

KIC 006607357

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})
006607357-01	OBS	2838.01	7.699857	134.401131	72.0	4.316	14.1	15.5	1.10	5727	1.11	209.22
006607357-02	OBS	2838.02	4.774665	135.162095	50.6	3.867	12.6	12.9	1.10	5727	0.92	395.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006607357-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
006607357-02	OBS	PC	0.94	0	0	0	0	CENT_KIC_POS

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

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

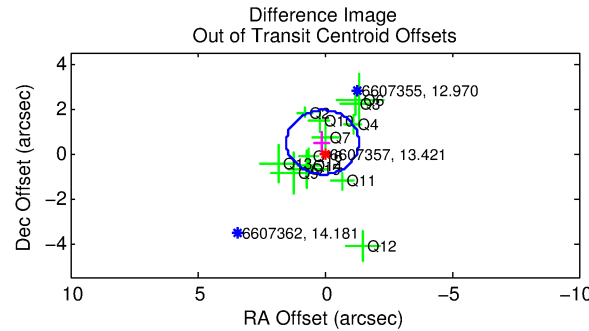
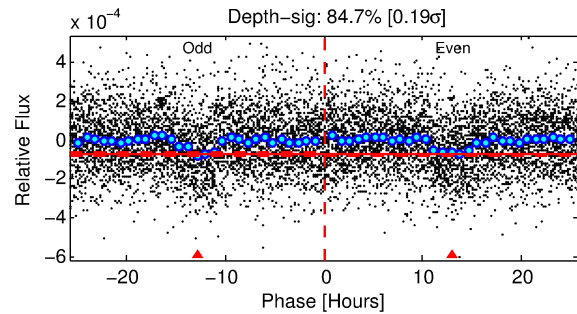
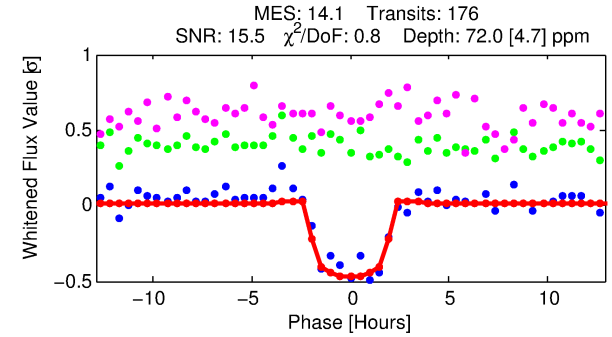
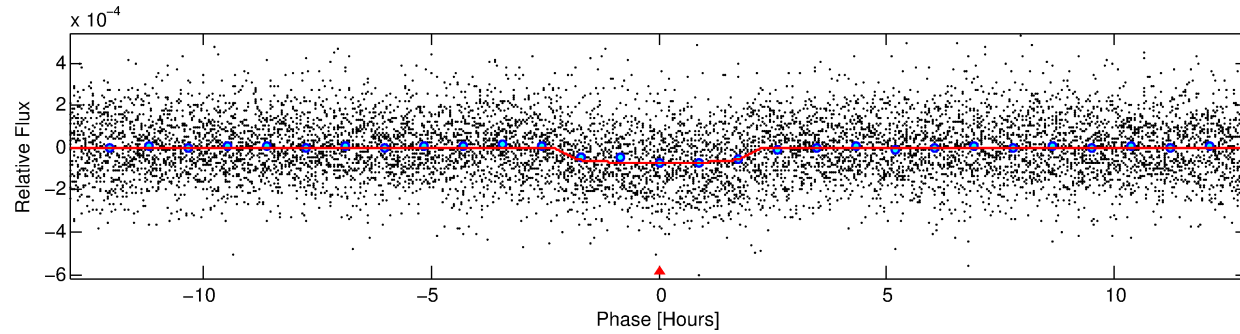
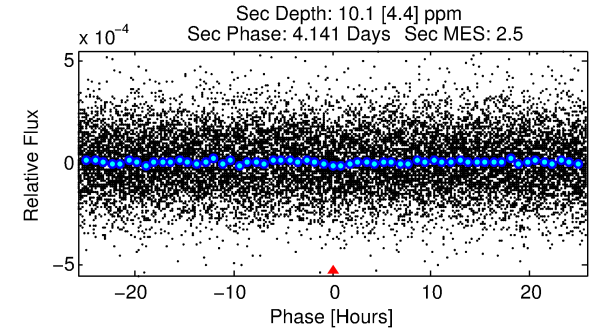
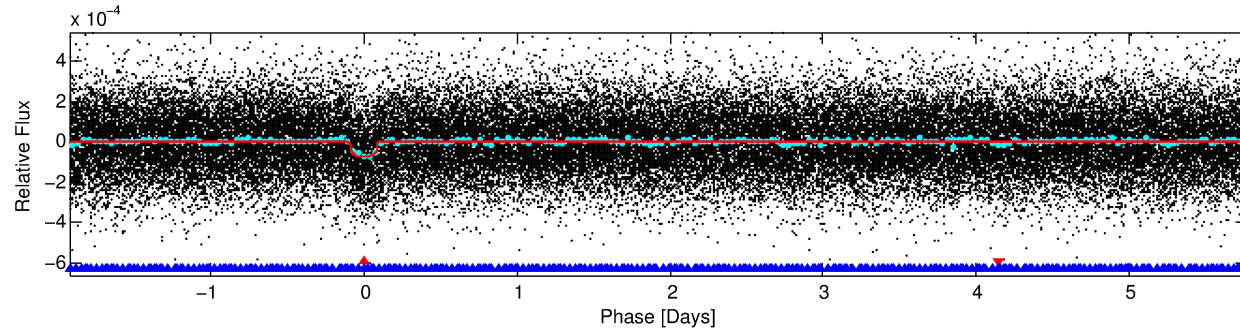
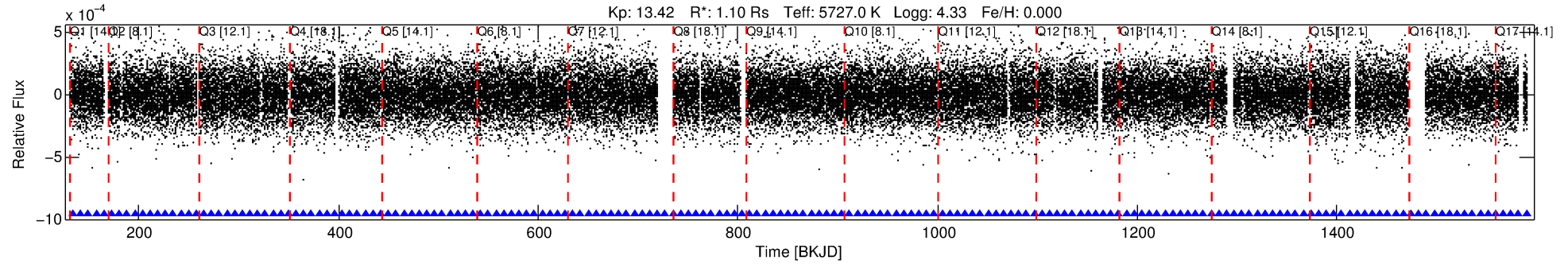
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006607357-01

No Significant Match Found

DV One-Page Summary

KIC: 6607357 Candidate: 1 of 2 Period: 7.700 d
KOI: K02838.01 Corr: 0.979



DV Fit Results:

Period = 7.69986 [0.00005] d
Epoch = 134.4011 [0.0049] BKJD
Rp/R* = 0.0092 [0.0032]
a/R* = 6.49 [10.54]
b = 0.89 [0.39]
Seff = 209.22 [50.09]
Teff = 970 [58] K
Rp = 1.11 [0.42] Re
a = 0.0749 [0.0106] AU
Ag = 25.43 [21.75] [1.12σ]
Teffp = 3367 [698] K [3.42σ]

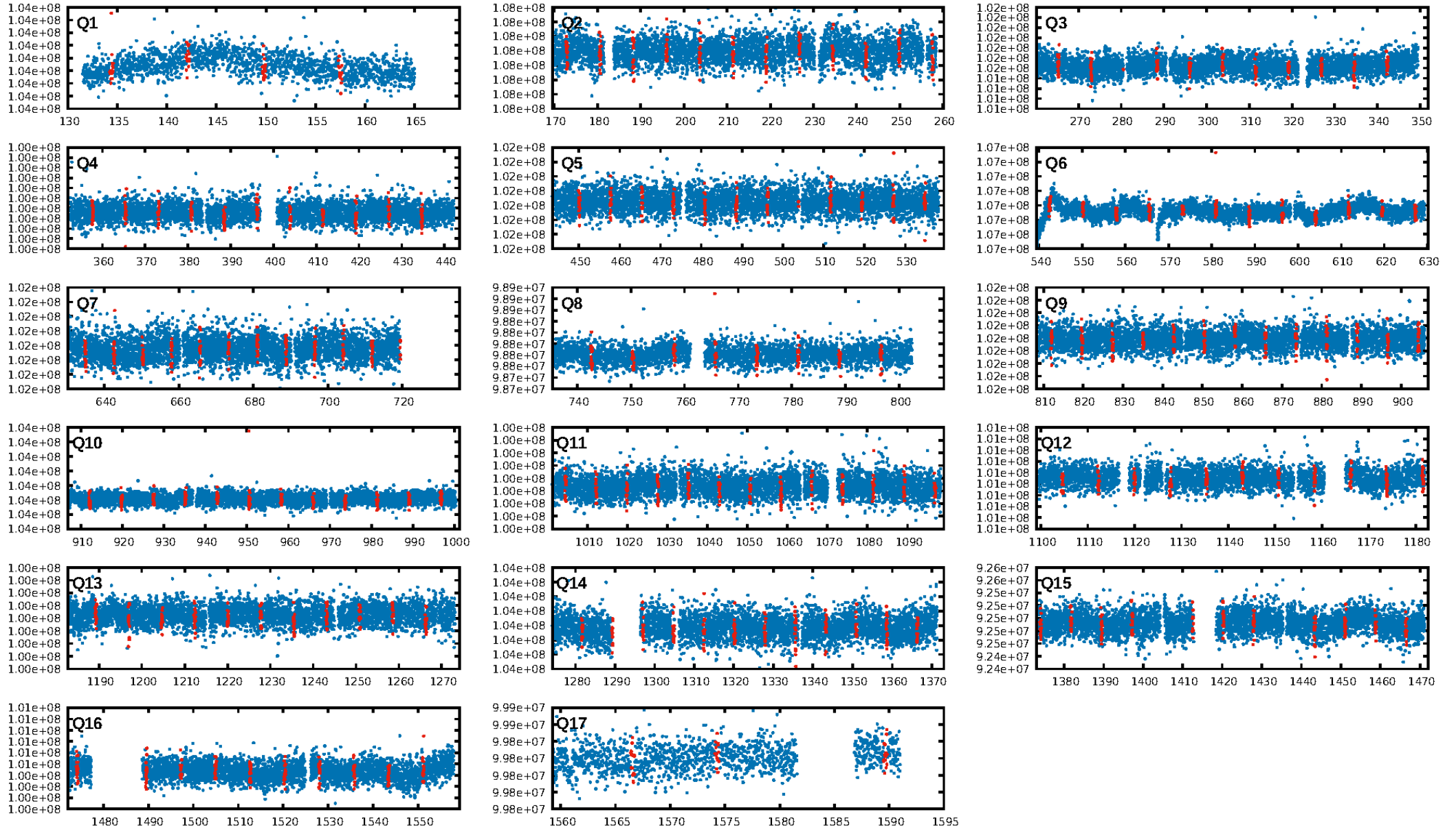
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.12σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.42e-43
RollingBand-fgt: 1.00 [169/169]
GhostDiagnostic-chr: 7.799
Centroid-sig: 0.3%
Centroid-so: 0.755 arcsec [1.13σ]
OotOffset-rm: 0.506 arcsec [1.07σ]
KicOffset-rm: 0.186 arcsec [0.40σ]
OotOffset-st: 4/4/3/2 [13]
KicOffset-st: 4/4/3/2 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [17/17]

