

KIC 007449844

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})
007449844-01	OBS	1452.01	1.152268	132.114201	1138.9	3.885	349.6	77.4	15.11	5560	75.29	0.00
007449844-02	OBS	No	1.151223	131.712688	100.8	2.353	8.8	7.6	15.11	5560	18.23	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007449844-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
007449844-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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 007449844-01

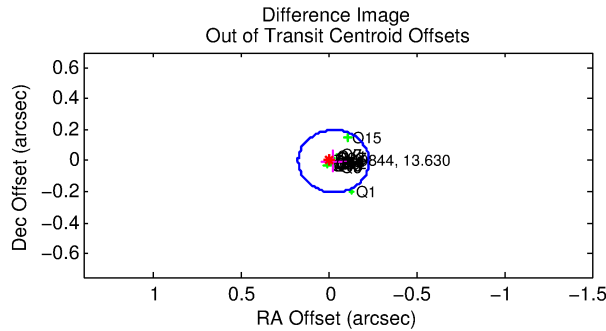
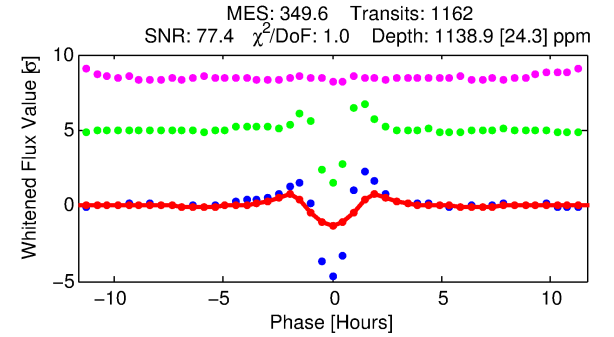
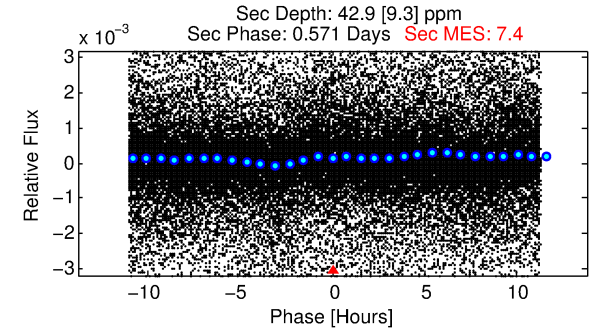
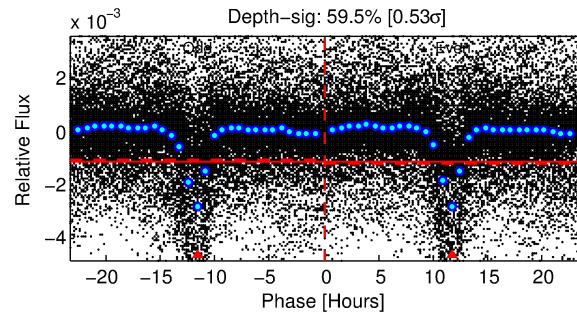
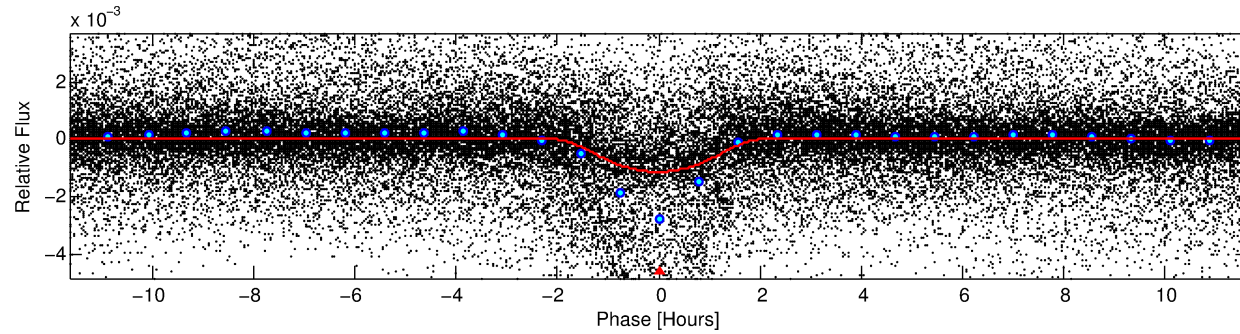
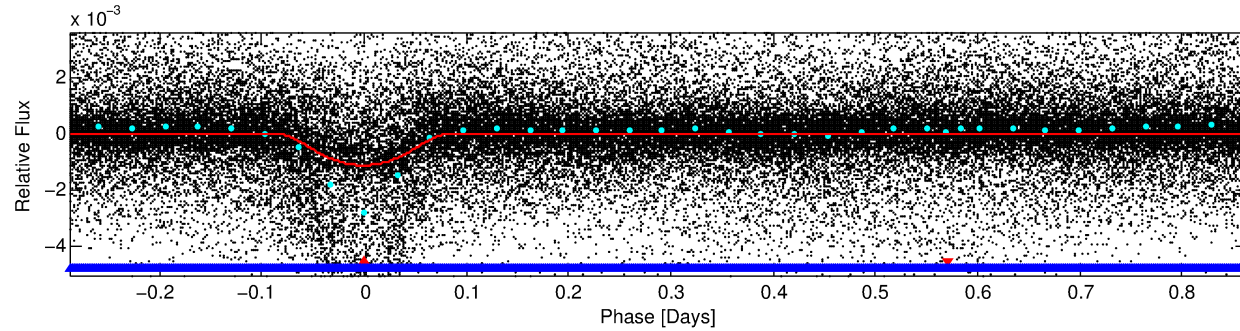
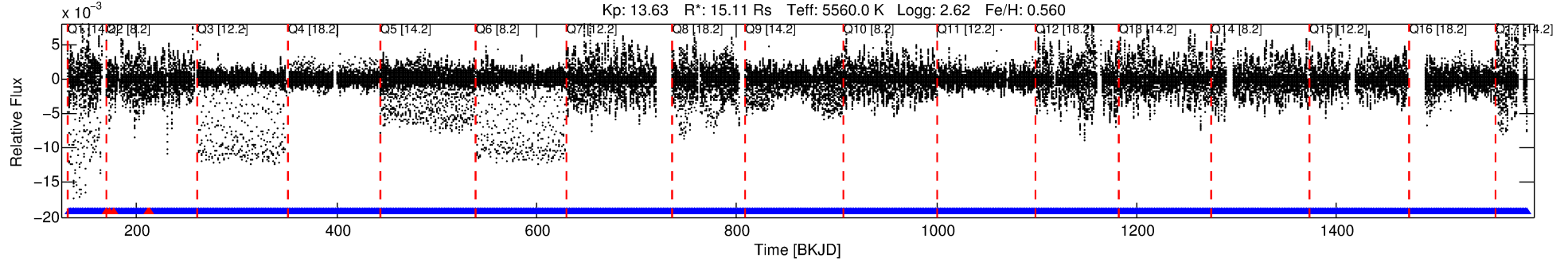
No Significant Match Found

DV One-Page Summary

KIC: 7449844 Candidate: 1 of 2 Period: 1.152 d

KOI: K01452 Corr: No Ephemeris Match

Kp: 13.63 R*: 15.11 Rs Teff: 5560.0 K Logg: 2.62 Fe/H: 0.560



DV Fit Results:

Period = 1.15227 [0.00000] d
Epoch = 132.1142 [0.0004] BKJD
Rp/R* = 0.0457 [0.0028]
a/R* = 1.32 [0.01]
b = 0.97 [0.01]
Seff = N/A
Teq = N/A
Rp = 75.29 [20.91] Re
a = N/A
Ag = N/A
Teffp = N/A

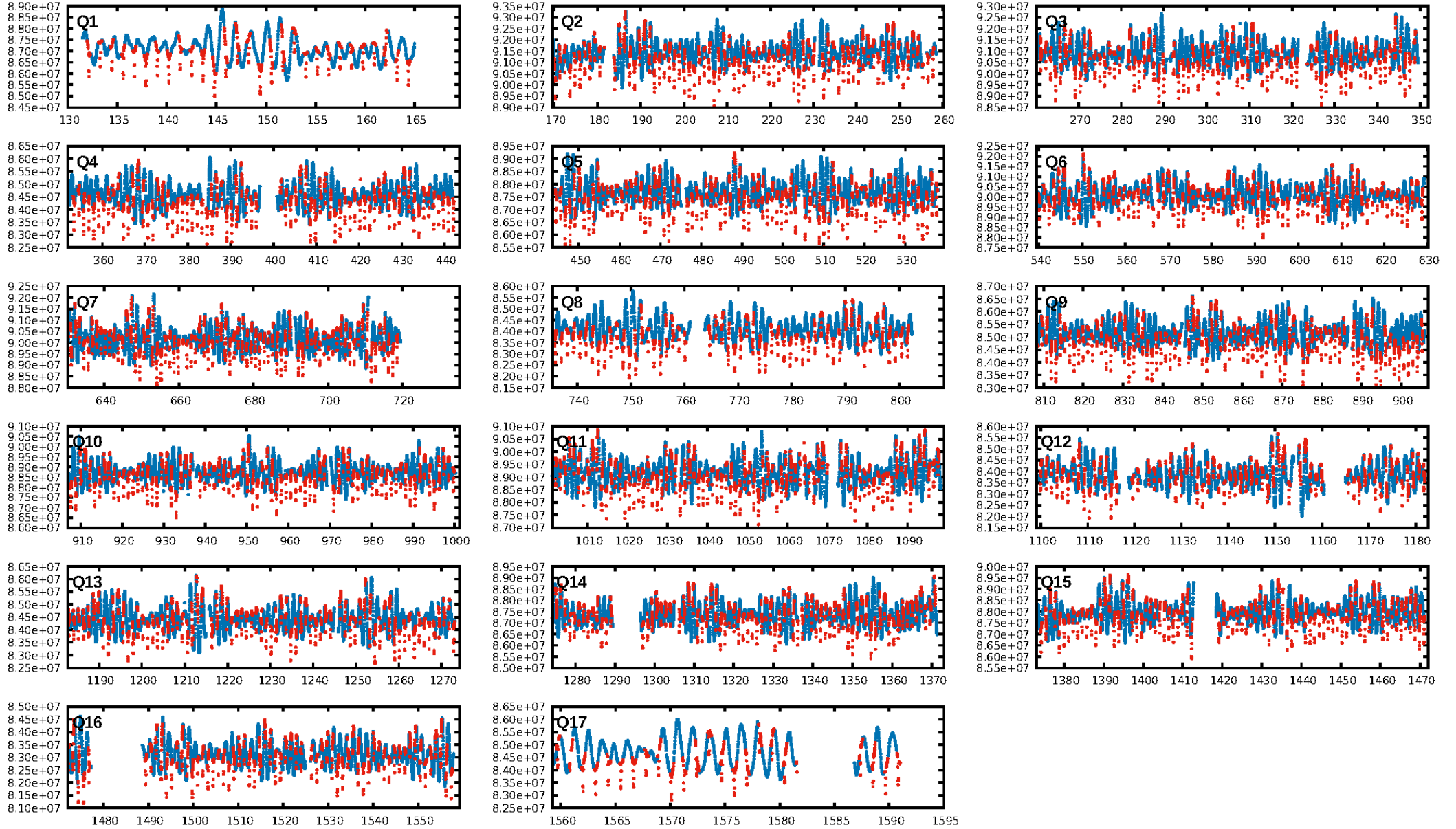
DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.01σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [1103/1109]
GhostDiagnostic-chr: 0.5005
Centroid-sig: 0.0%
Centroid-so: 0.225 arcsec [8.31σ]
OotOffset-rm: 0.027 arcsec [0.41σ]
KicOffset-rm: 0.059 arcsec [0.87σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.47 [8/17]

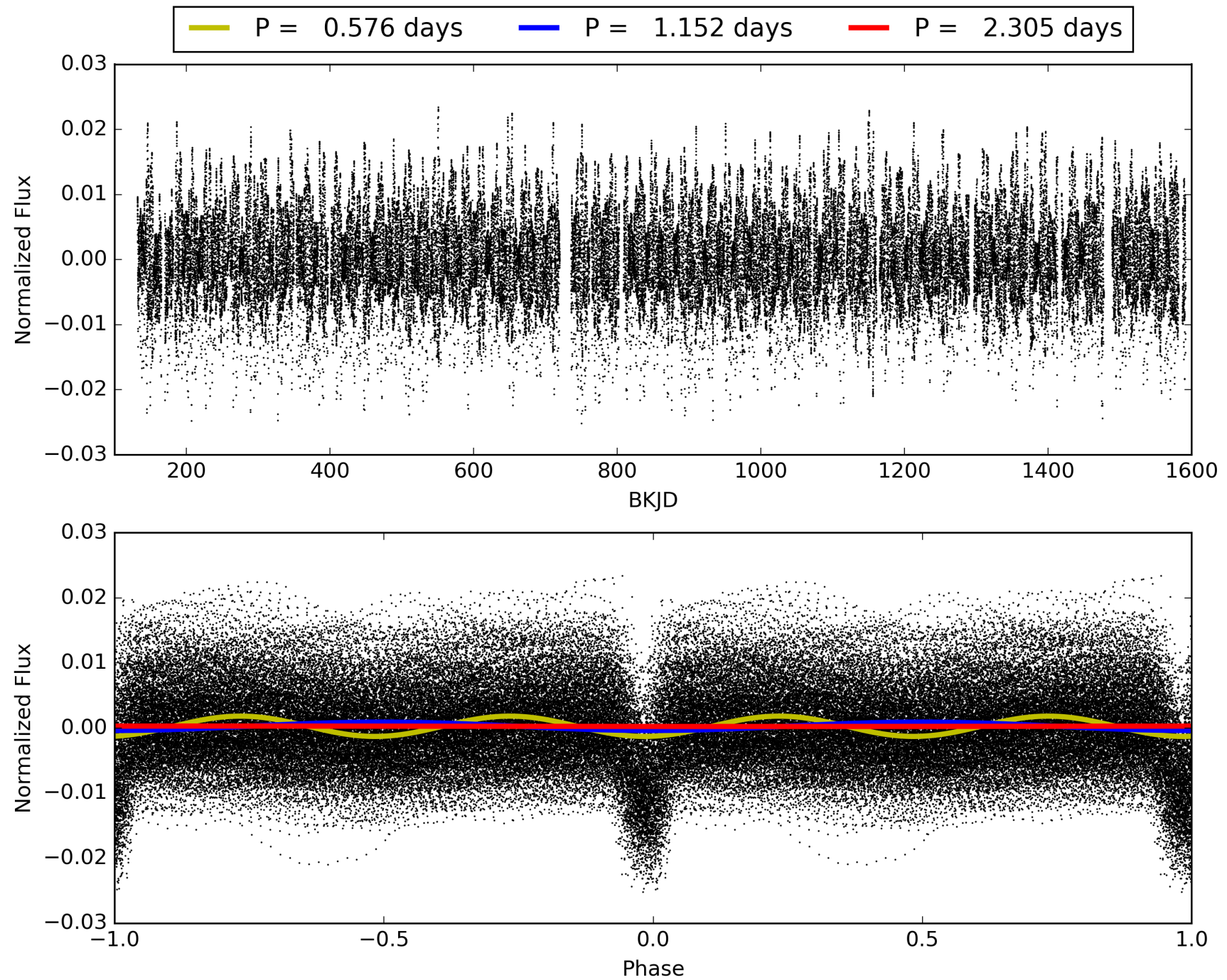
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:53:13 Z

