

KIC 008574270

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})
008574270-01	OBS	7063.01	15.120214	139.696603	24521.4	3.510	1055.3	999.0	0.72	5232	19.93	31.65
008574270-02	OBS	No	15.120208	134.323769	8414.2	4.337	422.0	413.4	0.72	5232	11.92	31.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008574270-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
008574270-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

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

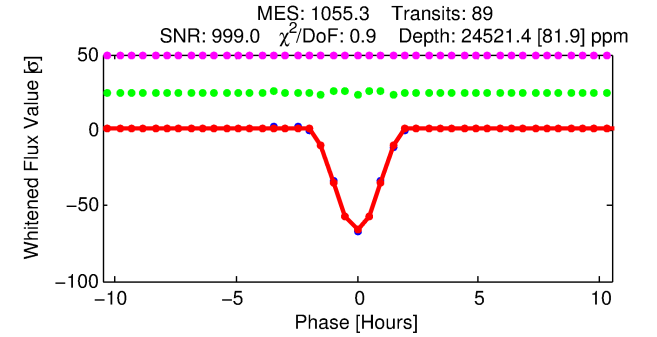
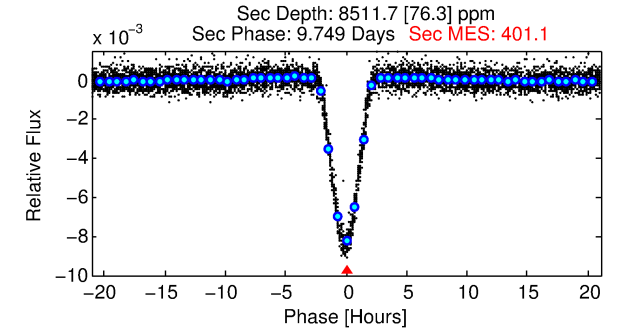
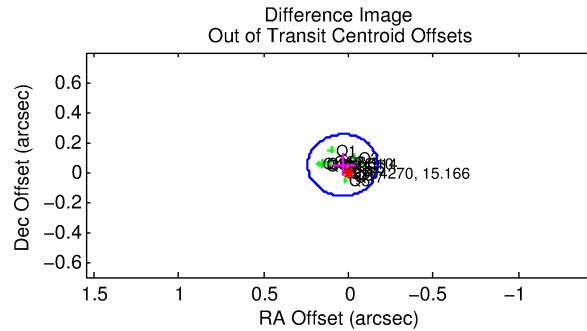
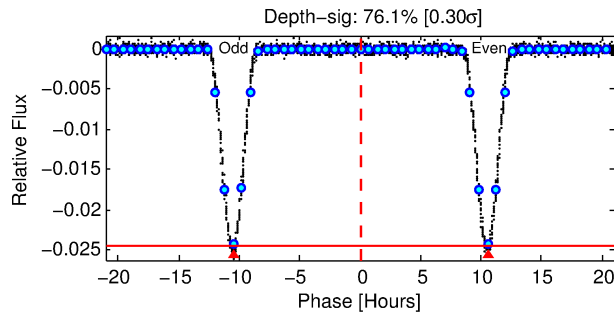
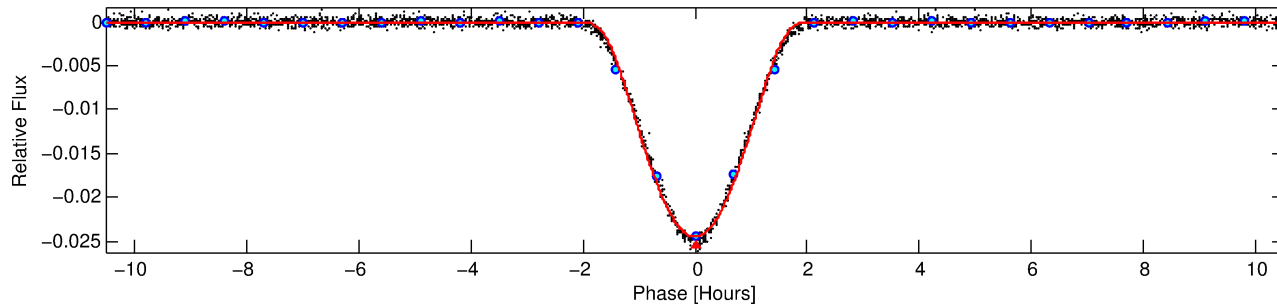
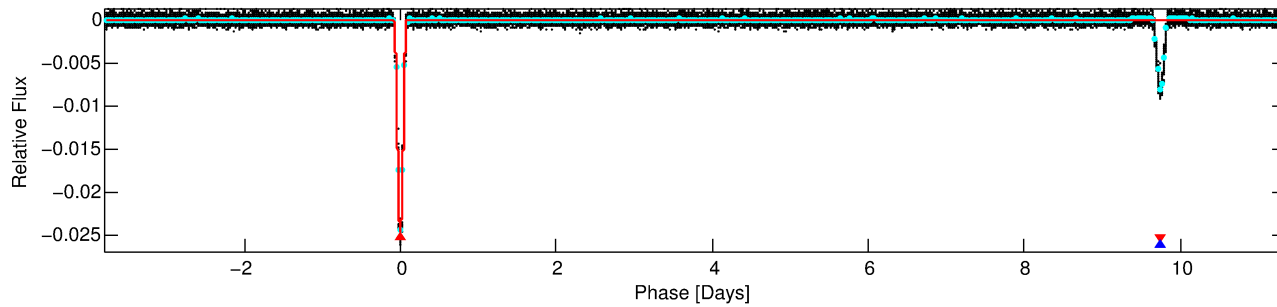
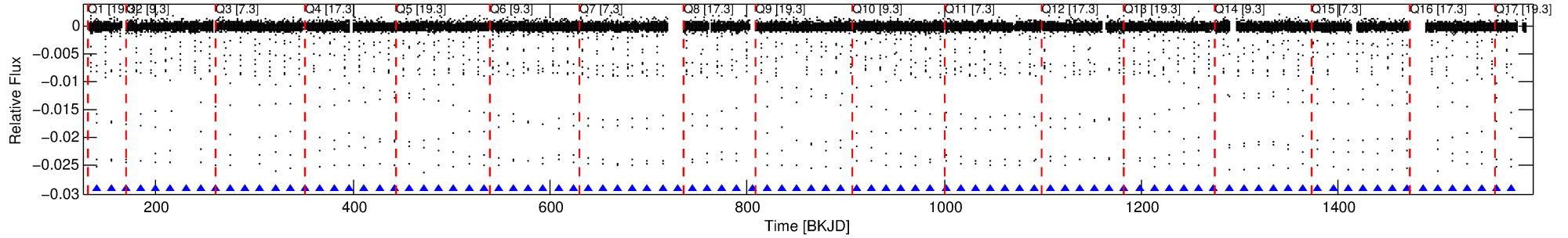
Ephemeris Match Information For 008574270-01

No Significant Match Found

DV One-Page Summary

KIC: 8574270 Candidate: 1 of 2 Period: 15.120 d
KOI: K07063.01 Corr: 0.999

Kp: 15.17 R*: 0.72 Rs Teff: 5232.0 K Logg: 4.55 Fe/H: -0.520



DV Fit Results:

Period = 15.12021 [0.00000] d
Epoch = 139.6966 [0.0001] BKJD
Rp/R* = 0.2519 [0.0233]
a/R* = 25.02 [0.18]
b = 1.00 [0.03]
Seff = 31.65 [6.02]
Teq = 605 [29] K
Rp = 19.93 [2.89] Re
a = 0.1056 [0.0103] AU
Ag = 131.45 [31.09] [4.20σ]
Teffp = 3166 [174] K [14.49σ]

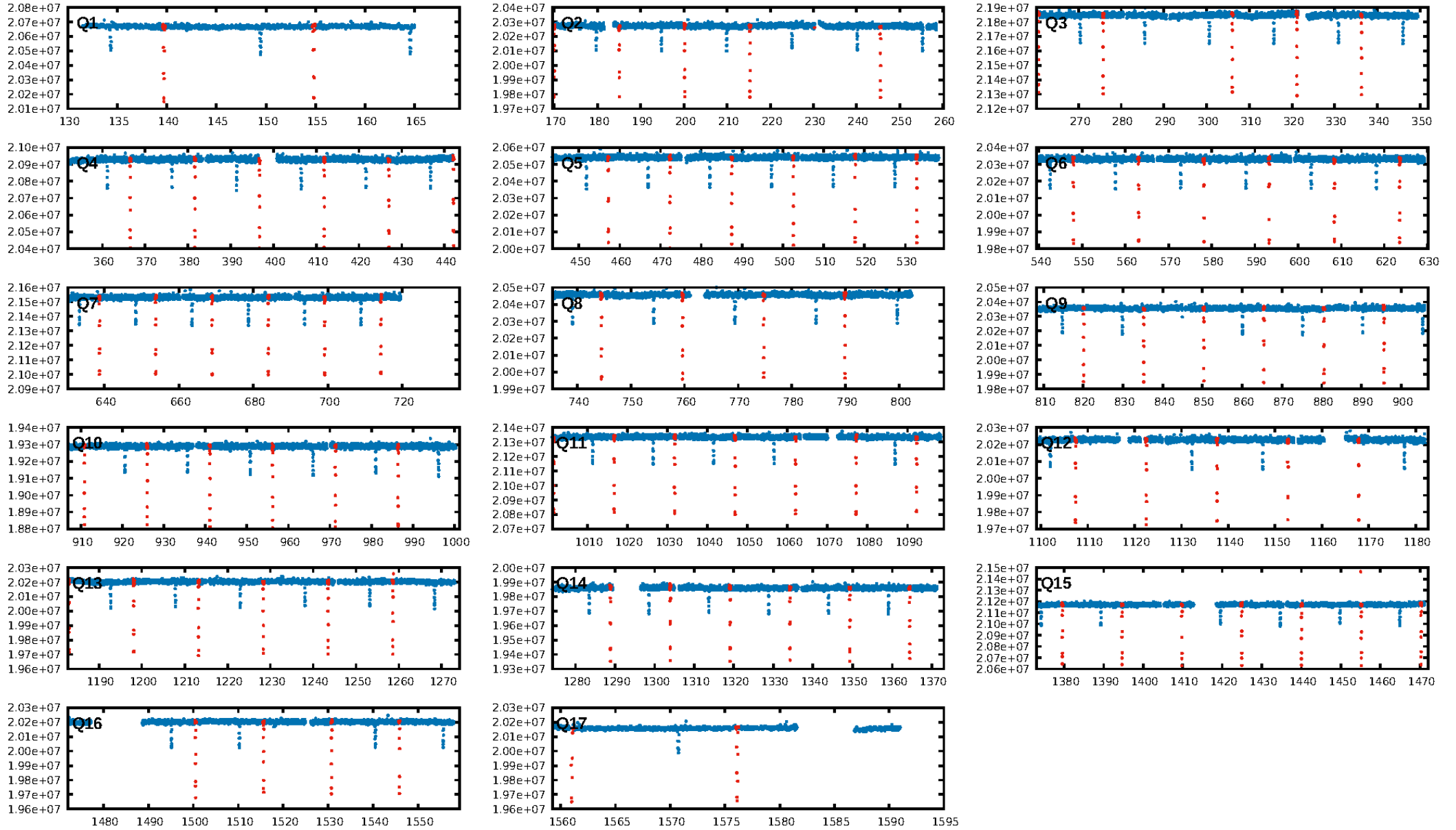
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 35.1%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [85/85]
GhostDiagnostic-chr: 4.876
Centroid-sig: 0.0%
Centroid-so: 0.146 arcsec [11.52σ]
OotOffset-rm: 0.059 arcsec [0.85σ]
KicOffset-rm: 0.159 arcsec [2.32σ]
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]

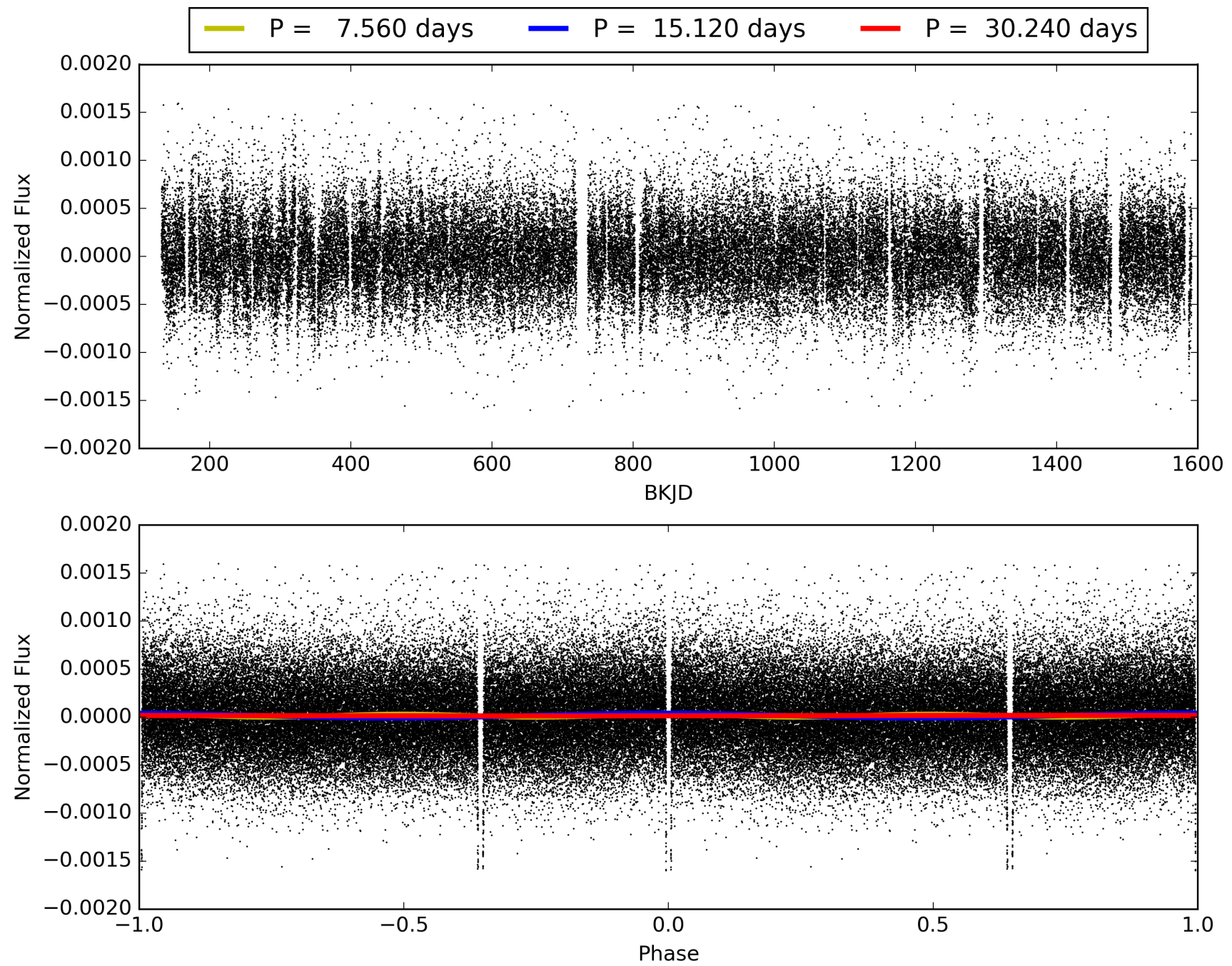
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:13:09 Z