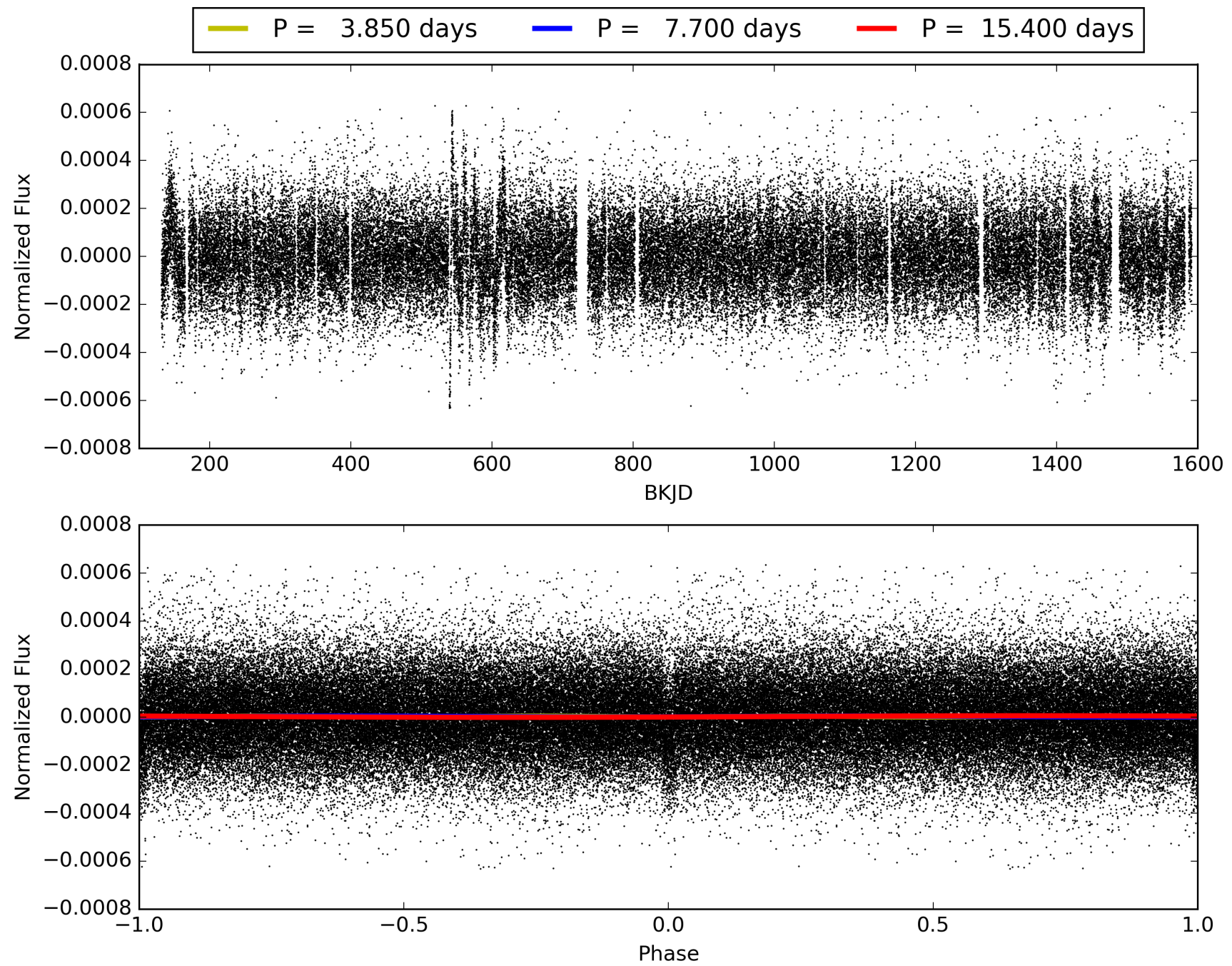
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:01:07 Z

