

KIC 008075439

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})
008075439-01	OBS	No	4.589401	134.287820	107.8	17.282	7.2	6.4	0.90	6063	1.09	350.85
008075439-02	OBS	No	284.453941	411.443519	65.3	13.655	14.6	0.7	0.90	6063	0.77	1.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008075439-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
008075439-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

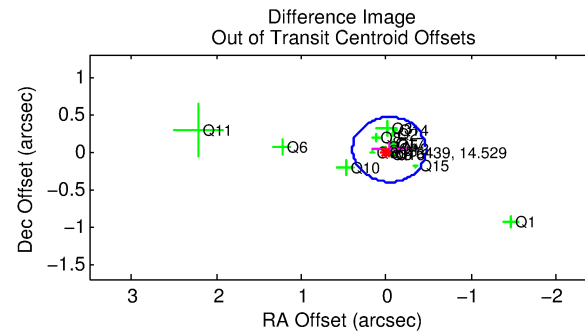
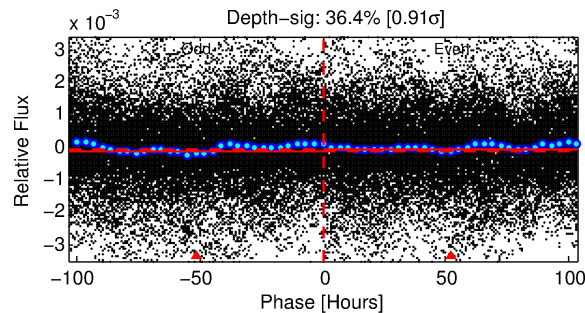
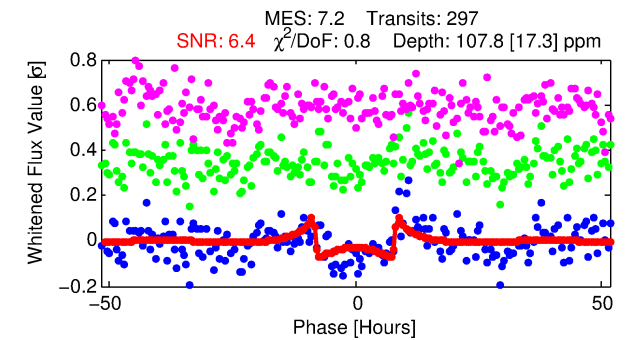
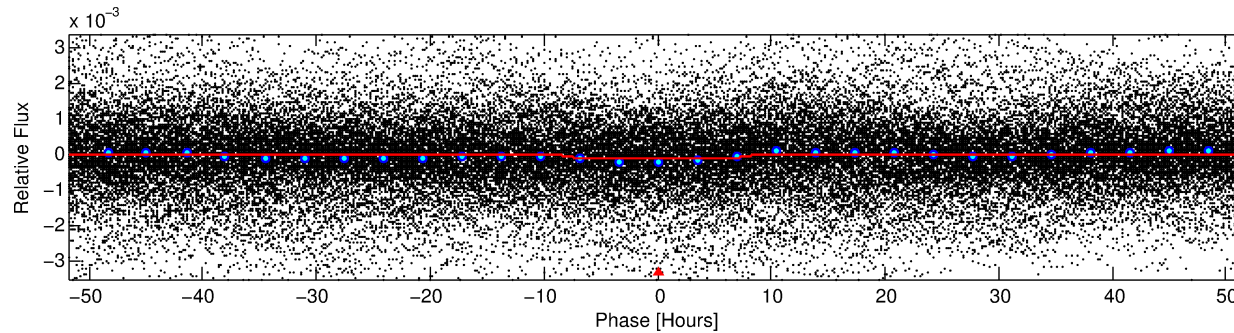
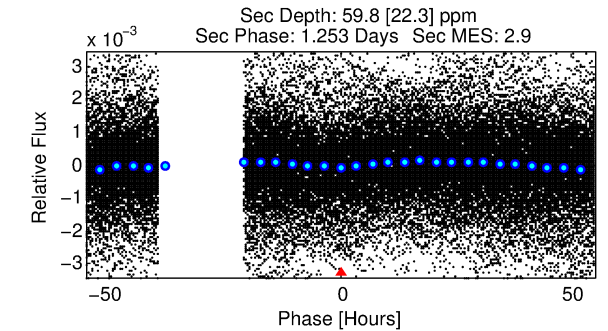
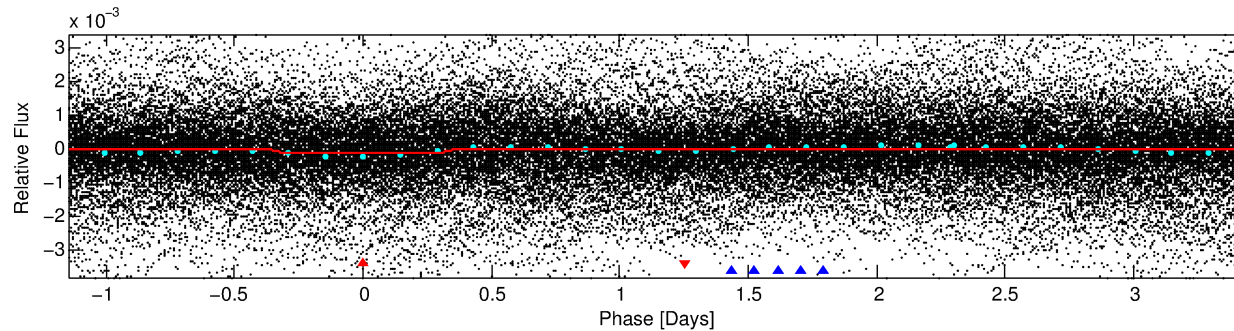
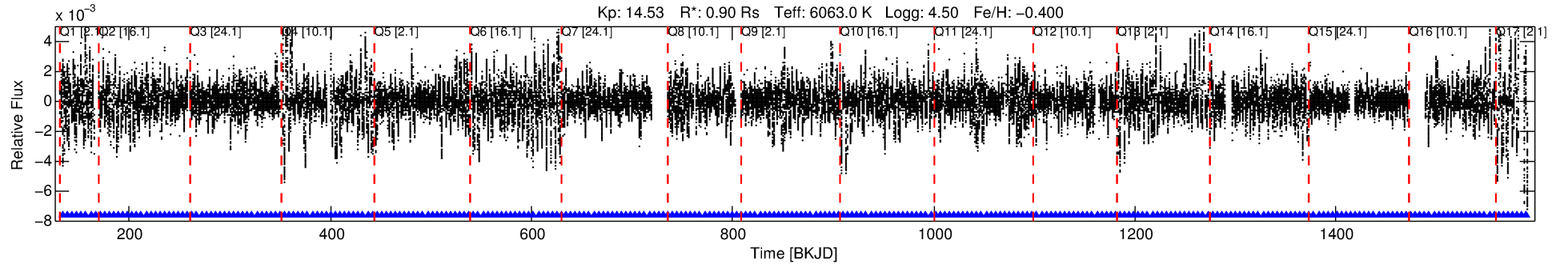
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008075439-01

No Significant Match Found

DV One-Page Summary

KIC: 8075439 Candidate: 1 of 2 Period: 4.589 d



DV Fit Results:

Period = 4.58940 [0.00006] d
Epoch = 134.2878 [0.0103] BKJD
Rp/R* = 0.0111 [0.0012]
a/R* = 1.35 [0.21]
b = 0.89 [0.08]
Seff = 350.85 [137.47]
Teq = 1104 [108] K
Rp = 1.09 [0.34] Re
a = 0.0529 [0.0132] AU
Ag = 77.81 [44.30] [1.73 σ]
Teffp = 5068 [566] K [6.88 σ]

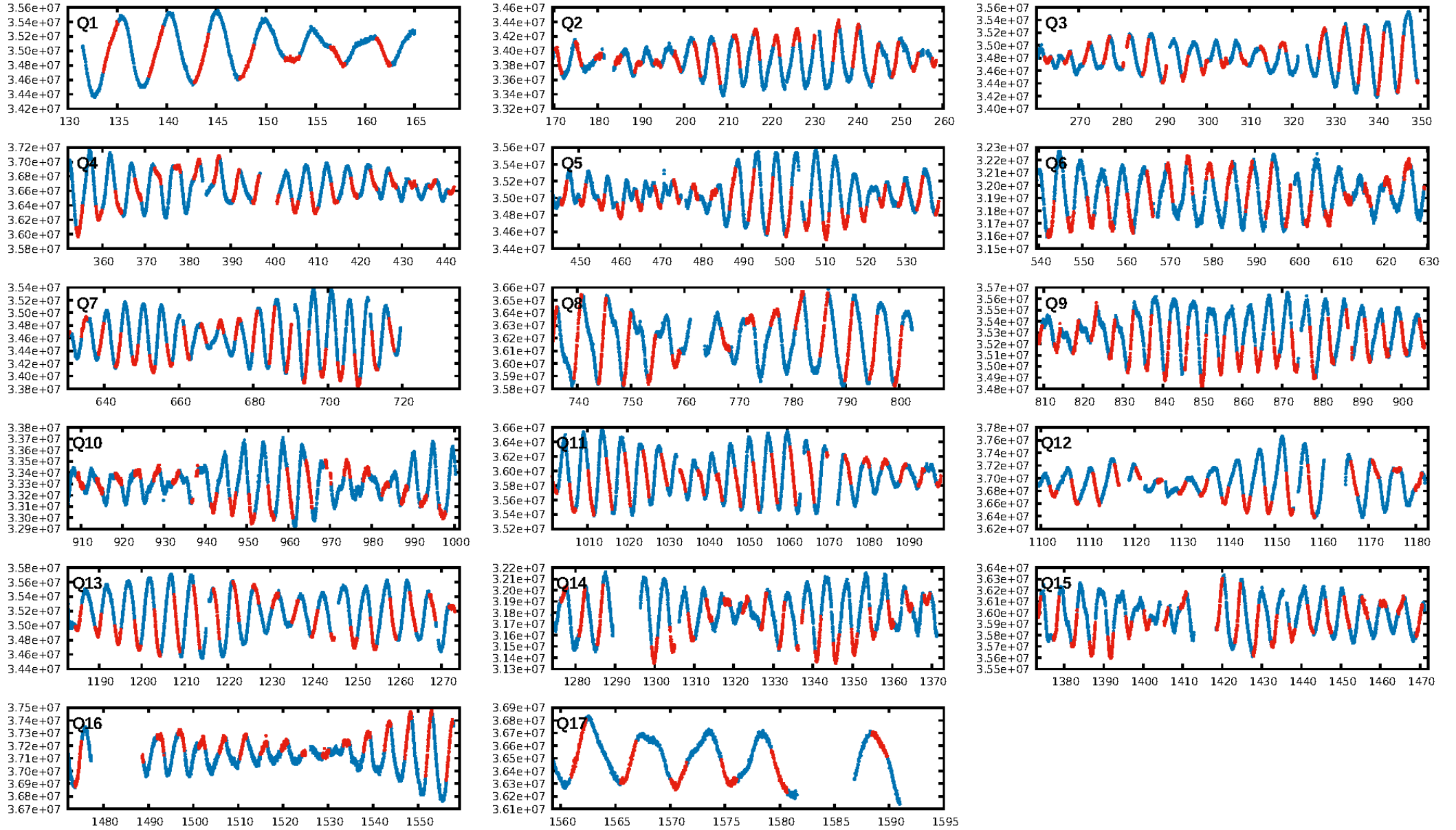
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [304.95 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.28e-08
RollingBand-fgt: 1.00 [284/284]
GhostDiagnostic-chr: 0.6521
Centroid-sig: 0.2%
Centroid-so: 1.070 arcsec [1.99 σ]
OotOffset-rm: 0.048 arcsec [0.33 σ]
KicOffset-rm: 0.116 arcsec [0.66 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

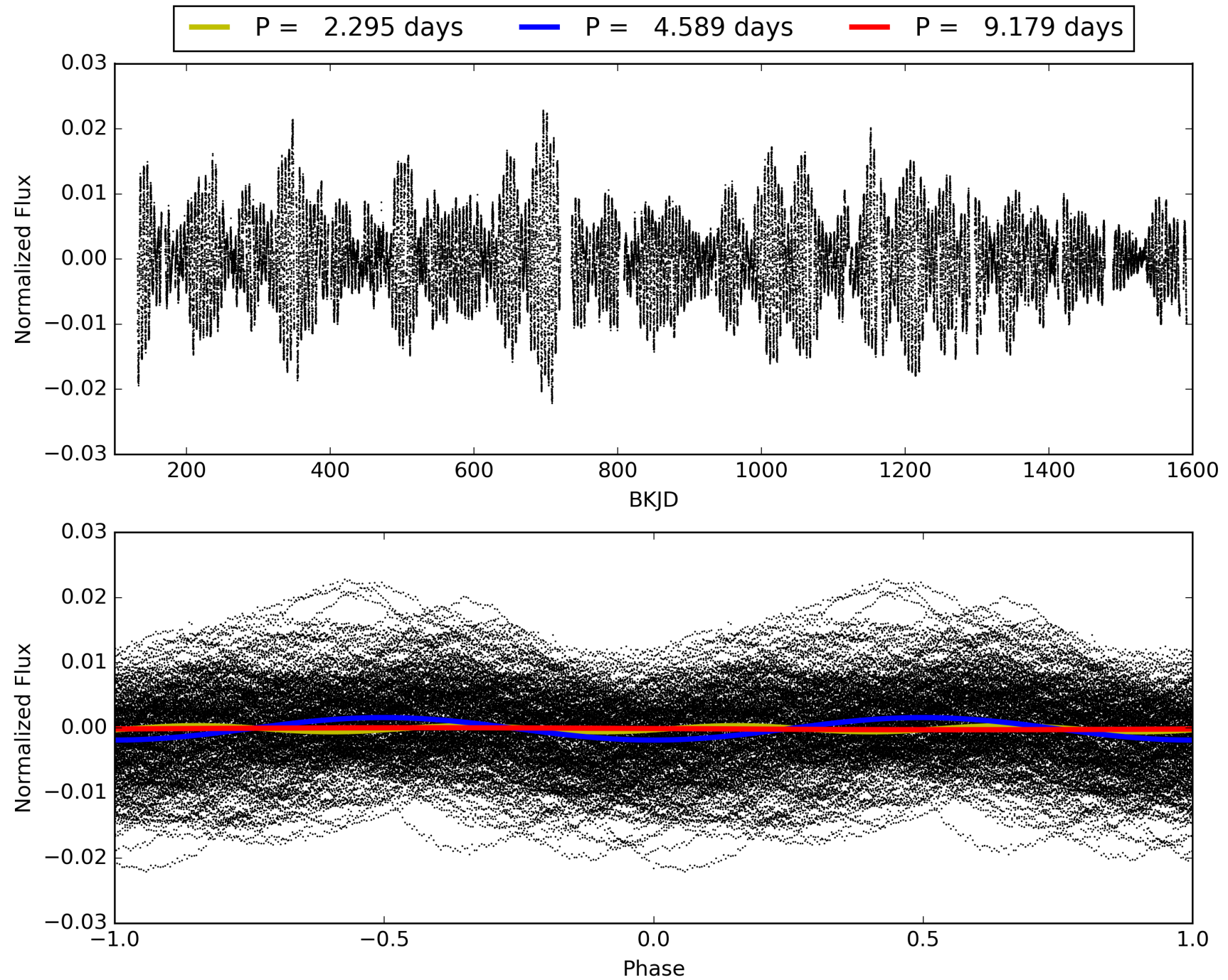
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:08:33 Z

