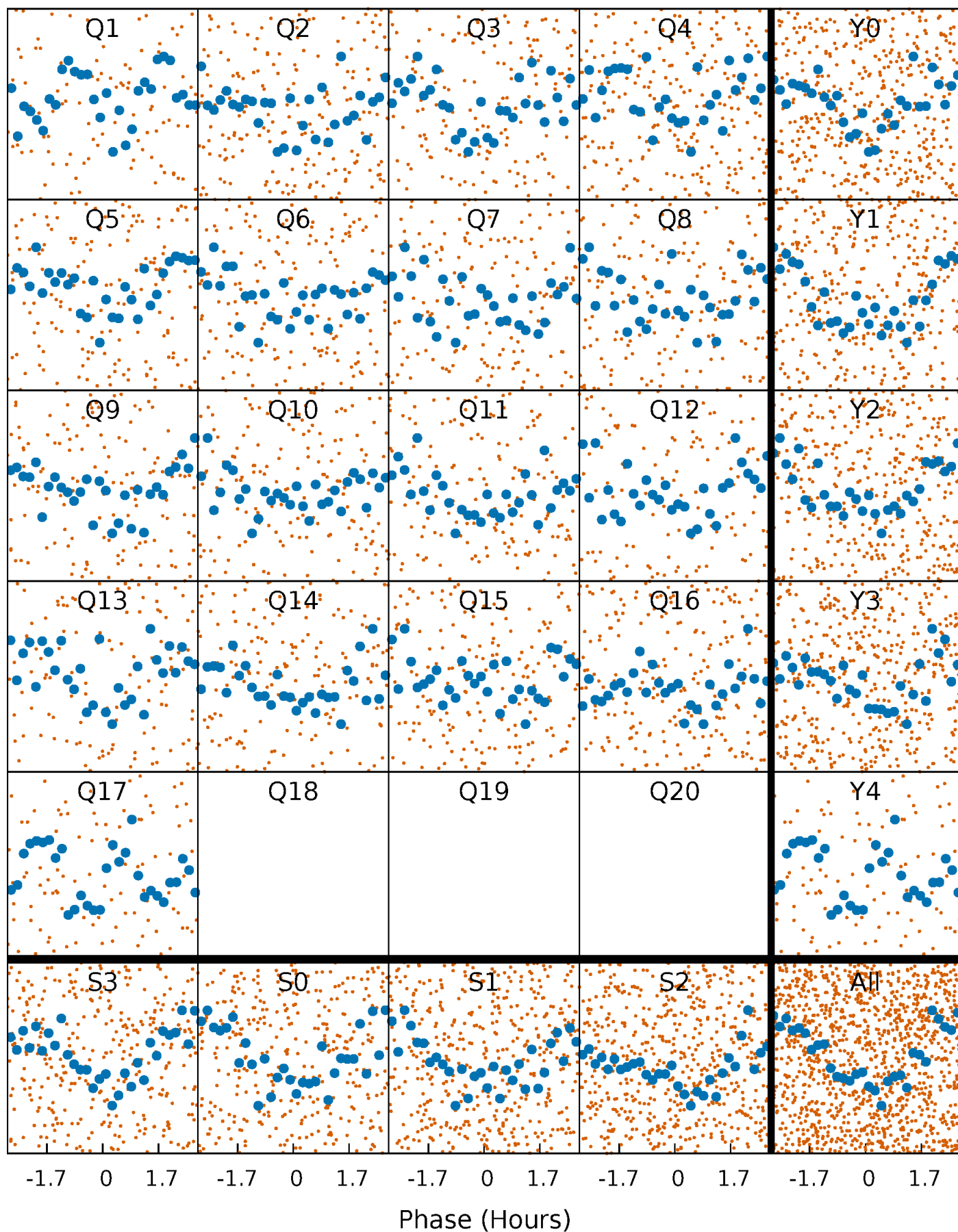


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



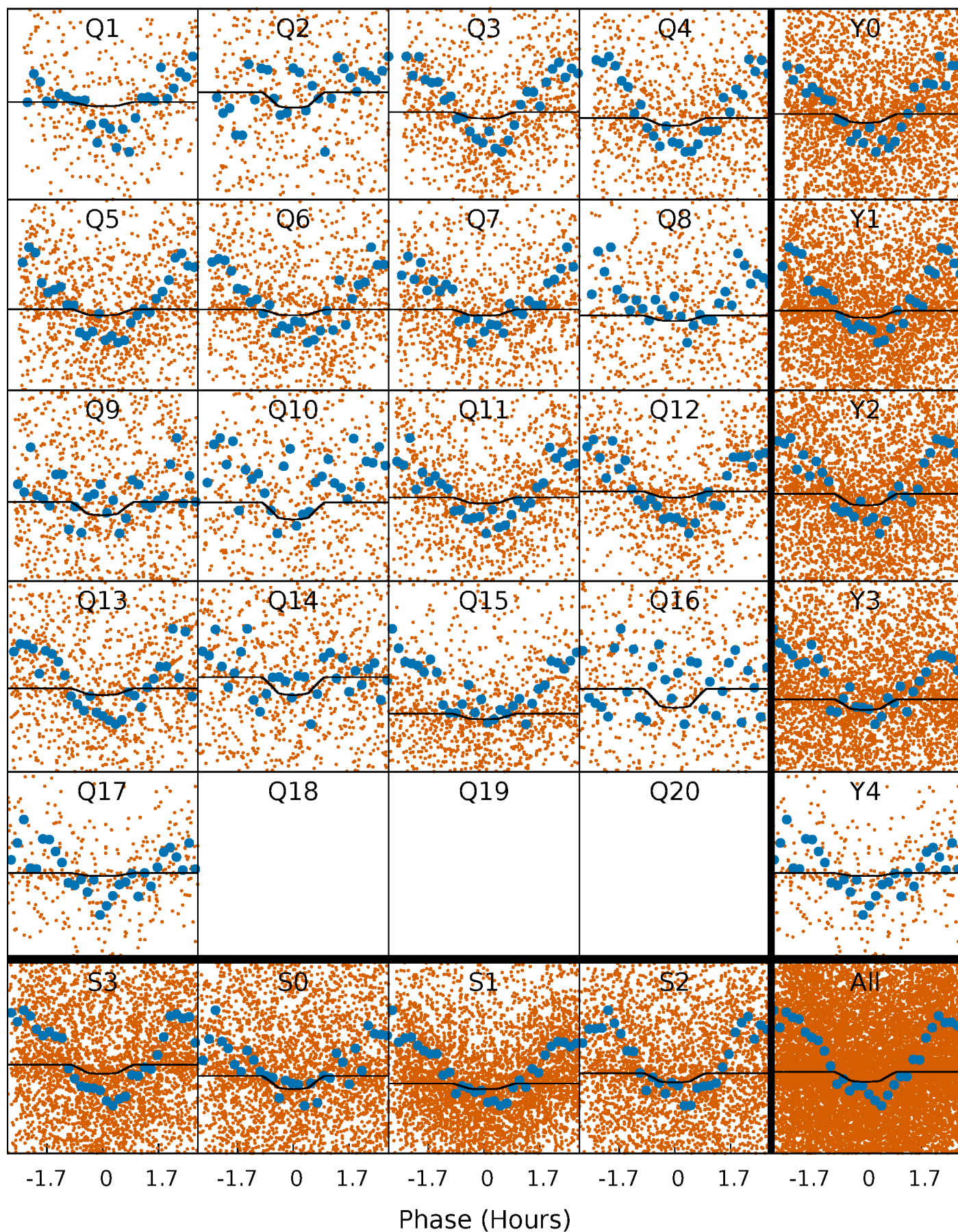
PDC Quarter-Phased Transit Curves

TCE 001573174-03 P= 0.634927 Days $T_0=132.020832$ (BKJD)



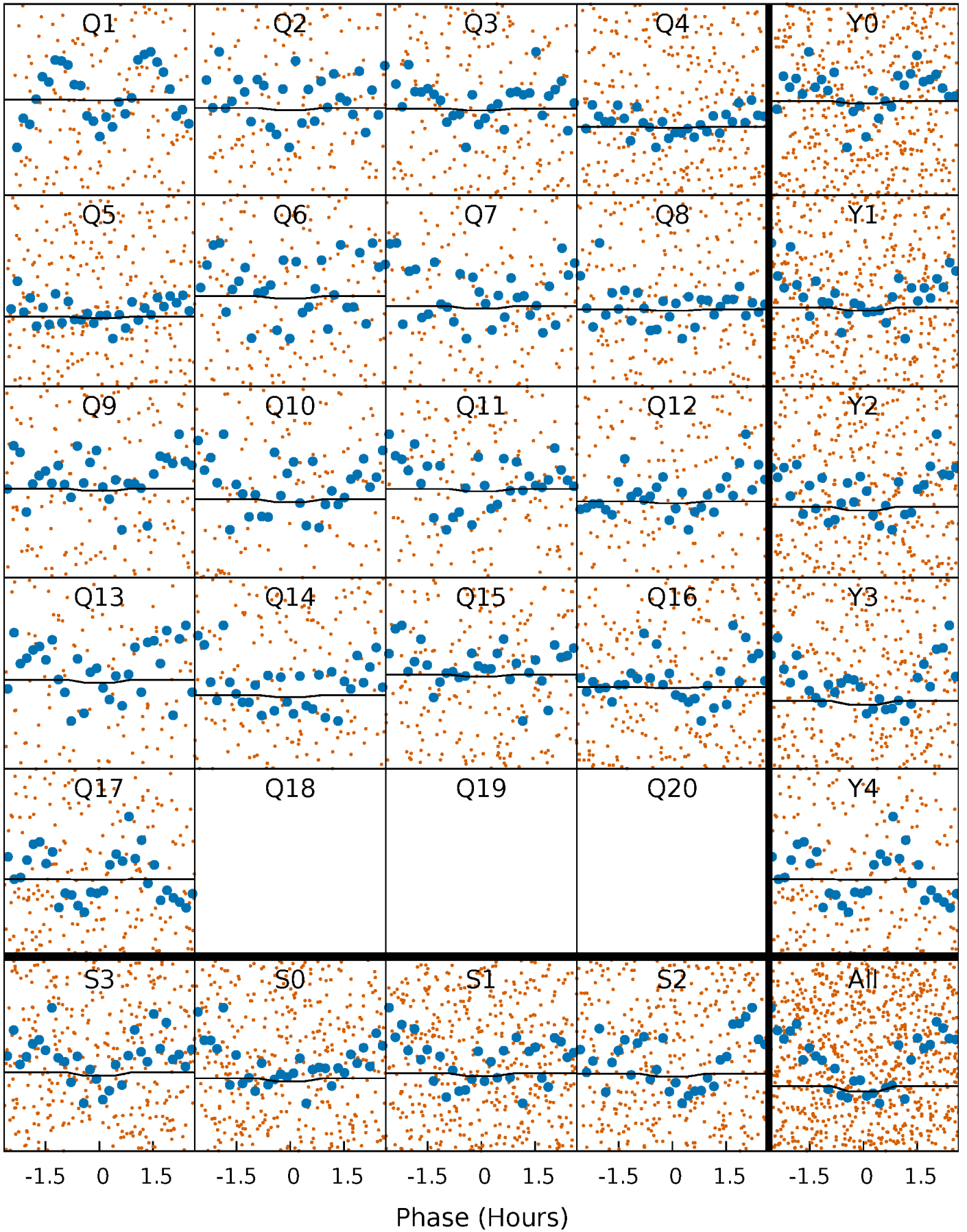
DV Quarter-Phased Transit Curves

TCE 001573174-03 P= 0.634927 Days $T_0=132.020832$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

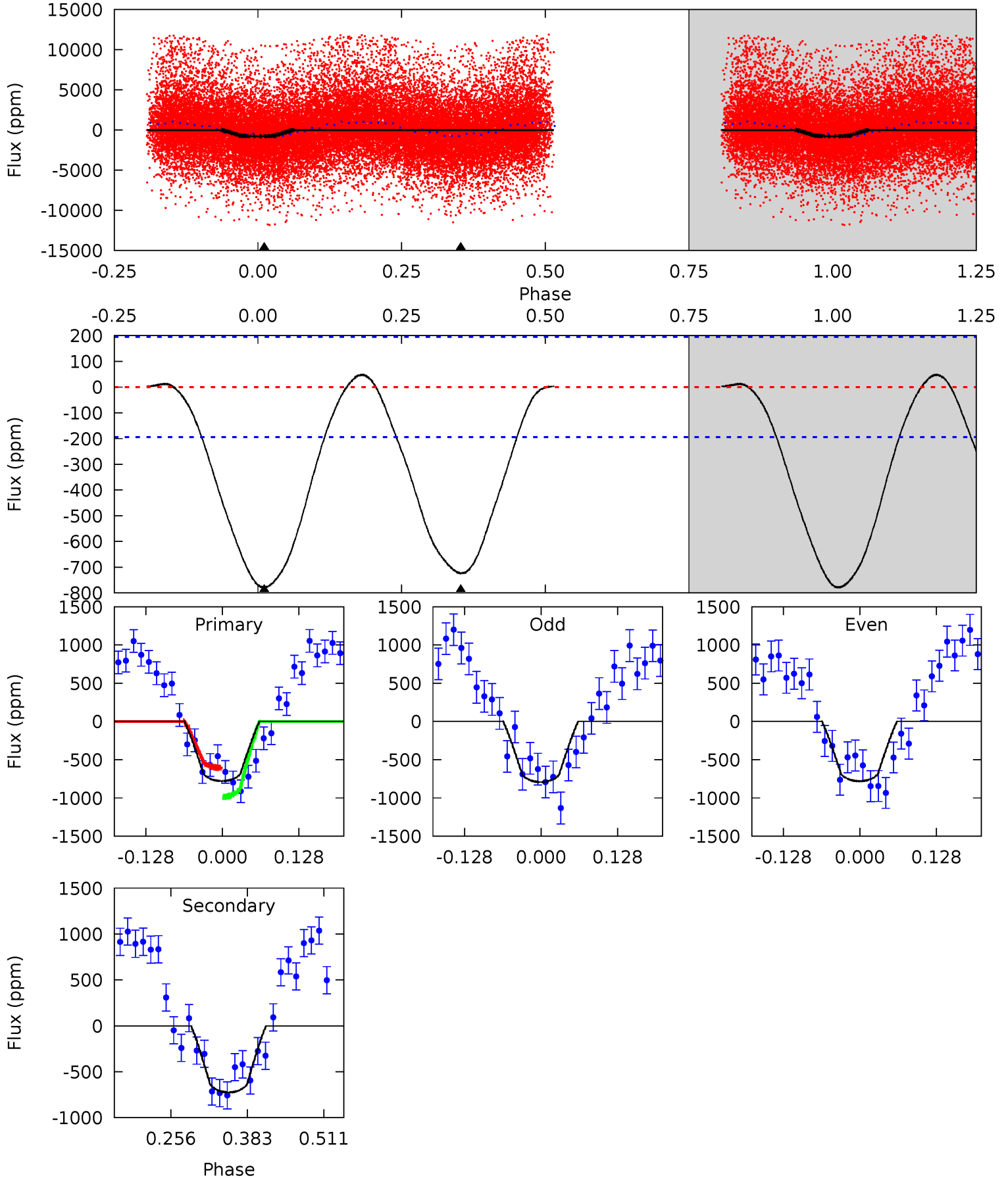
TCE 001573174-03 P= 0.634928 Days $T_0=132.020779$ (BKJD)



DV Model-Shift Uniqueness Test

001573174-03, P = 0.634927 Days, E = 131.385905 Days

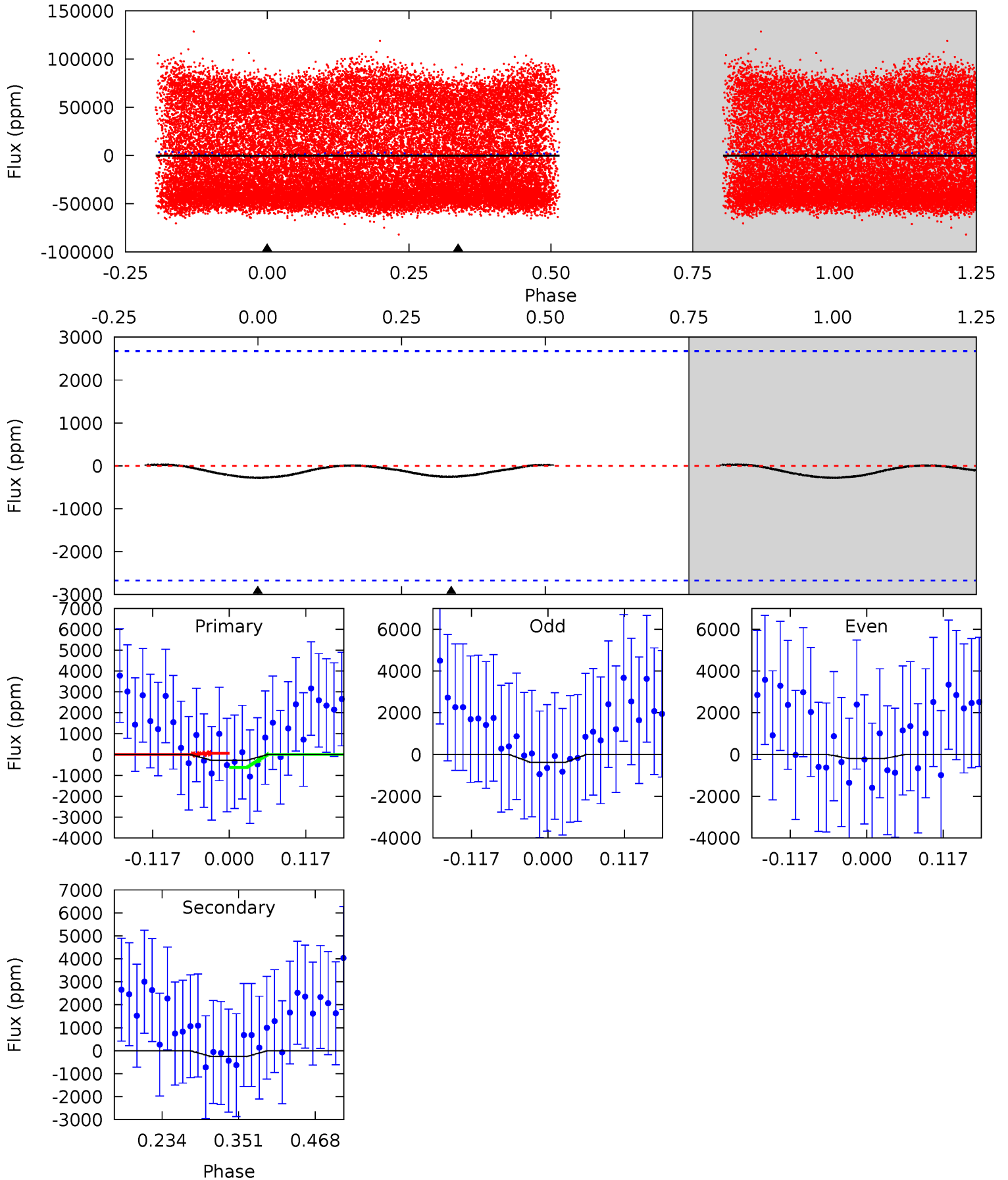
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	16.8	0	0	4.51	1.52	0.84	18.1	18.1	16.8	16.8	0.14	1.02	0.06	4.66