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

TCE 007449844-01, PDC Light Curves

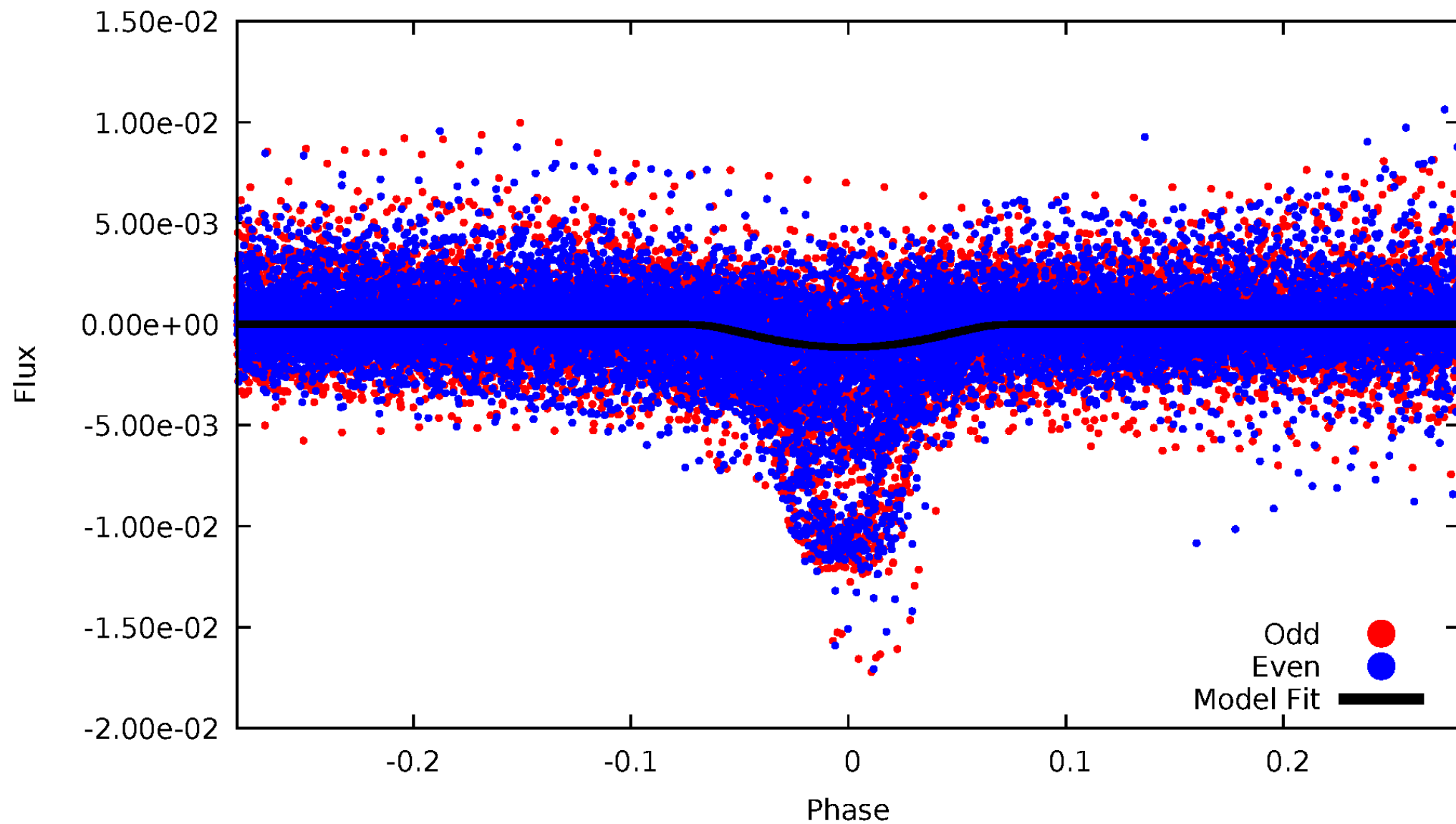


TCE 007449844-01



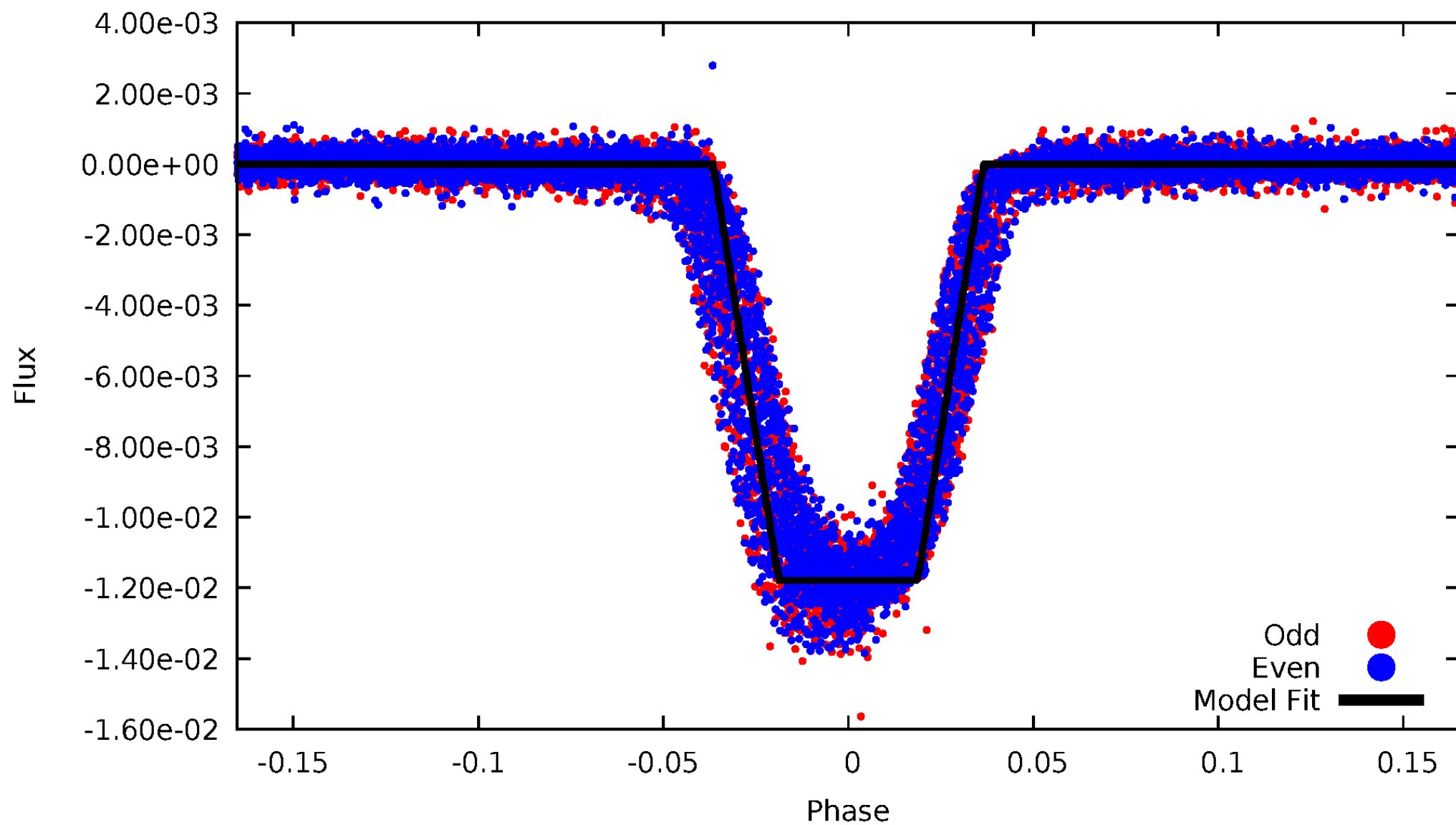
DV Odd/Even

TCE 007449844-01

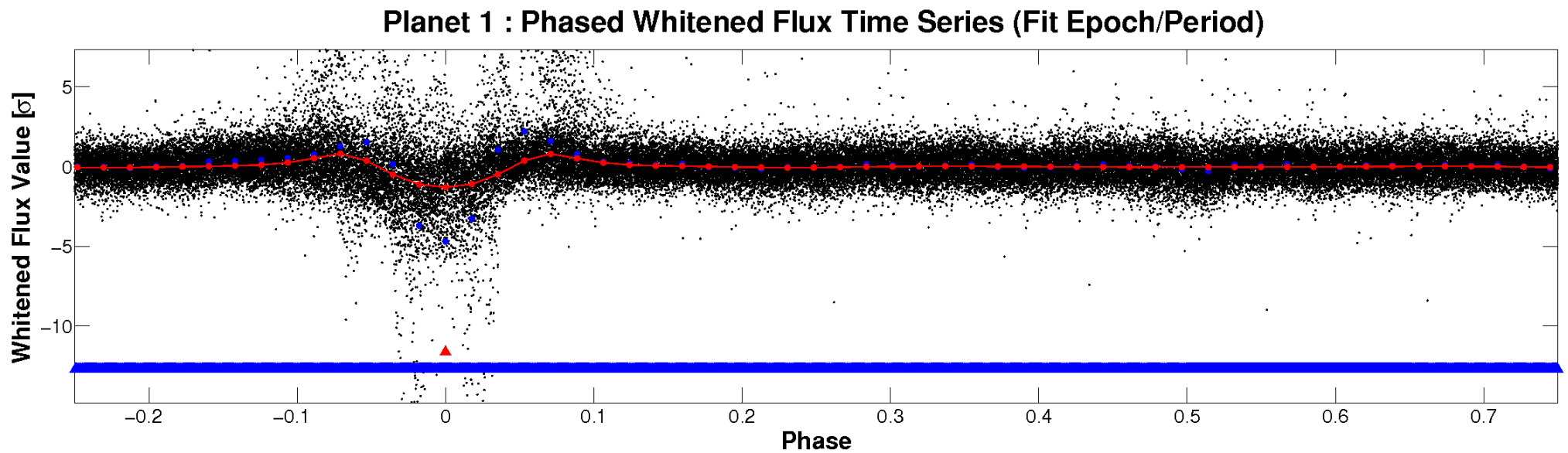
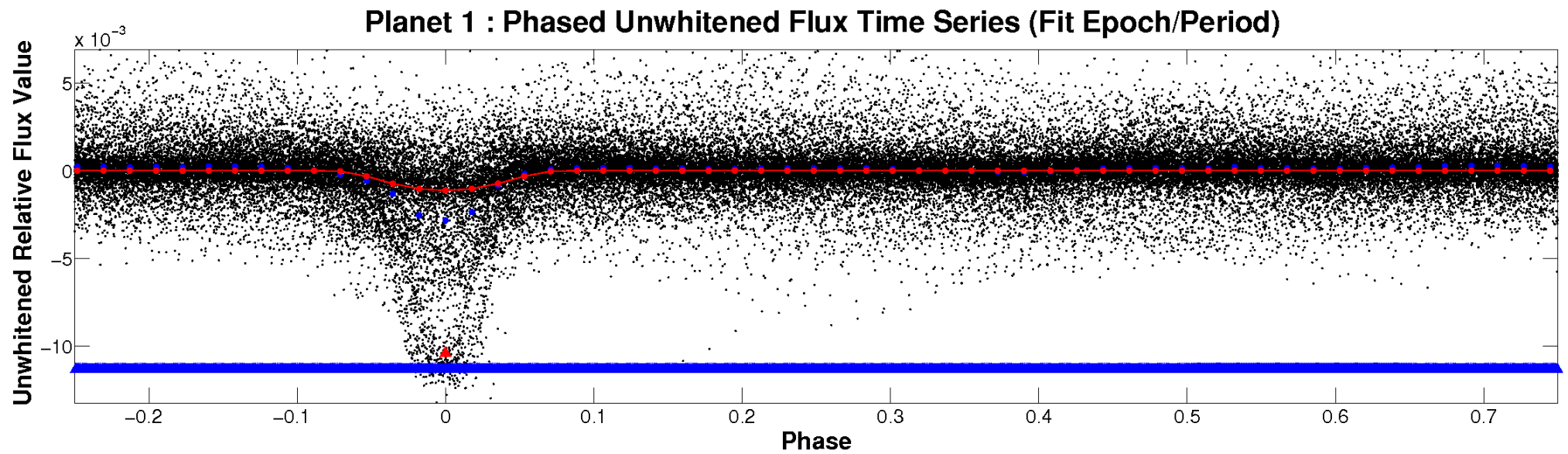


ALT Odd/Even

TCE 007449844-01

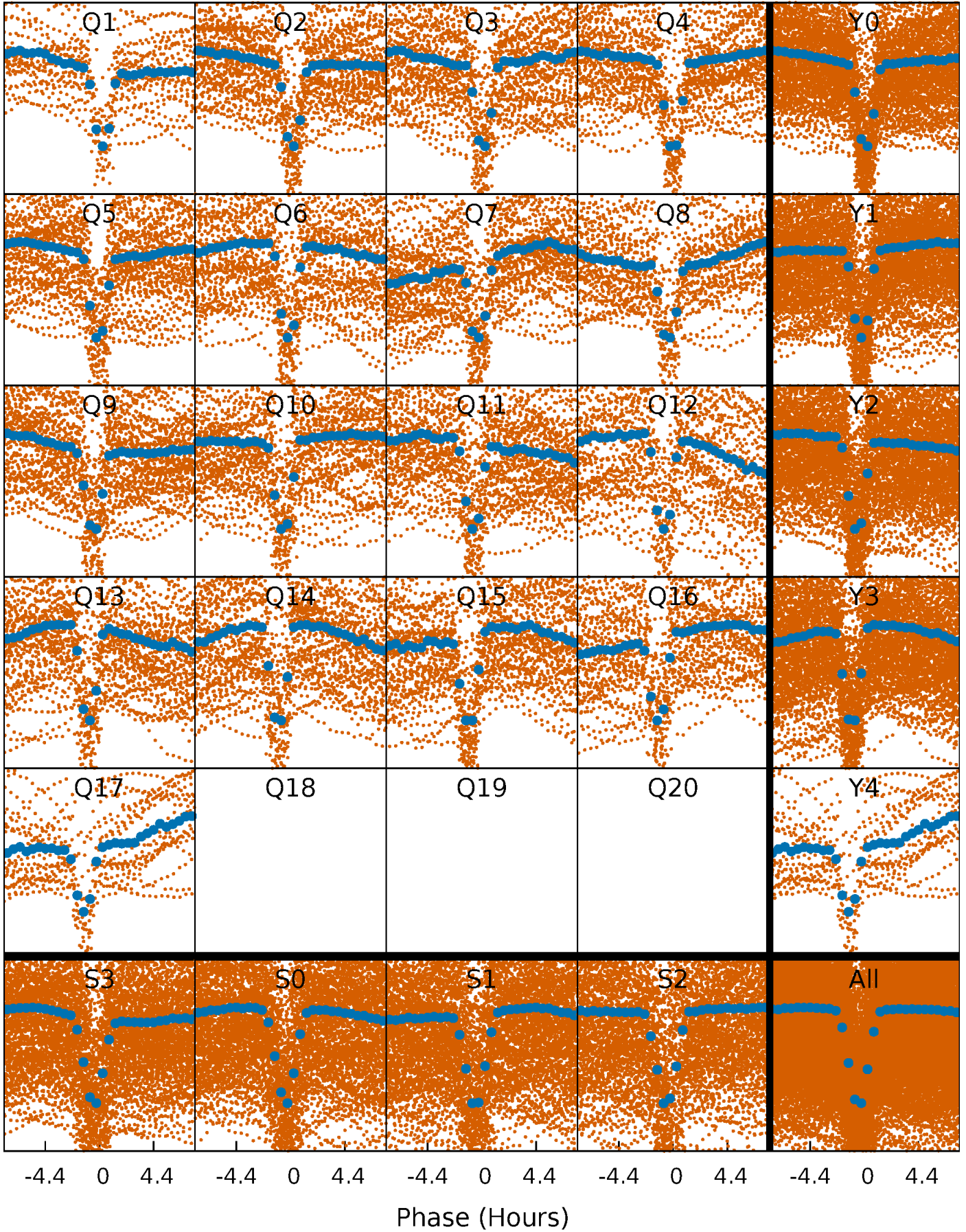


Non-Whitened Vs. Whitened Light Curve



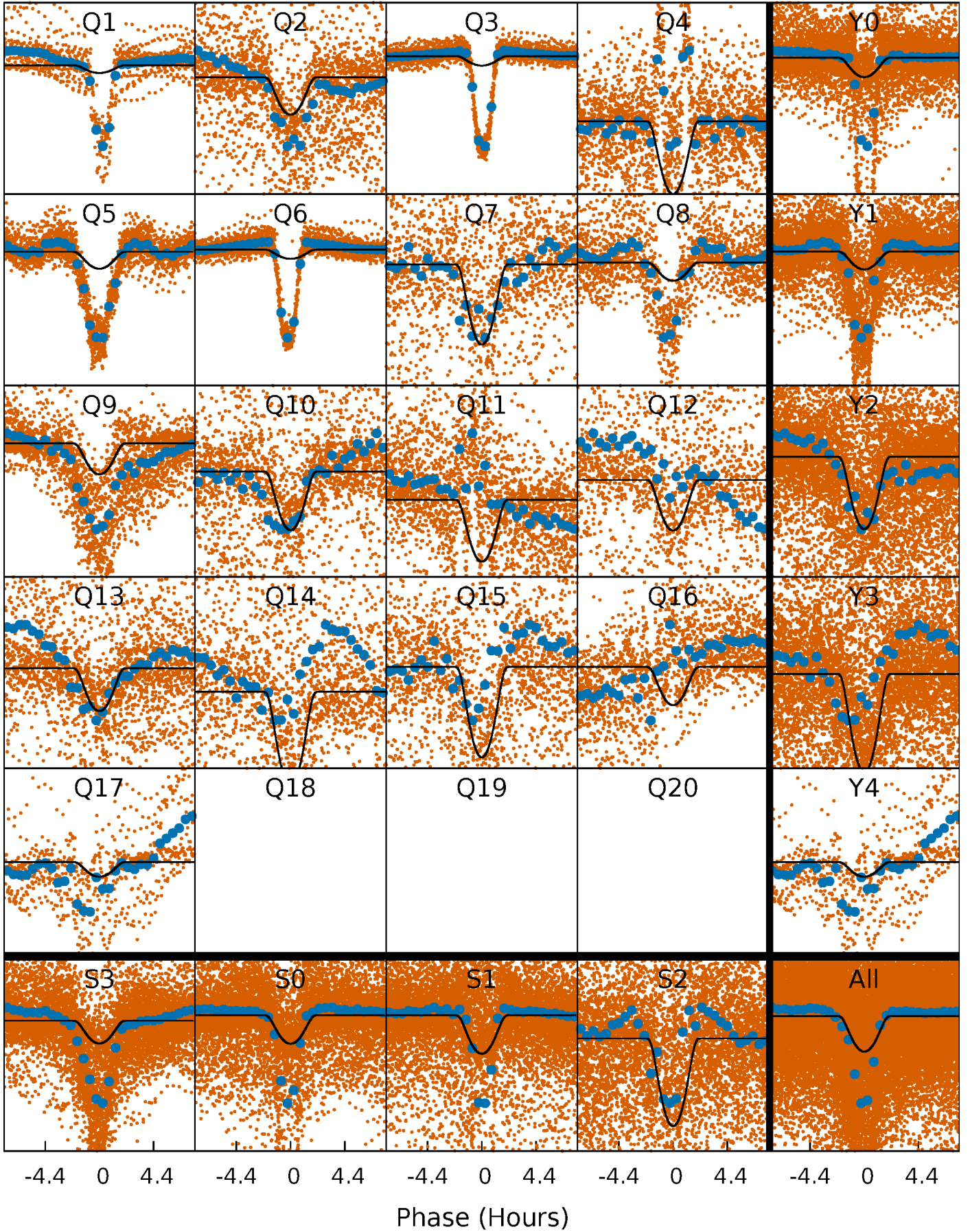
PDC Quarter-Phased Transit Curves

TCE 007449844-01 P= 1.152268 Days $T_0=132.114201$ (BKJD)



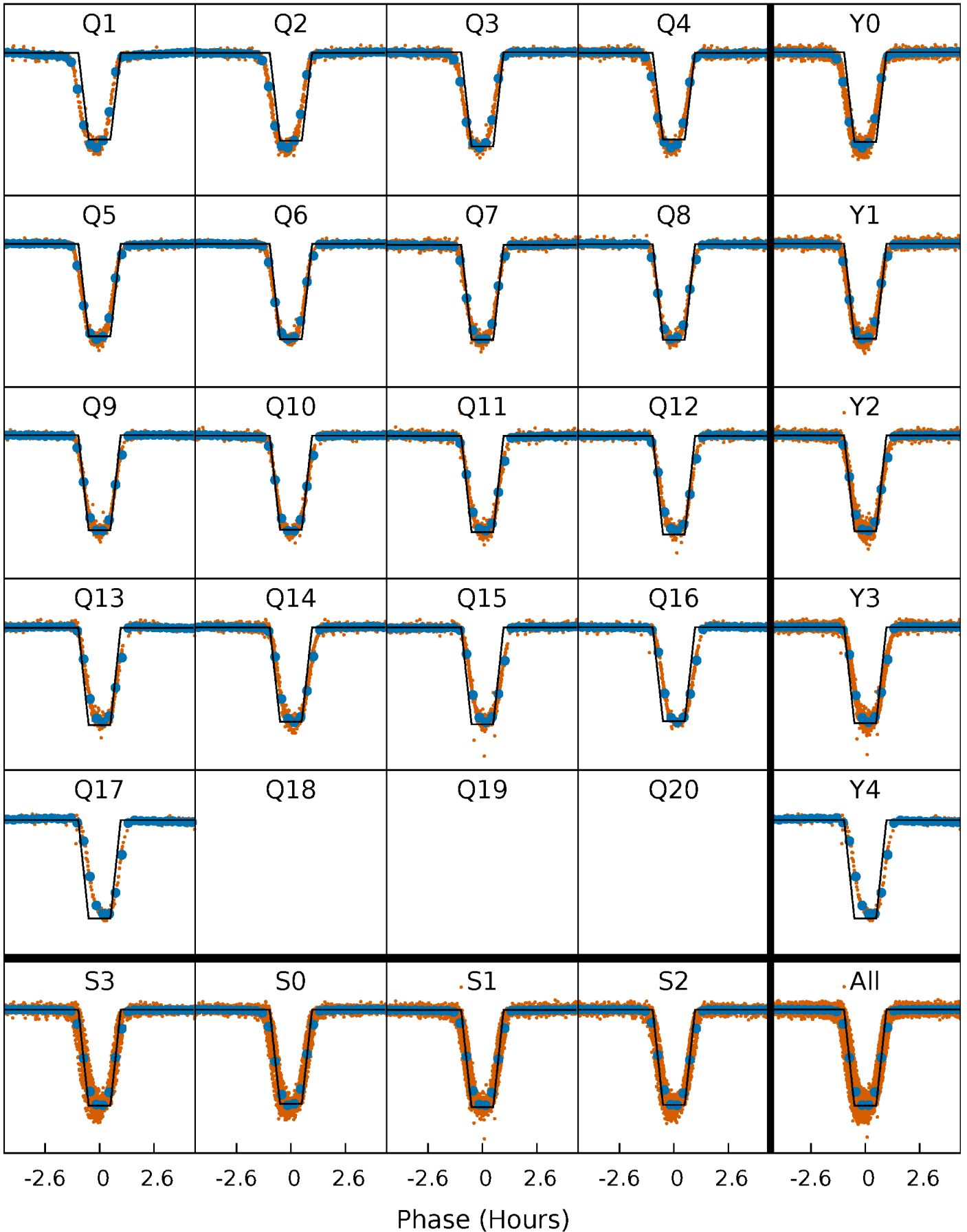
DV Quarter-Phased Transit Curves

TCE 007449844-01 P= 1.152268 Days $T_0=132.114201$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

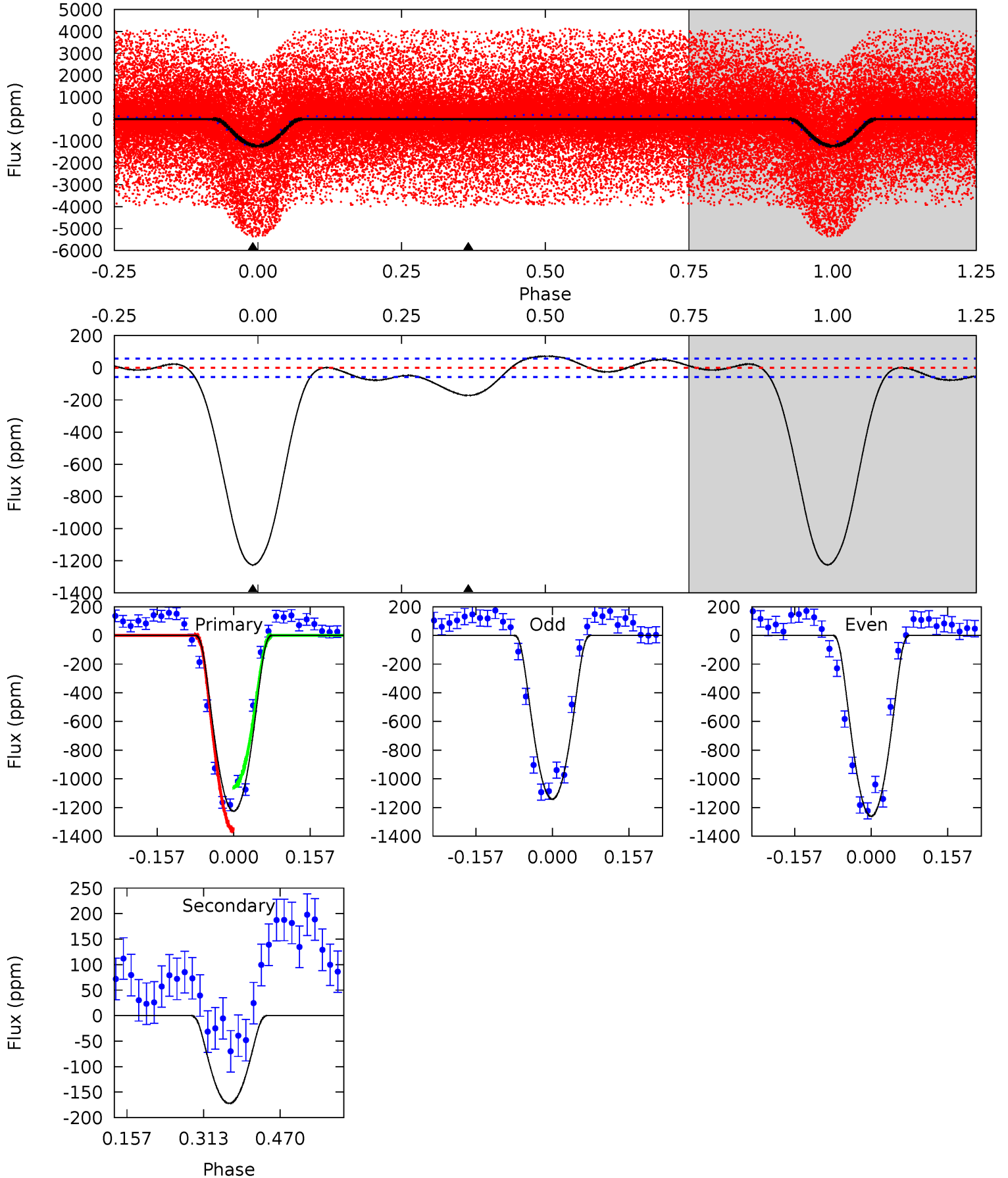
TCE 007449844-01 P= 1.152204 Days $T_0=132.133844$ (BKJD)