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

TCE 006607357-01, PDC Light Curves

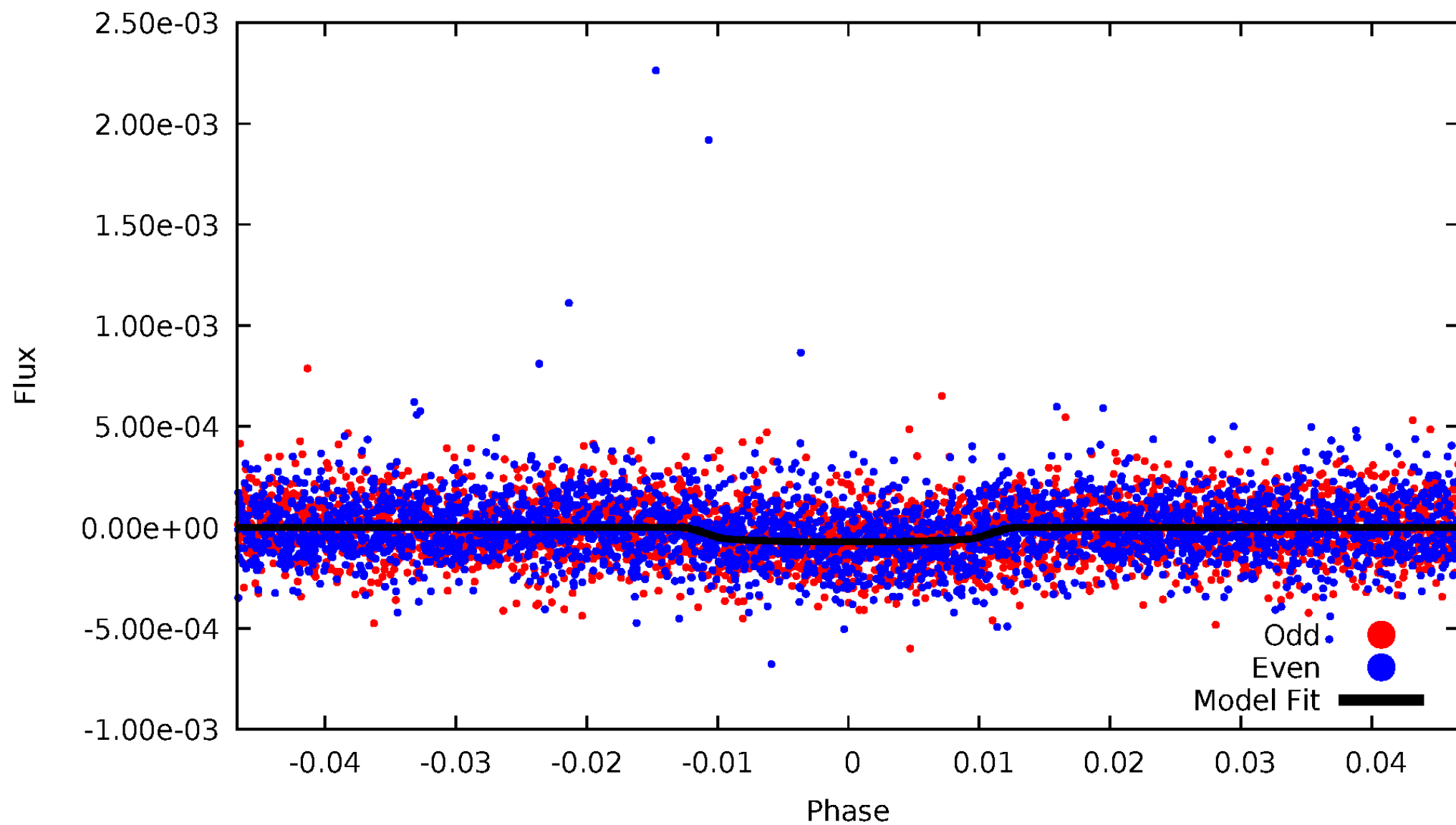


TCE 006607357-01



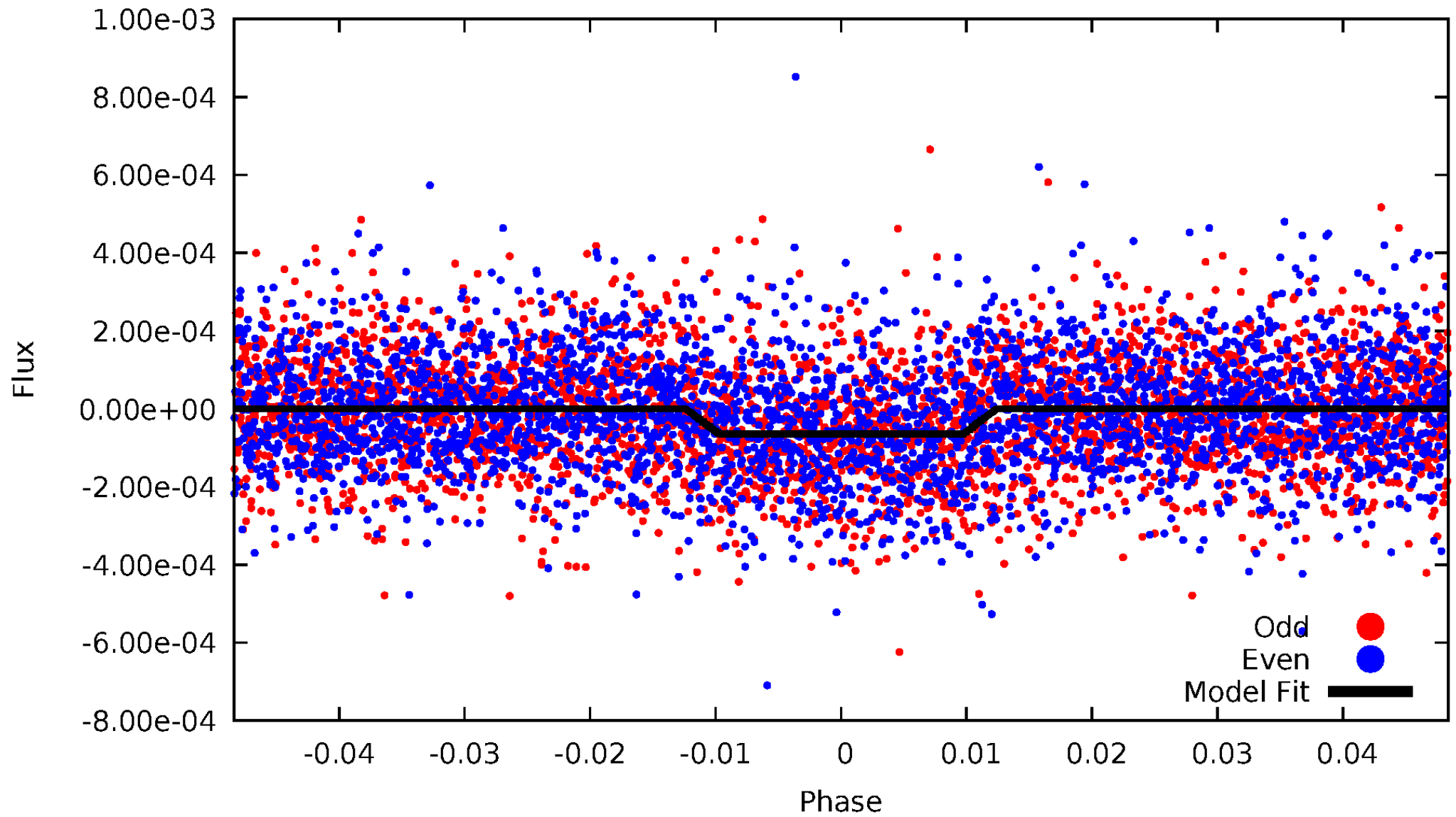
DV Odd/Even

TCE 006607357-01



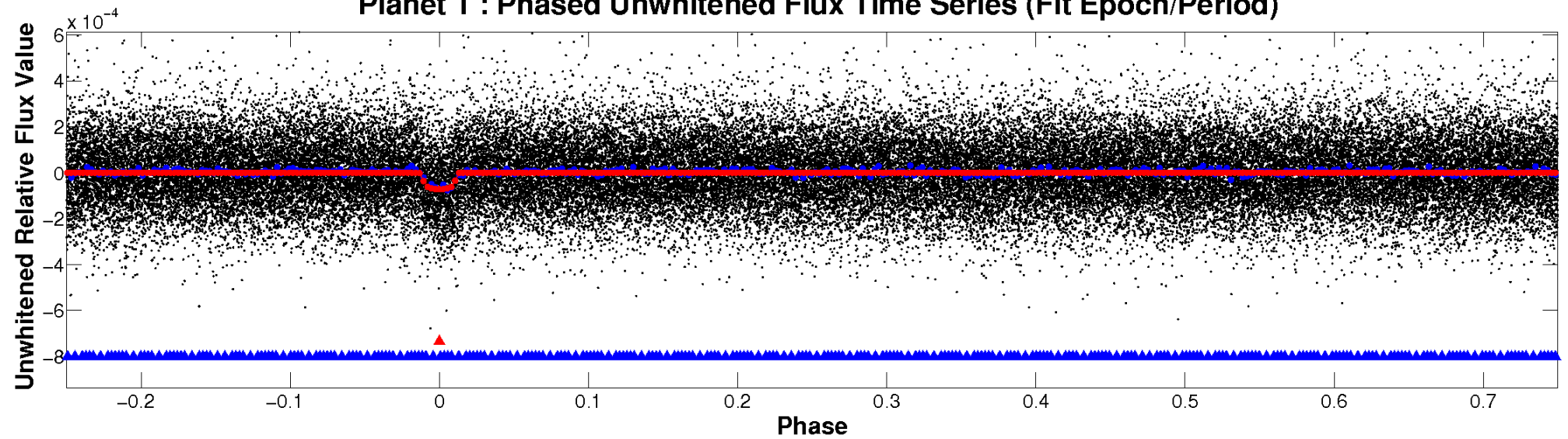
ALT Odd/Even

TCE 006607357-01

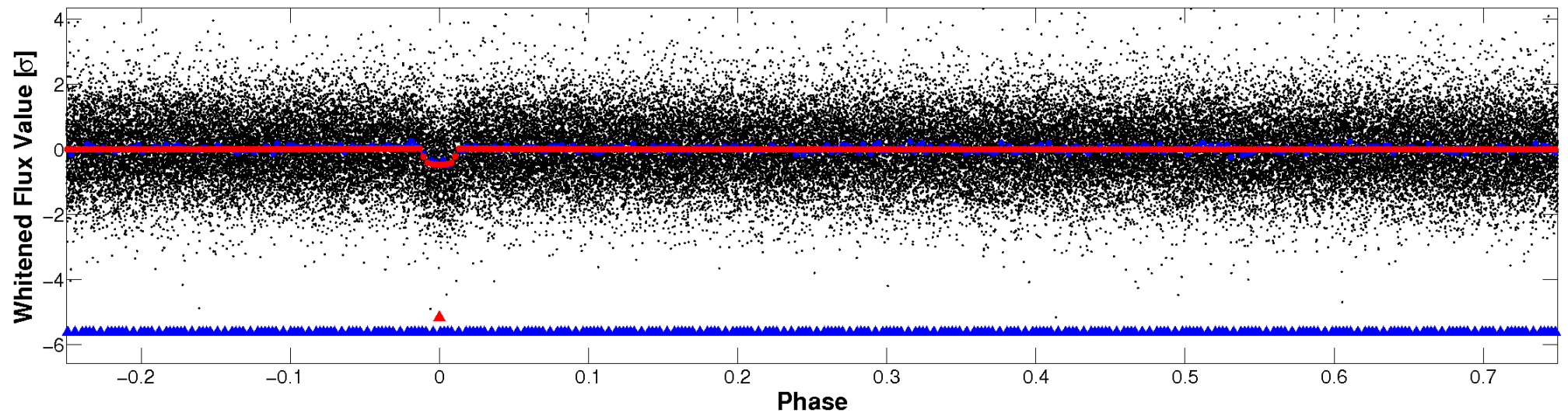


Non-Whitened Vs. Whitened Light Curve

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

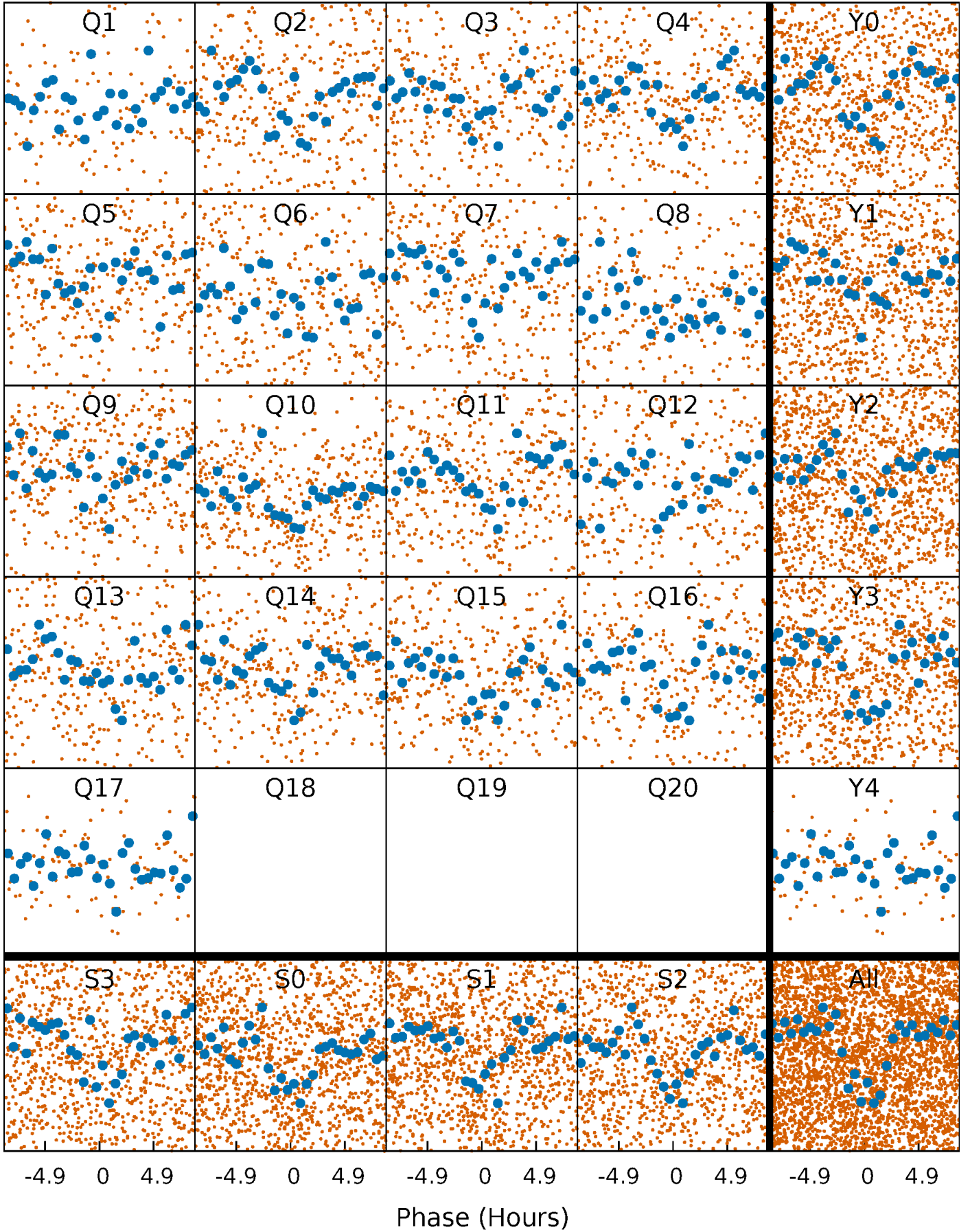


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



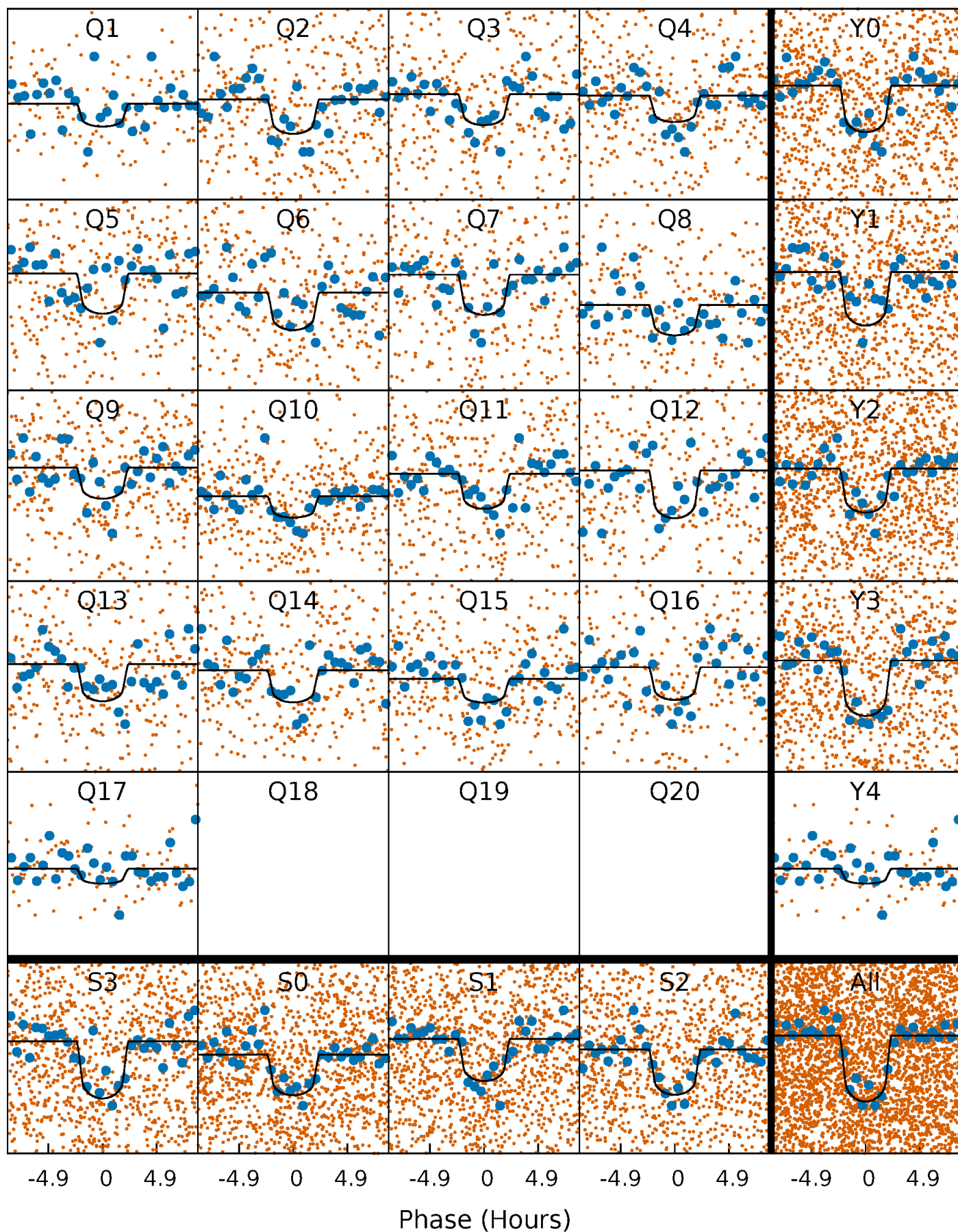
PDC Quarter-Phased Transit Curves

TCE 006607357-01 P= 7.699857 Days $T_0=134.401131$ (BKJD)



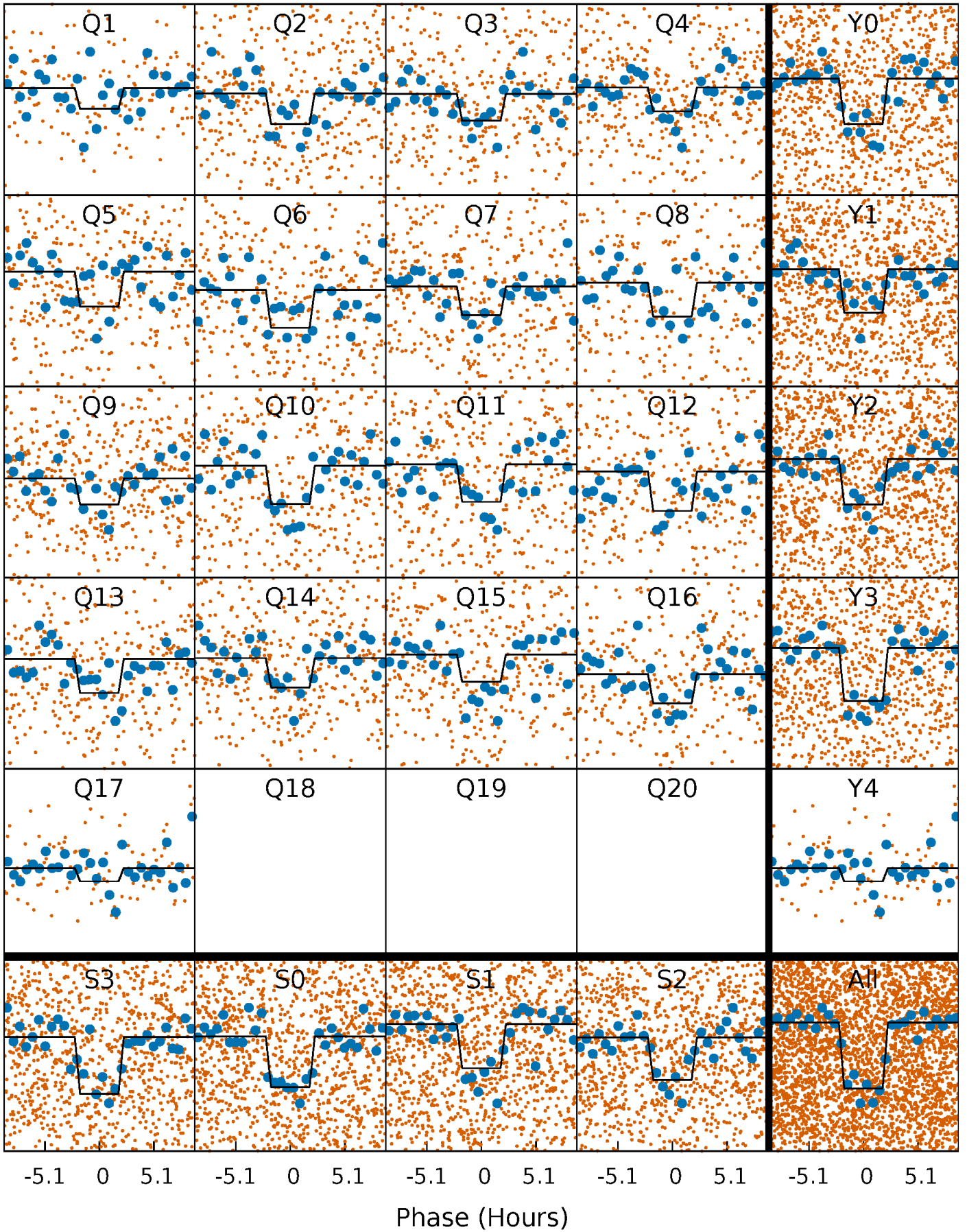
DV Quarter-Phased Transit Curves

TCE 006607357-01 P= 7.699857 Days $T_0=134.401131$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