Alt Model-Shift Uniqueness Test

001573174-03, P = 0.634928 Days, E = 131.385851 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.48	0.43	0	0	4.53	1.57	0.03	0.48	0.48	0.43	0.43	0.15	0.09	0.09	0.51



Stellar Parameters For KIC 001573174

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7159^{+225}_{-325}	$4.035^{+0.209}_{-0.171}$	$-0.140^{+0.250}_{-0.350}$	$1.960^{+0.560}_{-0.560}$	$1.517^{+0.209}_{-0.279}$	$0.284^{+0.388}_{-0.134}$
	+3%/-5%	+5%/-4%	+179%/-250%	+29%/-29%	+14%/-18%	+137%/-47%
Source	PHO1	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 001573174-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-724 ± 43	$5.16^{+4.78}_{-3.51}$	4733^{+396}_{-378}	7355^{+9954}_{-2340}	$4.071^{+33.612}_{-2.959}$
Alt.	-255 ± 590	$5.03^{+4.84}_{-3.41}$	4740^{+390}_{-388}	4541^{+5982}_{-11262}	$0.785^{+12.121}_{-2.916}$

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

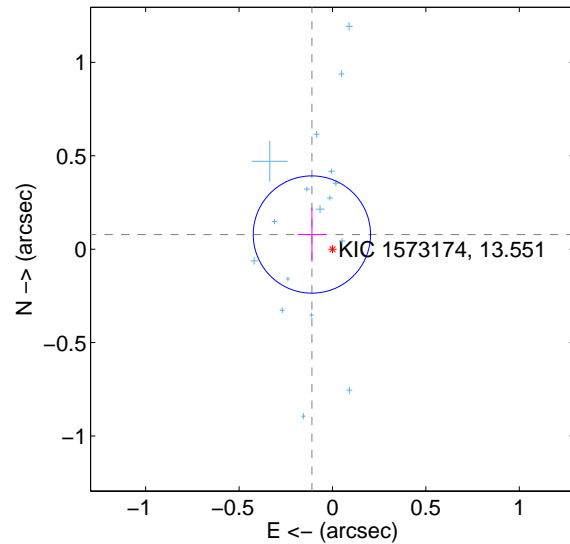
Supplemental centroid analysis for 001573174-03. Kepler magnitude: 13.55. Transit SNR 6.08

There are 17 quarters with good PRF difference image offsets

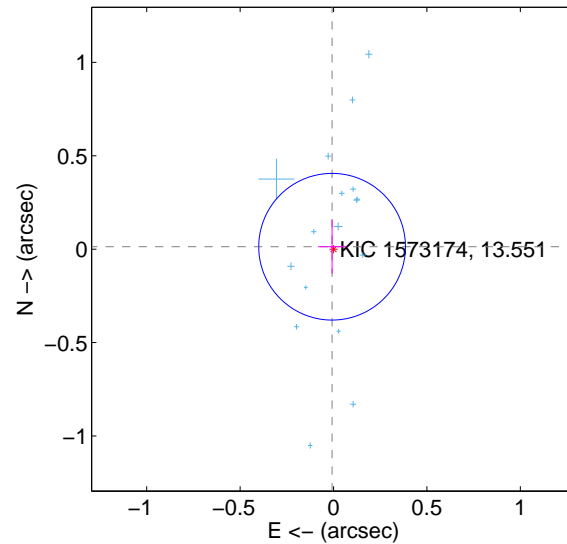
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.135 ± 0.105	1.29	0.110 ± 0.077	0.078 ± 0.145
PRF-fit source offset from KIC position	0.015 ± 0.131	0.12	0.008 ± 0.075	0.013 ± 0.145
photometric centroid source offset	0.55 ± 0.18	3.11	-0.31 ± 0.21	-0.45 ± 0.16

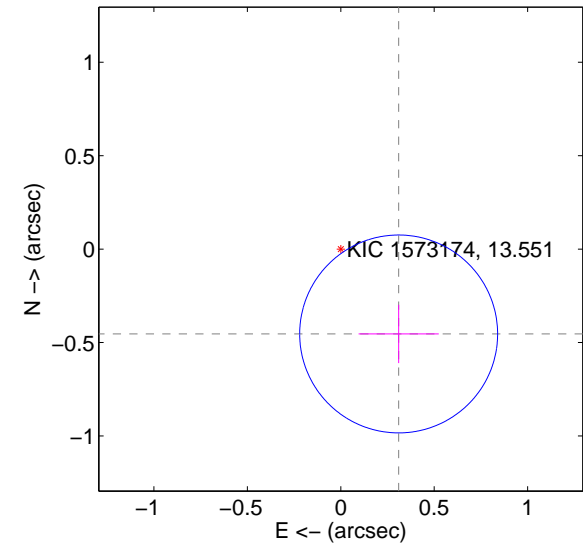
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

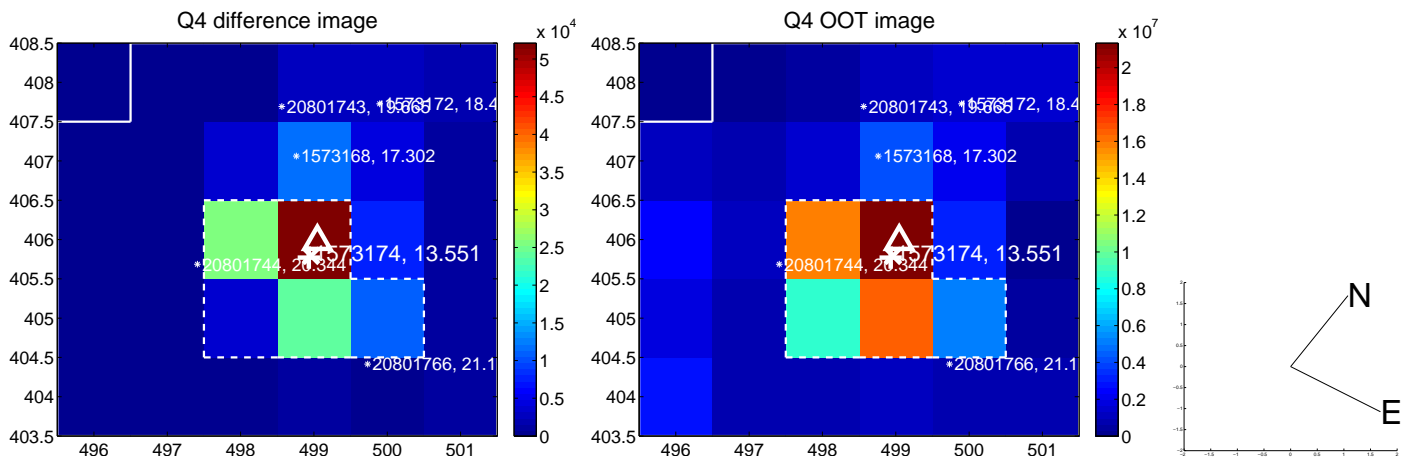
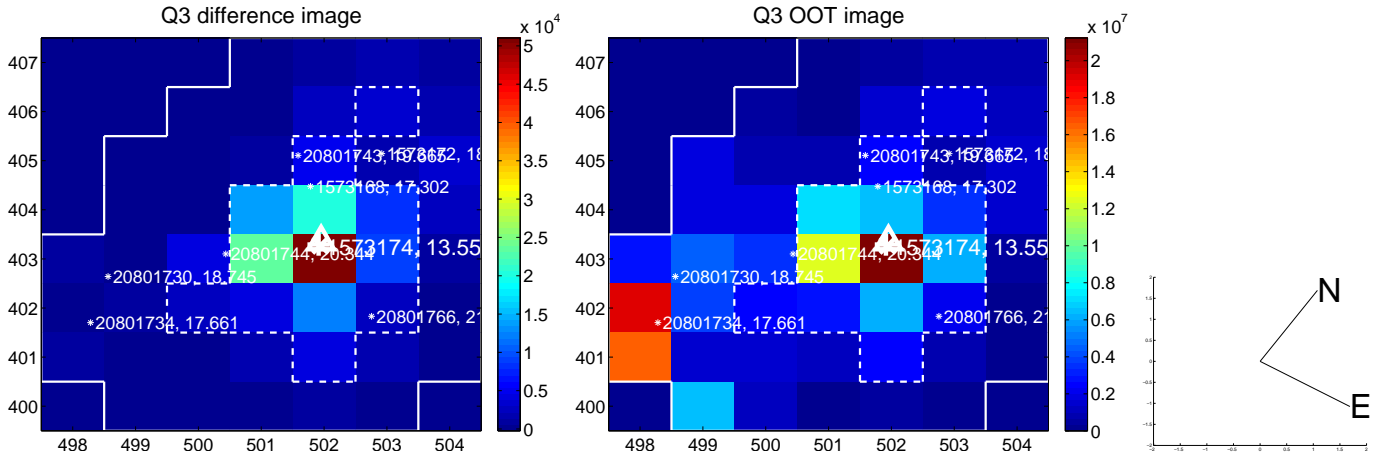
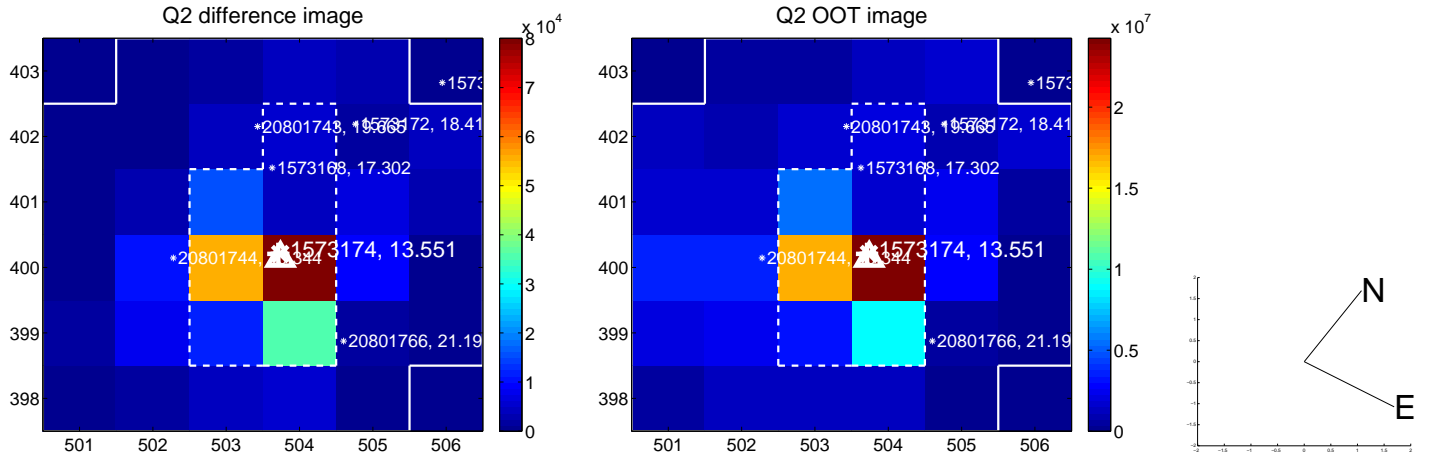
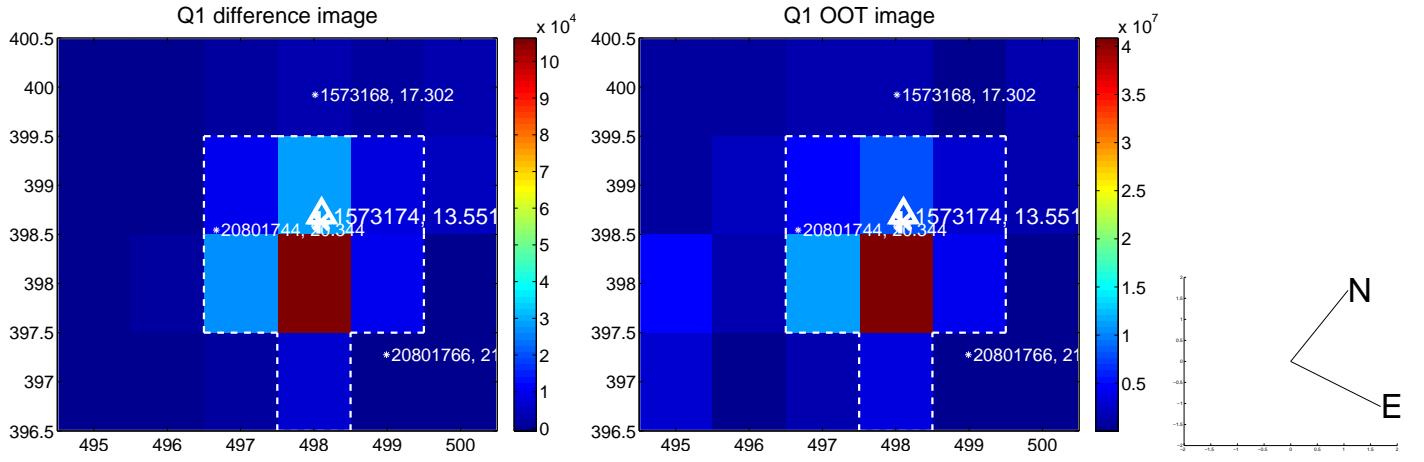


offset from photometric centroids

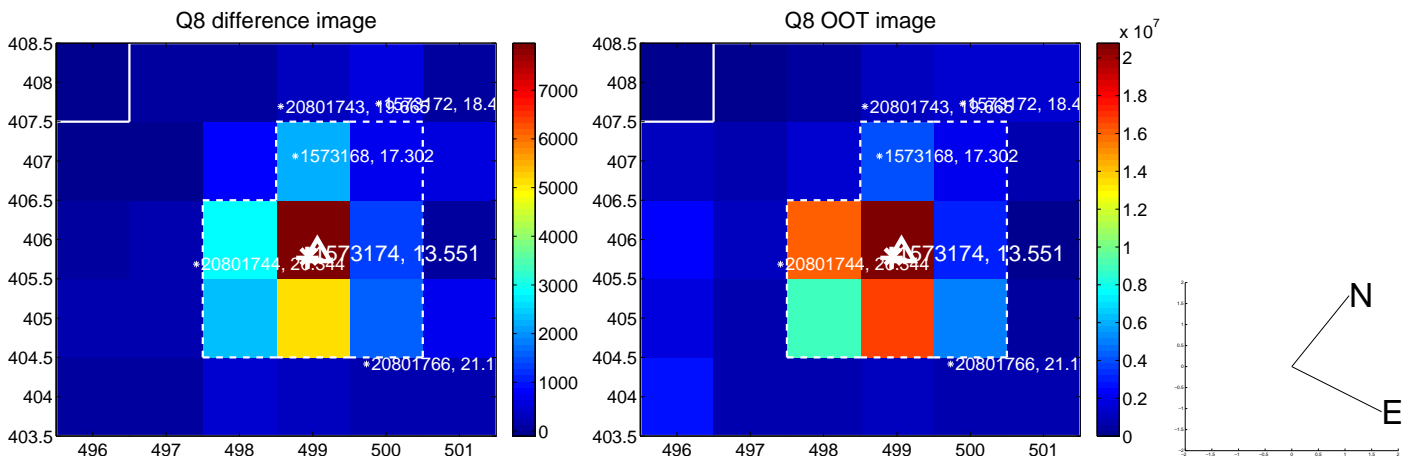
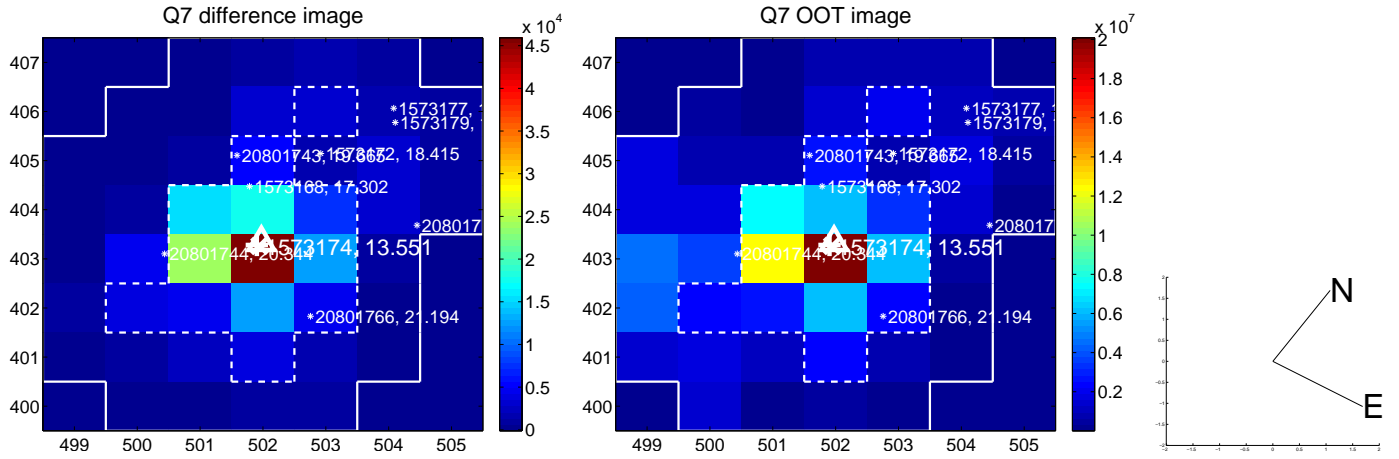
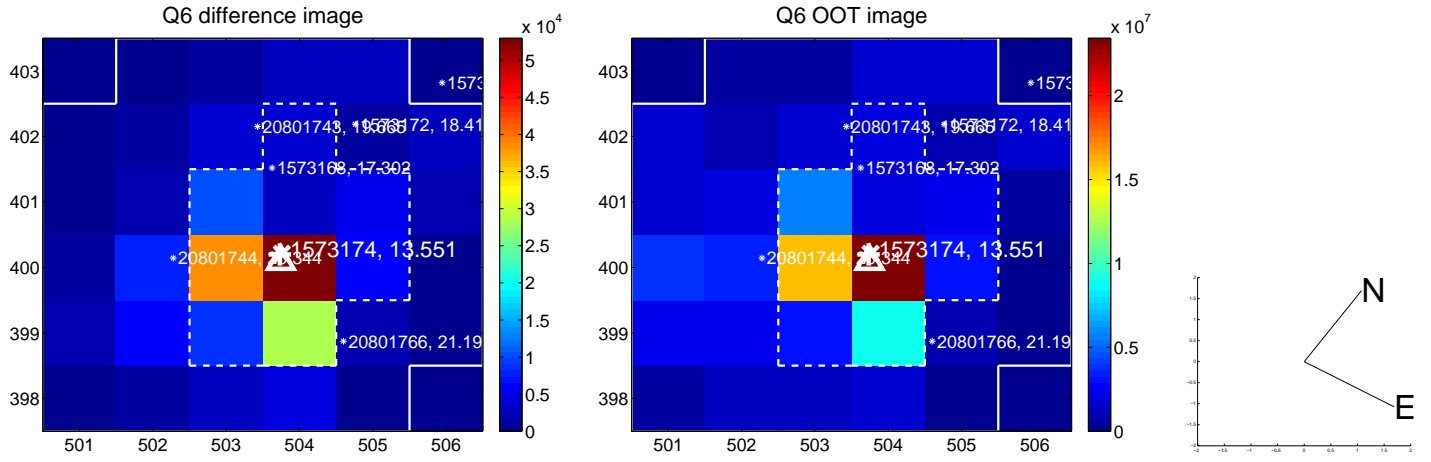
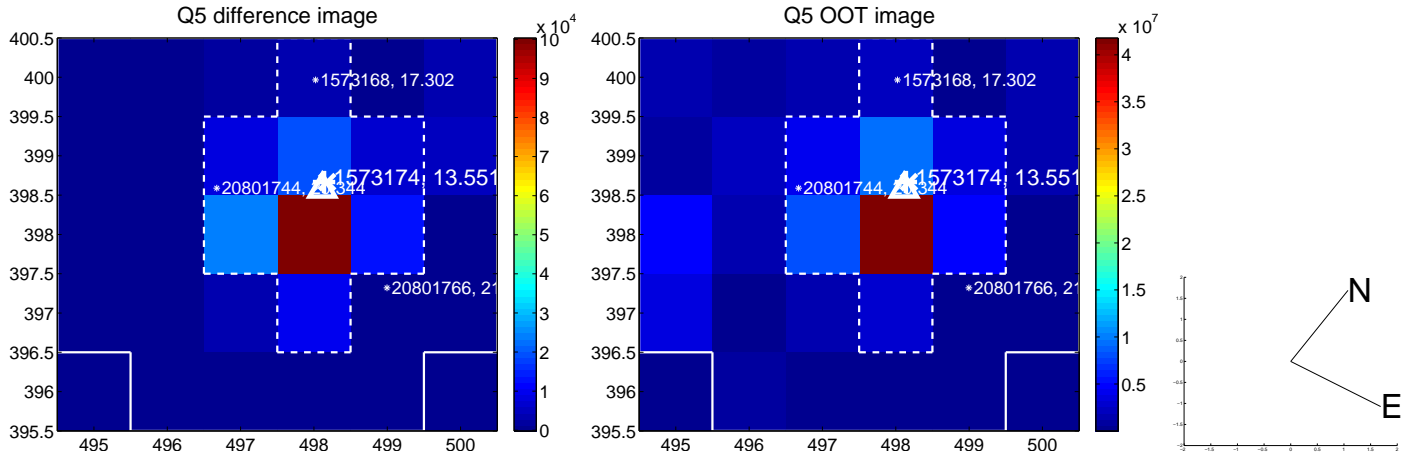