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

TCE 008574270-01, PDC Light Curves

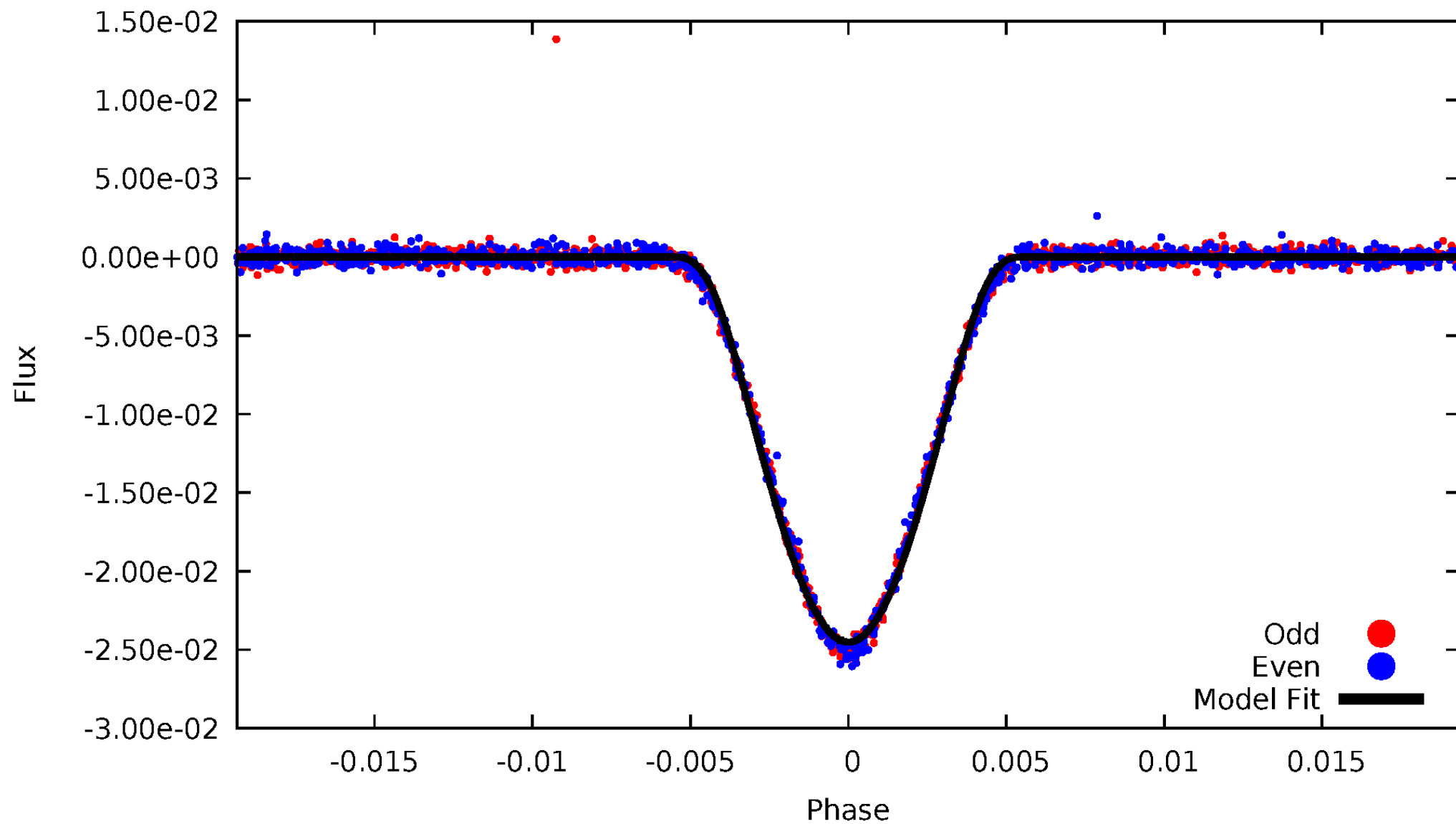


TCE 008574270-01



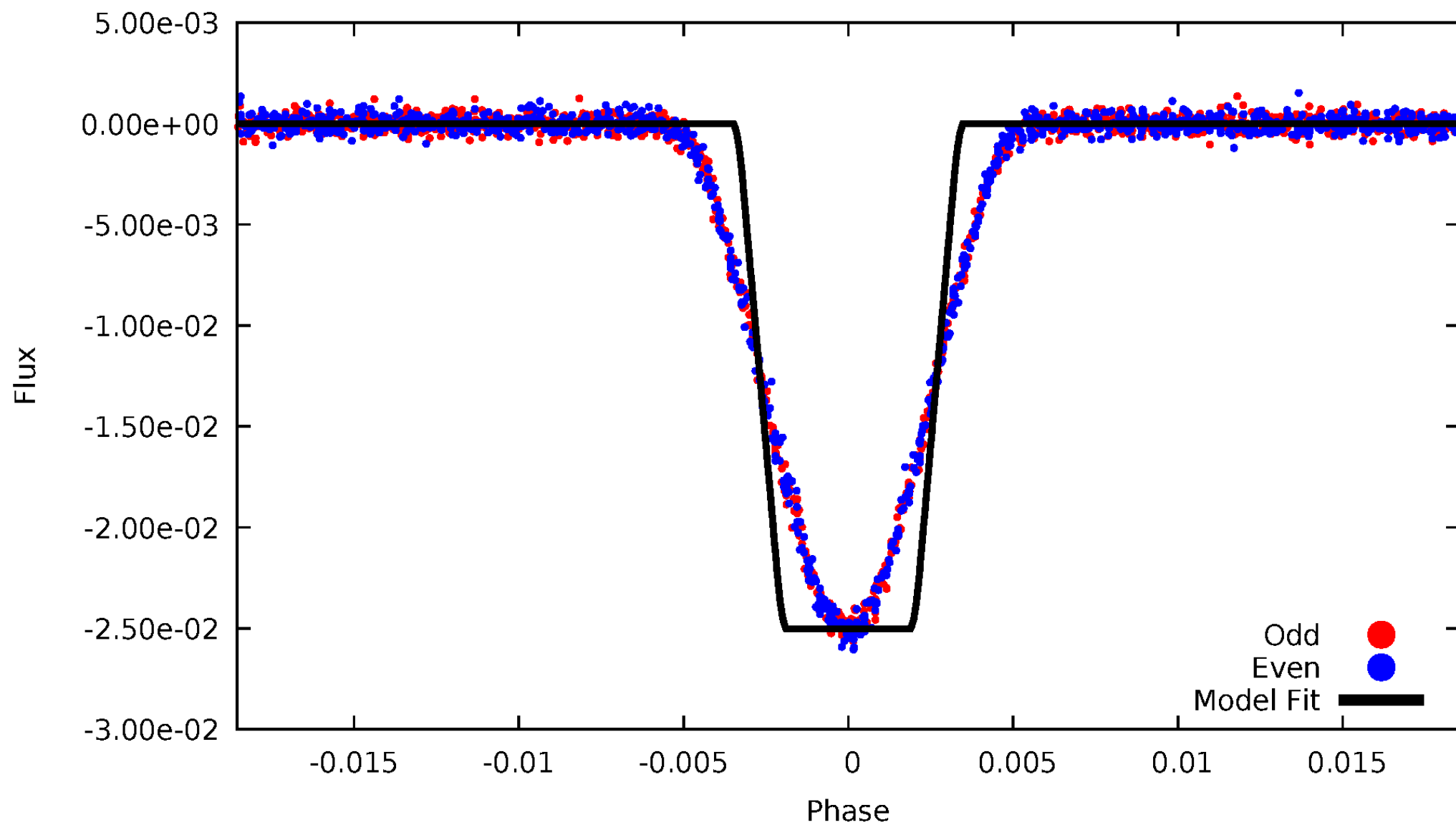
DV Odd/Even

TCE 008574270-01



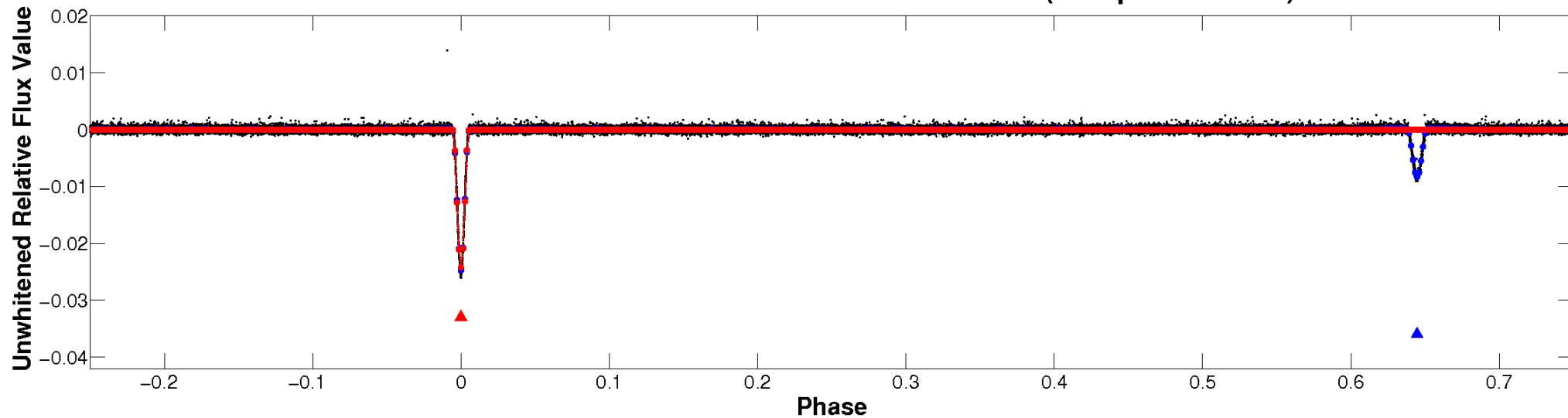
ALT Odd/Even

TCE 008574270-01

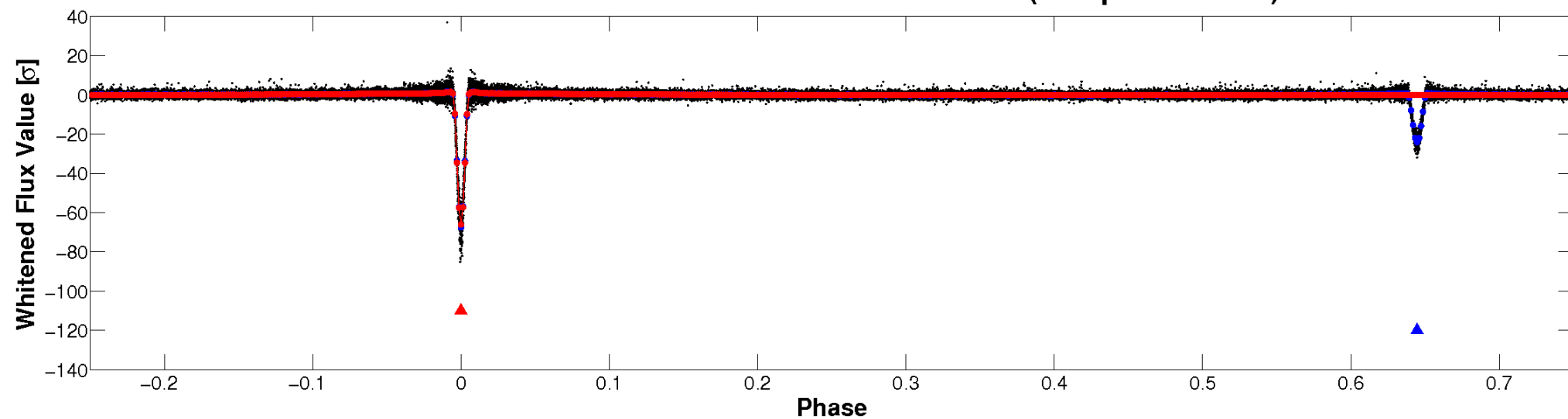


Non-Whitened Vs. Whitened Light Curve

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

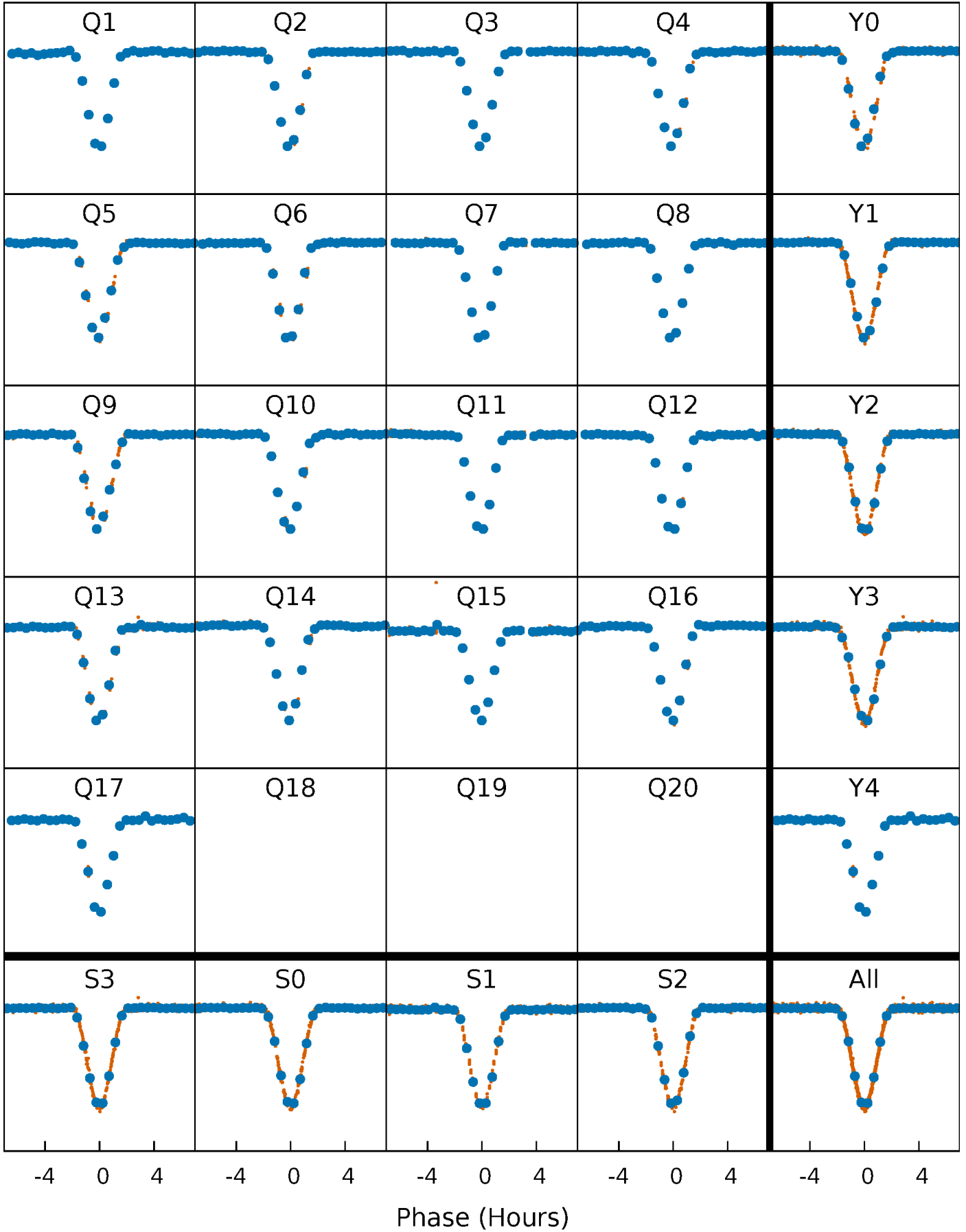


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



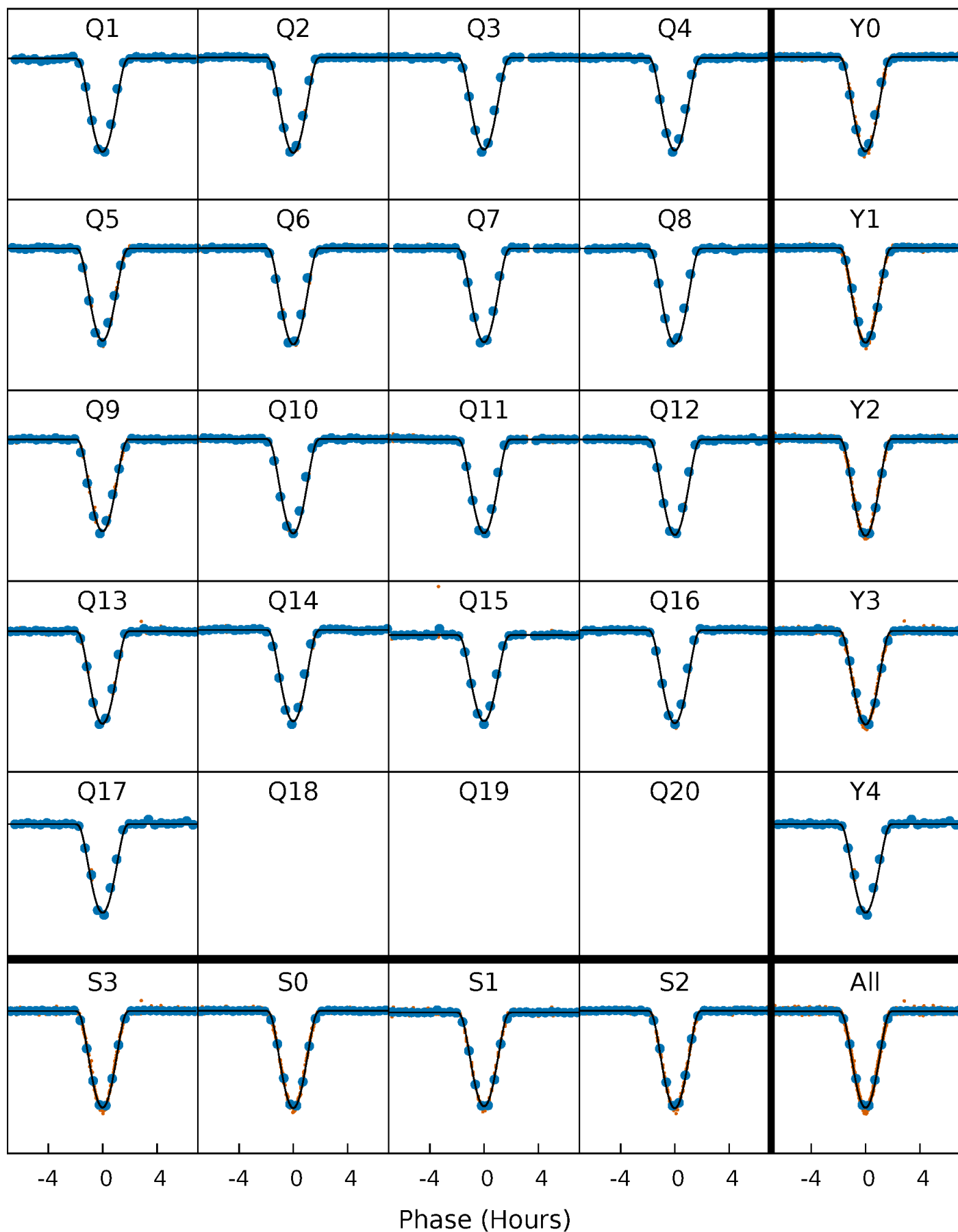
PDC Quarter-Phased Transit Curves

TCE 008574270-01 P= 15.120214 Days $T_0=139.696603$ (BKJD)



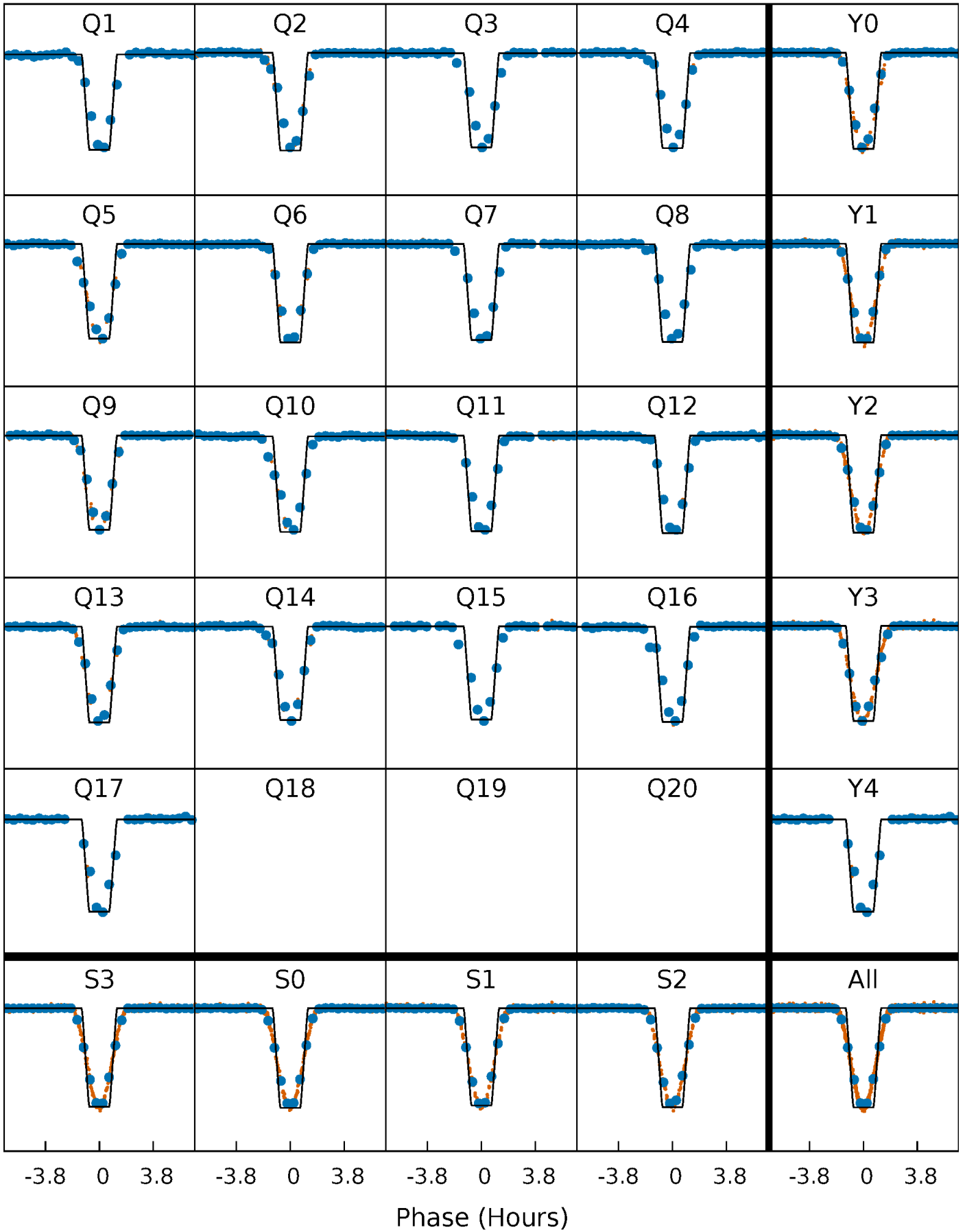
DV Quarter-Phased Transit Curves

TCE 008574270-01 P= 15.120214 Days $T_0=139.696603$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

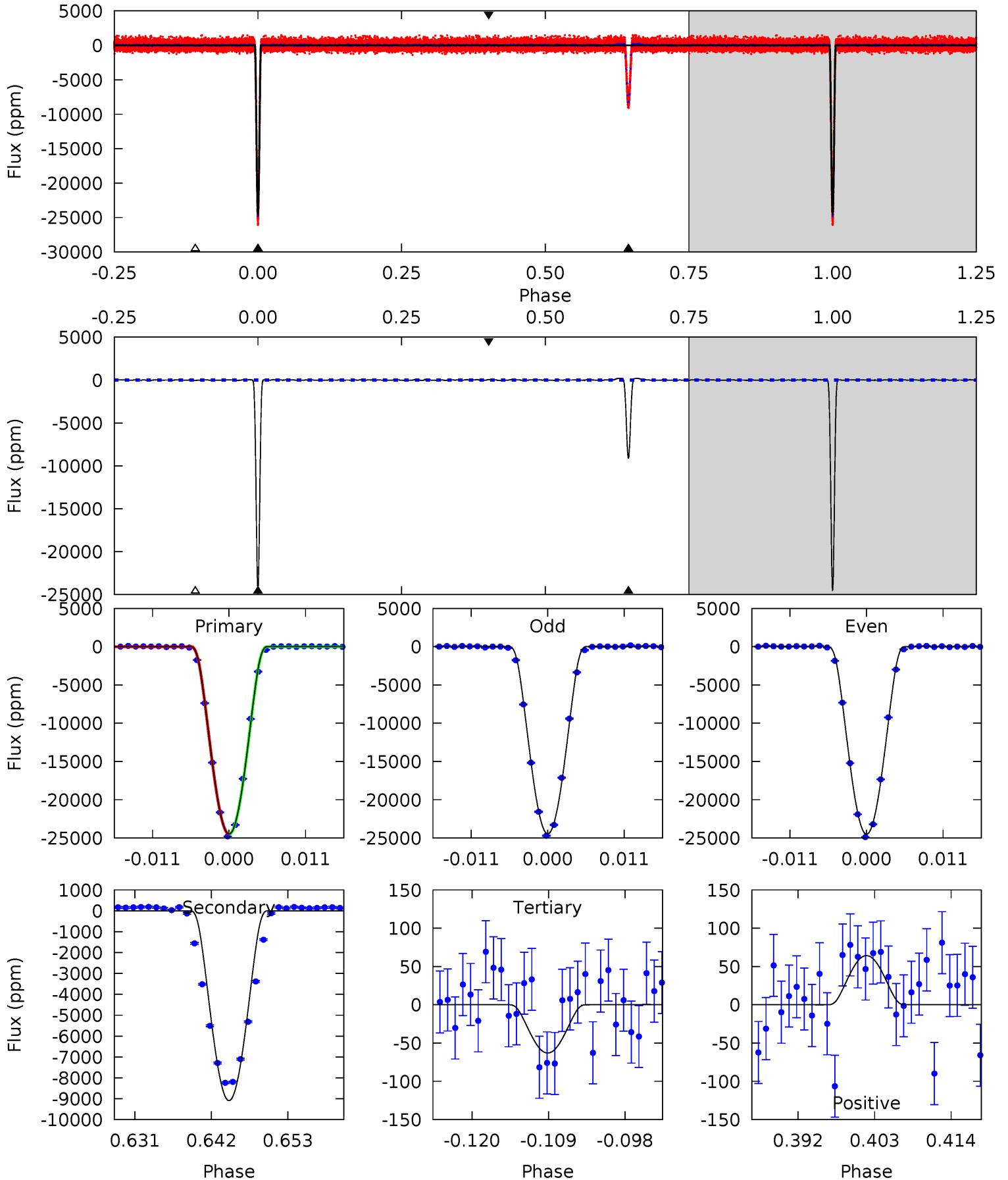
TCE 008574270-01 P= 15.120238 Days $T_0=139.695447$ (BKJD)