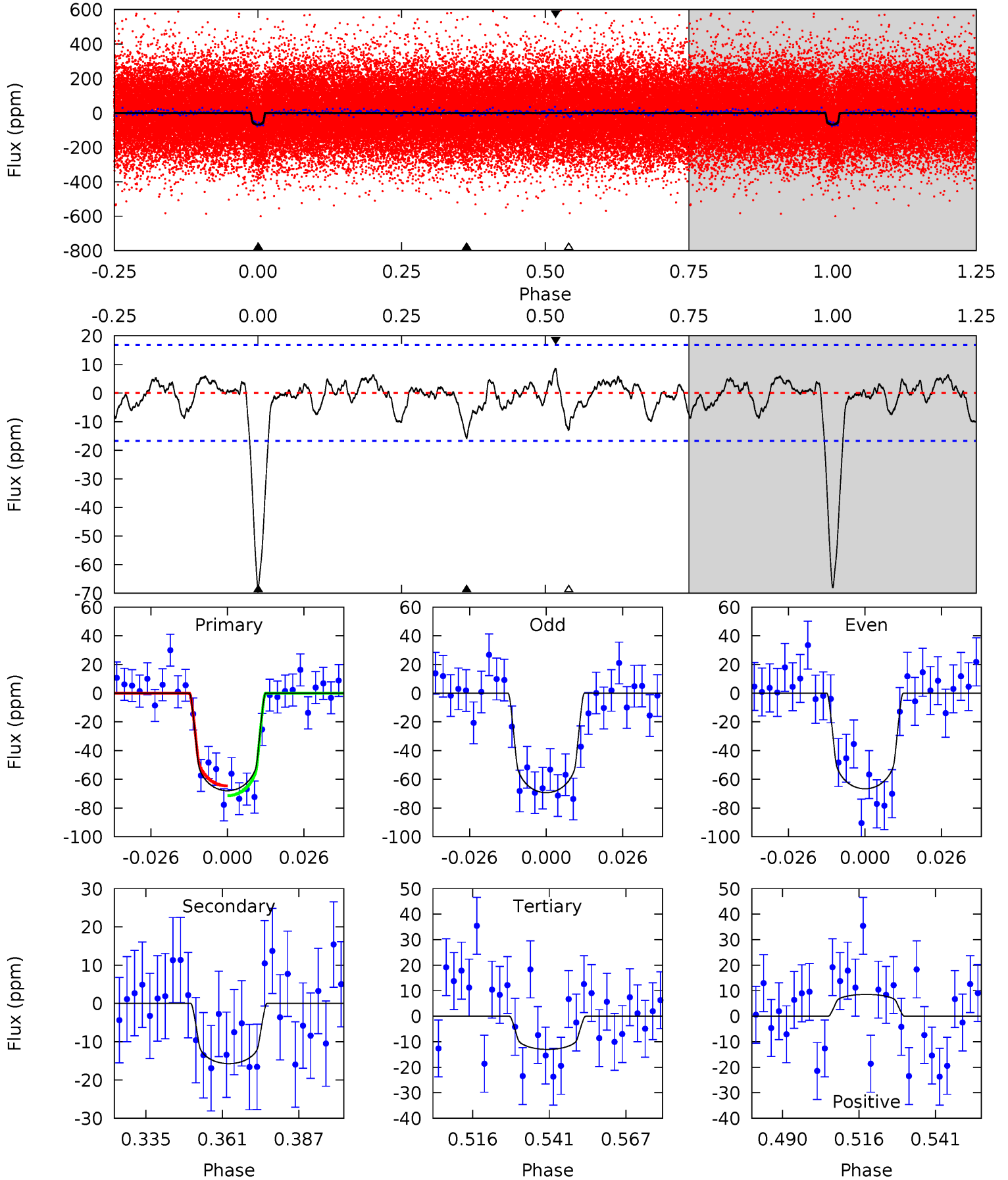
TCE 006607357-01 P= 7.699864 Days $T_0=134.401028$ (BKJD)



DV Model-Shift Uniqueness Test

006607357-01, P = 7.699857 Days, E = 126.701274 Days

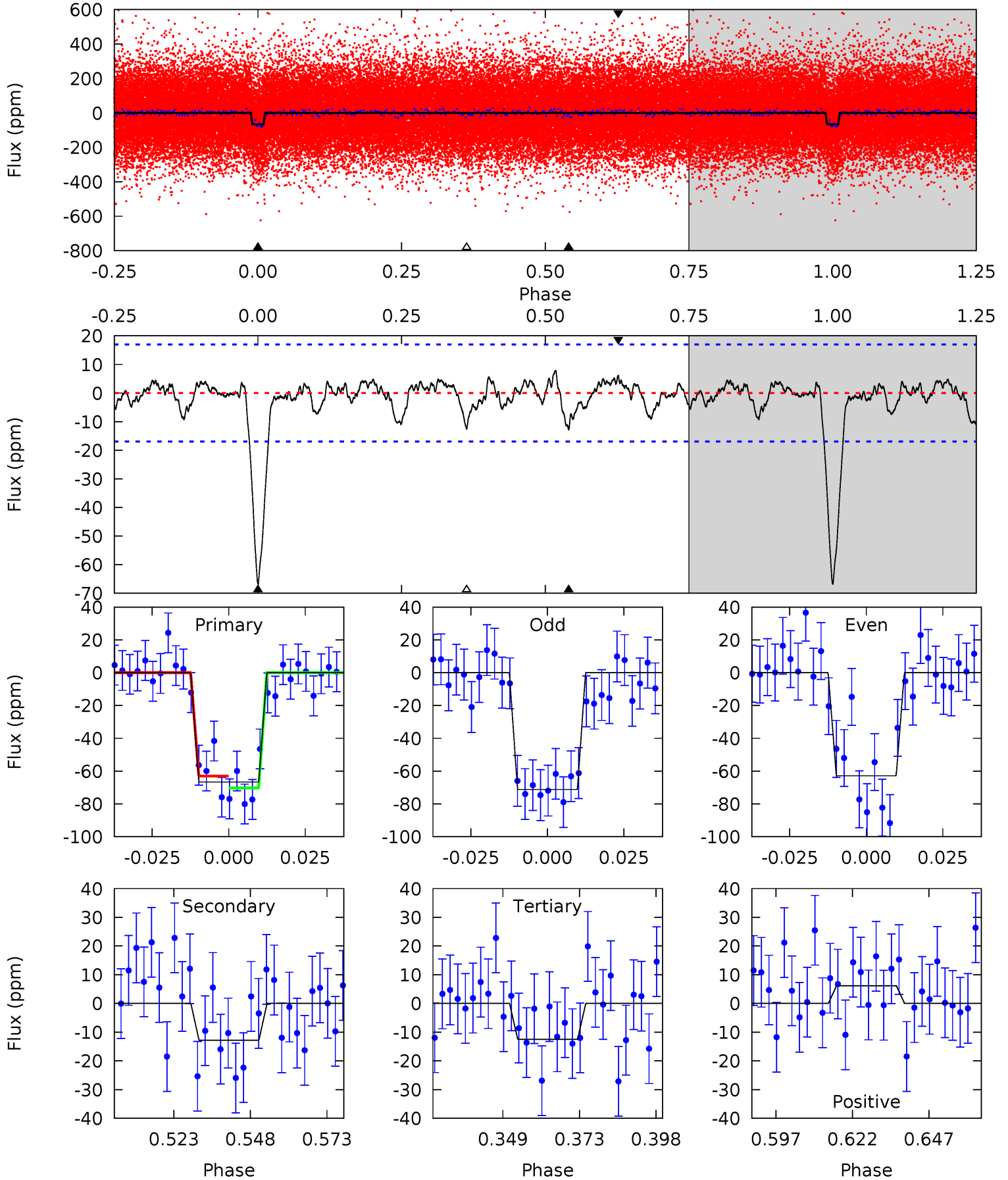
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	4.54	3.76	2.47	4.84	2.23	1.11	15.9	17.2	0.78	2.07	0.39	0.98	0.11	0.98



Alt Model-Shift Uniqueness Test

006607357-01, P = 7.699864 Days, E = 126.701164 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	3.66	3.58	1.77	4.85	2.24	1.01	15.5	17.3	0.08	1.89	1.20	1.01	0.11	1.06



Stellar Parameters For KIC 006607357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5727^{+115}_{-104}	$4.328^{+0.132}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$1.104^{+0.164}_{-0.164}$	$0.946^{+0.079}_{-0.057}$	$0.989^{+0.594}_{-0.317}$
	+2%/-2%	+3%/-2%	+inf%/-inf%	+15%/-15%	+8%/-6%	+60%/-32%
Source	SPE57	SPE57	SPE57	DSEP		

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

Secondary Eclipse Parameters for KIC 006607357-01 / KOI 2838.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-16 ± 3	$1.09^{+0.42}_{-0.40}$	1350^{+71}_{-62}	4040^{+843}_{-421}	40^{+65}_{-20}
Alt.	-13 ± 3	$0.95^{+0.39}_{-0.37}$	1354^{+62}_{-60}	4120^{+928}_{-503}	44^{+79}_{-24}

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 $A_{obs} \gg 1.0$

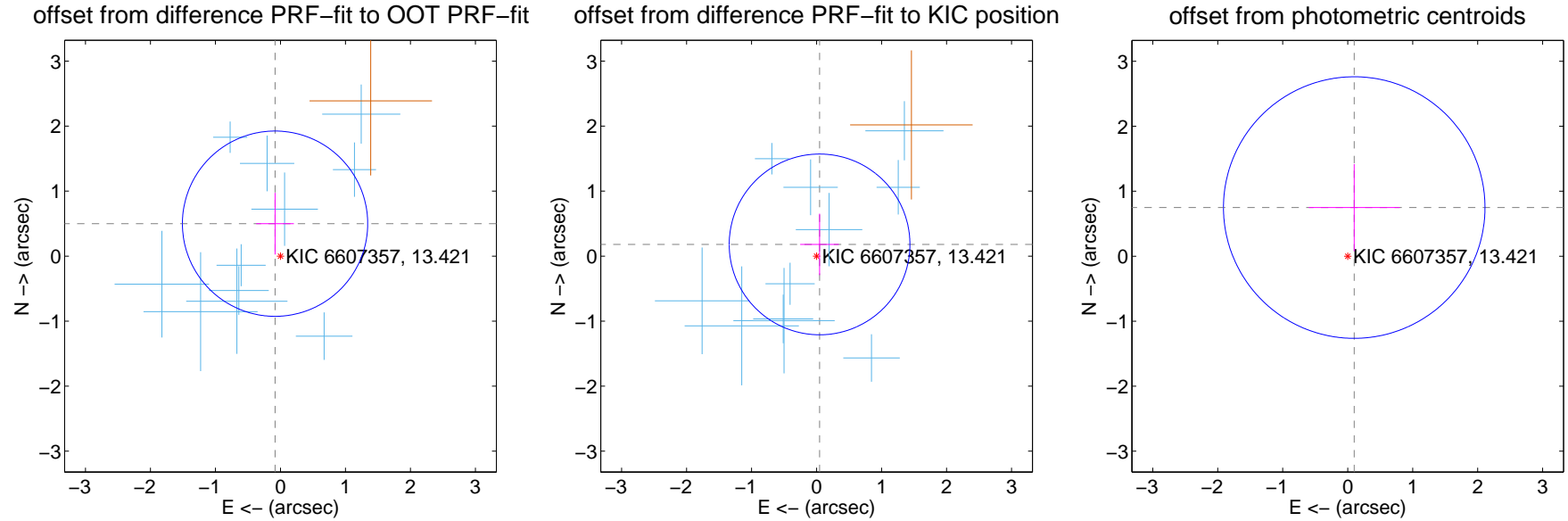
DV Centroid Data

Supplemental centroid analysis for 006607357-01. Kepler magnitude: 13.42. Transit SNR 15.50