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

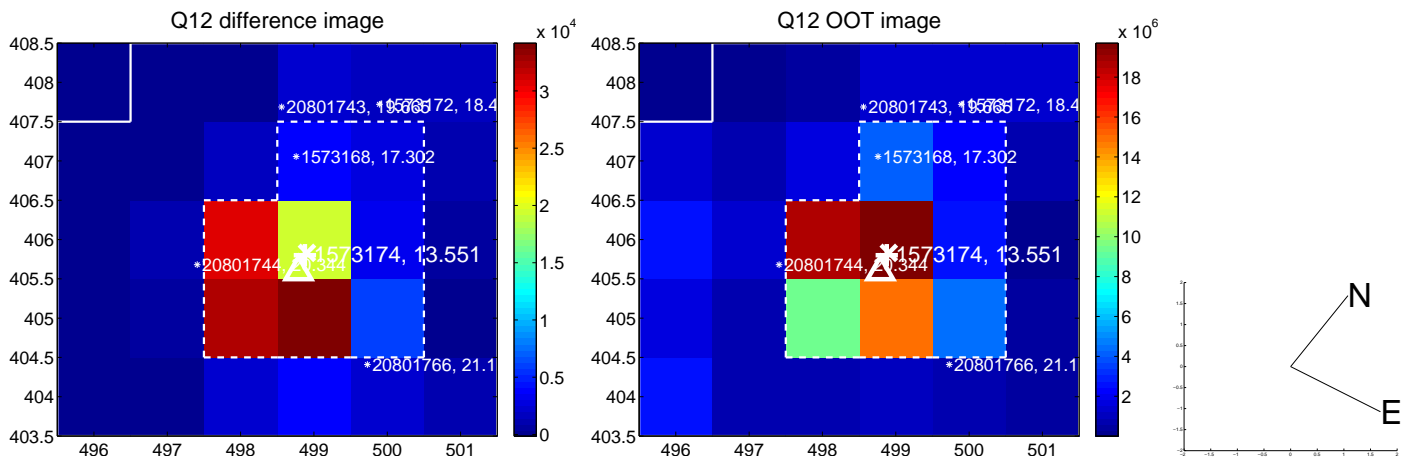
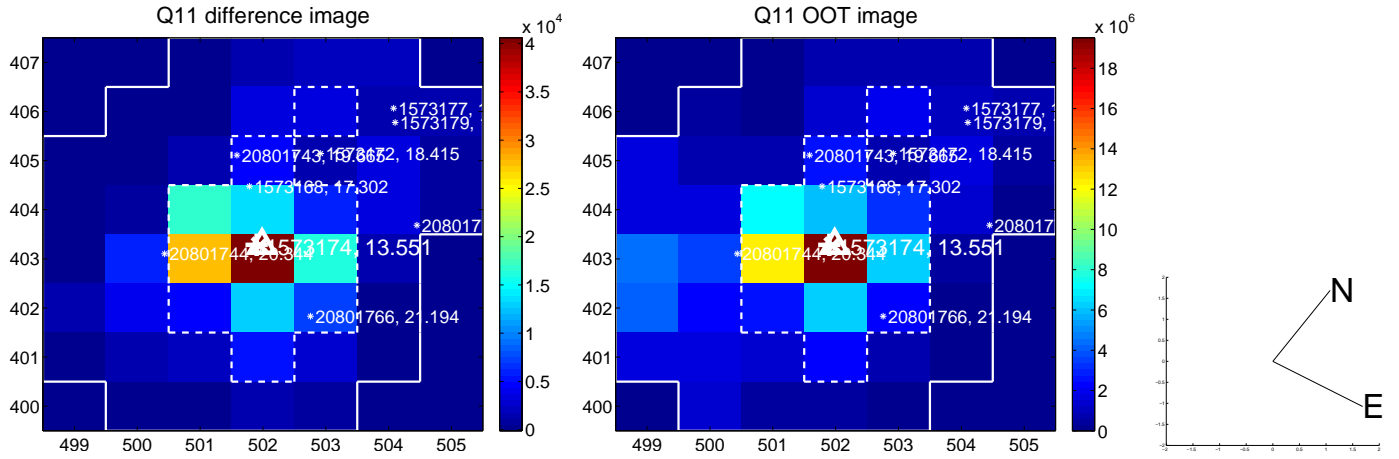
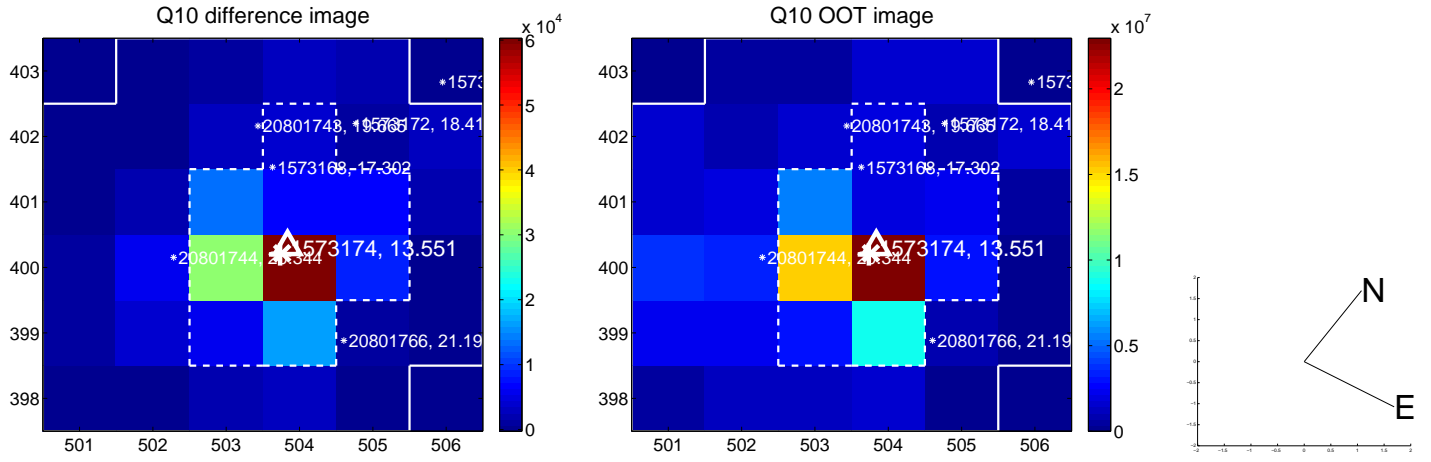
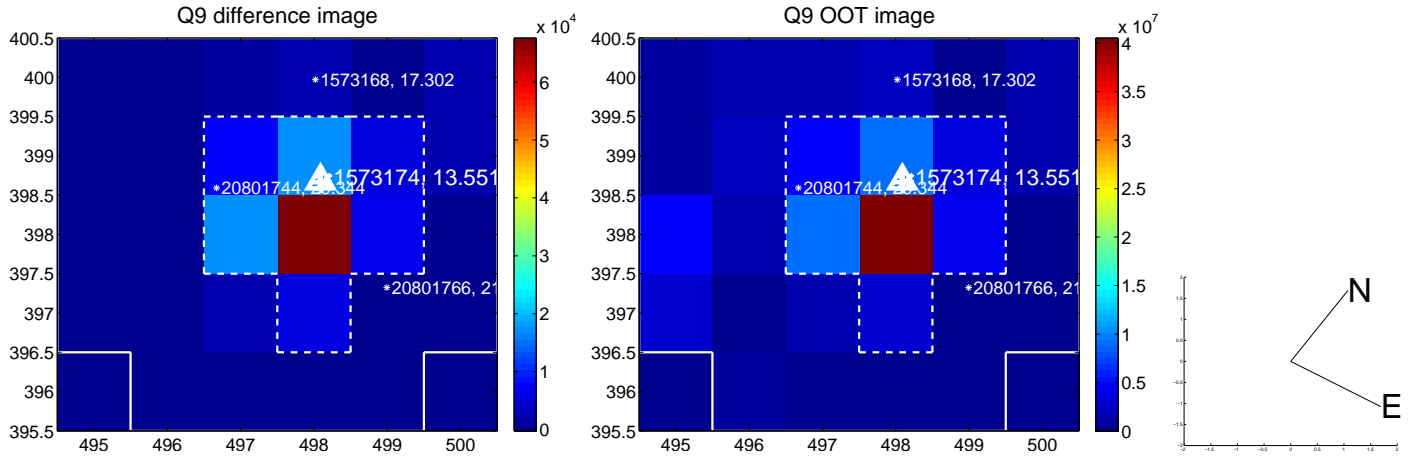
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



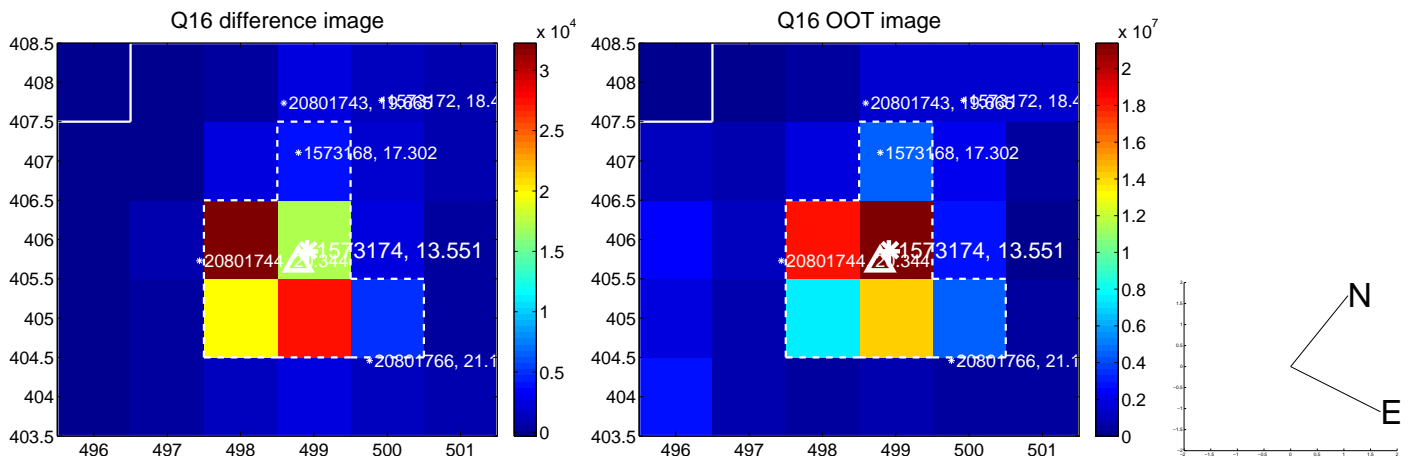
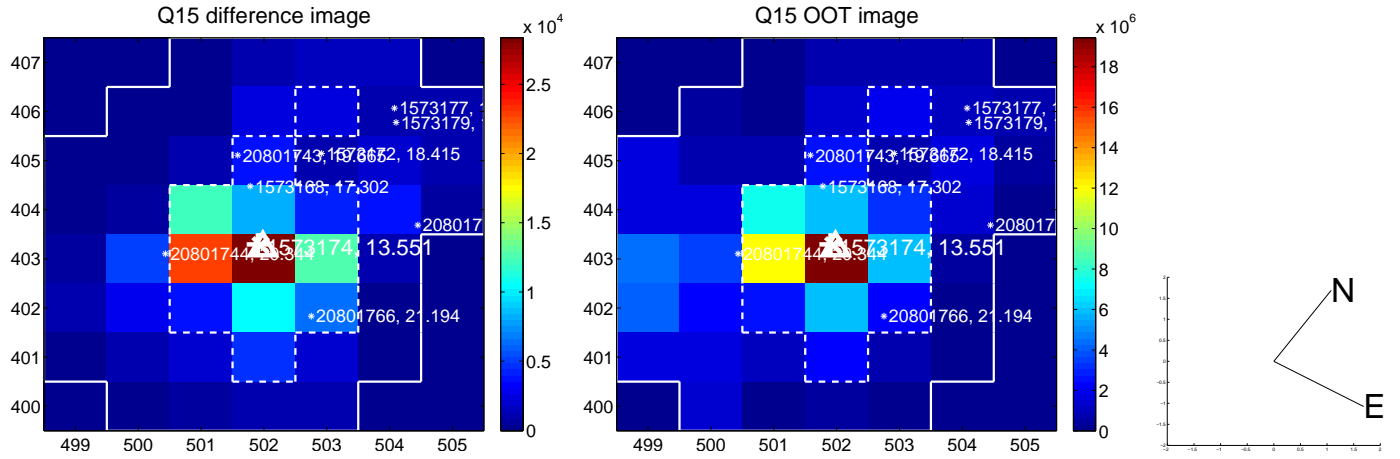
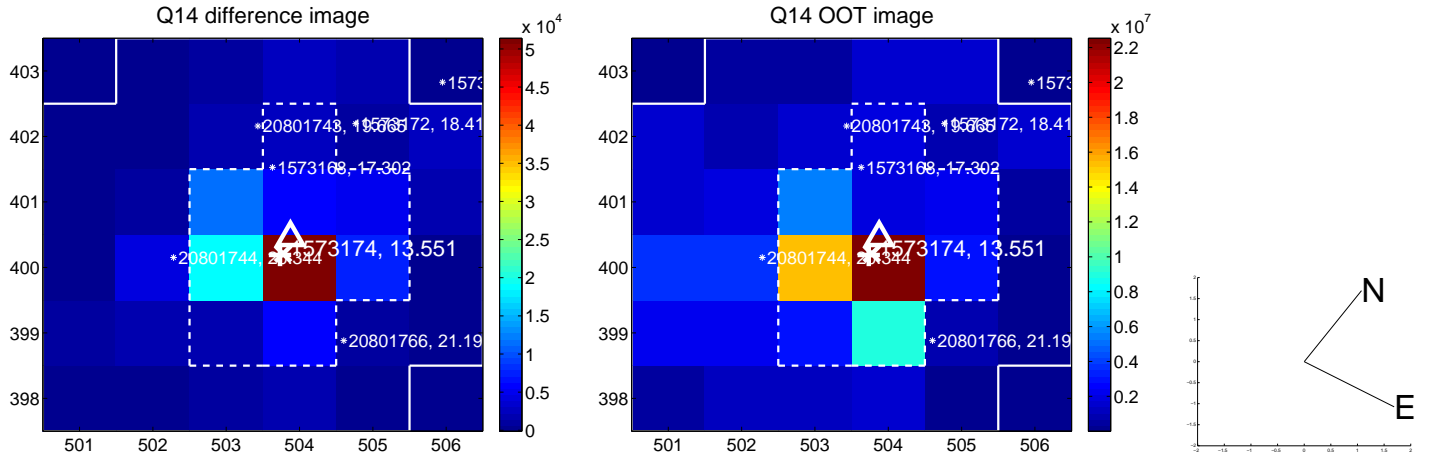
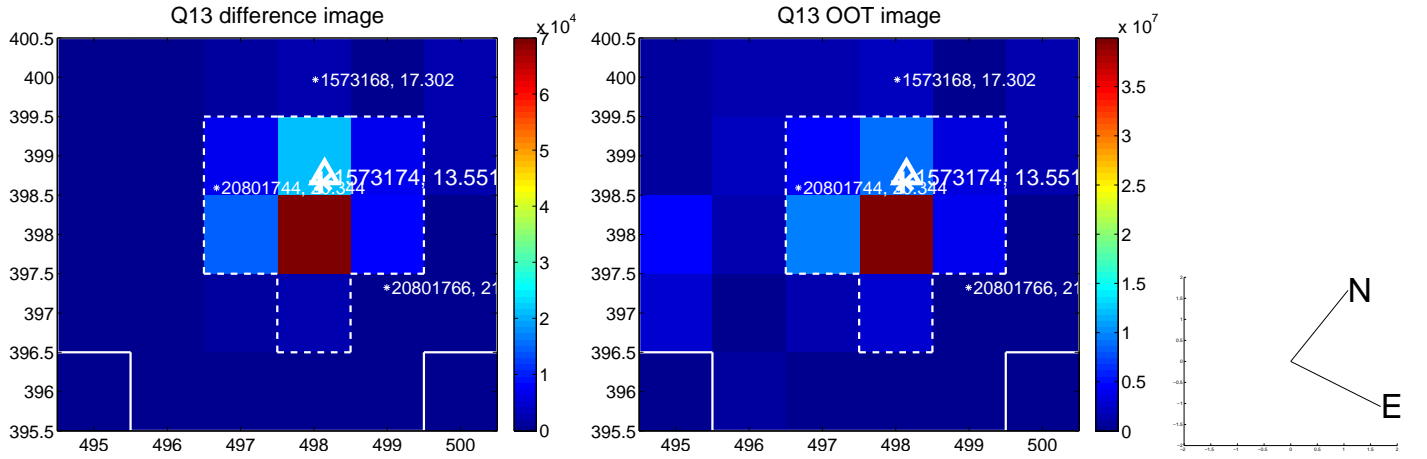
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



