

KIC 006276994

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})
006276994-01	OBS	4095.01	1.105994	131.843061	37.8	2.449	11.5	10.5	1.03	6241	0.74	3107.51
006276994-02	OBS	No	282.712068	390.194128	181.6	16.164	7.4	5.4	1.03	6241	1.48	1.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006276994-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET
006276994-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

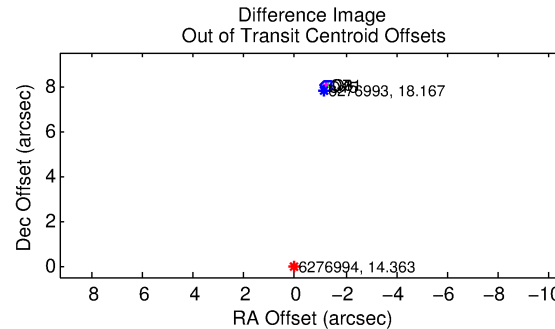
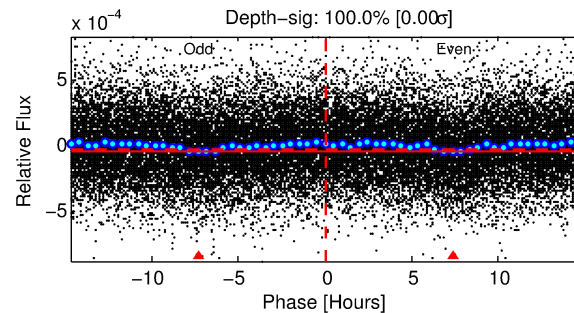
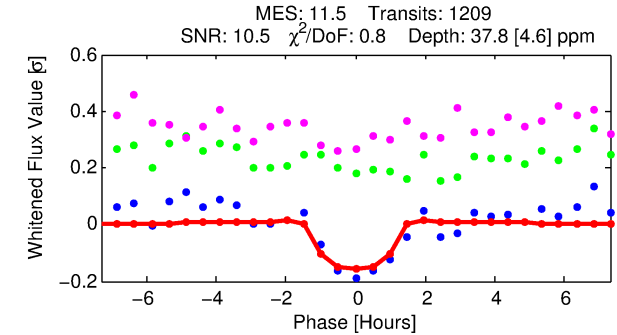
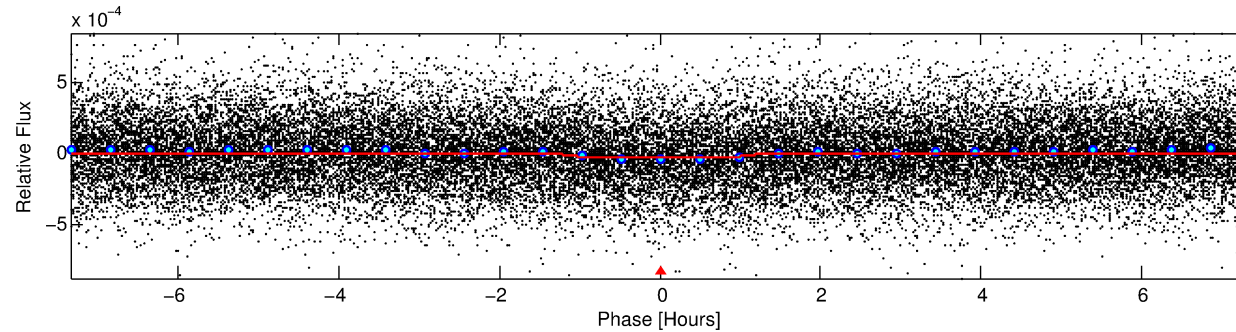
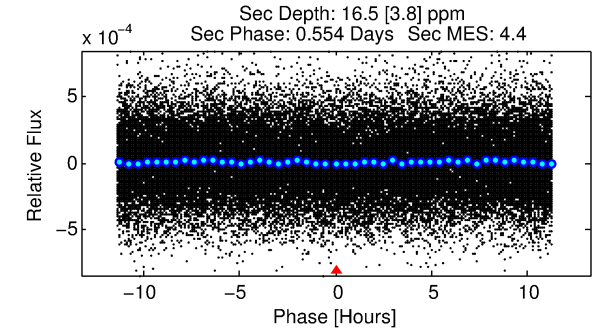
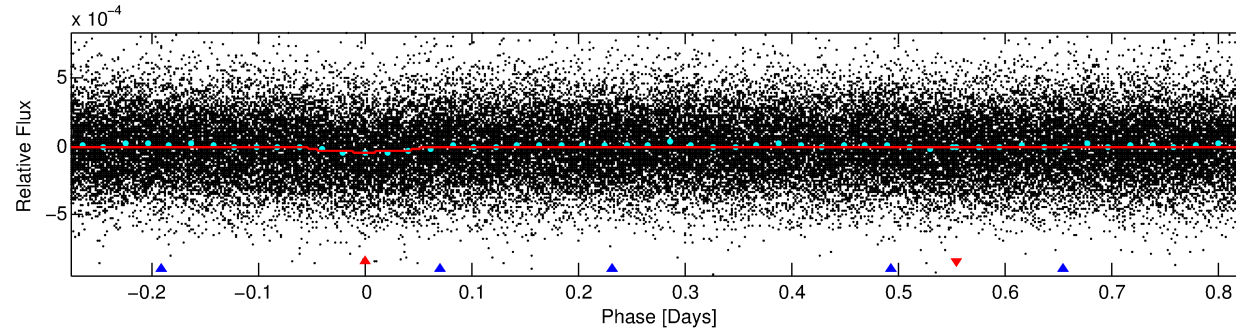
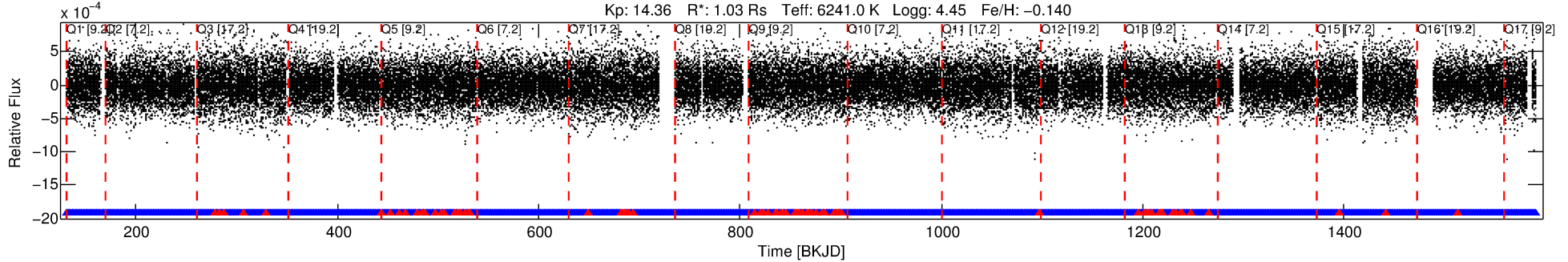
Ephemeris Match Information For 006276994-01

No Significant Match Found

DV One-Page Summary

KIC: 6276994 Candidate: 1 of 2 Period: 1.106 d
KOI: K04095.01 Corr: 0.896

Kp: 14.36 R*: 1.03 Rs Teff: 6241.0 K Logg: 4.45 Fe/H: -0.140



DV Fit Results:

Period = 1.10599 [0.00001] d
Epoch = 131.8431 [0.0030] BKJD
Rp/R* = 0.0066 [0.0026]
a/R* = 1.82 [2.71]
b = 0.90 [0.46]
Seff = 3107.51 [1350.48]
Teq = 1904 [207] K
Rp = 0.74 [0.39] Re
a = 0.0216 [0.0061] AU
Ag = 7.62 [6.97] [0.95σ]
Teff = 4891 [1013] K [2.89σ]

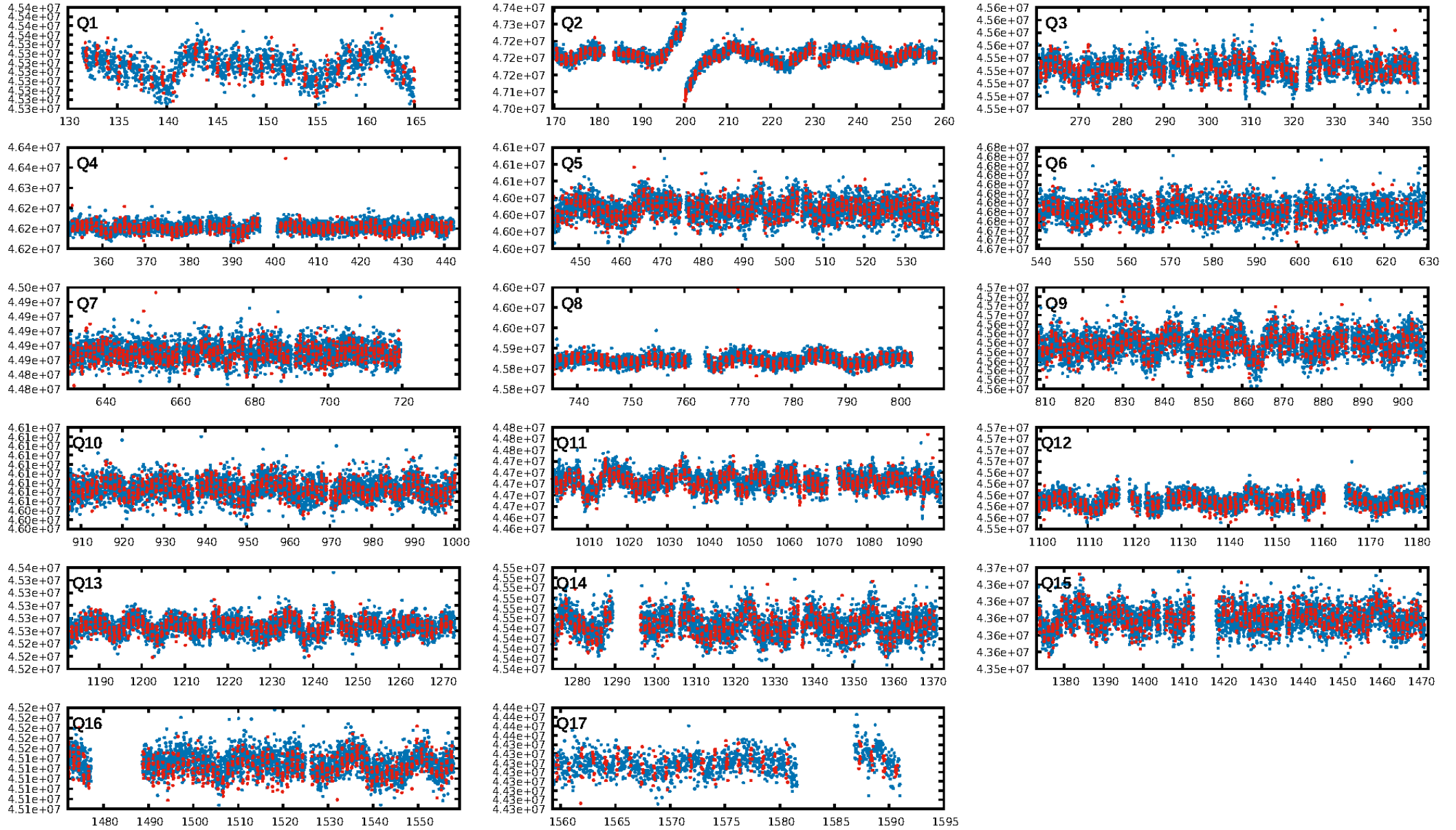
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [413.40σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.90e-29
RollingBand-fgt: 0.94 [1080/1154]
GhostDiagnostic-chr: -2.166
Centroid-sig: 0.0%
Centroid-so: 4.334 arcsec [3.09σ]
OotOffset-rm: 8.115 arcsec [110.67σ]
KicOffset-rm: 8.205 arcsec [114.24σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [17/17]

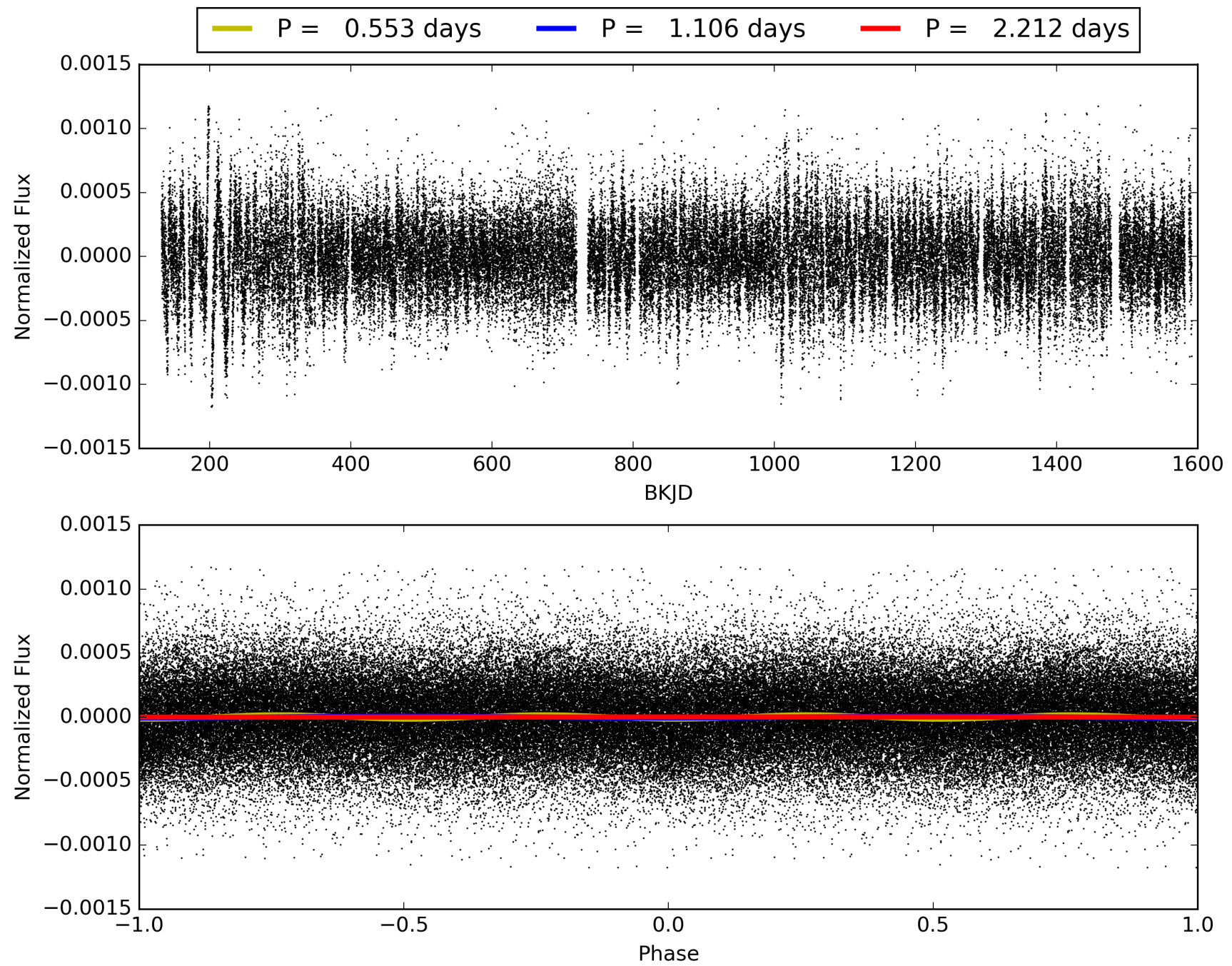
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:32:01 Z