DV Model-Shift Uniqueness Test

008574270-01, P = 15.120214 Days, E = 124.576389 Days

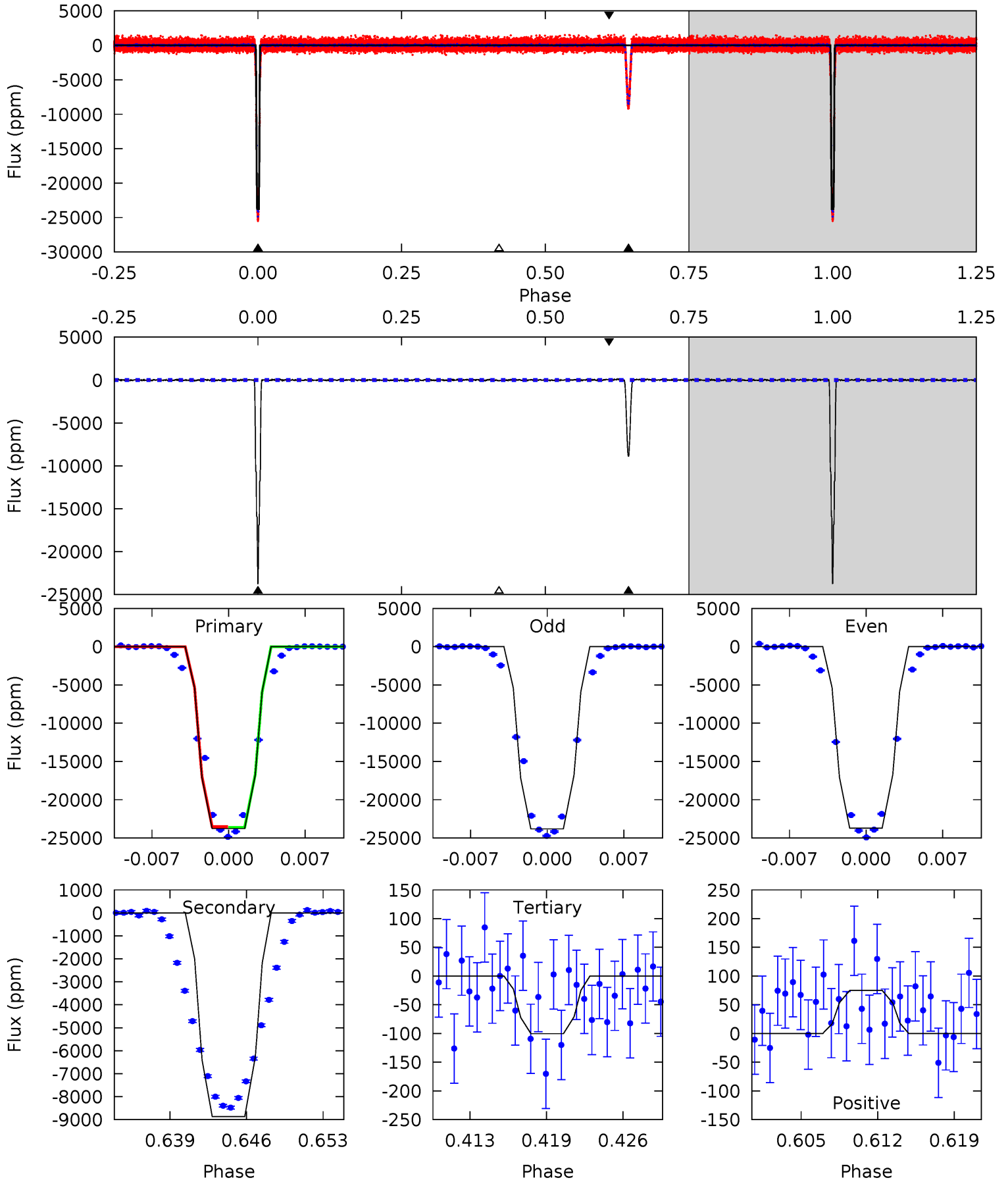
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1857	689.8	4.78	4.87	5.01	2.55	2.62	1852	1852	685.0	684.9	1.98	1.00	0.01	0.05



Alt Model-Shift Uniqueness Test

008574270-01, P = 15.120238 Days, E = 124.575209 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1083	404.4	4.58	3.41	5.10	2.70	1.28	1079	1080	399.8	401.0	2.47	1.00	0.00	1.13



Stellar Parameters For KIC 008574270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5232^{+157}_{-141}	$4.554^{+0.083}_{-0.060}$	$-0.520^{+0.300}_{-0.300}$	$0.725^{+0.081}_{-0.073}$	$0.686^{+0.091}_{-0.042}$	$2.540^{+0.910}_{-0.508}$
	+3%/-3%	+2%/-1%	+58%/-58%	+11%/-10%	+13%/-6%	+36%/-20%
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 008574270-01 / KOI 7063.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9092 ± 13	$19.89^{+2.49}_{-2.18}$	843^{+35}_{-30}	3641^{+151}_{-141}	145^{+35}_{-29}
Alt.	-8870 ± 22	$12.52^{+2.04}_{-1.97}$	837^{+36}_{-29}	4235^{+302}_{-214}	355^{+142}_{-89}

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

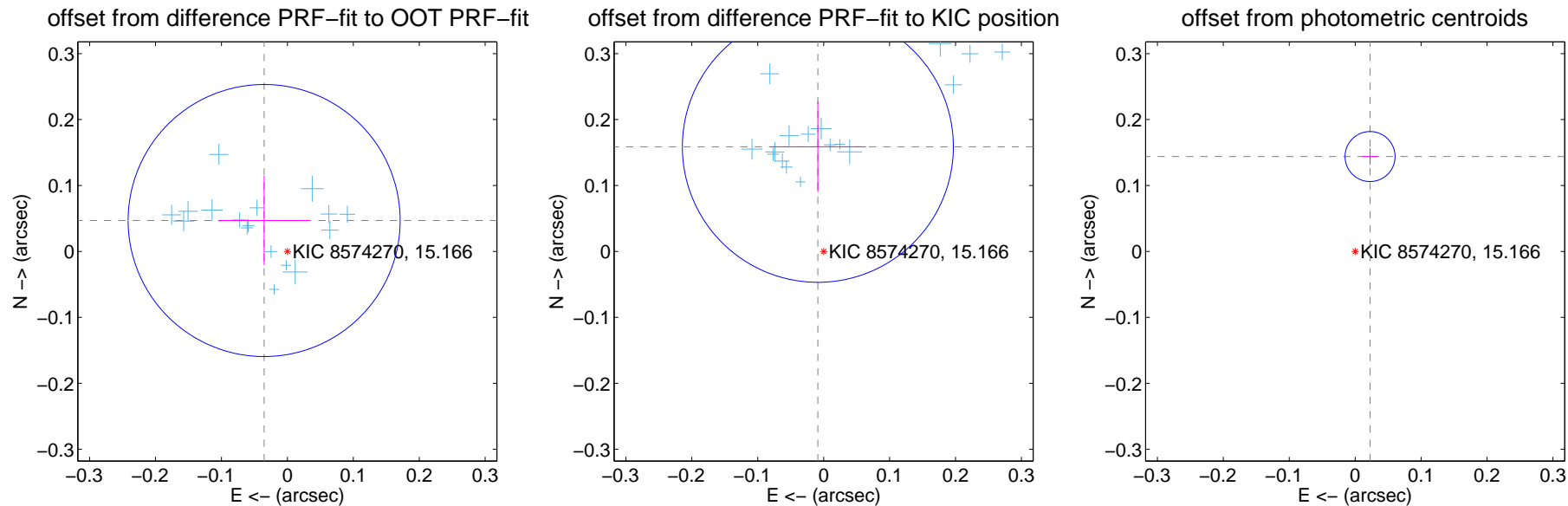
DV Centroid Data

Supplemental centroid analysis for 008574270-01. Kepler magnitude: 15.17. Transit SNR 999.02

There are 17 quarters with good PRF difference image offsets

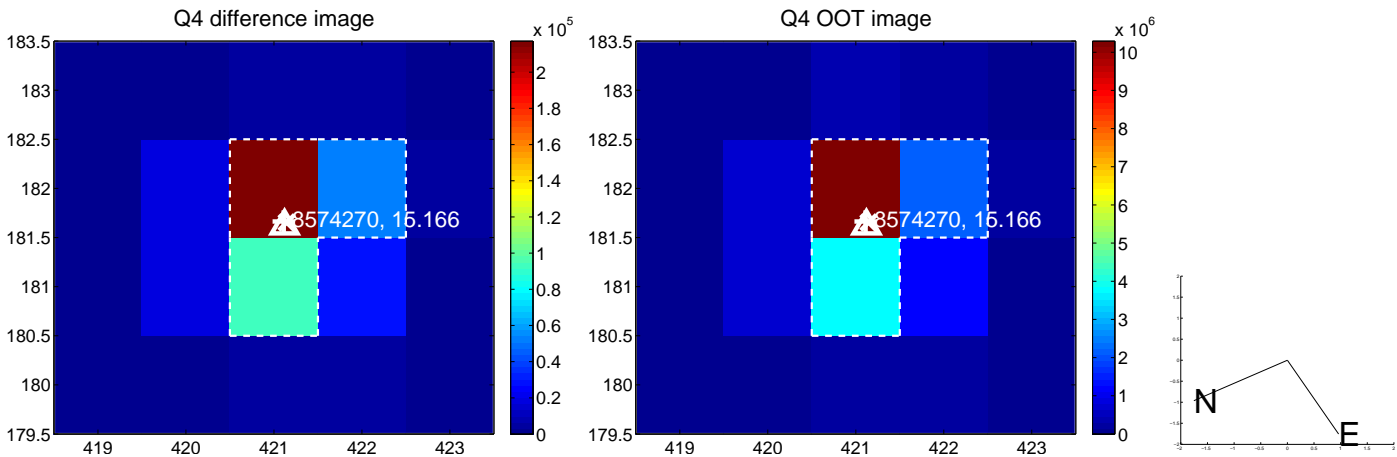
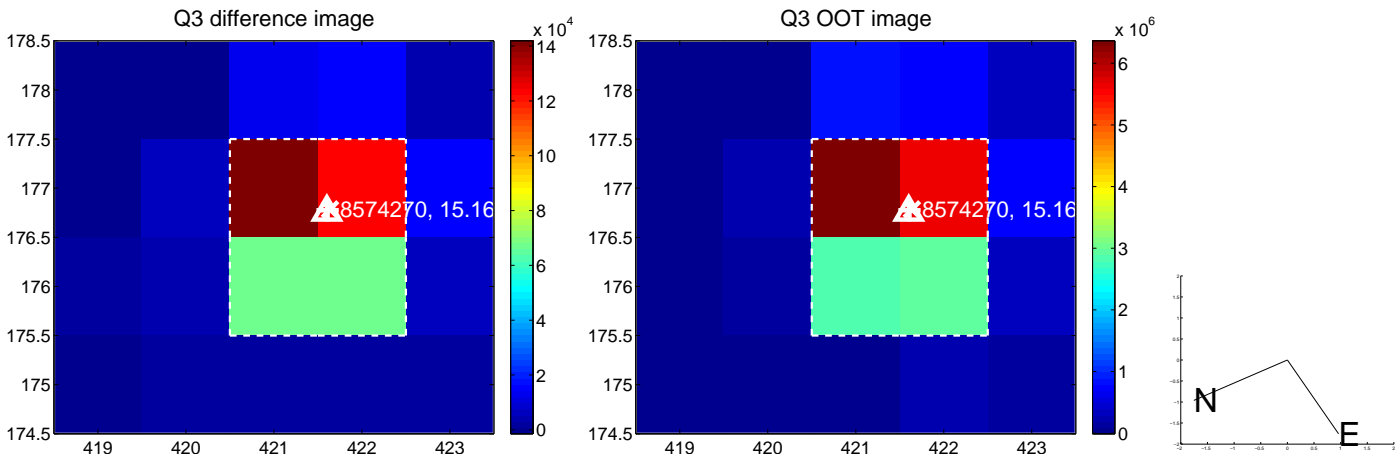
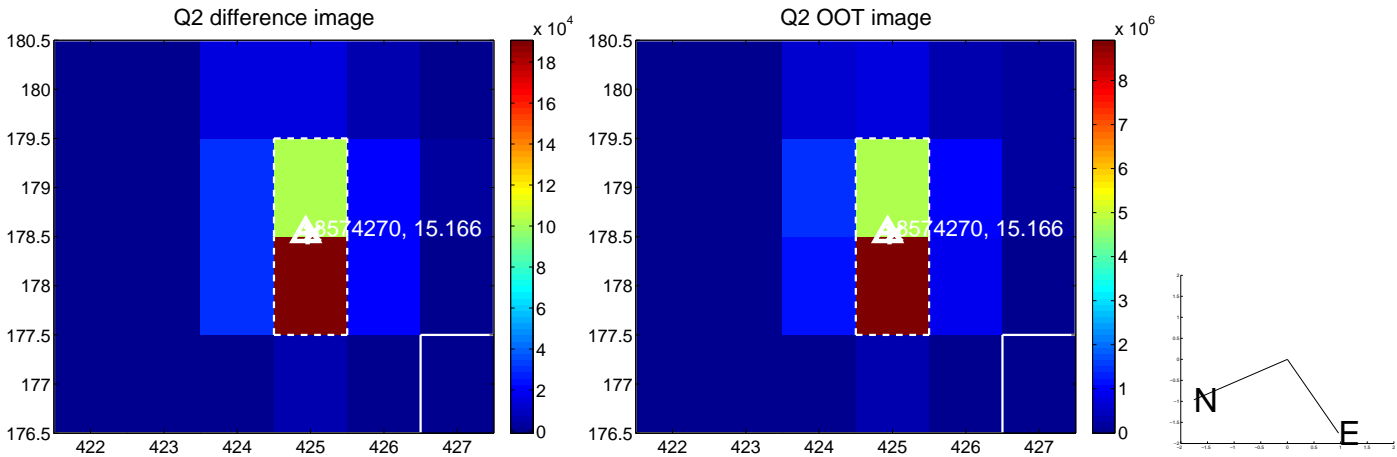
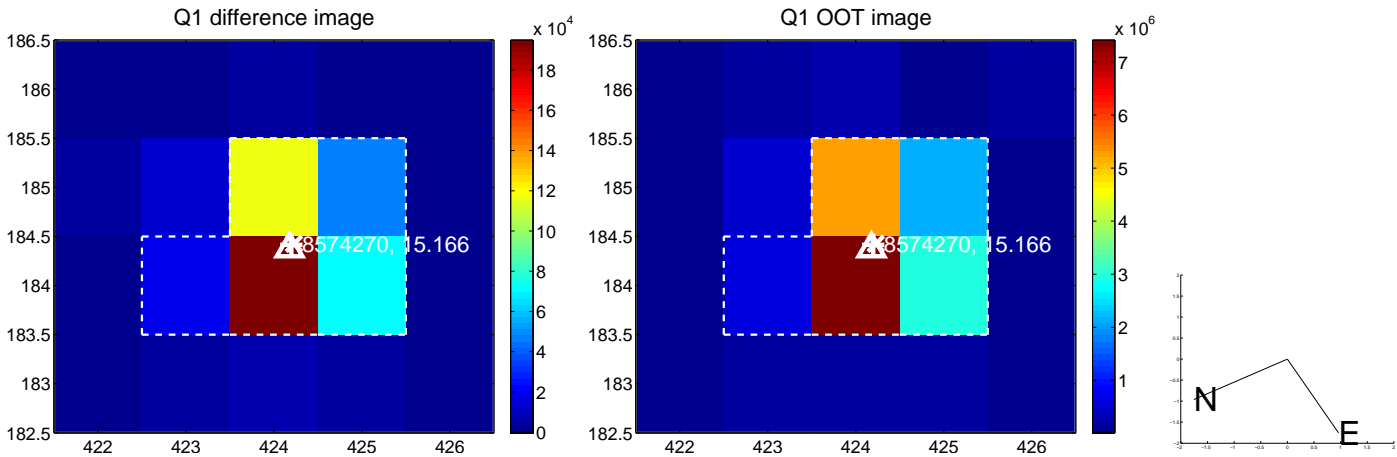
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.059 ± 0.069	0.85	0.035 ± 0.069	0.047 ± 0.068
PRF-fit source offset from KIC position	0.159 ± 0.069	2.32	0.009 ± 0.073	0.159 ± 0.069
photometric centroid source offset	0.15 ± 0.01	11.52	-0.02 ± 0.01	0.14 ± 0.01

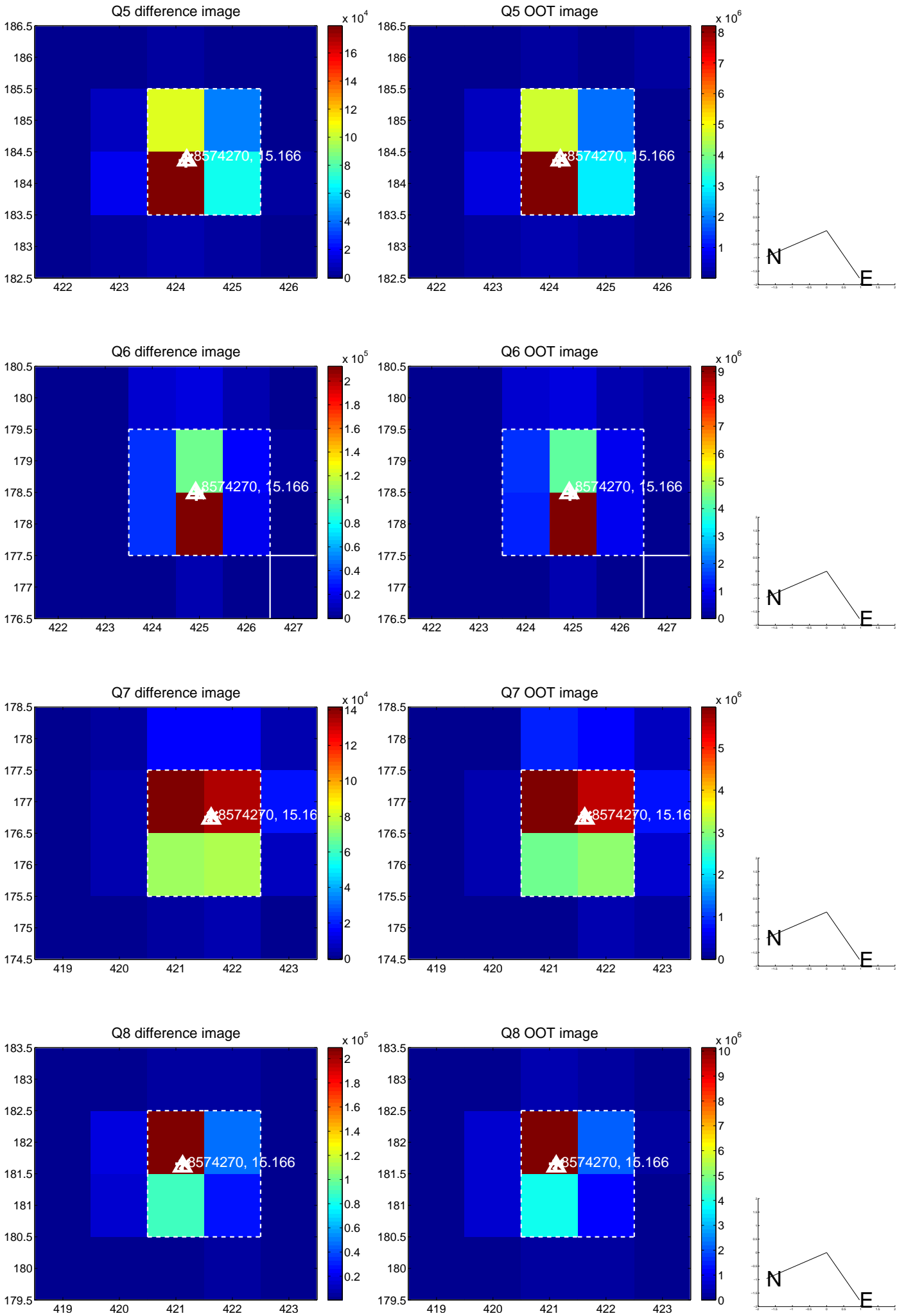


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

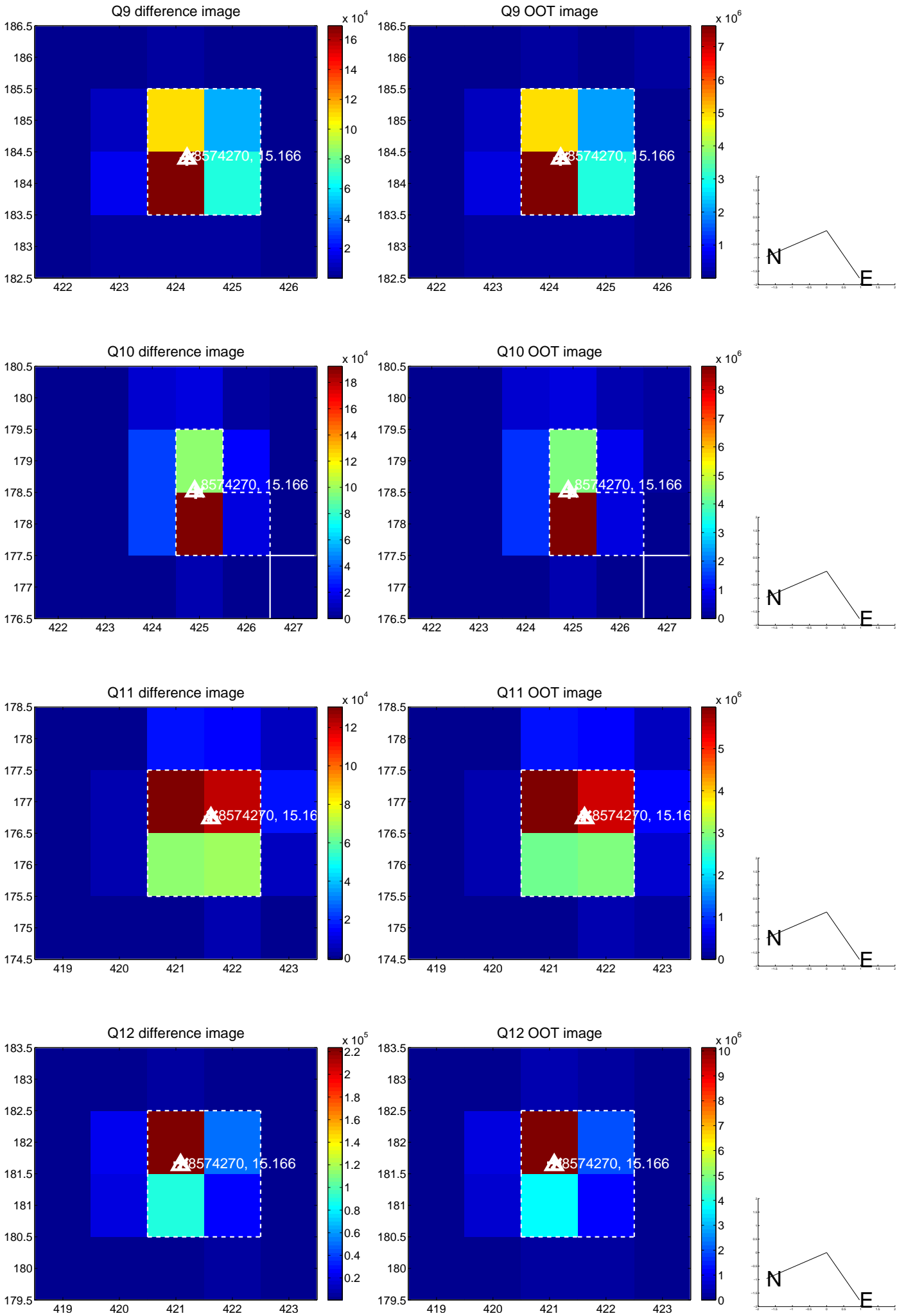
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