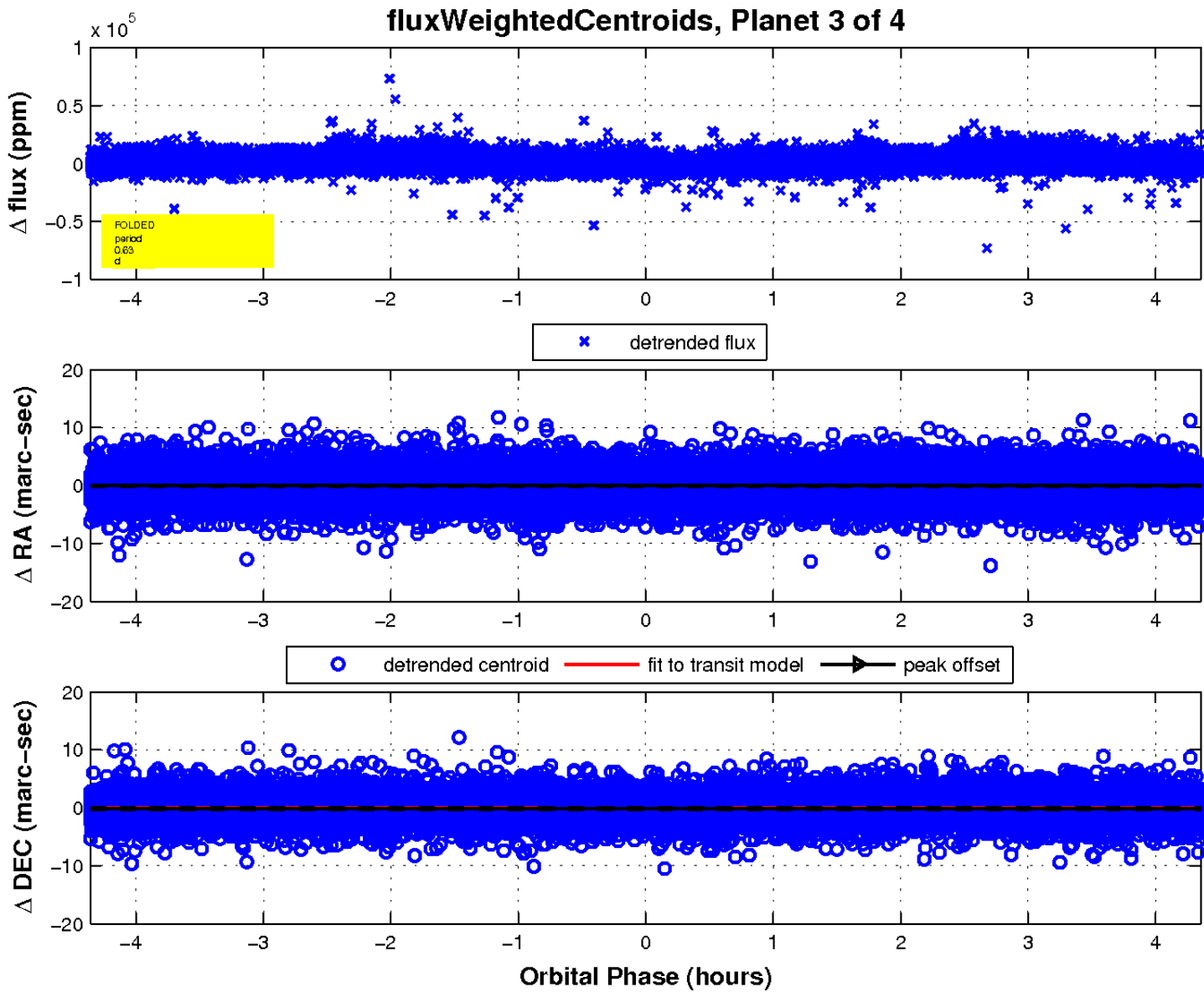
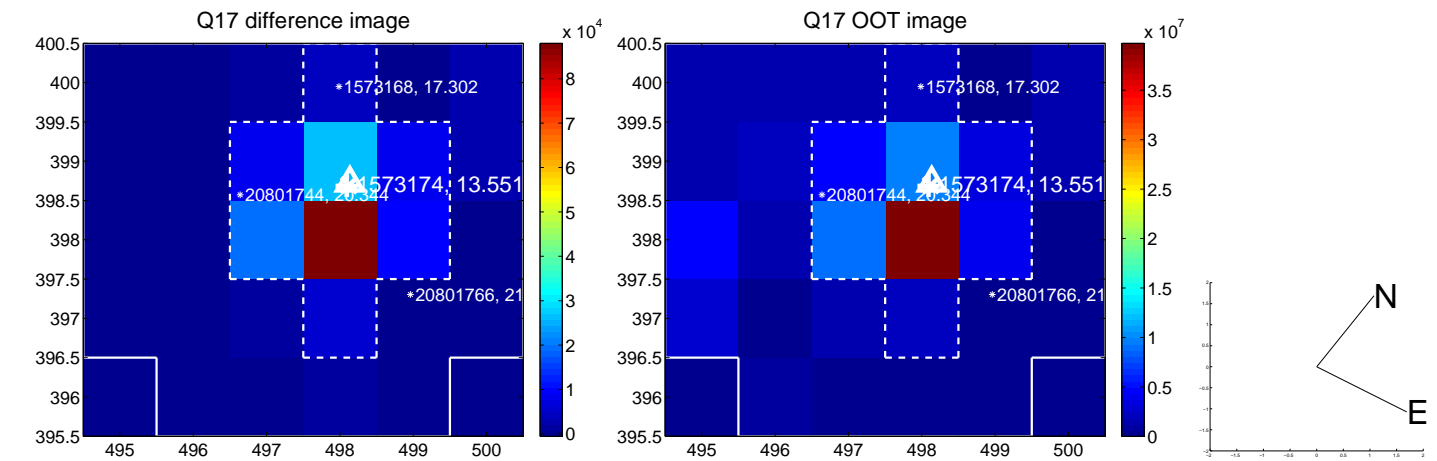
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

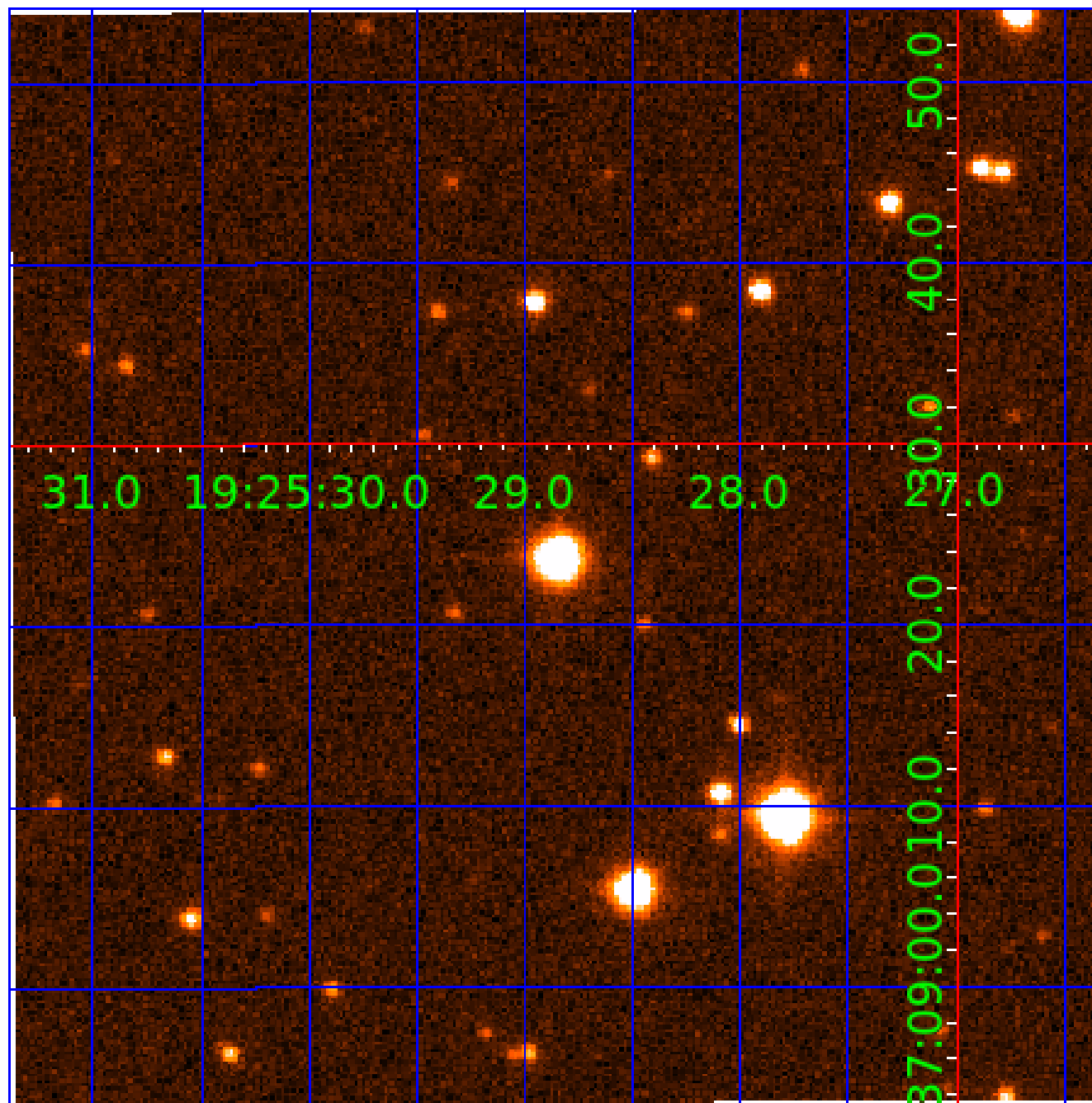


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001573174

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})
001573174-01	OBS	No	0.979807	131.995291	0.9	0.754	16.0	0.0	1.96	7159	0.20	18349.34
001573174-02	OBS	No	0.634916	131.817243	546.2	1.130	14.5	9.4	1.96	7159	5.35	32722.95
001573174-03	OBS	No	0.634927	132.020832	299.9	1.452	13.2	6.1	1.96	7159	3.45	32722.26
001573174-04	OBS	No	0.634924	131.604944	1008.9	2.000	9.9	-1.0	1.96	7159	6.32	32722.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001573174-01	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
001573174-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
001573174-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
001573174-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

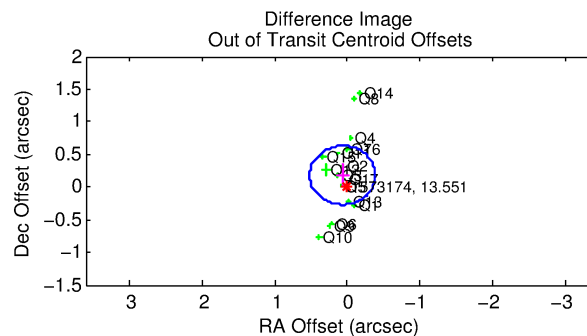
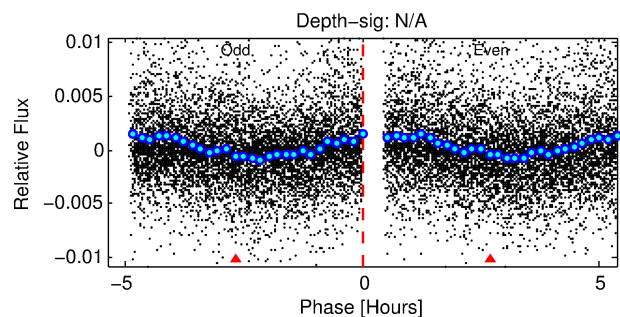
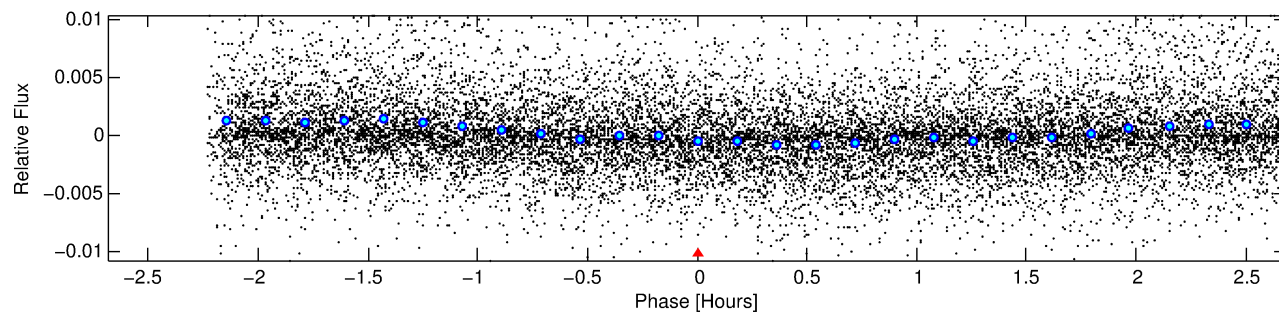
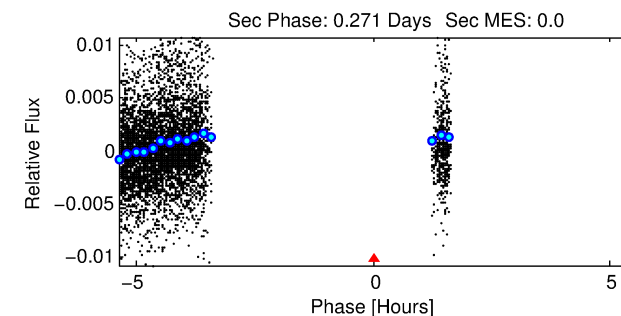
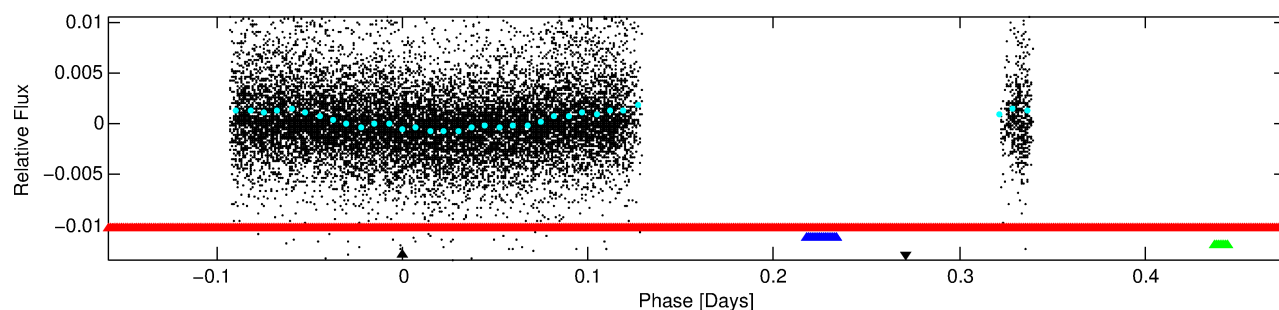
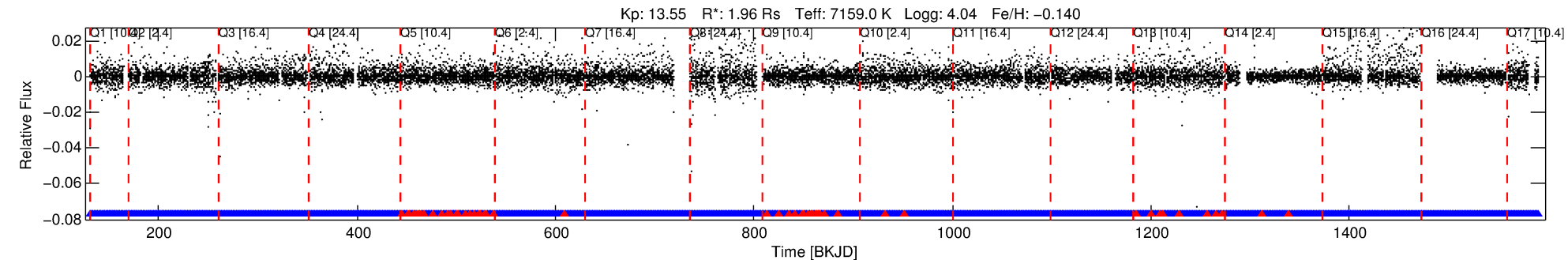
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001573174-04

No Significant Match Found

DV One-Page Summary

KIC: 1573174 Candidate: 4 of 4 Period: 0.635 d



TPS TCE Results:

Period = 0.63492 d
Epoch = 131.6049 BKJD

DV fit results are unavailable

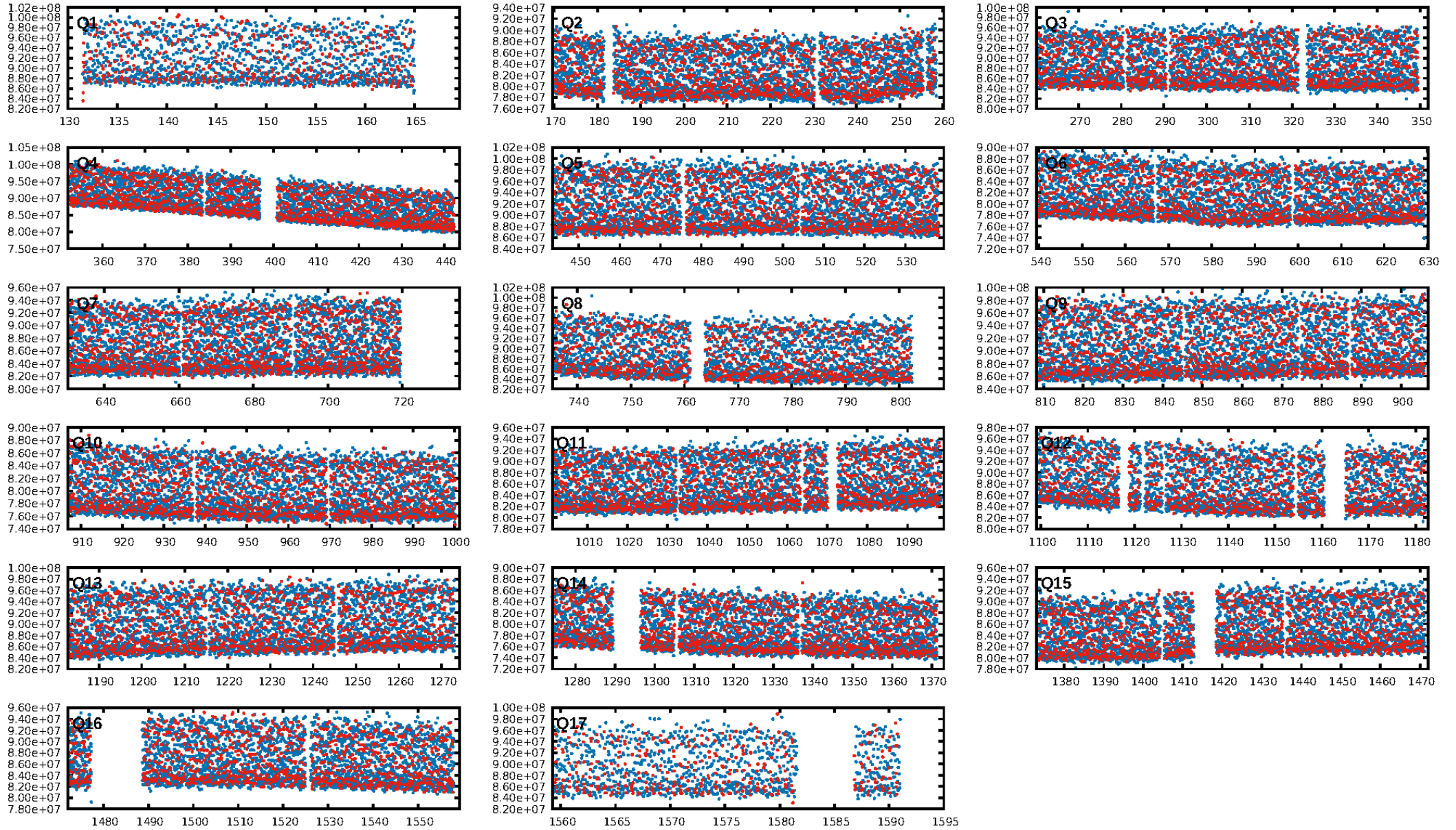
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [1649/1705]
GhostDiagnostic-chr: 4.783
Centroid-sig: 0.0%
Centroid-so: 0.521 arcsec [2.90 σ]
OotOffset-rm: 0.195 arcsec [1.30 σ]
KicOffset-rm: 0.117 arcsec [0.76 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.00 [0/17]