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

TCE 006276994-01, PDC Light Curves

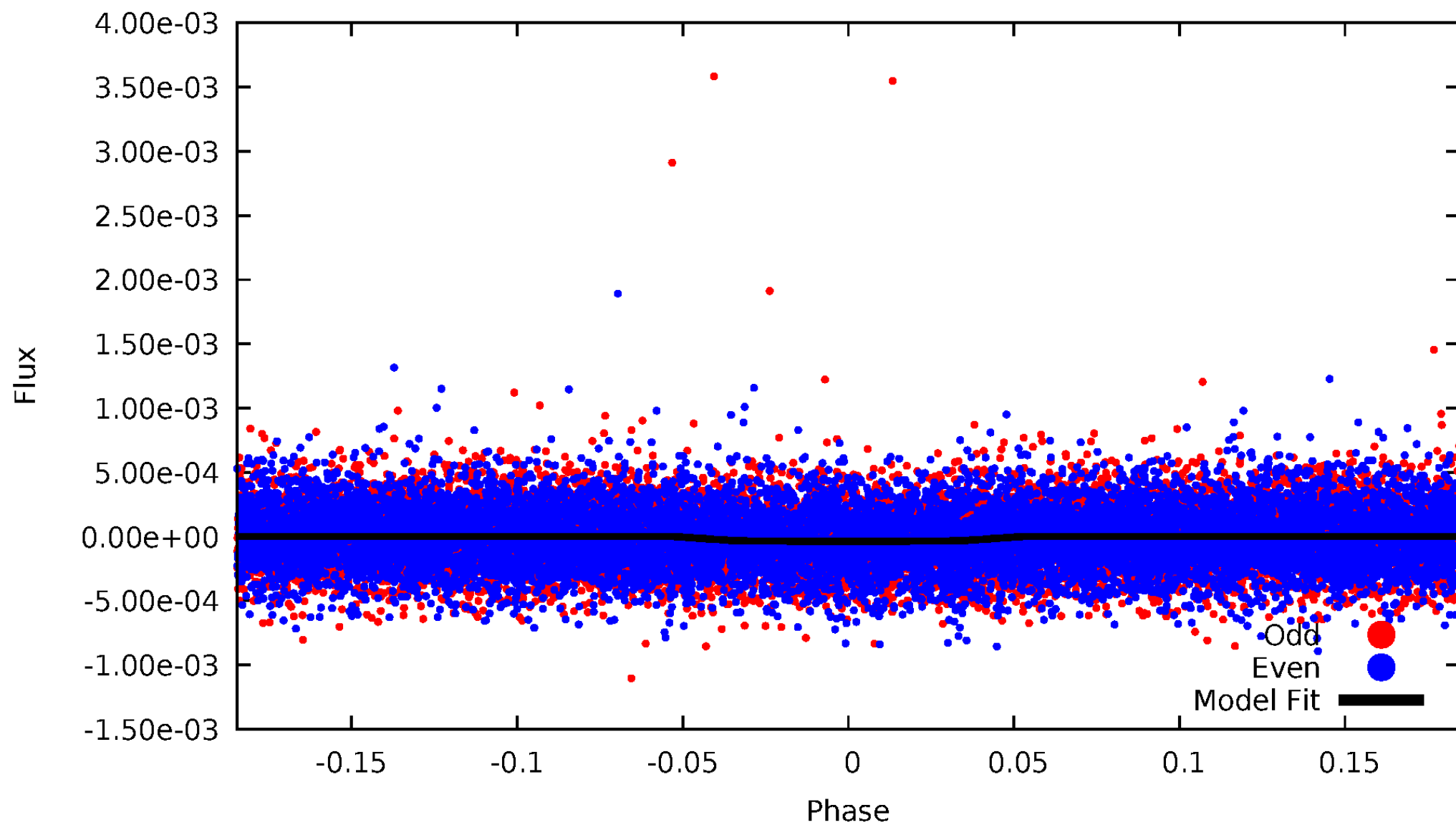


TCE 006276994-01



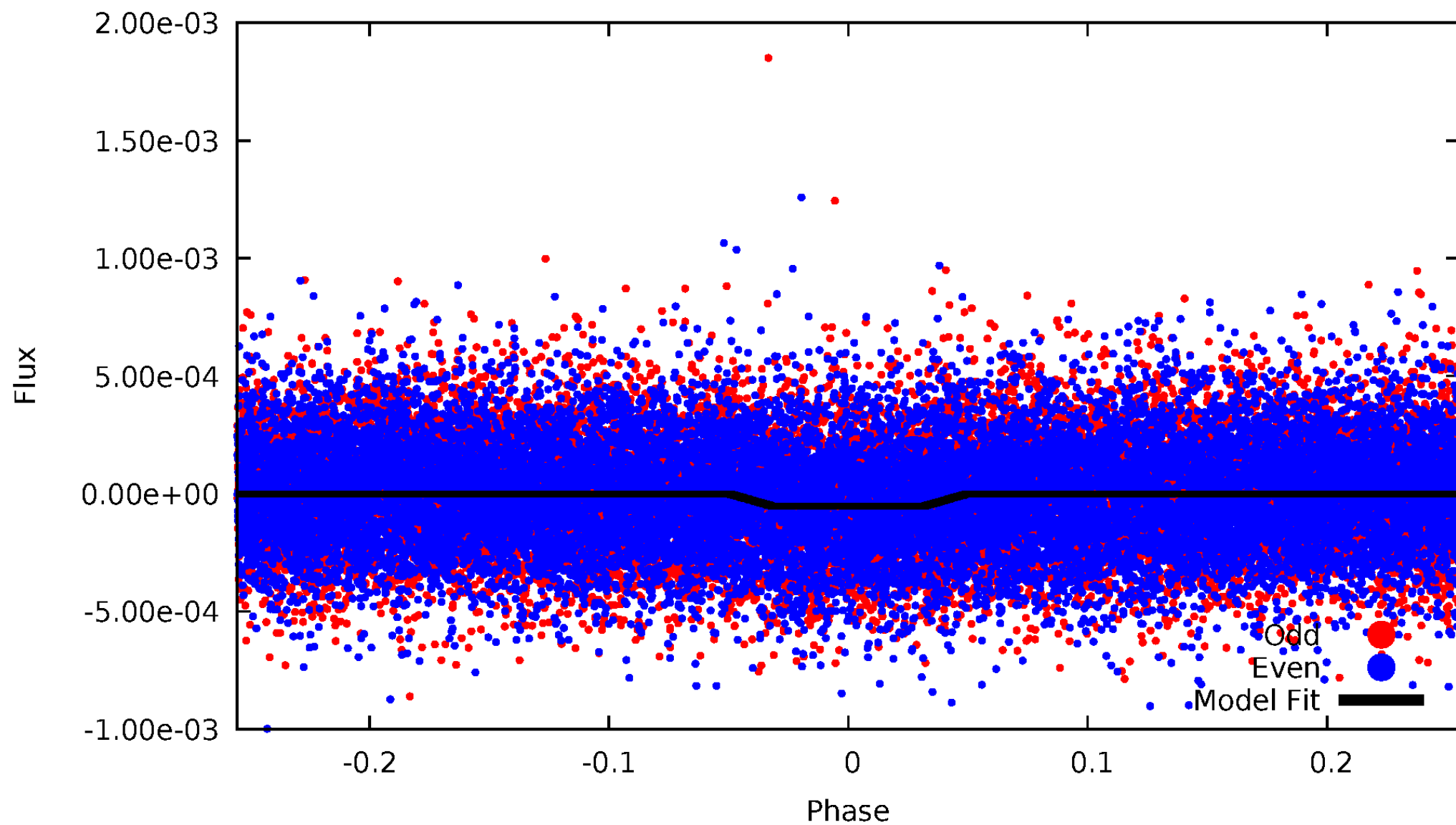
DV Odd/Even

TCE 006276994-01

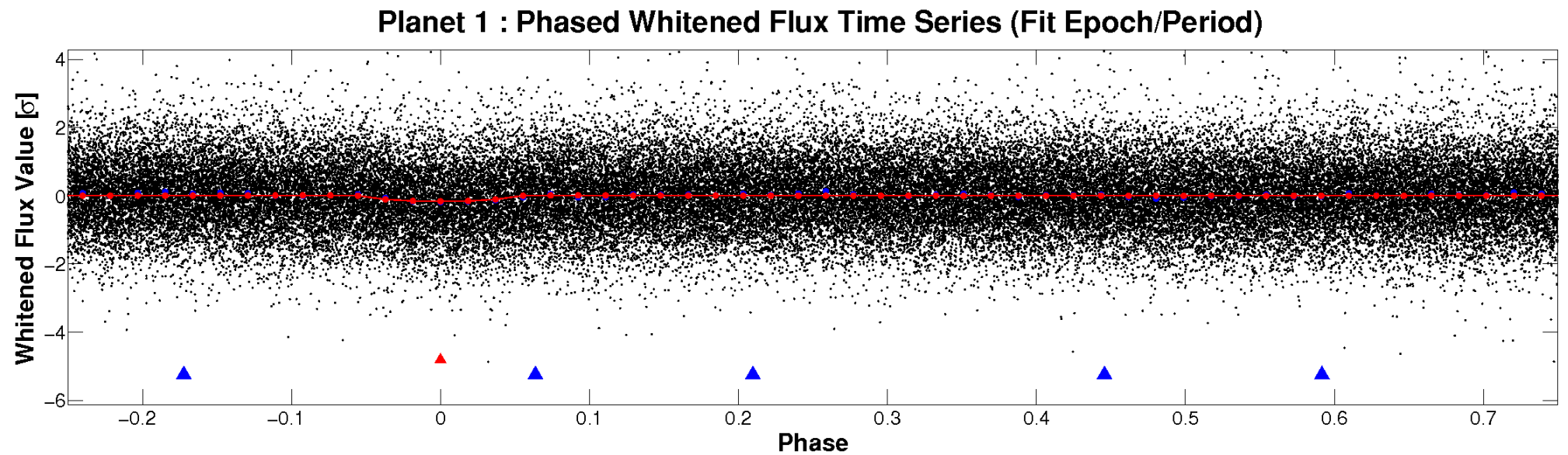
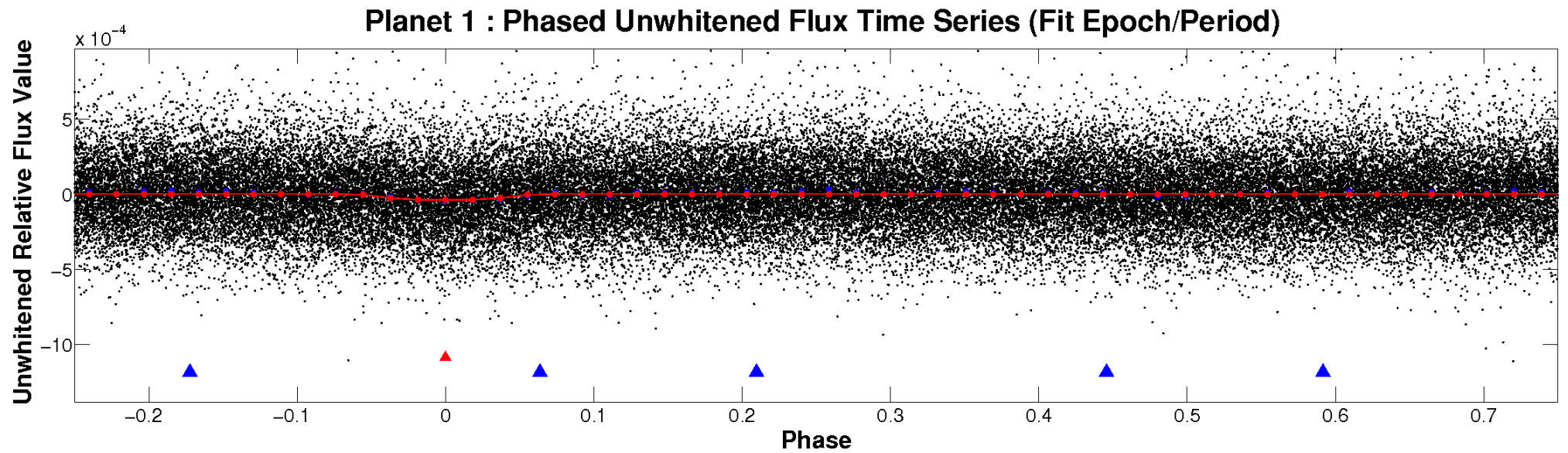


ALT Odd/Even

TCE 006276994-01

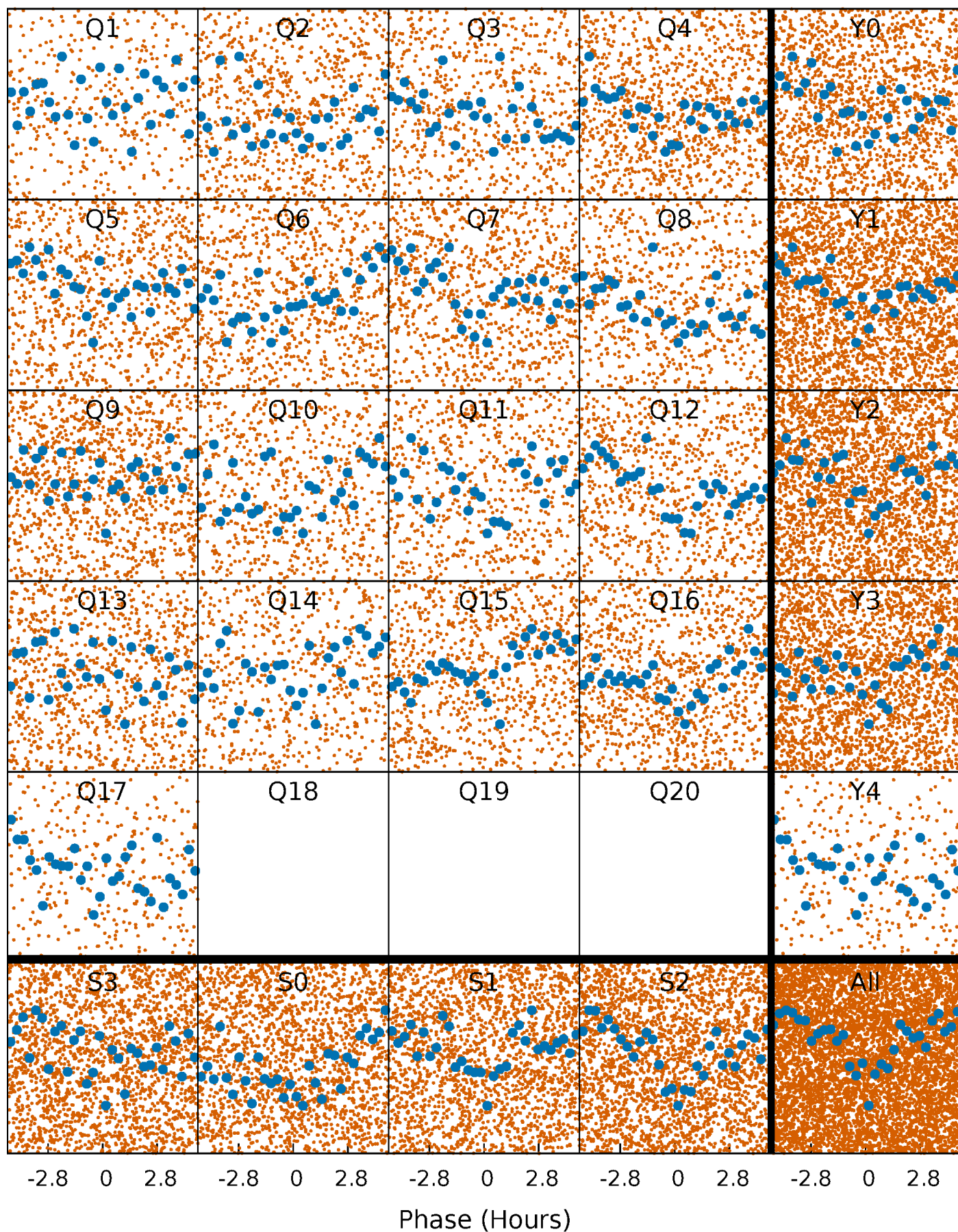


Non-Whitened Vs. Whitened Light Curve



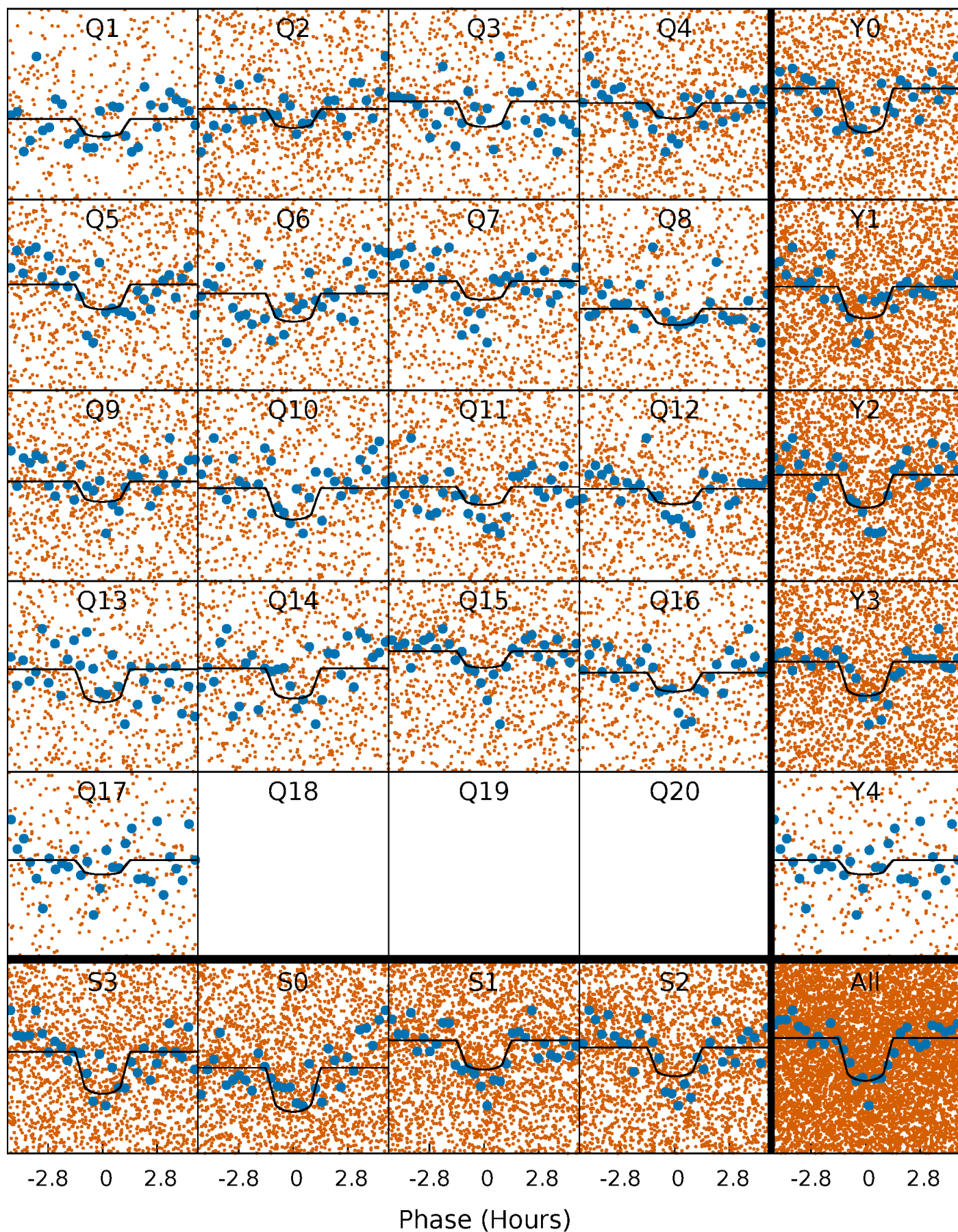
PDC Quarter-Phased Transit Curves

TCE 006276994-01 P= 1.105994 Days $T_0=131.843061$ (BKJD)



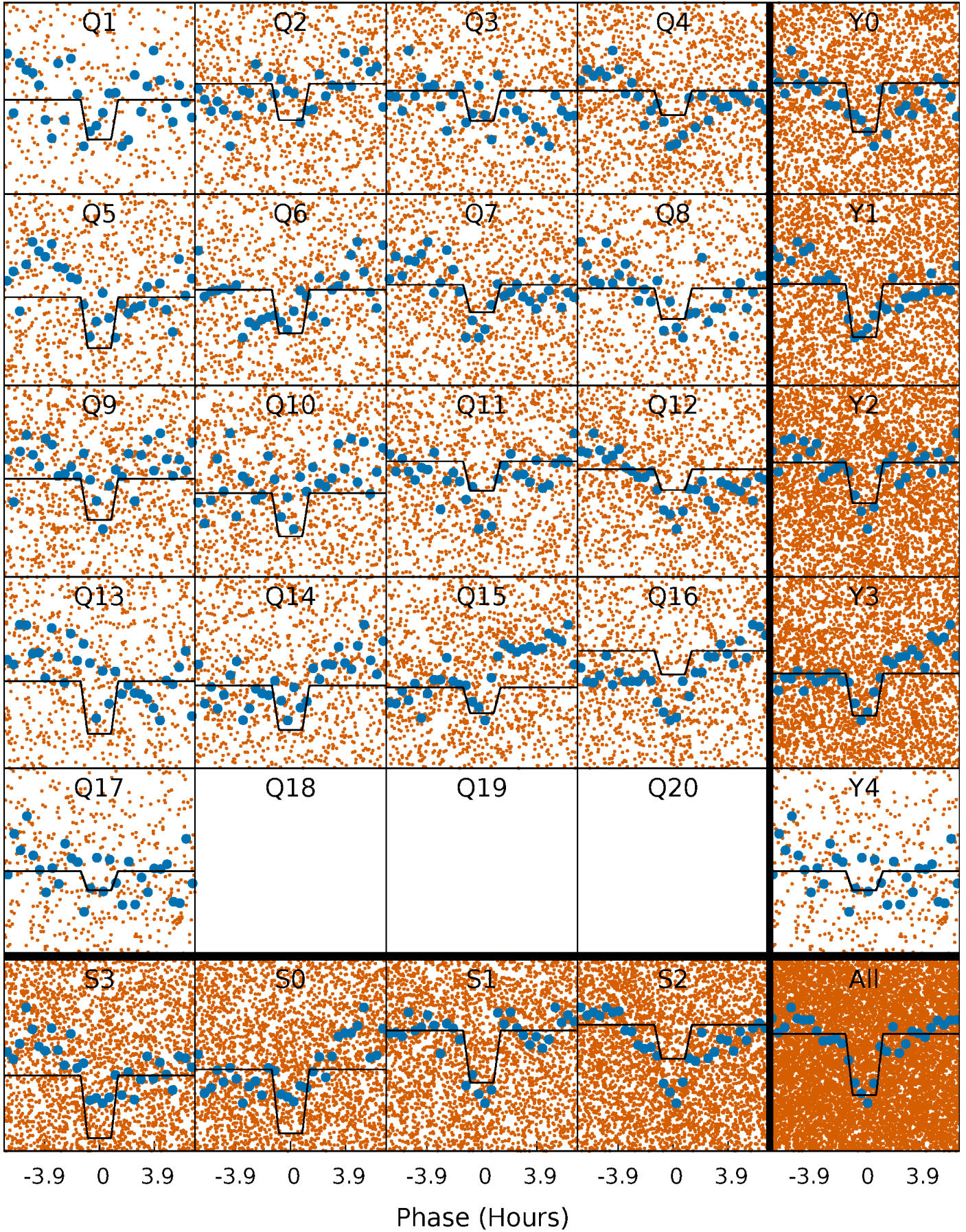
DV Quarter-Phased Transit Curves

TCE 006276994-01 P= 1.105994 Days $T_0=131.843061$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