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

TCE 008075439-01, PDC Light Curves

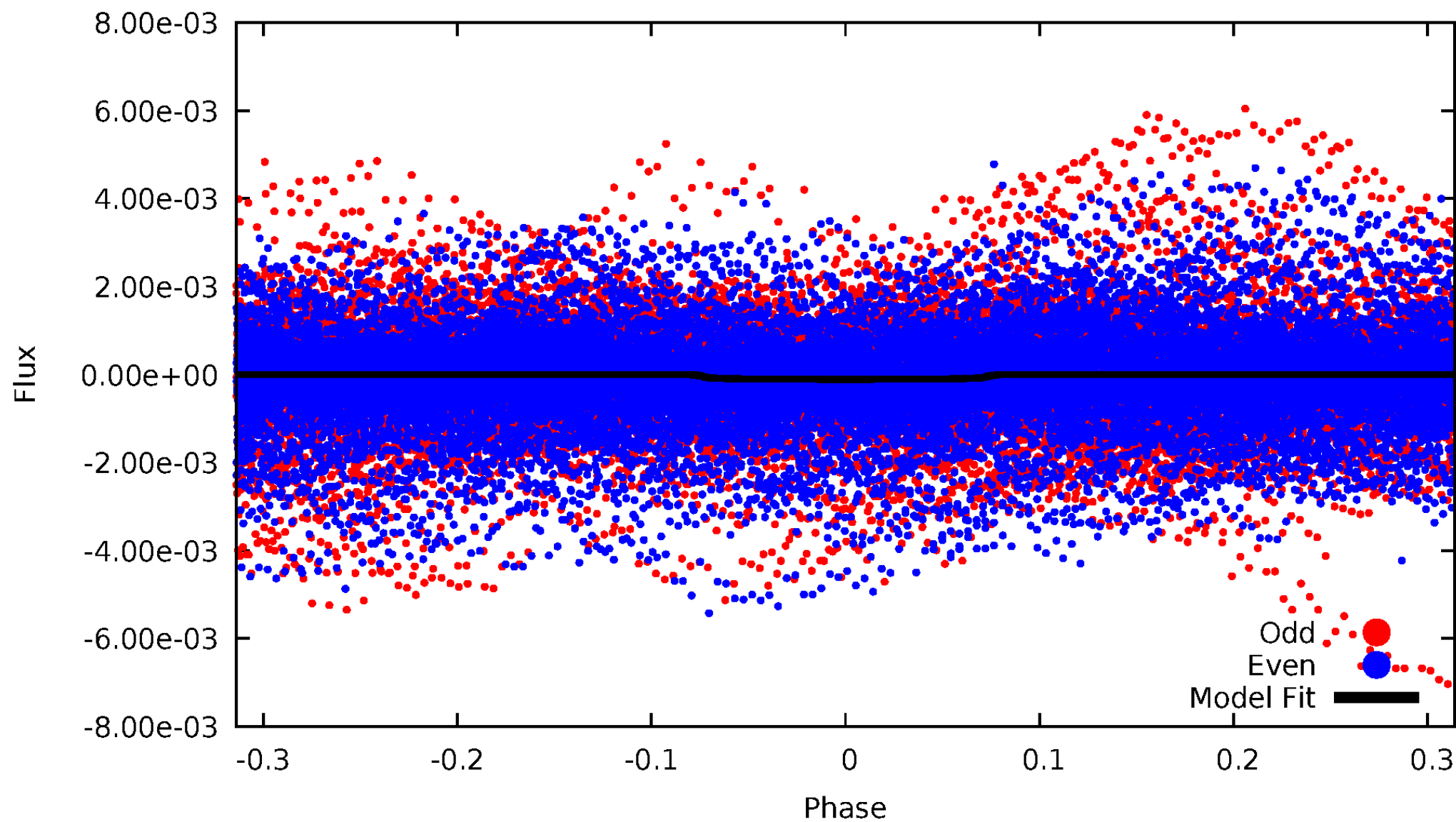


TCE 008075439-01



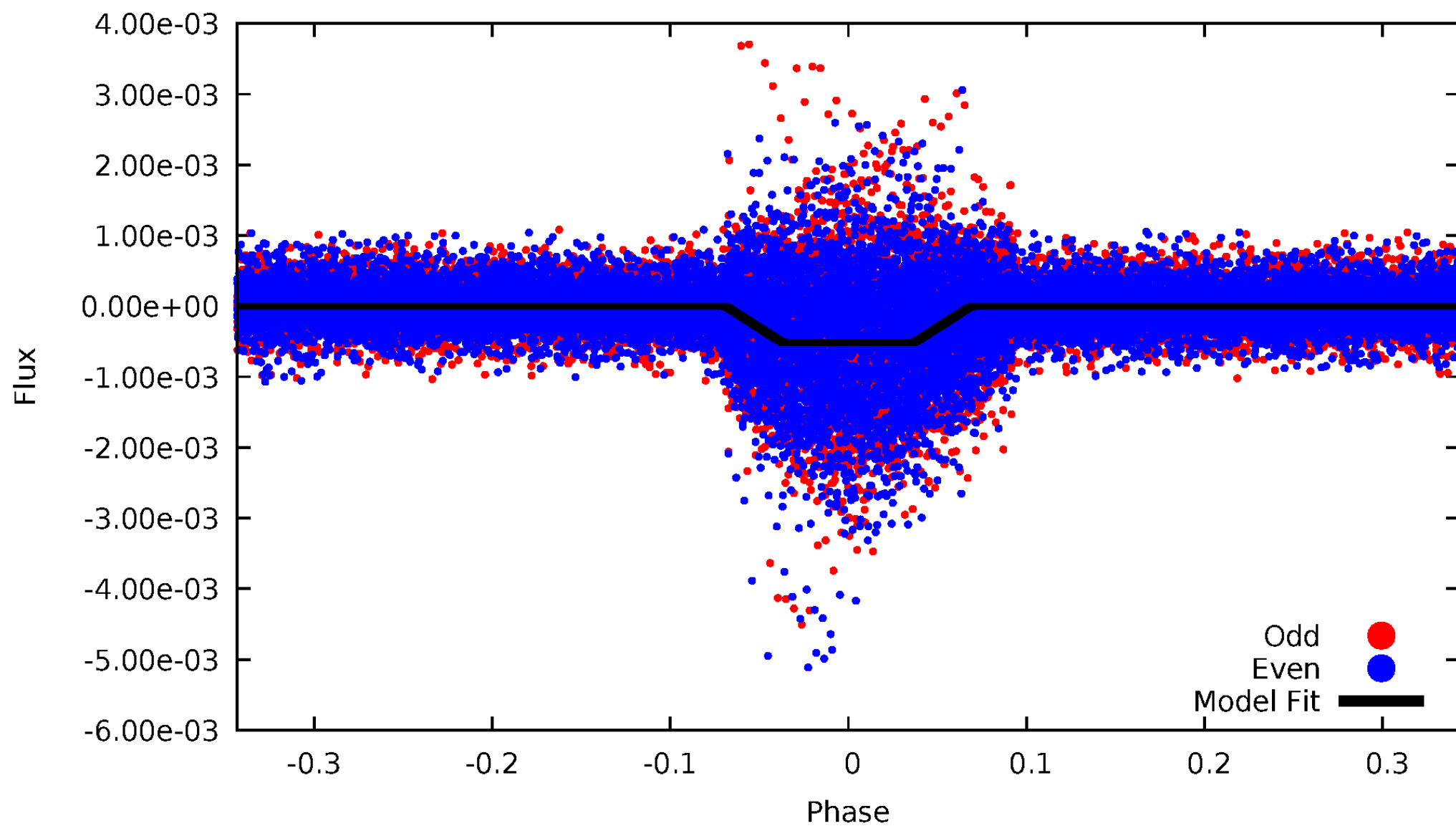
DV Odd/Even

TCE 008075439-01



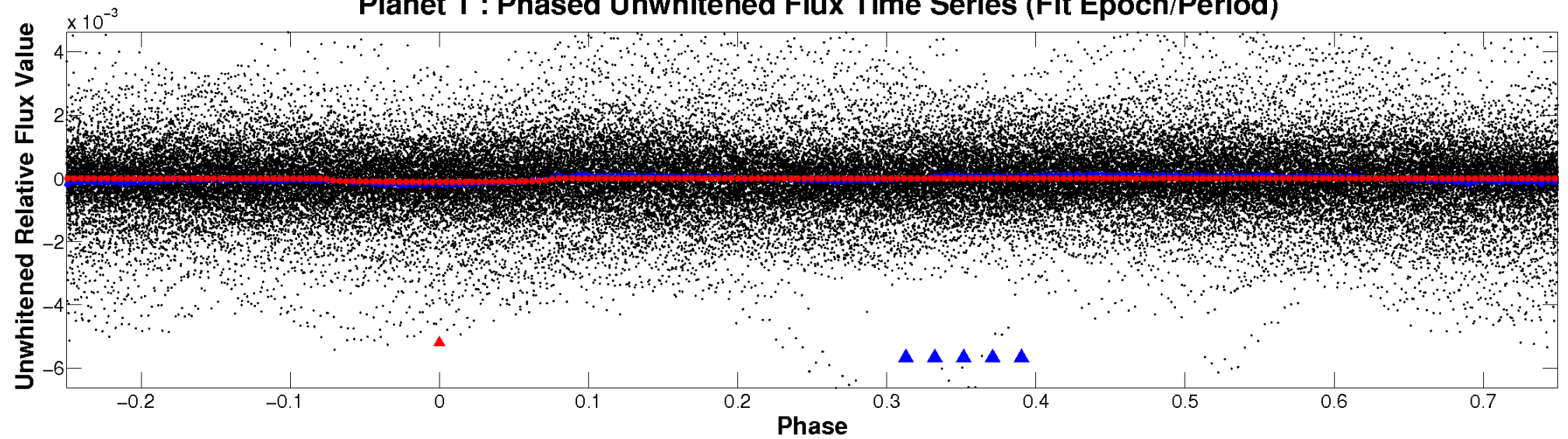
ALT Odd/Even

TCE 008075439-01

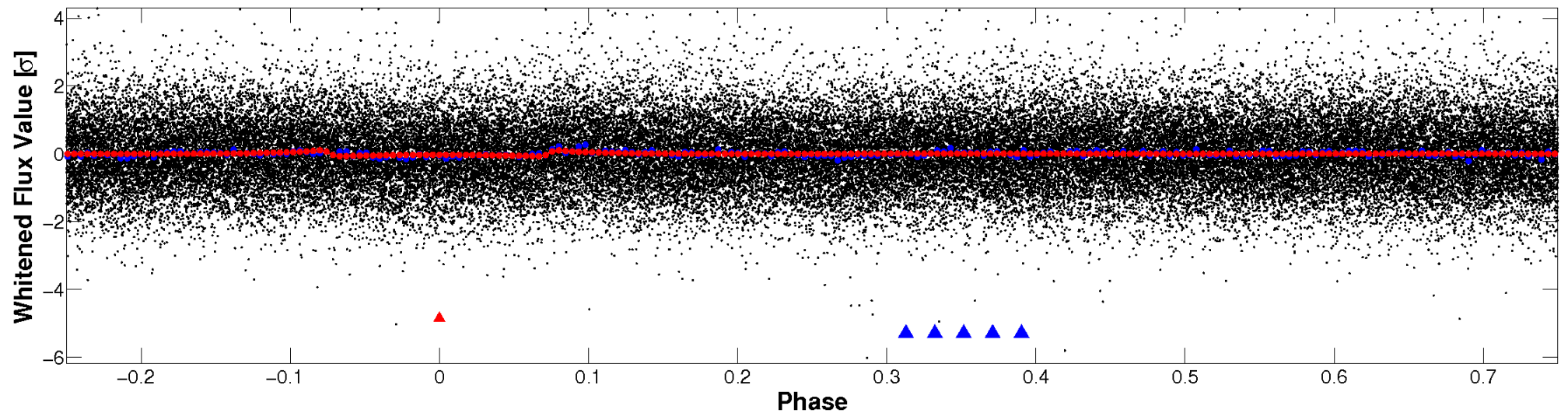


Non-Whitened Vs. Whitened Light Curve

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

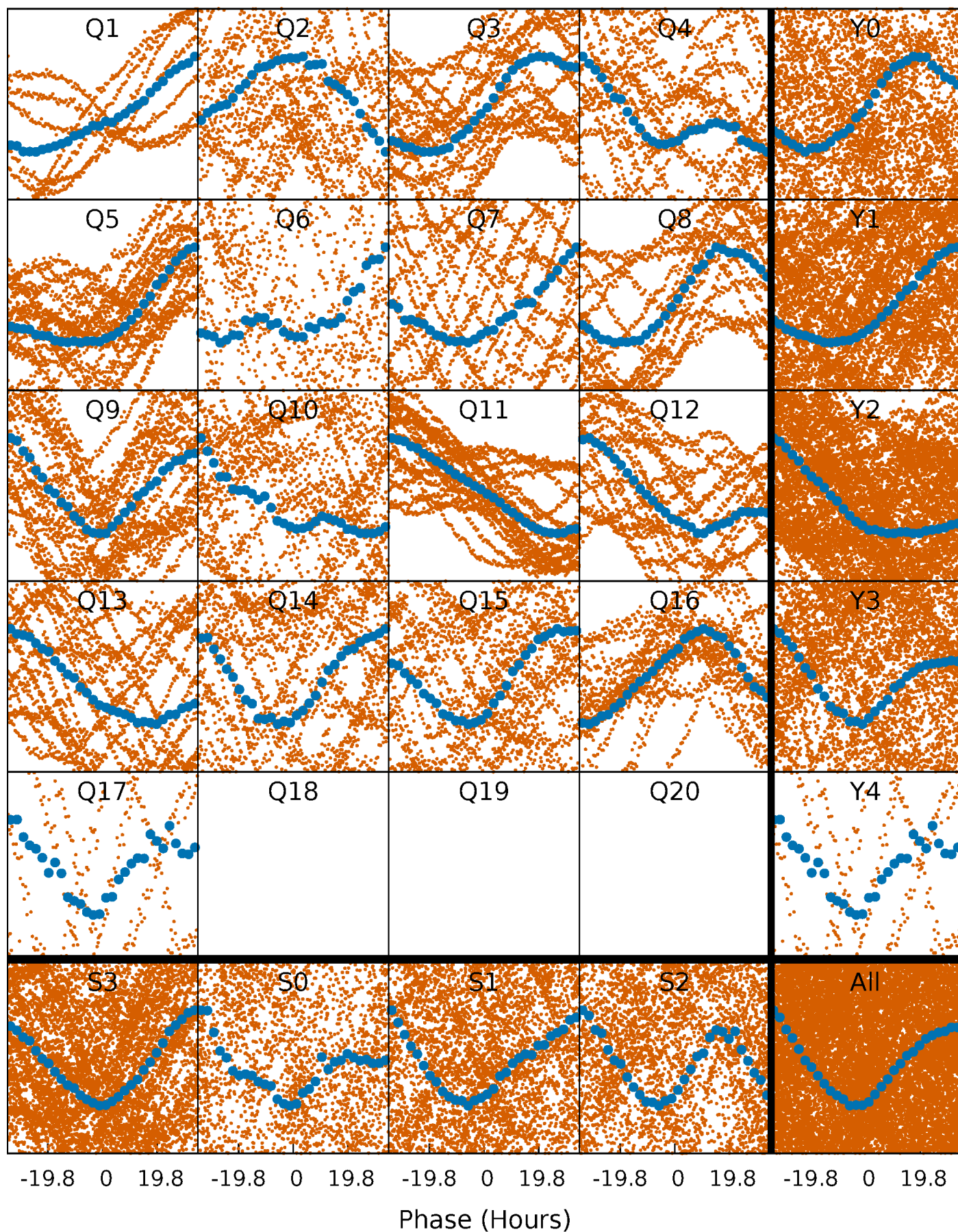


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



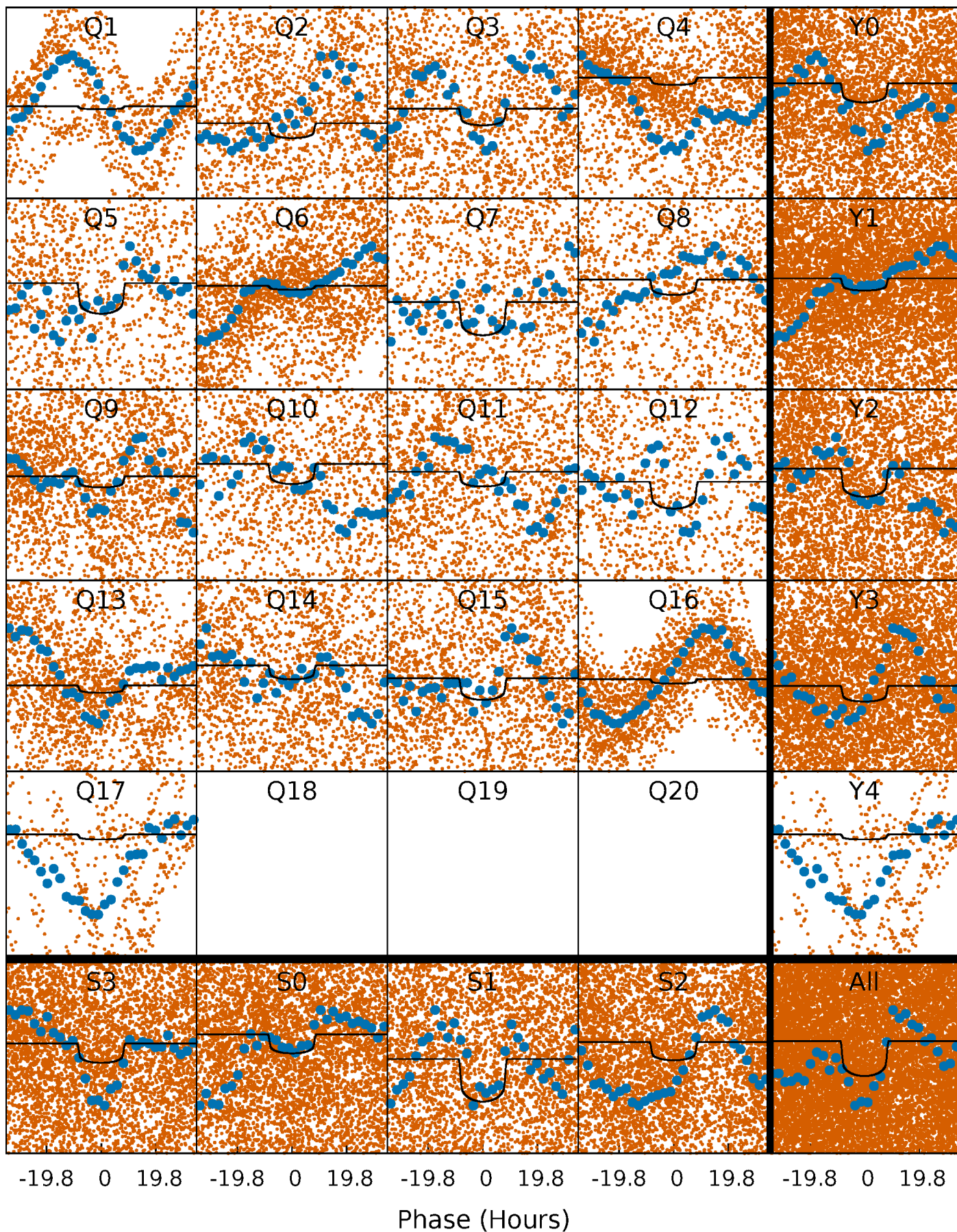
PDC Quarter-Phased Transit Curves

TCE 008075439-01 P= 4.589401 Days $T_0=134.287820$ (BKJD)