DV Model-Shift Uniqueness Test

007449844-01, P = 1.152268 Days, E = 130.961933 Days

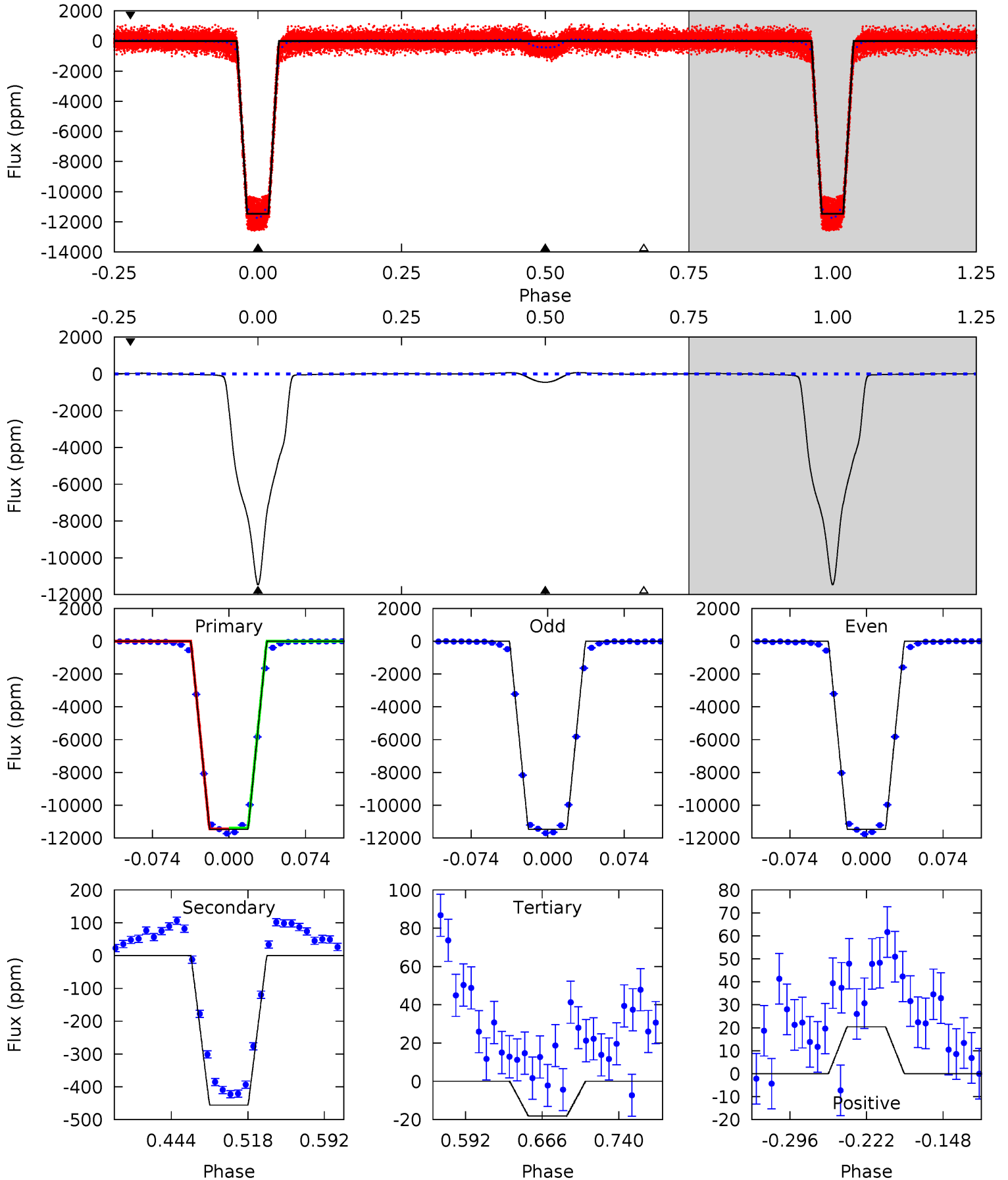
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
95.7	13.4	0	0	4.47	1.42	2.87	95.7	95.7	13.4	13.4	4.73	1.74	0.06	0



Alt Model-Shift Uniqueness Test

007449844-01, P = 1.152204 Days, E = 130.981640 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2445	97.2	3.85	4.35	4.63	1.79	4.28	2441	2440	93.3	92.8	0.51	1.00	0.01	6.80



Stellar Parameters For KIC 007449844

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5560^{+268}_{-1005}	$2.619^{+0.075}_{-0.225}$	$0.560^{+0.050}_{-0.250}$	$15.113^{+4.094}_{-4.094}$	$3.468^{+0.152}_{-0.913}$	$0.001^{+0.001}_{-0.001}$
	+5%/-18%	+3%/-9%	+9%/-45%	+27%/-27%	+4%/-26%	+49%/-53%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007449844-01 / KOI 1452.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-172 ± 13	$78.63^{+11.86}_{-11.68}$	7491^{+688}_{-1254}	-6004^{+1075}_{-624}	$0.016^{+0.004}_{-0.004}$
Alt.	-456 ± 5	$186.98^{+27.70}_{-21.36}$	7430^{+746}_{-1269}	-6011^{+1077}_{-652}	$0.007^{+0.002}_{-0.002}$

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 $A_{obs} \gg 1.0$

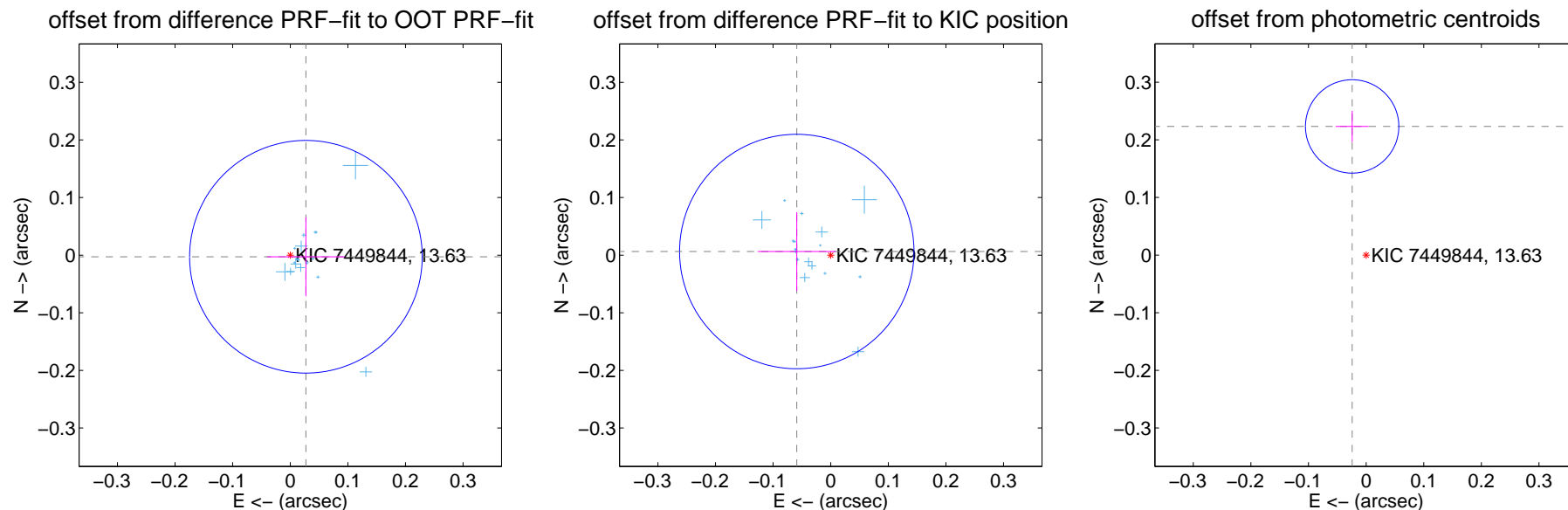
DV Centroid Data

Supplemental centroid analysis for 007449844-01. Kepler magnitude: 13.63. Transit SNR 77.37

There are 17 quarters with good PRF difference image offsets

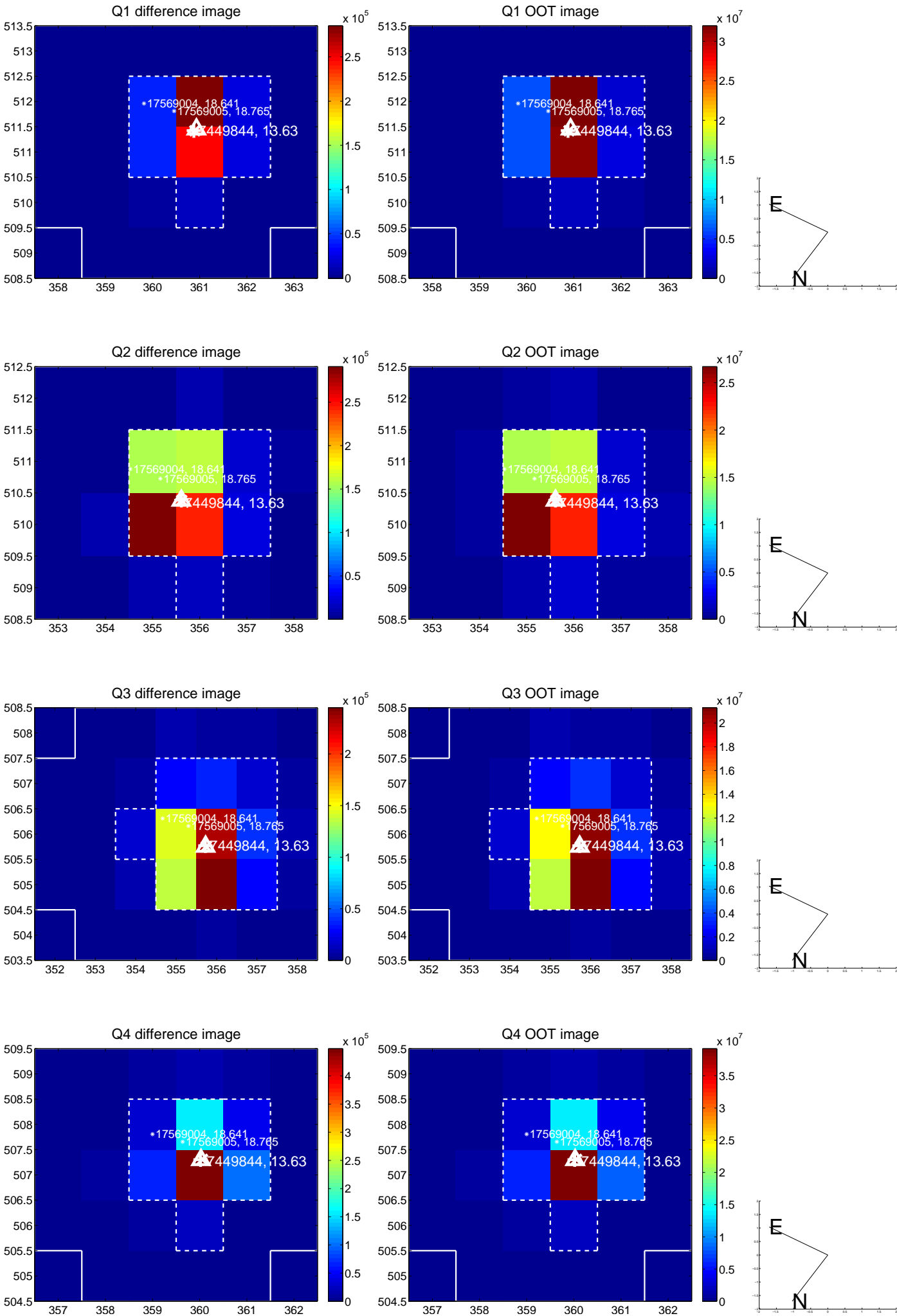
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.027 ± 0.067	0.41	-0.027 ± 0.067	-0.003 ± 0.068
PRF-fit source offset from KIC position	0.059 ± 0.068	0.87	0.059 ± 0.068	0.006 ± 0.068
photometric centroid source offset	0.22 ± 0.03	8.31	0.02 ± 0.03	0.22 ± 0.03

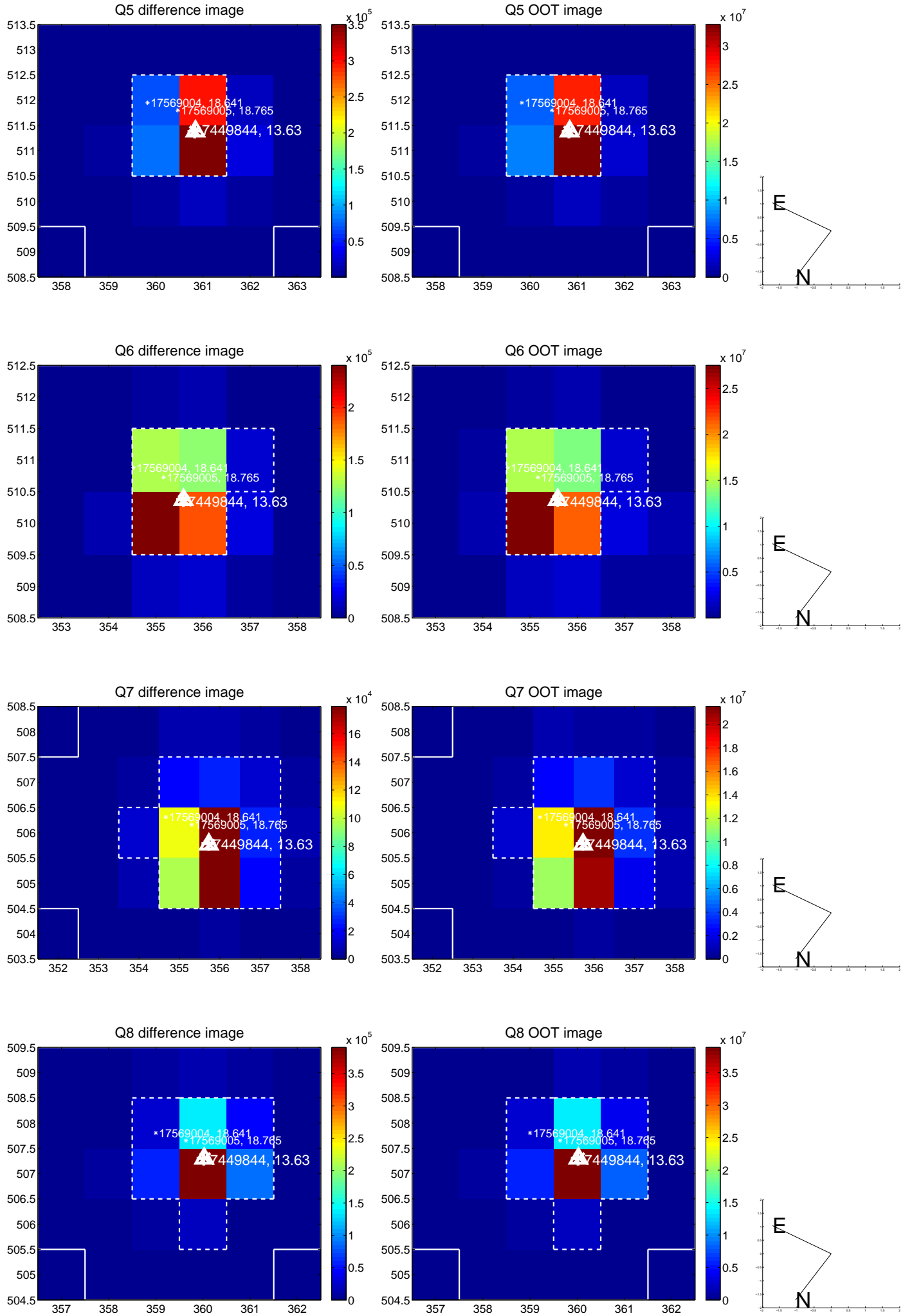


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

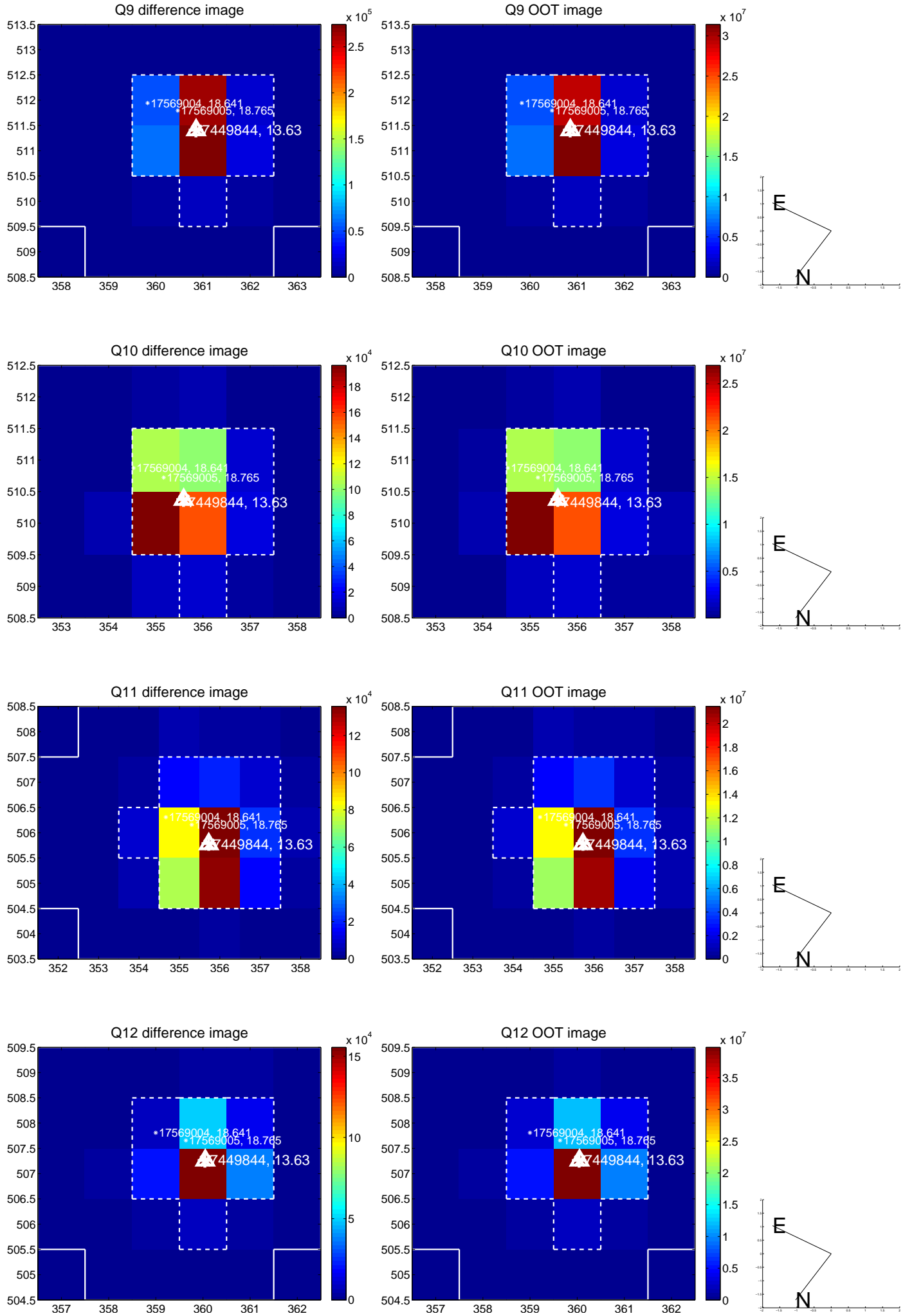
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