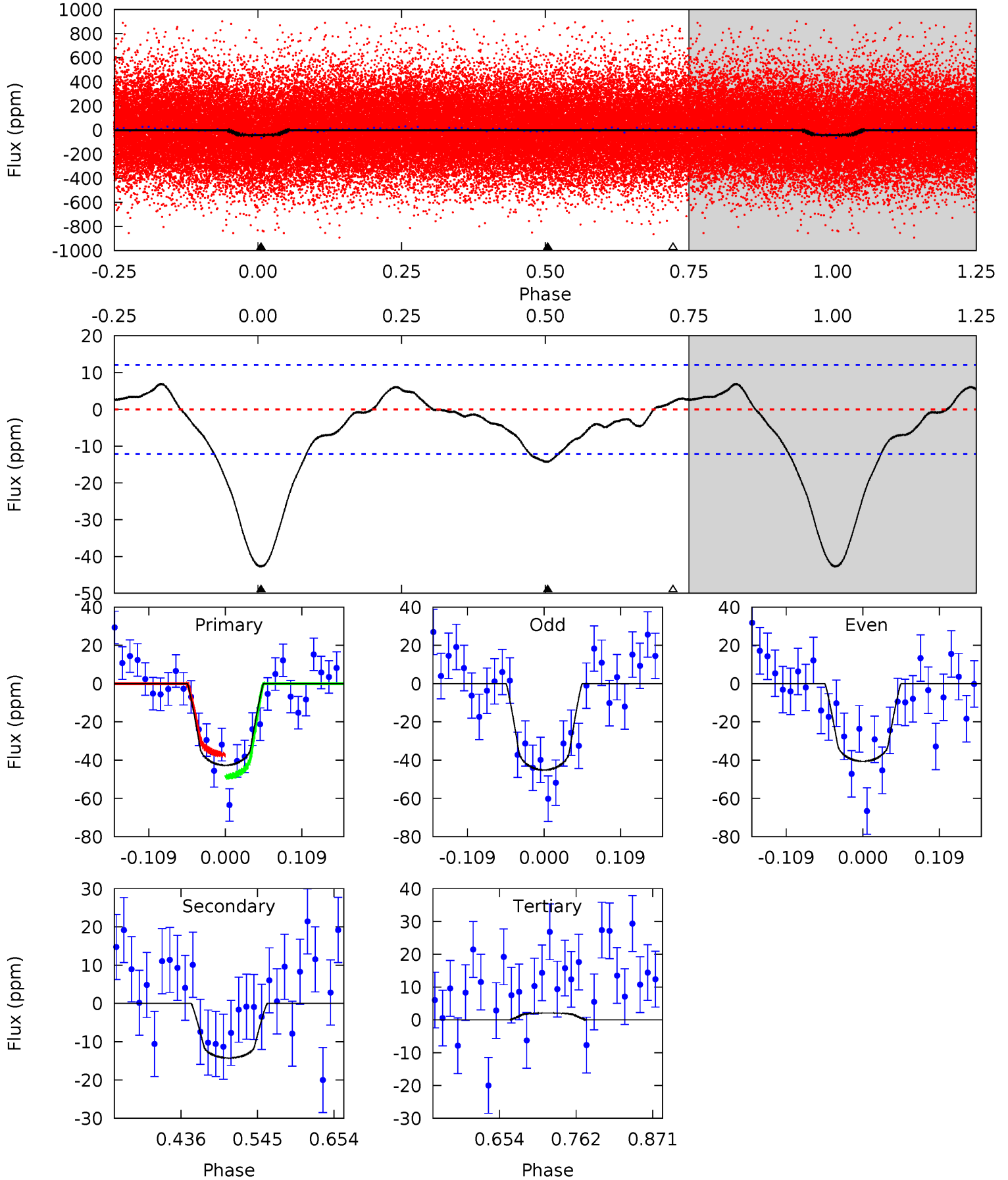
TCE 006276994-01 P= 1.106025 Days $T_0=131.827341$ (BKJD)



DV Model-Shift Uniqueness Test

006276994-01, P = 1.105994 Days, E = 130.737067 Days

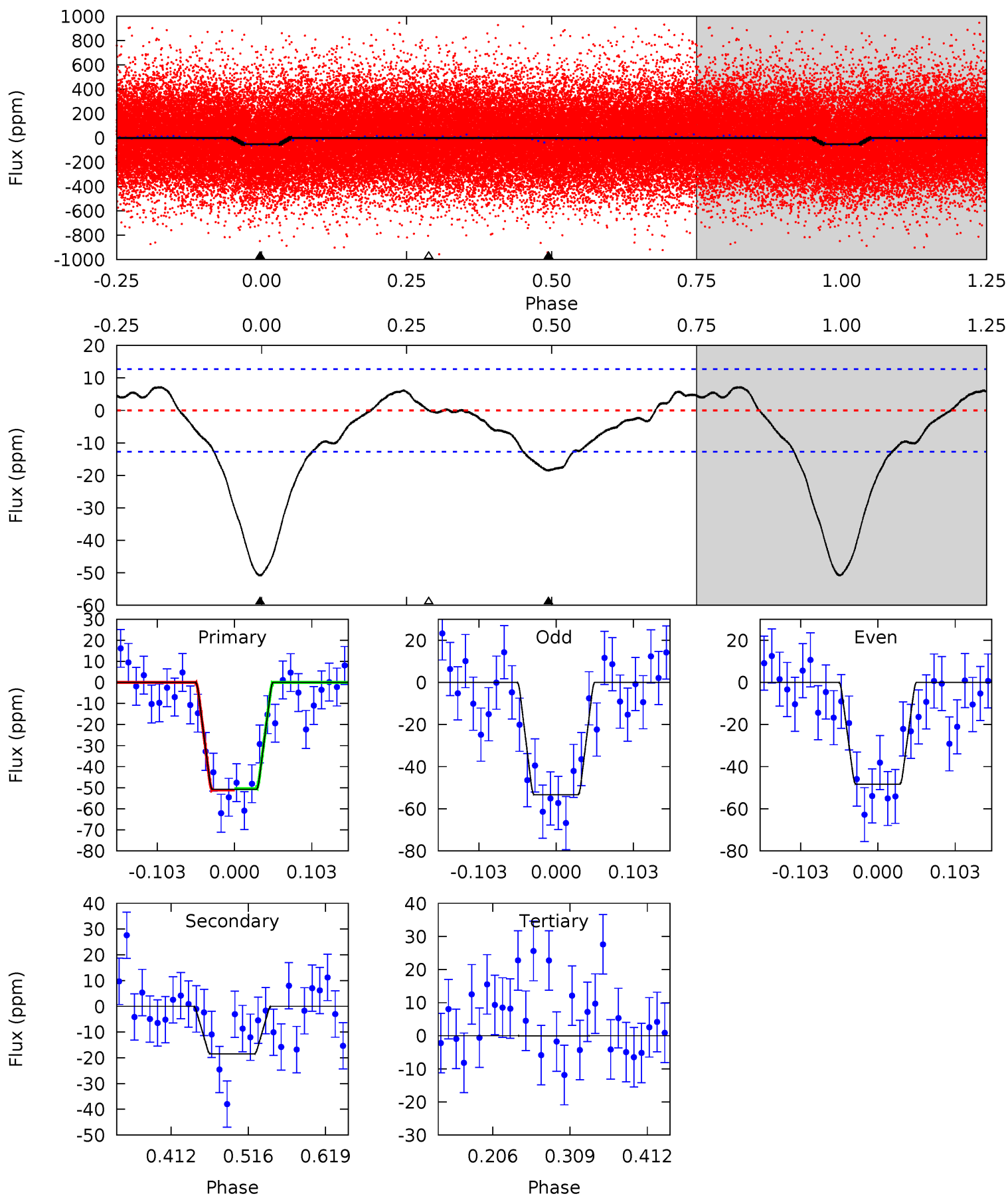
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	5.36	-0.78	0	4.55	1.60	1.31	16.8	16.0	6.14	5.36	0.85	0.89	0.14	2.19



Alt Model-Shift Uniqueness Test

006276994-01, P = 1.106025 Days, E = 130.721316 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	6.63	0	0	4.56	1.63	1.61	18.2	18.2	6.63	6.63	0.90	1.00	0.12	0.12



Stellar Parameters For KIC 006276994

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6241^{+175}_{-219}	$4.450^{+0.056}_{-0.224}$	$-0.140^{+0.250}_{-0.300}$	$1.031^{+0.349}_{-0.116}$	$1.088^{+0.154}_{-0.154}$	$1.400^{+0.417}_{-0.763}$
	+3%/-4%	+1%/-5%	+179%/-214%	+34%/-11%	+14%/-14%	+30%/-54%
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 006276994-01 / KOI 4095.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 3	$0.77^{+0.33}_{-0.29}$	2714^{+242}_{-139}	4794^{+1172}_{-678}	$6.003^{+9.327}_{-3.126}$
Alt.	-18 ± 3	$0.87^{+0.36}_{-0.33}$	2725^{+205}_{-136}	4798^{+1246}_{-615}	$6.120^{+10.393}_{-3.055}$

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 $A_{obs} \gg 1.0$

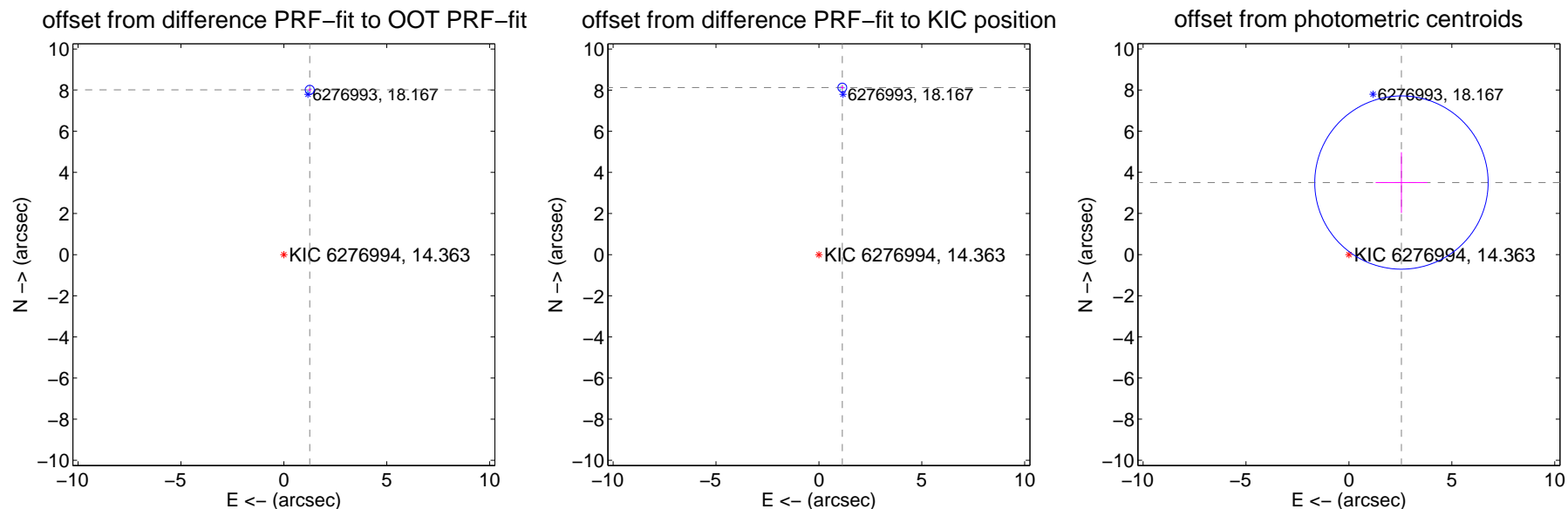
DV Centroid Data

Supplemental centroid analysis for 006276994-01. Kepler magnitude: 14.36. Transit SNR 10.47

There are 4 quarters with good PRF difference image offsets

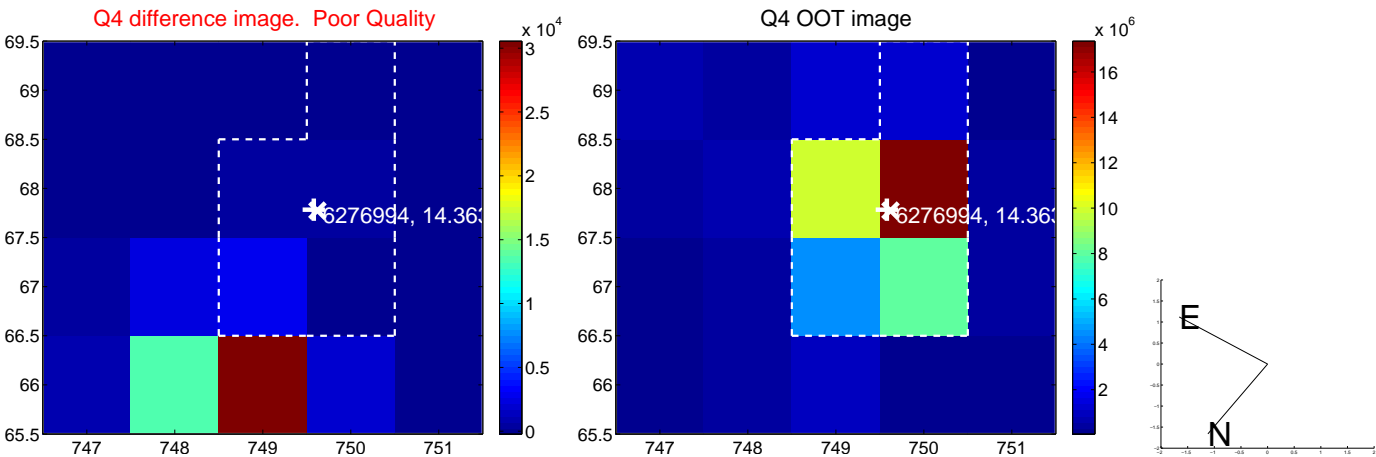
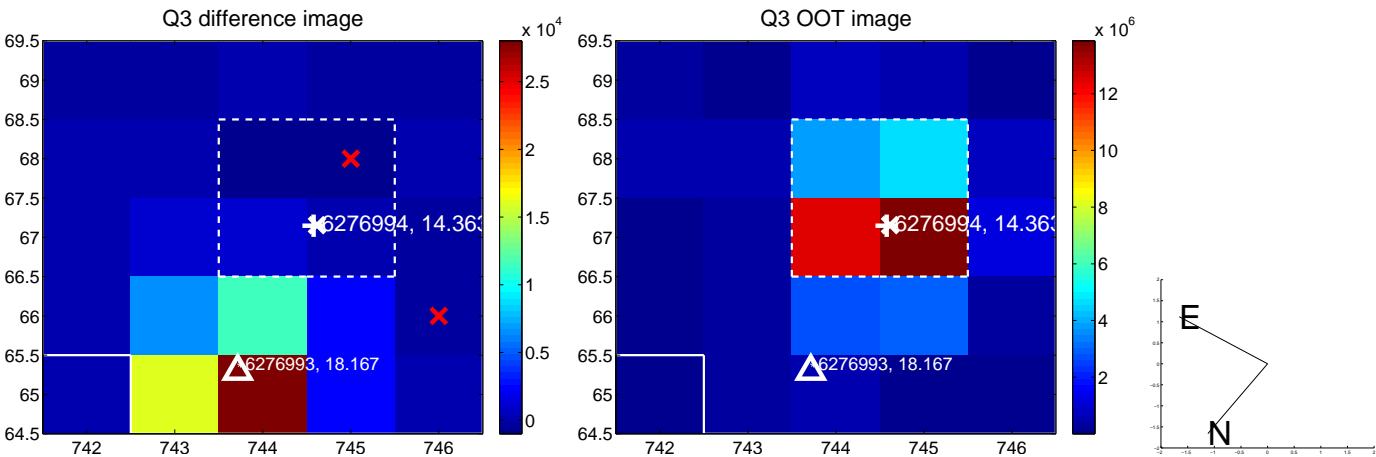
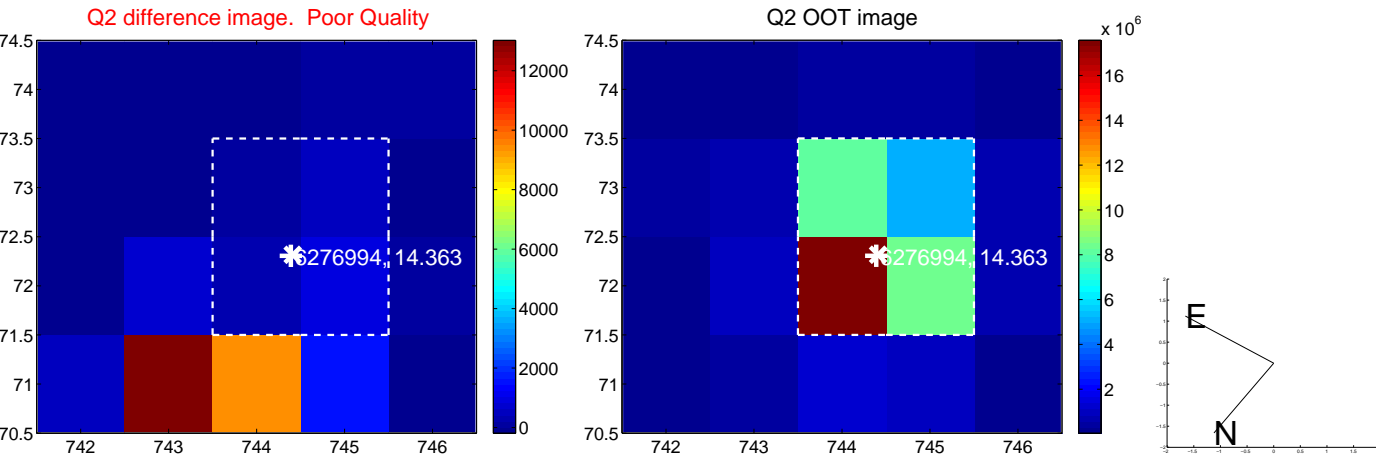
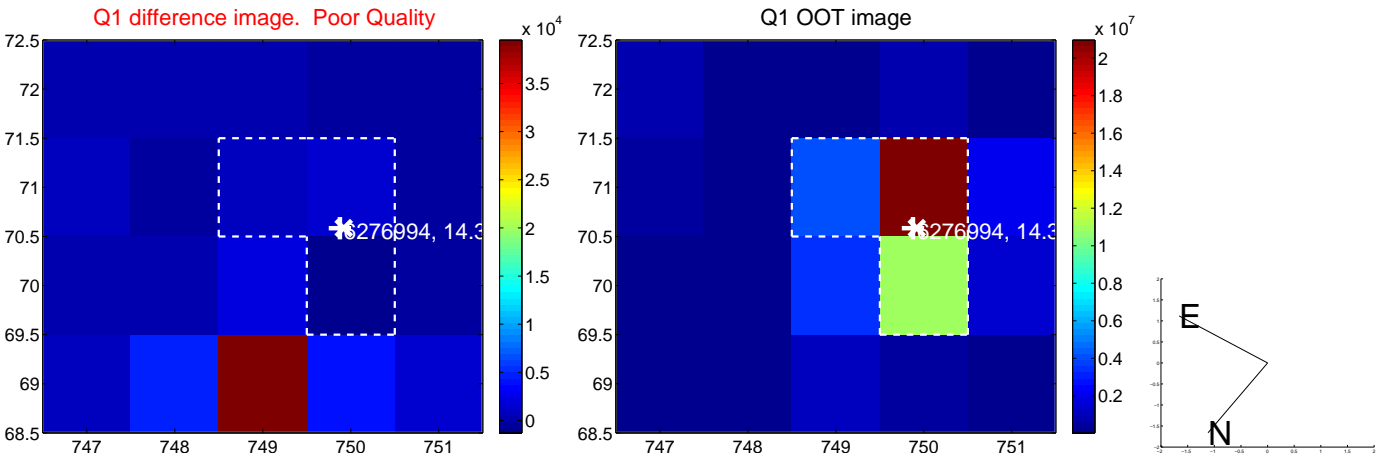
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.115 \pm 0.073	110.67	-1.261 \pm 0.074	8.016 \pm 0.072
PRF-fit source offset from KIC position	8.205 \pm 0.072	114.24	-1.138 \pm 0.077	8.125 \pm 0.071
photometric centroid source offset	4.33 \pm 1.40	3.09	-2.55 \pm 1.26	3.50 \pm 1.48