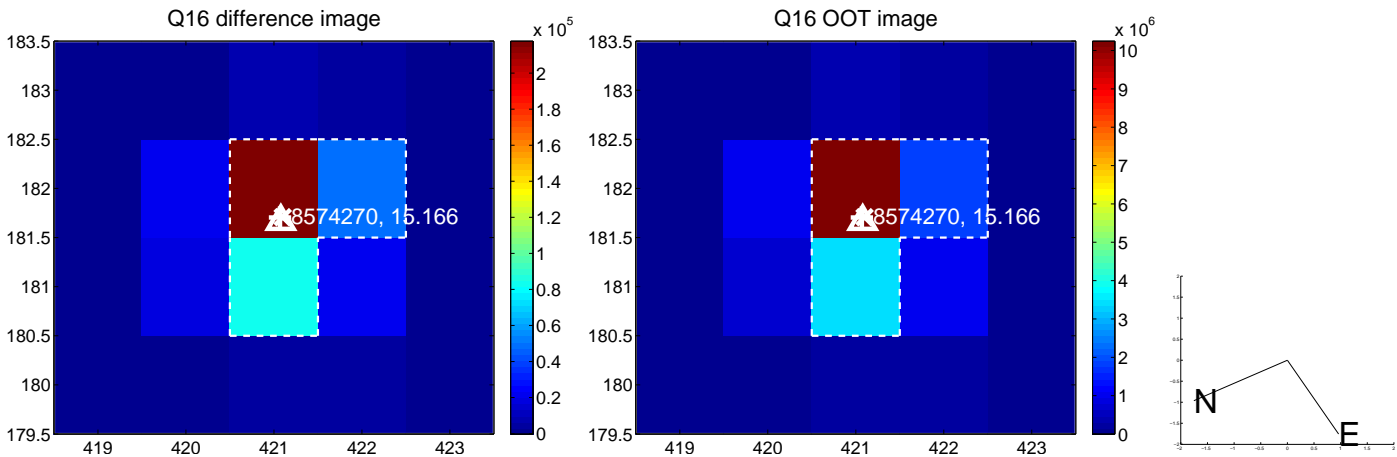
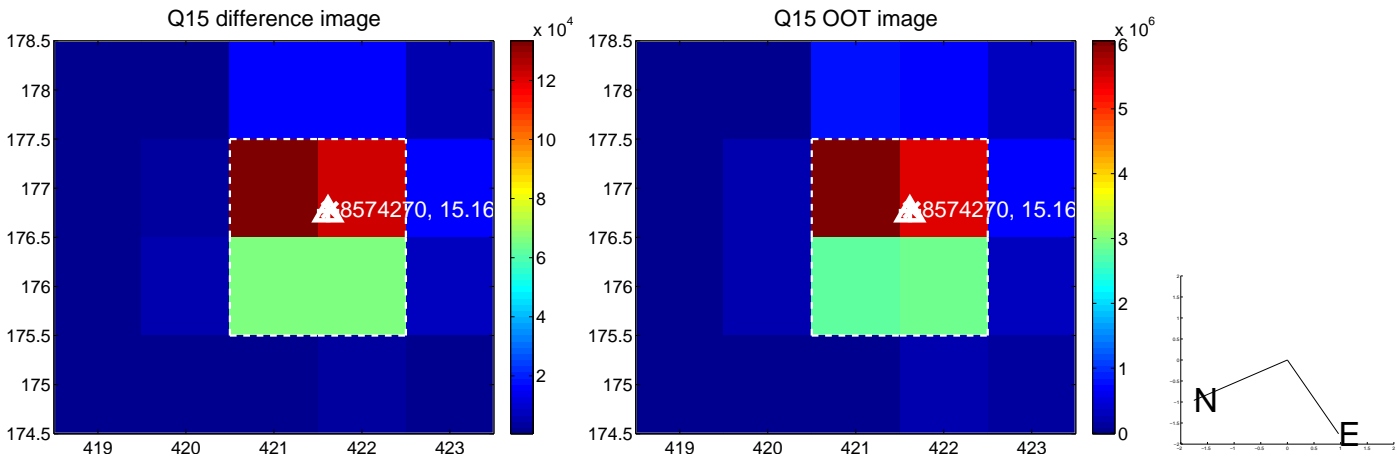
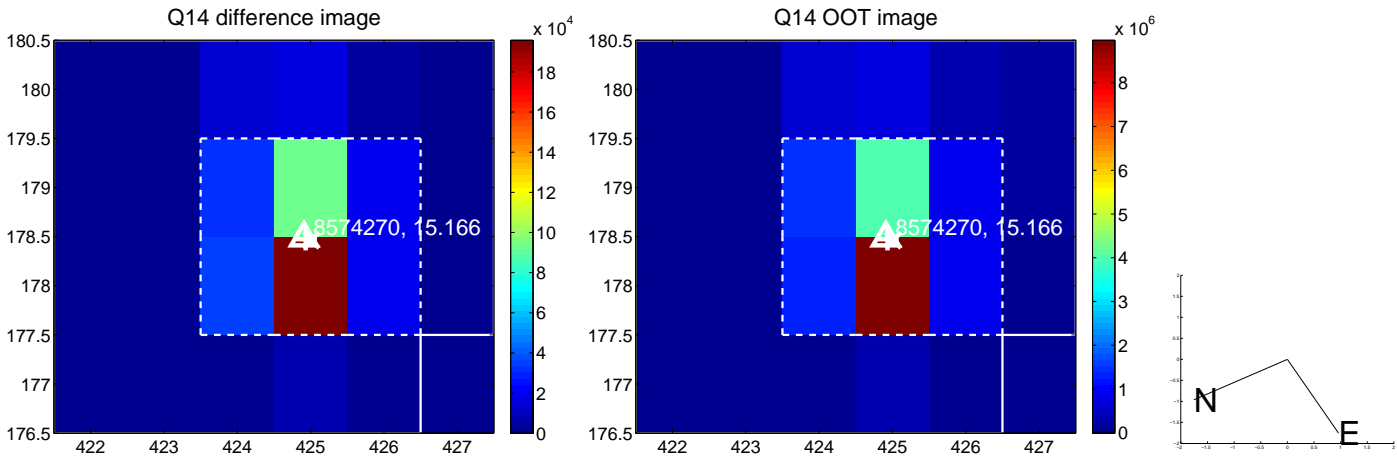
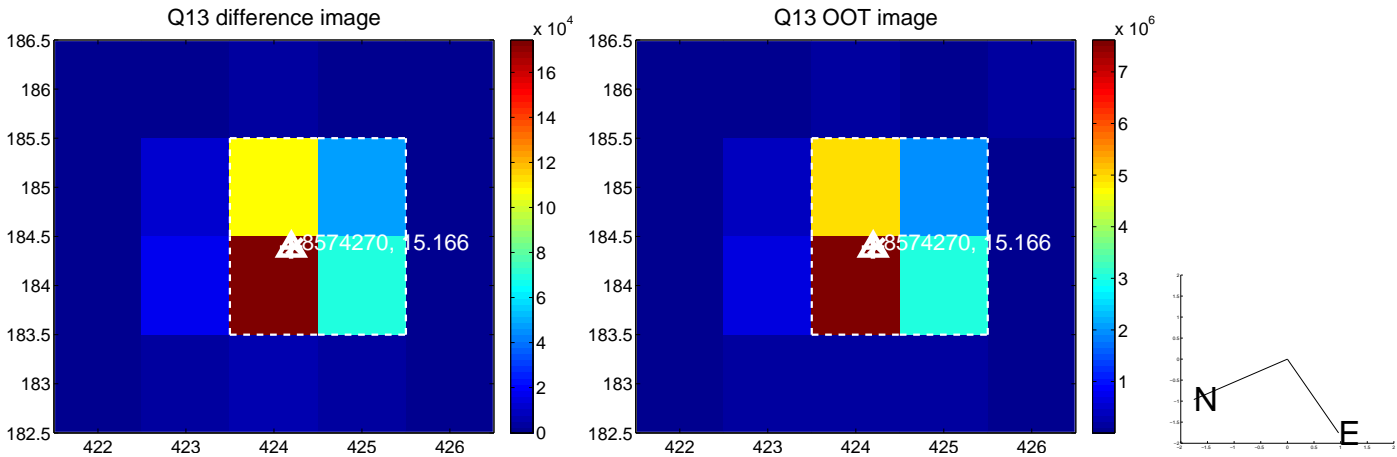
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



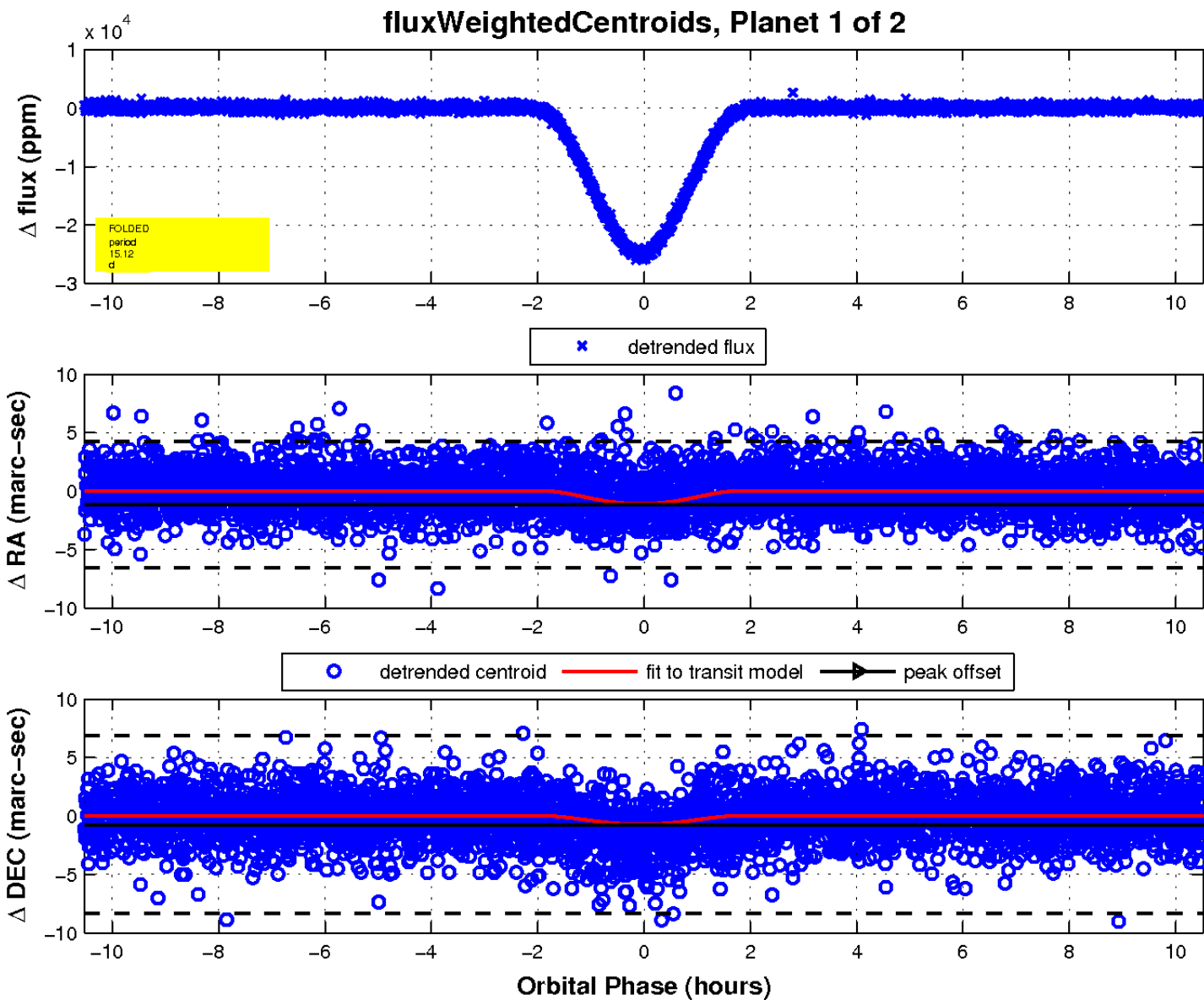
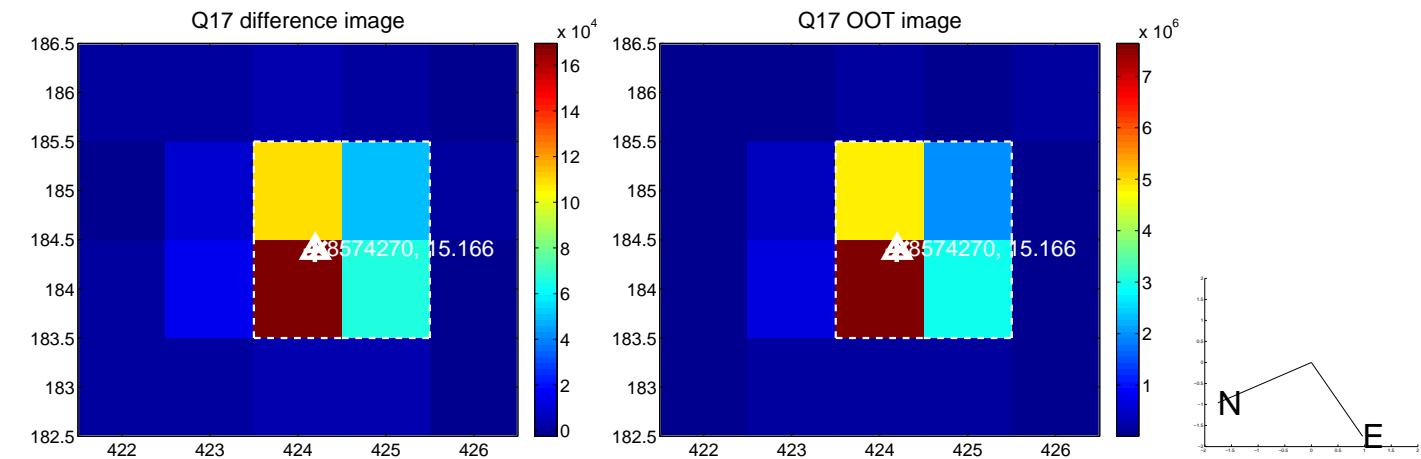
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

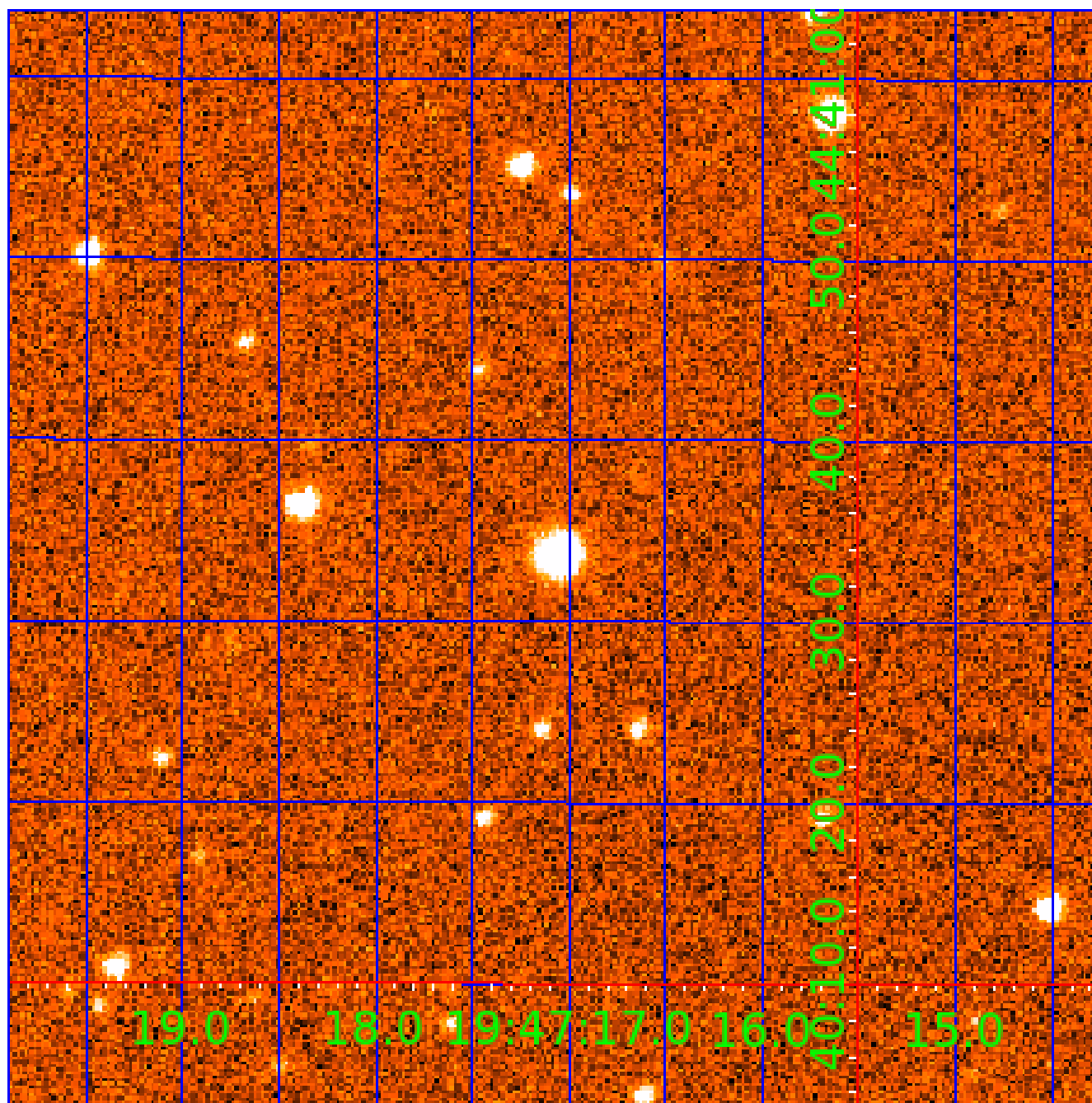


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008574270

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})
008574270-01	OBS	7063.01	15.120214	139.696603	24521.4	3.510	1055.3	999.0	0.72	5232	19.93	31.65
008574270-02	OBS	No	15.120208	134.323769	8414.2	4.337	422.0	413.4	0.72	5232	11.92	31.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008574270-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
008574270-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