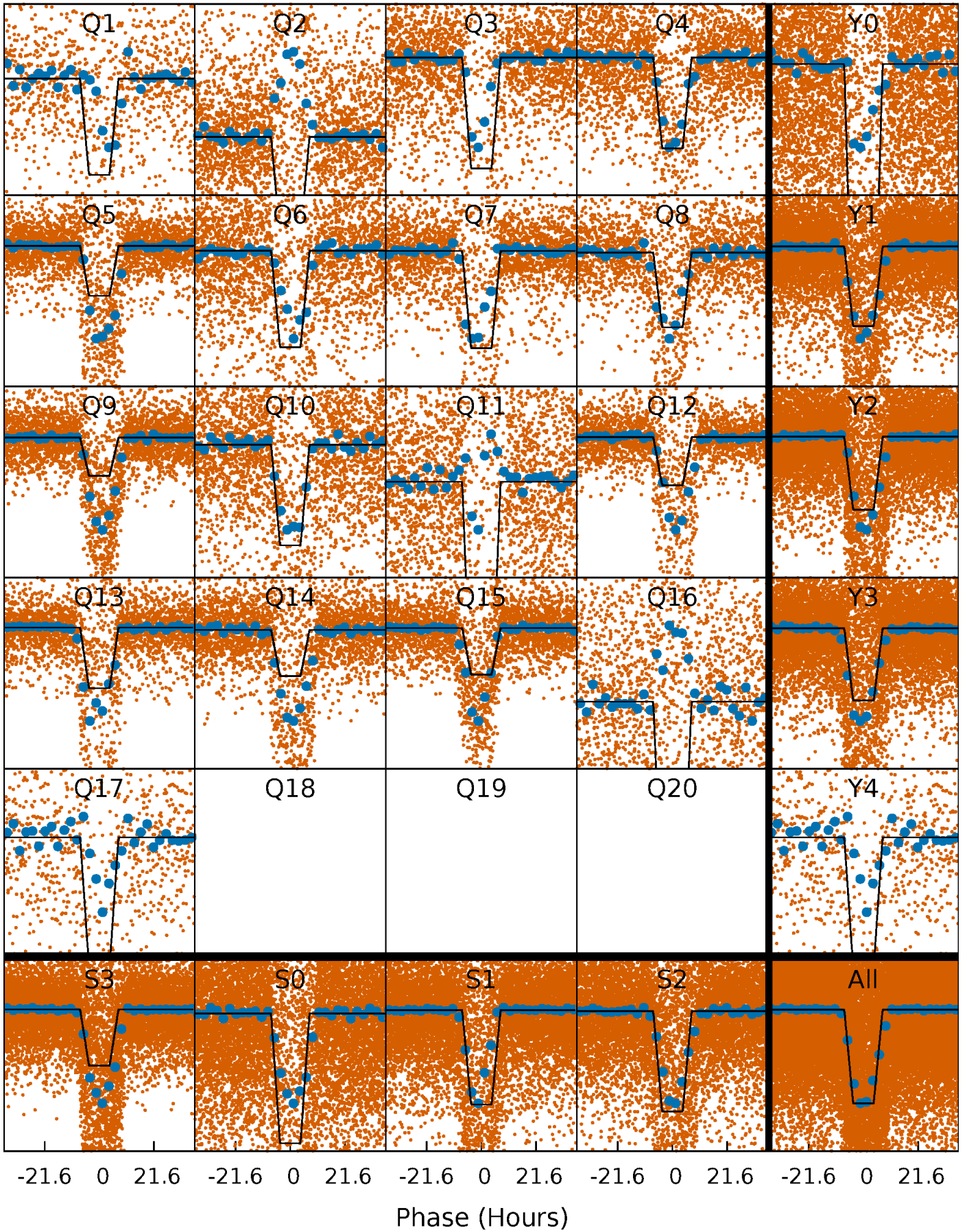
DV Quarter-Phased Transit Curves

TCE 008075439-01 P= 4.589401 Days $T_0=134.287820$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

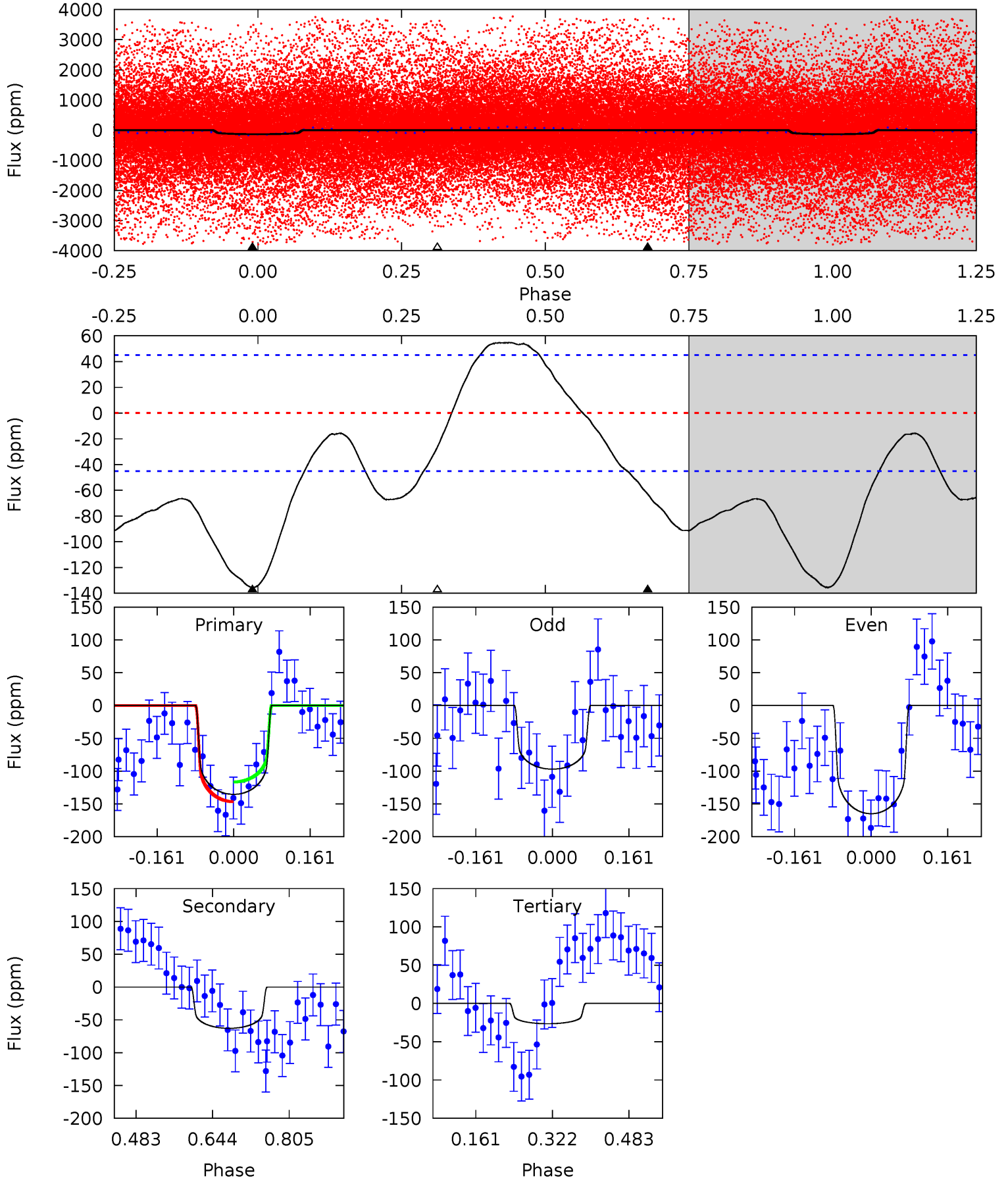
TCE 008075439-01 P= 4.589204 Days $T_0=134.293608$ (BKJD)



DV Model-Shift Uniqueness Test

008075439-01, P = 4.589401 Days, E = 129.698419 Days

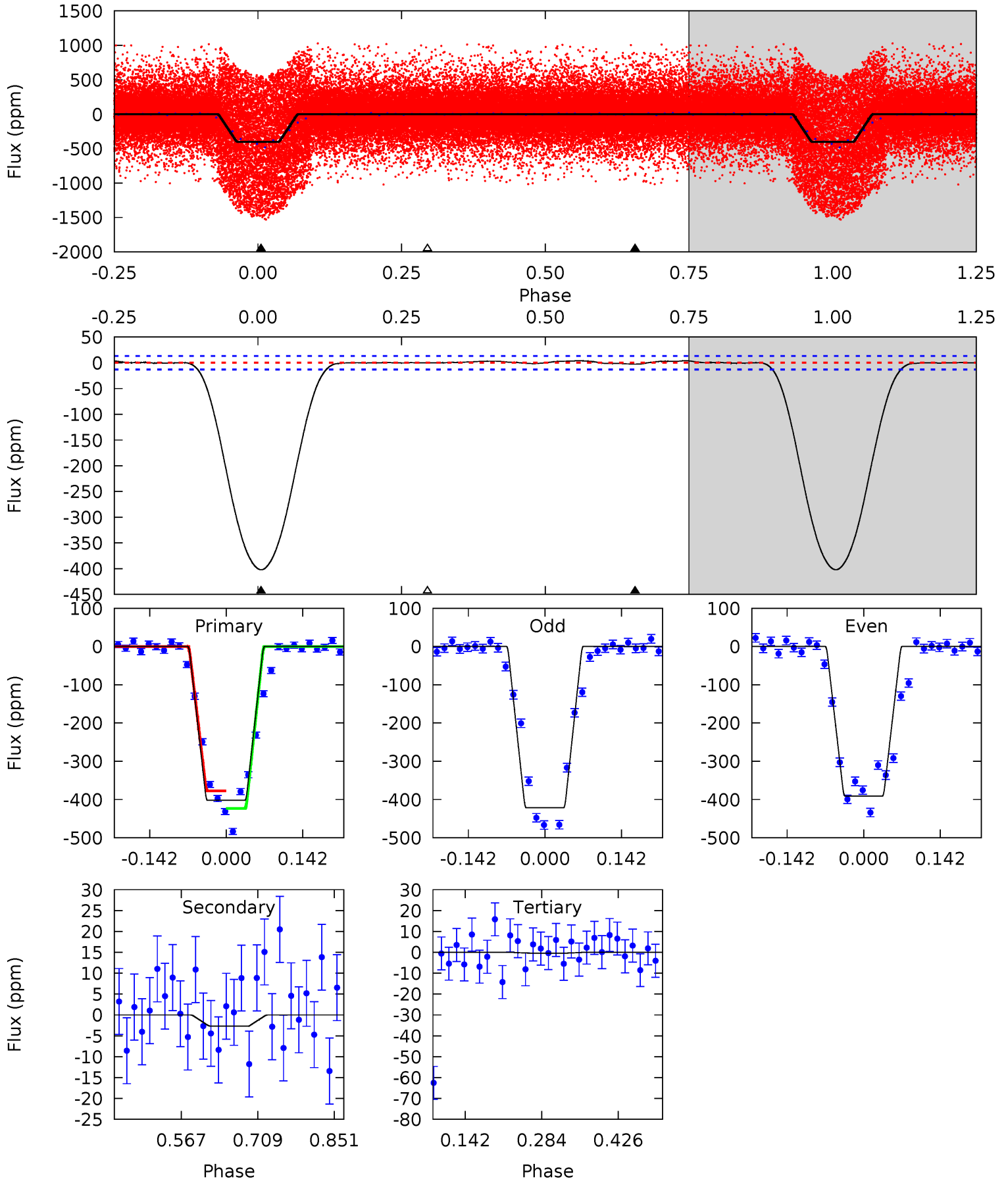
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	6.23	2.62	0	4.46	1.40	4.64	10.8	13.4	3.61	6.23	3.38	1.76	0.29	1.46



Alt Model-Shift Uniqueness Test

008075439-01, P = 4.589204 Days, E = 129.704404 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
137.5	0.92	0.12	0	4.49	1.47	0.39	137.4	137.5	0.79	0.92	5.22	1.26	0.01	7.76



Stellar Parameters For KIC 008075439

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6063^{+164}_{-183}	$4.501^{+0.052}_{-0.208}$	$-0.400^{+0.300}_{-0.300}$	$0.901^{+0.260}_{-0.087}$	$0.937^{+0.118}_{-0.106}$	$1.806^{+0.475}_{-0.906}$
	+3%/-3%	+1%/-5%	+75%/-75%	+29%/-10%	+13%/-11%	+26%/-50%
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 008075439-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-63 ± 10	$1.14^{+0.22}_{-0.15}$	1583^{+115}_{-79}	5171^{+344}_{-323}	71^{+27}_{-21}
Alt.	-3 ± 3	$2.33^{+0.37}_{-0.23}$	1579^{+110}_{-75}	2291^{+367}_{-4624}	$0.662^{+0.891}_{-0.784}$

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 $A_{obs} \gg 1.0$

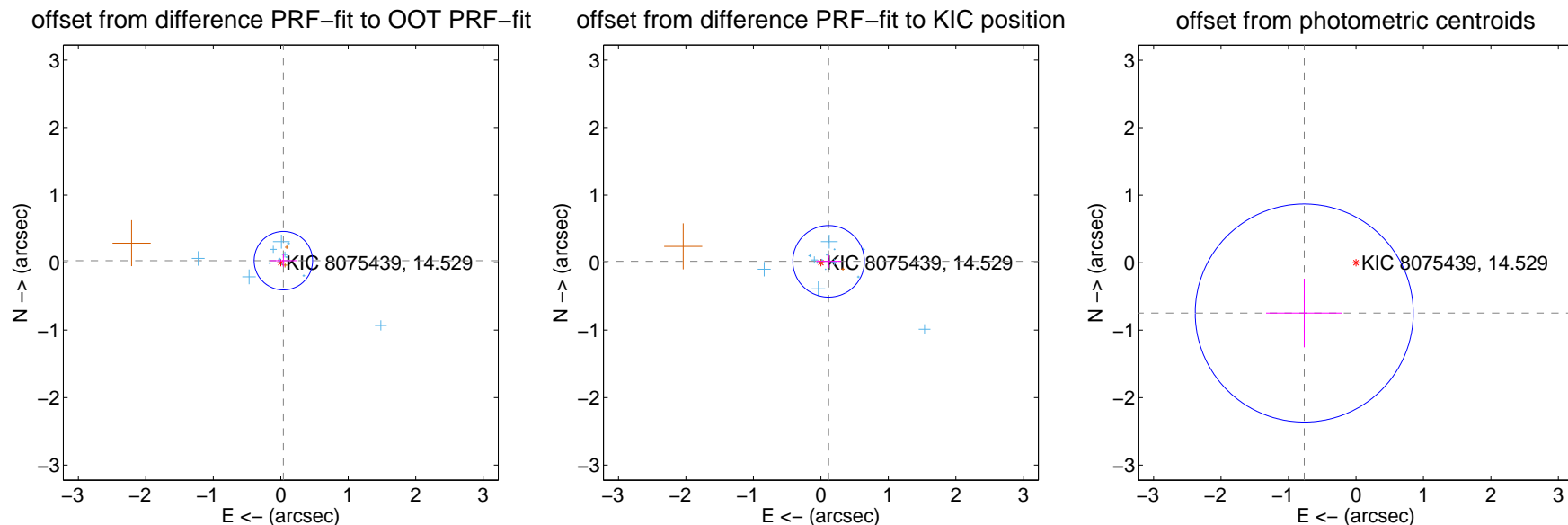
DV Centroid Data

Supplemental centroid analysis for 008075439-01. Kepler magnitude: 14.53. Transit SNR 6.40

There are 14 quarters with good PRF difference image offsets

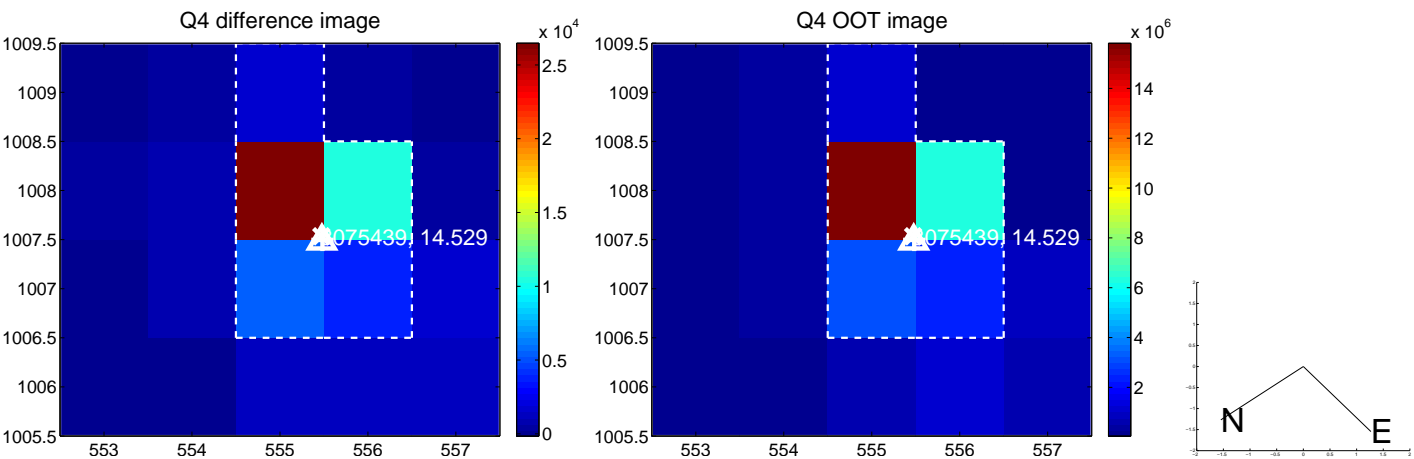
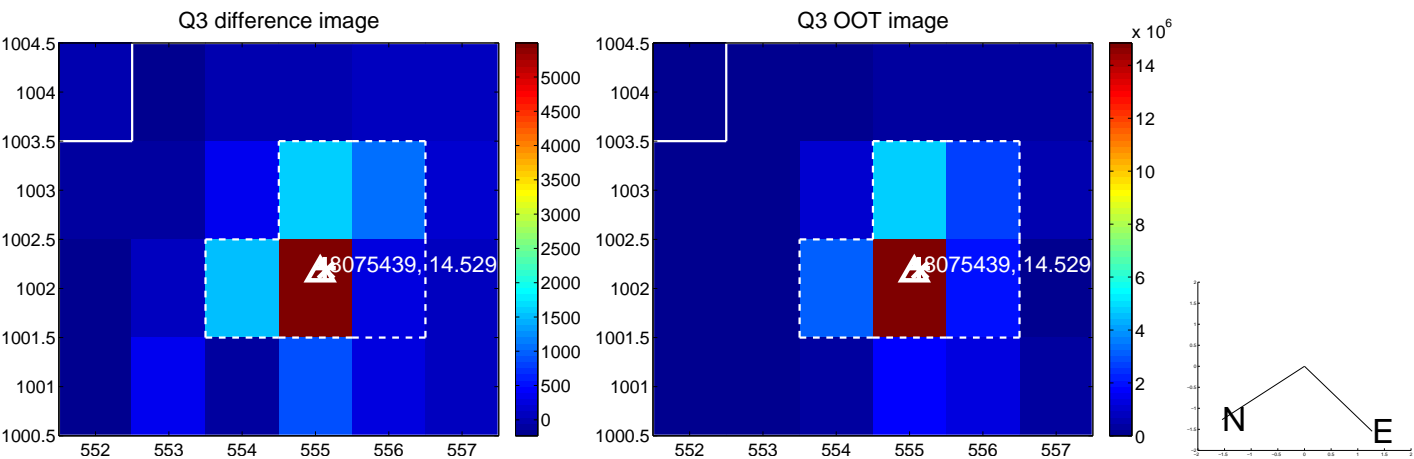
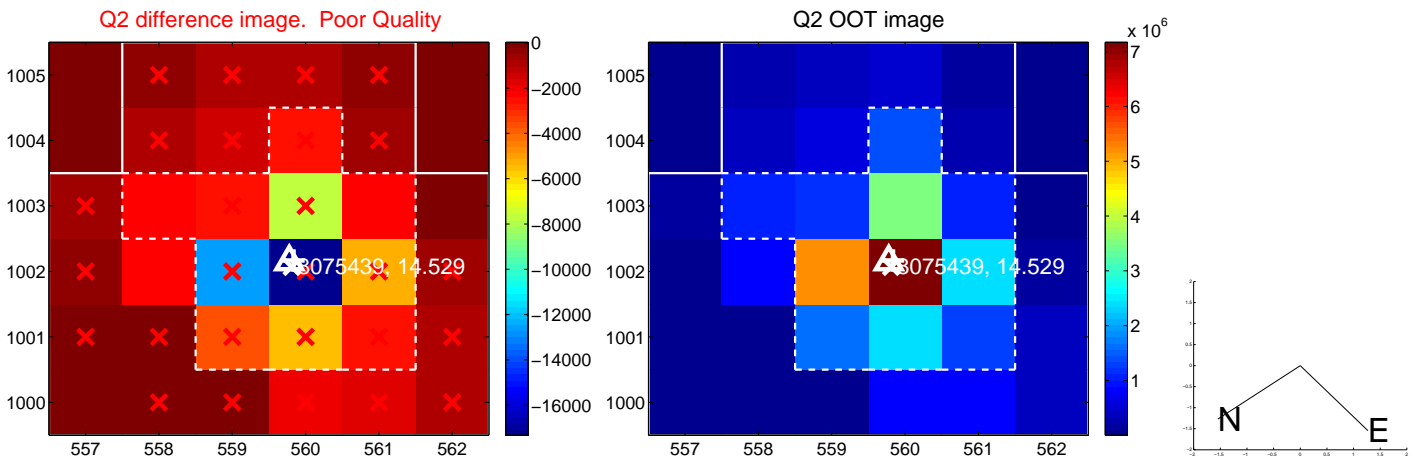
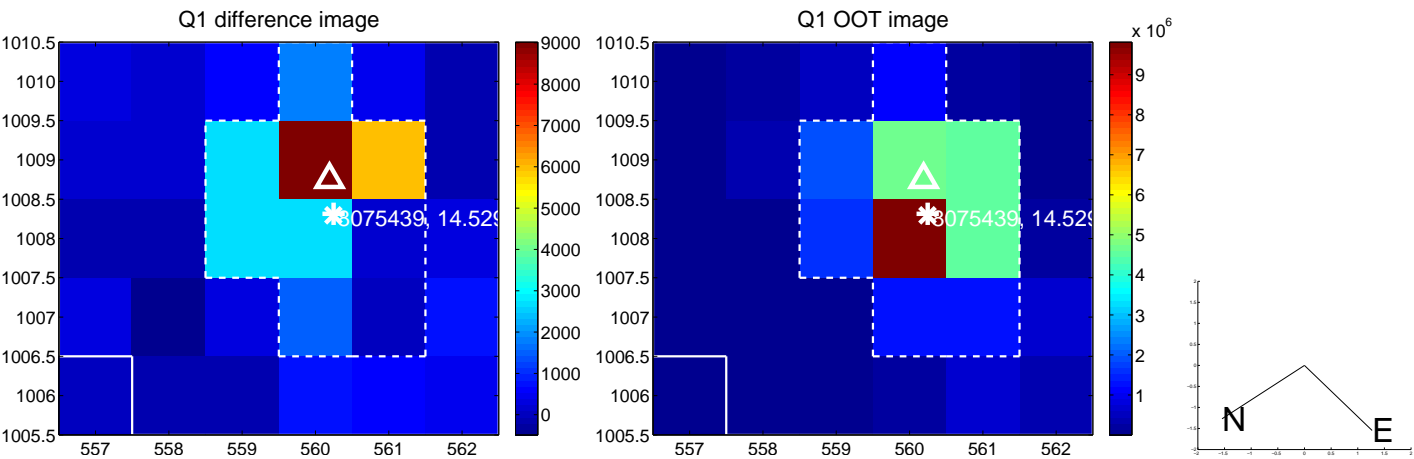
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.048 ± 0.144	0.33	-0.039 ± 0.194	0.028 ± 0.094
PRF-fit source offset from KIC position	0.116 ± 0.177	0.66	-0.115 ± 0.184	0.019 ± 0.096
photometric centroid source offset	1.07 ± 0.54	1.99	0.77 ± 0.57	-0.75 ± 0.51