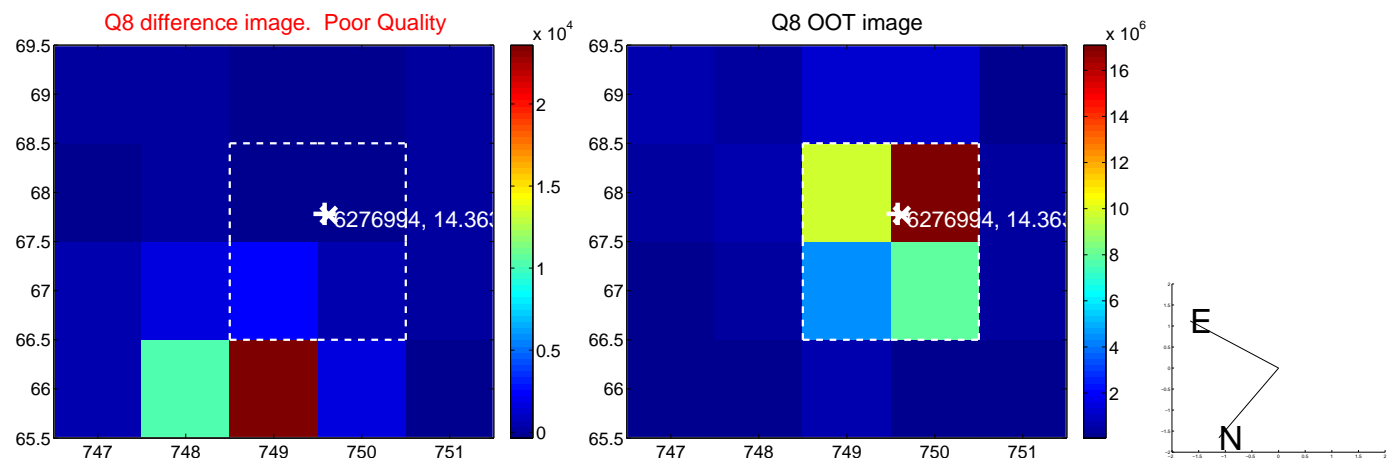
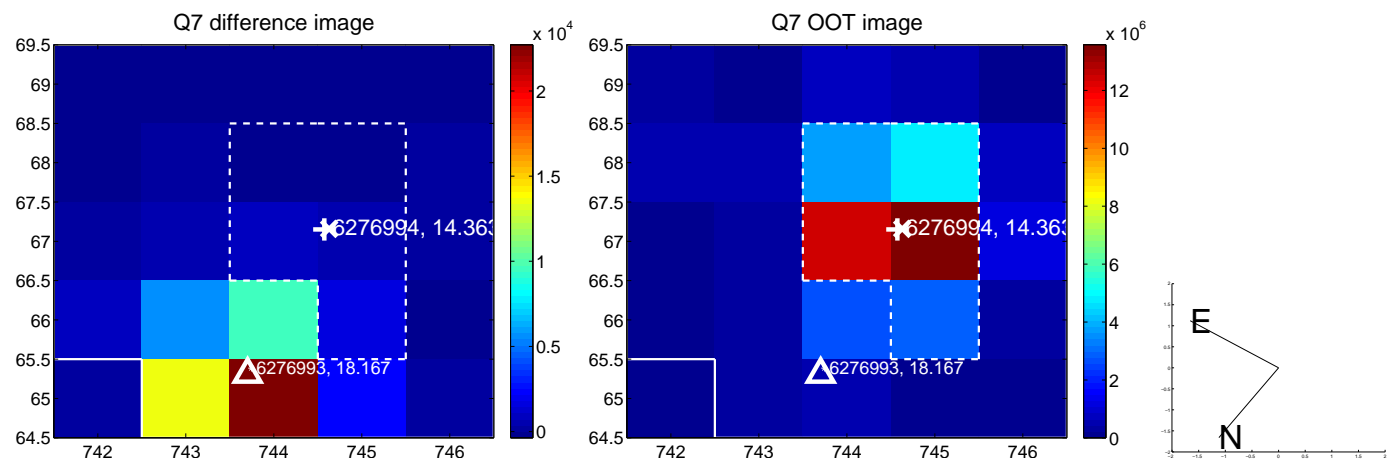
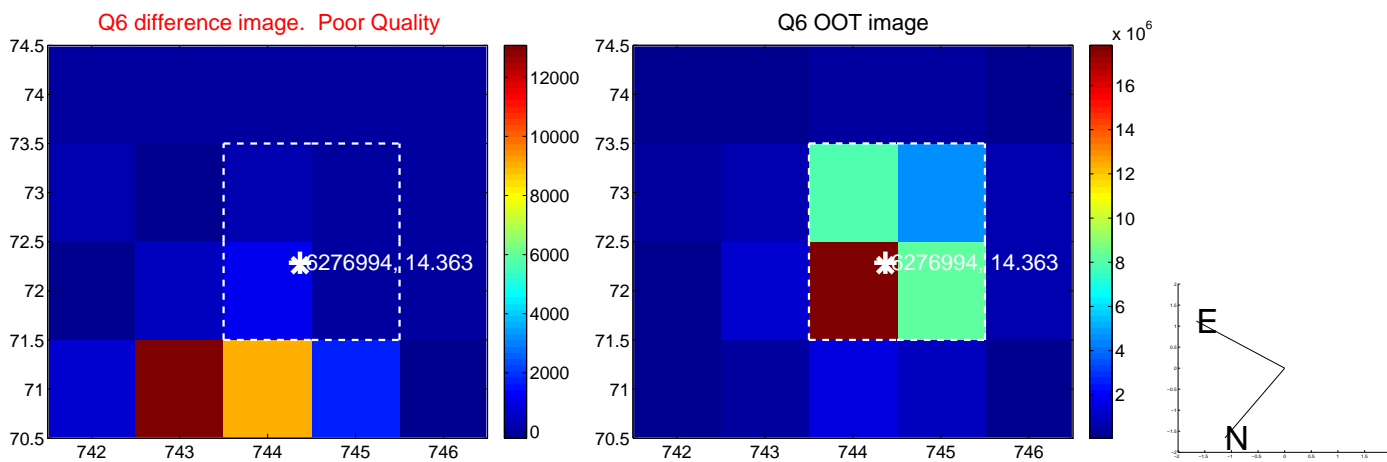
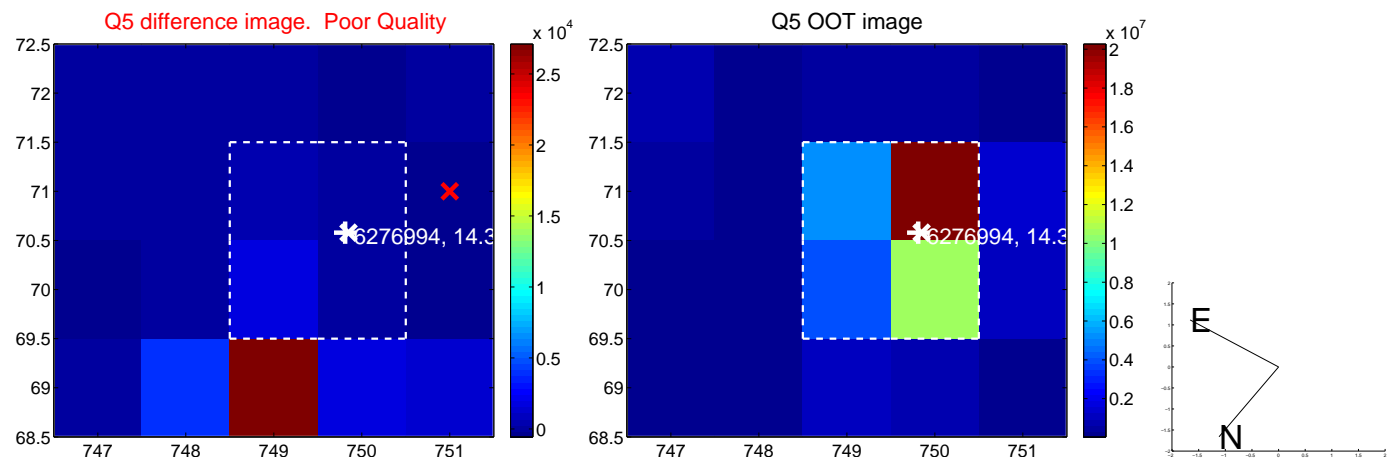


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

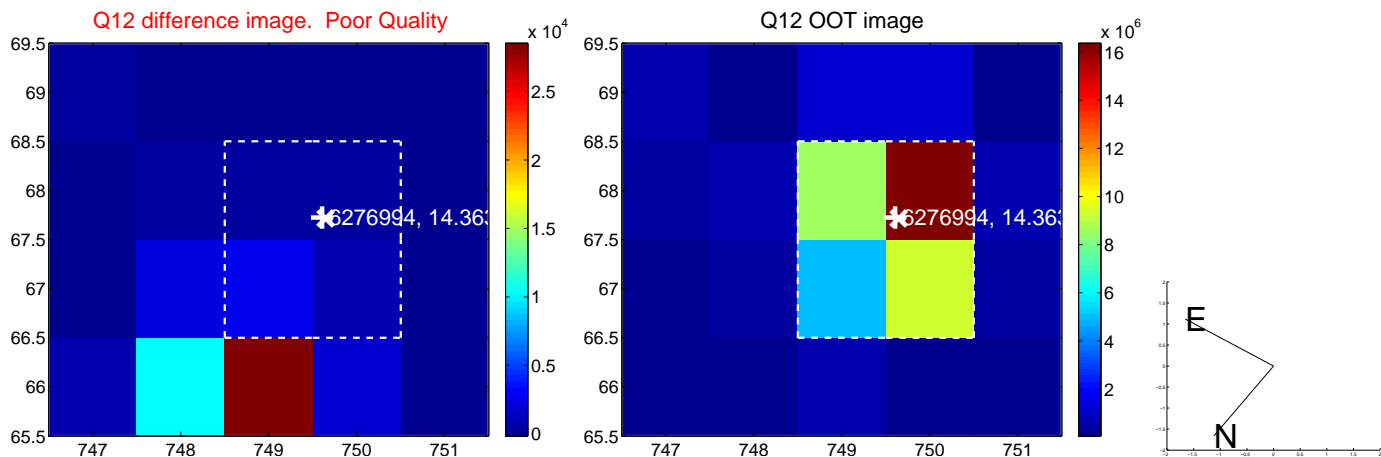
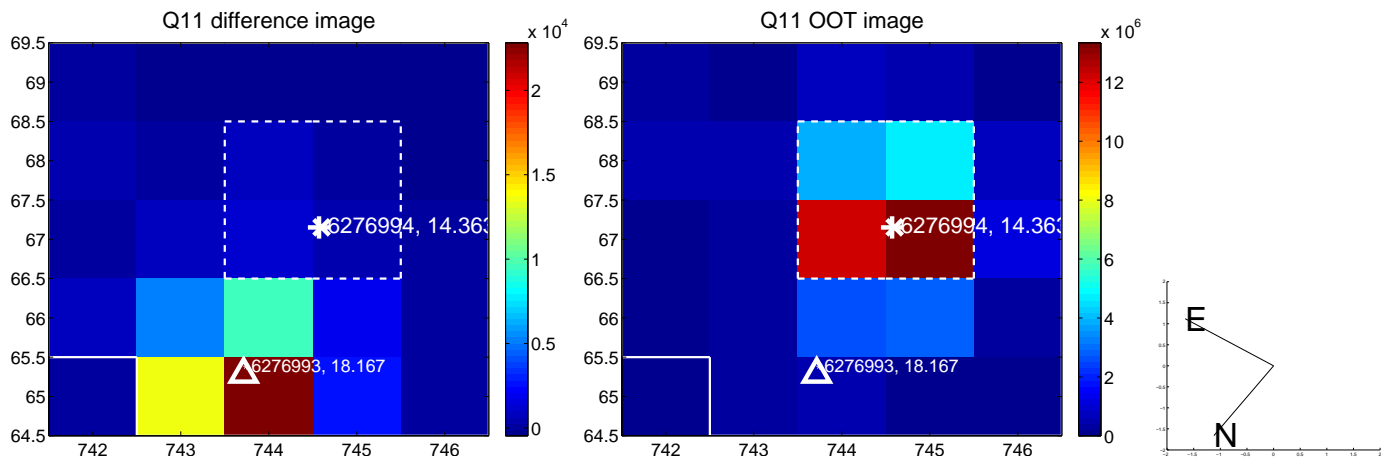
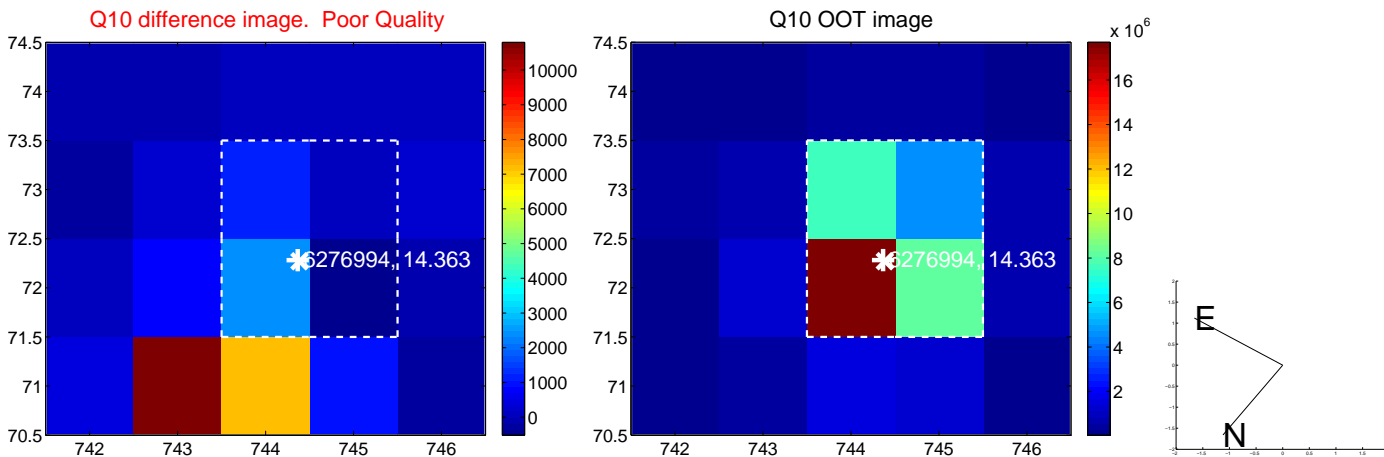
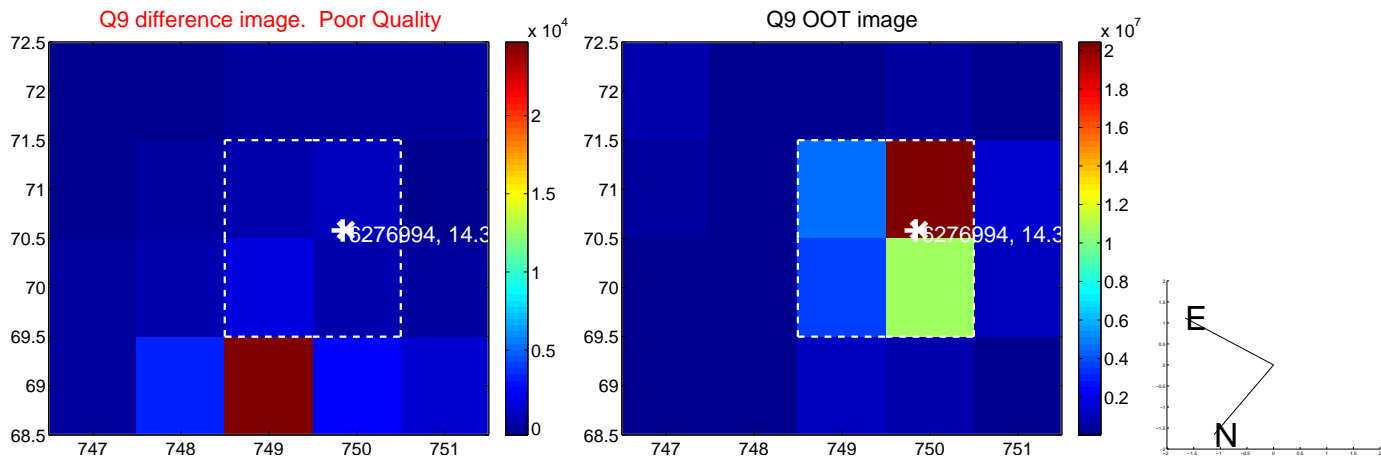
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



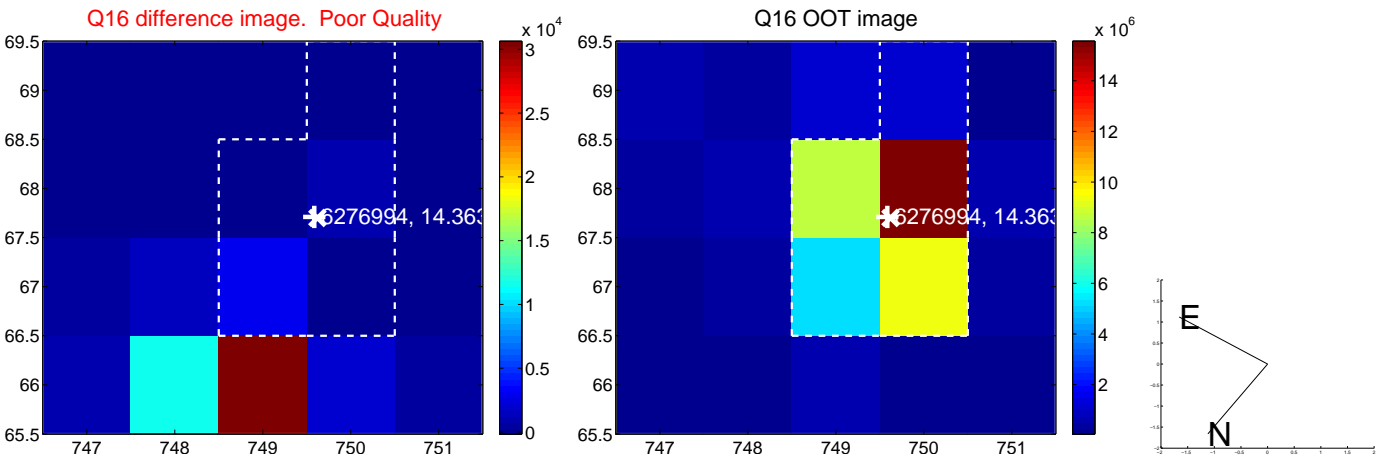
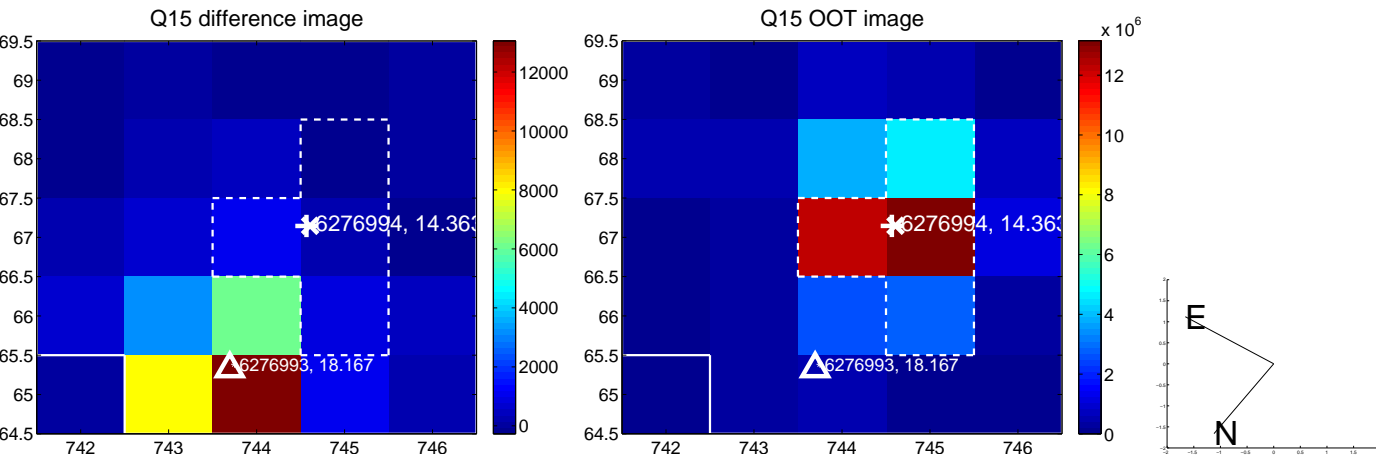
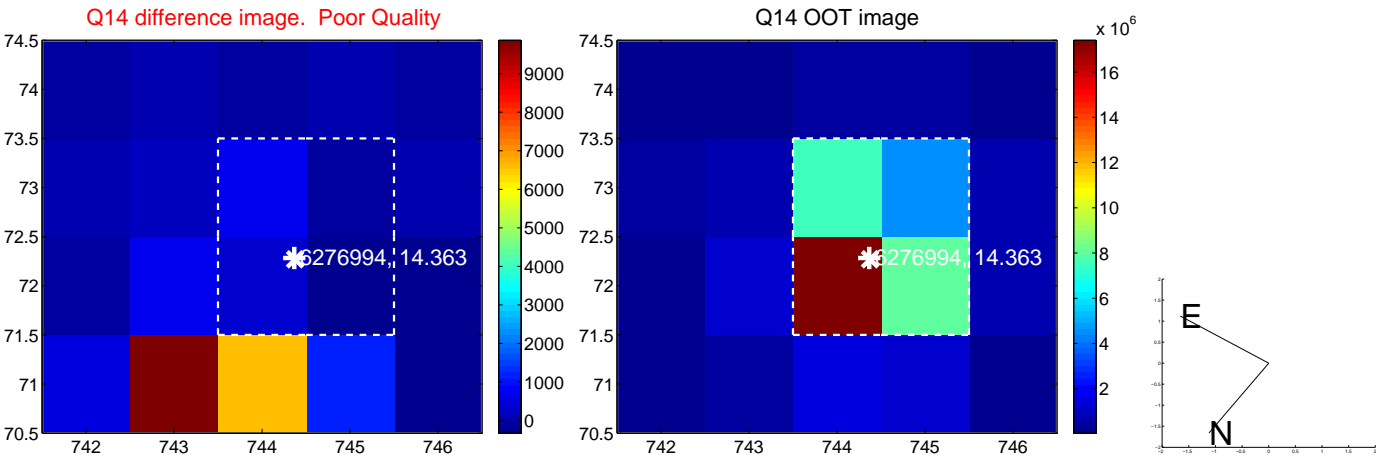
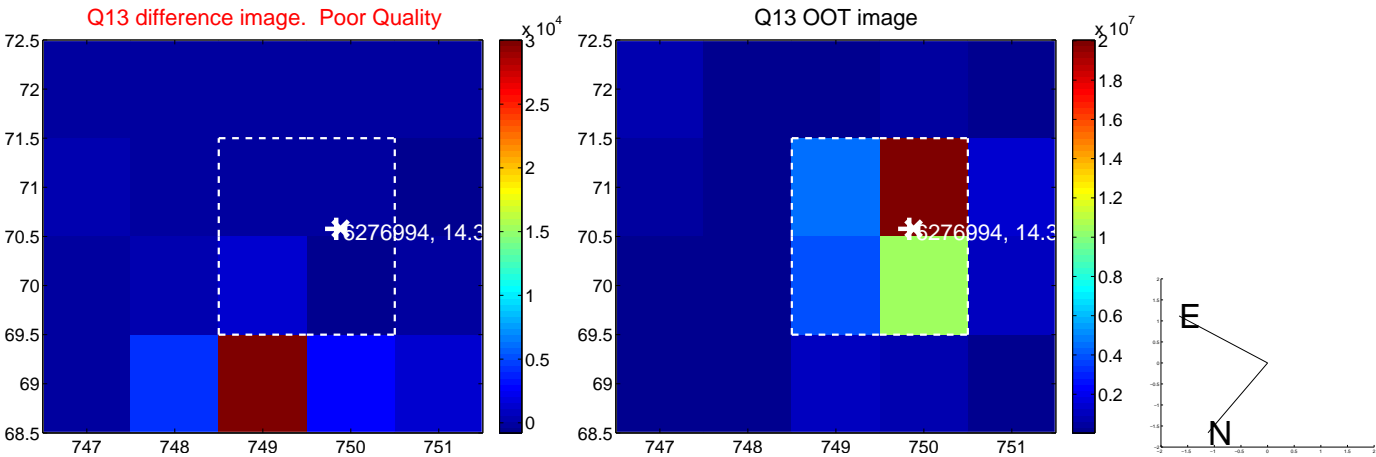
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