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

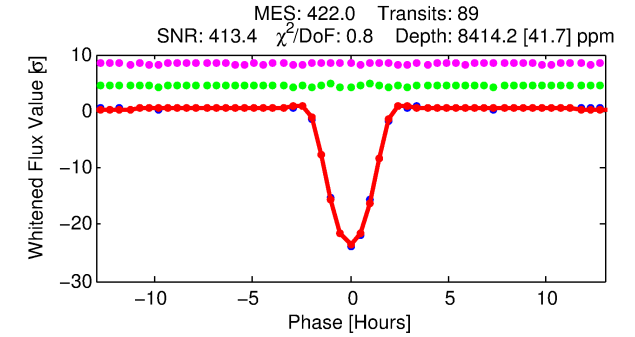
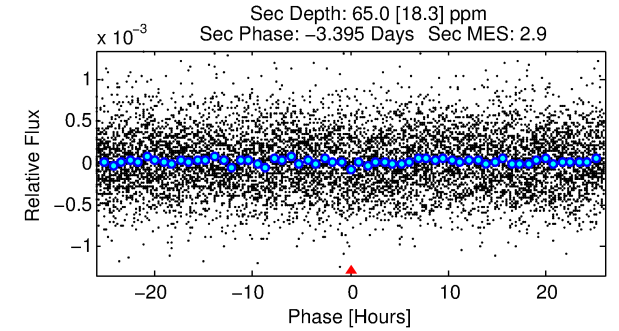
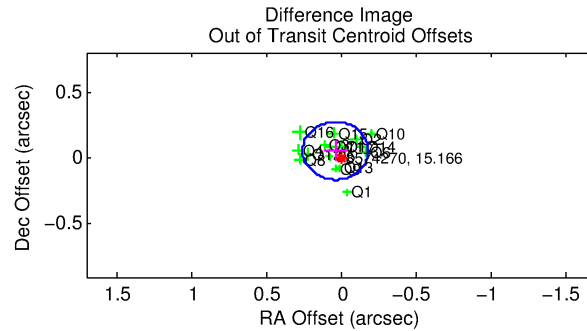
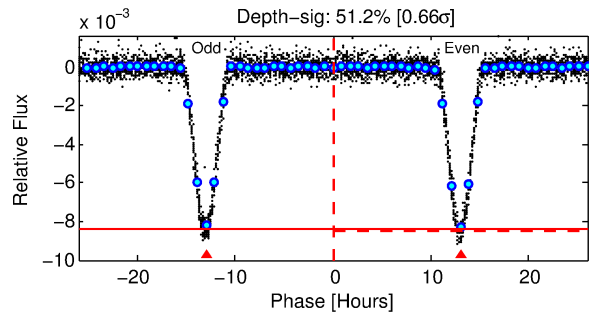
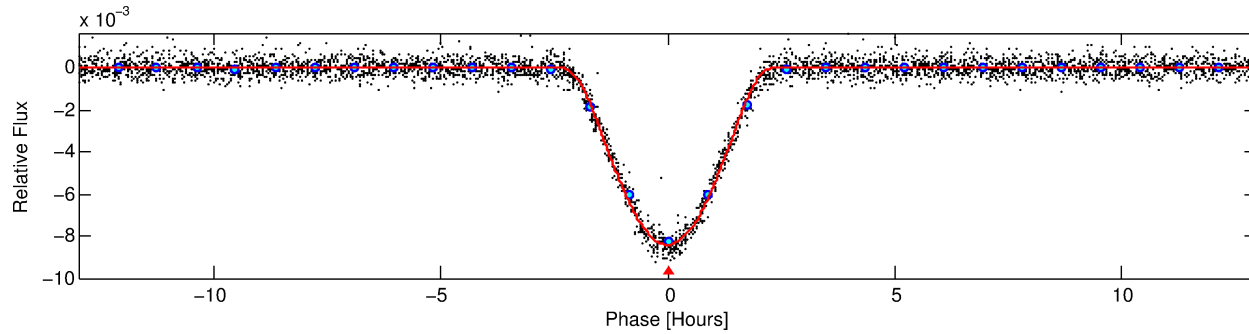
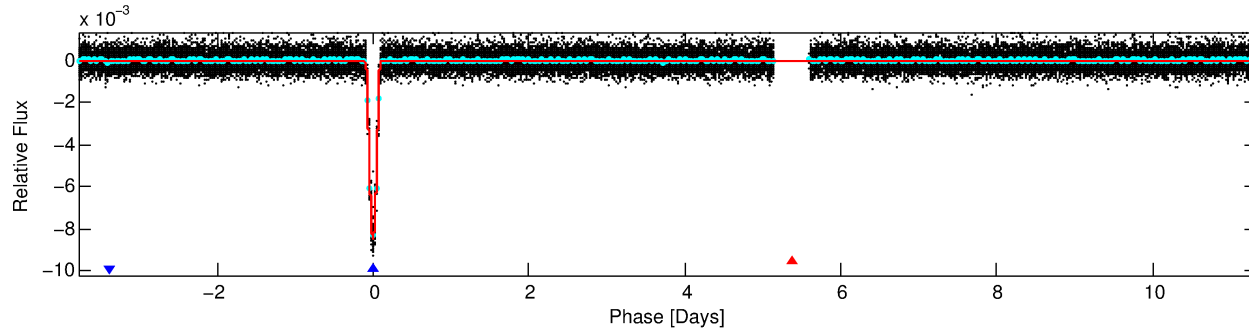
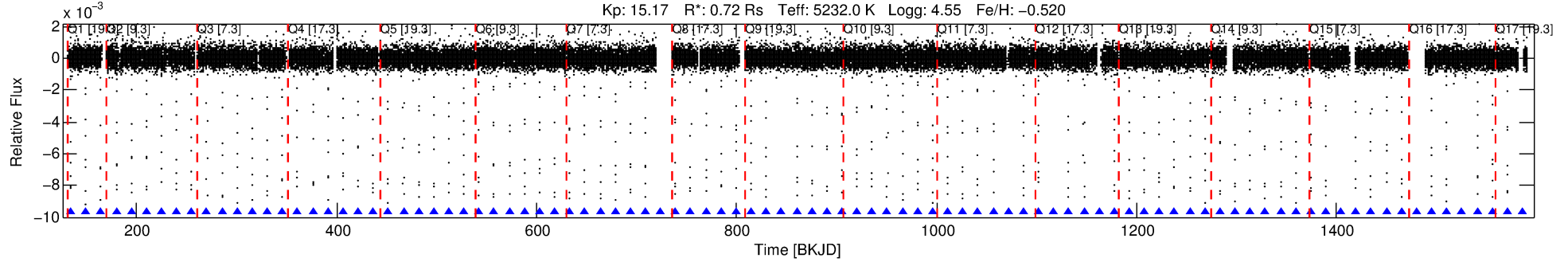
Ephemeris Match Information For 008574270-02

No Significant Match Found

DV One-Page Summary

KIC: 8574270 Candidate: 2 of 2 Period: 15.120 d
KOI: K07063 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.72 Rs Teff: 5232.0 K Logg: 4.55 Fe/H: -0.520



DV Fit Results:

Period = 15.12021 [0.00000] d
Epoch = 134.3238 [0.0002] BKJD
Rp/R* = 0.1507 [0.0197]
a/R* = 15.48 [0.32]
b = 0.99 [0.03]
Seff = 31.65 [6.02]
Teq = 605 [29] K
Rp = 11.92 [2.05] Re
a = 0.1056 [0.0103] AU
Ag = 2.81 [1.16] [1.56σ]
Teffp = 1210 [122] K [4.84σ]

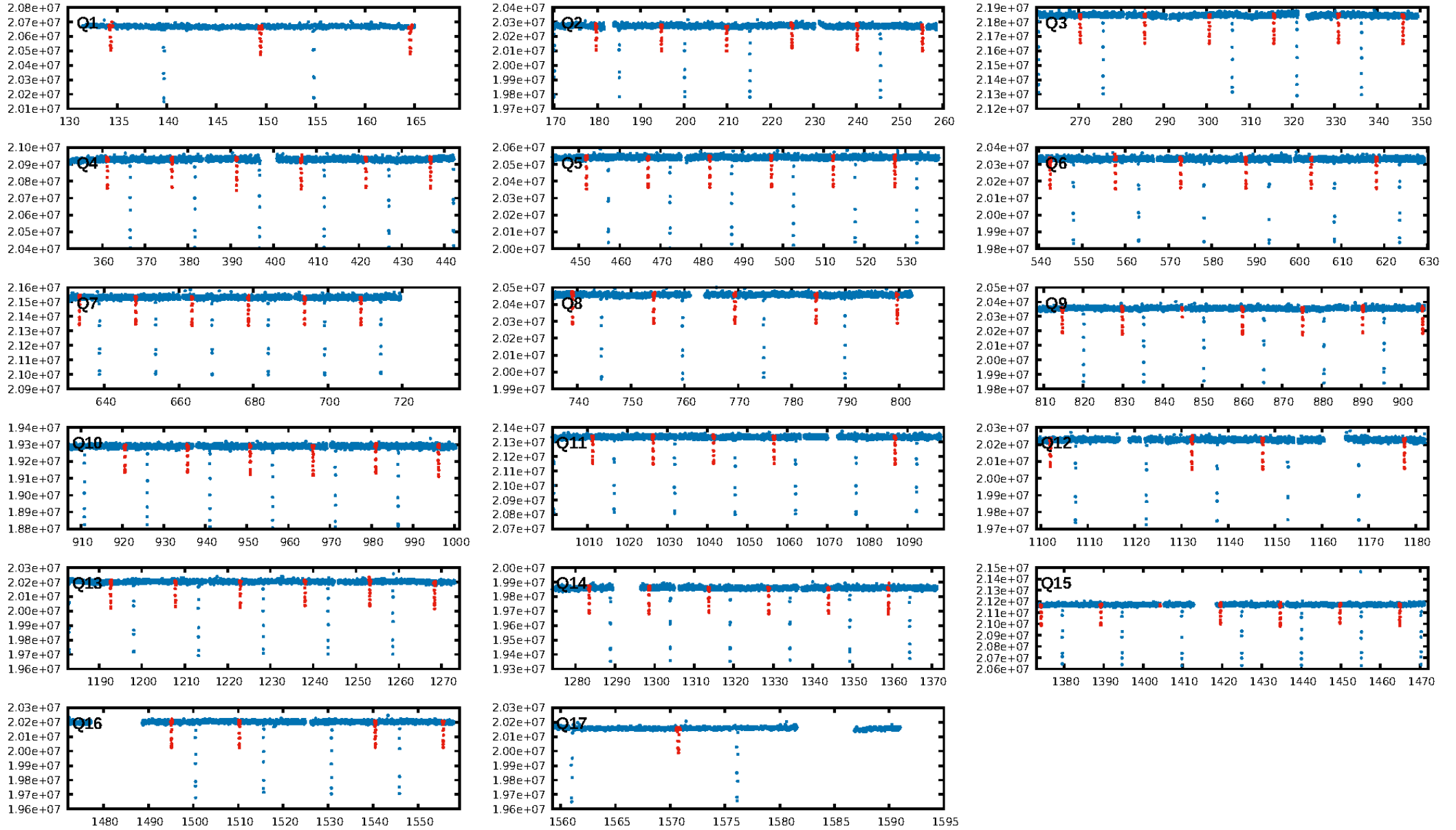
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 86.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [85/85]
GhostDiagnostic-chr: 4.825
Centroid-sig: 44.1%
Centroid-so: 0.108 arcsec [3.32σ]
OotOffset-rm: 0.065 arcsec [0.90σ]
KicOffset-rm: 0.191 arcsec [2.55σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
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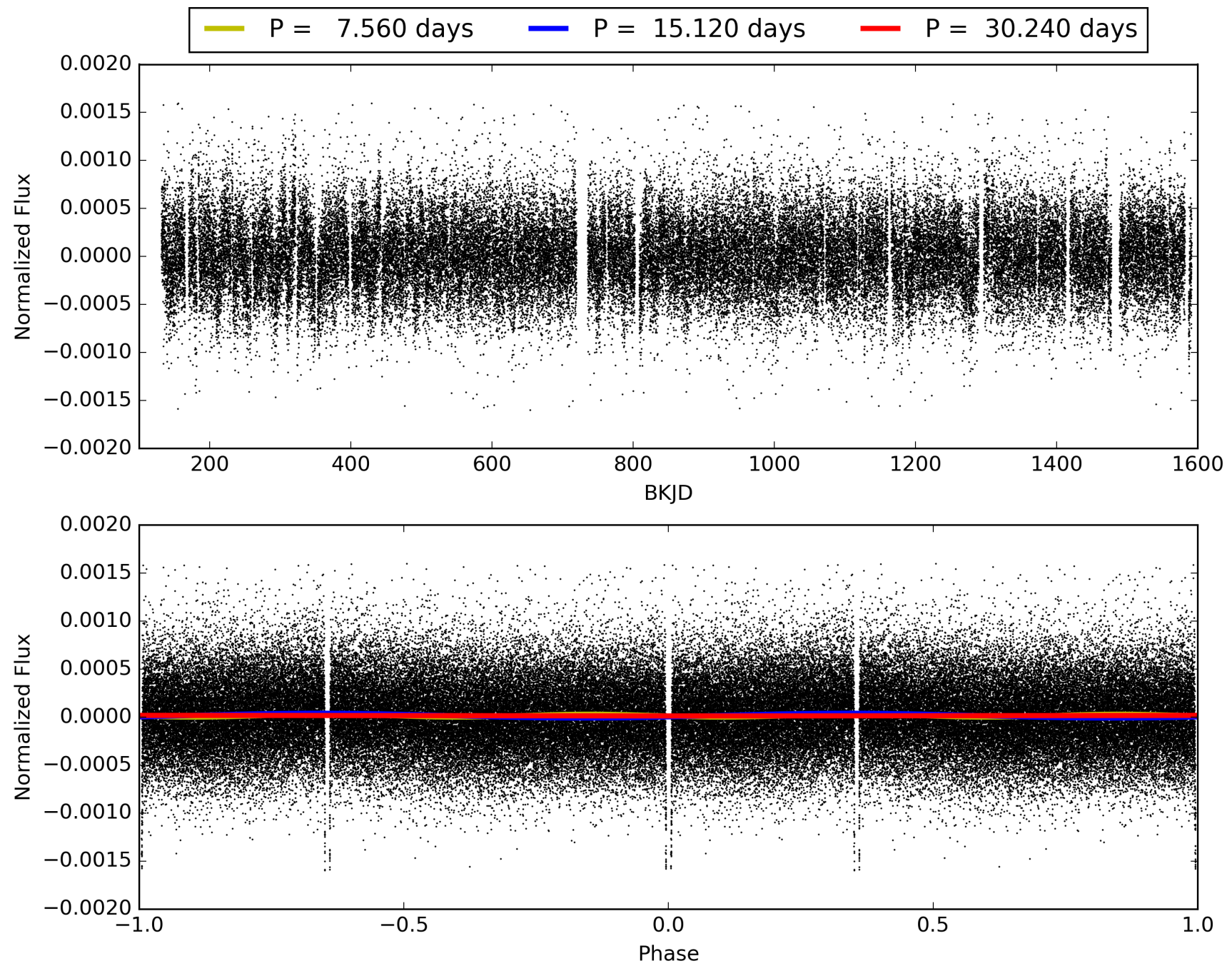
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:13:15 Z