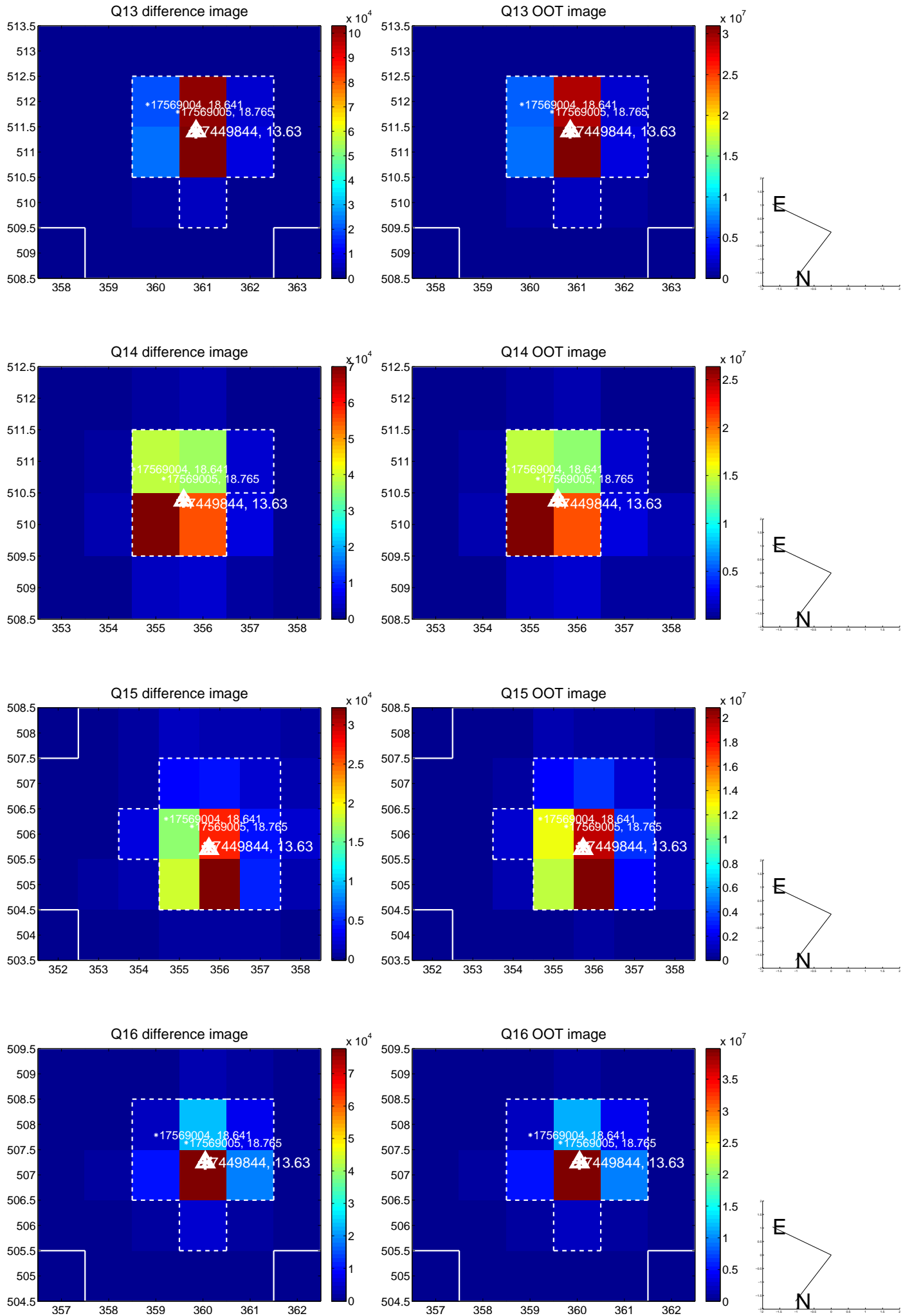
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



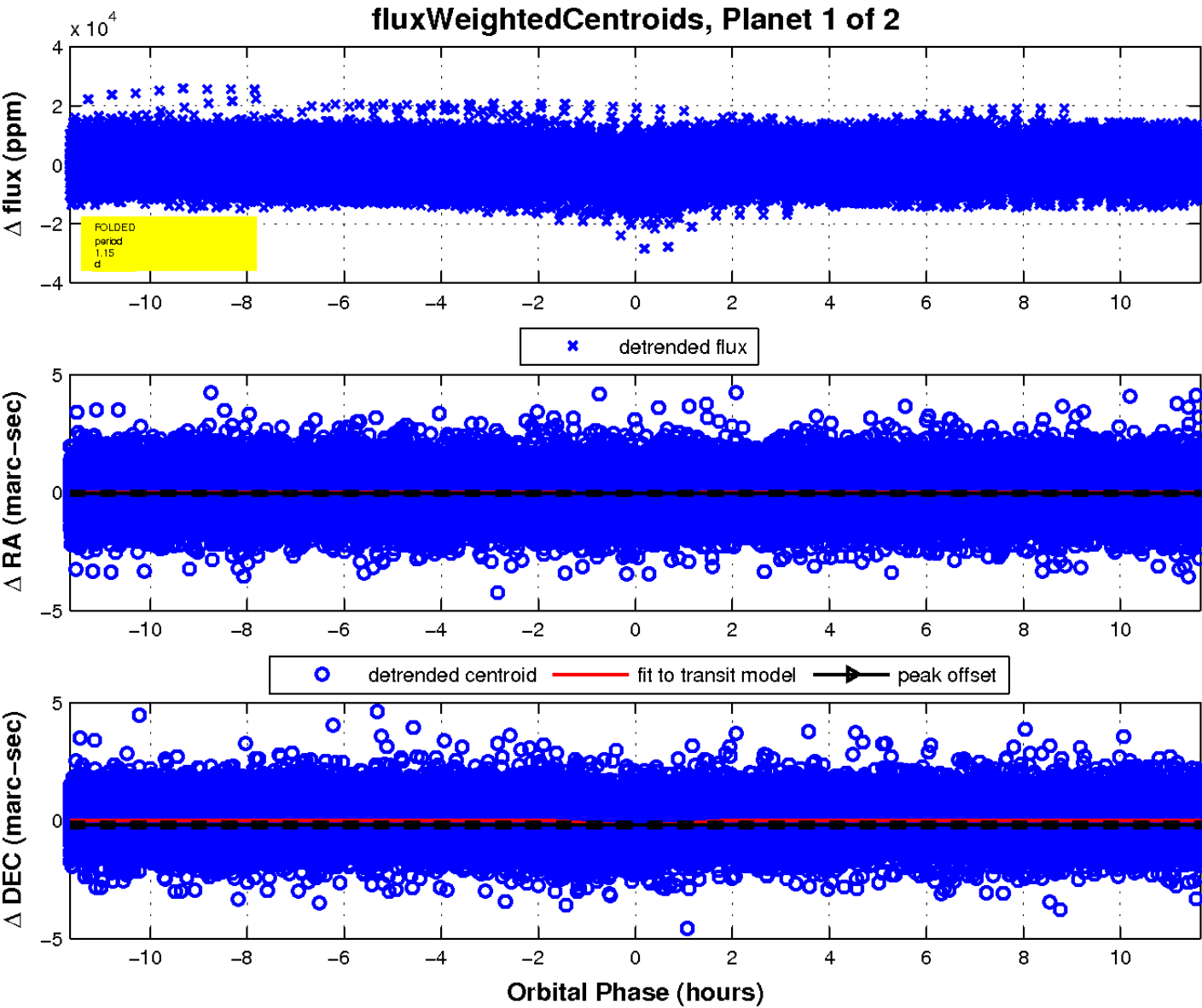
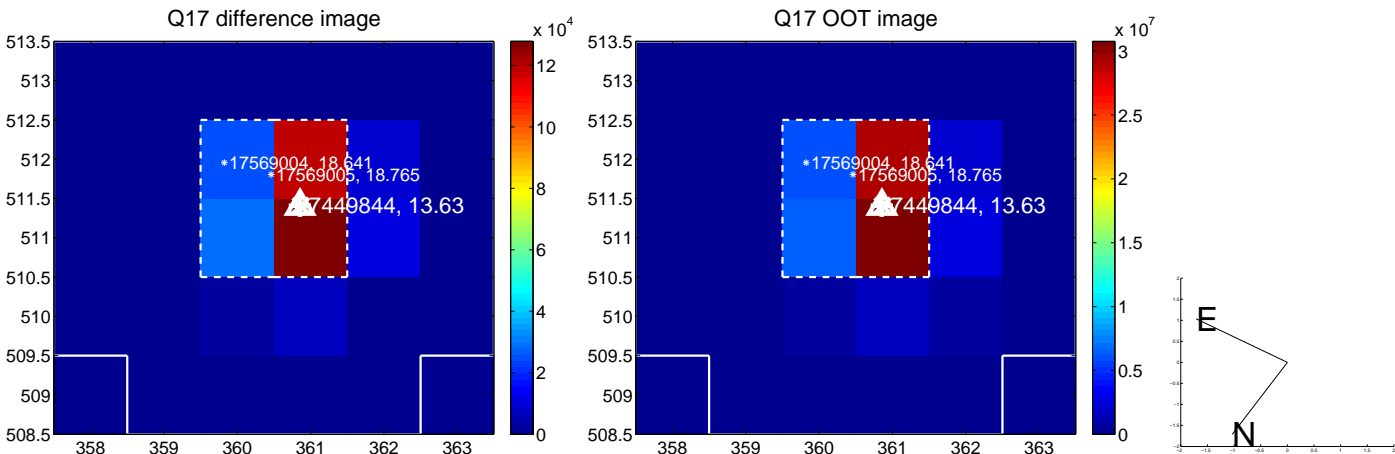
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



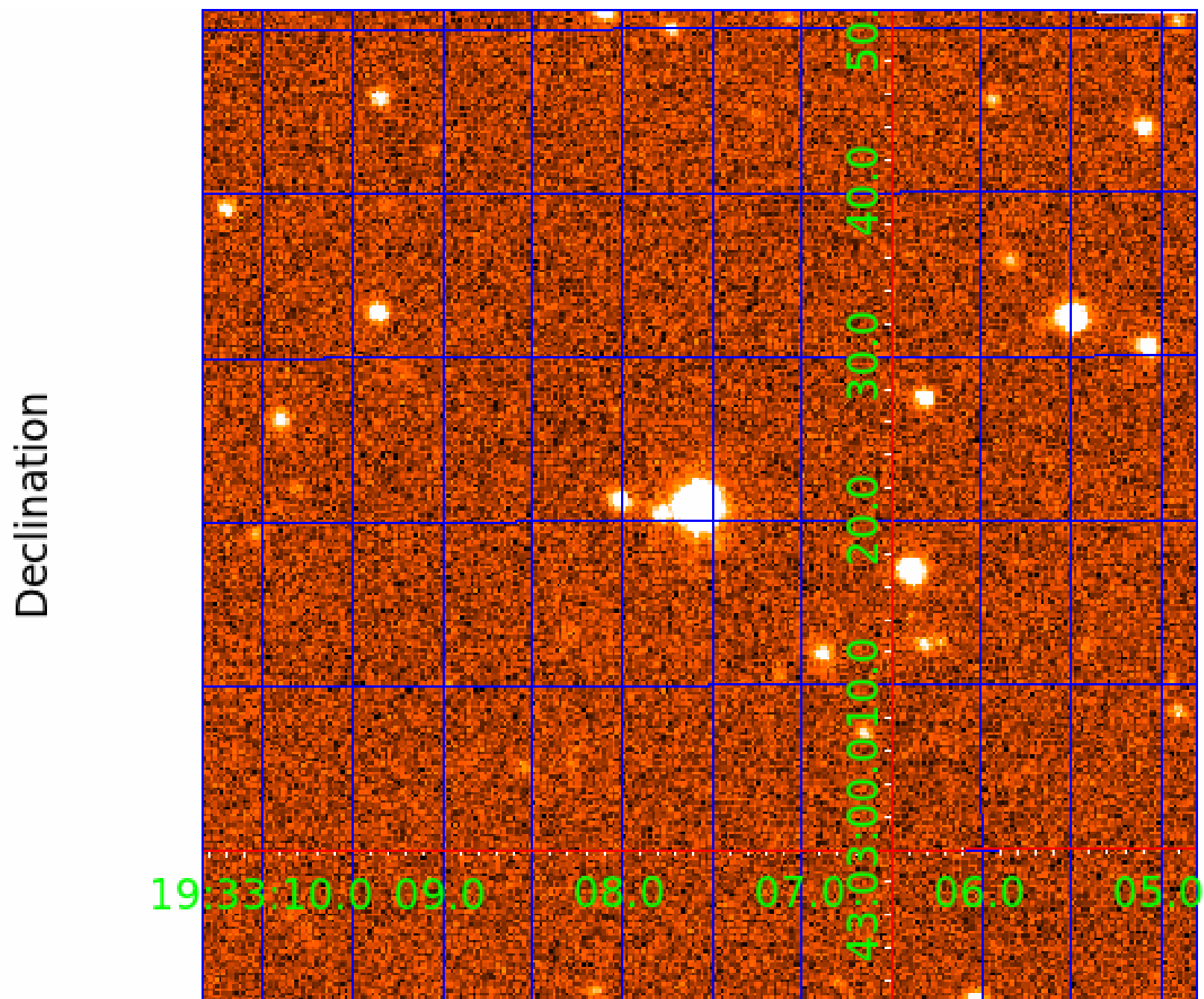
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007449844

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})
007449844-01	OBS	1452.01	1.152268	132.114201	1138.9	3.885	349.6	77.4	15.11	5560	75.29	0.00
007449844-02	OBS	No	1.151223	131.712688	100.8	2.353	8.8	7.6	15.11	5560	18.23	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007449844-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
007449844-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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.

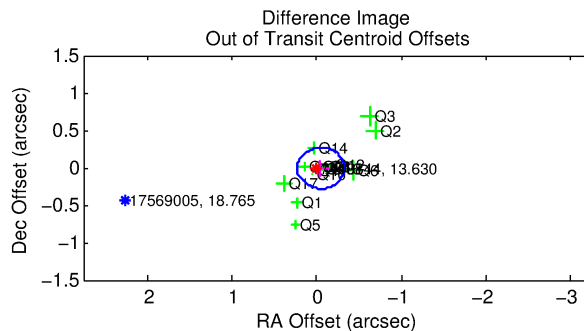
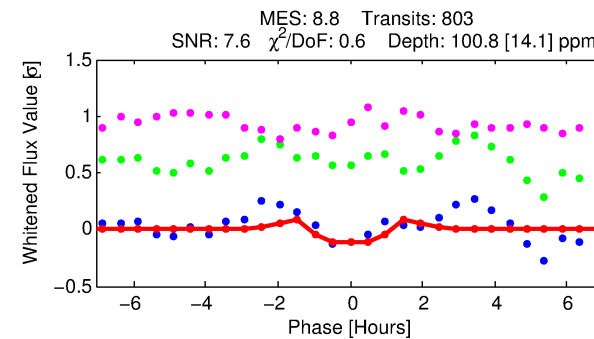
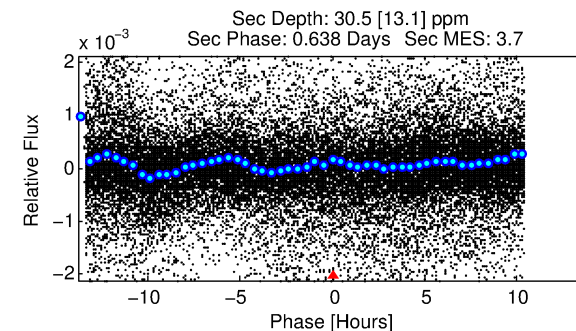
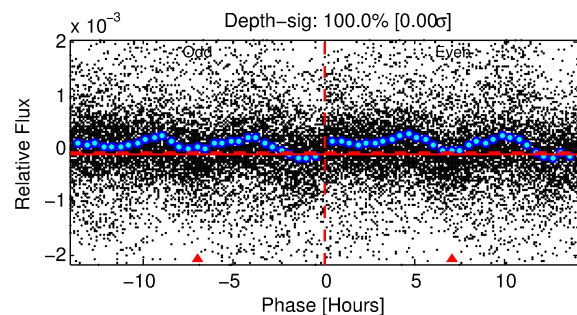
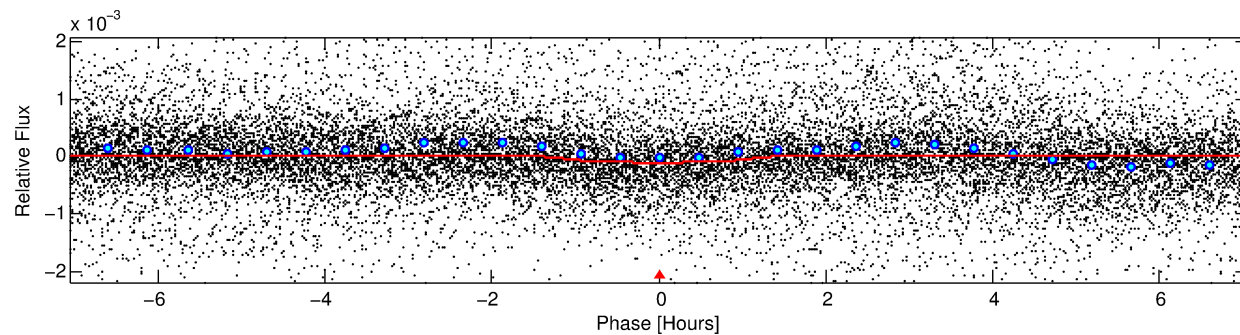
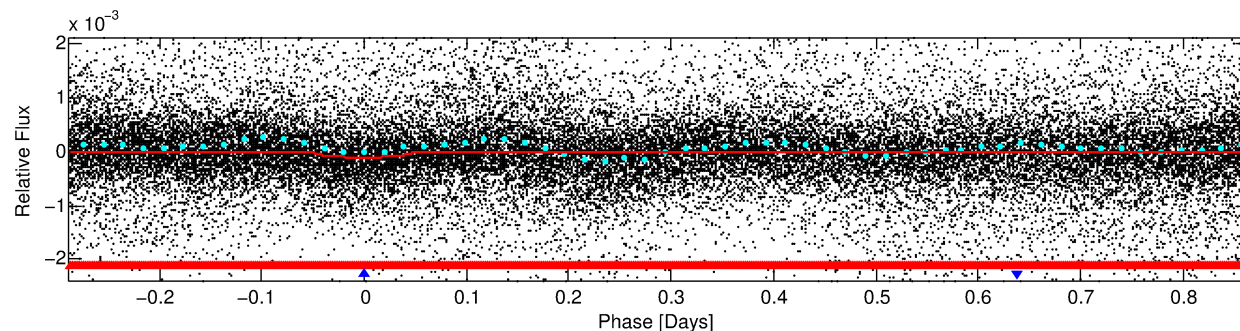
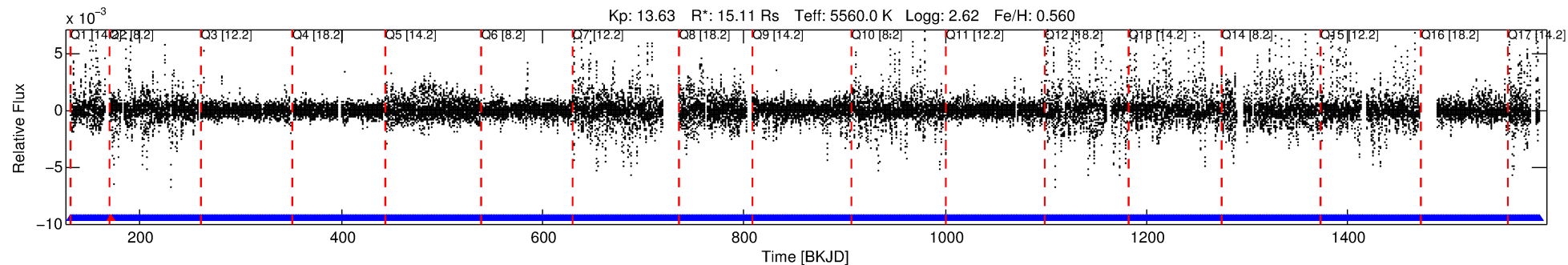
Ephemeris Match Information For 007449844-02