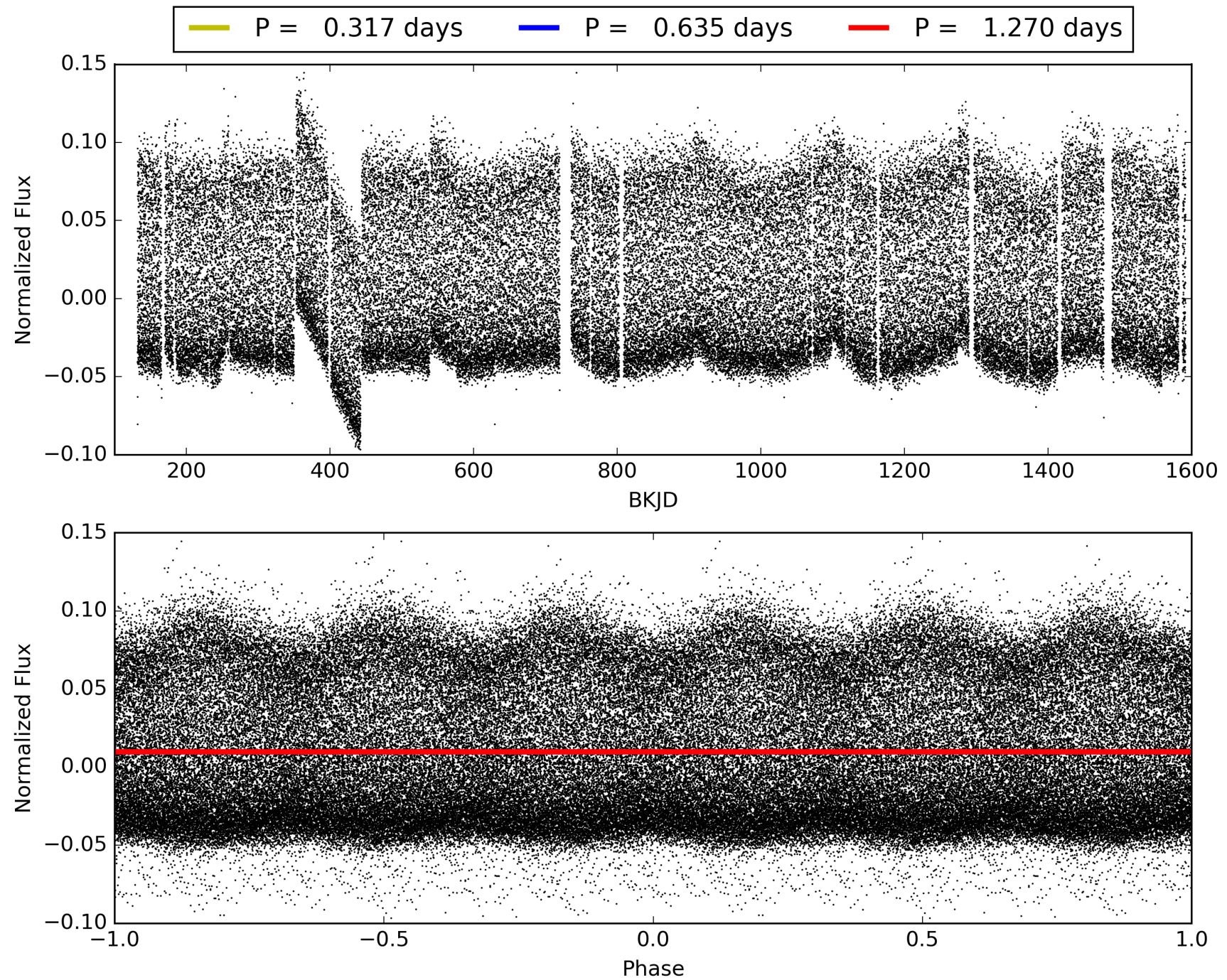
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 01:12:32 Z

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

TCE 001573174-04, PDC Light Curves

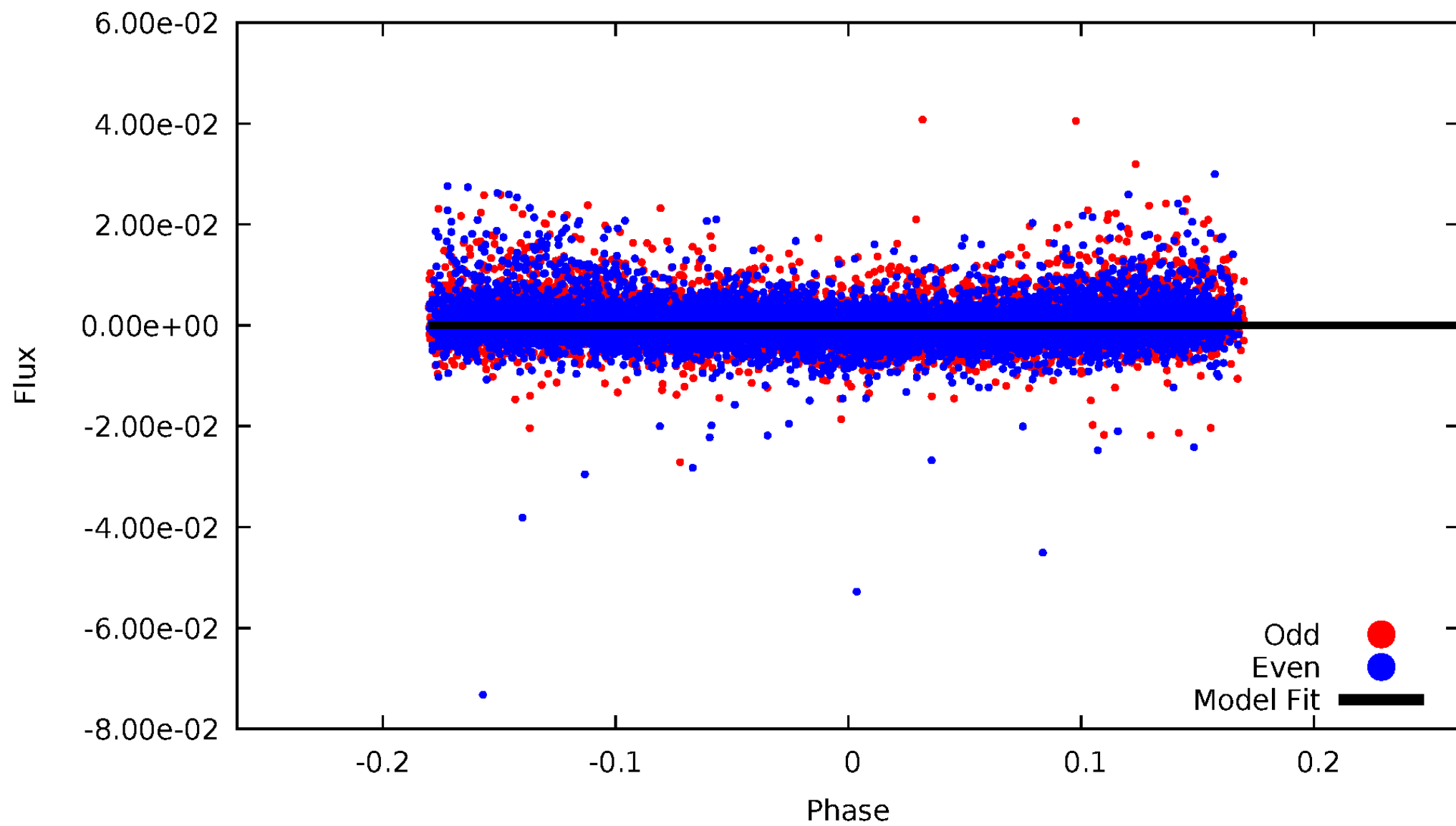


TCE 001573174-04



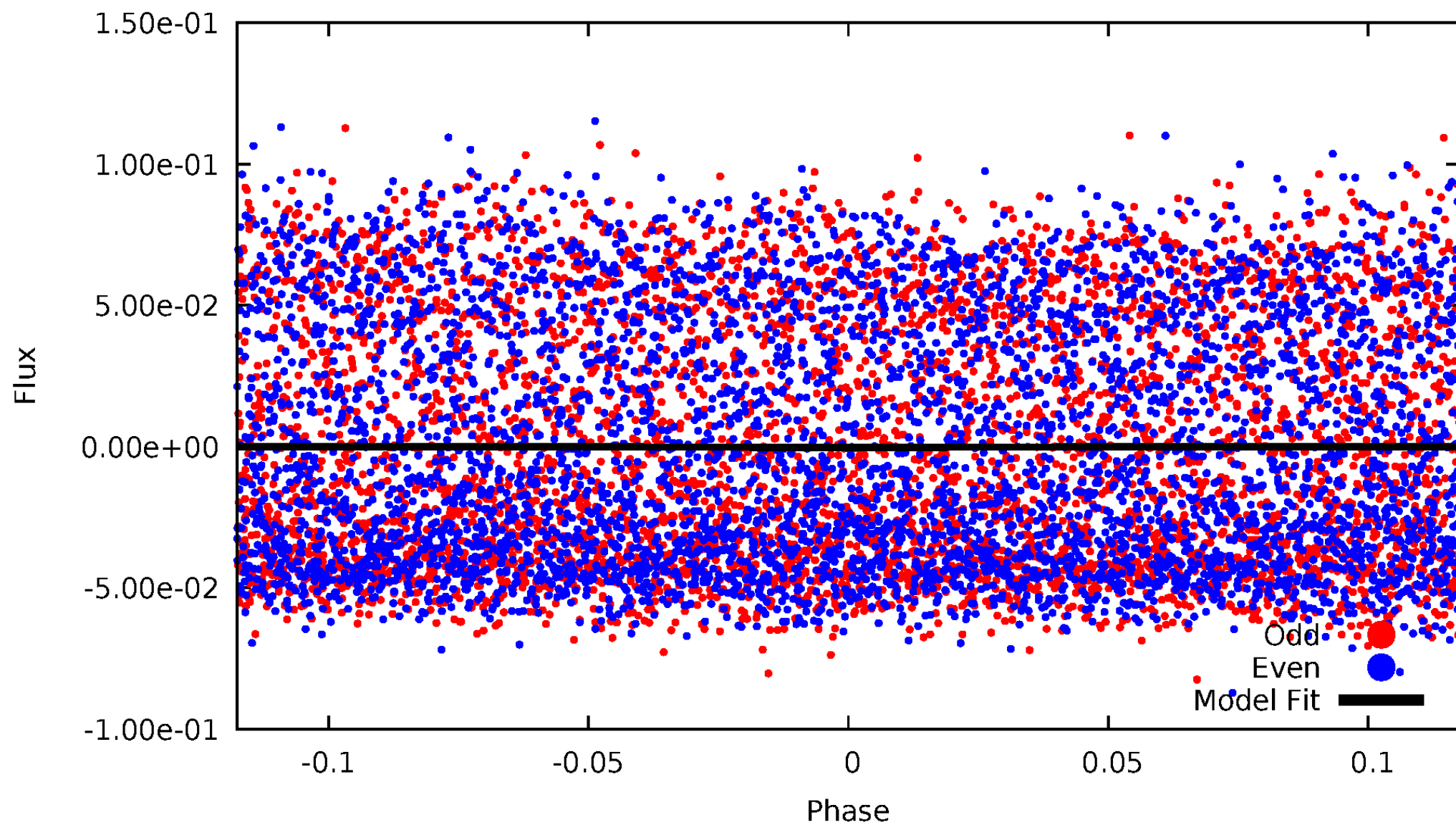
DV Odd/Even

TCE 001573174-04



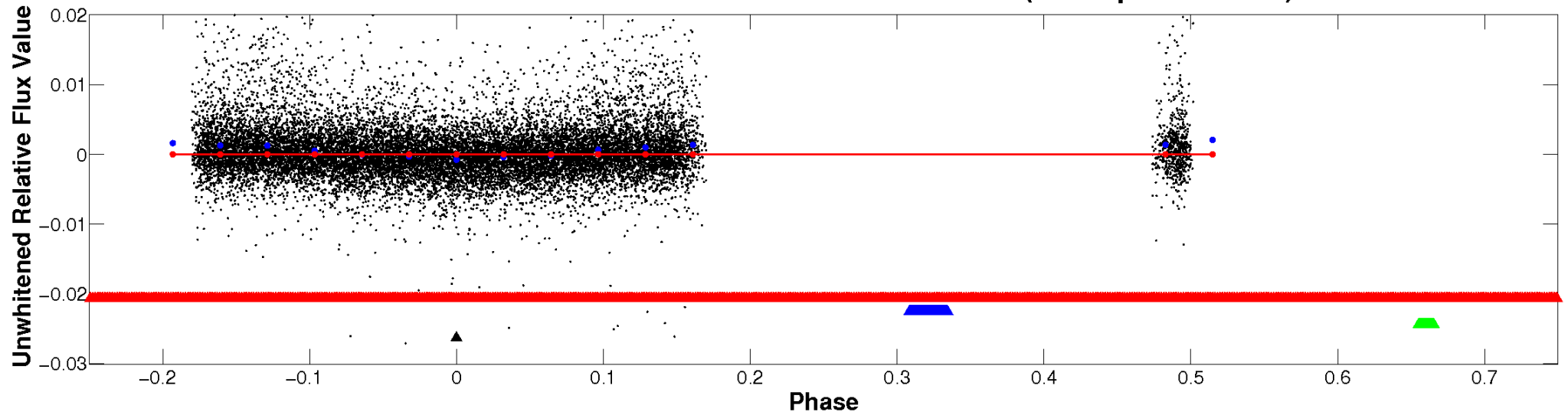
ALT Odd/Even

TCE 001573174-04



Non-Whitened Vs. Whitened Light Curve

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

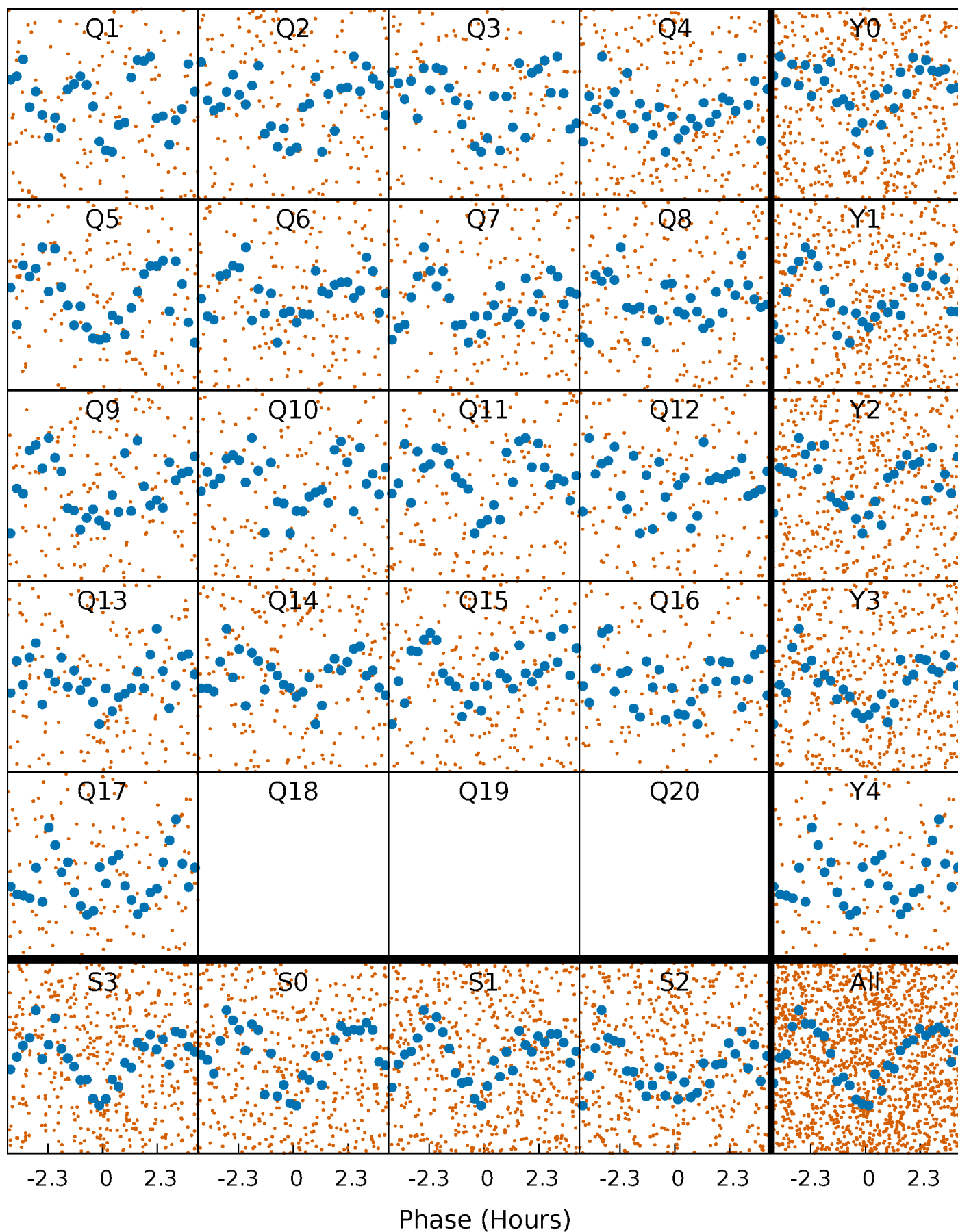


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



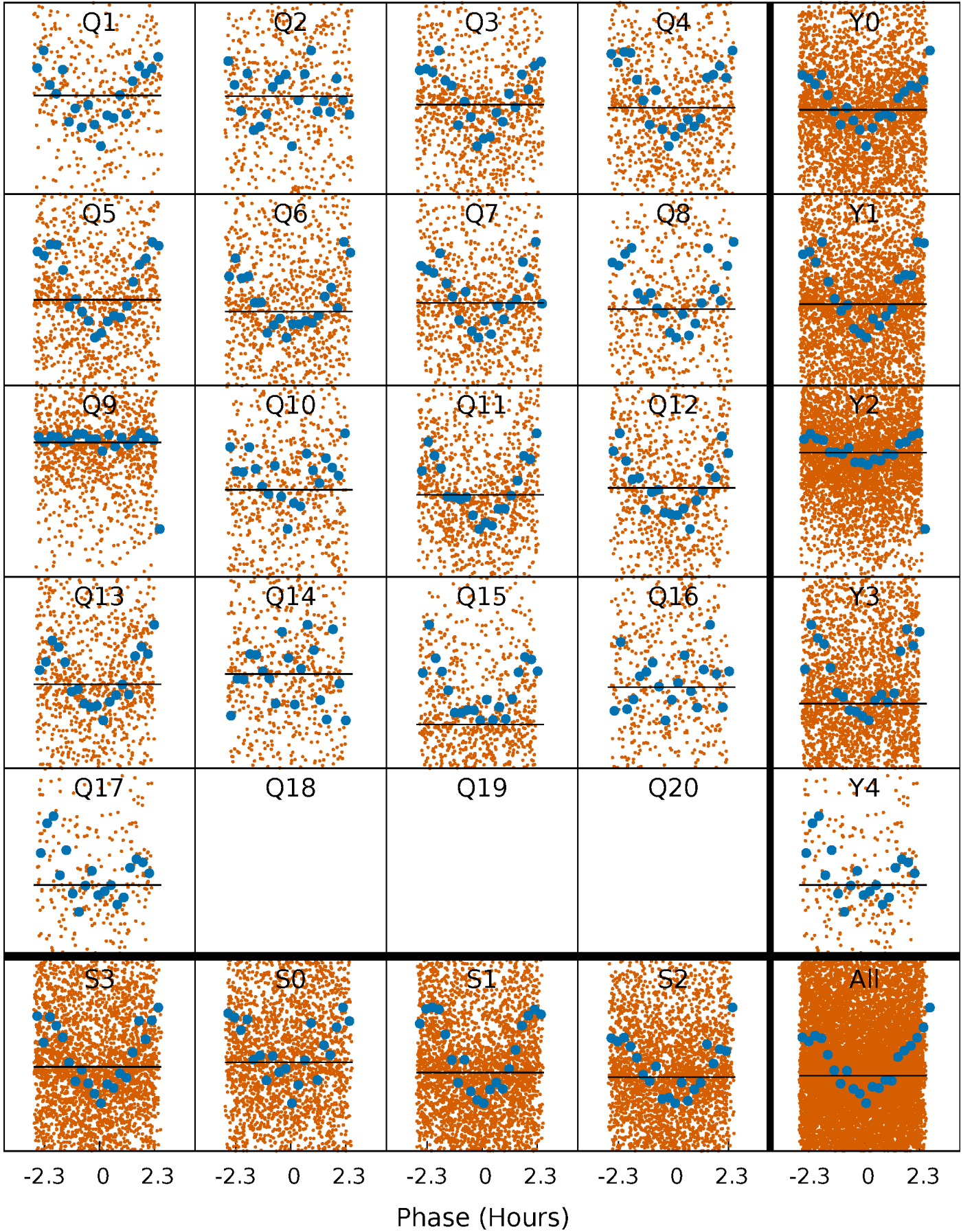
PDC Quarter-Phased Transit Curves

TCE 001573174-04 P= 0.634924 Days $T_0=131.604944$ (BKJD)