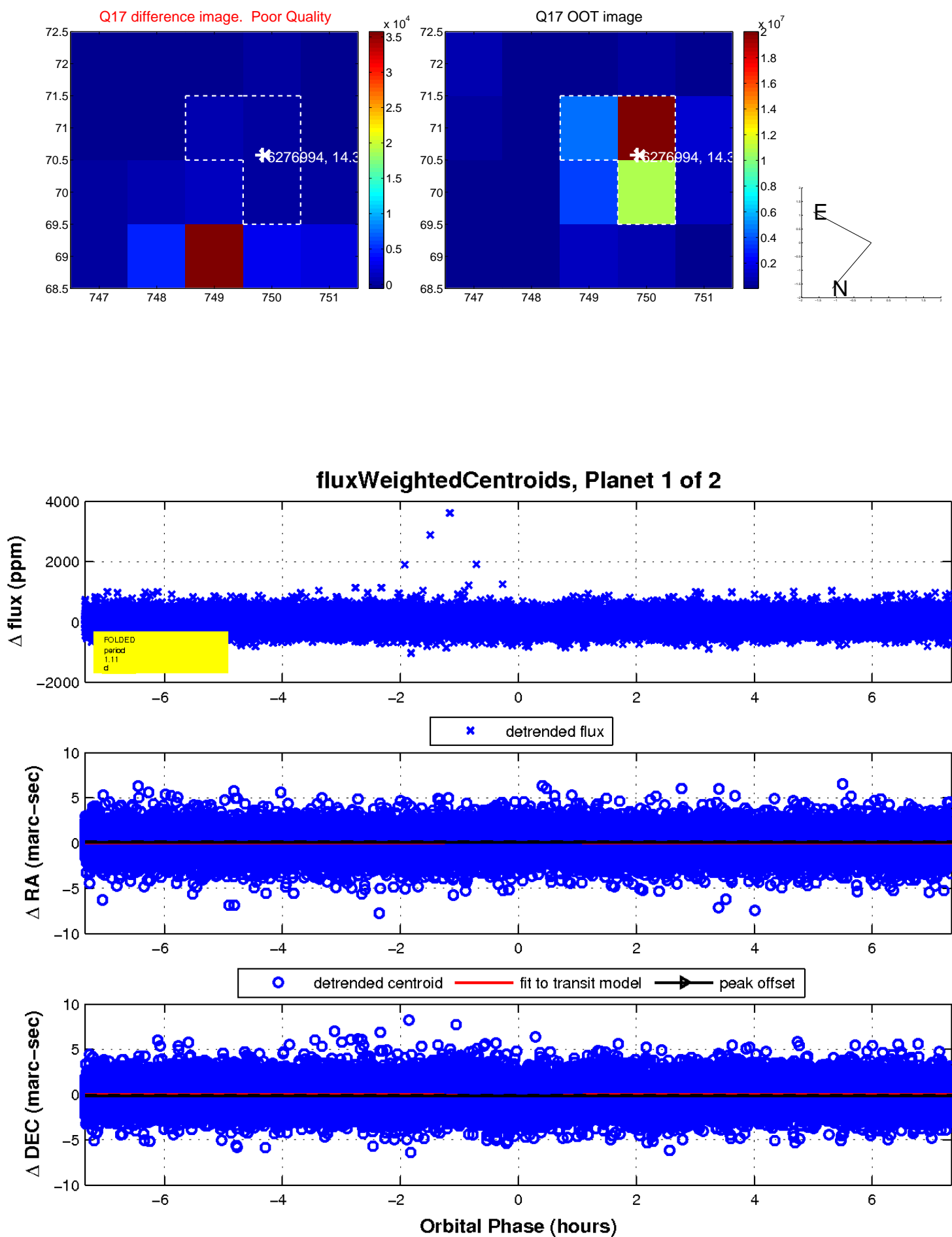
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

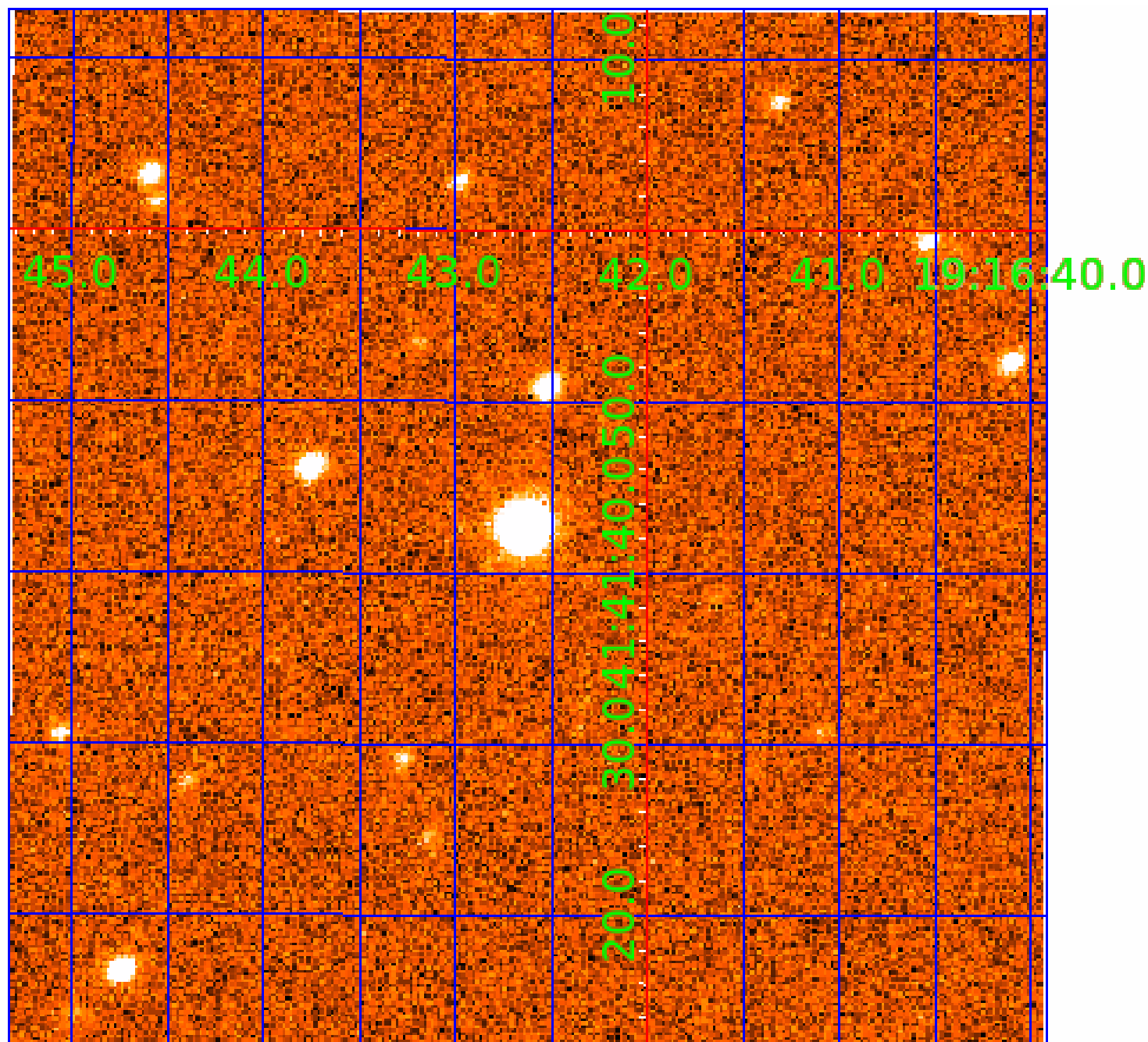


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006276994

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})
006276994-01	OBS	4095.01	1.105994	131.843061	37.8	2.449	11.5	10.5	1.03	6241	0.74	3107.51
006276994-02	OBS	No	282.712068	390.194128	181.6	16.164	7.4	5.4	1.03	6241	1.48	1.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006276994-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET
006276994-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

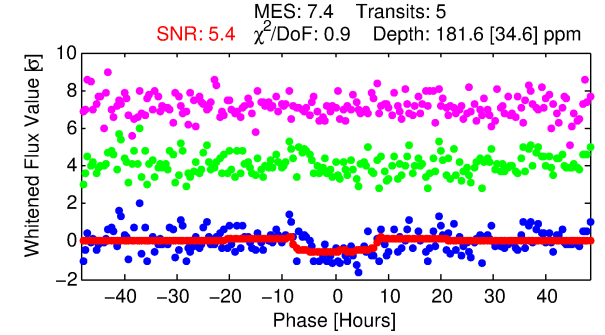
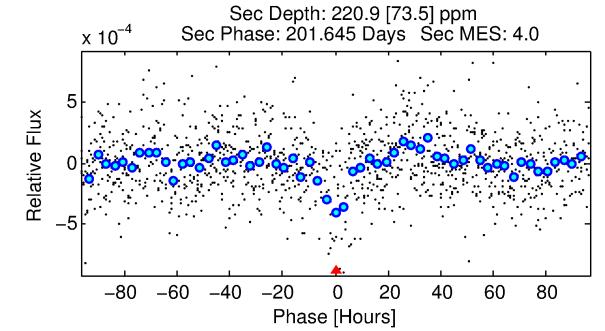
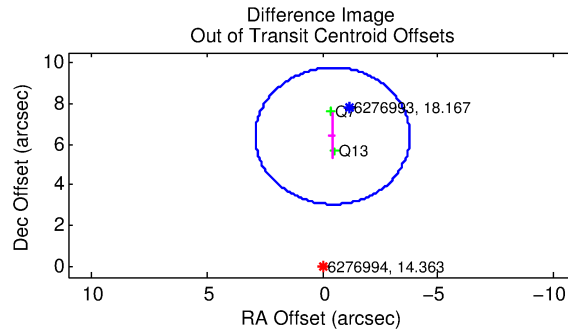
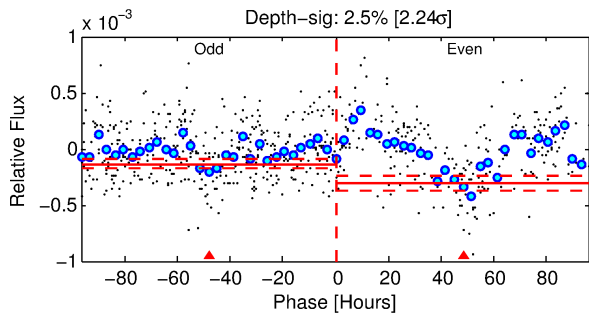
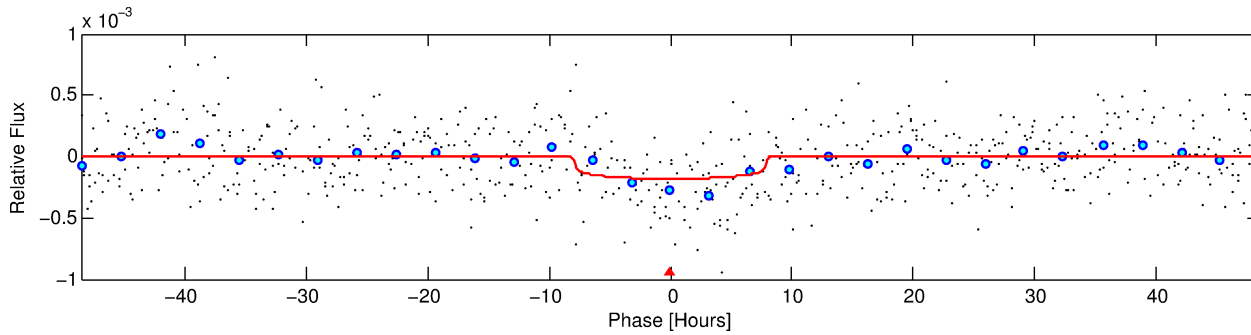
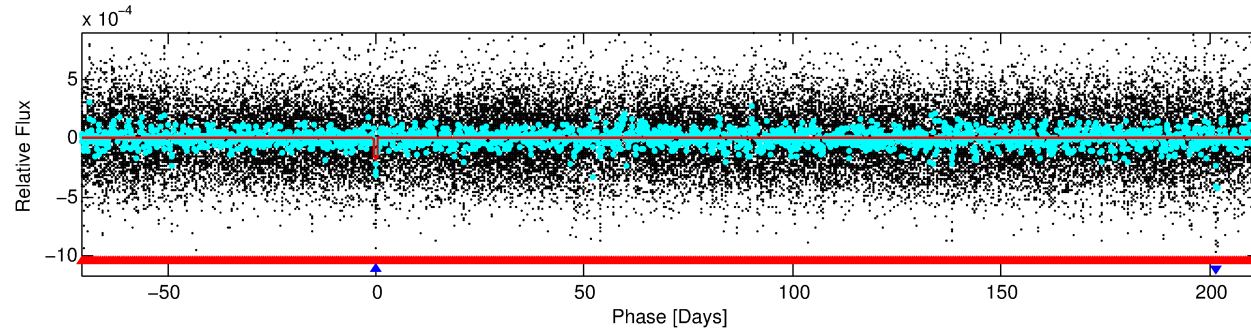
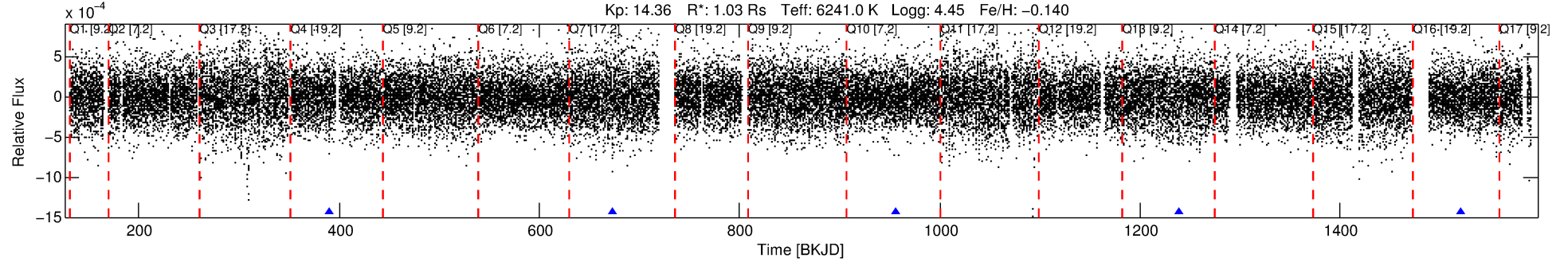
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006276994-02

No Significant Match Found

DV One-Page Summary

KIC: 6276994 Candidate: 2 of 2 Period: 282.712 d
KOI: K04095 Corr: No Ephemeris Match



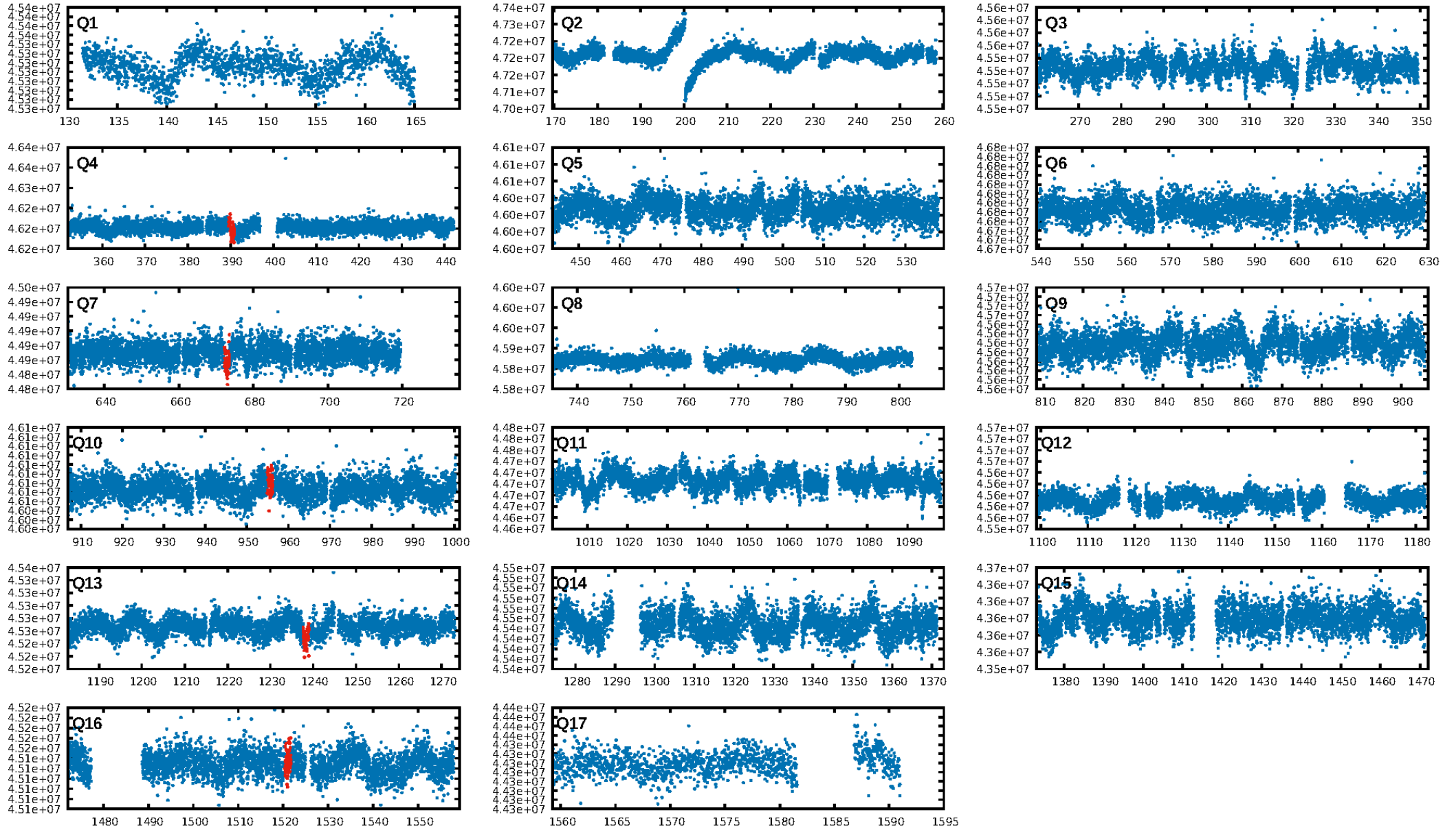
DV Fit Results:

Period = 282.71207 [0.01374] d
Epoch = 390.1941 [0.0376] BKJD
Rp/R* = 0.0131 [0.0082]
a/R* = 100.90 [320.60]
b = 0.68 [2.57]
Seff = 1.92 [0.83]
Teff = 300 [33] K
Rp = 1.48 [1.05] Re
a = 0.8685 [0.2464] AU
Ag = 42062.34 [57019.95] [0.74σ]
Teffp = 6642 [2158] K [2.94σ]

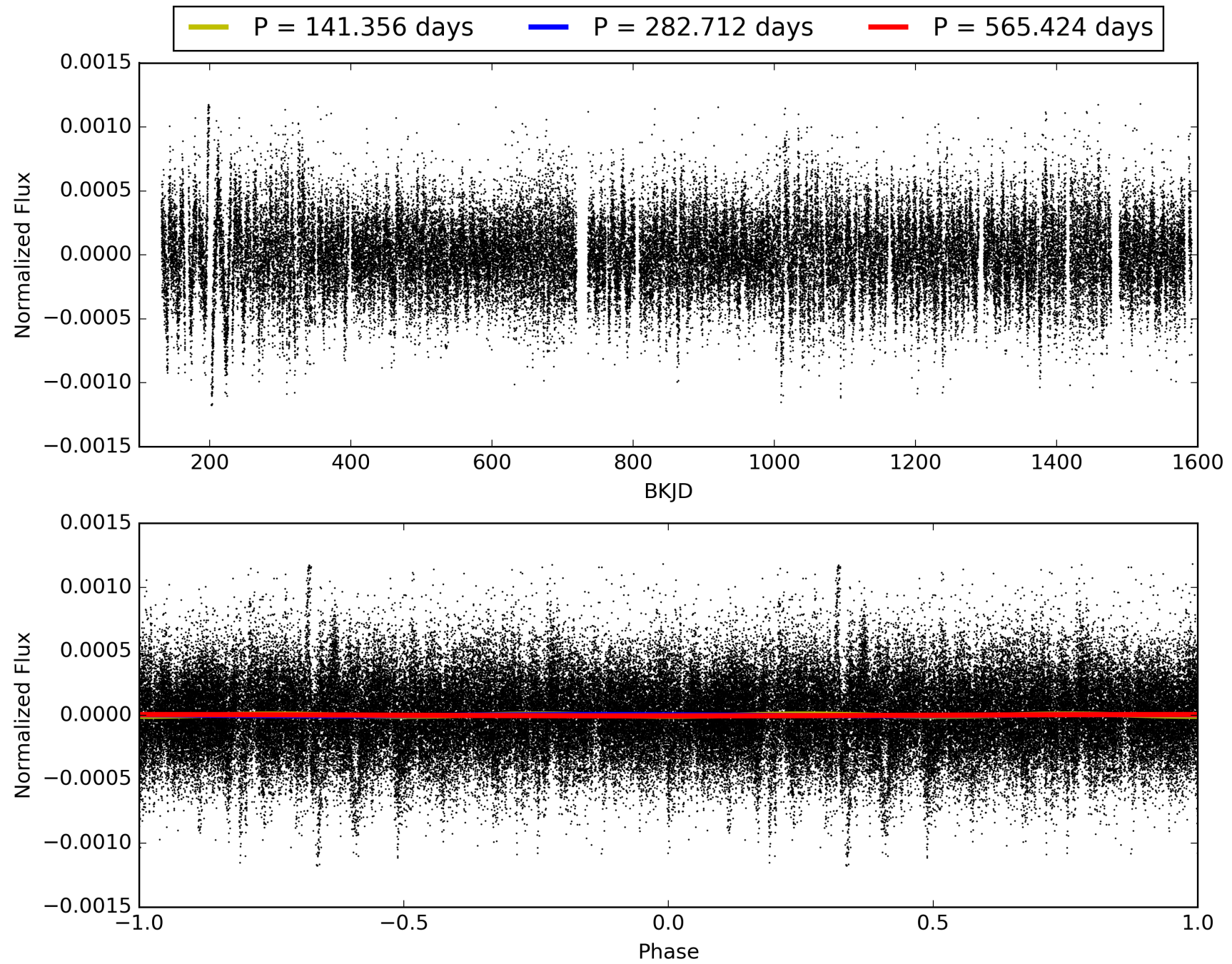
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [413.40σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.00e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.318
Centroid-sig: 74.6%
Centroid-so: 0.816 arcsec [0.33σ]
OotOffset-rm: 6.417 arcsec [5.75σ]
KicOffset-rm: 6.531 arcsec [5.76σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/5]