No Significant Match Found

DV One-Page Summary

KIC: 7449844 Candidate: 2 of 2 Period: 1.151 d
KOI: K01452 Corr: No Ephemeris Match

Kp: 13.63 R*: 15.11 Rs Teff: 5560.0 K Logg: 2.62 Fe/H: 0.560



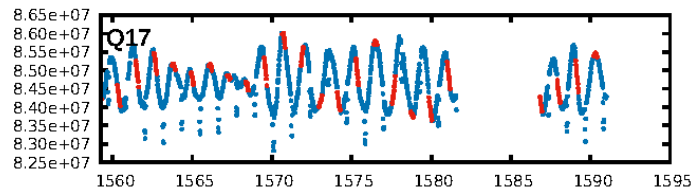
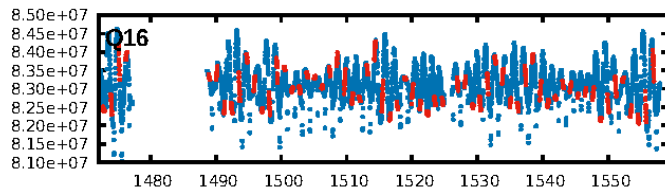
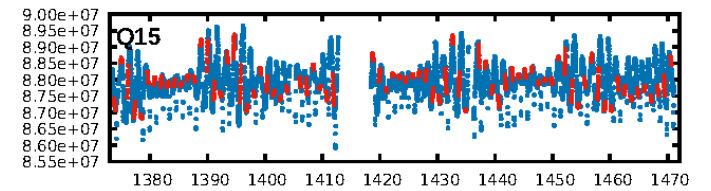
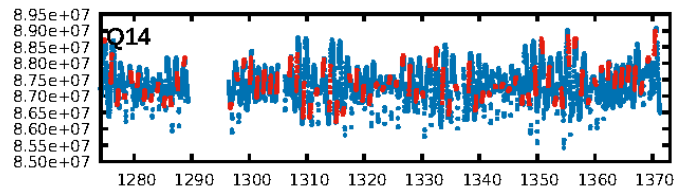
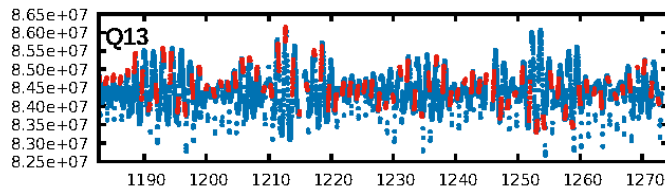
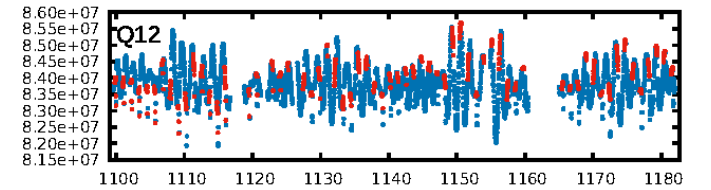
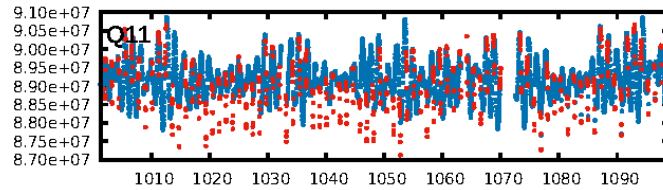
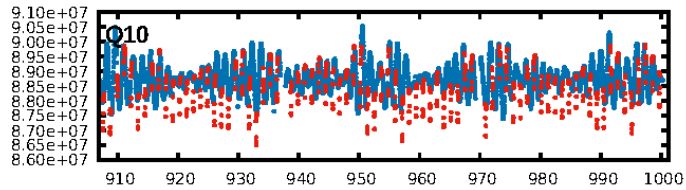
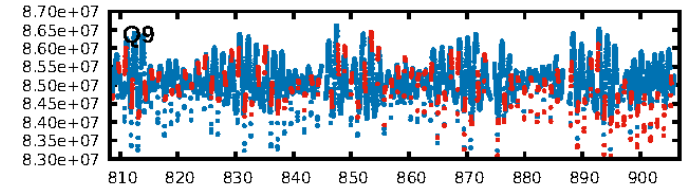
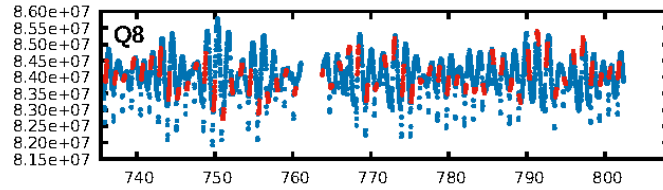
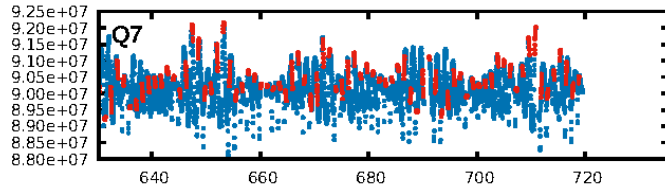
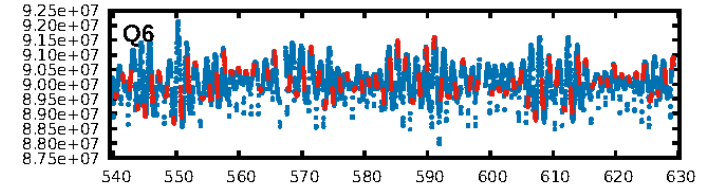
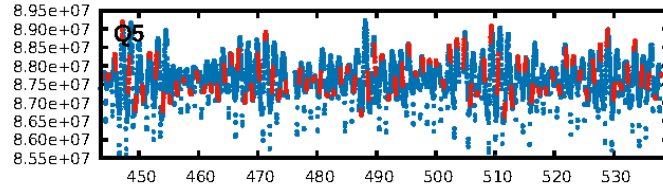
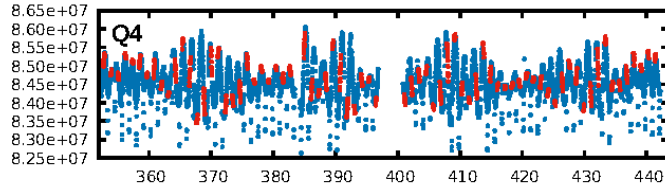
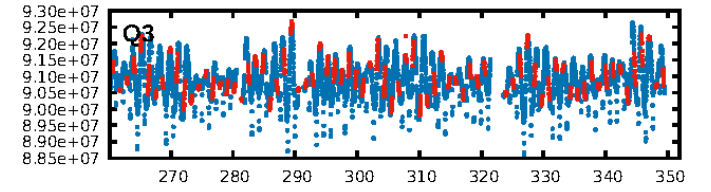
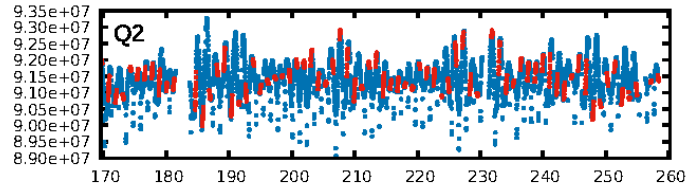
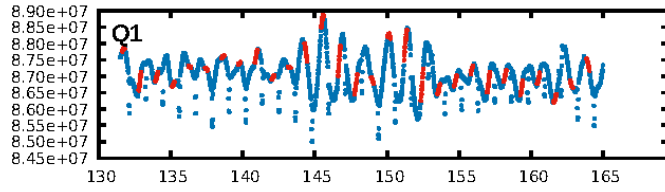
DV Fit Results:

Period = 1.15122 [0.00001] d
Epoch = 131.7127 [0.0021] BKJD
Rp/R* = 0.0111 [0.0051]
a/R* = 1.96 [2.89]
b = 0.90 [0.43]
Seff = N/A
Teq = N/A
Rp = 18.23 [9.71] Re
a = N/A
Ag = N/A
Teffp = N/A

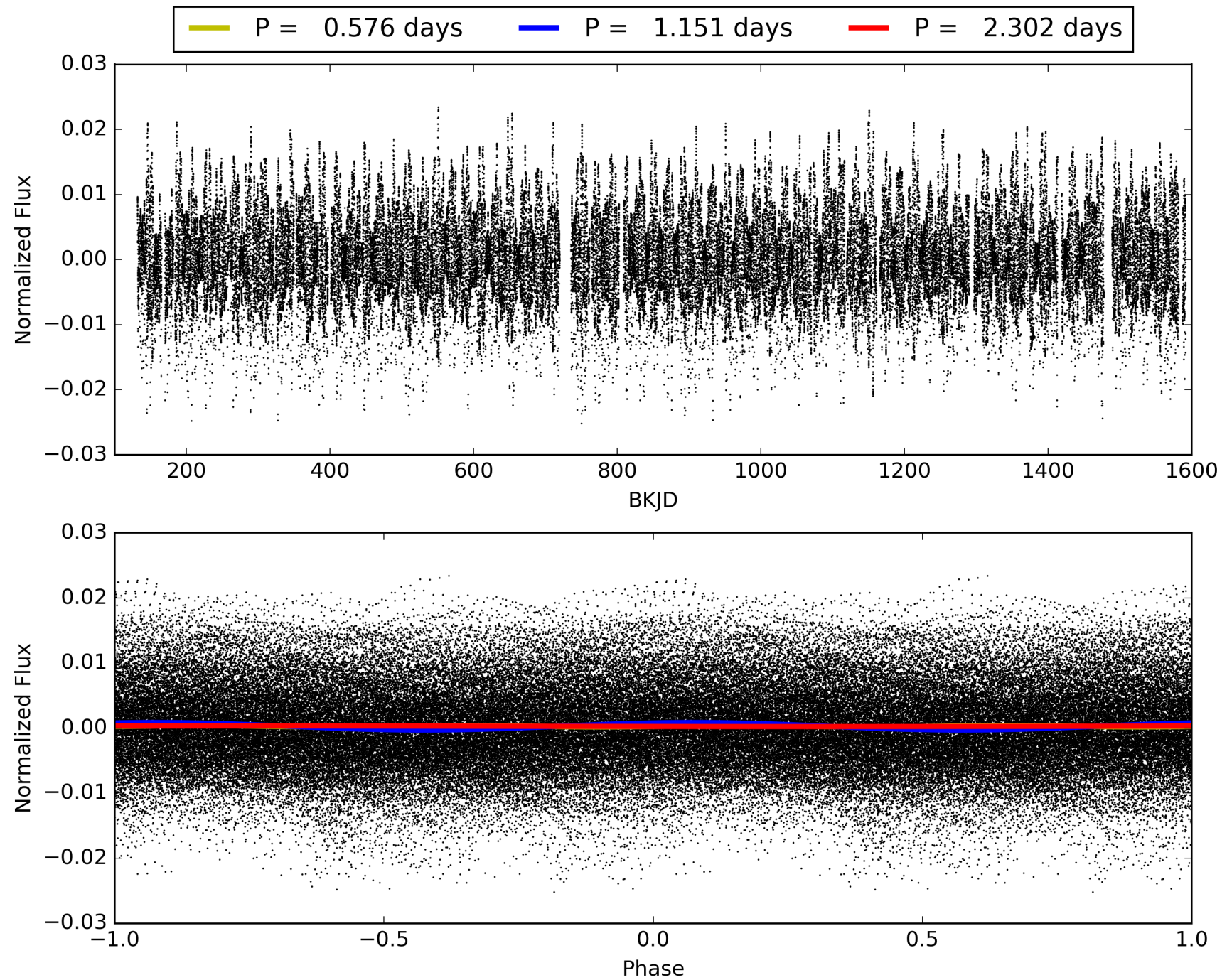
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.4% [0.01σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 1.37e-34
RollingBand-fgt: 1.00 [749/750]
GhostDiagnostic-chr: -2.956
Centroid-sig: 0.0%
Centroid-so: 0.952 arcsec [2.99σ]
OotOffset-rm: 0.051 arcsec [0.56σ]
KicOffset-rm: 0.016 arcsec [0.17σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.29 [5/17]
DiffImageOverlap-fno: 0.59 [10/17]