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

TCE 008574270-02, PDC Light Curves

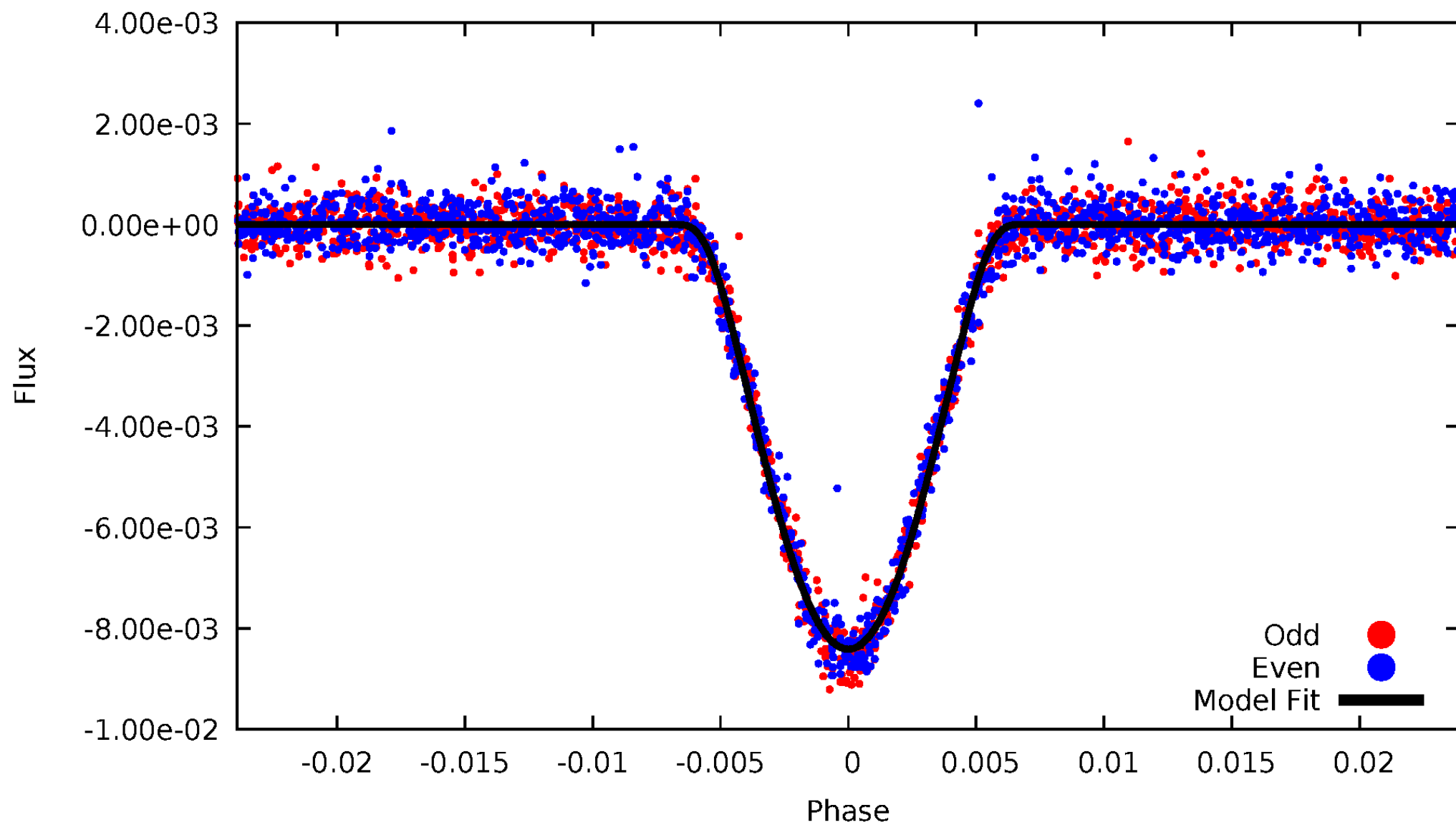


TCE 008574270-02



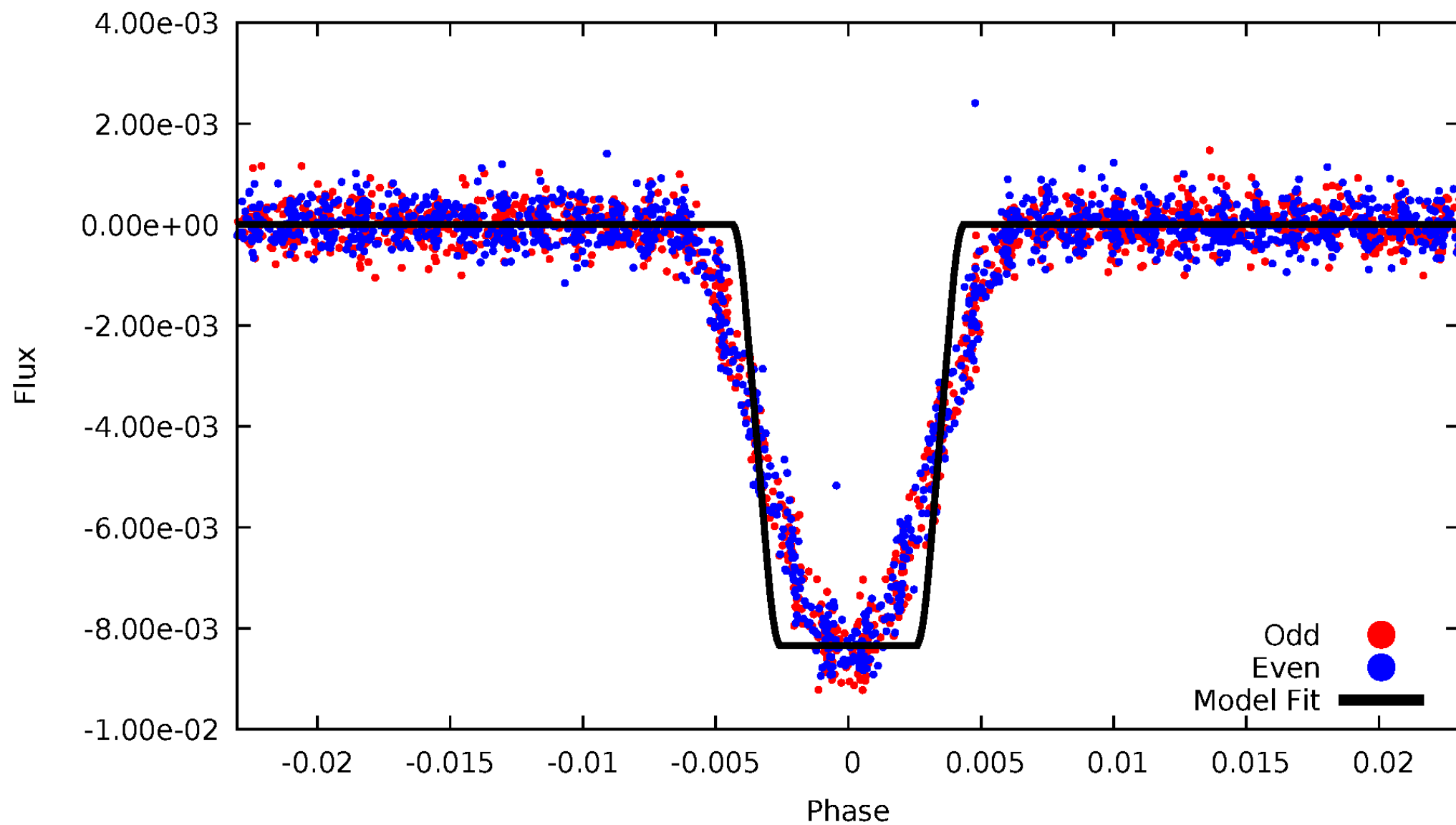
DV Odd/Even

TCE 008574270-02



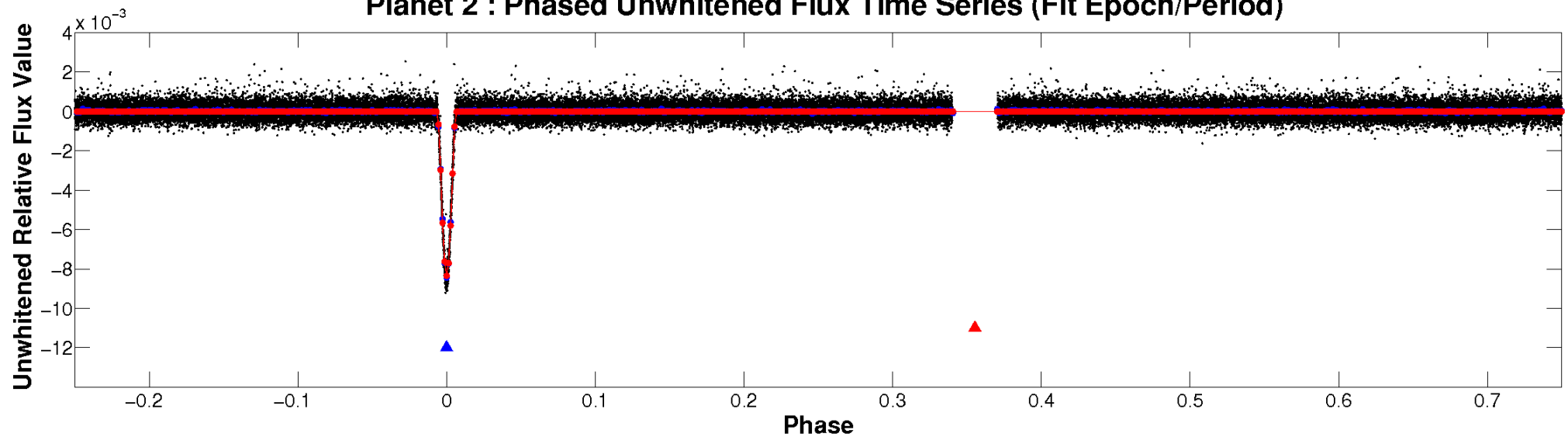
ALT Odd/Even

TCE 008574270-02

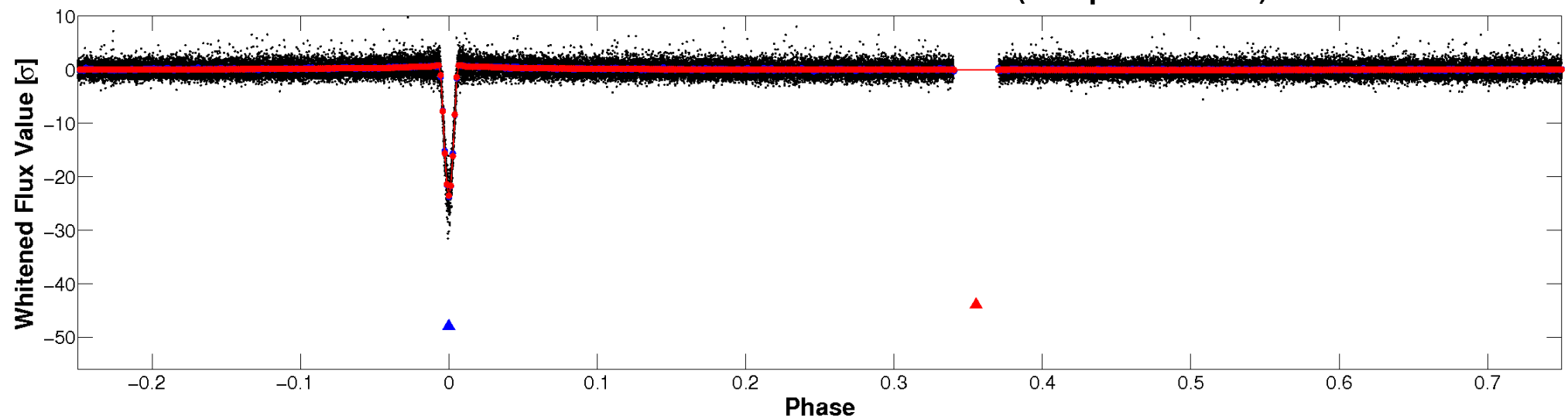


Non-Whitened Vs. Whitened Light Curve

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

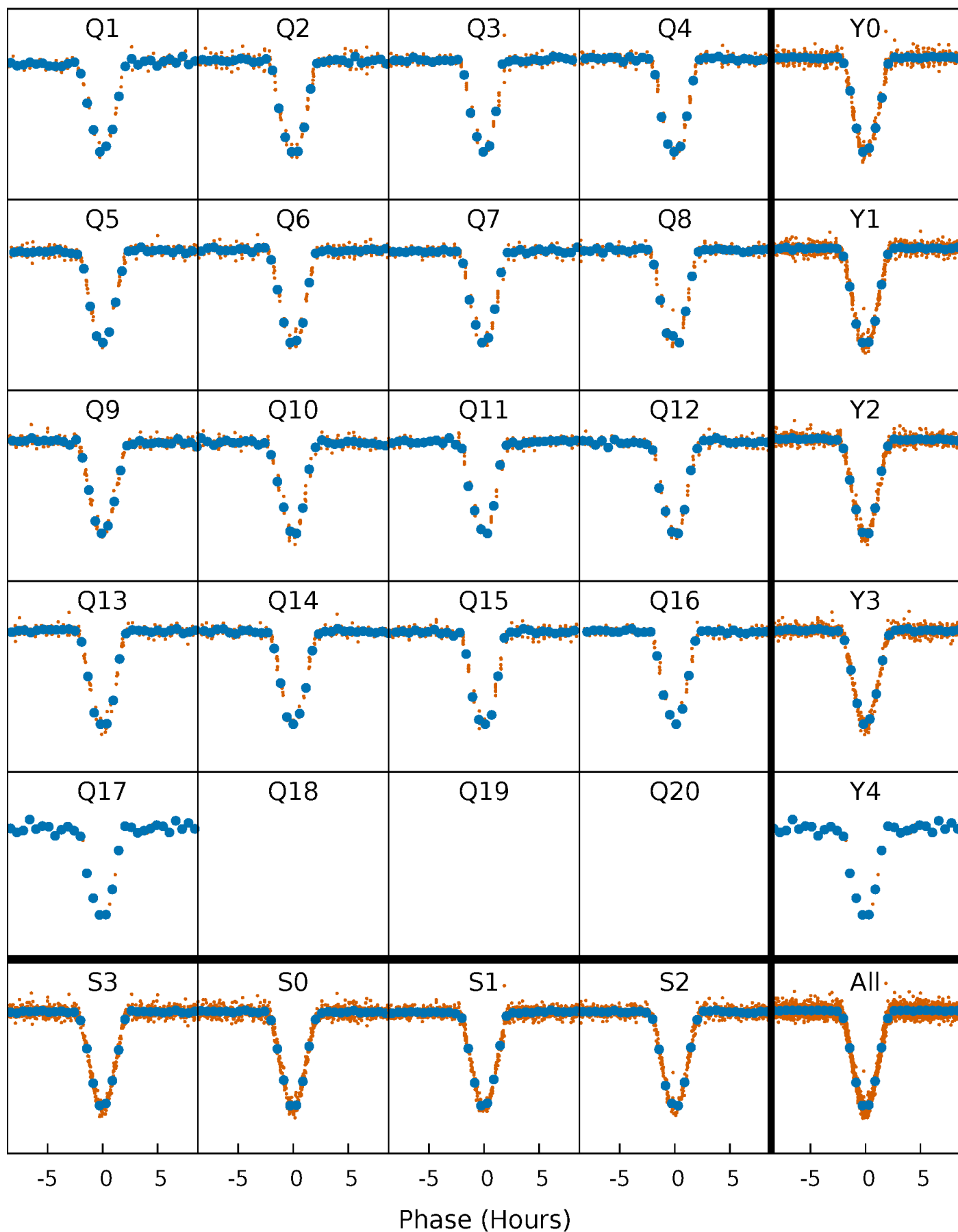


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



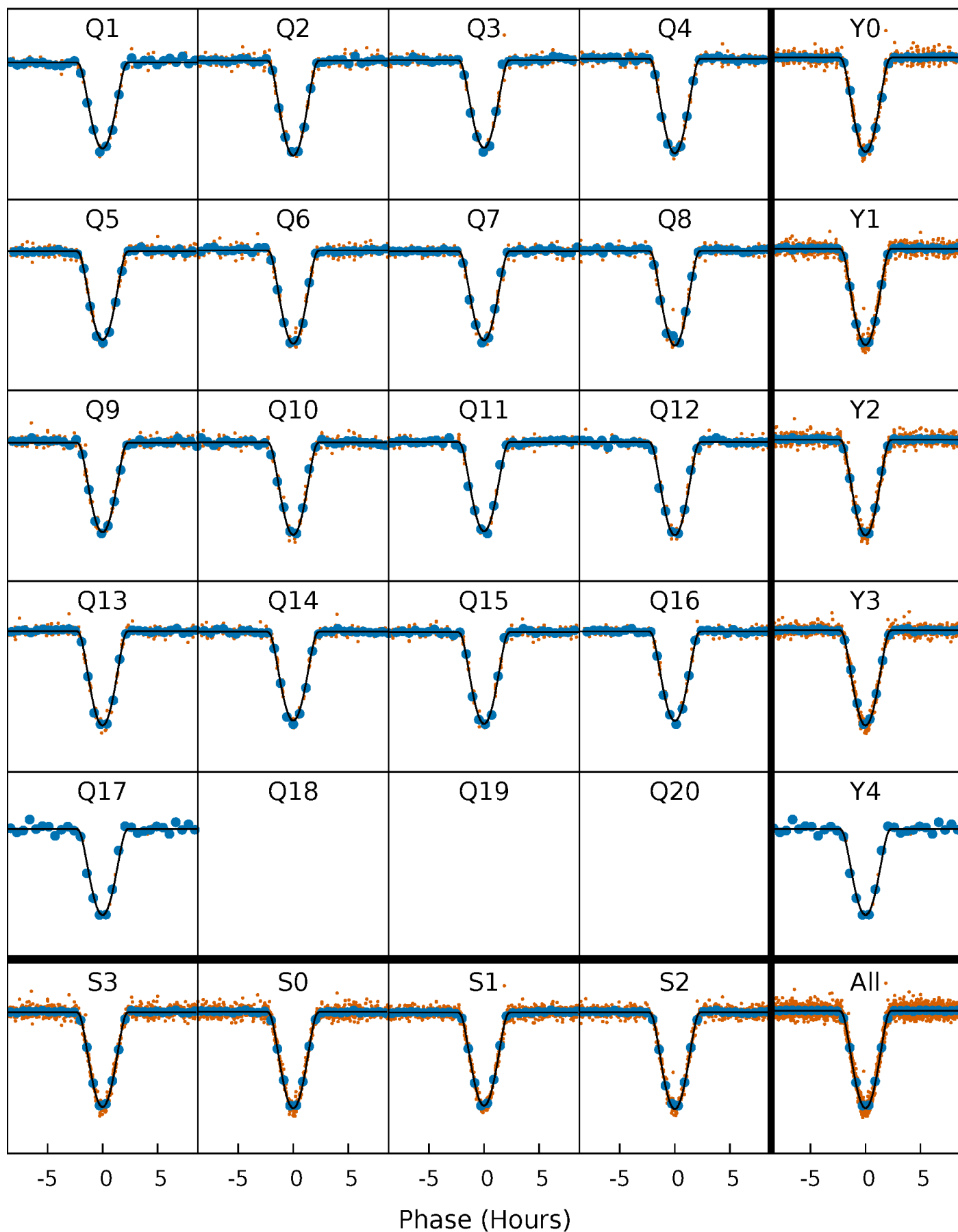
PDC Quarter-Phased Transit Curves

TCE 008574270-02 P= 15.120208 Days $T_0=134.323769$ (BKJD)



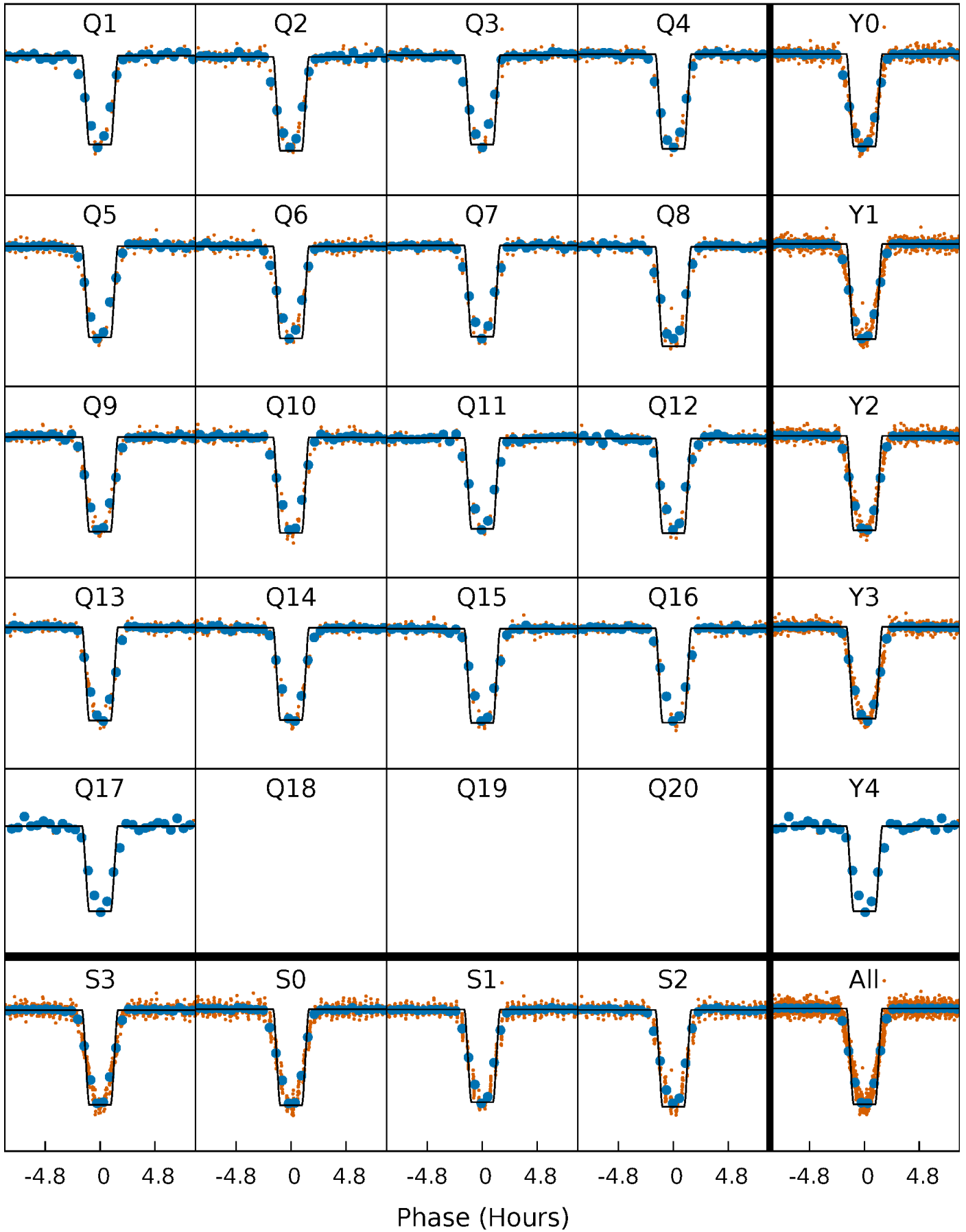
DV Quarter-Phased Transit Curves

TCE 008574270-02 P= 15.120208 Days $T_0=134.323769$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

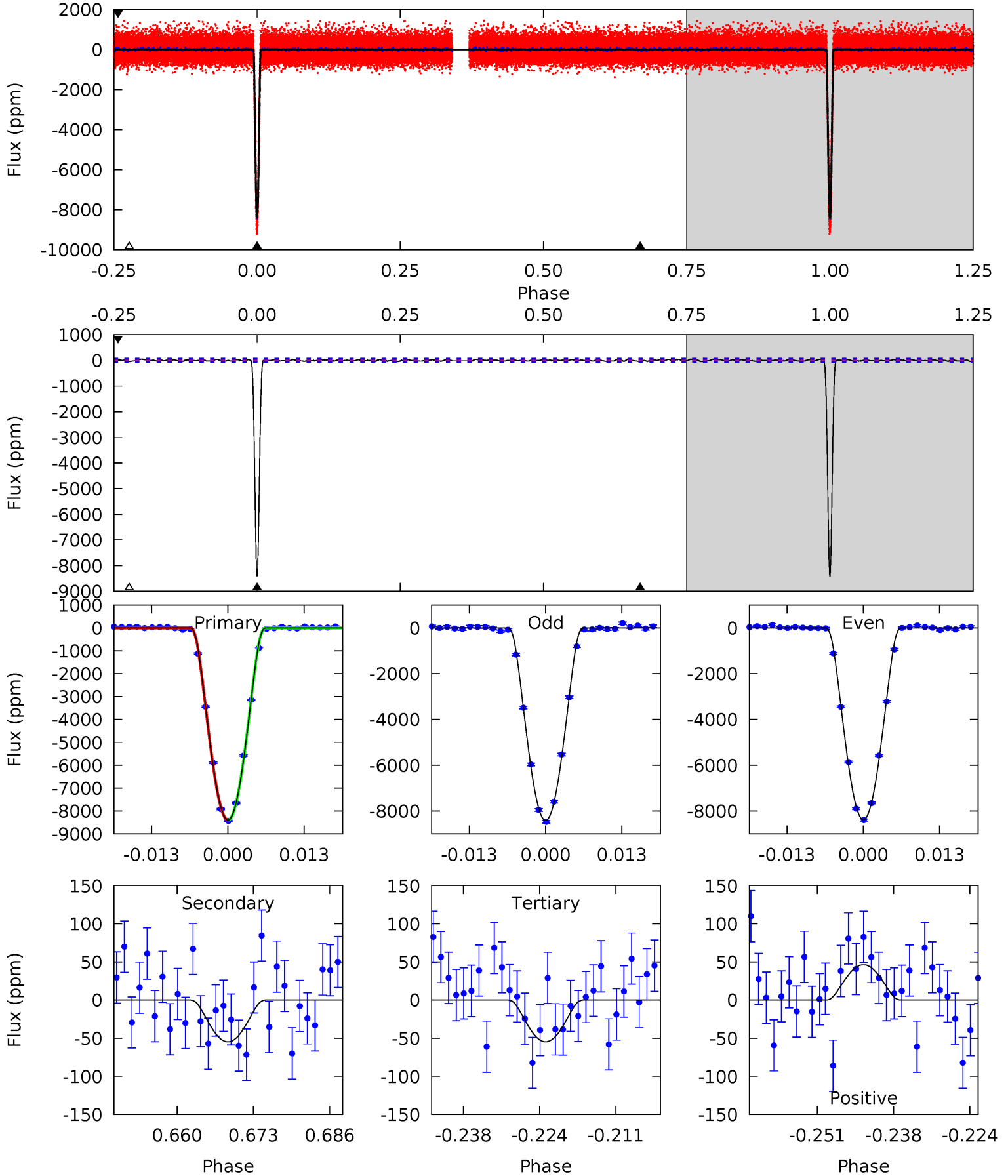
TCE 008574270-02 P= 15.120074 Days $T_0=134.329865$ (BKJD)