There are 11 quarters with good PRF difference image offsets

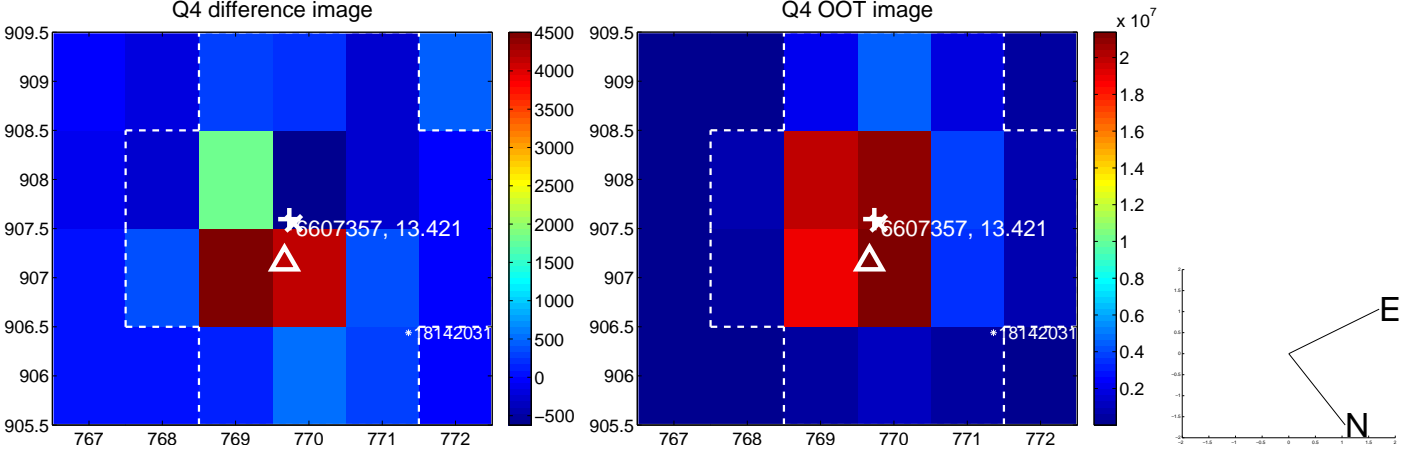
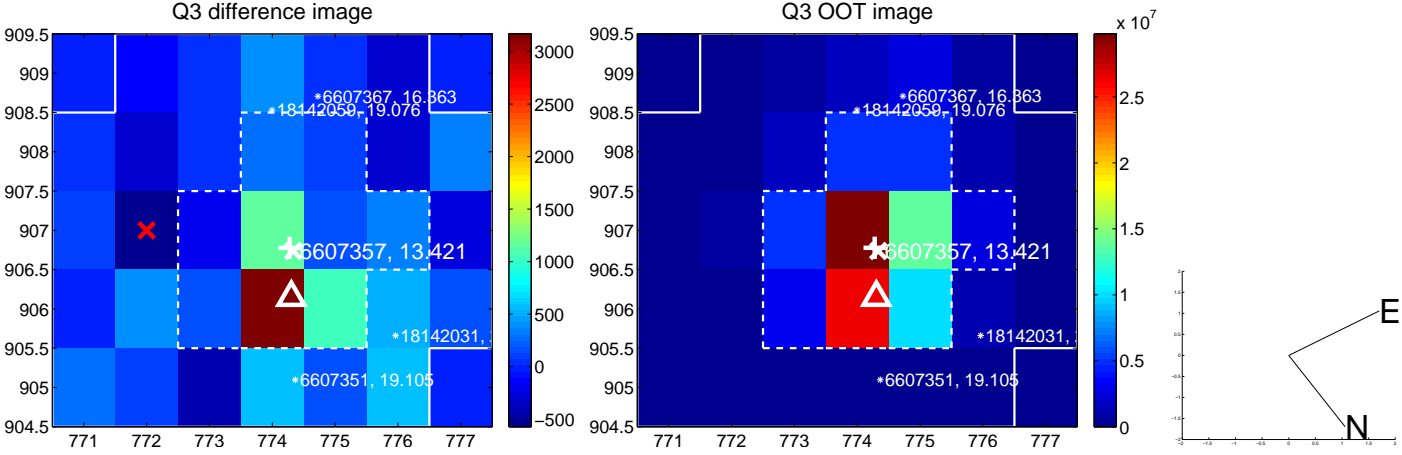
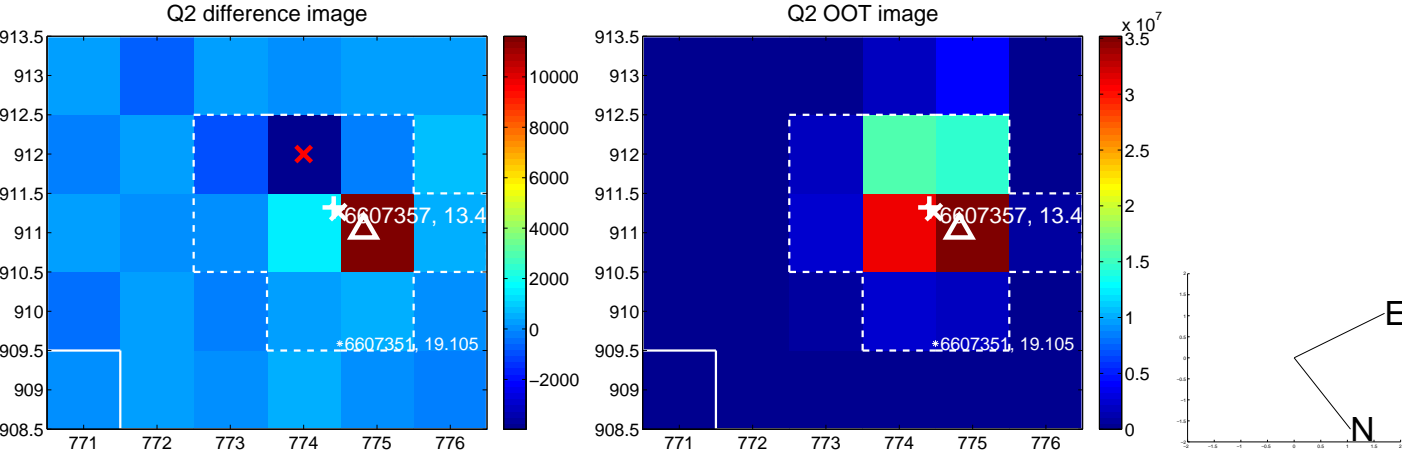
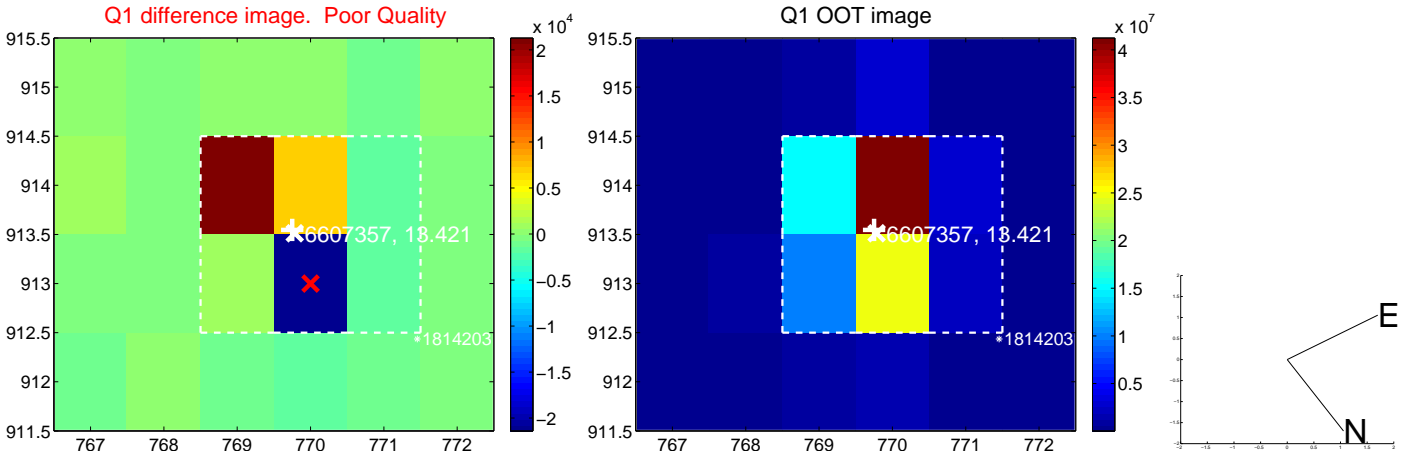
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.506 ± 0.475	1.07	0.083 ± 0.290	0.499 ± 0.475
PRF-fit source offset from KIC position	0.186 ± 0.463	0.40	-0.046 ± 0.298	0.180 ± 0.472
photometric centroid source offset	0.76 ± 0.67	1.13	-0.10 ± 0.70	0.75 ± 0.67