TCE 007449844-02, PDC Light Curves

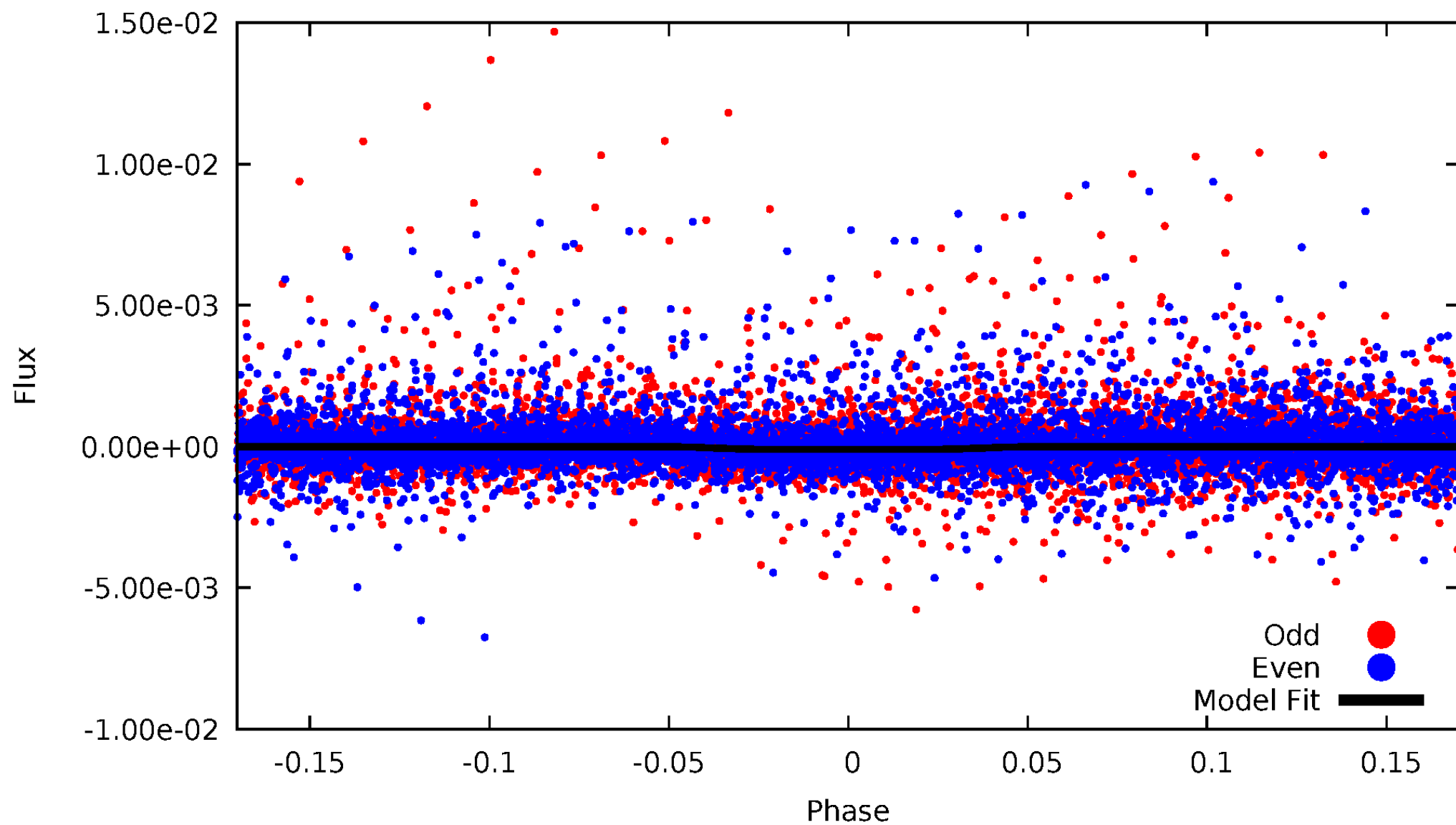


TCE 007449844-02



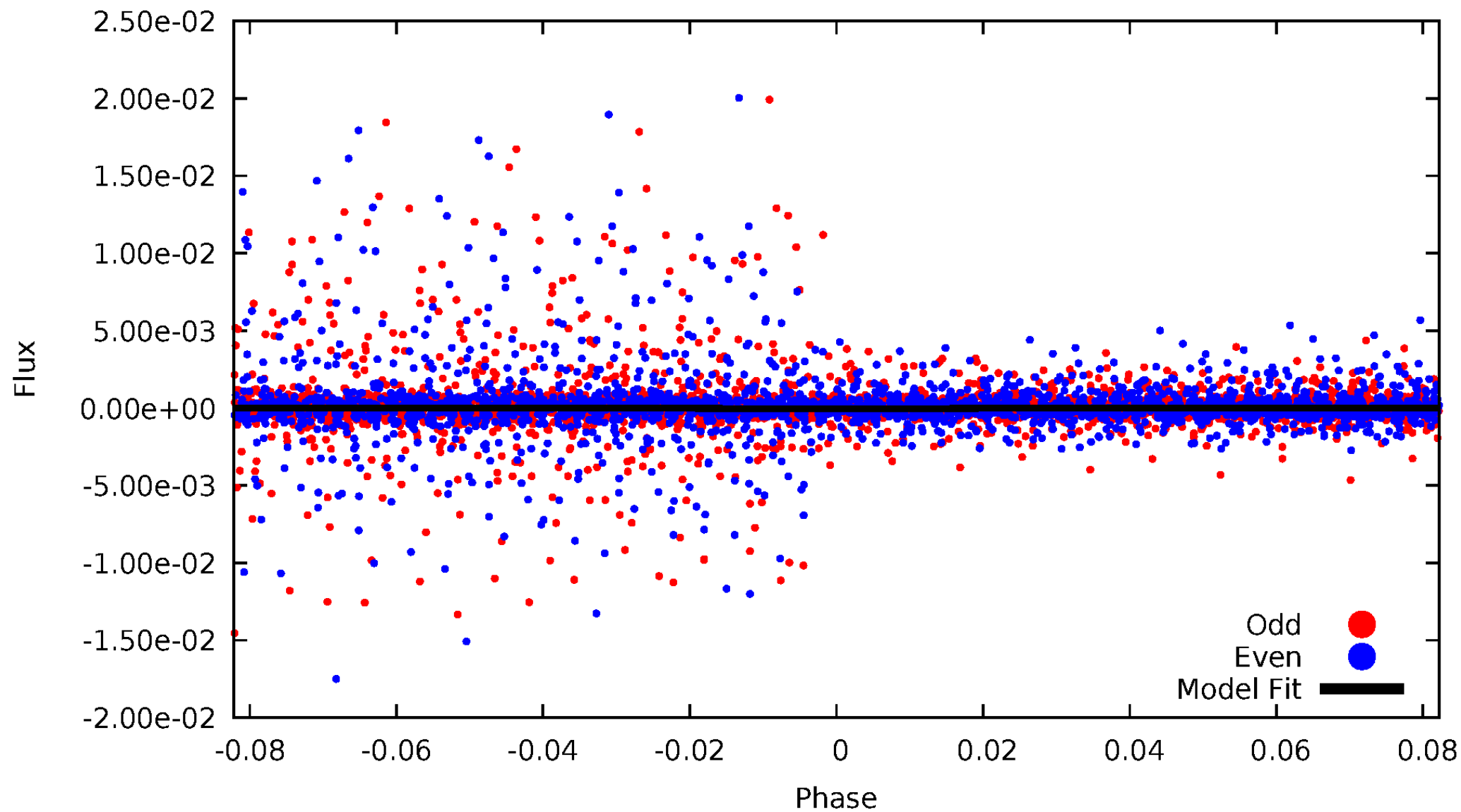
DV Odd/Even

TCE 007449844-02



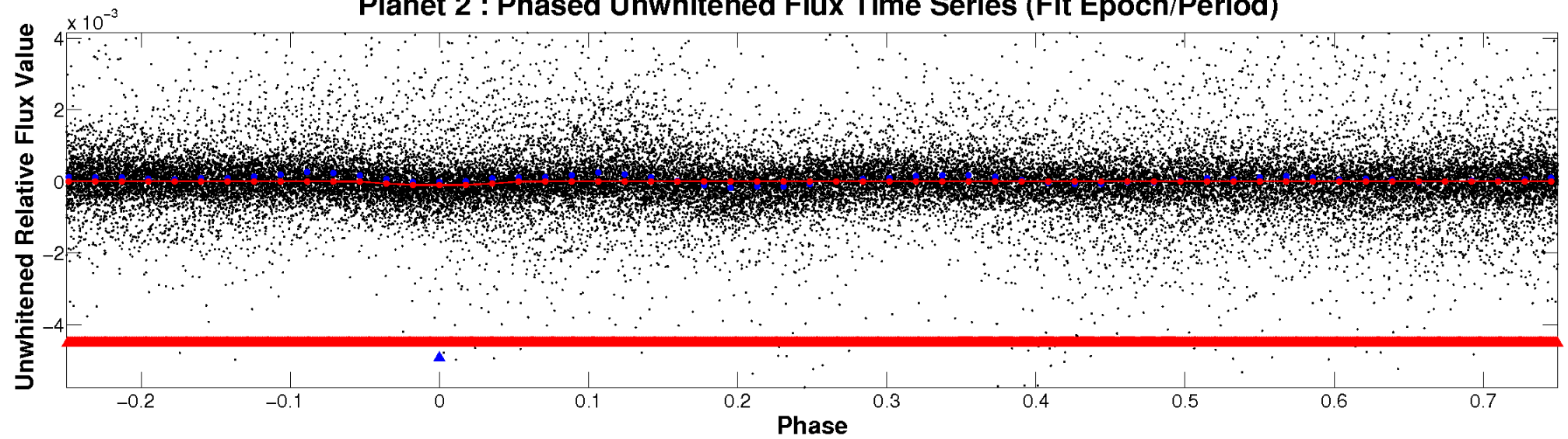
ALT Odd/Even

TCE 007449844-02

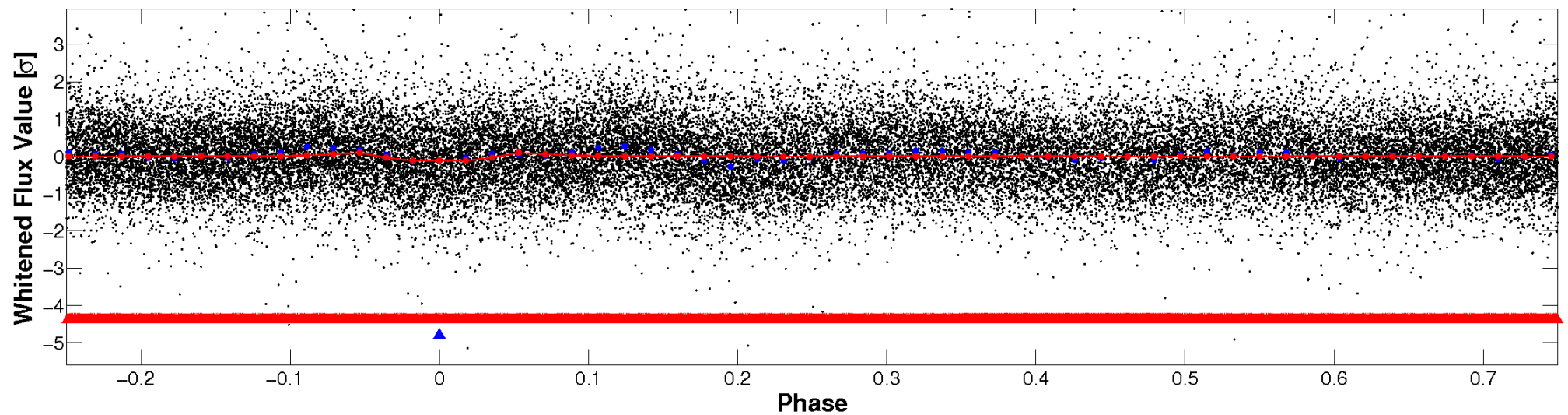


Non-Whitened Vs. Whitened Light Curve

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

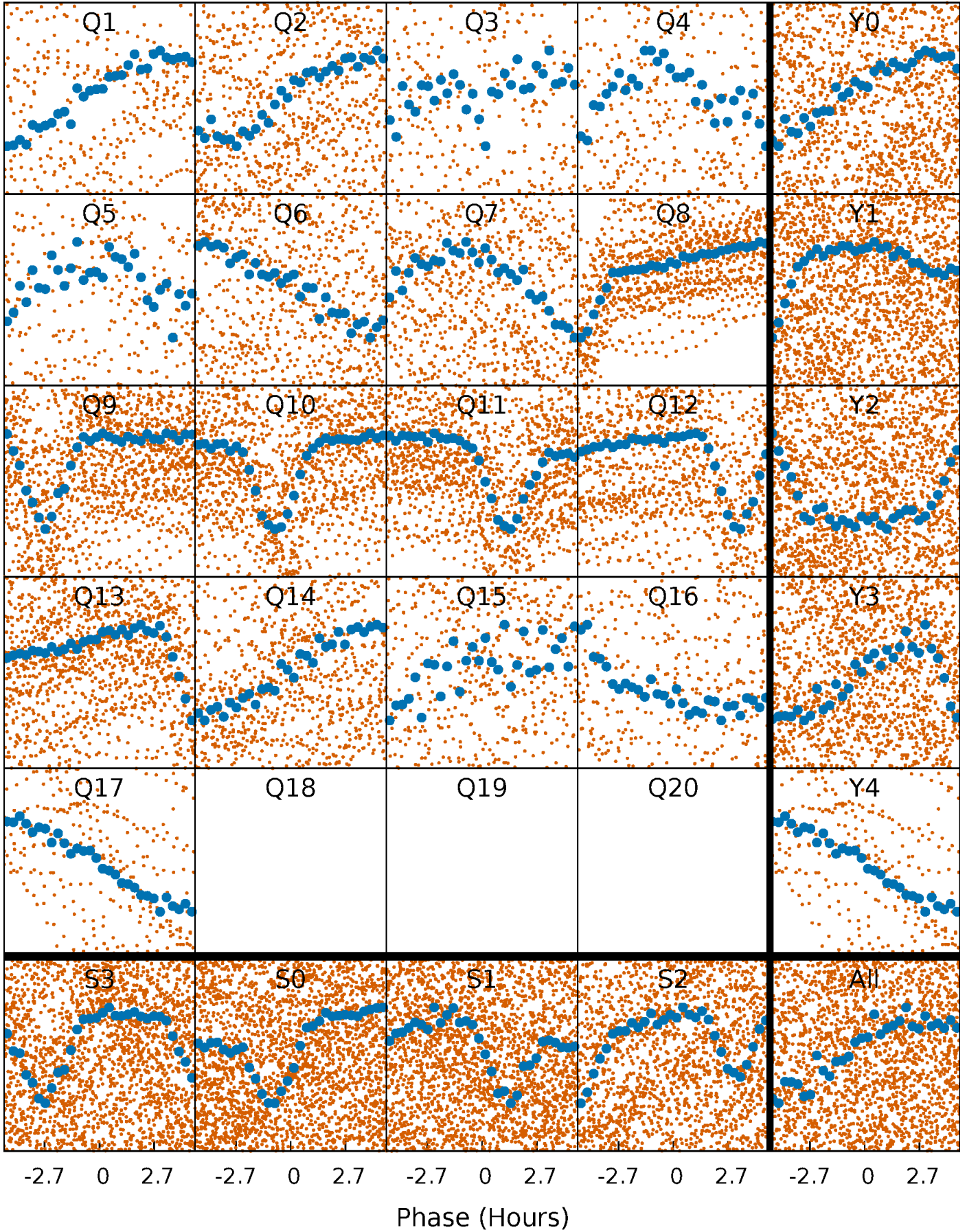


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



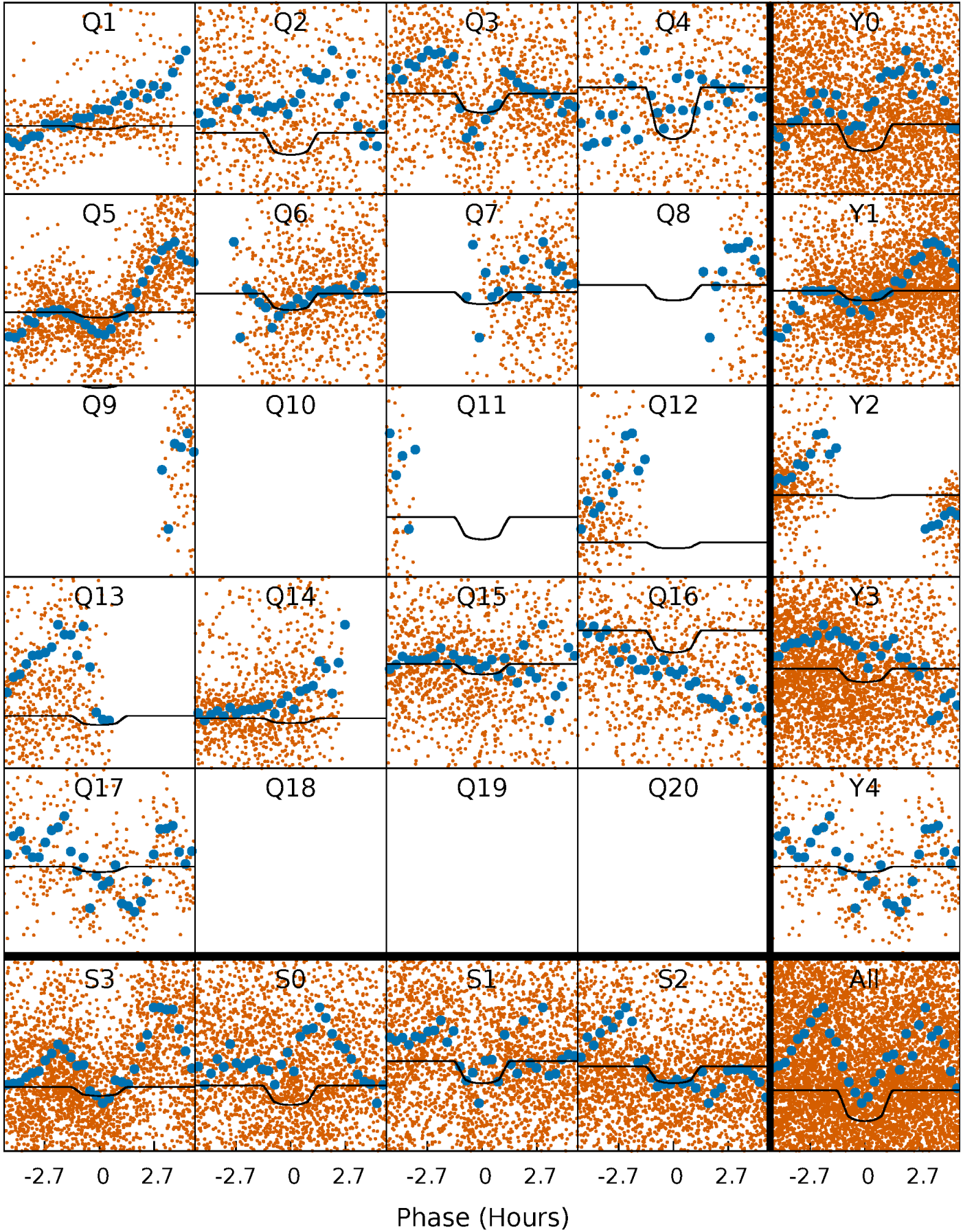
PDC Quarter-Phased Transit Curves

TCE 007449844-02 P= 1.151223 Days $T_0=131.712688$ (BKJD)



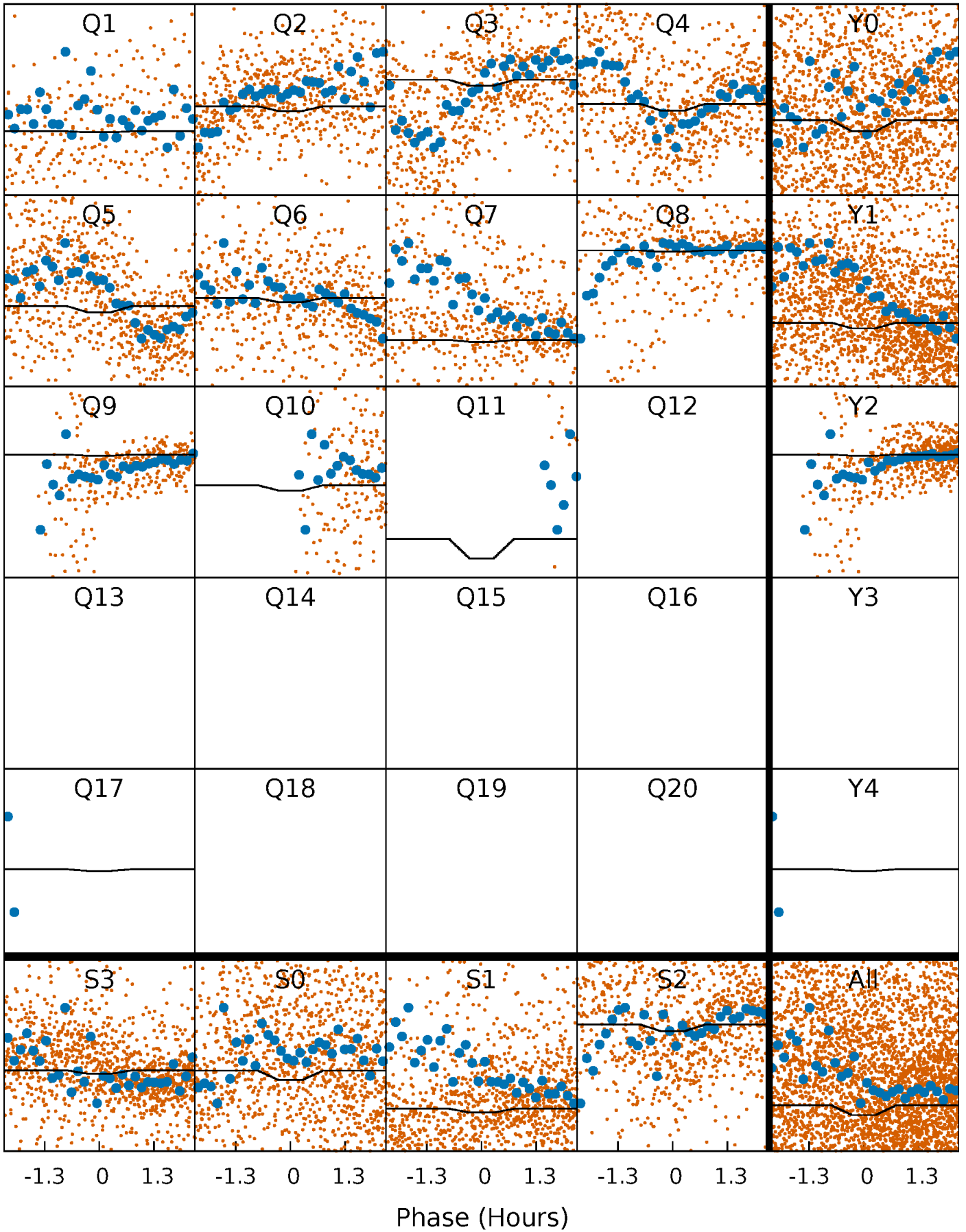
DV Quarter-Phased Transit Curves

TCE 007449844-02 P= 1.151223 Days $T_0=131.712688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

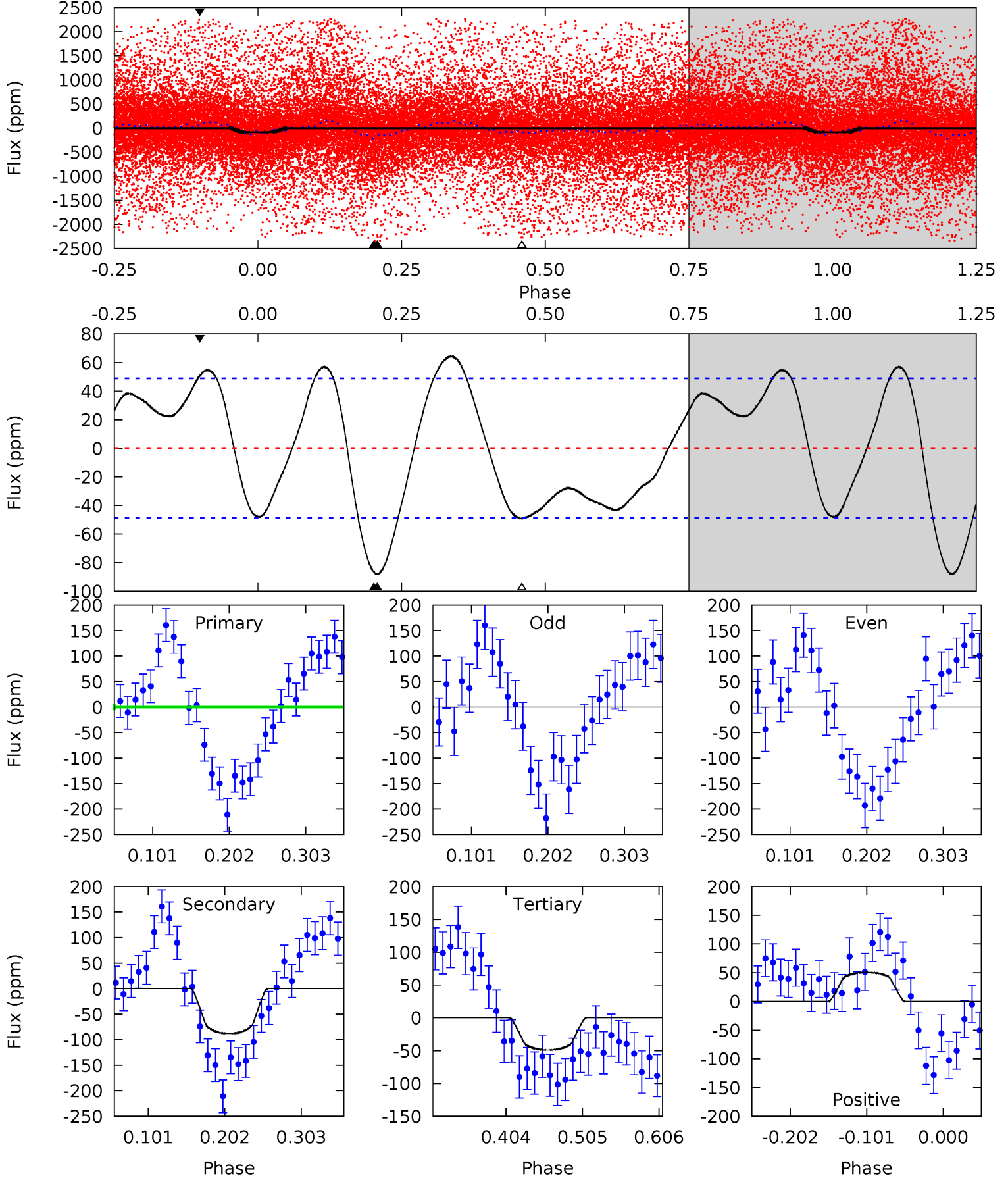
TCE 007449844-02 P= 1.151543 Days $T_0=131.706659$ (BKJD)