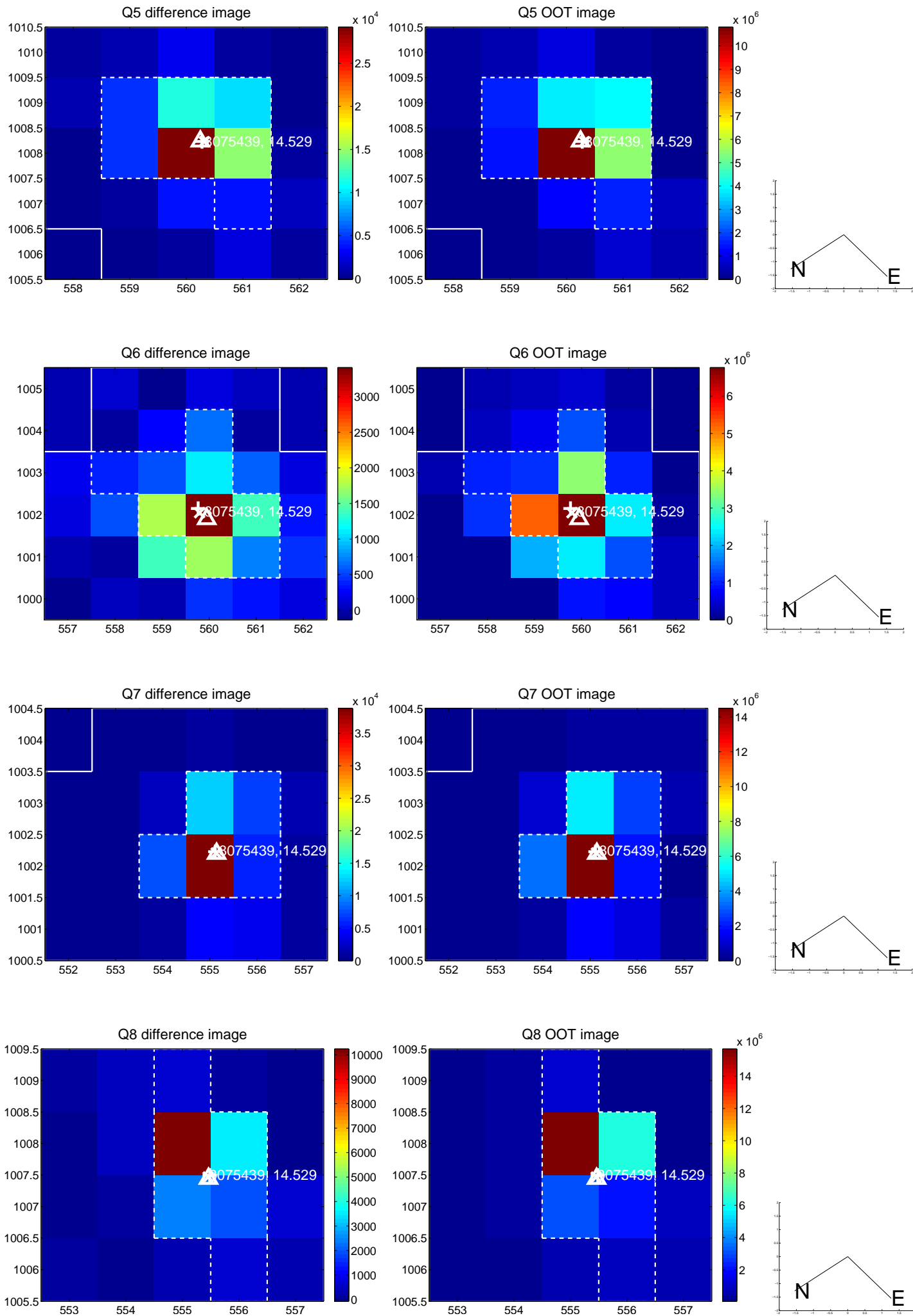


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

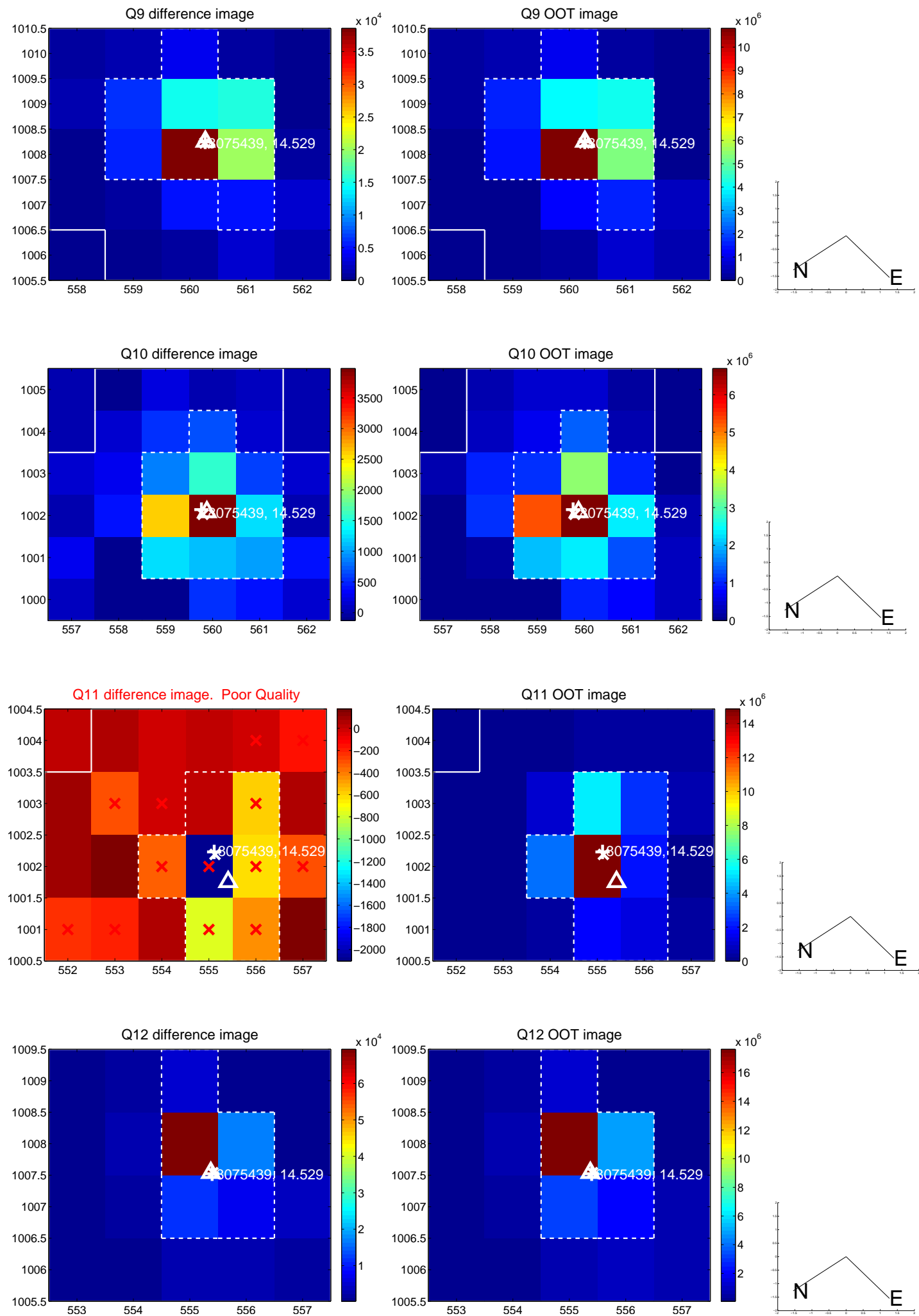
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



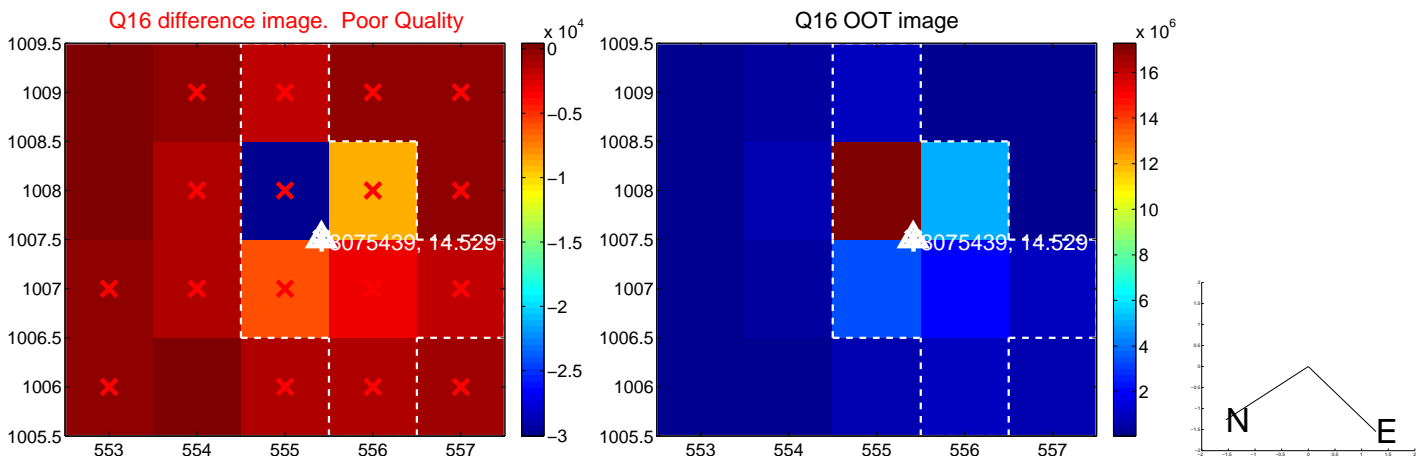
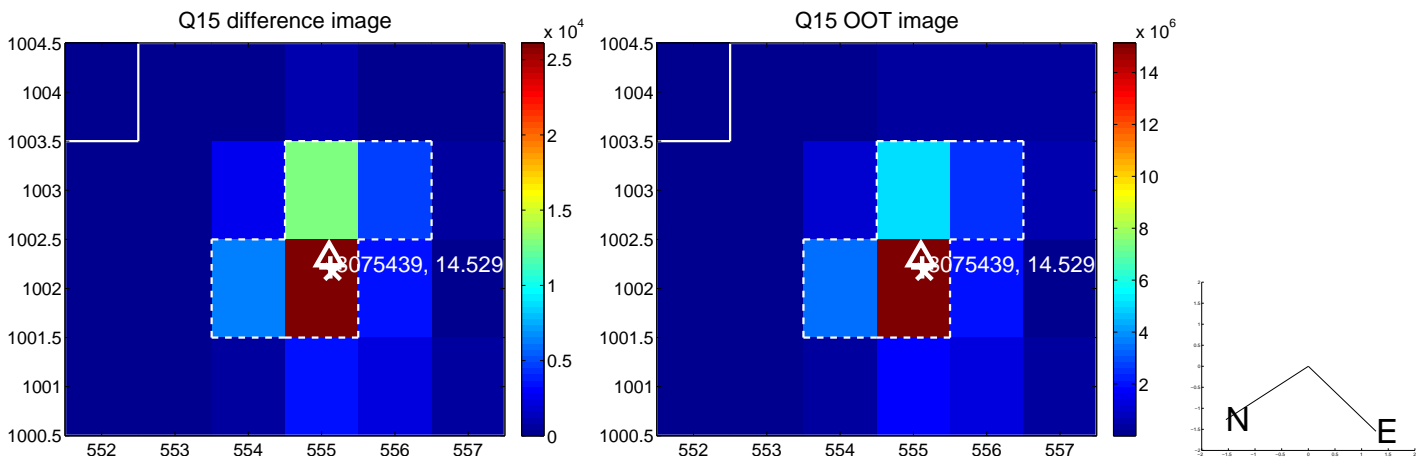
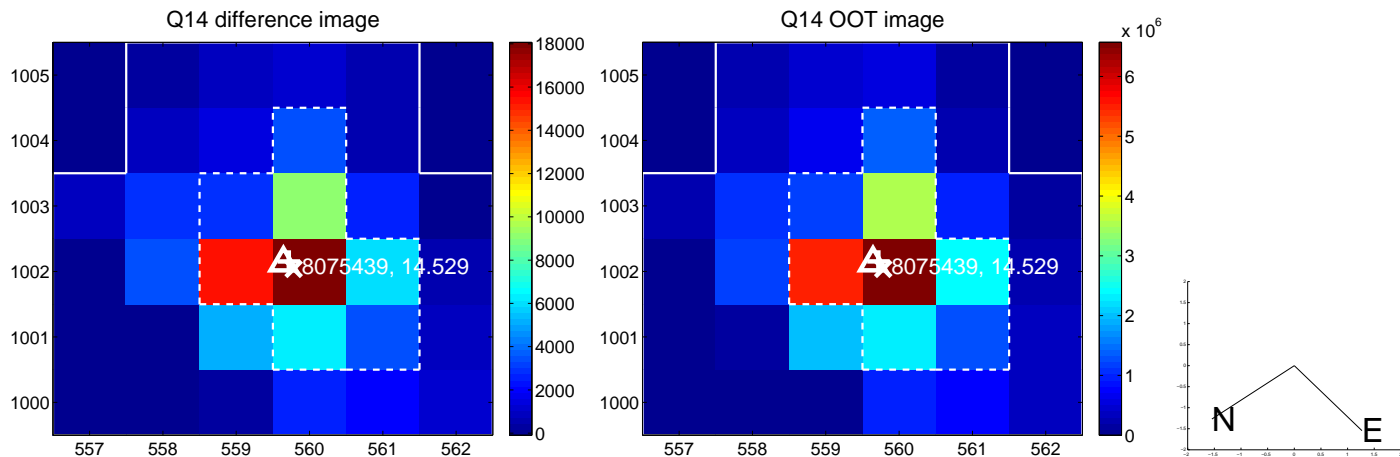
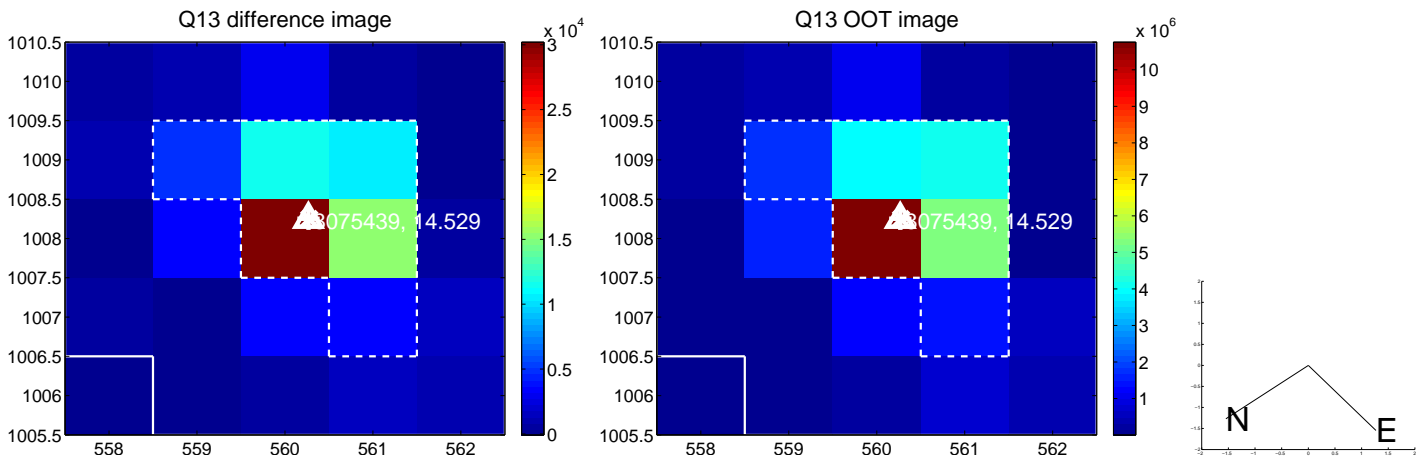
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