DV Model-Shift Uniqueness Test

008574270-02, P = 15.120208 Days, E = 119.203561 Days

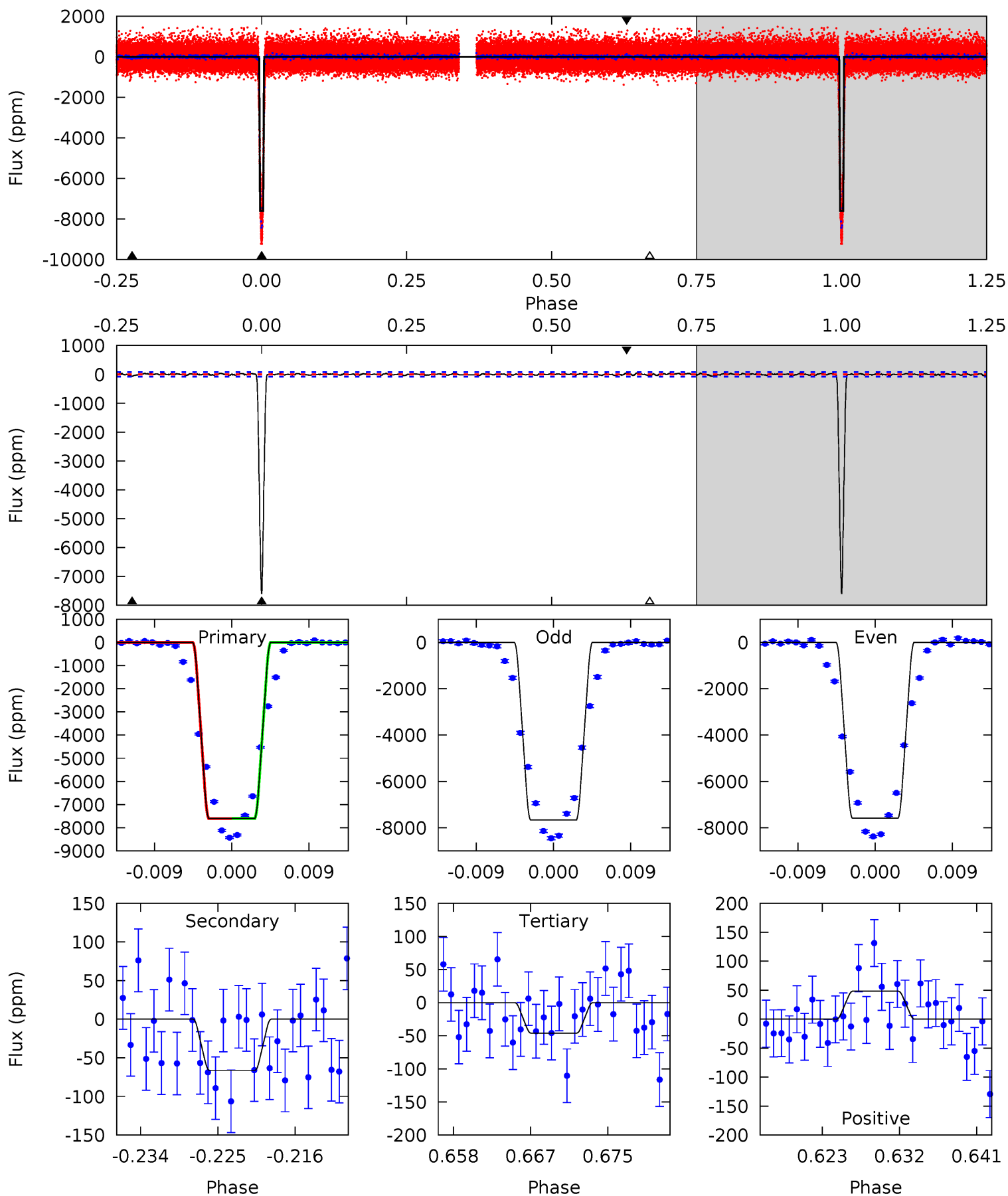
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
705.2	4.60	4.59	3.88	4.97	2.48	1.49	700.7	701.4	0.00	0.72	1.43	0.98	0.01	0.08



Alt Model-Shift Uniqueness Test

008574270-02, $P = 15.120074$ Days, $E = 119.209791$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
489.1	4.26	2.97	3.11	5.05	2.63	1.06	486.1	486.0	1.29	1.15	2.71	1.00	0.01	0.26



Stellar Parameters For KIC 008574270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5232^{+157}_{-141}	$4.554^{+0.083}_{-0.060}$	$-0.520^{+0.300}_{-0.300}$	$0.725^{+0.081}_{-0.073}$	$0.686^{+0.091}_{-0.042}$	$2.540^{+0.910}_{-0.508}$
	+3%/-3%	+2%/-1%	+58%/-58%	+11%/-10%	+13%/-6%	+36%/-20%
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 008574270-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-55 ± 12	$11.98^{+1.60}_{-1.83}$	841^{+32}_{-34}	2087^{+95}_{-89}	$2.382^{+1.123}_{-0.735}$
Alt.	-66 ± 16	$7.38^{+1.65}_{-1.66}$	842^{+33}_{-30}	2406^{+176}_{-134}	$7.580^{+5.149}_{-2.850}$

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 $A_{obs} \gg 1.0$

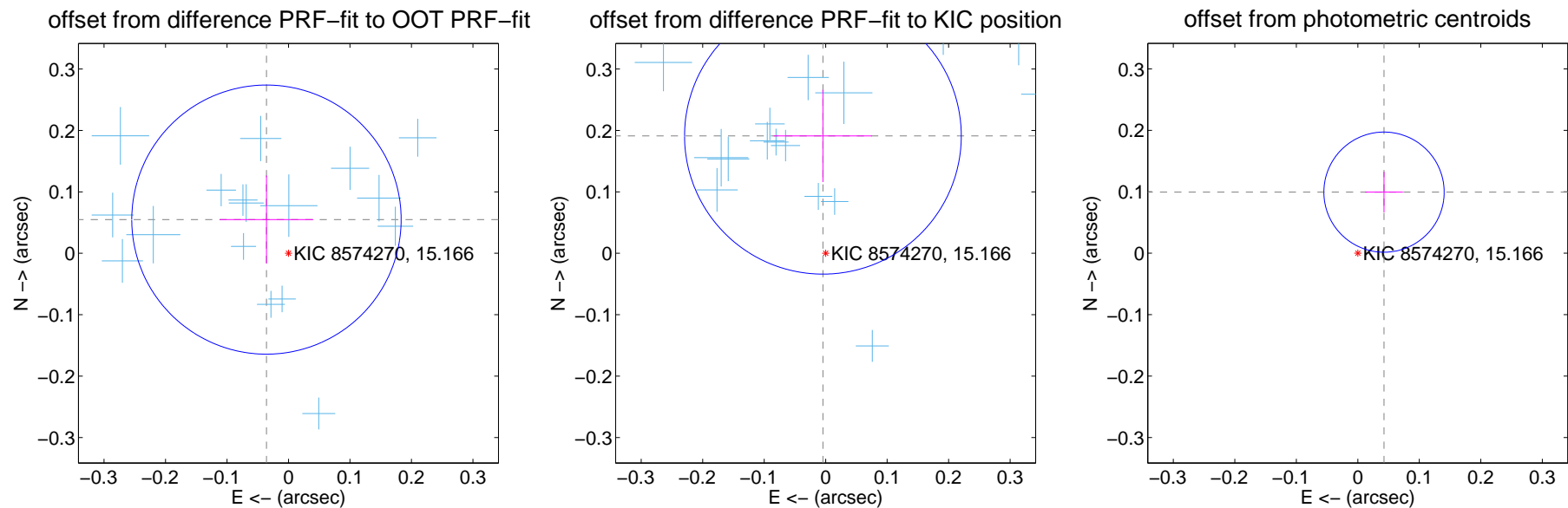
DV Centroid Data

Supplemental centroid analysis for 008574270-02. Kepler magnitude: 15.17. Transit SNR 413.41

There are 17 quarters with good PRF difference image offsets

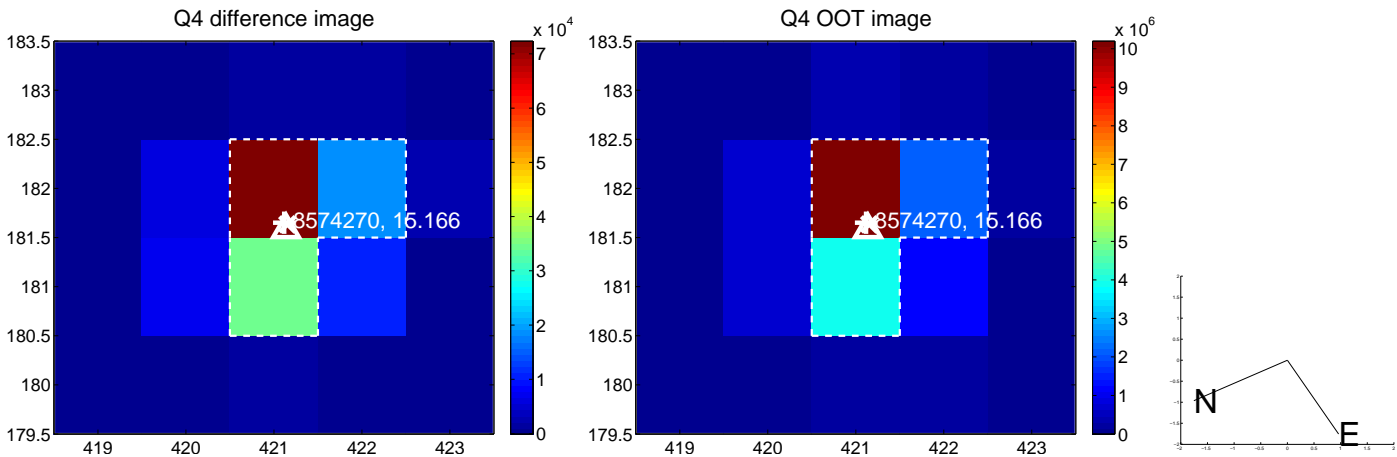
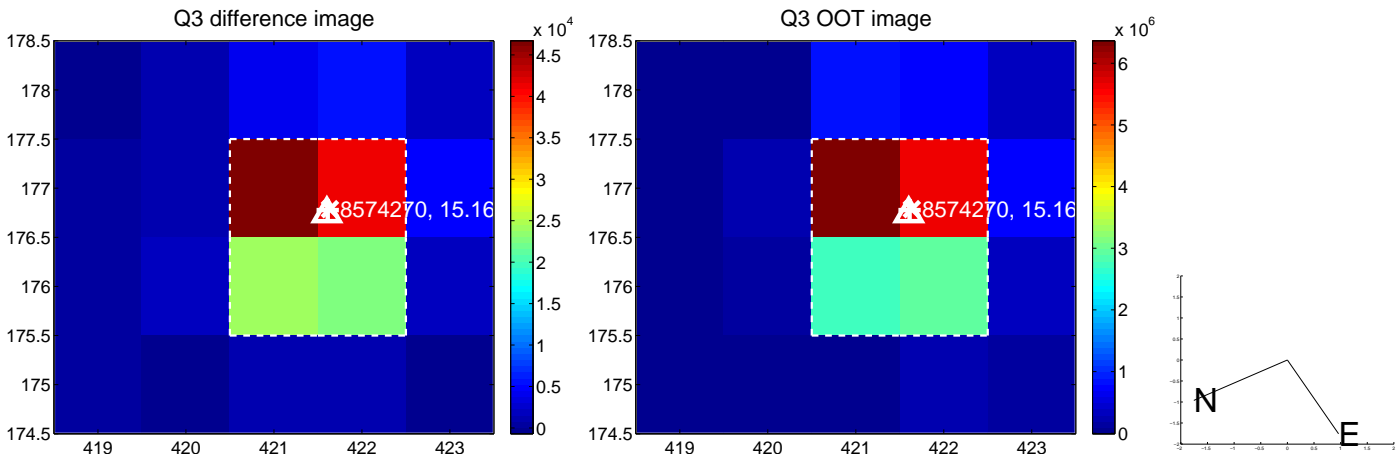
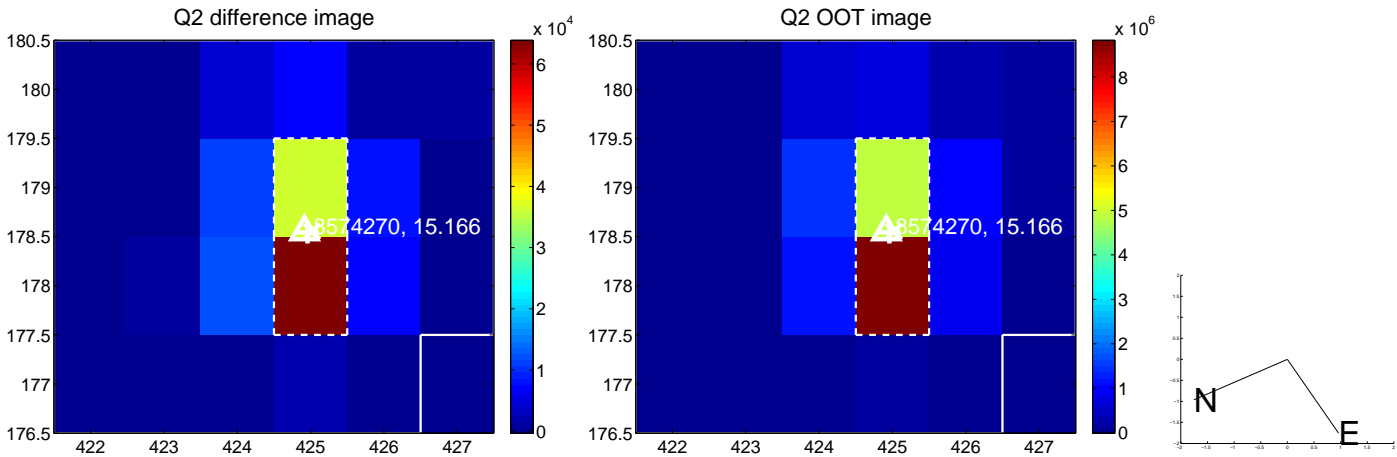
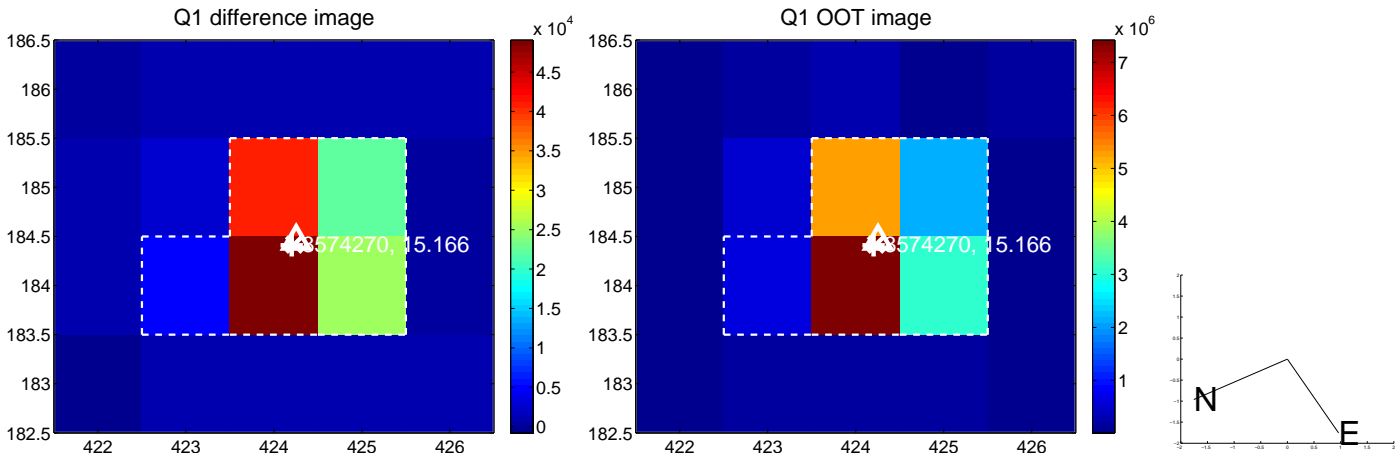
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.065 ± 0.073	0.90	0.036 ± 0.076	0.055 ± 0.072
PRF-fit source offset from KIC position	0.191 ± 0.075	2.55	0.004 ± 0.080	0.191 ± 0.075
photometric centroid source offset	0.11 ± 0.03	3.32	-0.04 ± 0.03	0.10 ± 0.03

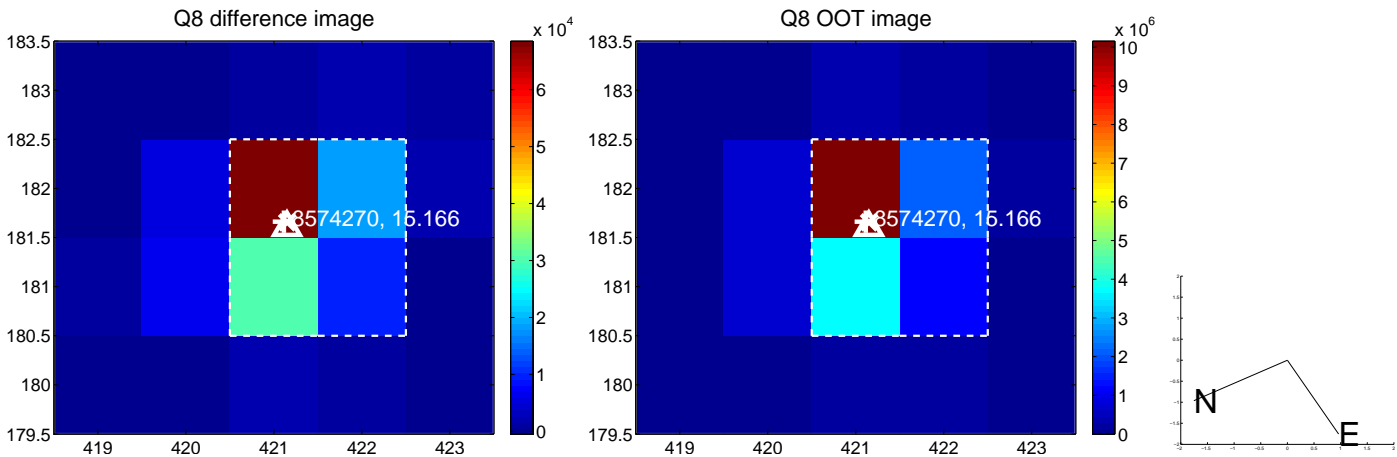
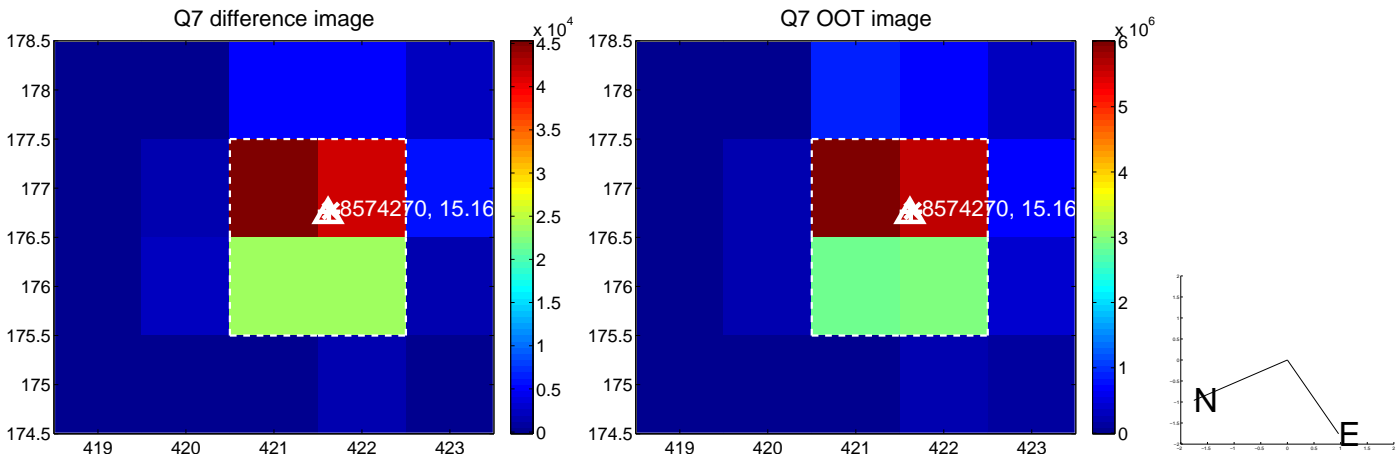
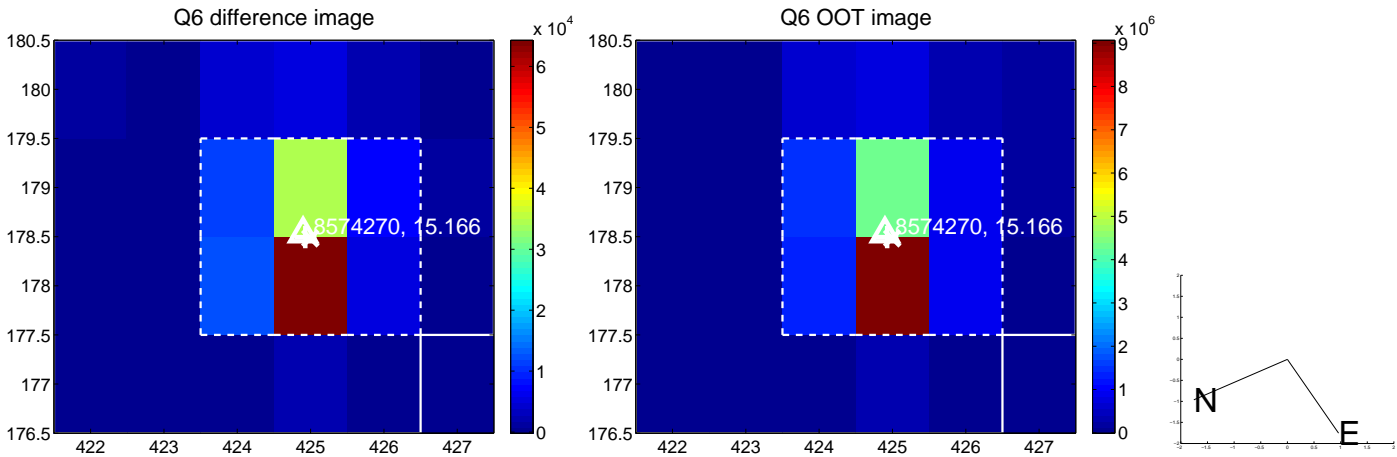
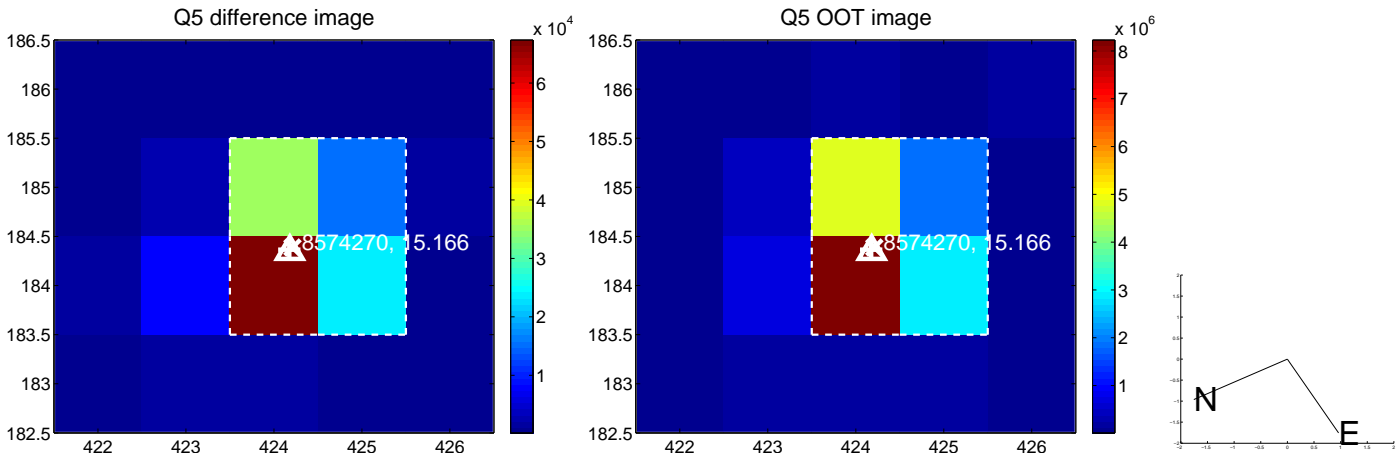