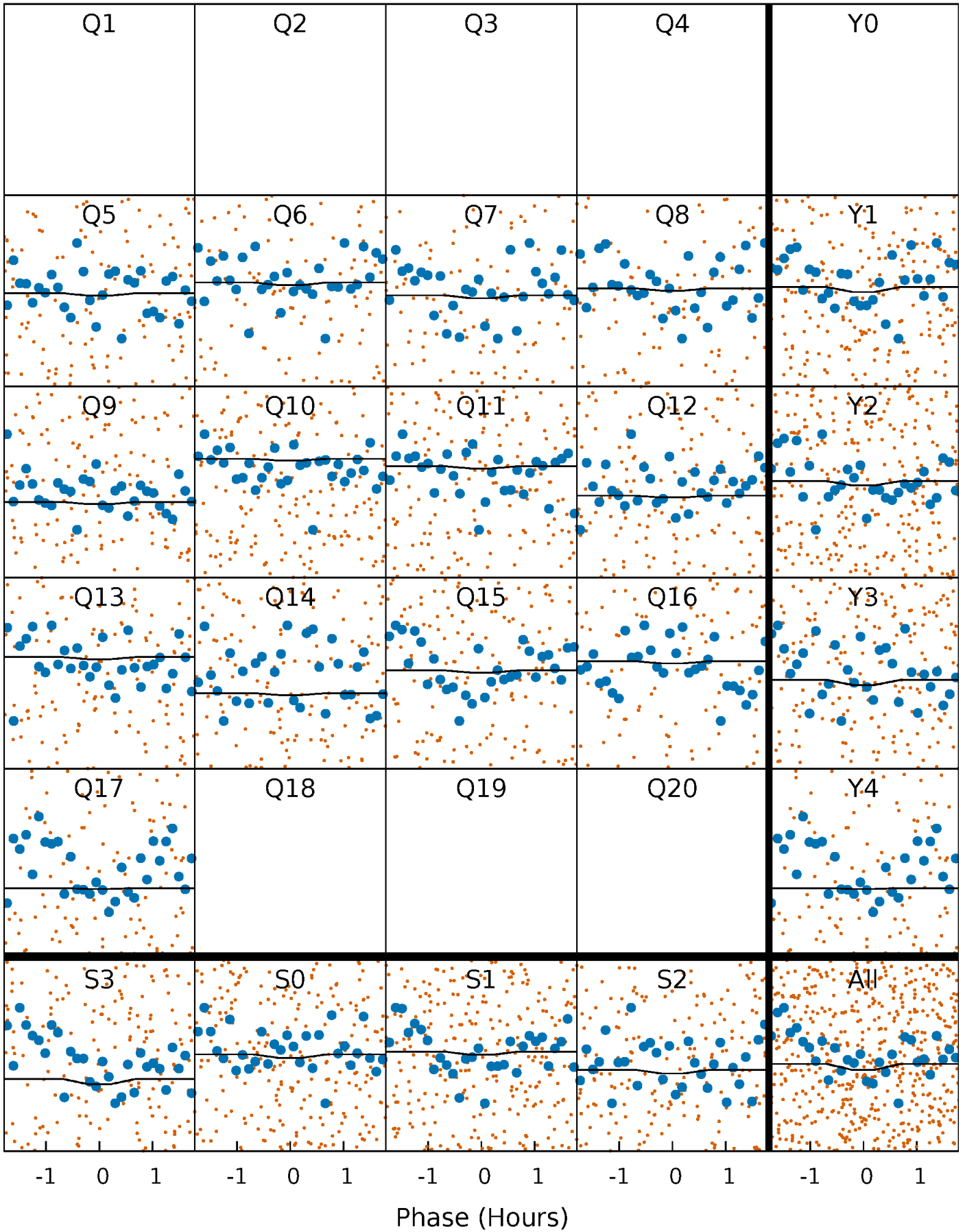
DV Quarter-Phased Transit Curves

TCE 001573174-04 P= 0.634924 Days $T_0=131.604944$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

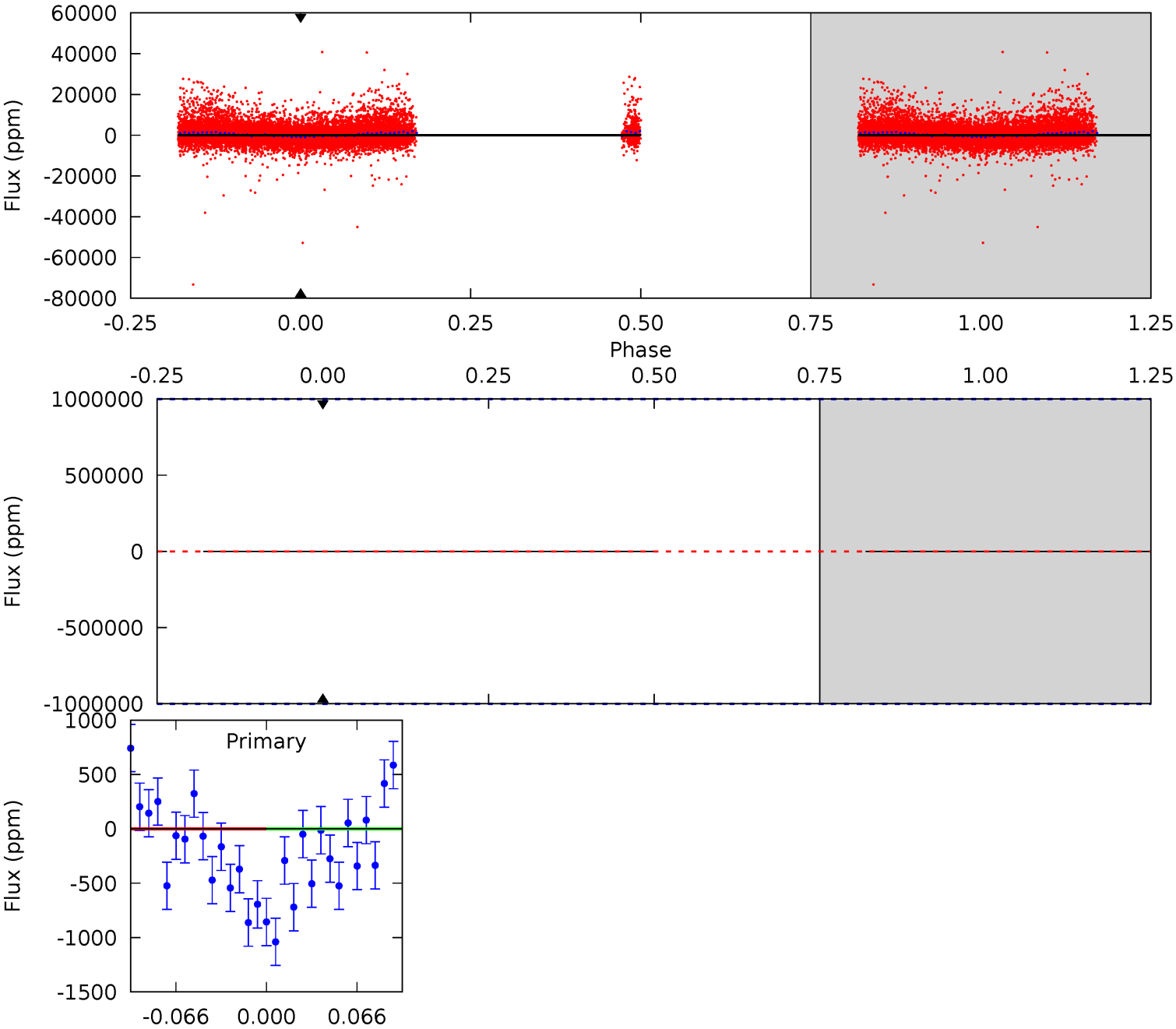
TCE 001573174-04 $P = 0.634924$ Days $T_0 = 131.583548$ (BKJD)



DV Model-Shift Uniqueness Test

001573174-04, P = 0.634924 Days, E = 130.970020 Days

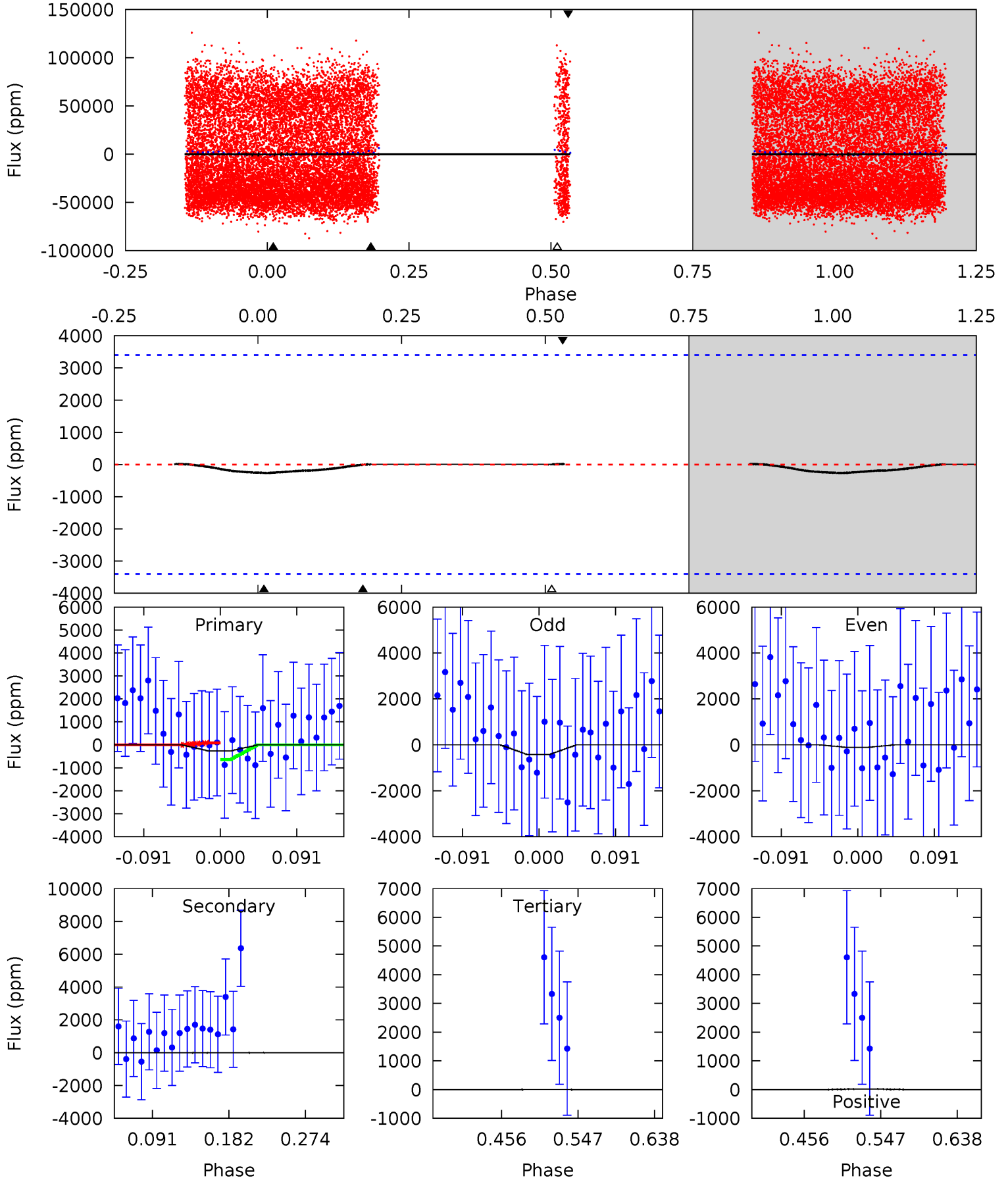
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

001573174-04, P = 0.634924 Days, E = 131.583548 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.36	0.01	0	0.03	4.58	1.69	0.04	0.36	0.33	0.01	-0.01	0.21	0.04	0.07	0.39



Stellar Parameters For KIC 001573174

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7159^{+225}_{-325}	$4.035^{+0.209}_{-0.171}$	$-0.140^{+0.250}_{-0.350}$	$1.960^{+0.560}_{-0.560}$	$1.517^{+0.209}_{-0.279}$	$0.284^{+0.388}_{-0.134}$
	+3%/-5%	+5%/-4%	+179%/-250%	+29%/-29%	+14%/-18%	+137%/-47%
Source	PHO1	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 001573174-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$17.36^{+17.12}_{-11.77}$	4772^{+385}_{-395}	-4385^{+35669}_{-21503}	$-0.177^{+94.528}_{-73.016}$
Alt.	-9 ± 743	$15.09^{+16.91}_{-10.20}$	4751^{+377}_{-385}	-4152^{+8866}_{-1354}	$-0.004^{+0.895}_{-0.976}$

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

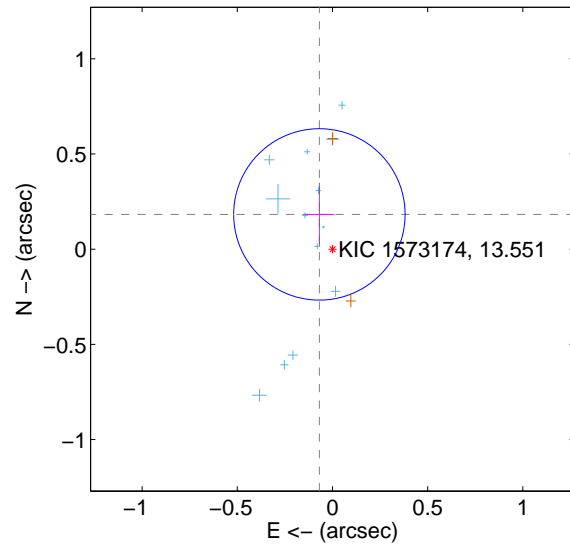
Supplemental centroid analysis for 001573174-04. Kepler magnitude: 13.55. Transit SNR -1.00

There are 15 quarters with good PRF difference image offsets

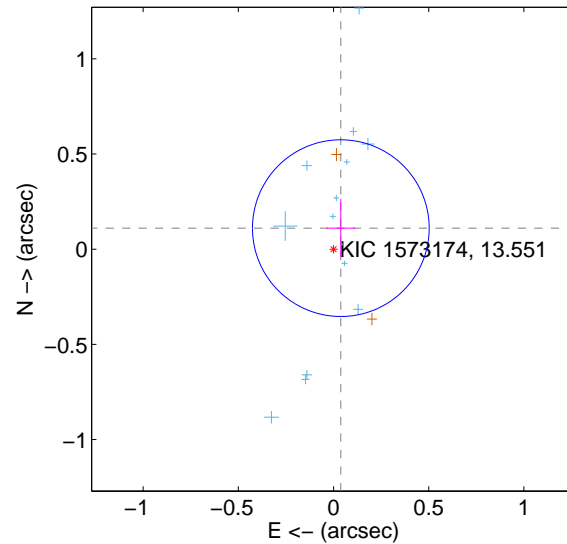
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.195 ± 0.150	1.30	0.069 ± 0.077	0.183 ± 0.166
PRF-fit source offset from KIC position	0.117 ± 0.155	0.76	-0.038 ± 0.077	0.110 ± 0.154
photometric centroid source offset	0.52 ± 0.18	2.90	-0.08 ± 0.24	-0.51 ± 0.18

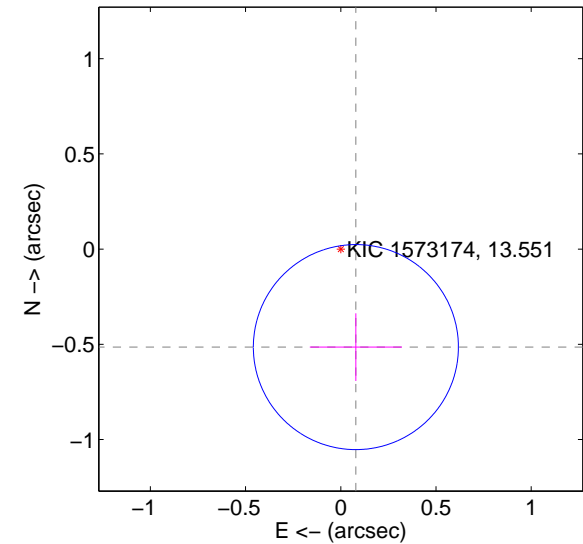
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