DV Model-Shift Uniqueness Test

007449844-02, P = 1.151223 Days, E = 130.561465 Days

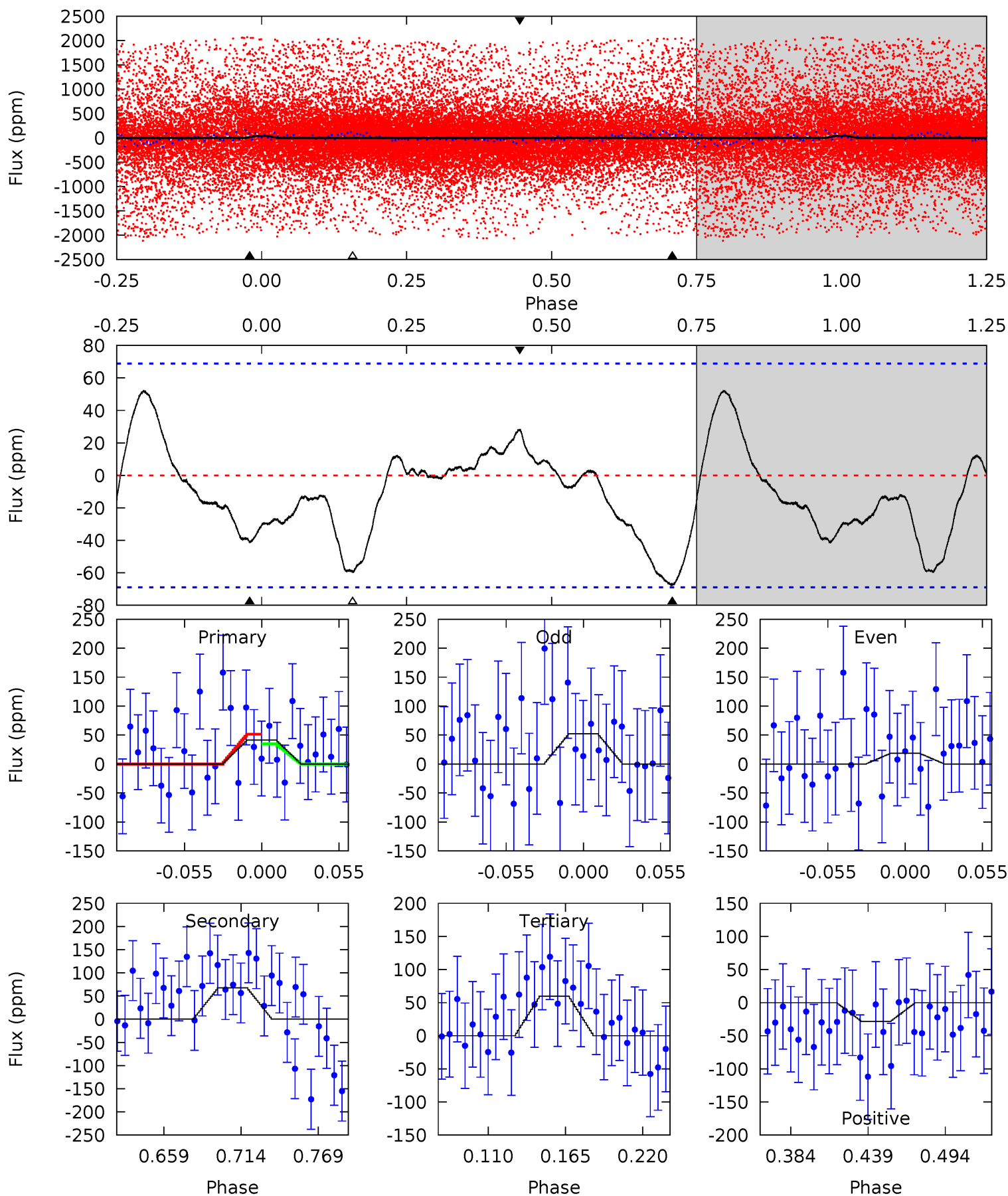
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.08	8.21	4.57	4.74	4.56	1.64	3.34	3.51	3.34	3.64	3.47	0.12	-0.25	0.42	1.59



Alt Model-Shift Uniqueness Test

007449844-02, P = 1.151543 Days, E = 130.555116 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.81	4.61	4.06	1.94	4.69	1.92	1.55	-1.25	0.87	0.55	2.68	1.14	5.94	0.43	0.56



Stellar Parameters For KIC 007449844

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5560^{+268}_{-1005}	$2.619^{+0.075}_{-0.225}$	$0.560^{+0.050}_{-0.250}$	$15.113^{+4.094}_{-4.094}$	$3.468^{+0.152}_{-0.913}$	$0.001^{+0.001}_{-0.001}$
	+5%/-18%	+3%/-9%	+9%/-45%	+27%/-27%	+4%/-26%	+49%/-53%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007449844-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-88 ± 11	$18.63^{+10.10}_{-8.00}$	7446^{+729}_{-1191}	-4873^{+9528}_{-1132}	$0.138^{+0.301}_{-0.078}$
Alt.	-68 ± 15	$13.19^{+8.43}_{-7.68}$	7530^{+738}_{-1281}	-4248^{+11816}_{-1541}	$0.201^{+0.925}_{-0.123}$

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 $A_{obs} \gg 1.0$

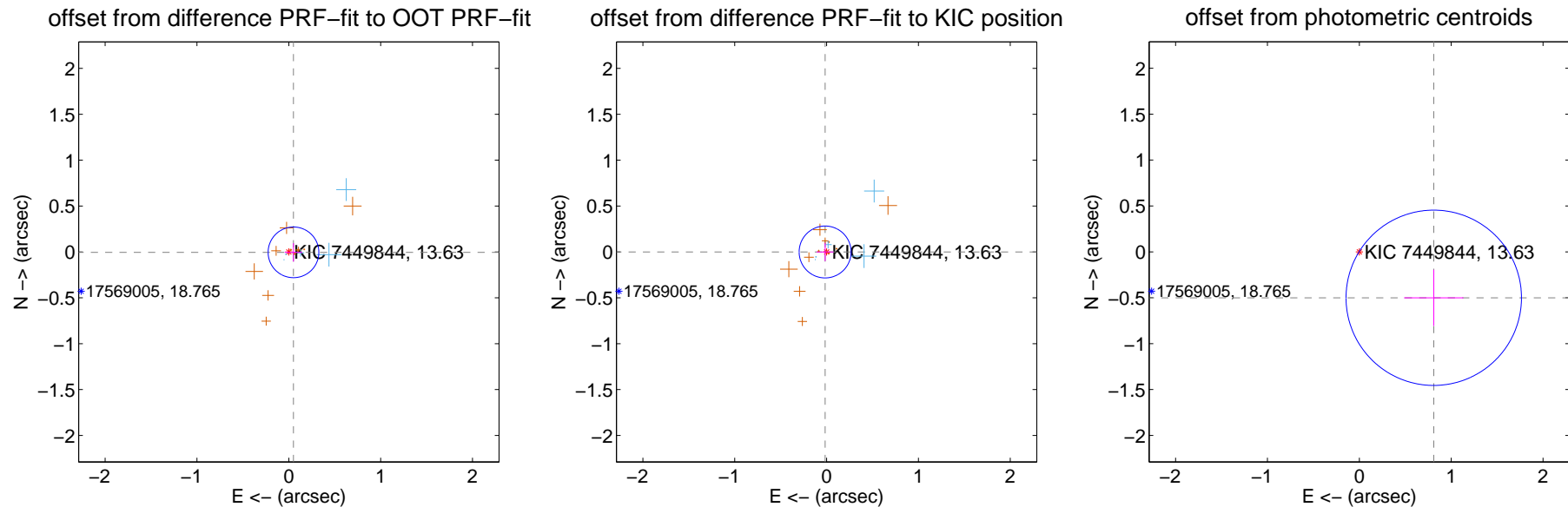
DV Centroid Data

Supplemental centroid analysis for 007449844-02. Kepler magnitude: 13.63. Transit SNR 7.59

There are 5 quarters with good PRF difference image offsets

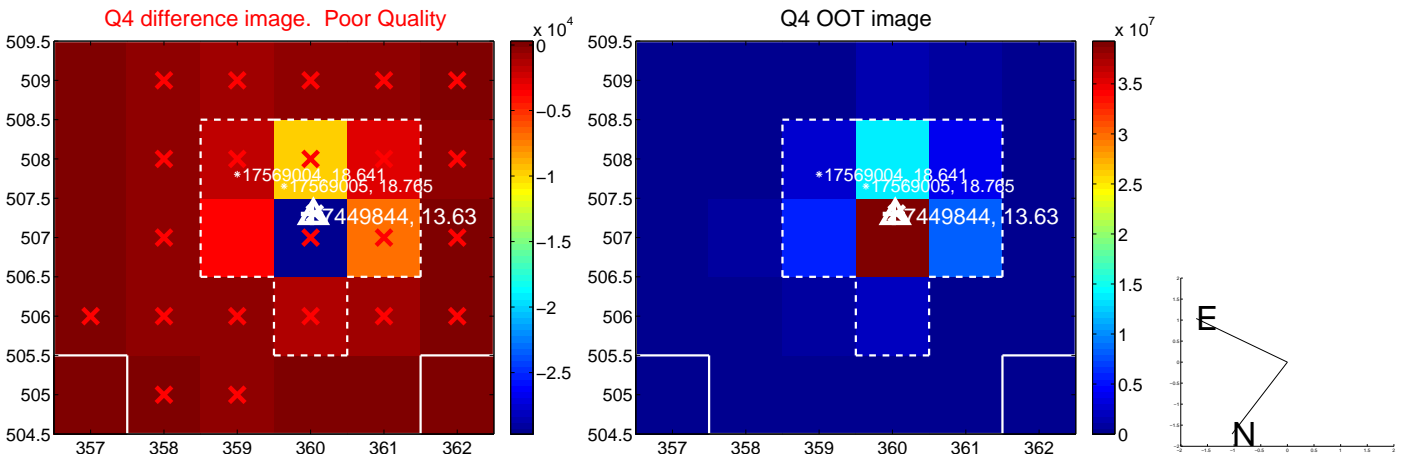
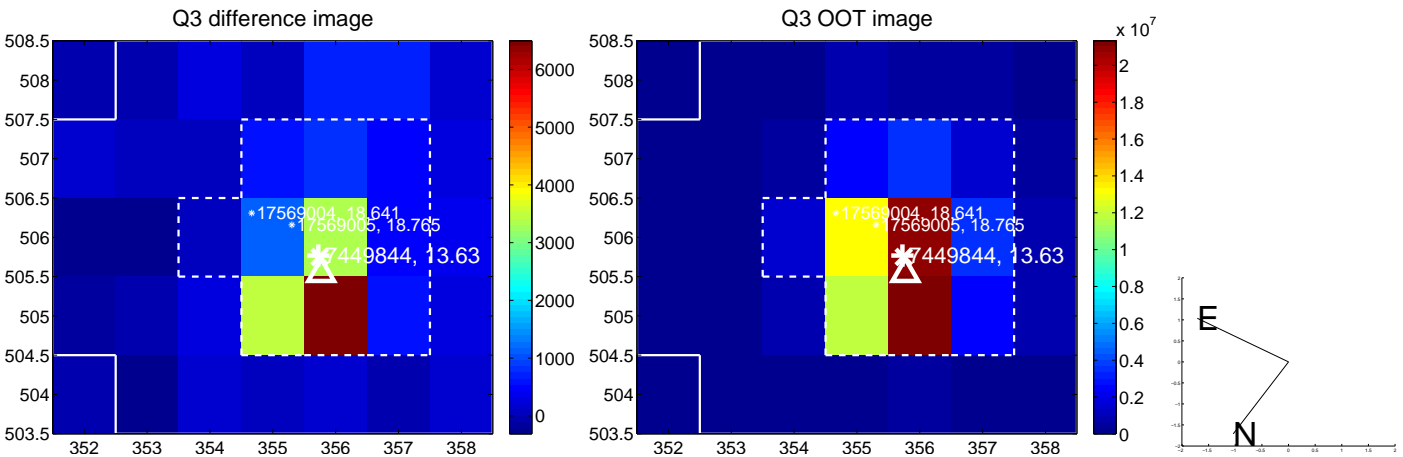
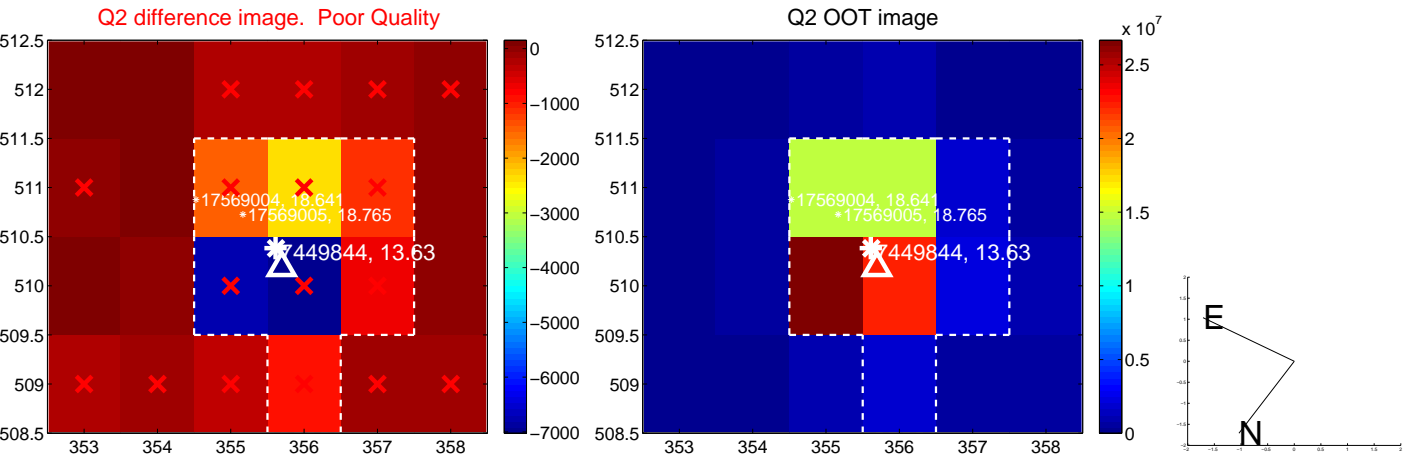
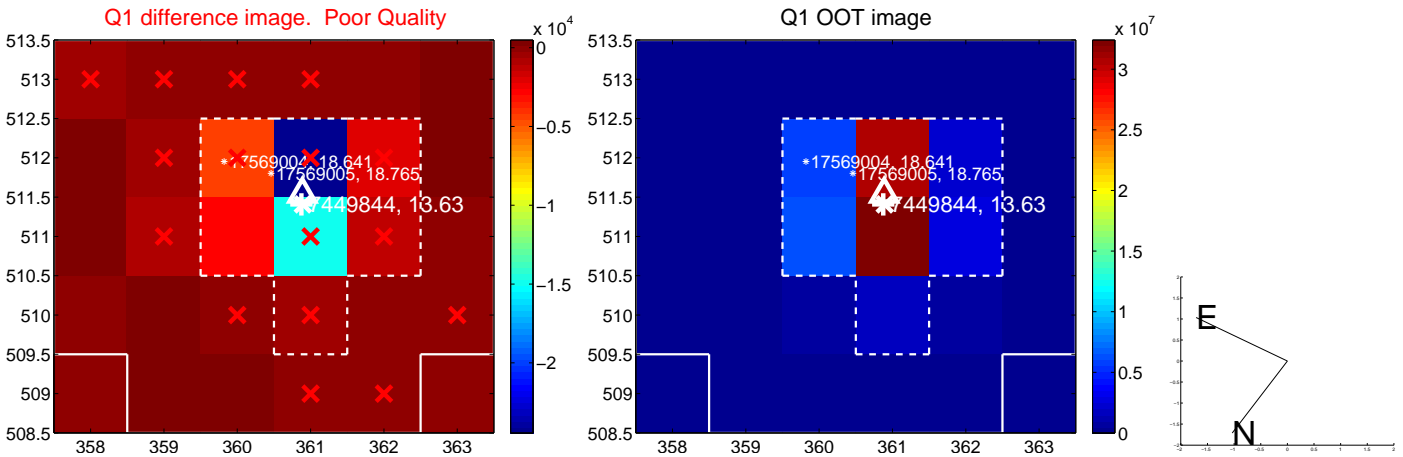
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.092	0.56	-0.051 ± 0.096	-0.005 ± 0.101
PRF-fit source offset from KIC position	0.016 ± 0.094	0.17	0.016 ± 0.093	-0.001 ± 0.100
photometric centroid source offset	0.95 ± 0.32	2.99	-0.81 ± 0.32	-0.50 ± 0.31

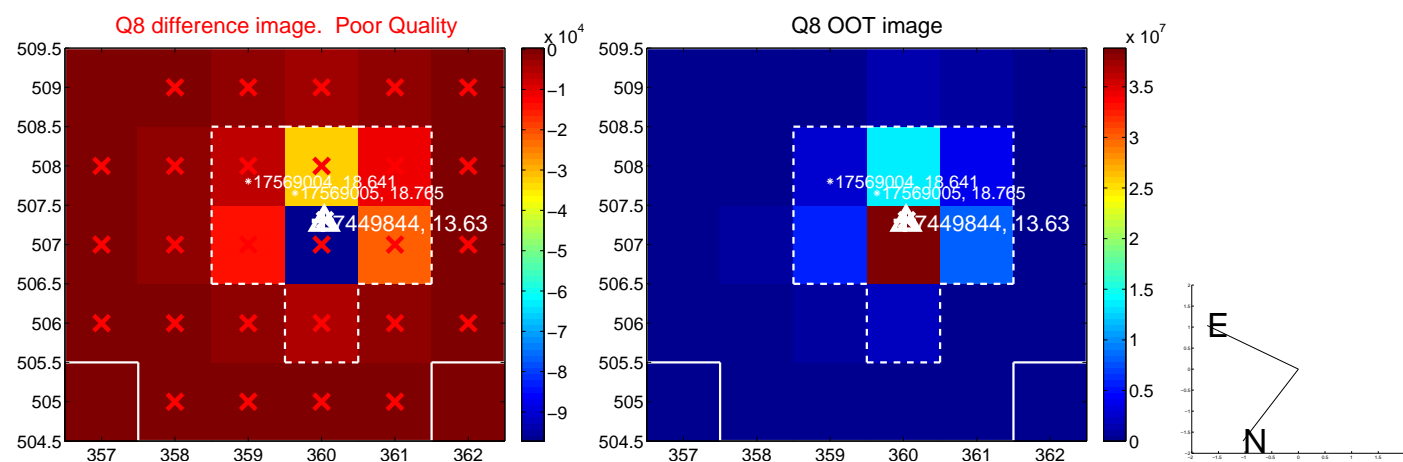
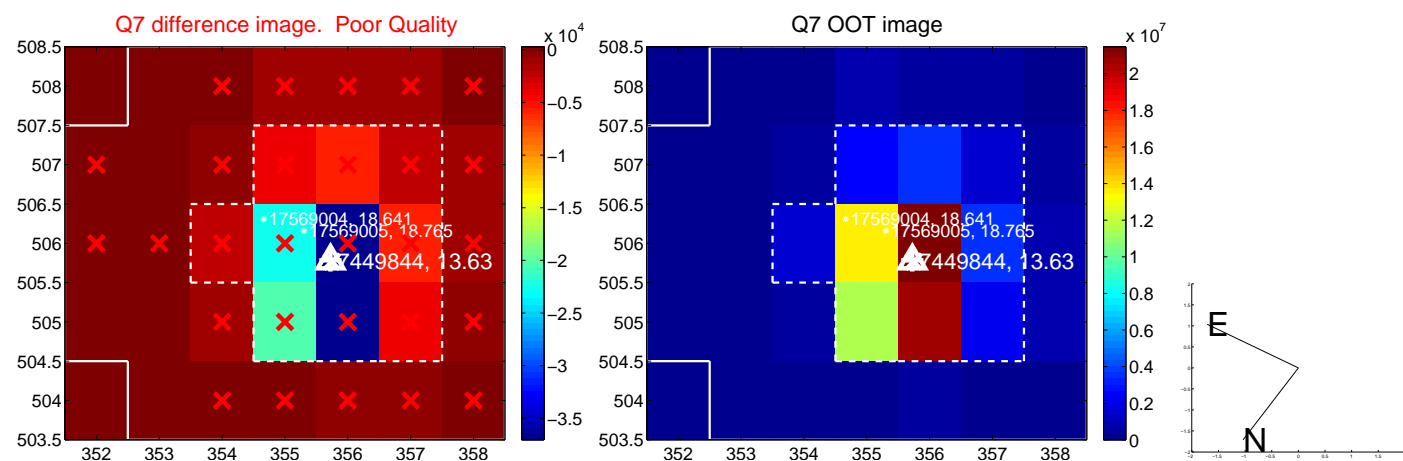
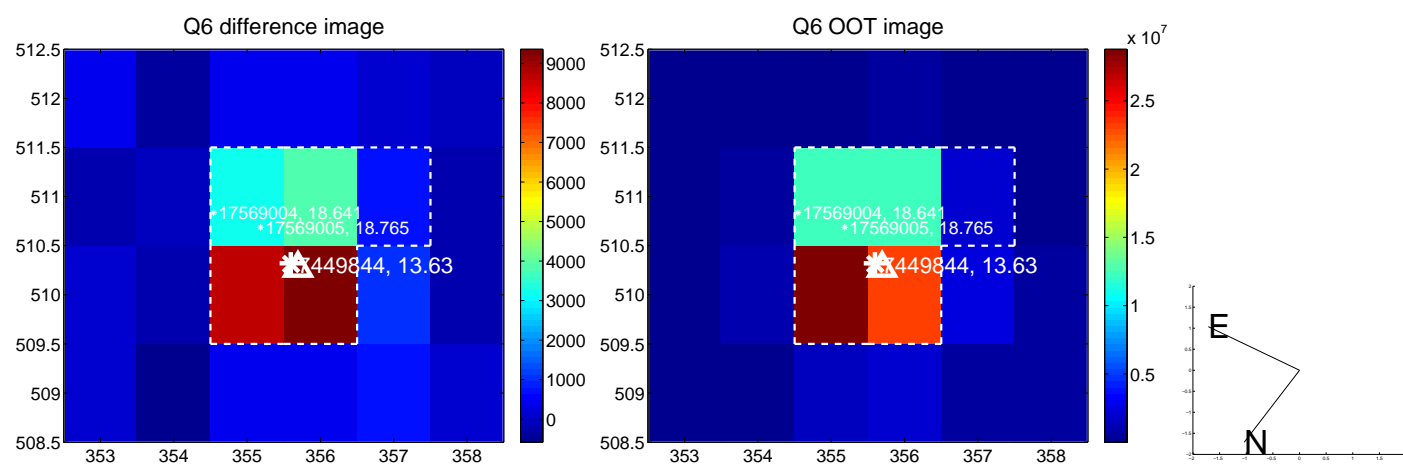
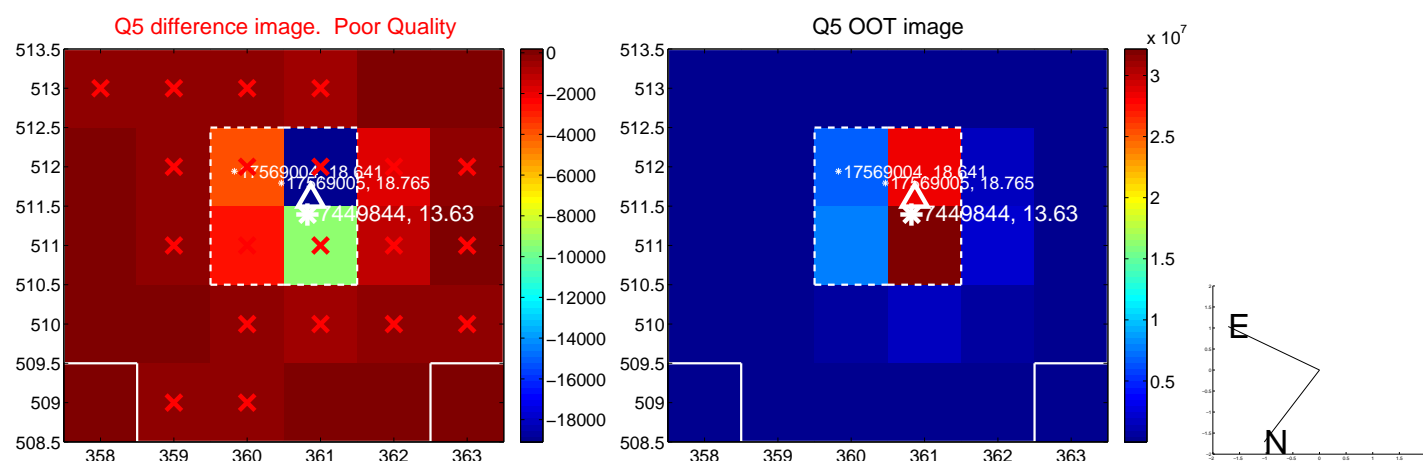