TCE 006276994-02, PDC Light Curves

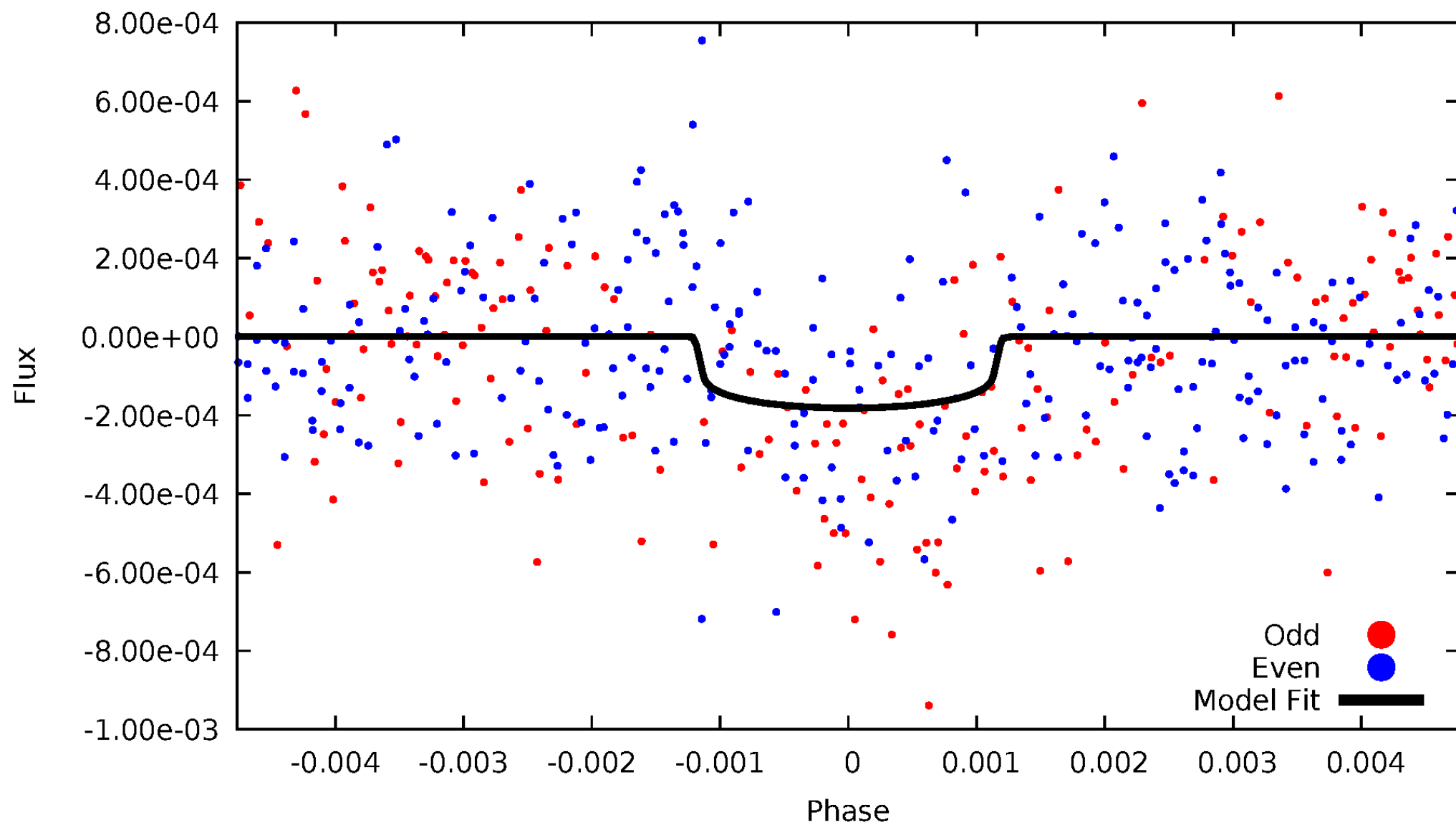


TCE 006276994-02



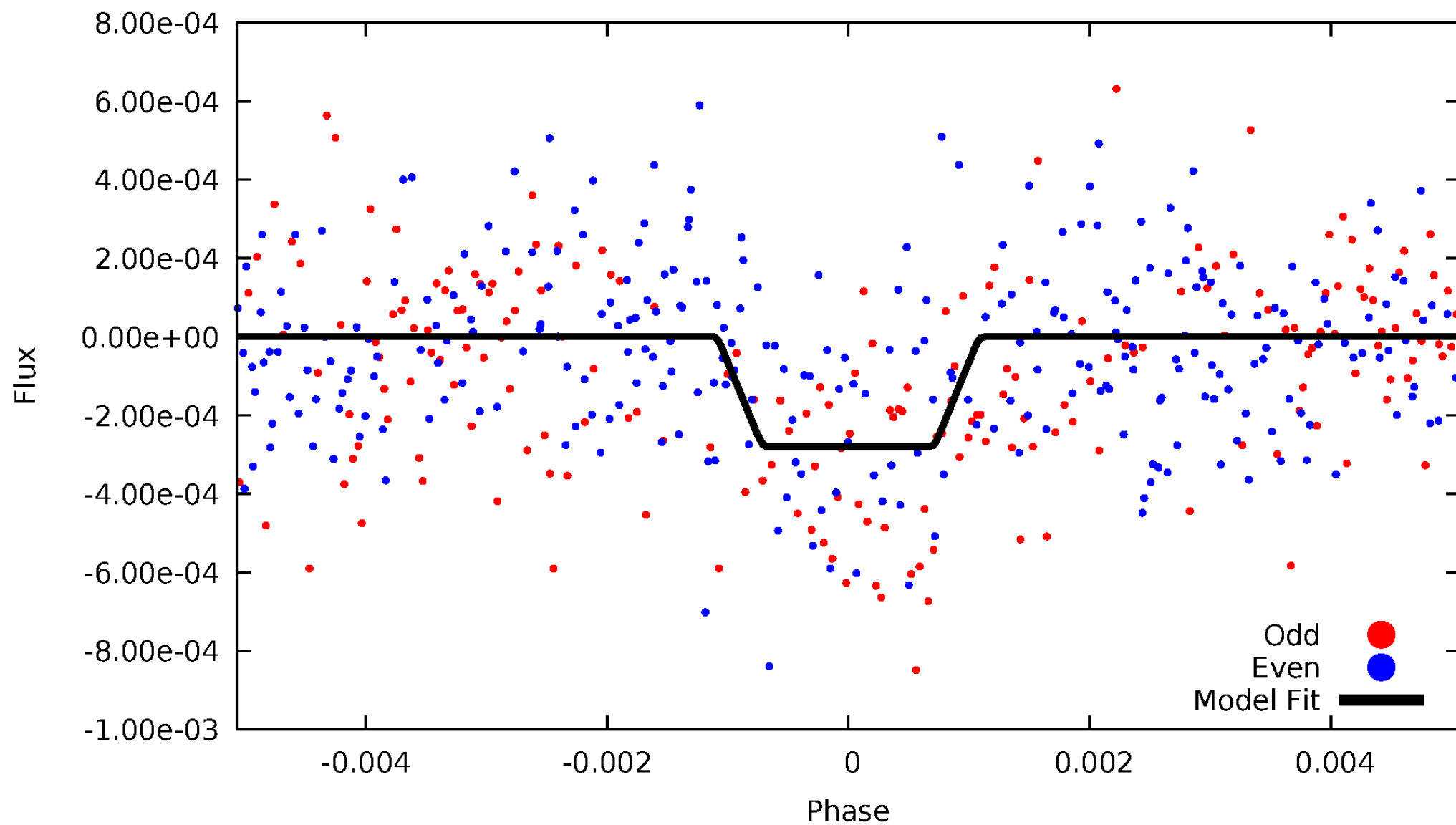
DV Odd/Even

TCE 006276994-02



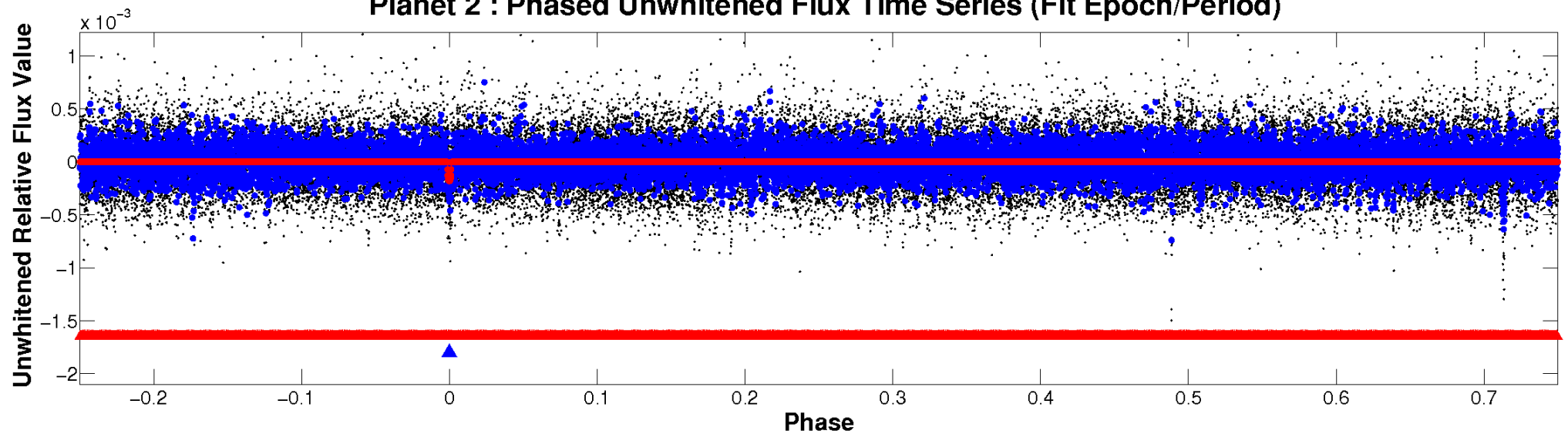
ALT Odd/Even

TCE 006276994-02

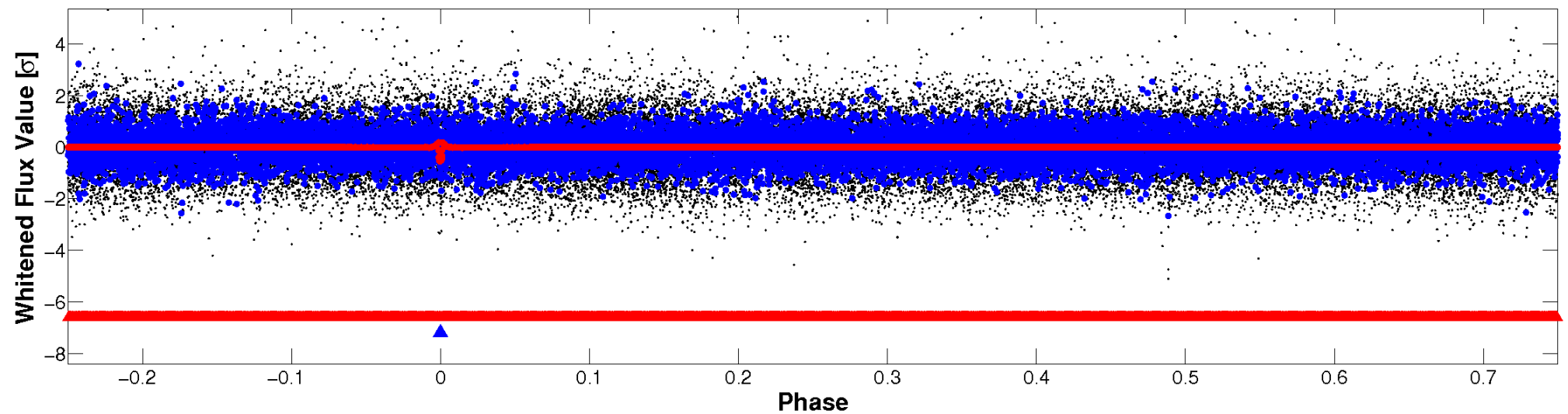


Non-Whitened Vs. Whitened Light Curve

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

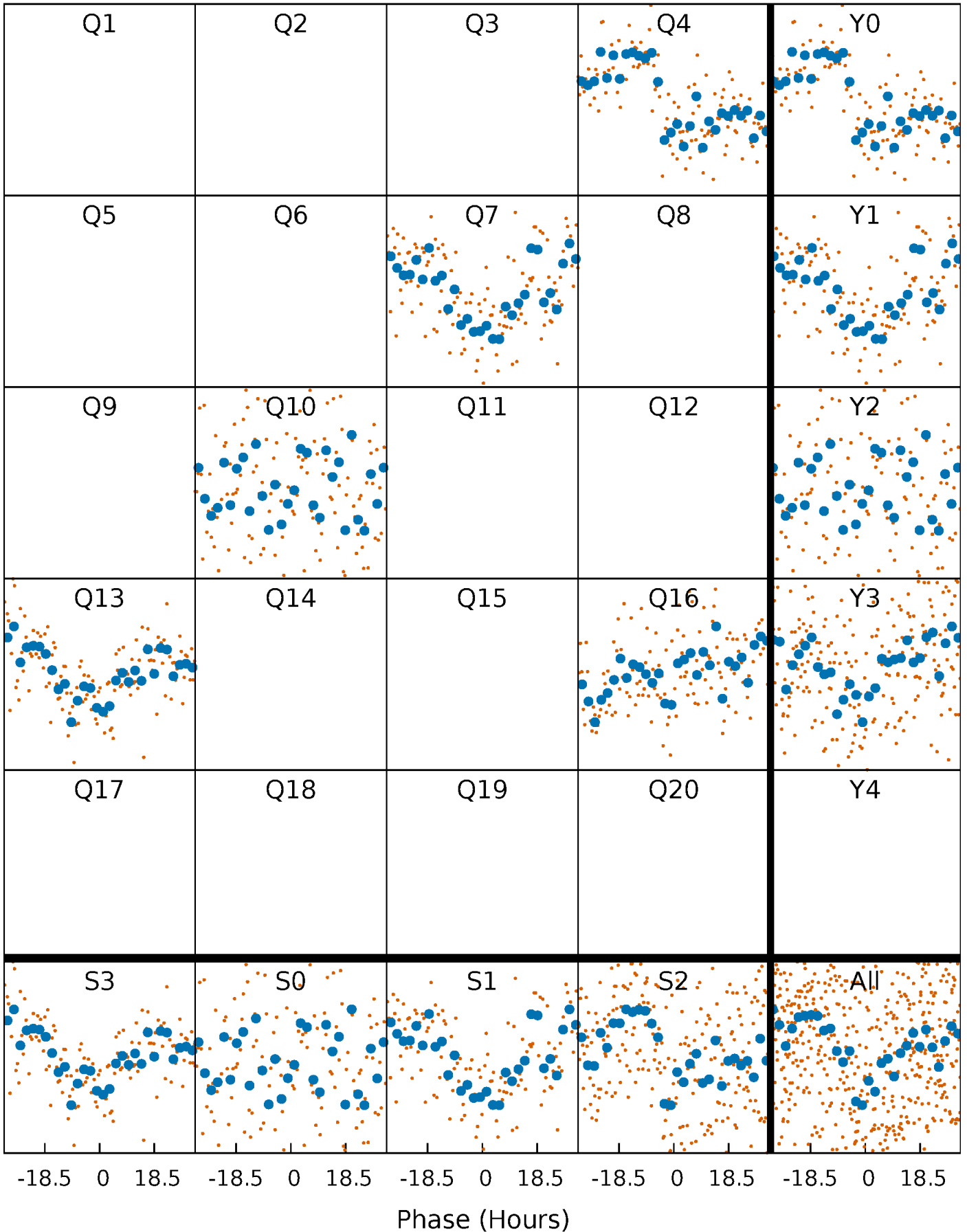


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



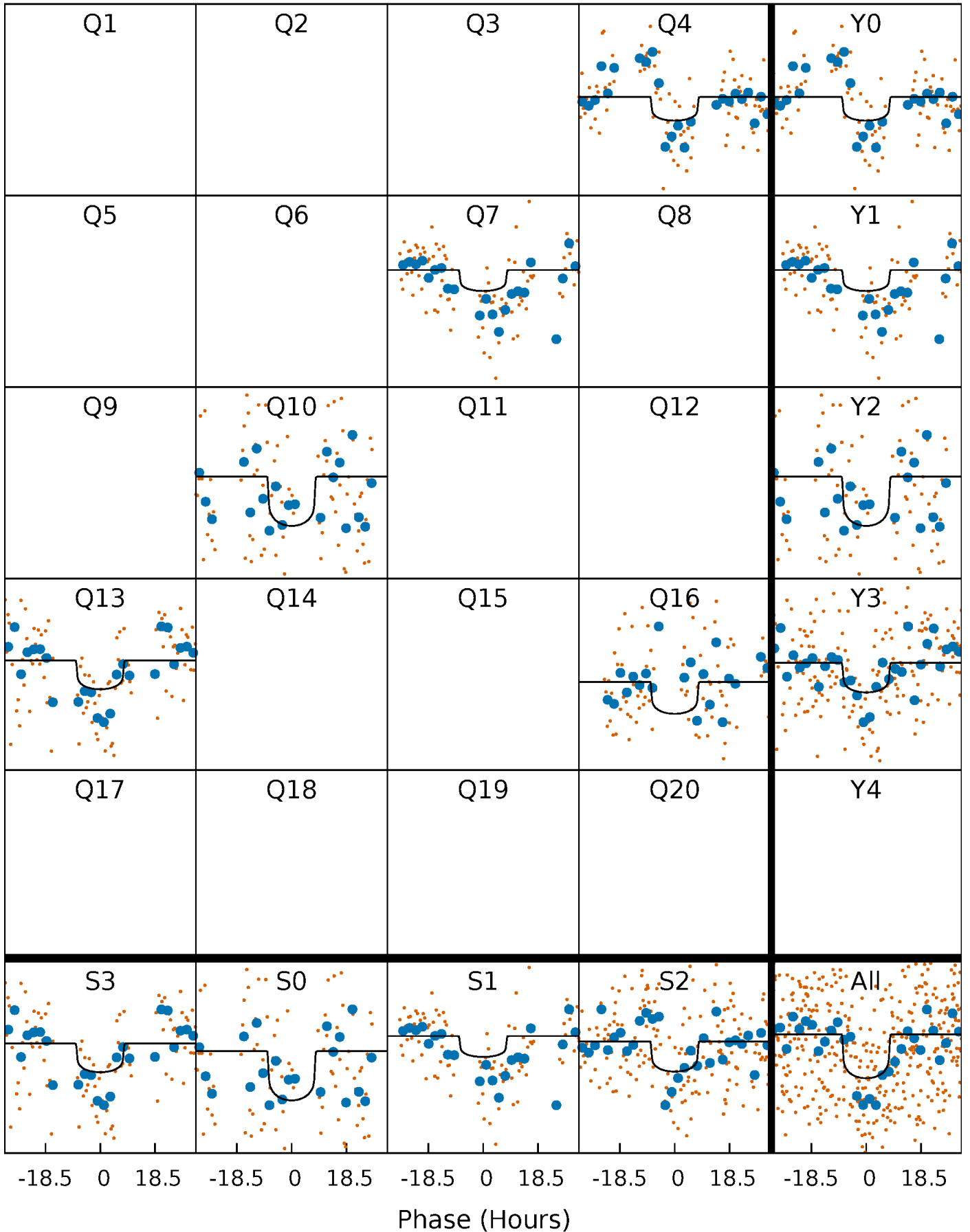
PDC Quarter-Phased Transit Curves

TCE 006276994-02 $P=282.712068$ Days $T_0=390.194128$ (BKJD)



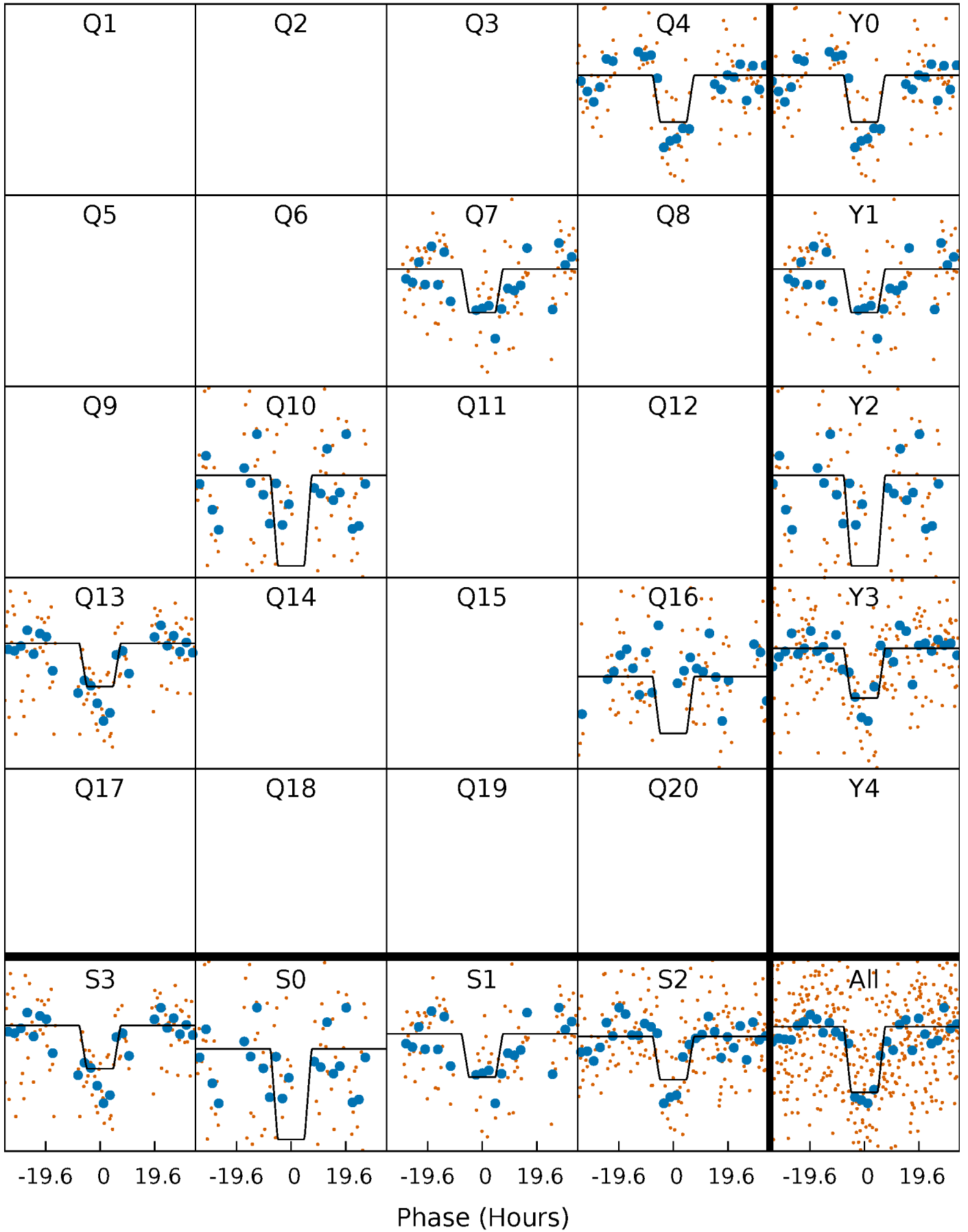
DV Quarter-Phased Transit Curves

TCE 006276994-02 P=282.712068 Days $T_0=390.194128$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

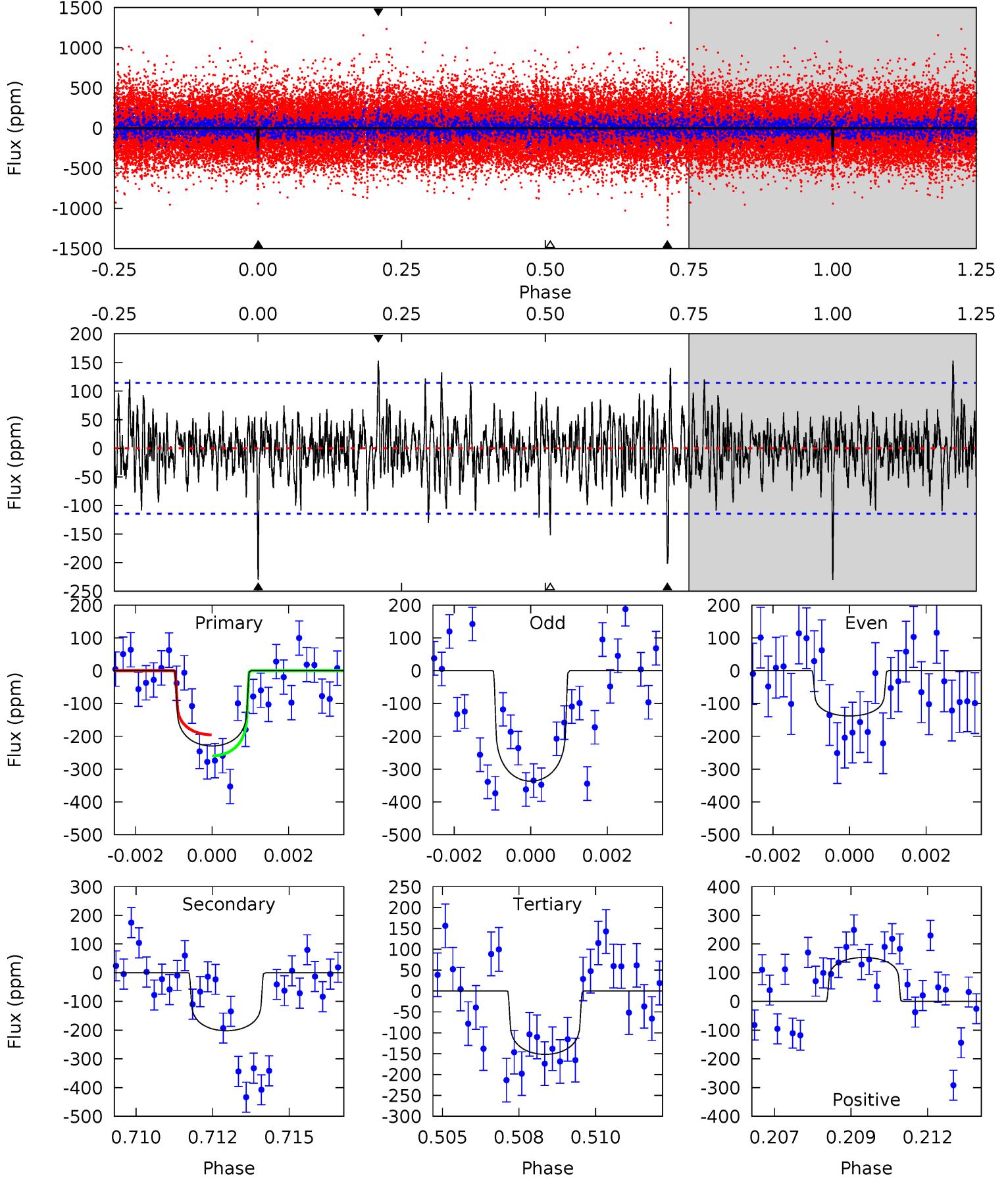
TCE 006276994-02 $P=282.705114$ Days $T_0=390.220073$ (BKJD)



DV Model-Shift Uniqueness Test

006276994-02, P = 282.712068 Days, E = 107.482060 Days

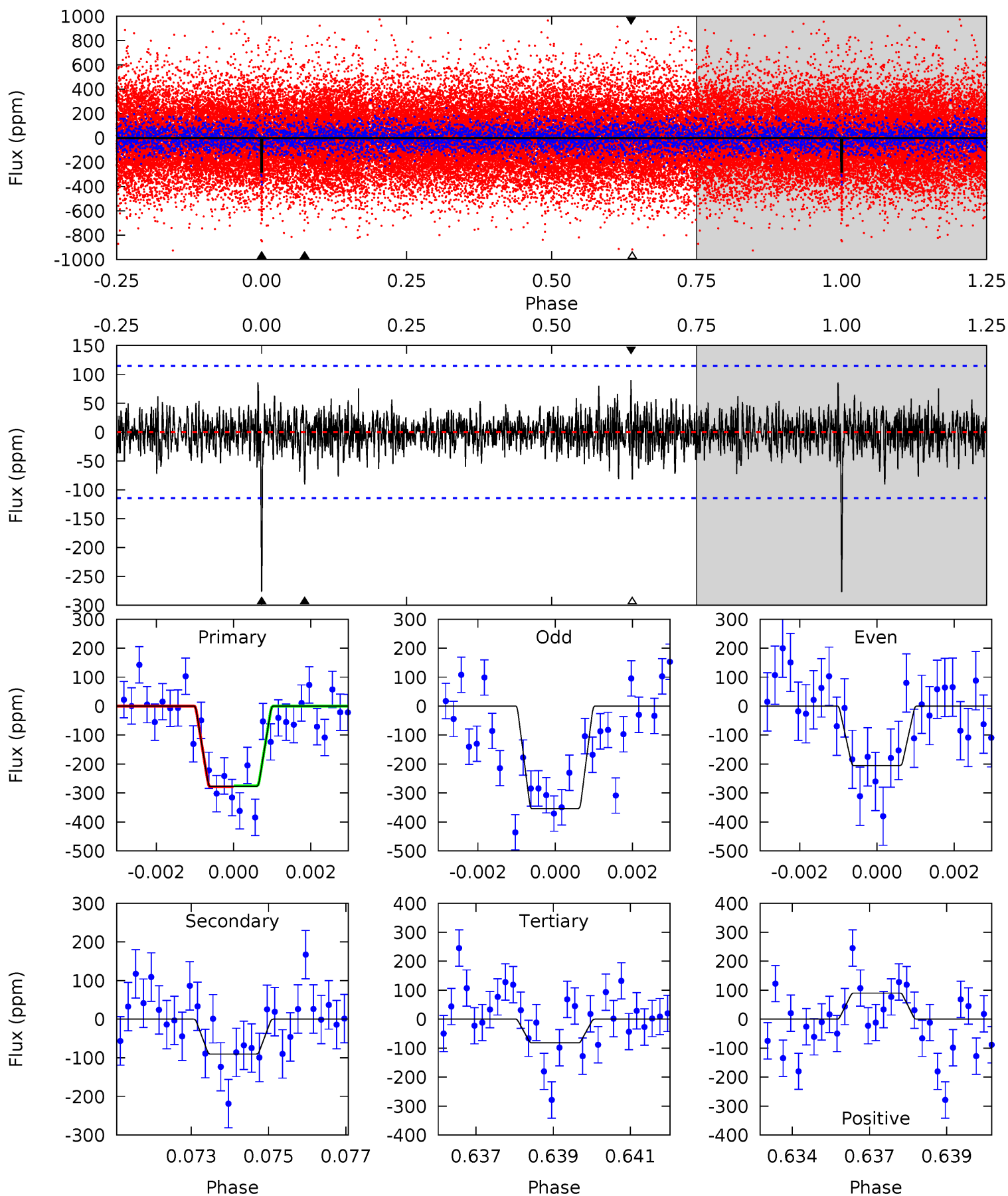
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	9.34	7.01	7.08	5.29	3.02	1.78	3.60	3.54	2.32	2.26	4.61	0.96	0.40	1.49



Alt Model-Shift Uniqueness Test

006276994-02, P = 282.705114 Days, E = 107.514959 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	4.19	3.80	4.18	5.31	3.06	1.06	9.05	8.67	0.39	0.01	3.48	0.66	0.25	0.07



Stellar Parameters For KIC 006276994

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6241^{+175}_{-219}	$4.450^{+0.056}_{-0.224}$	$-0.140^{+0.250}_{-0.300}$	$1.031^{+0.349}_{-0.116}$	$1.088^{+0.154}_{-0.154}$	$1.400^{+0.417}_{-0.763}$
	+3%/-4%	+1%/-5%	+179%/-214%	+34%/-11%	+14%/-14%	+30%/-54%
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 006276994-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-202 ± 22	$1.63^{+1.07}_{-0.87}$	430^{+37}_{-23}	6332^{+3678}_{-1255}	$31372^{+108334}_{-20137}$
Alt.	-90 ± 22	$1.96^{+1.04}_{-0.87}$	427^{+30}_{-22}	4759^{+1604}_{-697}	9195^{+22461}_{-5399}

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

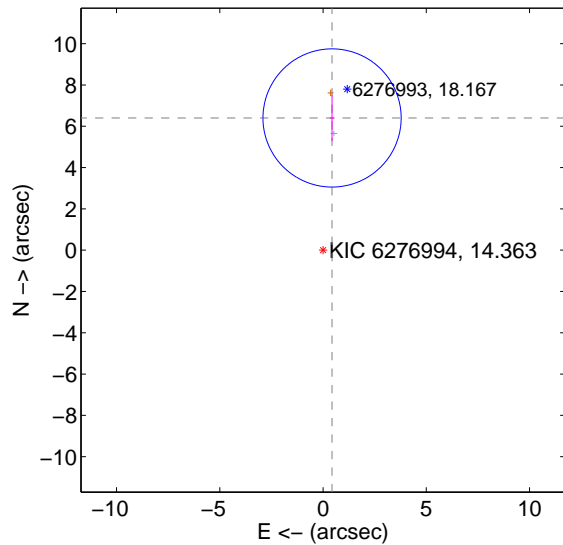
Supplemental centroid analysis for 006276994-02. Kepler magnitude: 14.36. Transit SNR 5.38

There are 1 quarters with good PRF difference image offsets

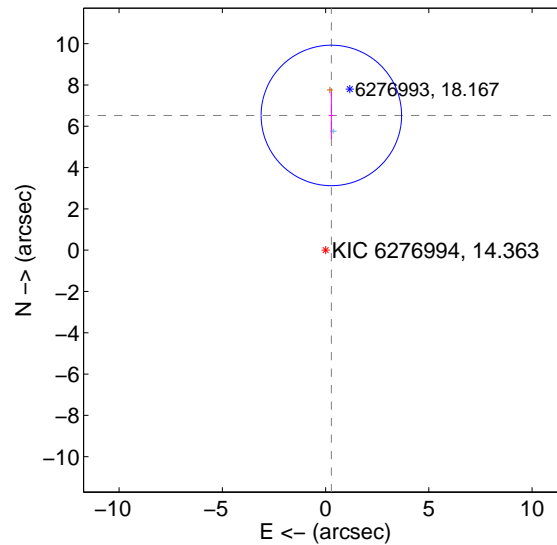
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.417 ± 1.115	5.75	-0.437 ± 0.114	6.403 ± 1.118
PRF-fit source offset from KIC position	6.531 ± 1.134	5.76	-0.279 ± 0.115	6.525 ± 1.135
photometric centroid source offset	0.82 ± 2.47	0.33	-0.02 ± 1.76	-0.82 ± 2.47