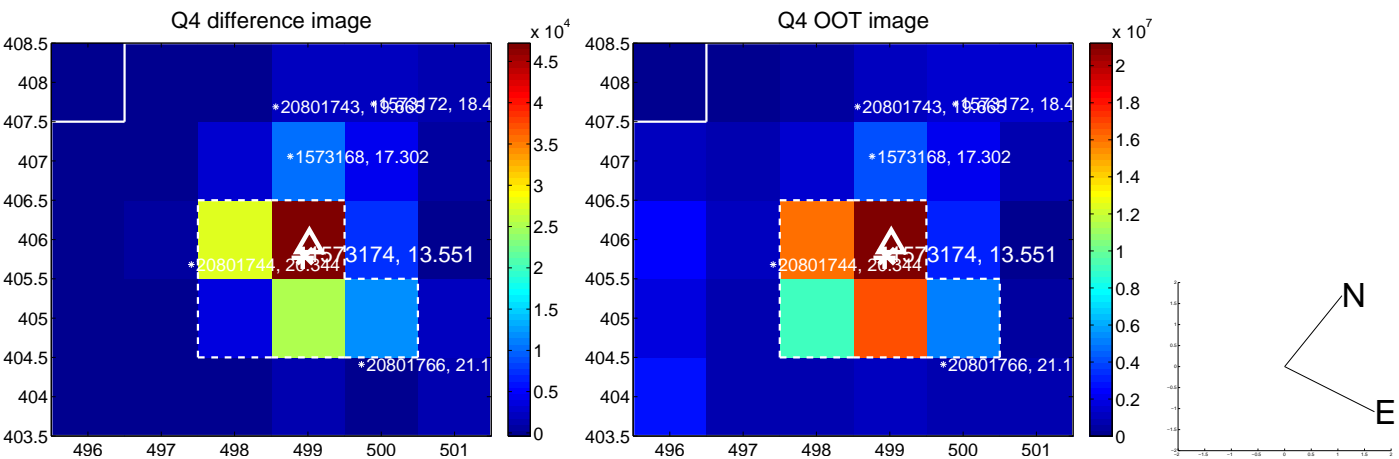
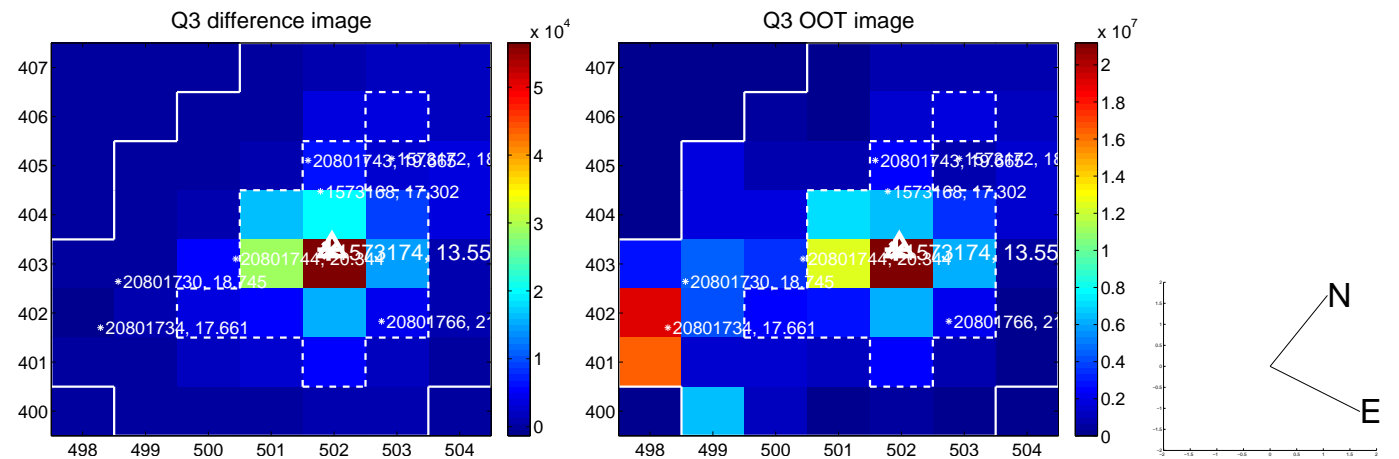
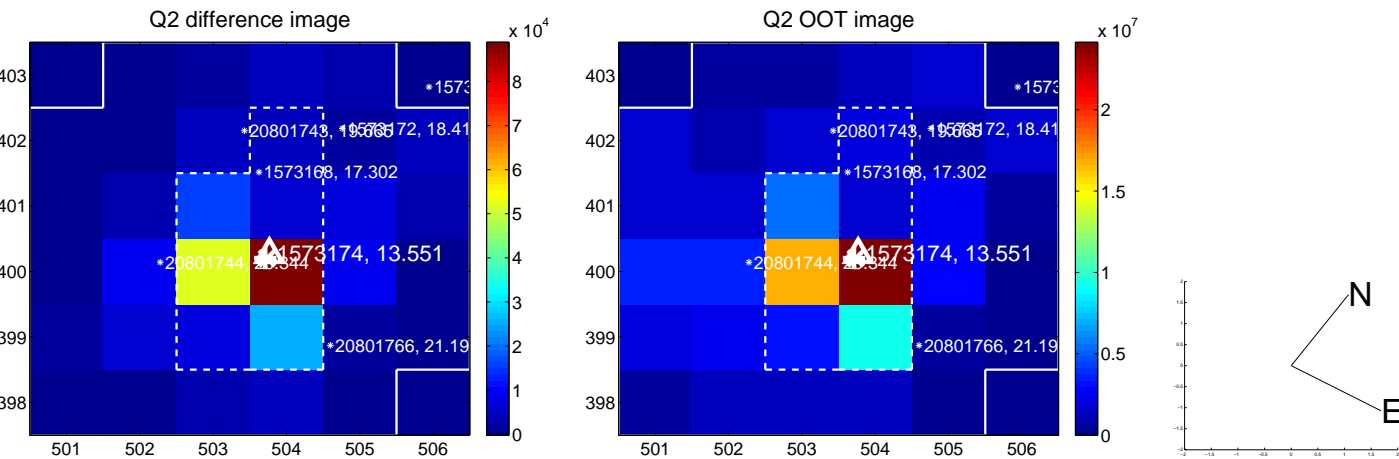
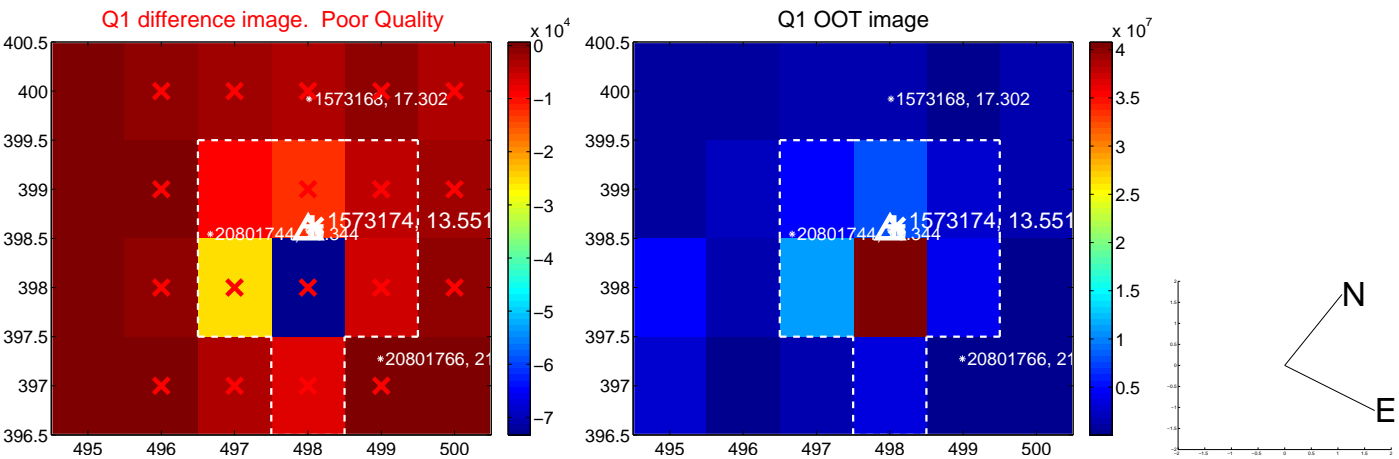


offset from photometric centroids

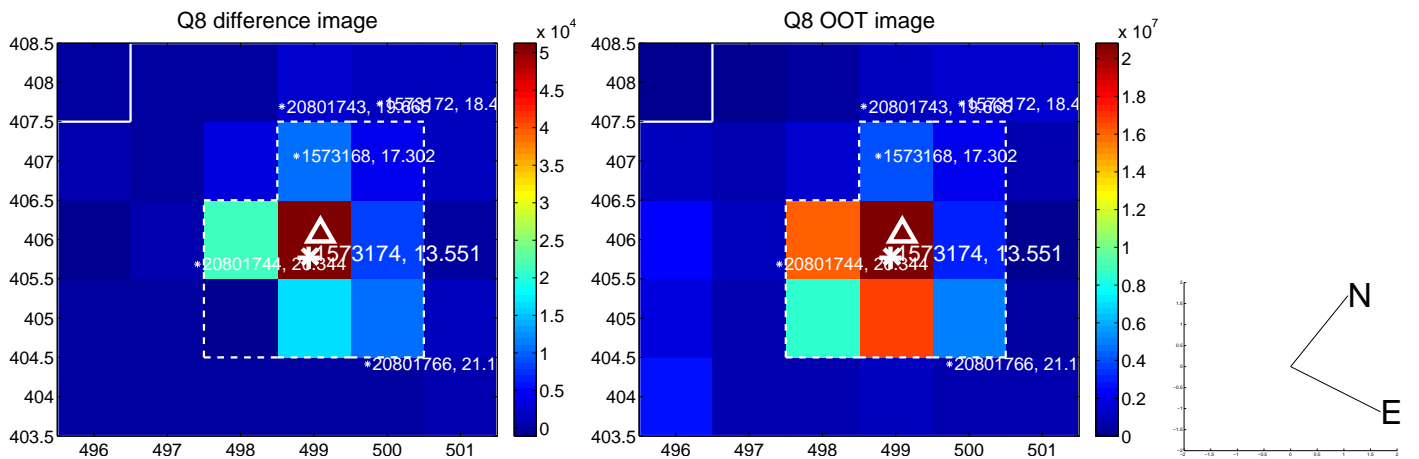
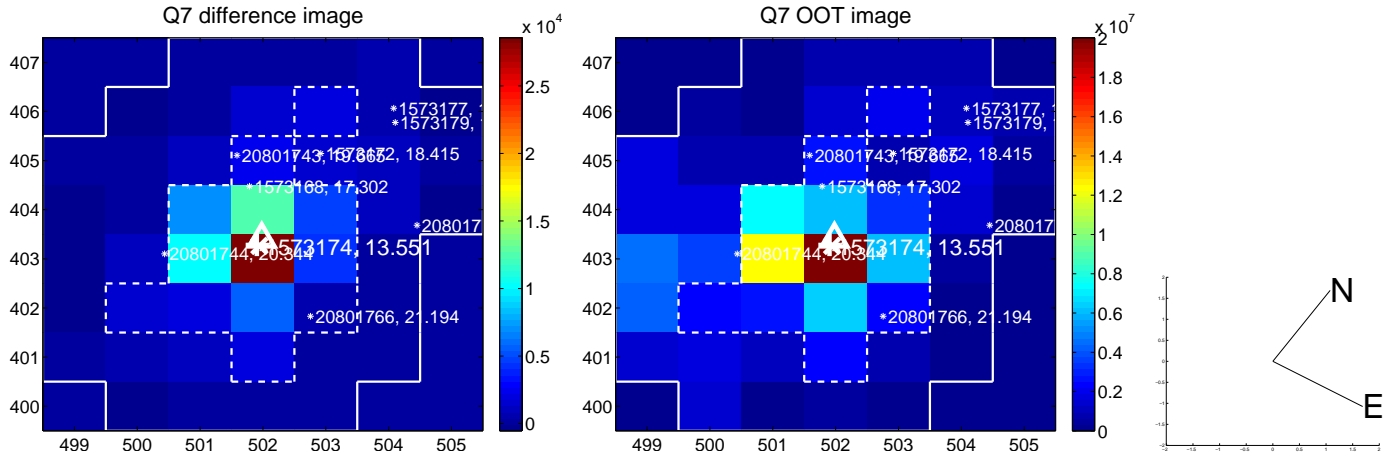
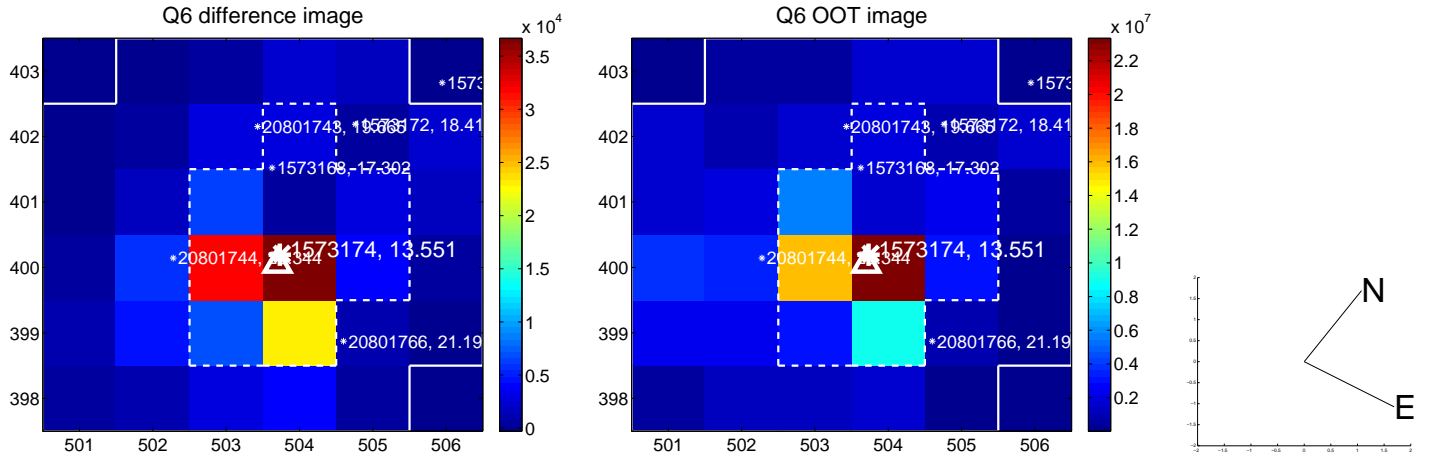
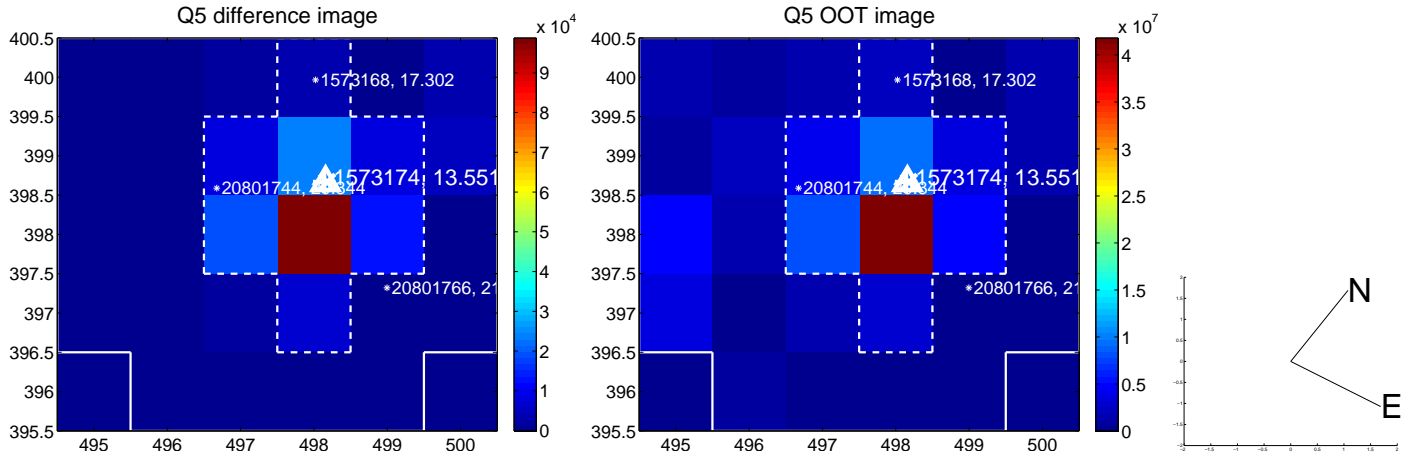