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

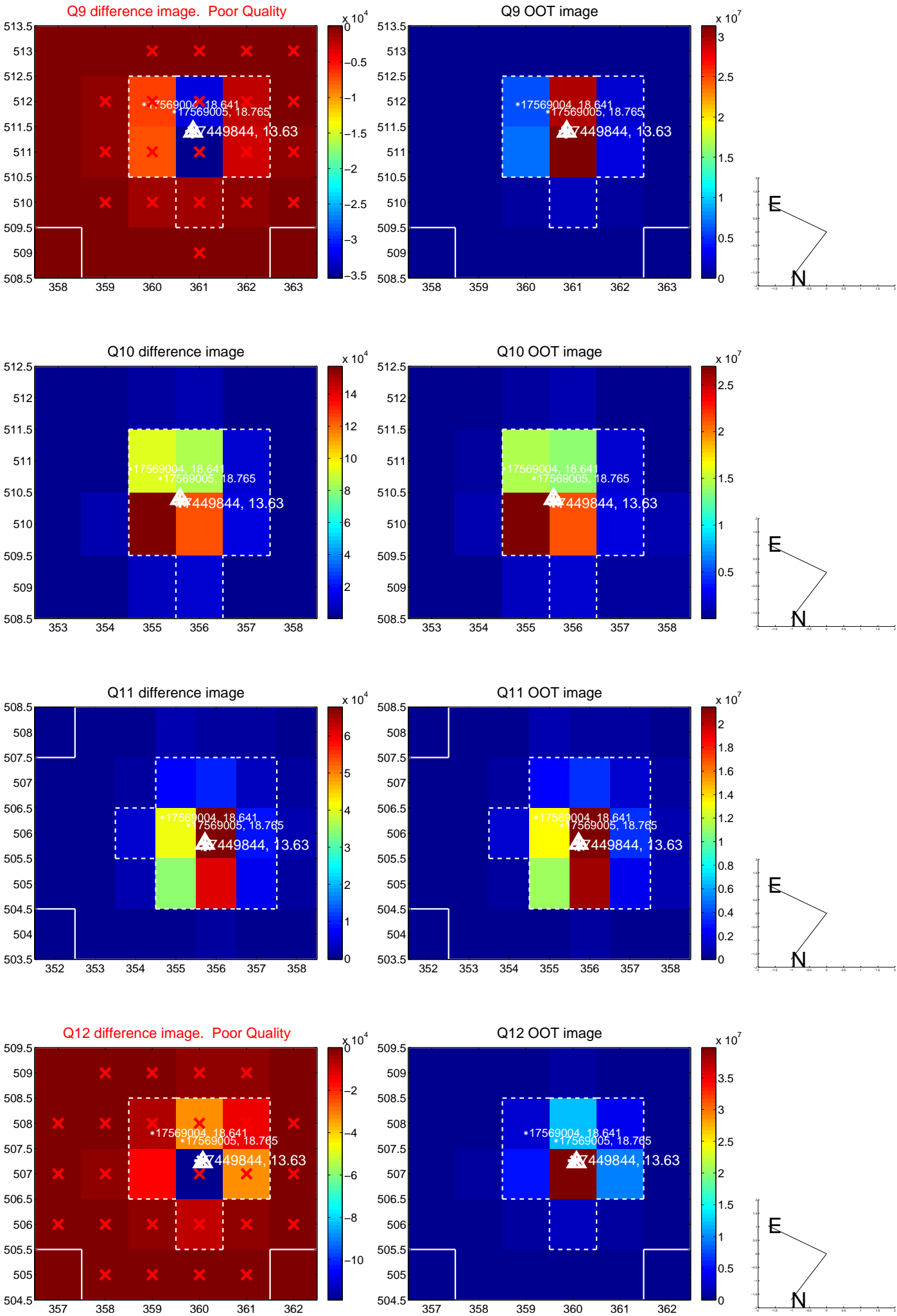
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



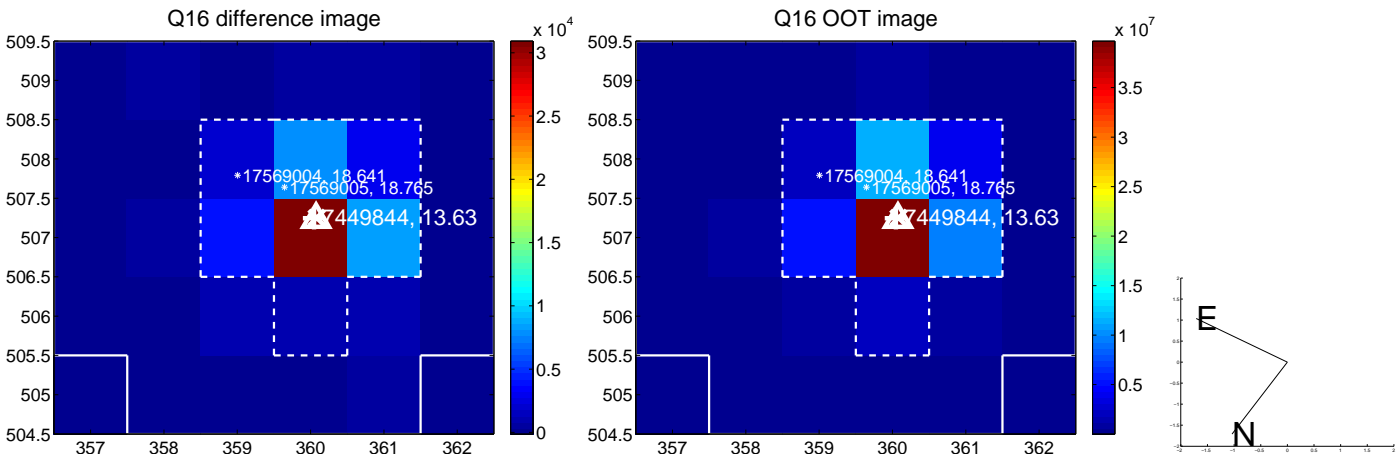
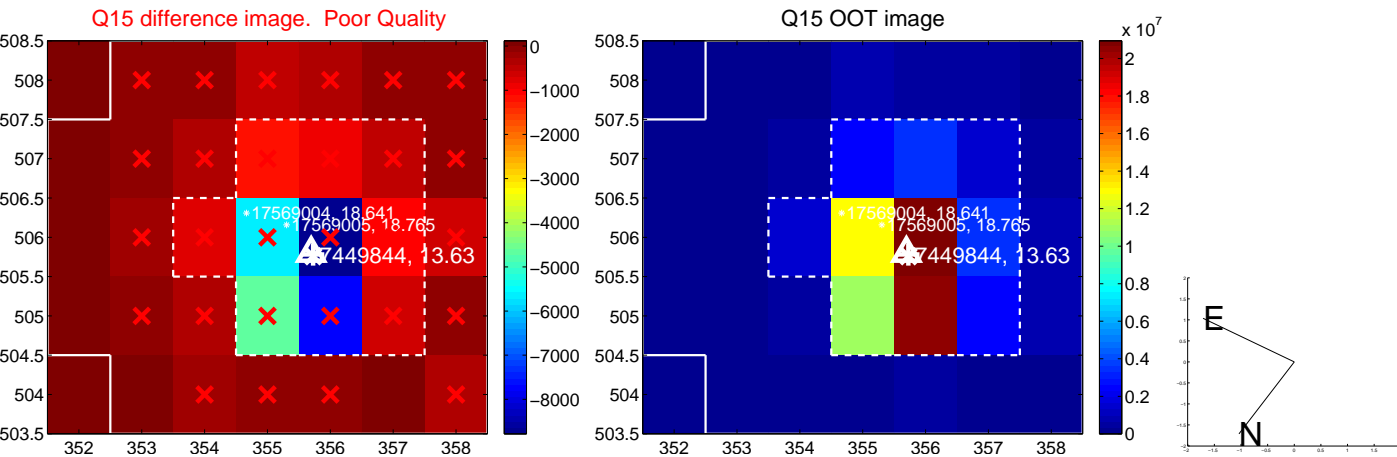
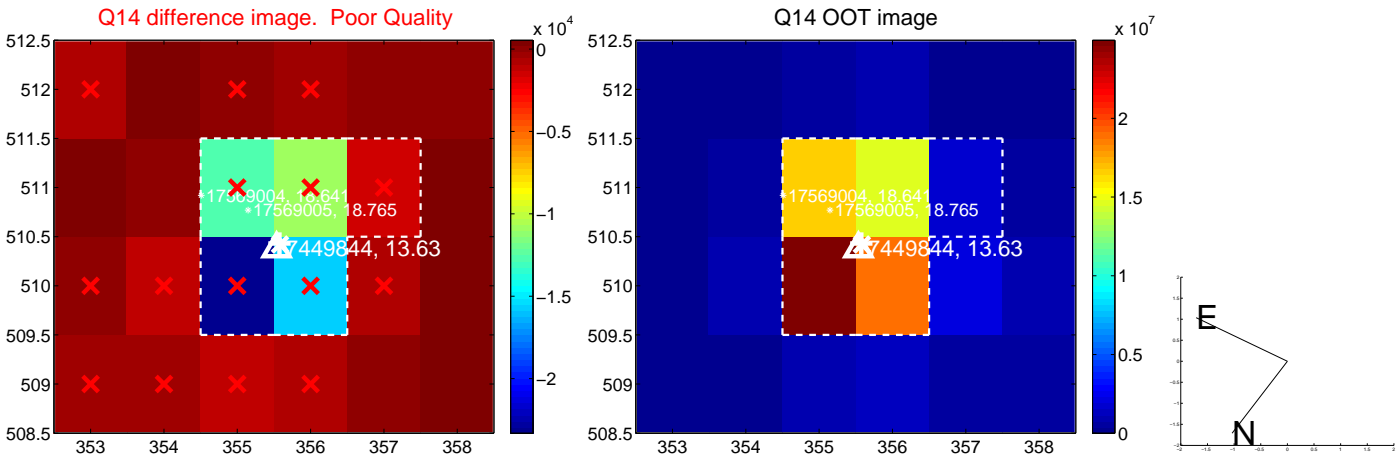
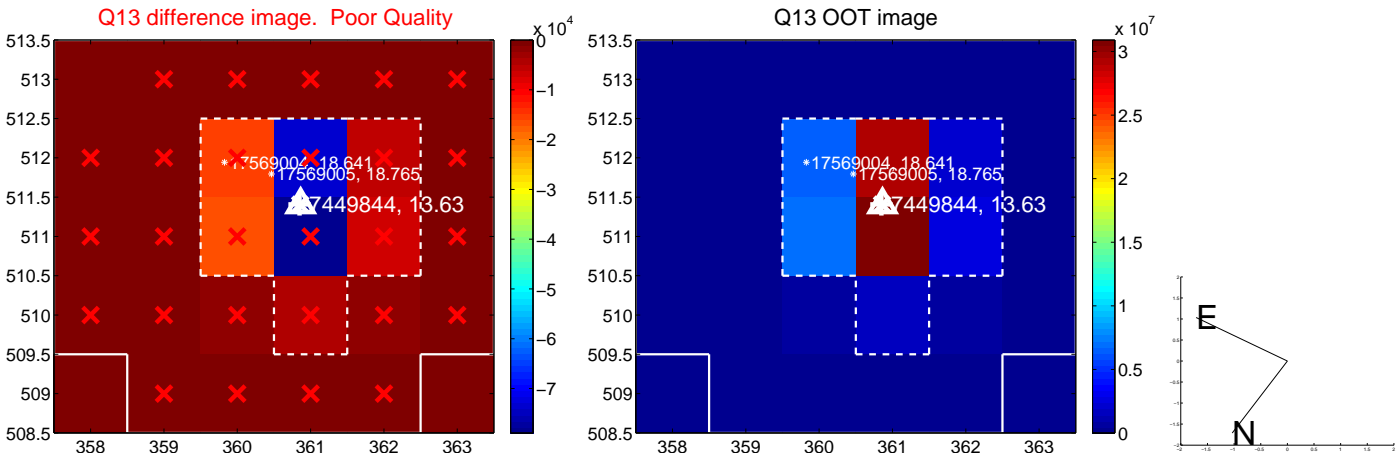
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



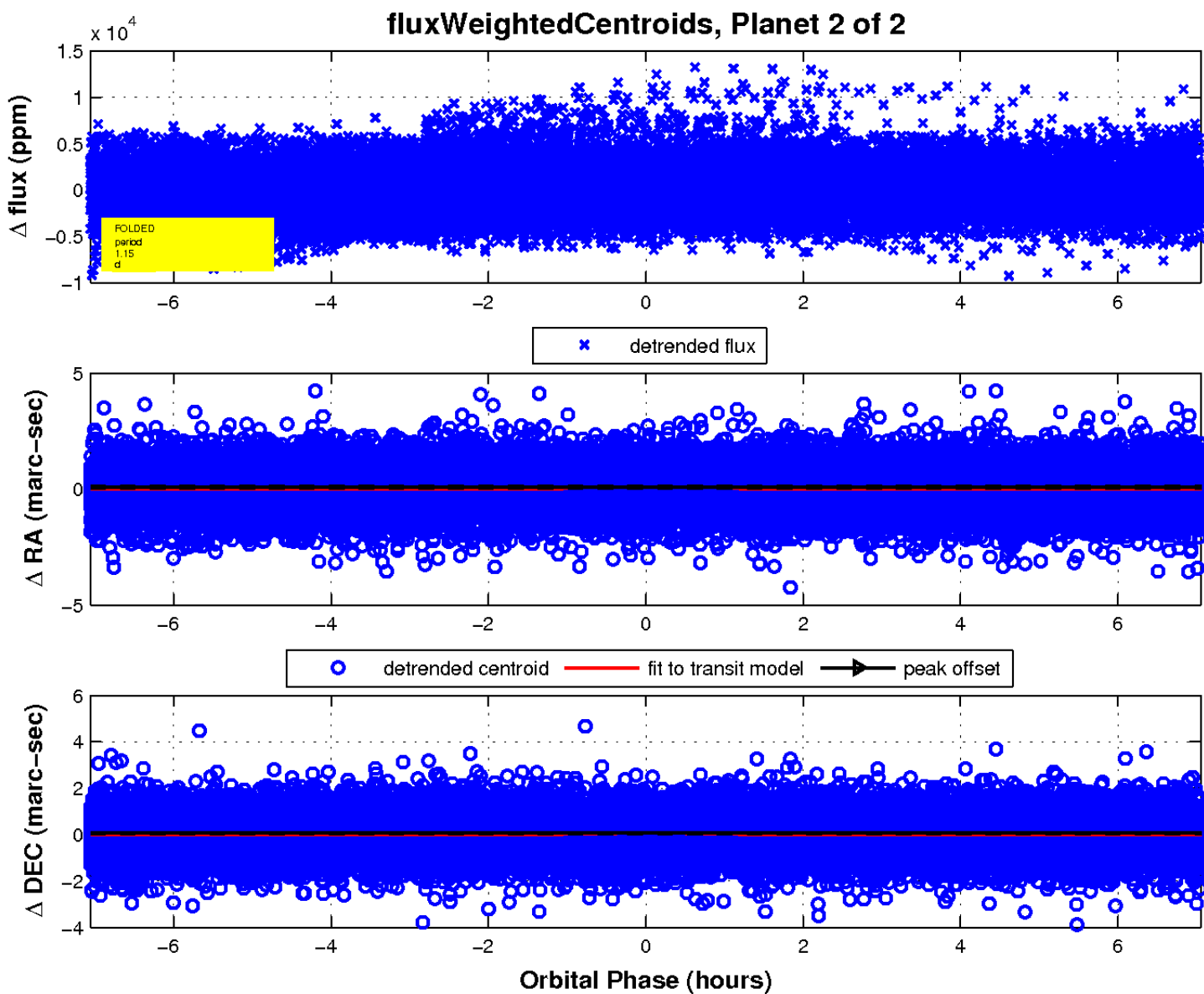
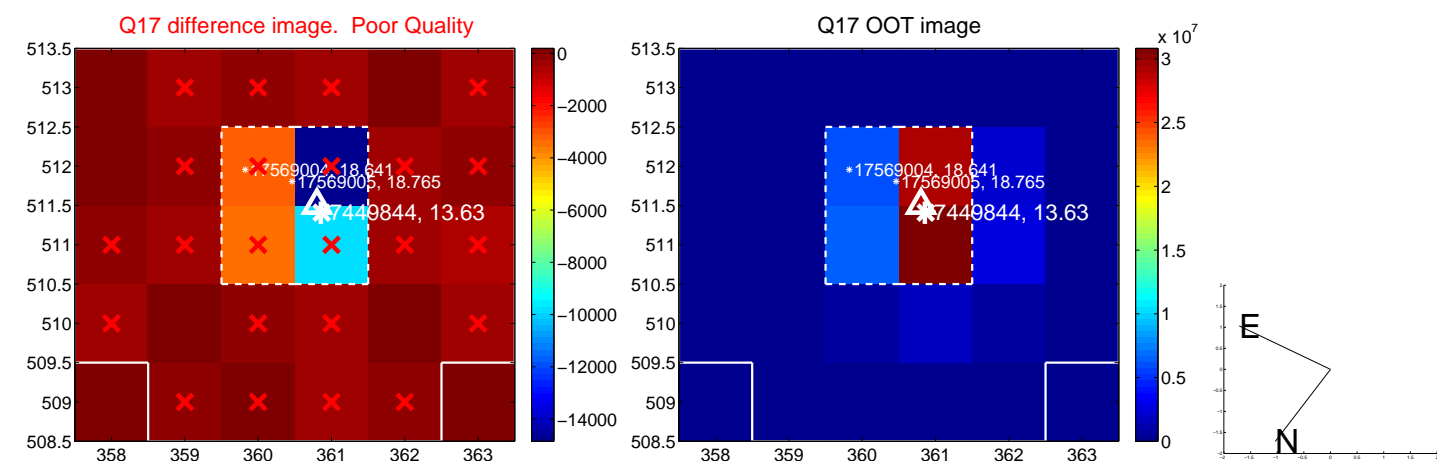
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UKIRT Image