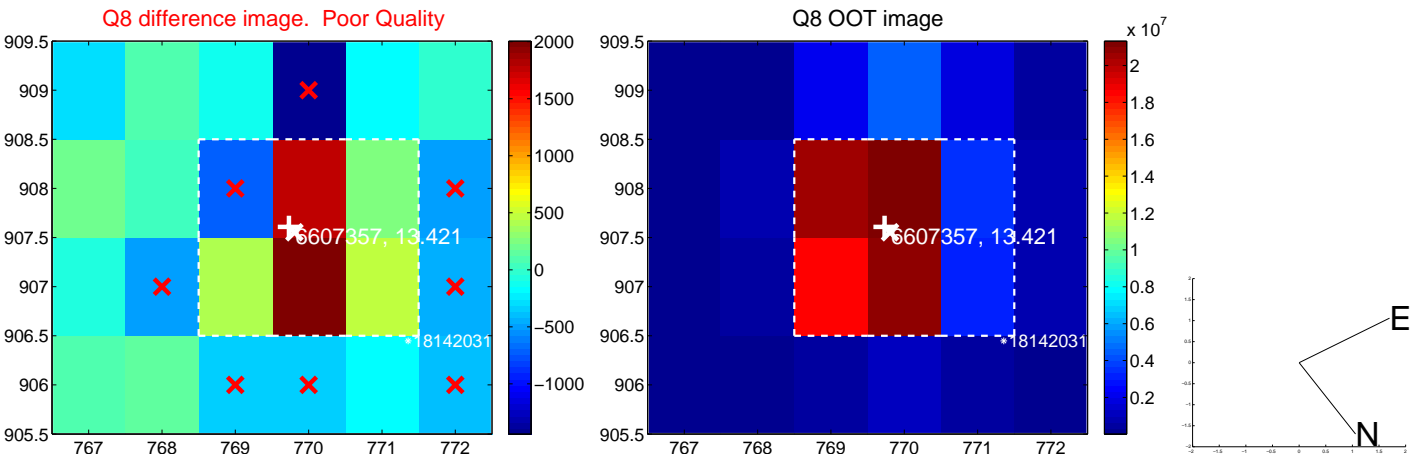
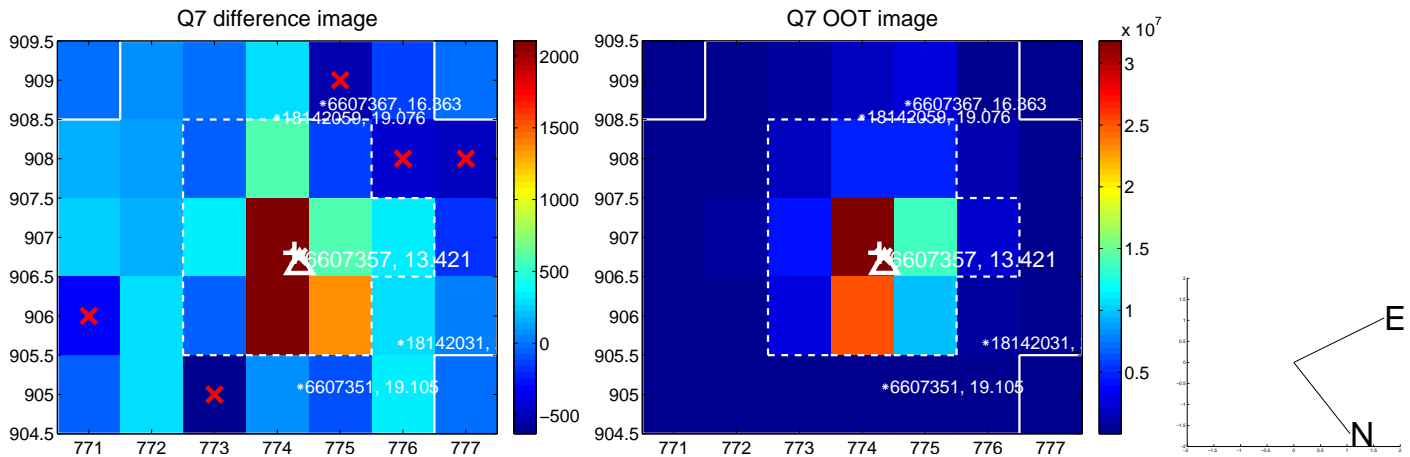
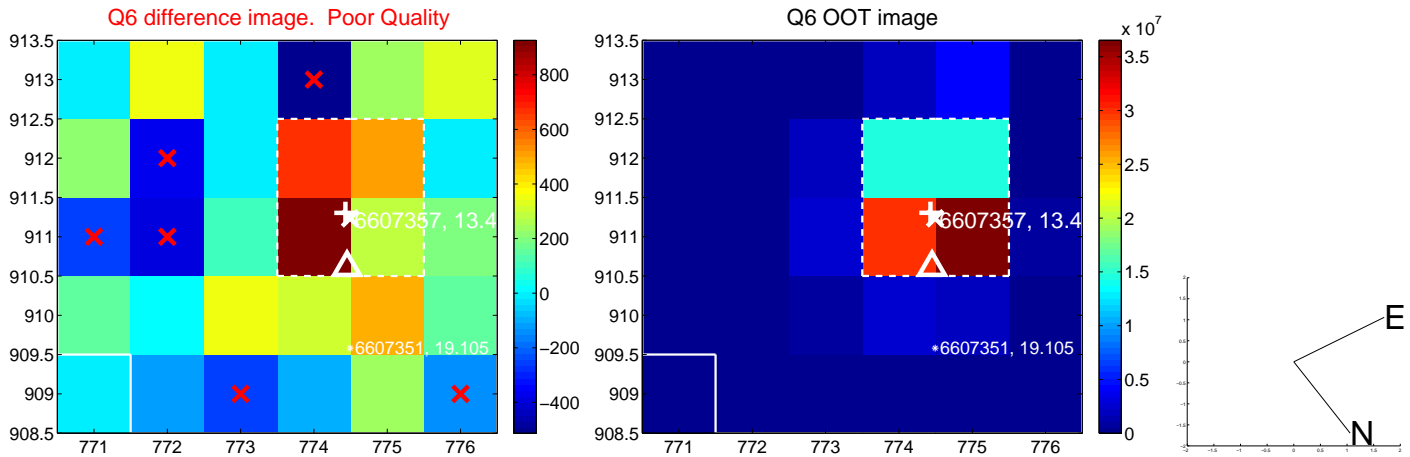
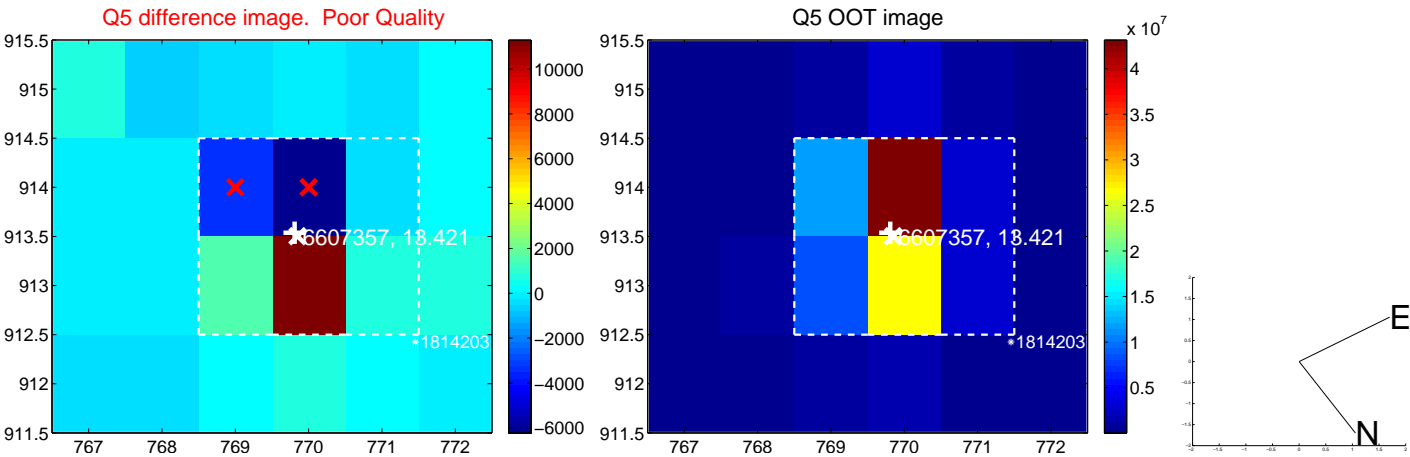


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

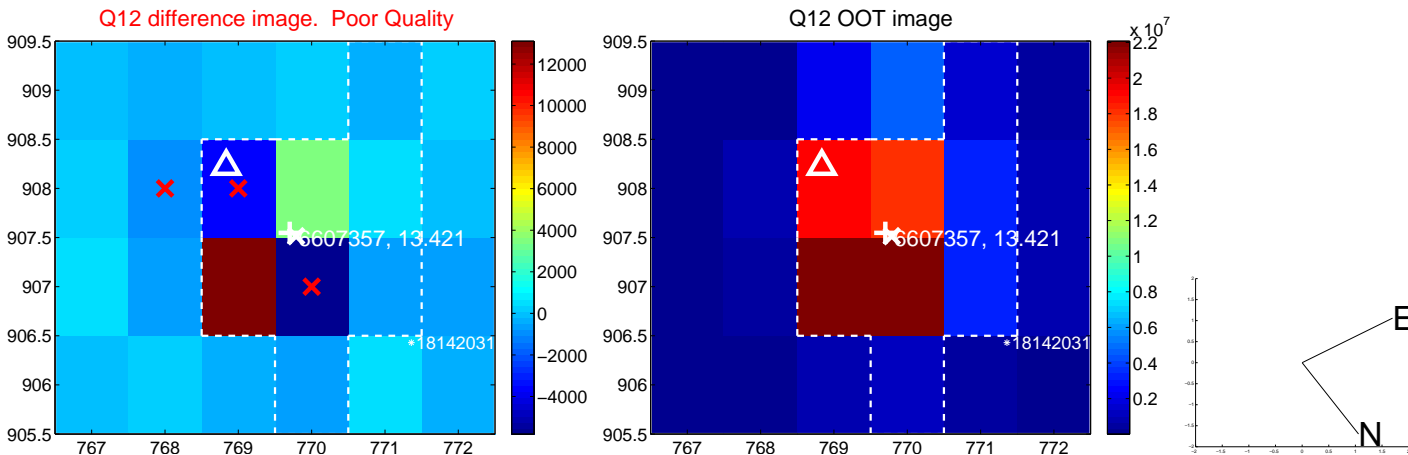
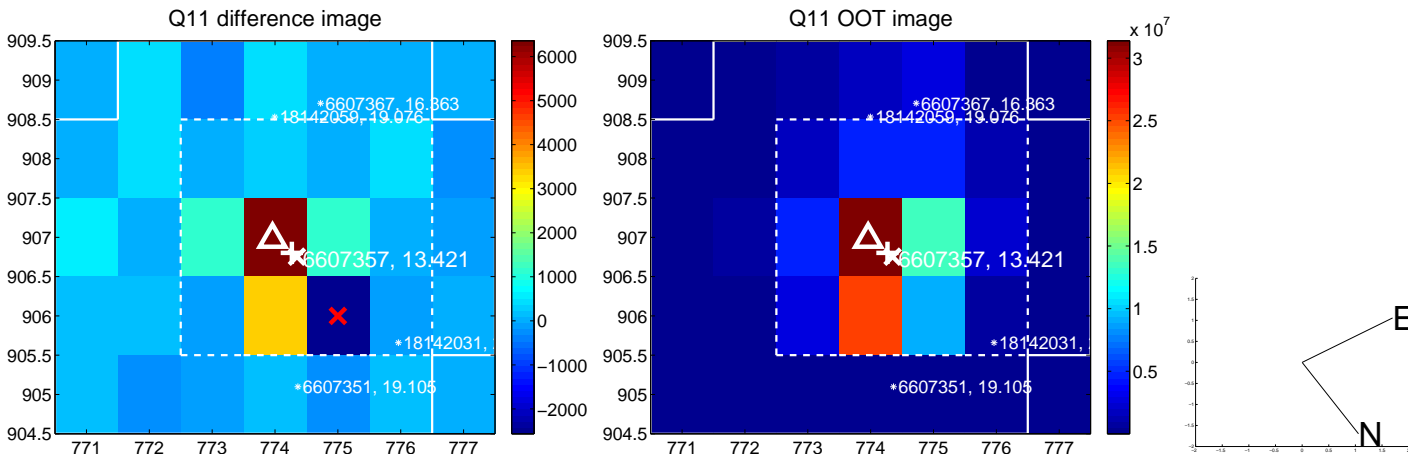
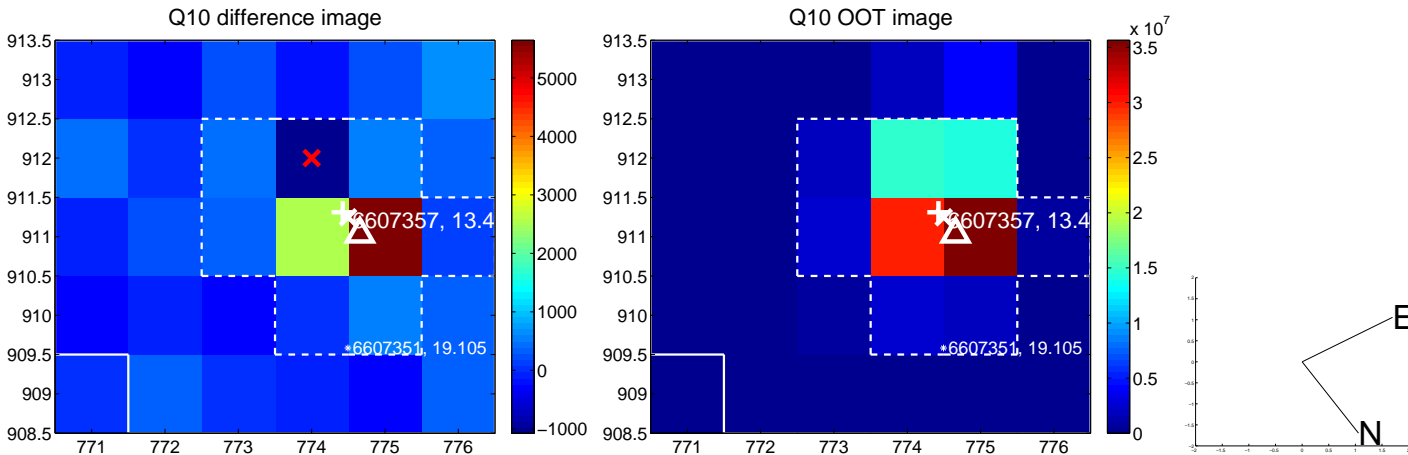
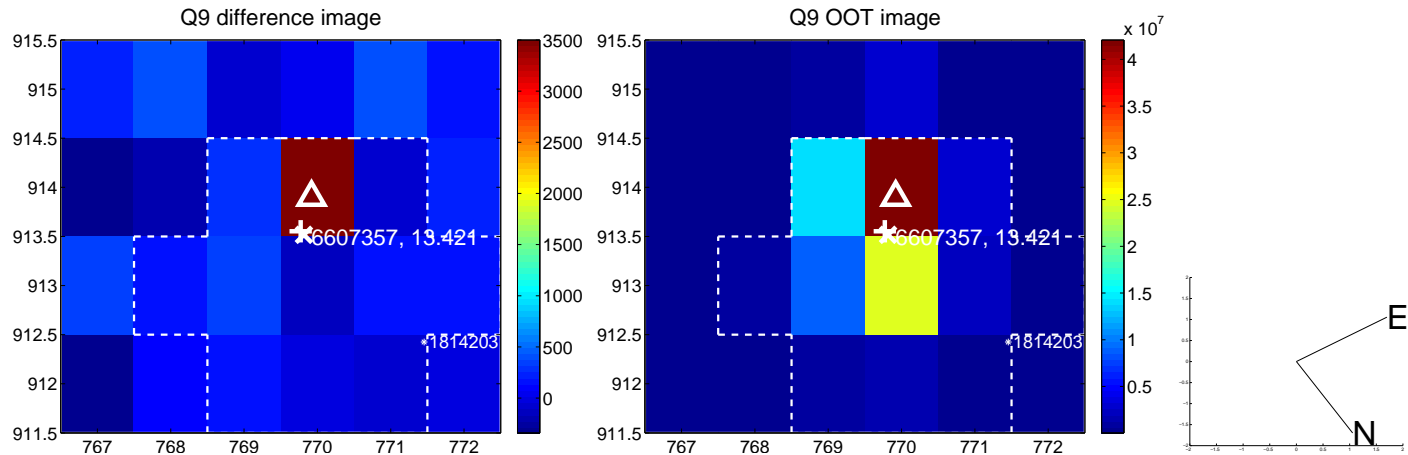
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