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

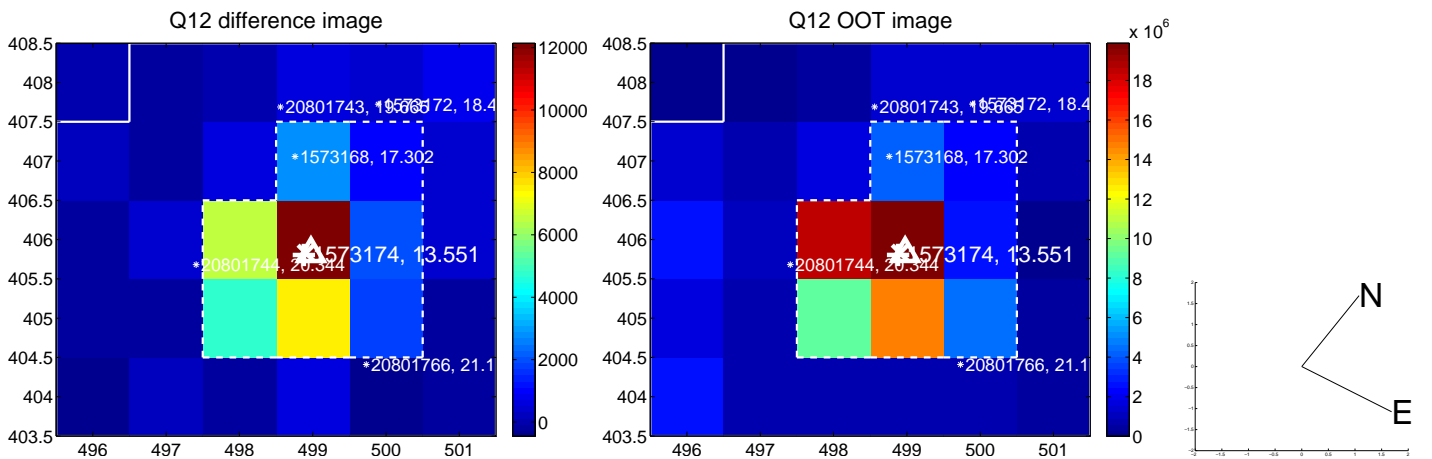
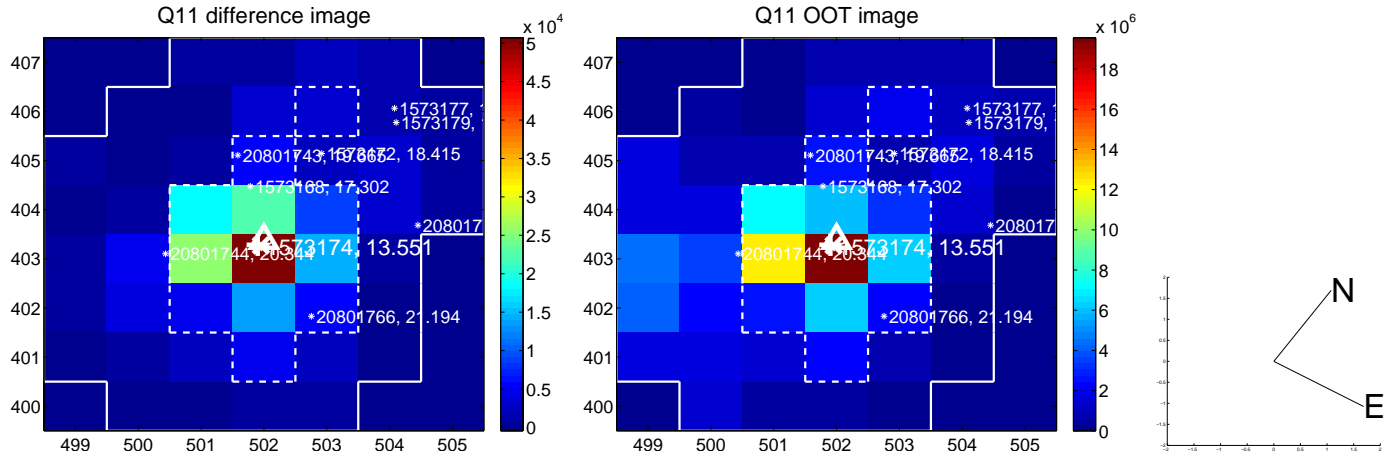
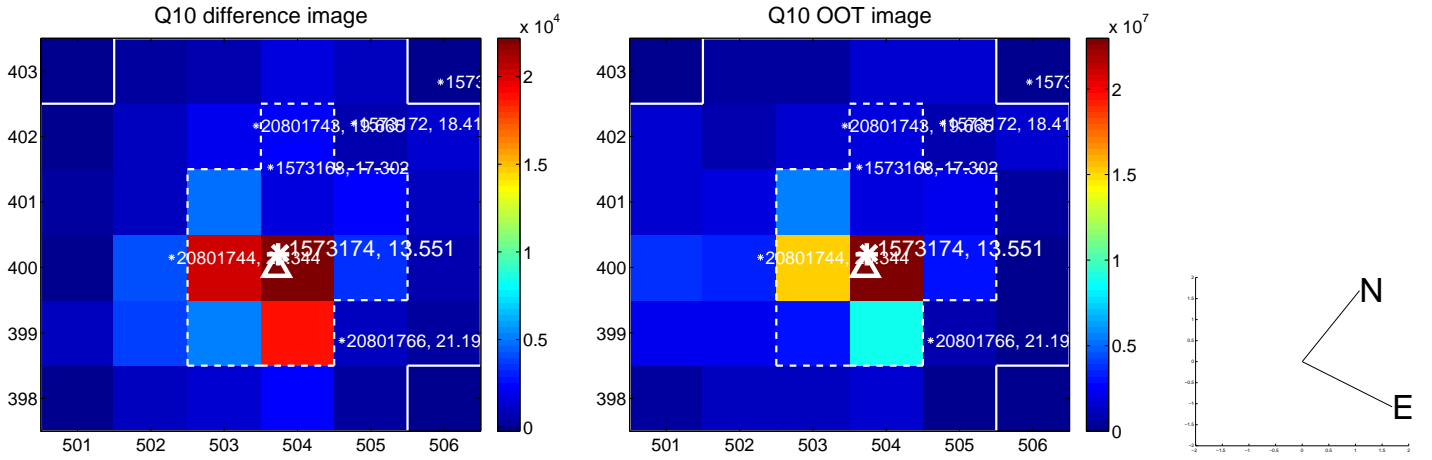
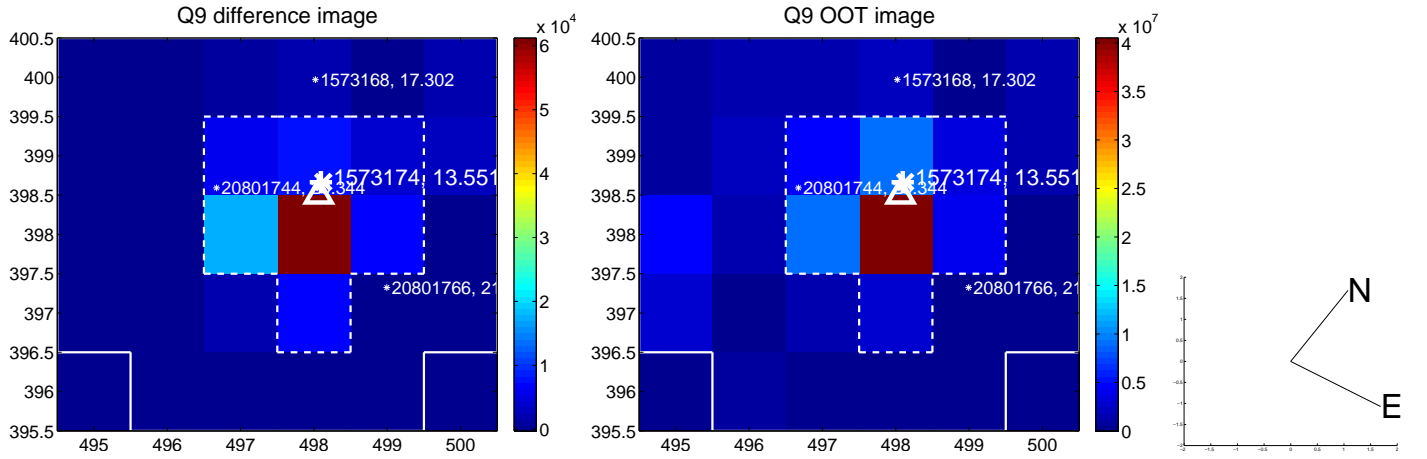
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



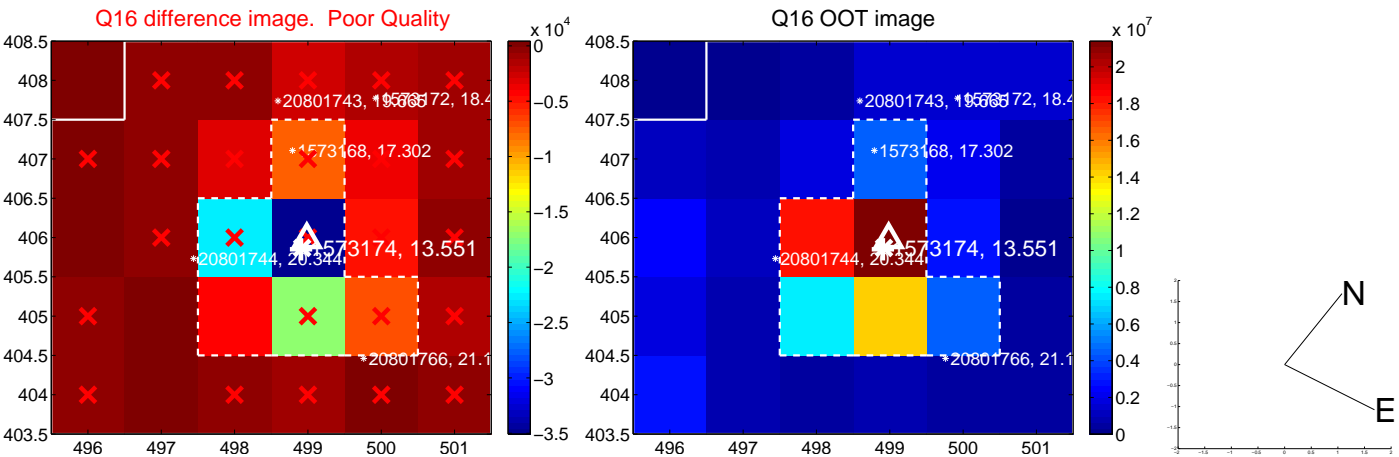
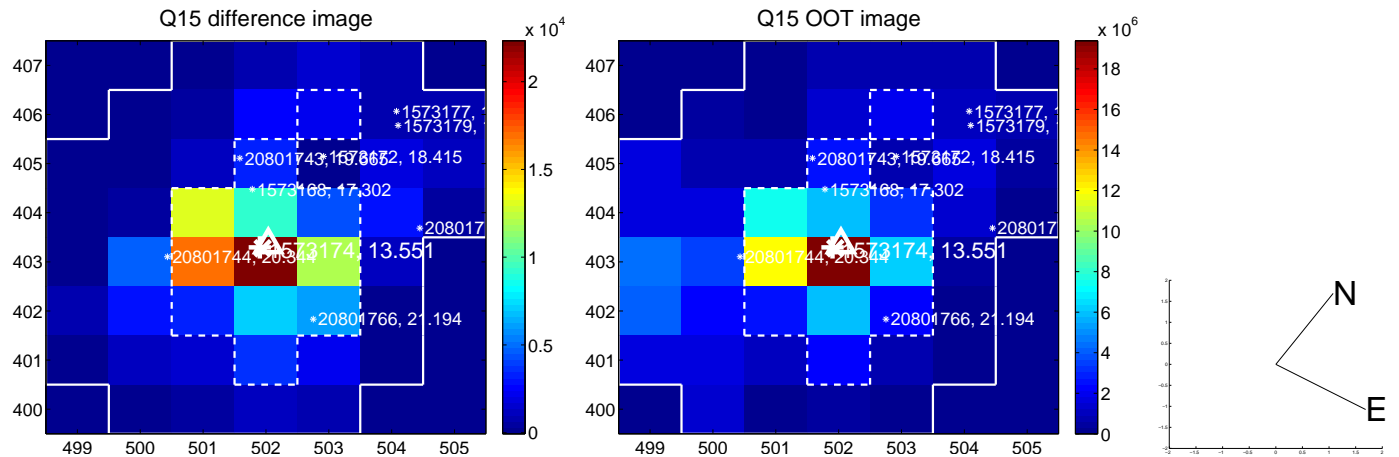
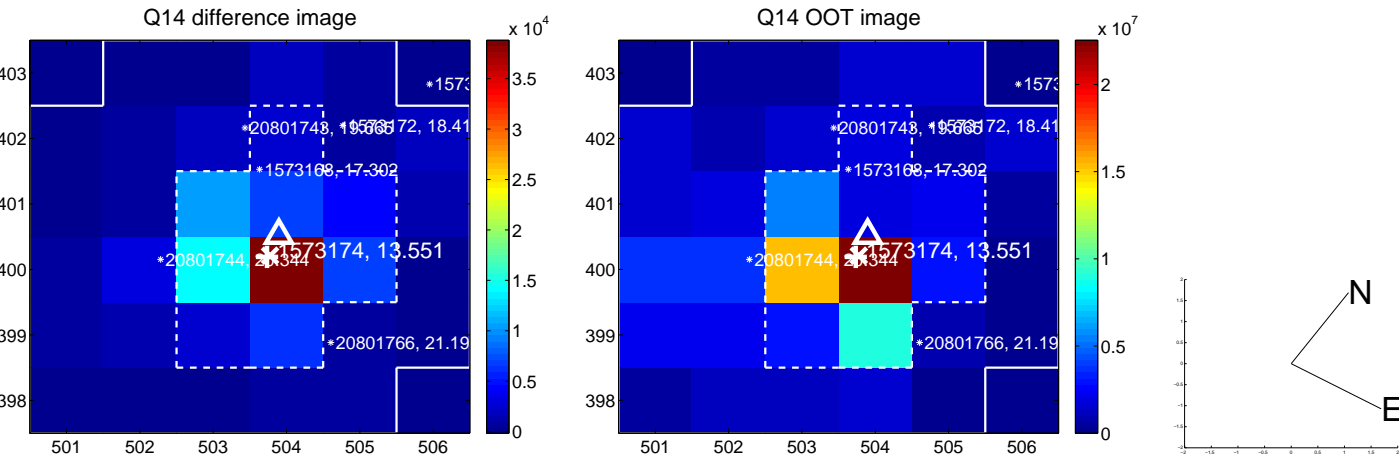
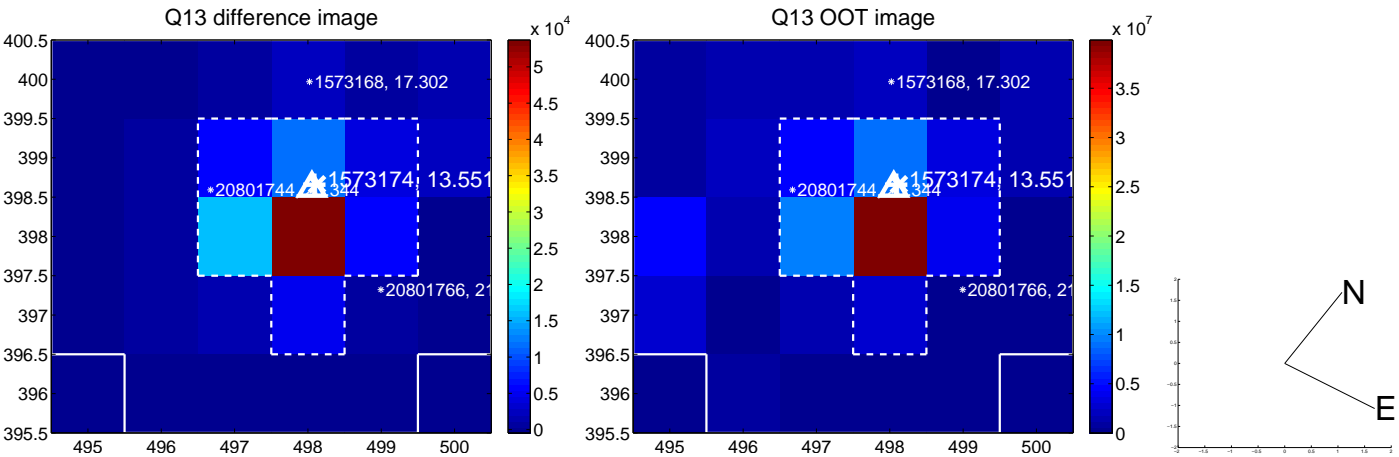
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



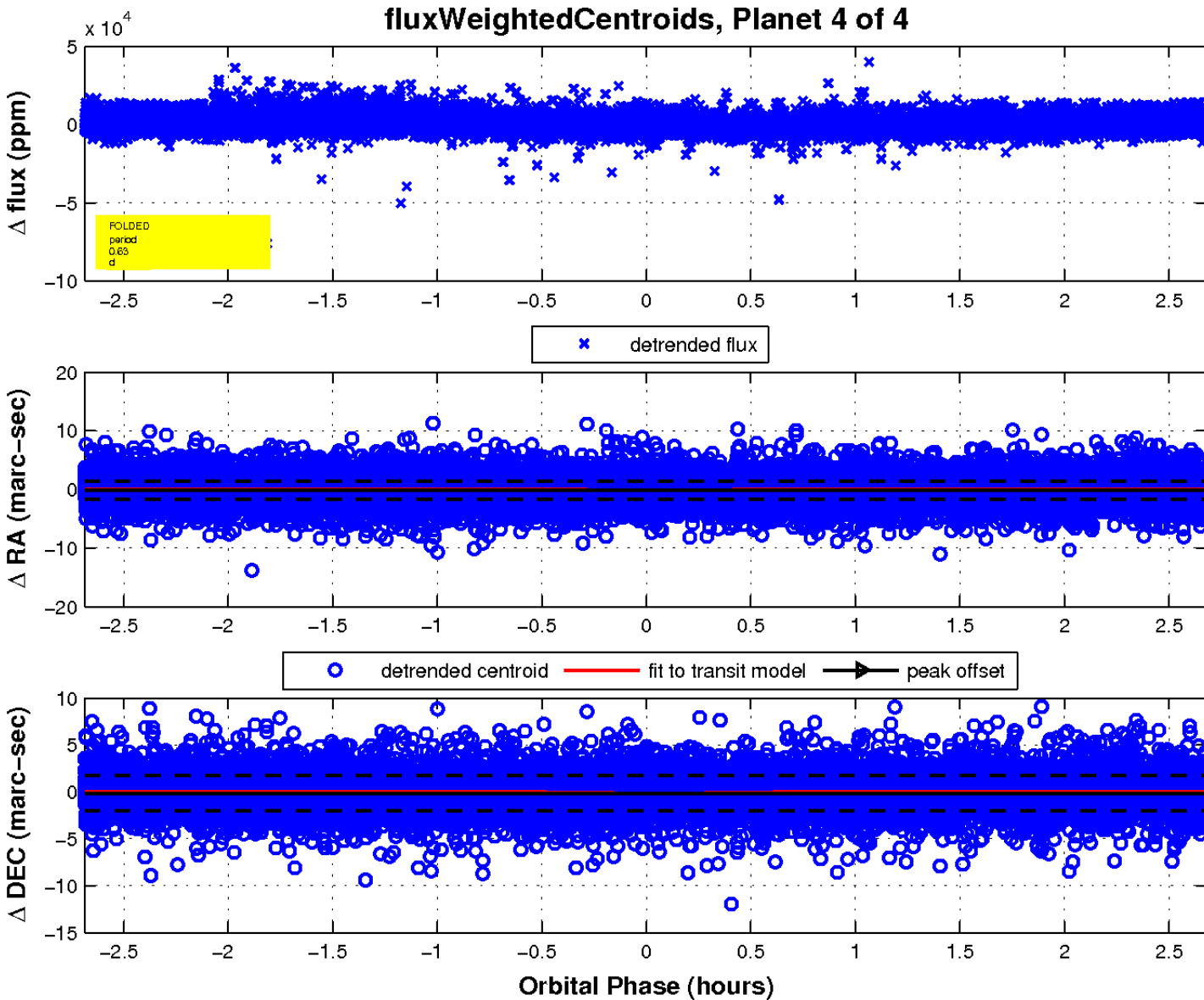
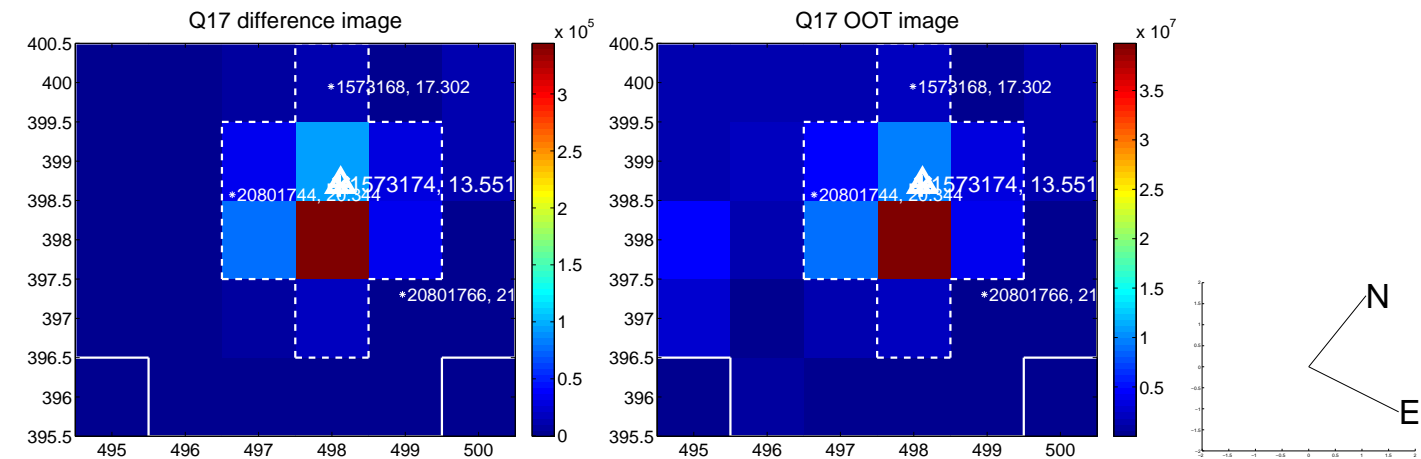
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