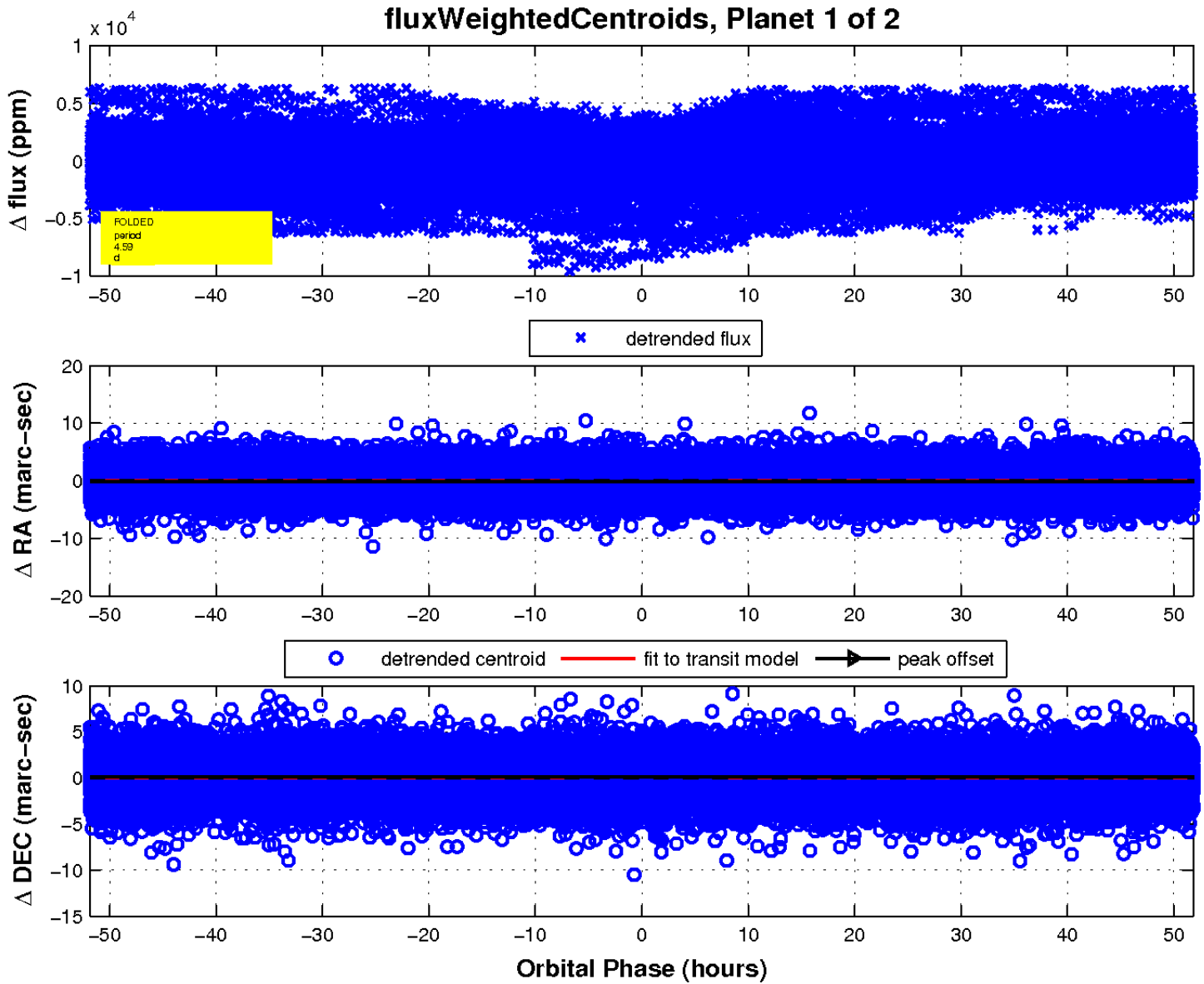
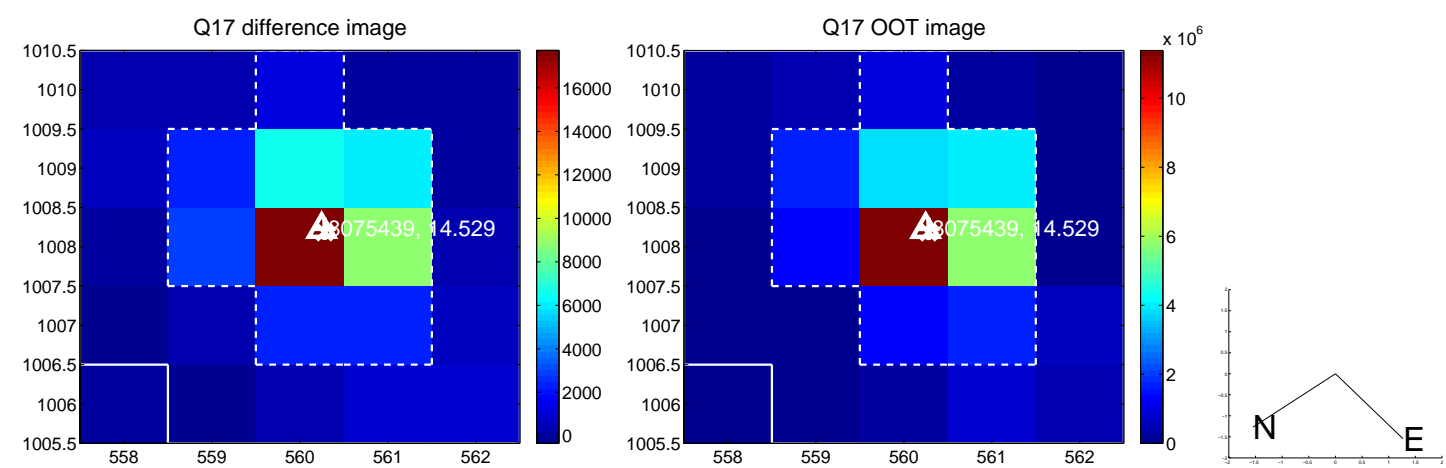
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

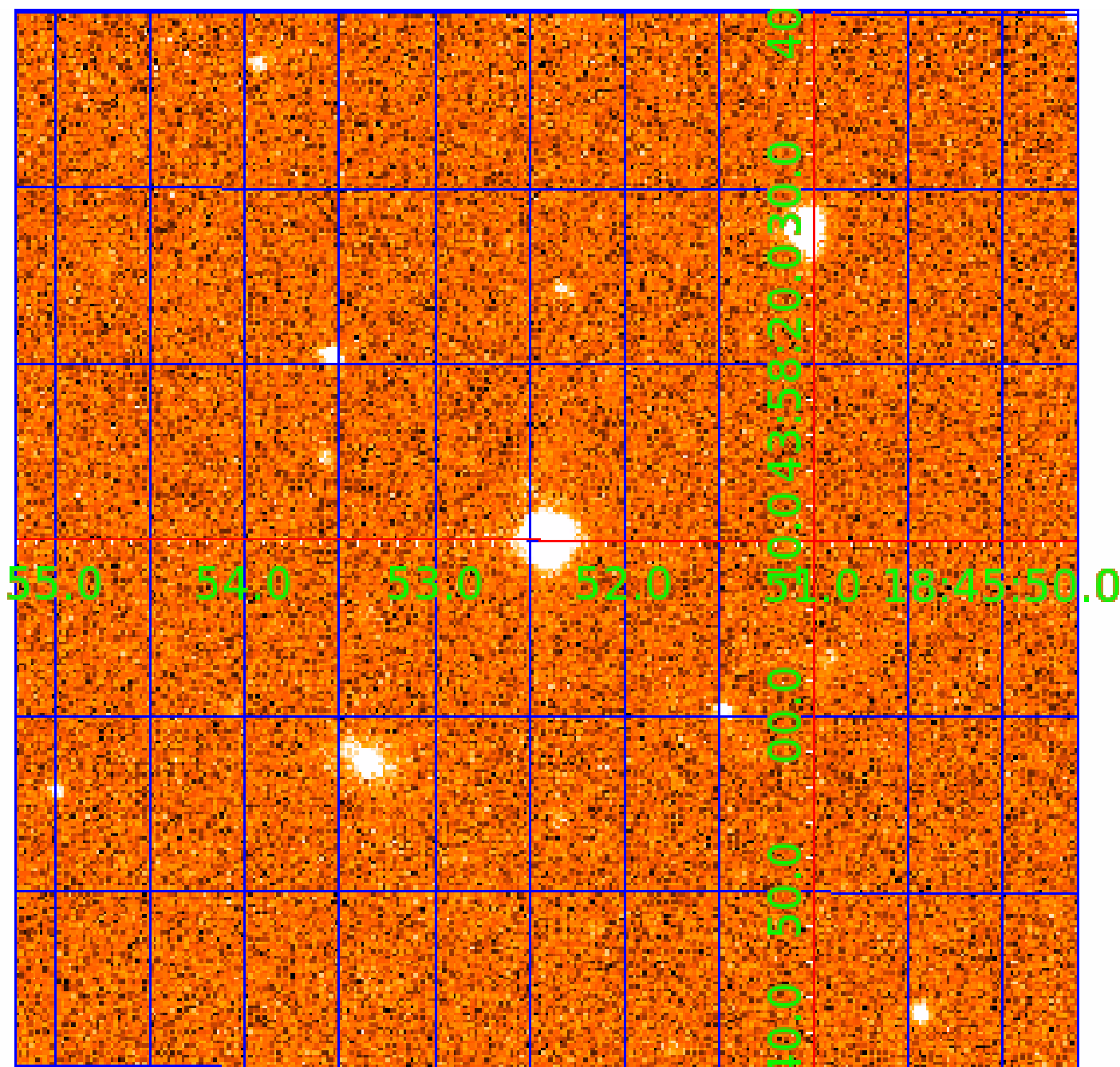


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008075439

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})
008075439-01	OBS	No	4.589401	134.287820	107.8	17.282	7.2	6.4	0.90	6063	1.09	350.85
008075439-02	OBS	No	284.453941	411.443519	65.3	13.655	14.6	0.7	0.90	6063	0.77	1.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008075439-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
008075439-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

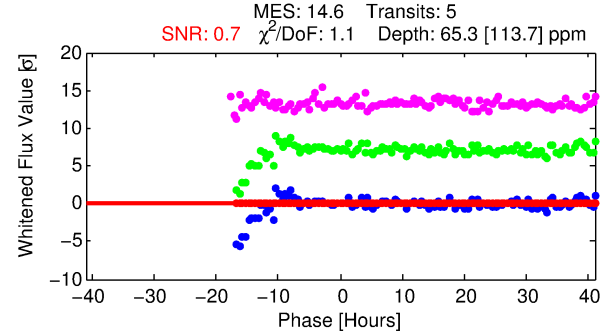
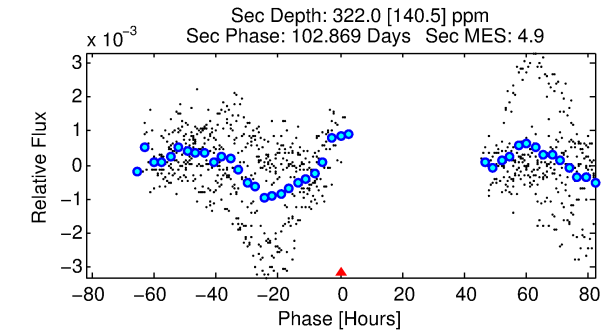
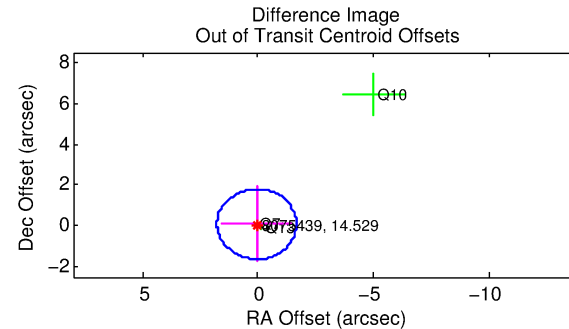
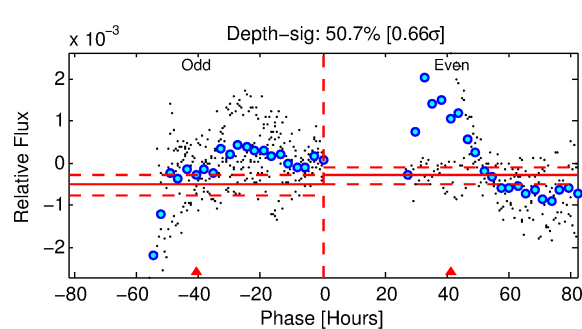
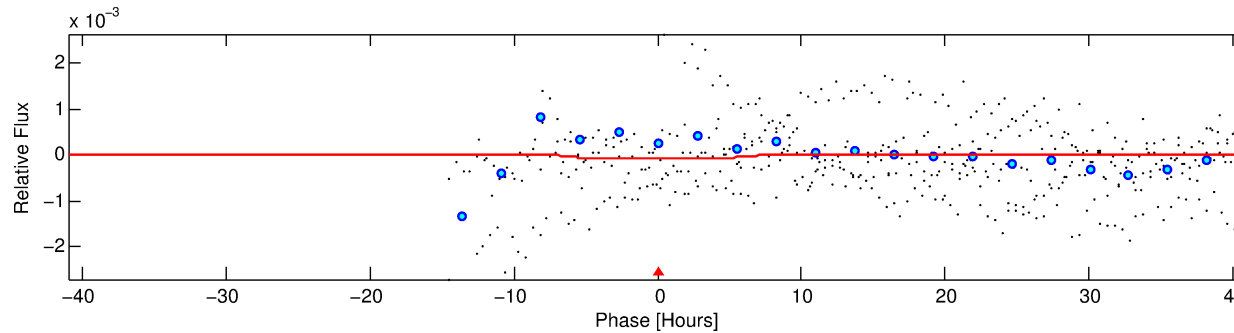
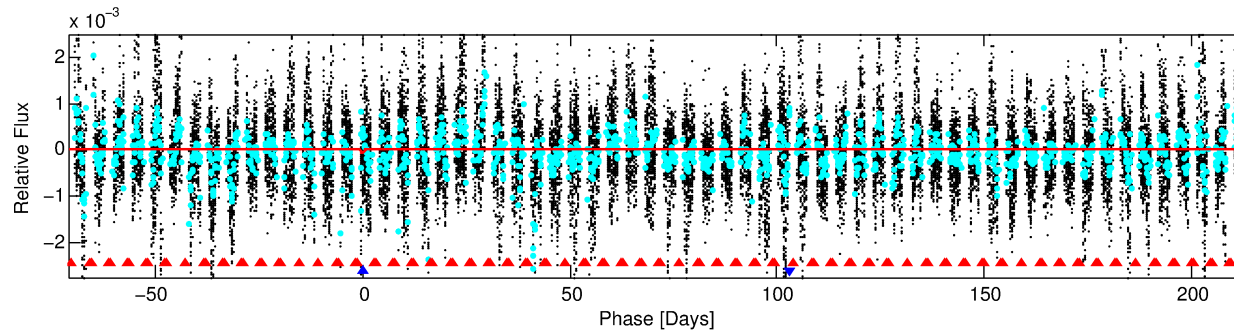
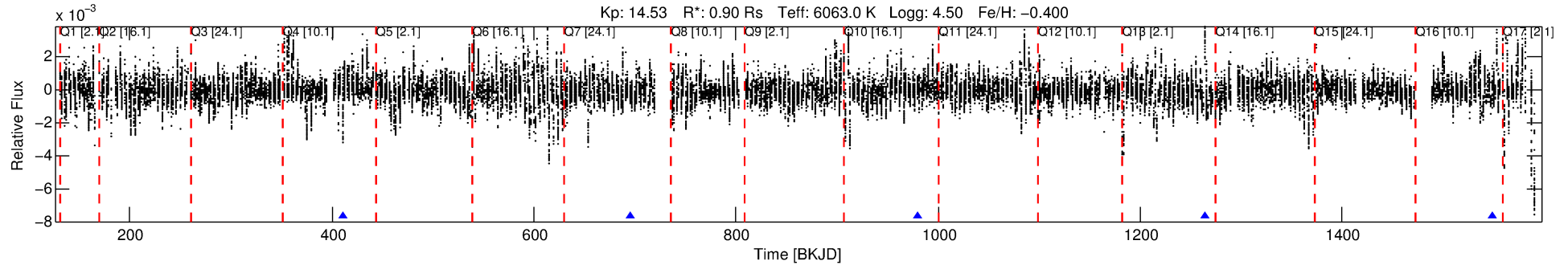
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008075439-02

No Significant Match Found

DV One-Page Summary

KIC: 8075439 Candidate: 2 of 2 Period: 284.454 d



DV Fit Results:

Period = 284.45394 [0.04634] d
Epoch = 411.4435 [0.1156] BKJD
Rp/R* = 0.0078 [0.0225]
a/R* = 125.25 [1710.99]
b = 0.63 [13.23]
Seff = 1.43 [0.56]
Teq = 279 [27] K
Rp = 0.77 [2.22] Re
a = 0.8289 [0.2072] AU
Ag = 207812.11 [1207176.69] [0.17 σ]
Teffp = 9205 [13344] K [0.67 σ]

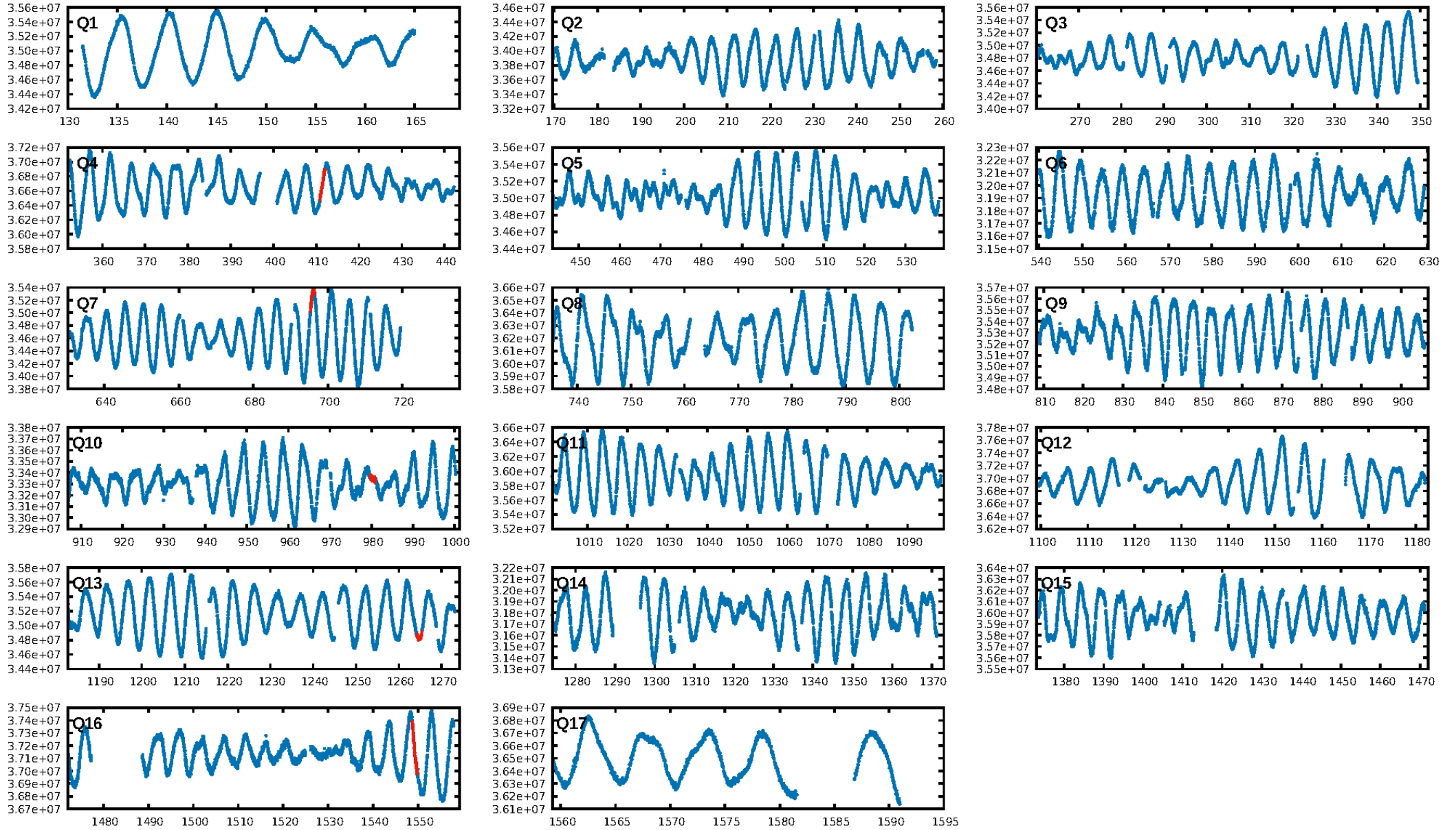
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [304.95 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 98.6%
Bootstrap-pfa: 9.41e-16
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -2.061
Centroid-sig: 1.4%
Centroid-so: 17.979 arcsec [2.33 σ]
OotOffset-rm: 0.106 arcsec [0.18 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.092 arcsec [0.05 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [4/4]

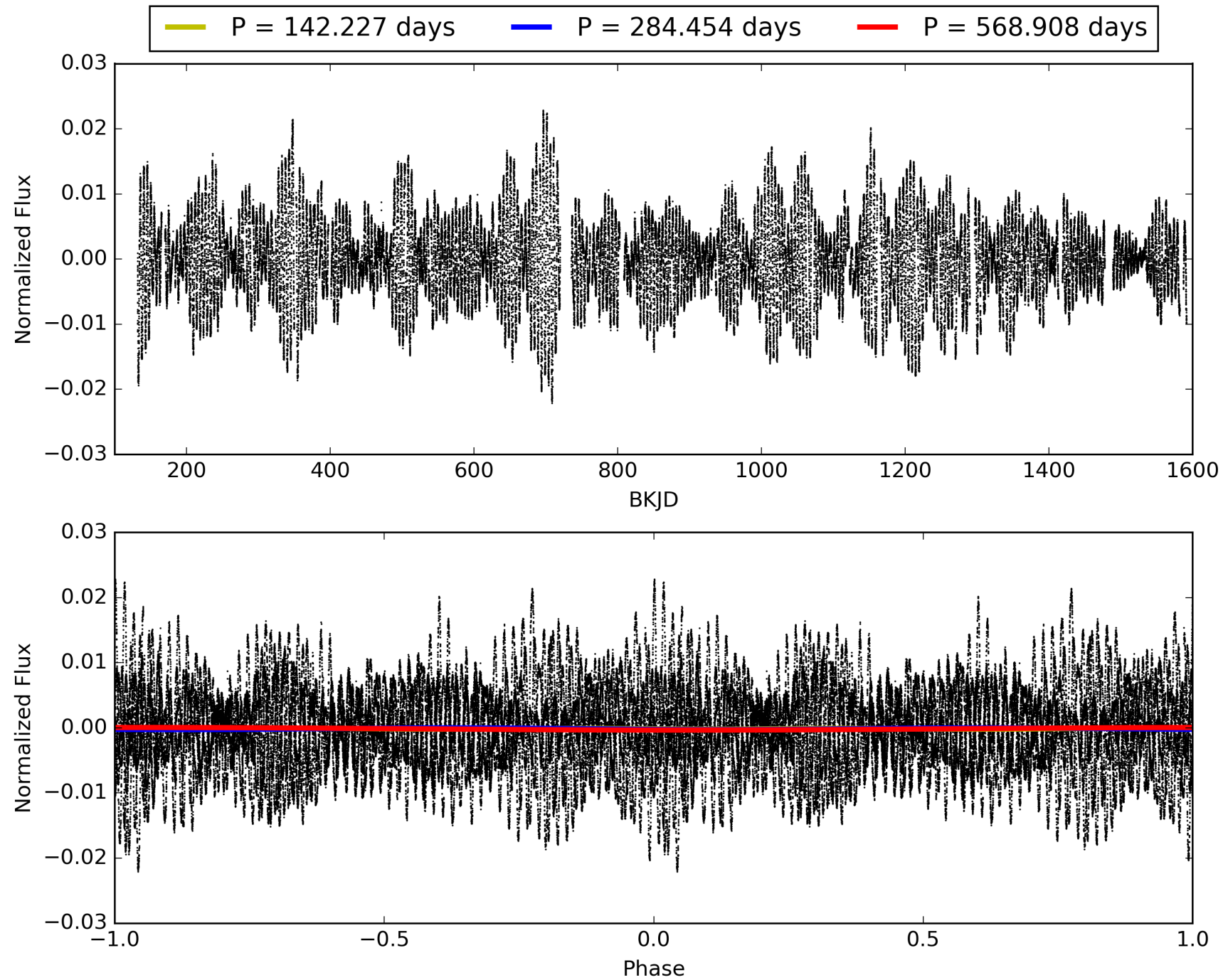
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:08:44 Z

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TCE 008075439-02, PDC Light Curves