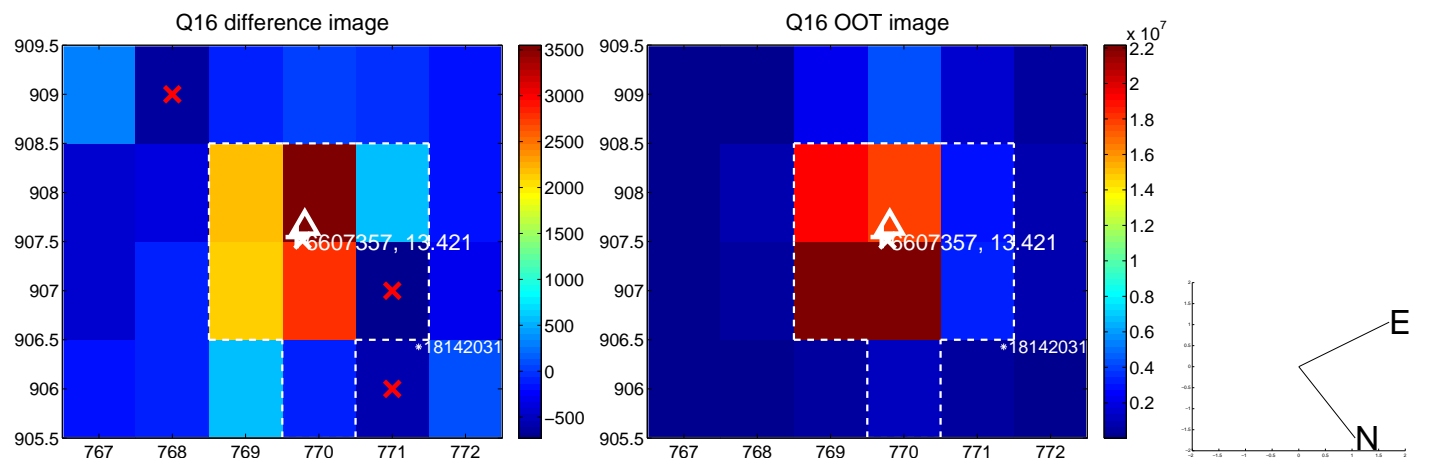
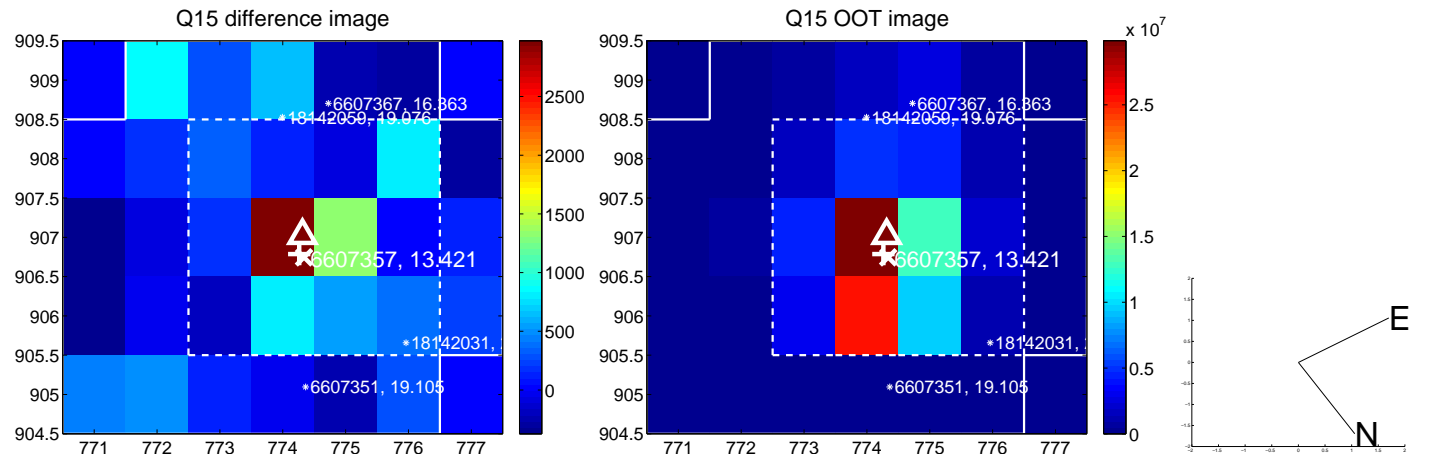
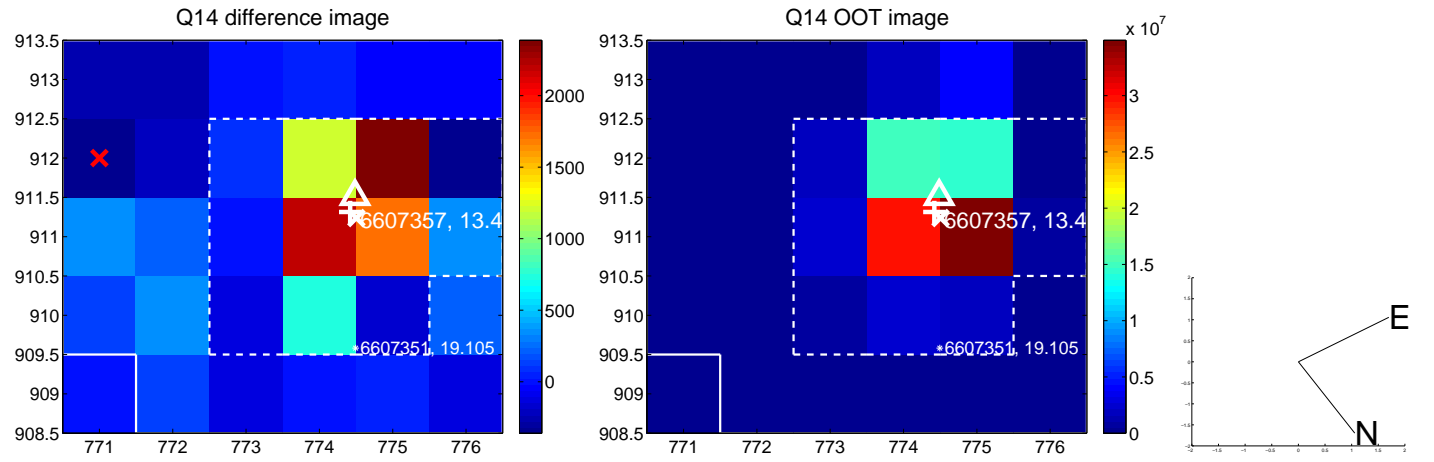
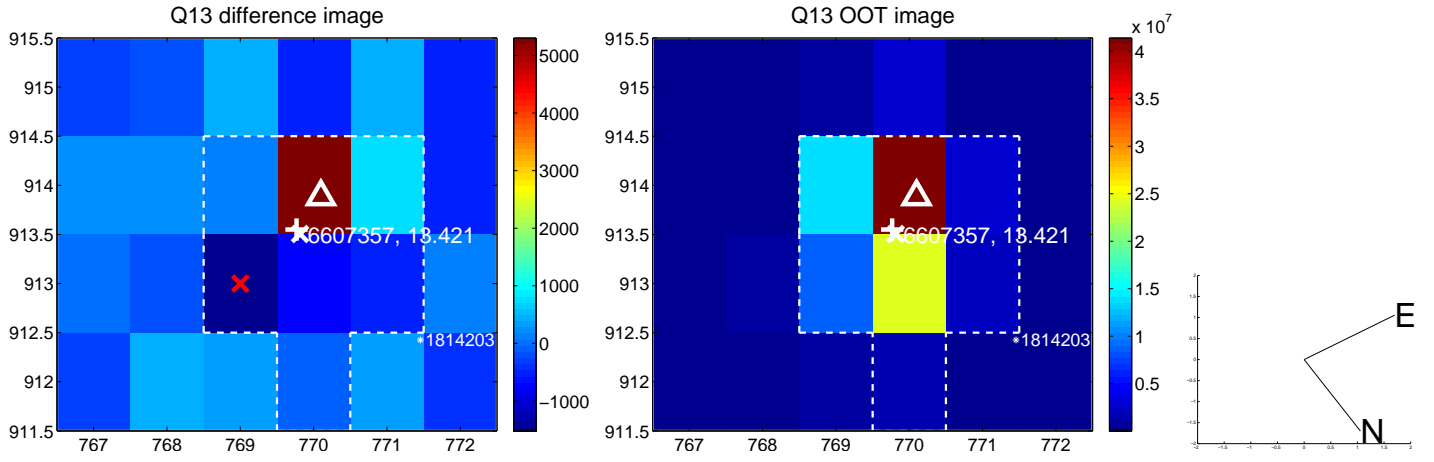
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