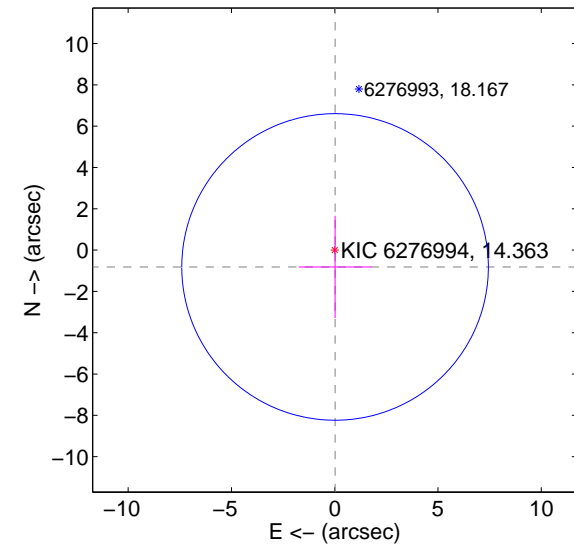
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

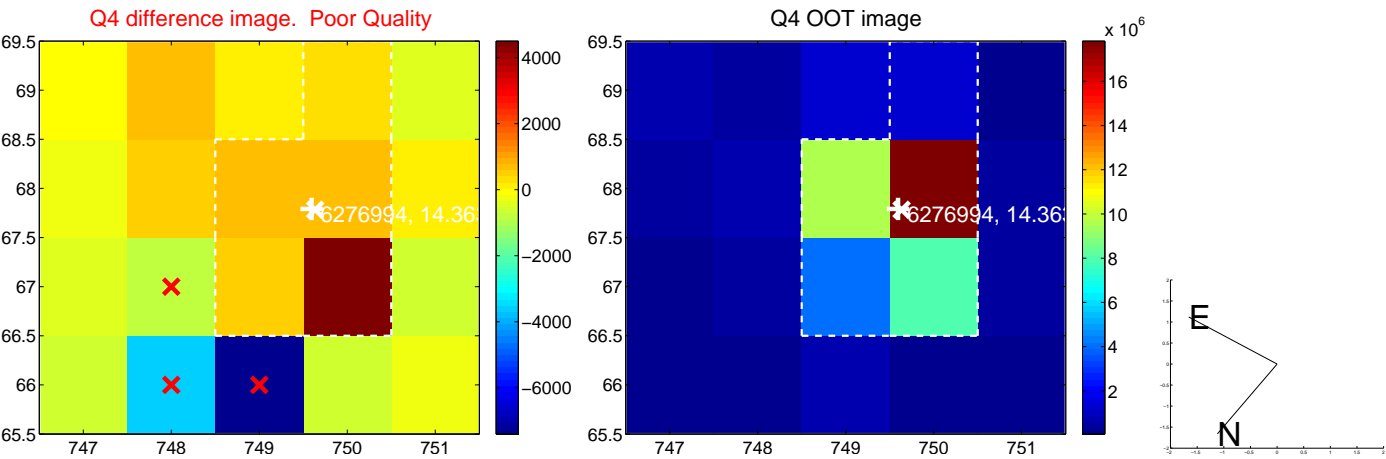


offset from photometric centroids



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

Q5 no difference image



Q5 no OOT image



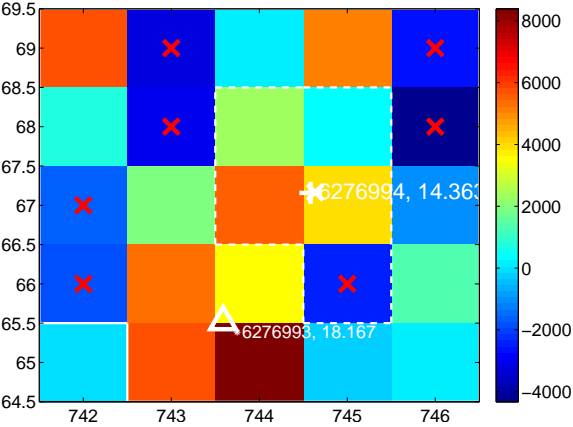
Q6 no difference image



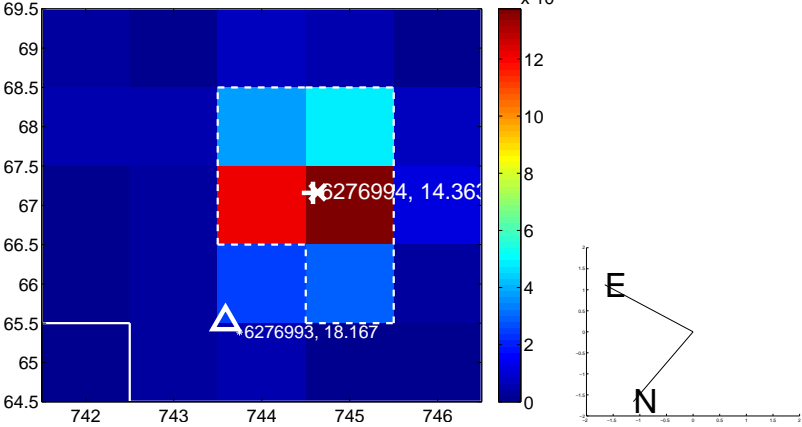
Q6 no OOT image



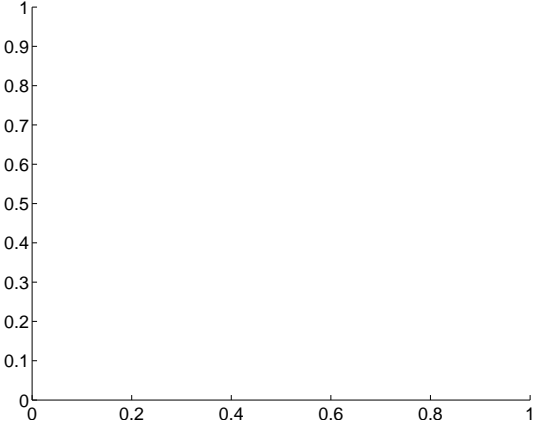
Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



Q8 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

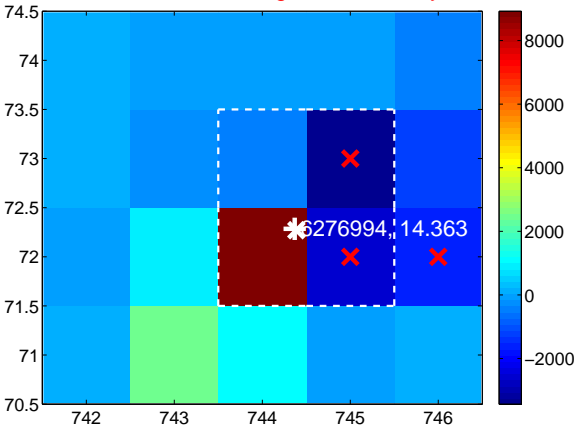
Q9 no difference image



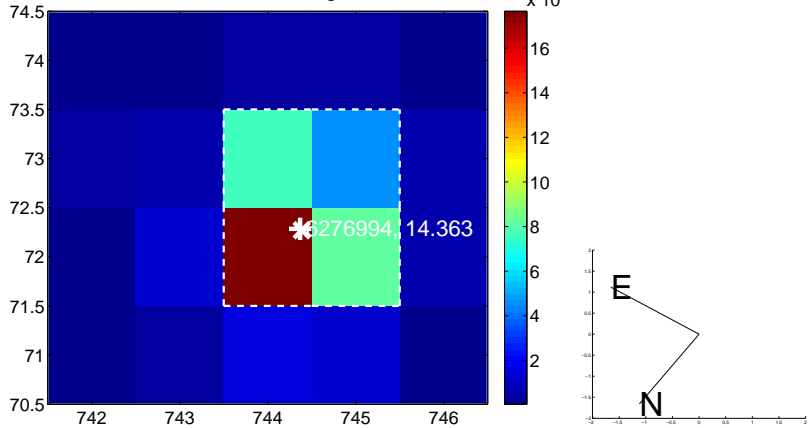
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



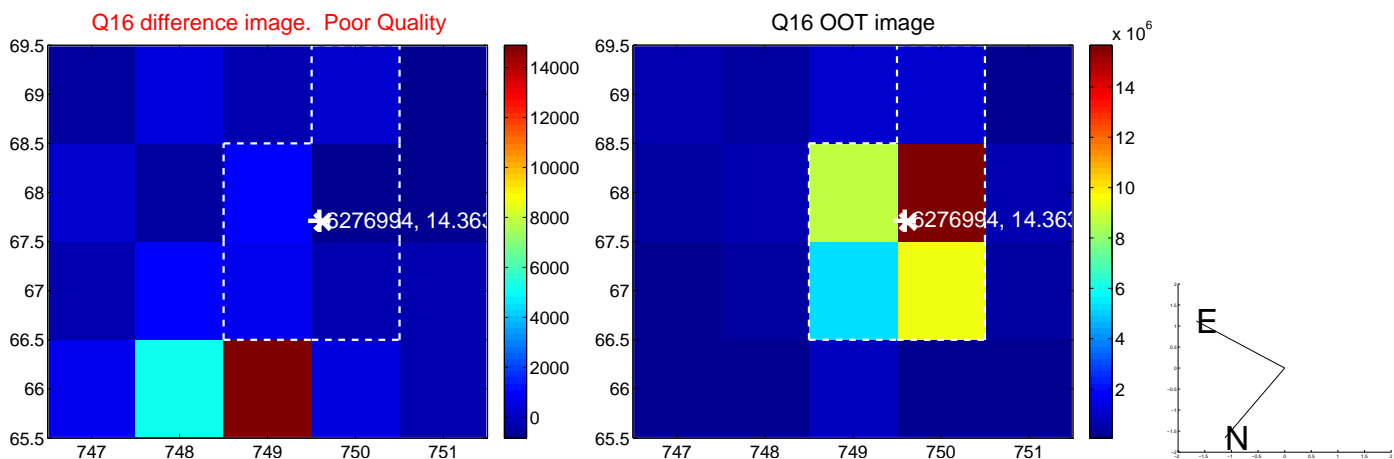
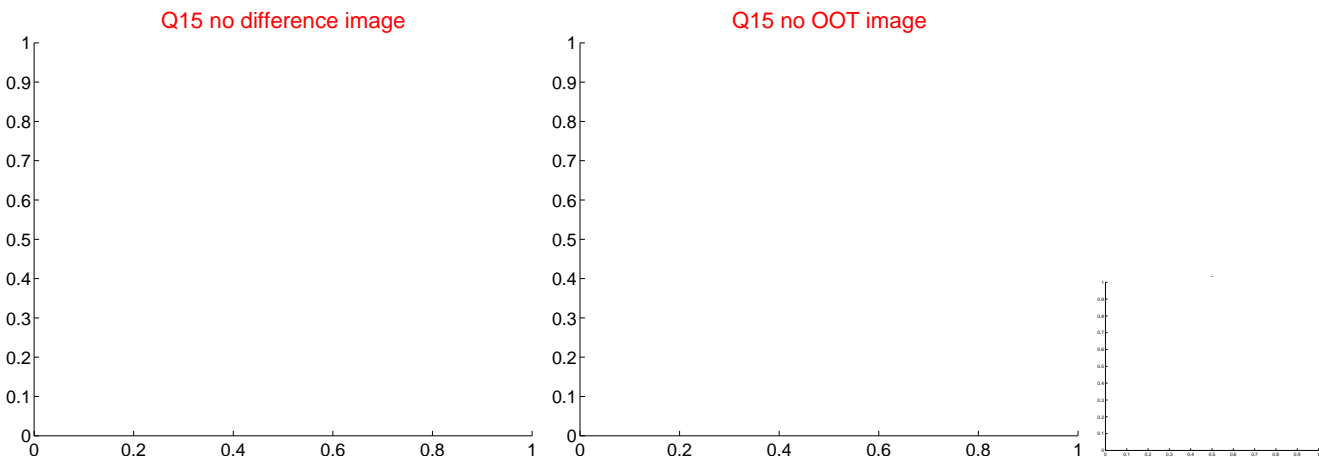
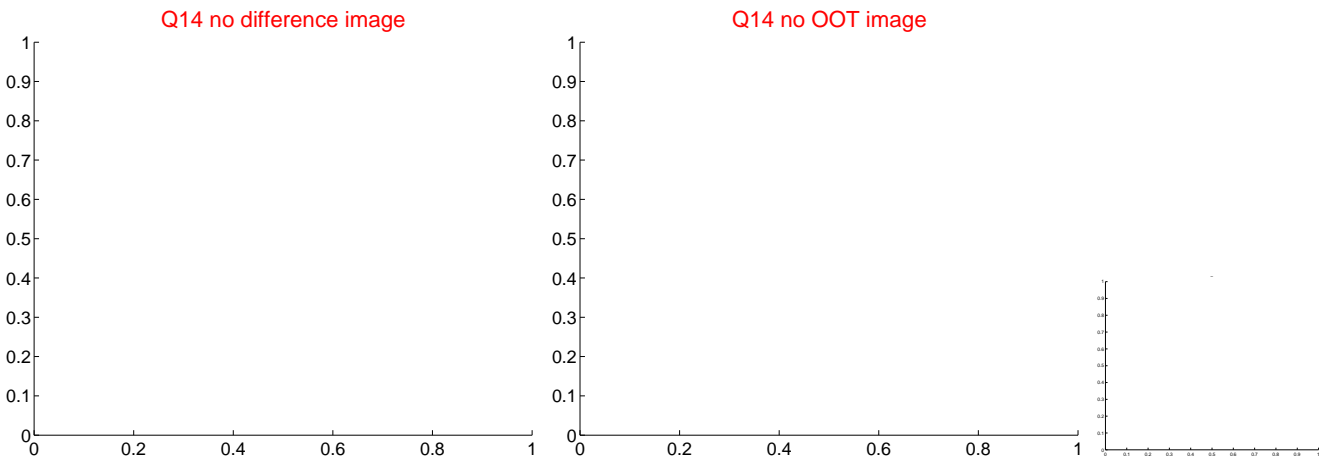
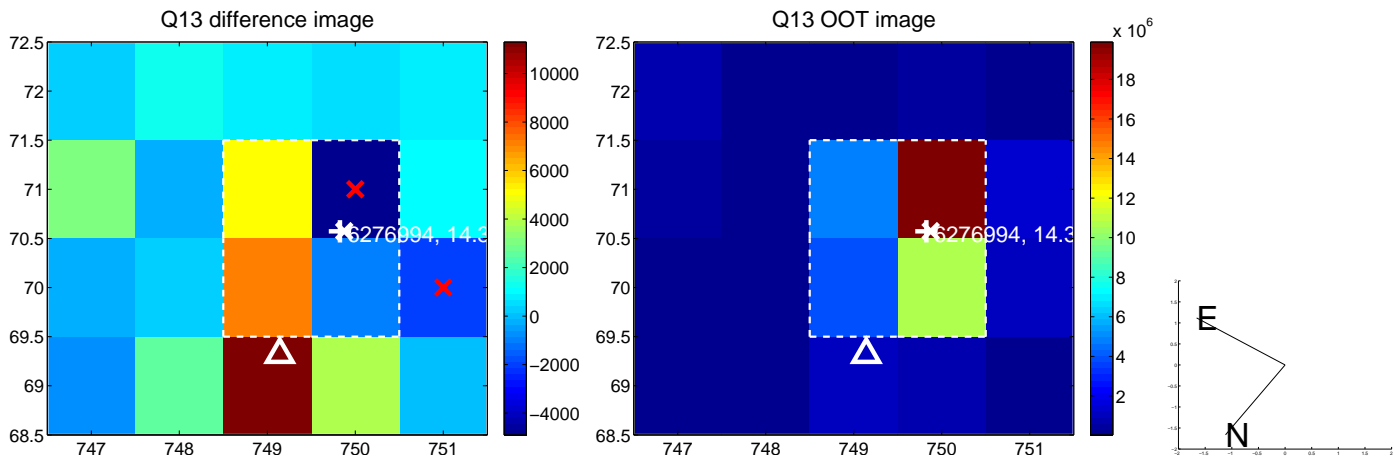
Q12 no difference image



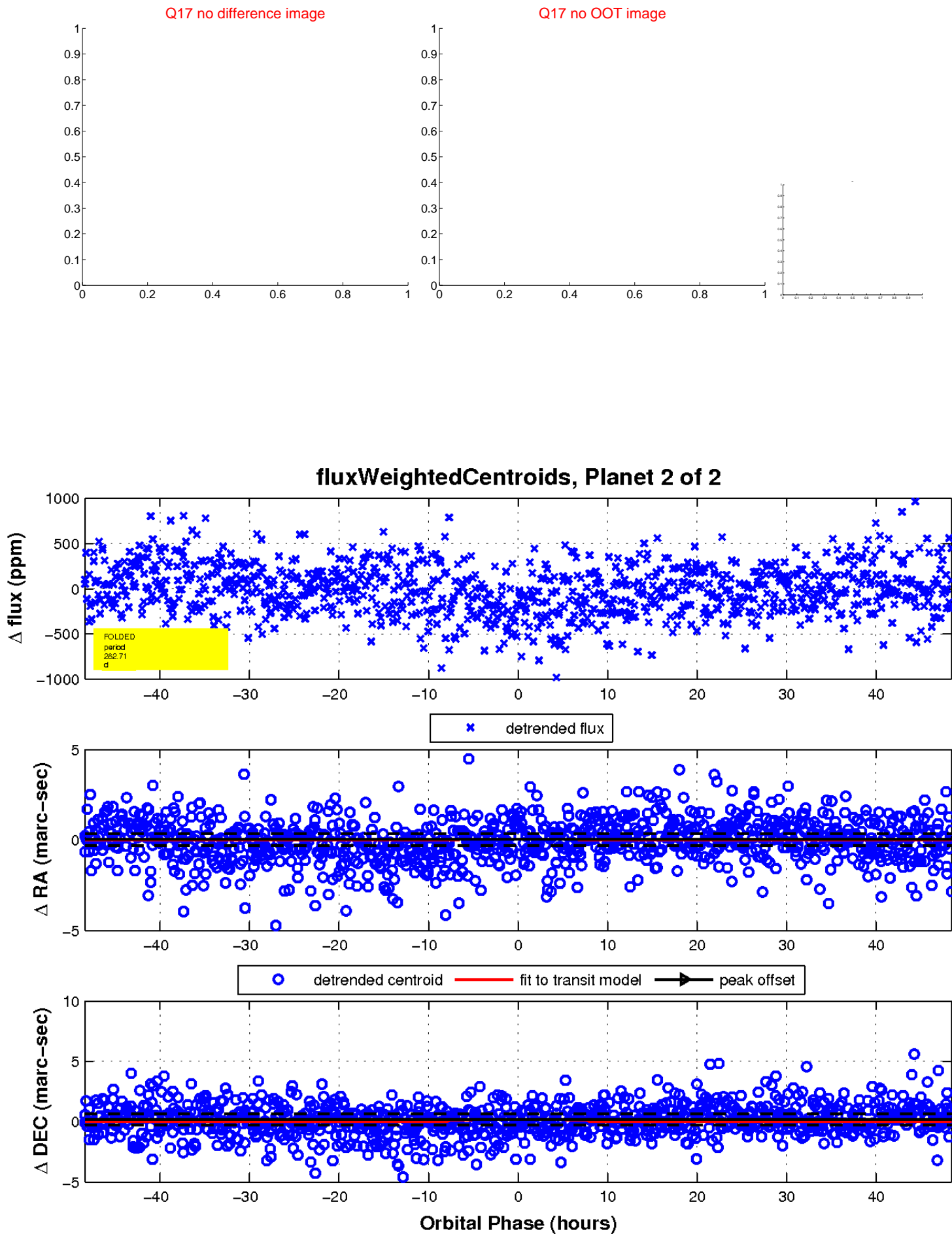
Q12 no OOT image



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.



UKIRT Image

Declination