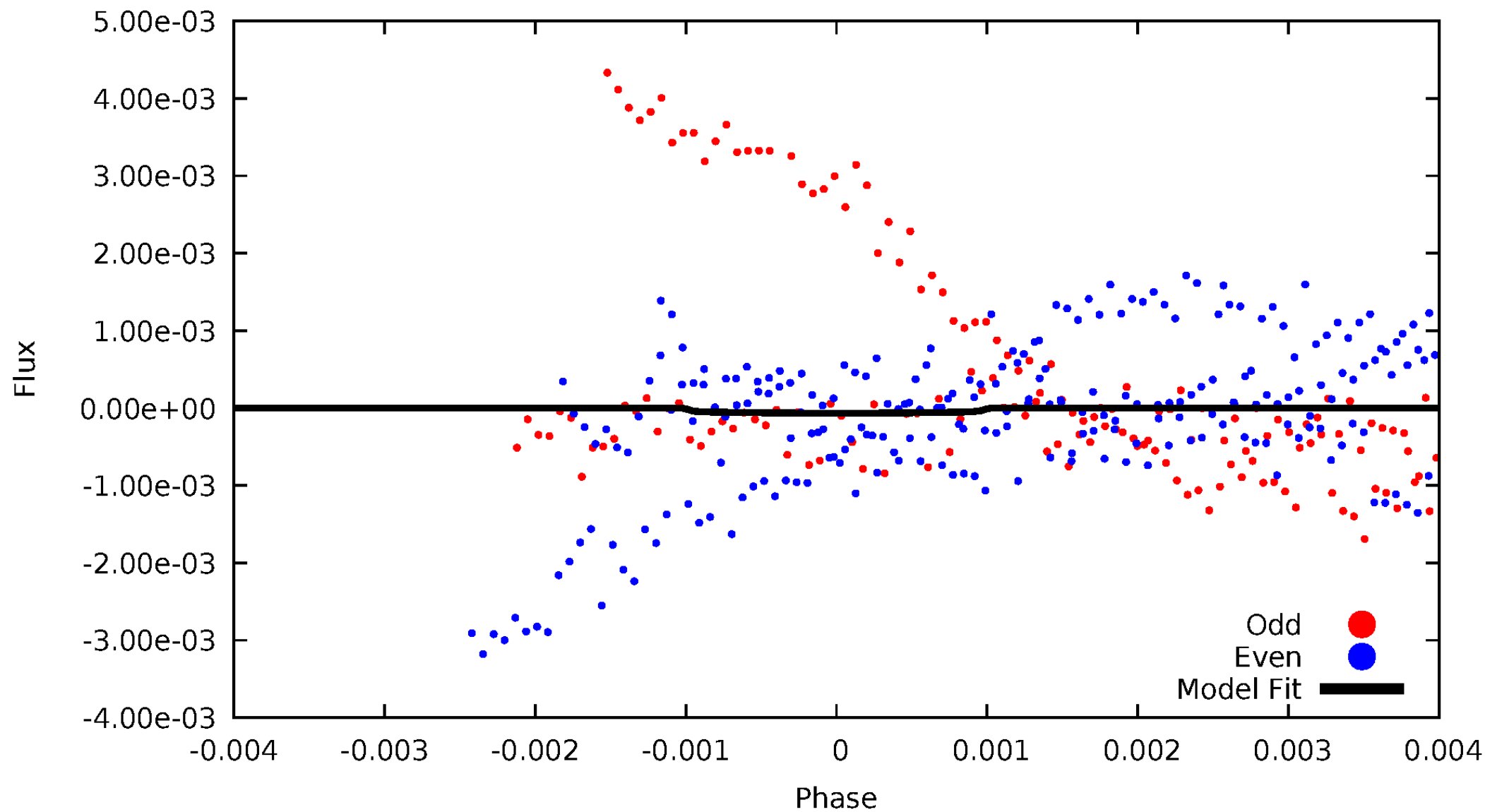


TCE 008075439-02



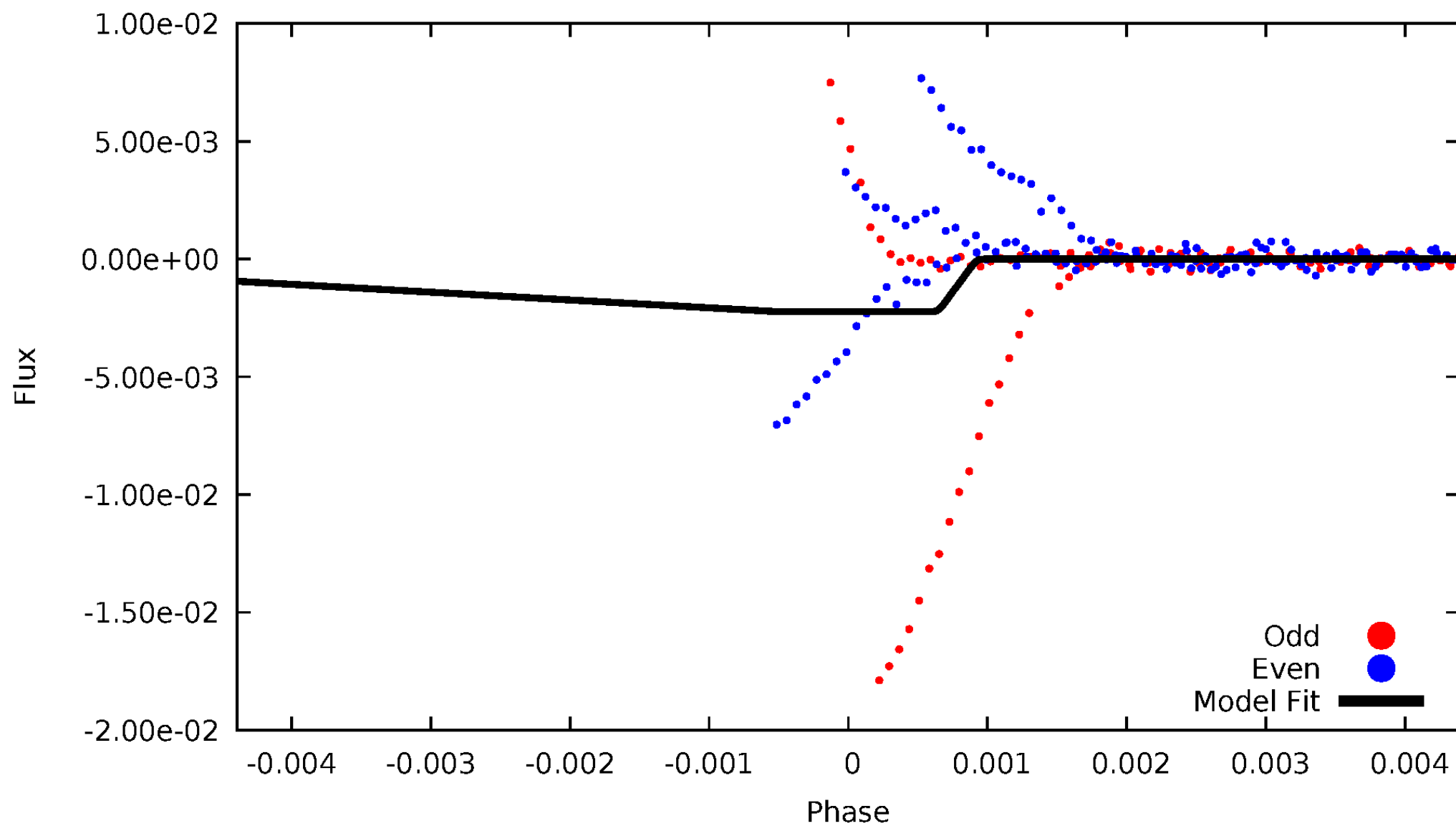
DV Odd/Even

TCE 008075439-02



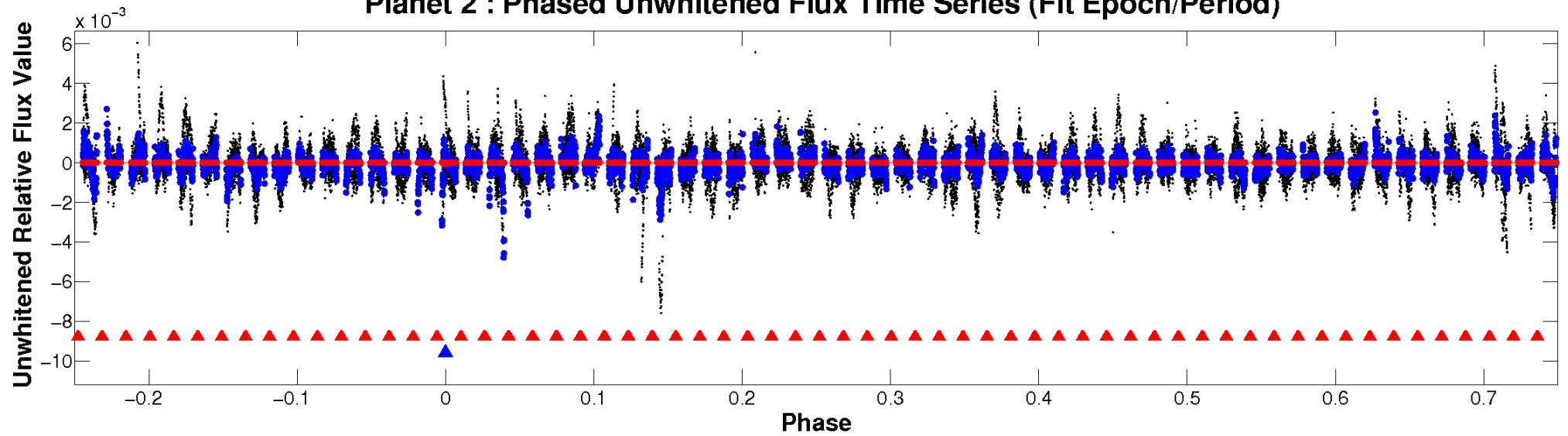
ALT Odd/Even

TCE 008075439-02

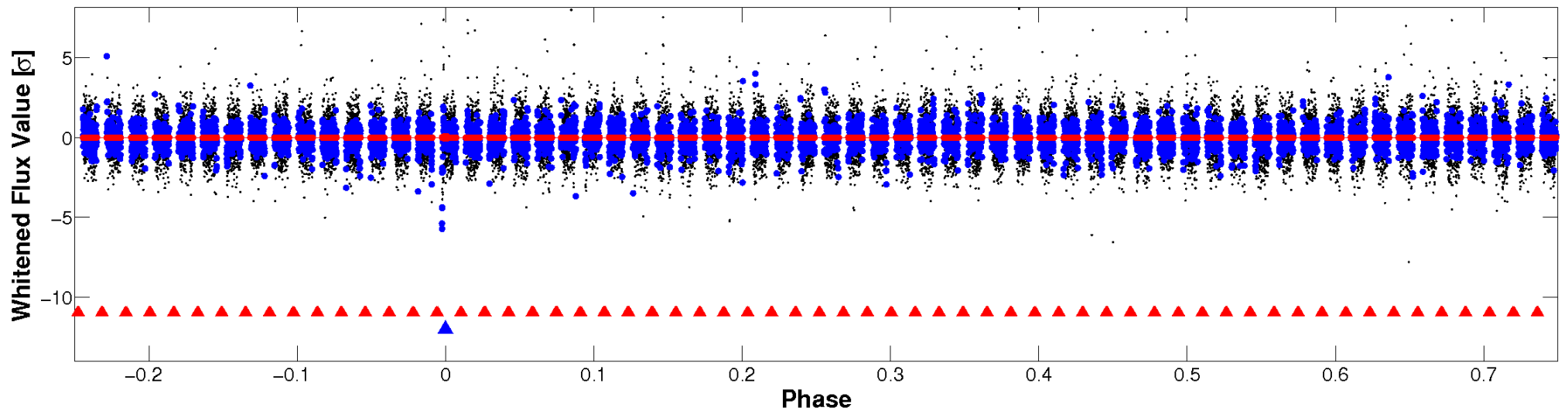


Non-Whitened Vs. Whitened Light Curve

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

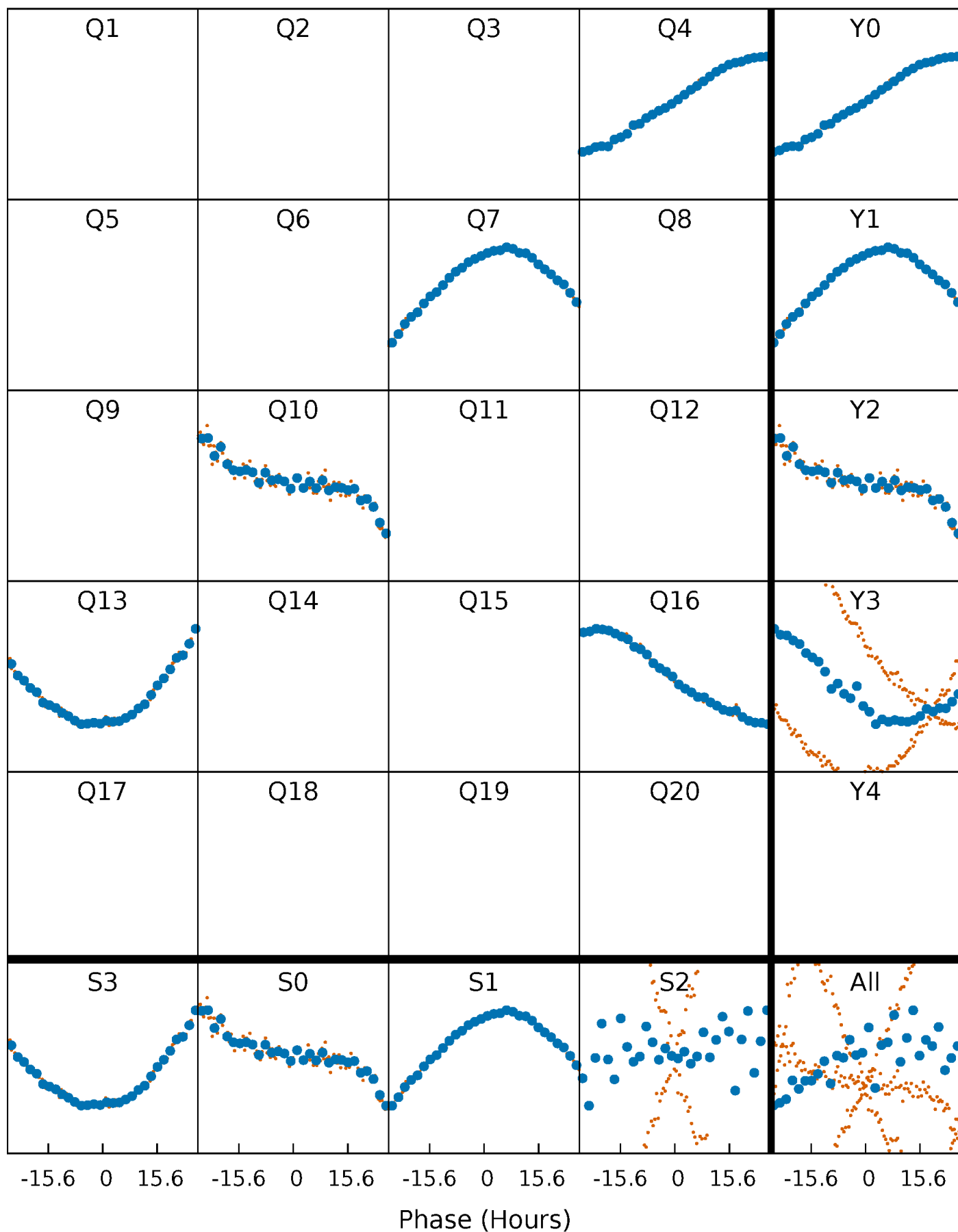


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 008075439-02 P=284.453941 Days $T_0=411.443519$ (BKJD)



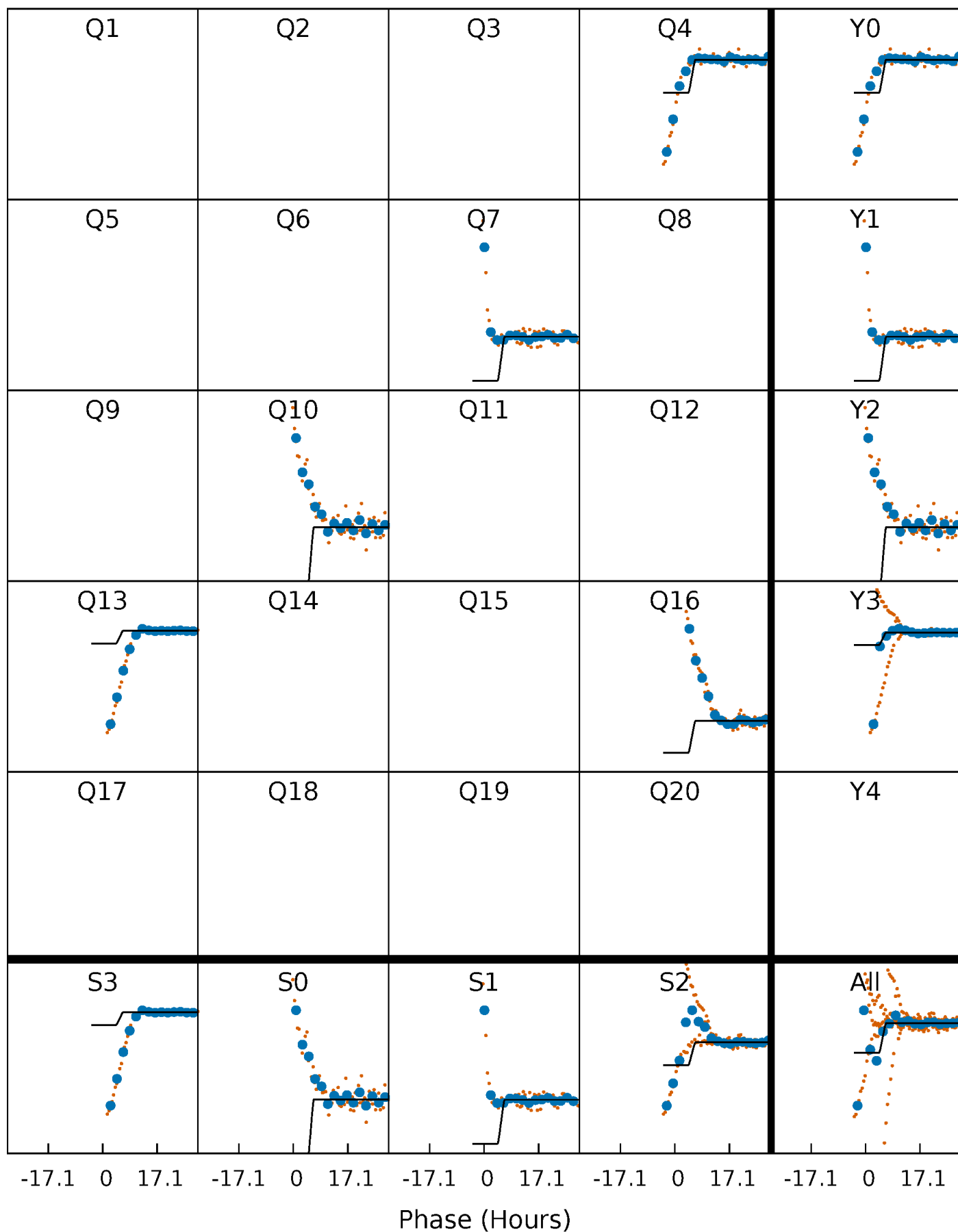
DV Quarter-Phased Transit Curves

TCE 008075439-02 $P=284.453941$ Days $T_0=411.443519$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

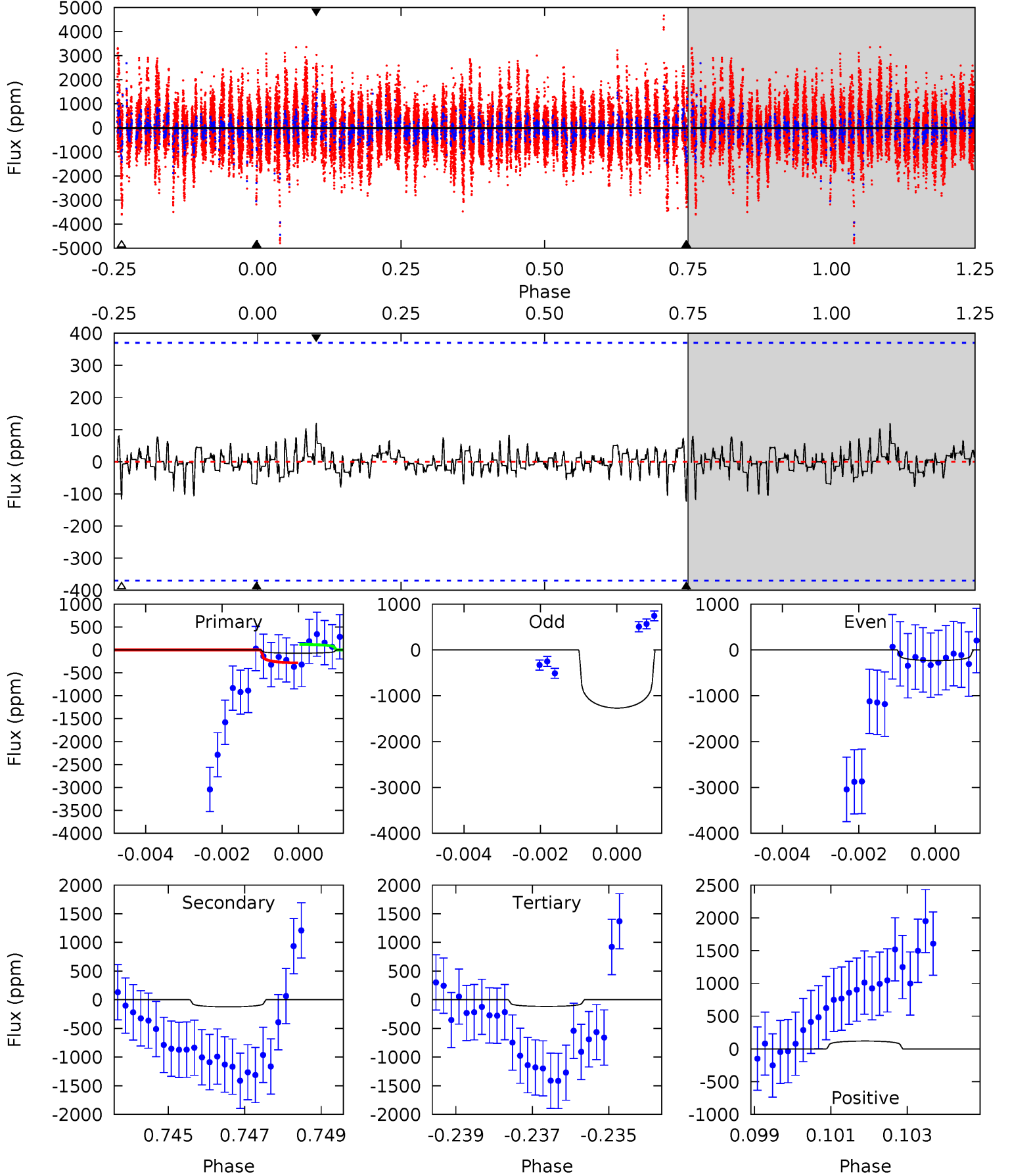
TCE 008075439-02 P=284.469211 Days $T_0=410.901973$ (BKJD)



DV Model-Shift Uniqueness Test

008075439-02, $P = 284.453941$ Days, $E = 126.989578$ Days

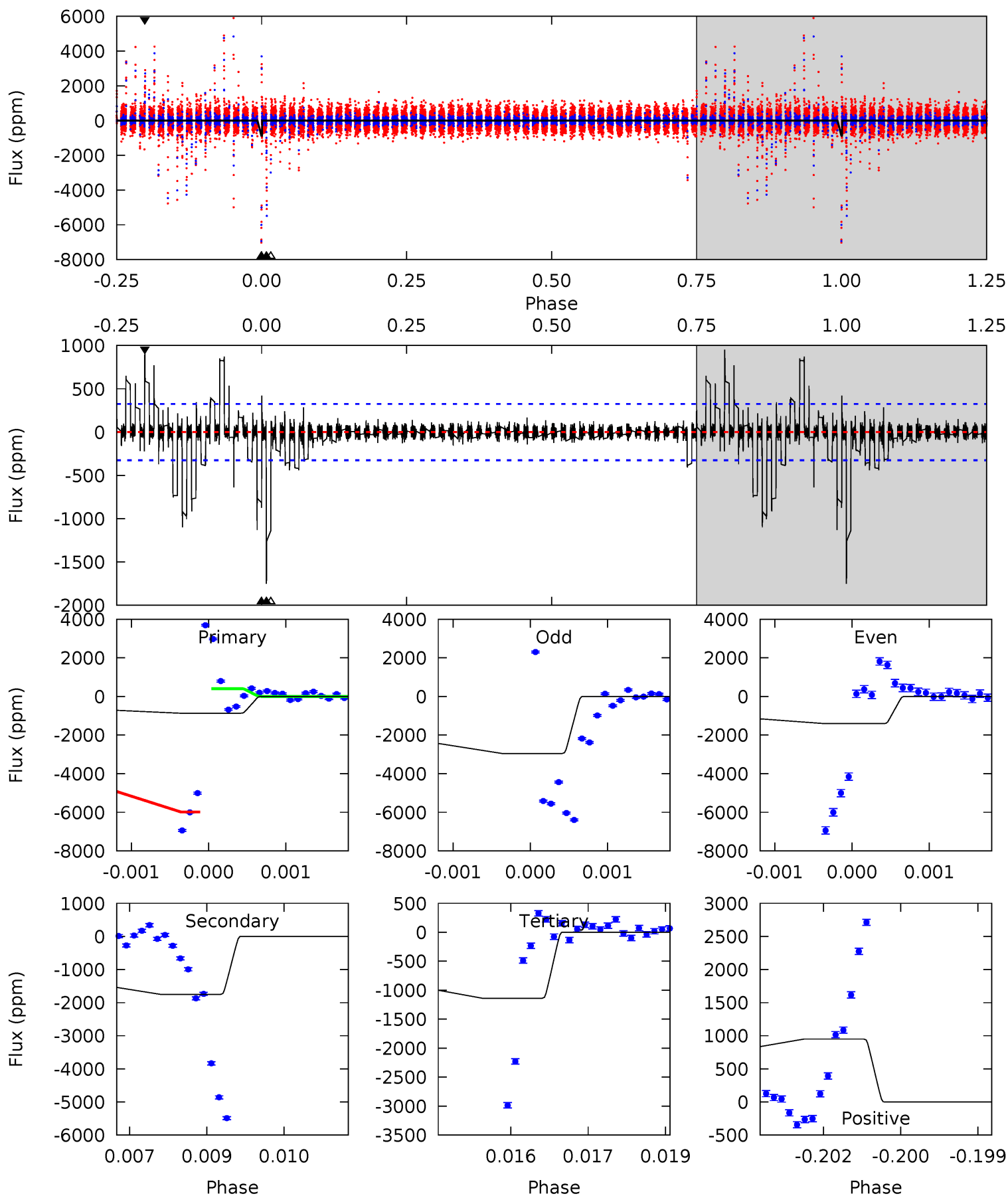
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.01	1.78	1.67	1.72	5.32	3.08	0.45	-0.66	-0.71	0.10	0.06	7.56	-1.25	0.49	0



Alt Model-Shift Uniqueness Test

008075439-02, P = 284.469211 Days, E = 126.432762 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	29.1	18.9	15.8	5.39	3.19	1.34	-4.44	-1.31	10.2	13.3	14.0	-0.78	0.35	0



Stellar Parameters For KIC 008075439

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6063^{+164}_{-183}	$4.501^{+0.052}_{-0.208}$	$-0.400^{+0.300}_{-0.300}$	$0.901^{+0.260}_{-0.087}$	$0.937^{+0.118}_{-0.106}$	$1.806^{+0.475}_{-0.906}$
	+3%/-3%	+1%/-5%	+75%/-75%	+29%/-10%	+13%/-11%	+26%/-50%
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 008075439-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-124 ± 70	$1.94^{+1.96}_{-1.38}$	399^{+30}_{-18}	4615^{+4431}_{-1098}	$10250^{+125861}_{-8173}$
Alt.	-1752 ± 60	$4.96^{+2.43}_{-2.17}$	398^{+29}_{-18}	5689^{+2002}_{-884}	26872^{+57636}_{-14582}