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

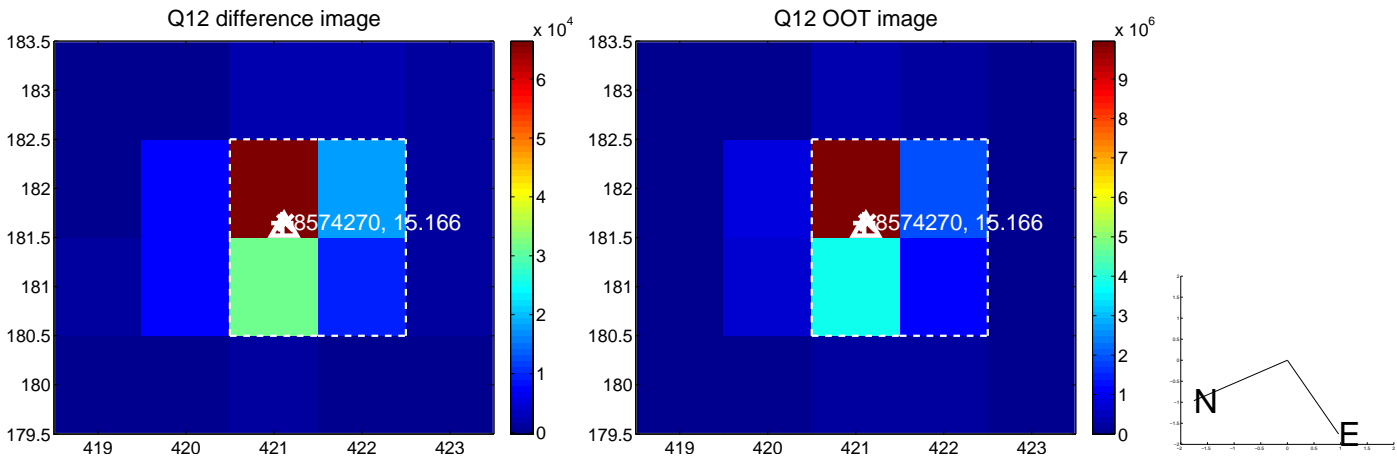
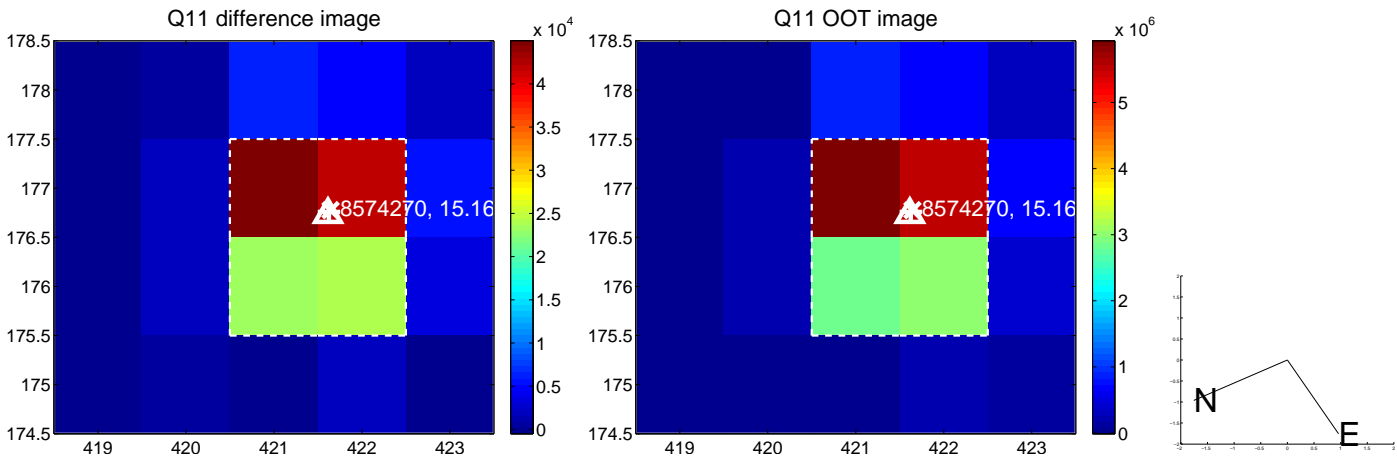
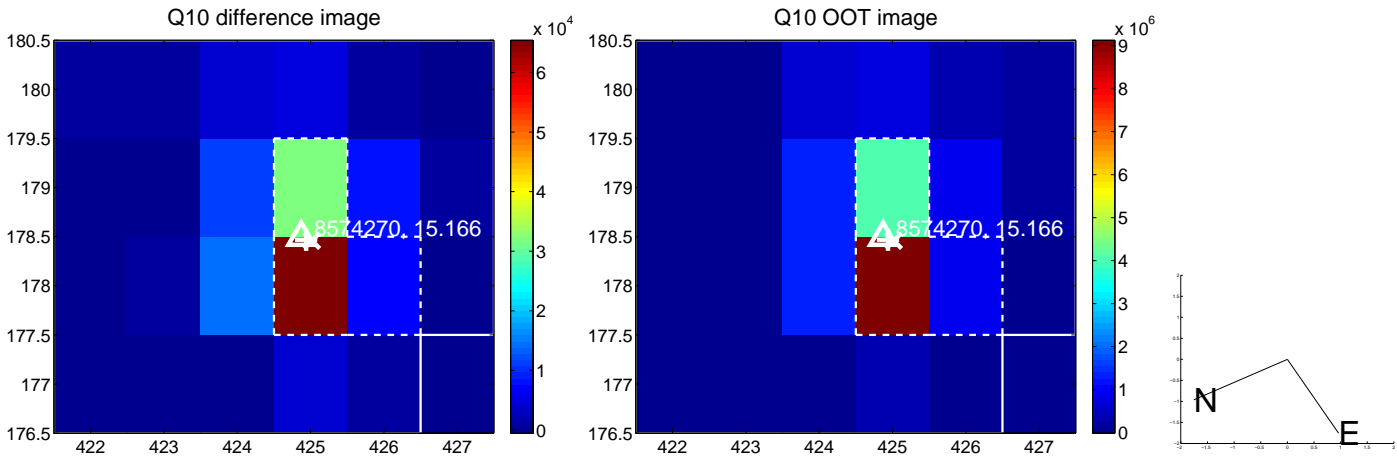
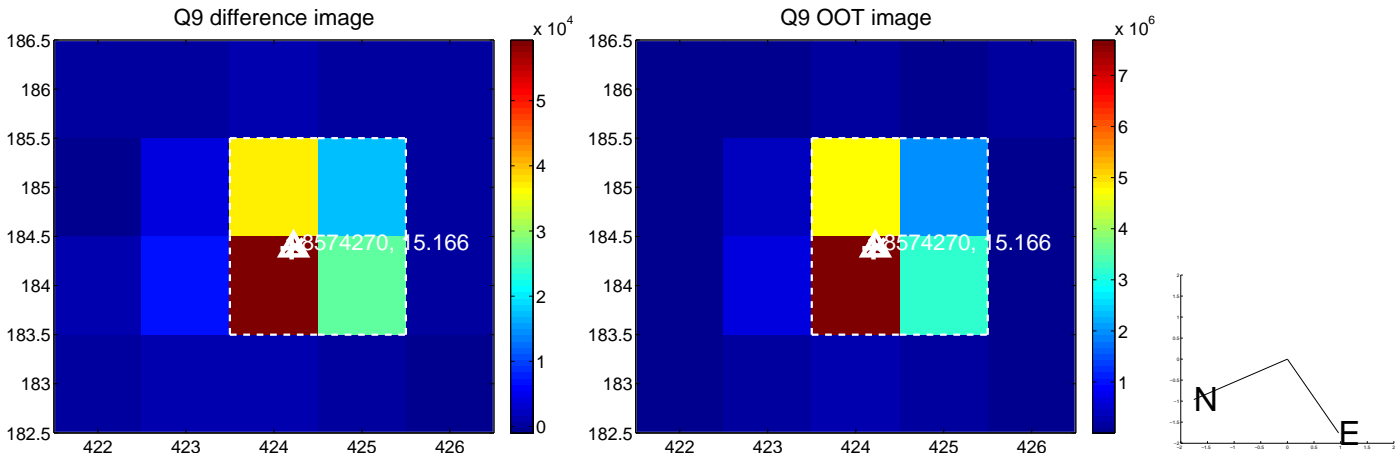
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



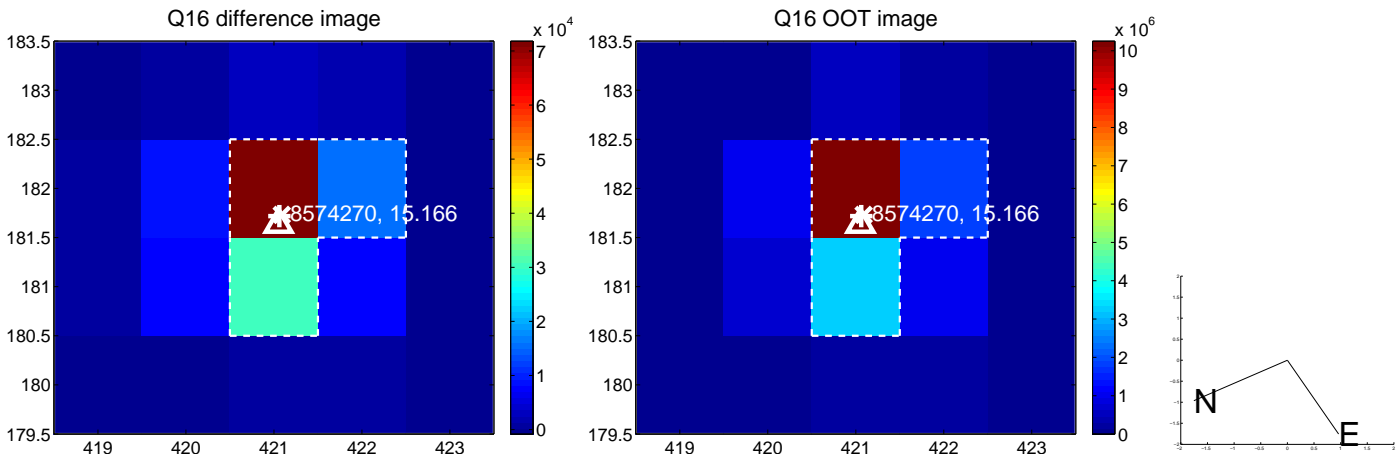
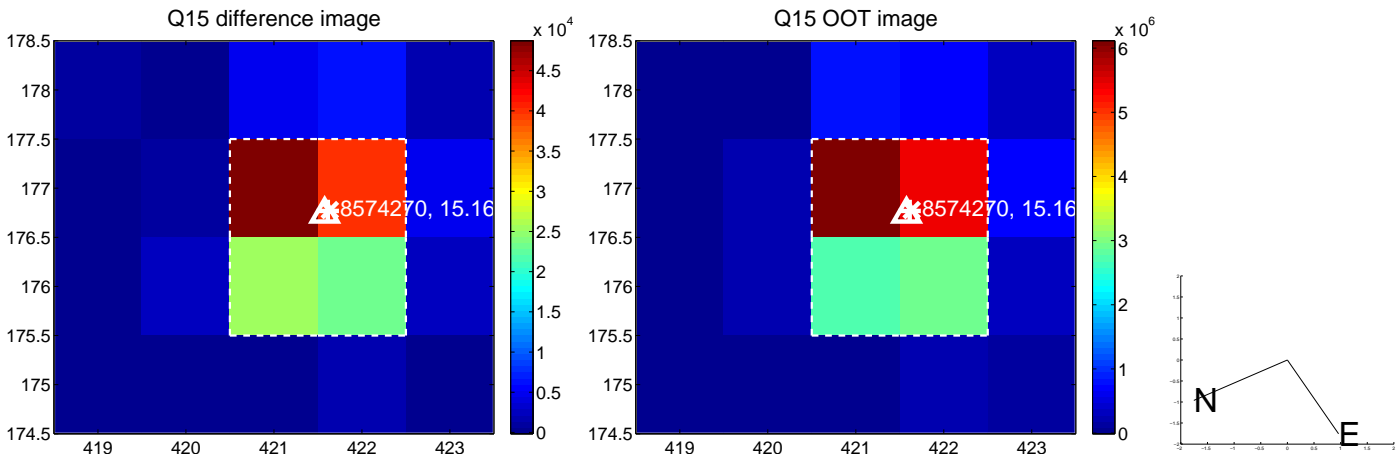
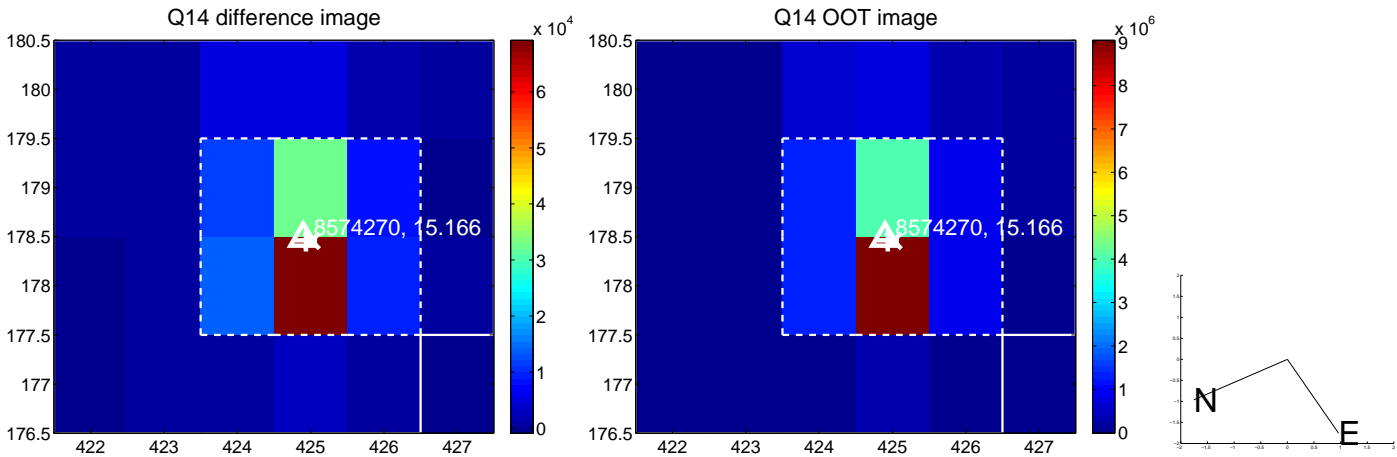
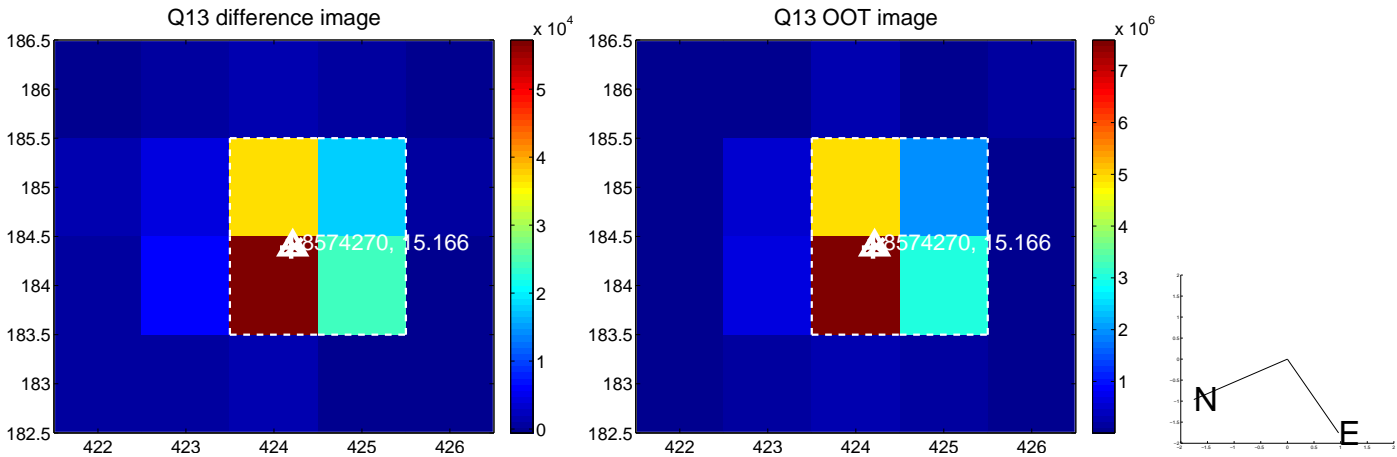
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



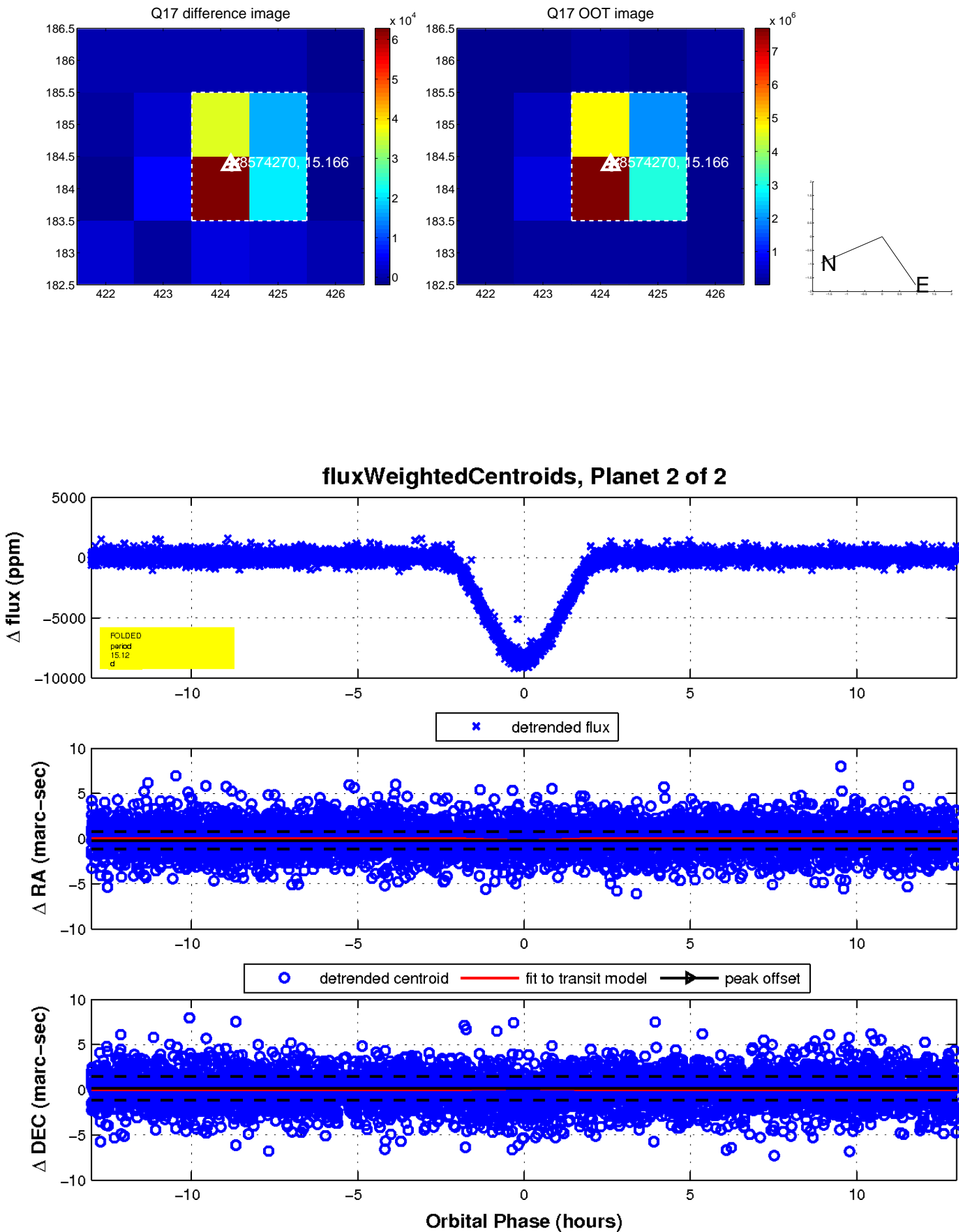
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