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

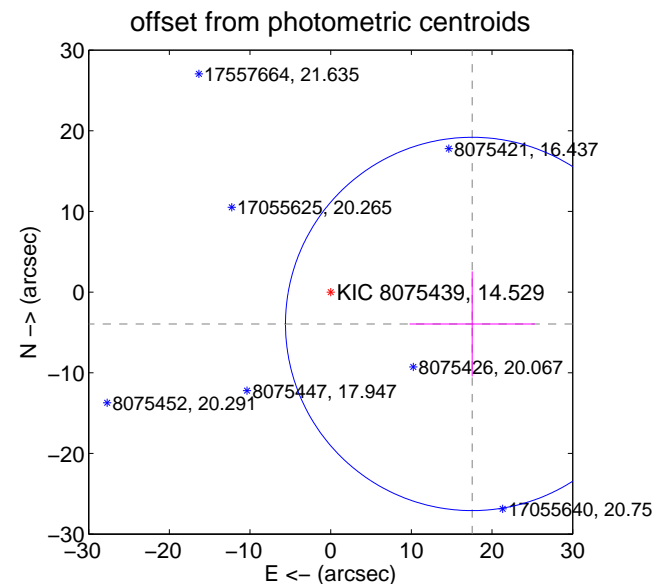
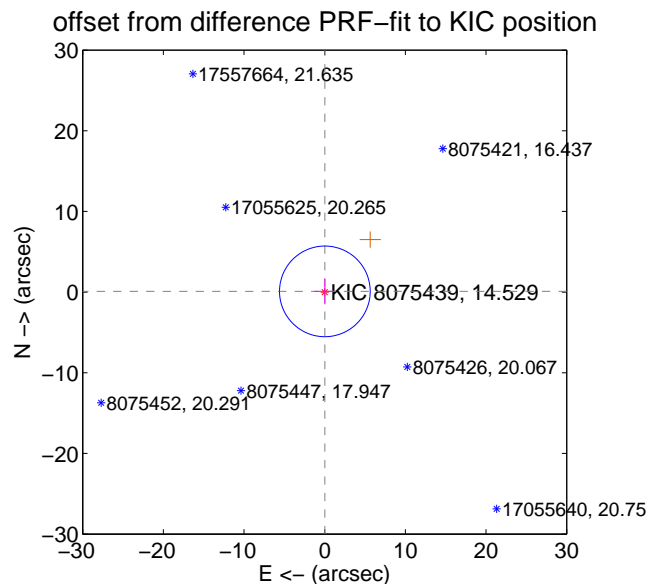
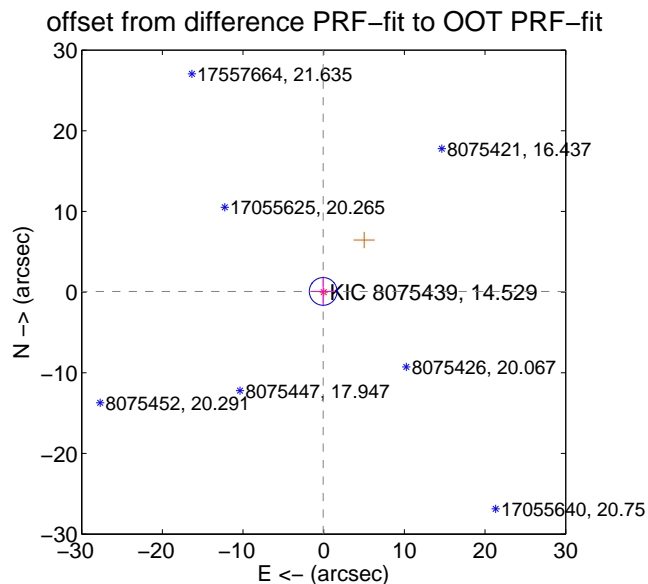
DV Centroid Data

Supplemental centroid analysis for 008075439-02. Kepler magnitude: 14.53. Transit SNR 0.66

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.106 ± 0.572	0.18	0.065 ± 1.473	0.084 ± 1.841
PRF-fit source offset from KIC position	0.092 ± 1.873	0.05	-0.022 ± 1.338	0.090 ± 1.598
photometric centroid source offset	17.98 ± 7.71	2.33	-17.54 ± 7.77	-3.95 ± 6.51



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.

Q1 no difference image



Q1 no OOT image



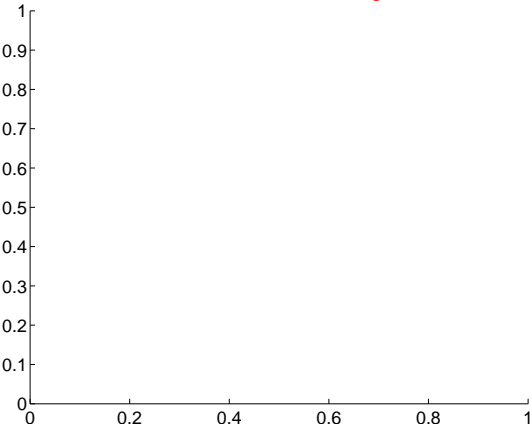
Q2 no difference image



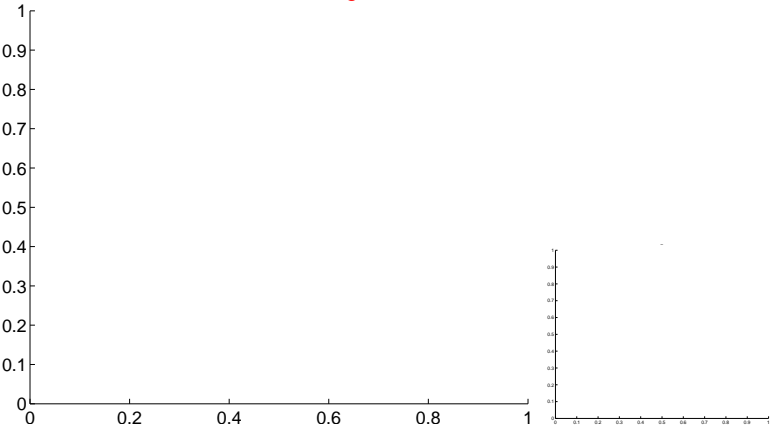
Q2 no OOT image



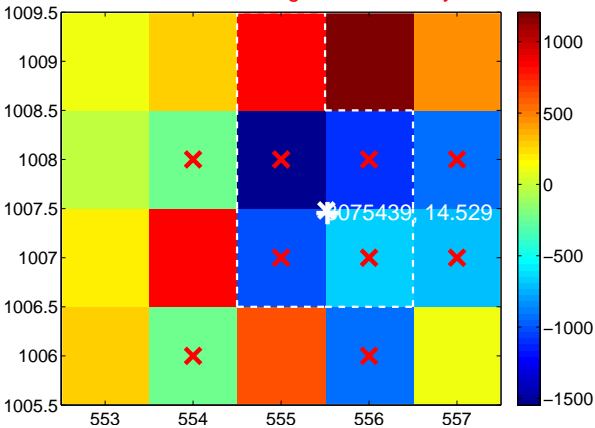
Q3 no difference image



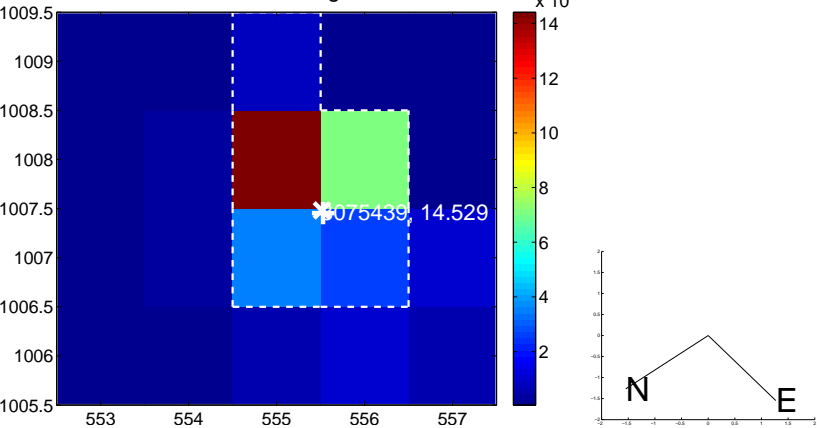
Q3 no OOT image



Q4 difference image. Poor Quality



Q4 OOT image



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

Q5 no difference image



Q5 no OOT image



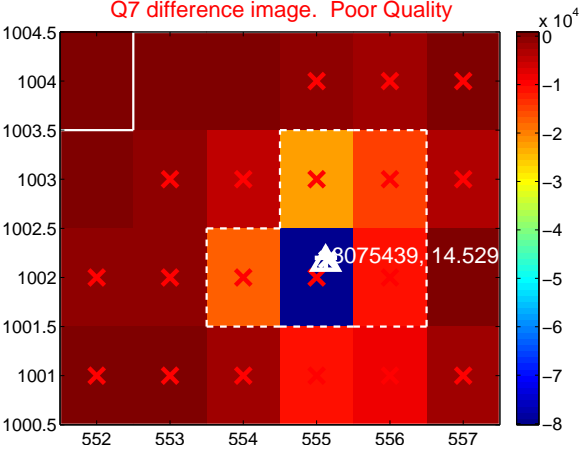
Q6 no difference image



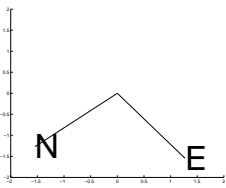
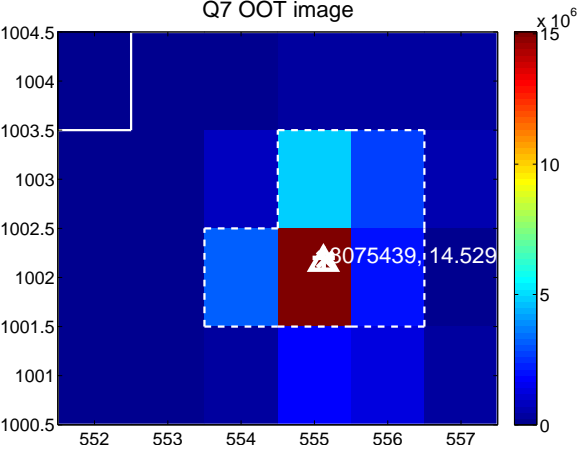
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



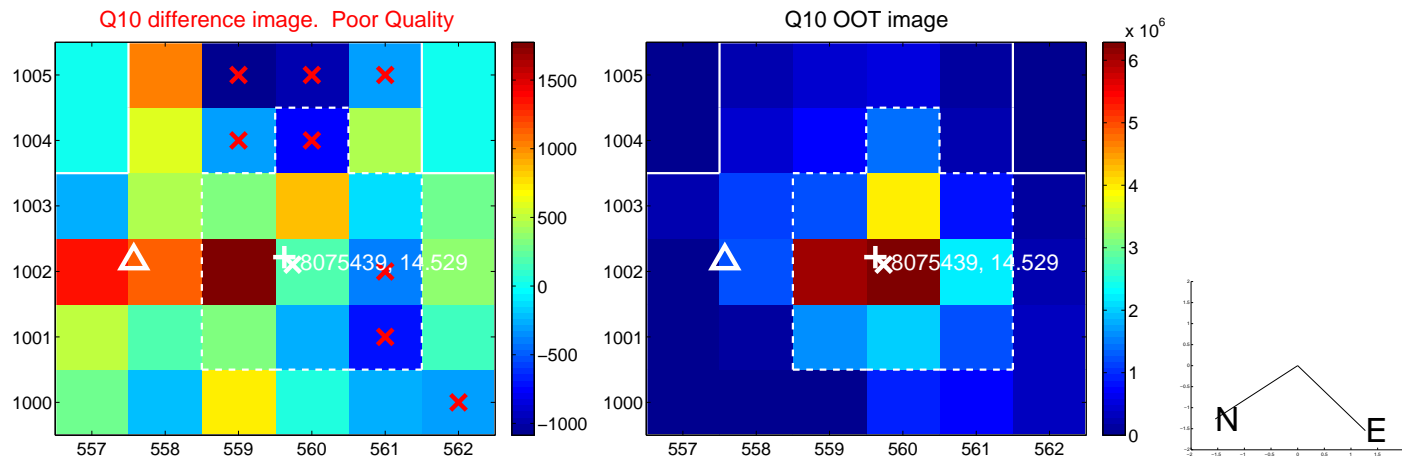
Q8 no difference image



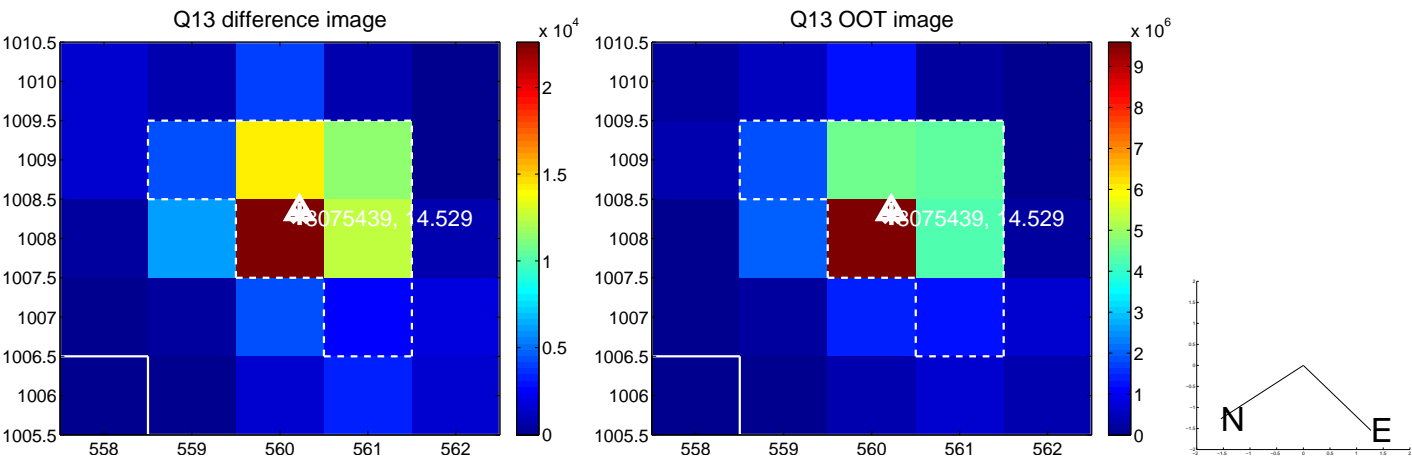
Q8 no OOT image



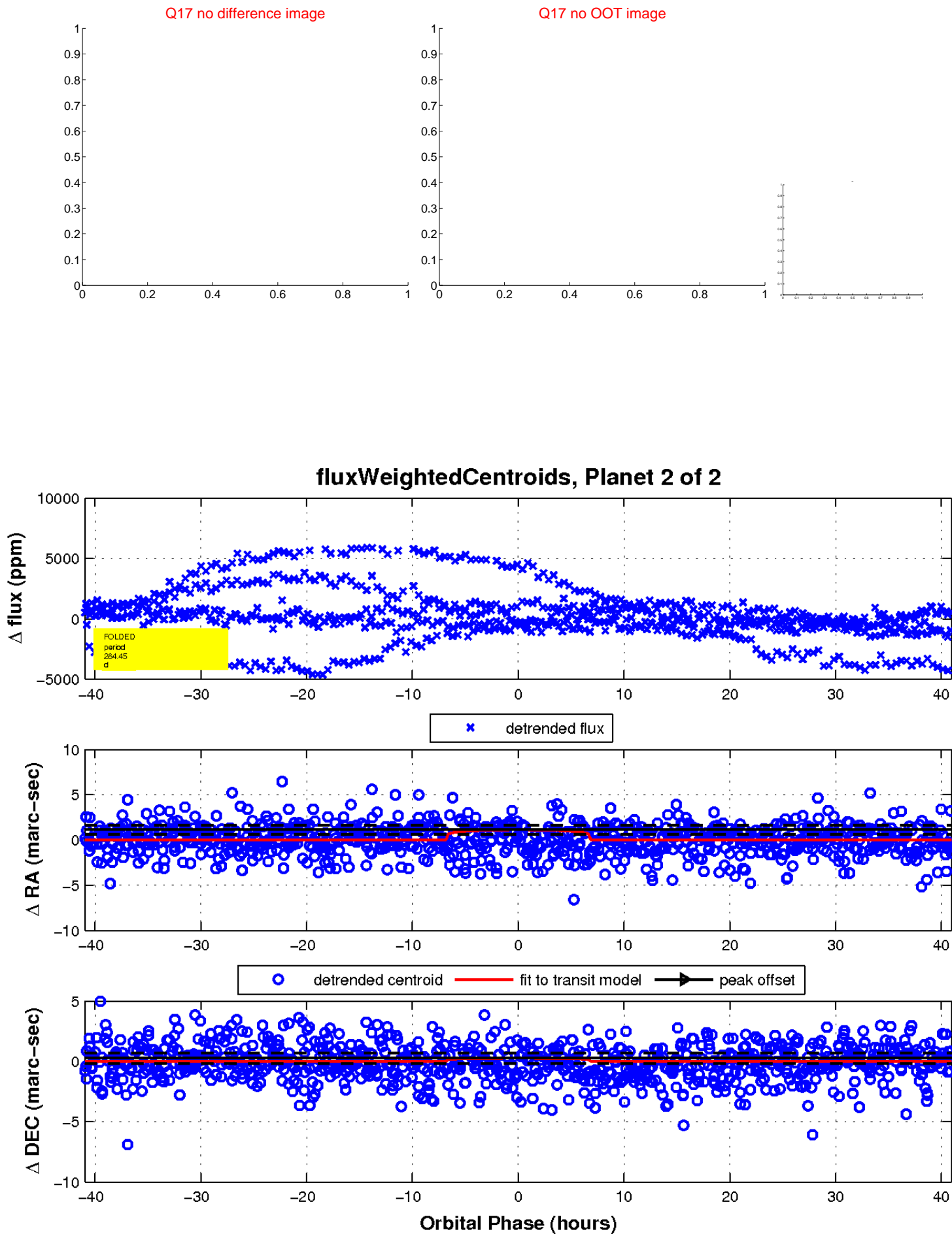
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