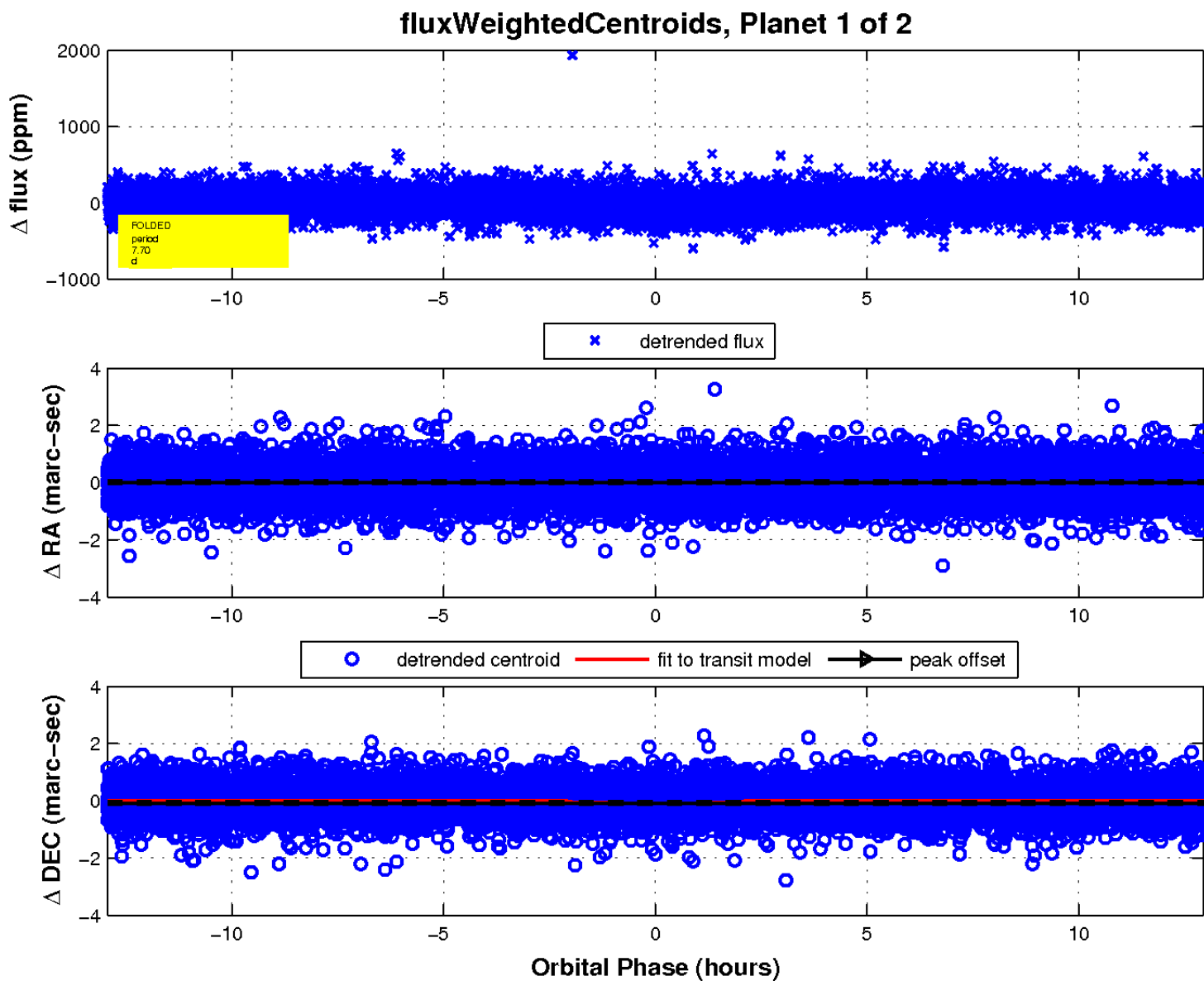
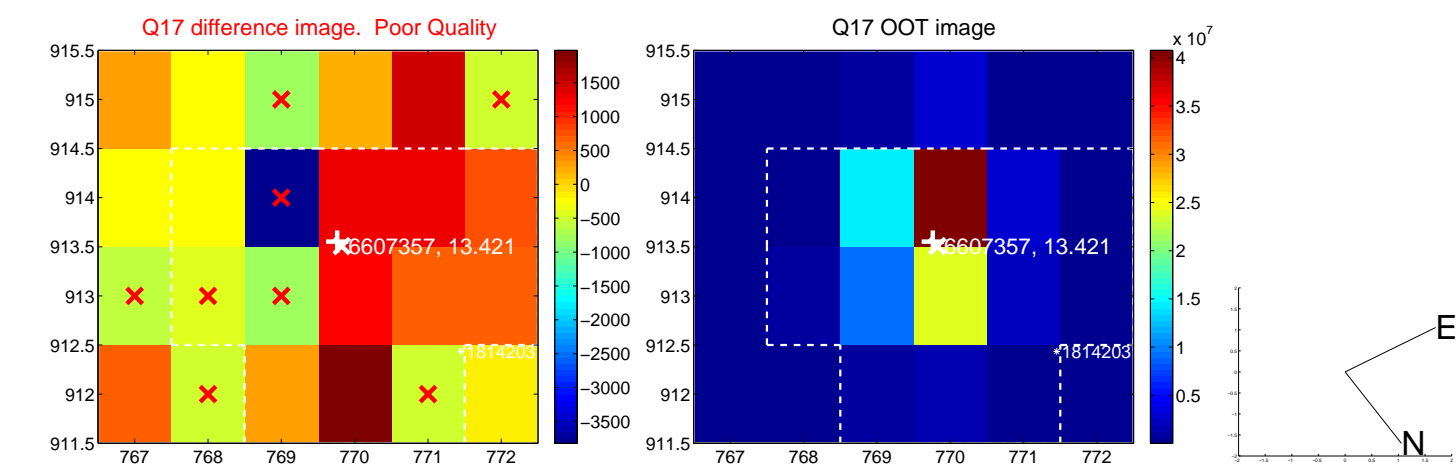
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

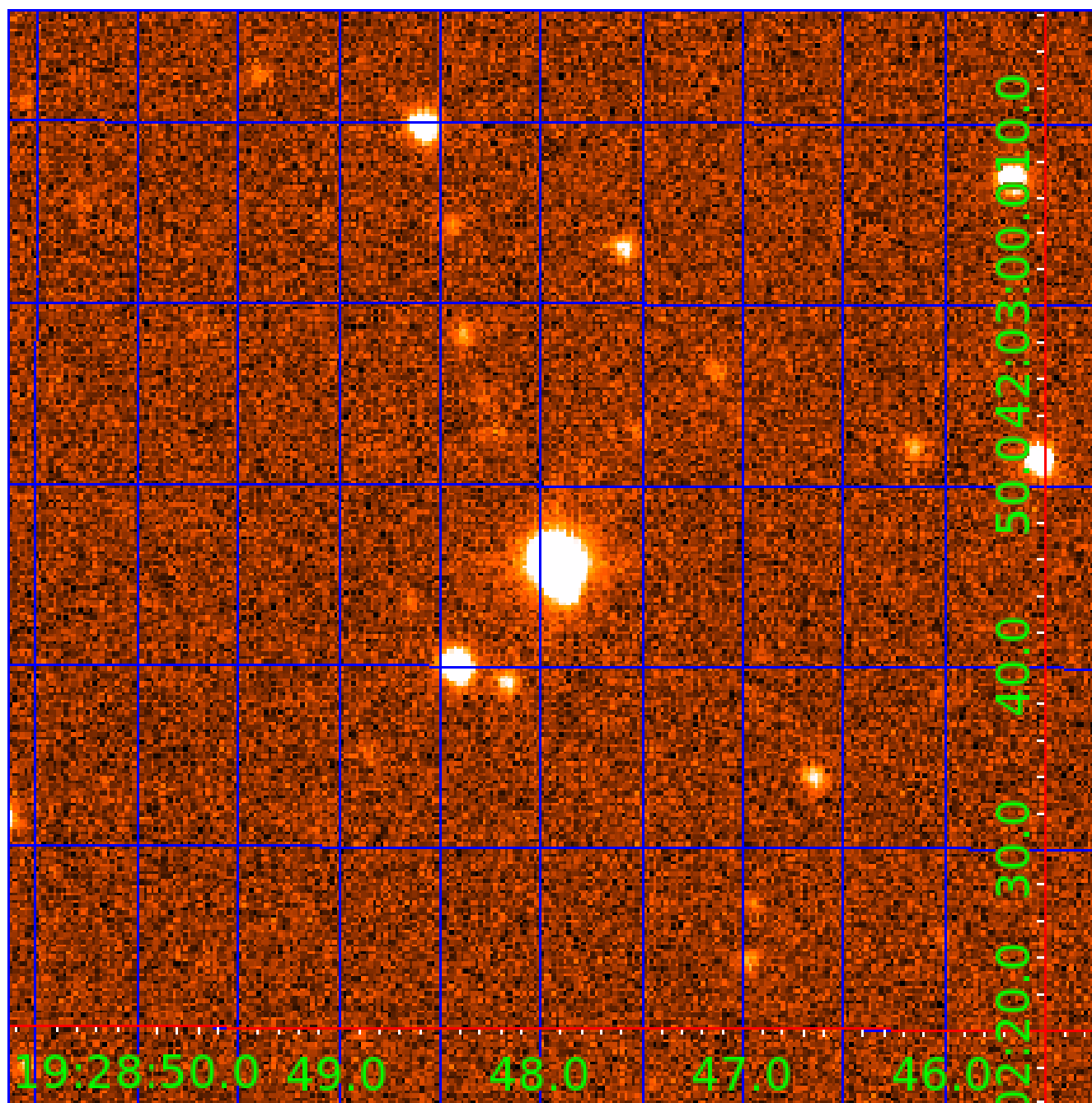


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006607357

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})
006607357-01	OBS	2838.01	7.699857	134.401131	72.0	4.316	14.1	15.5	1.10	5727	1.11	209.22
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006607357-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
006607357-02	OBS	PC	0.94	0	0	0	0	CENT_KIC_POS

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

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

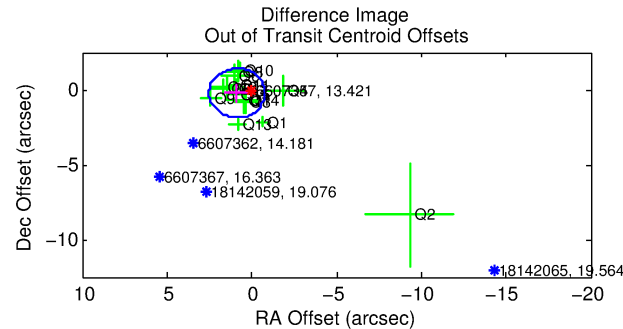
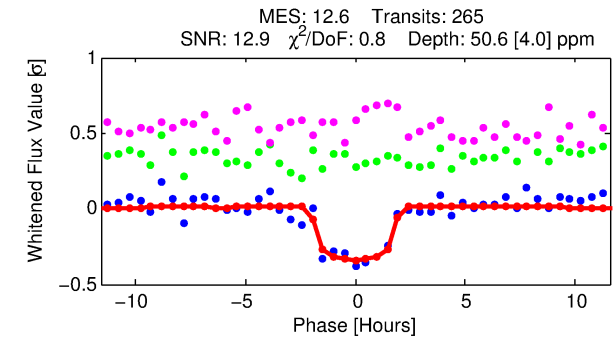
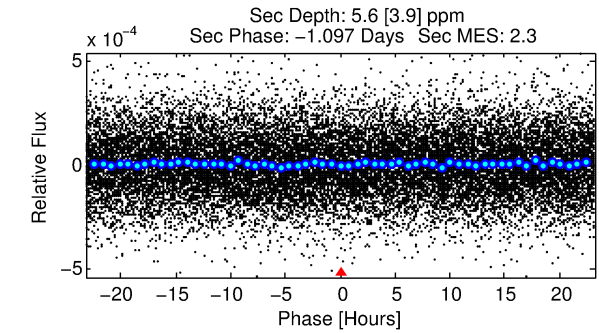
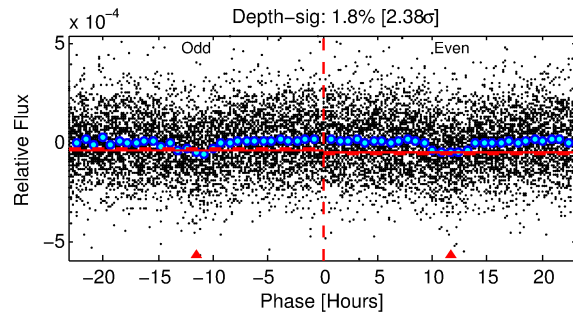
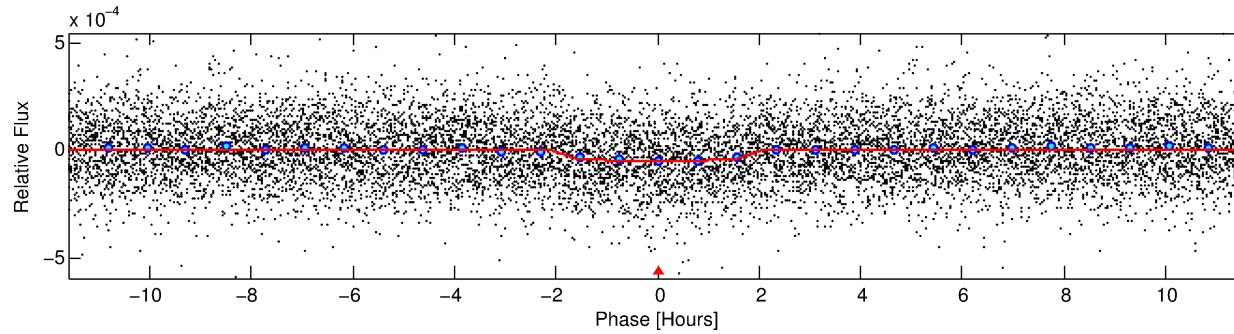
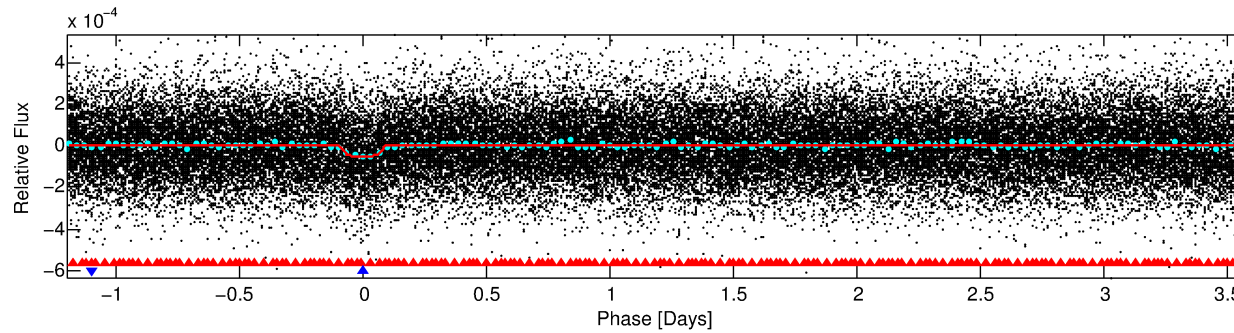
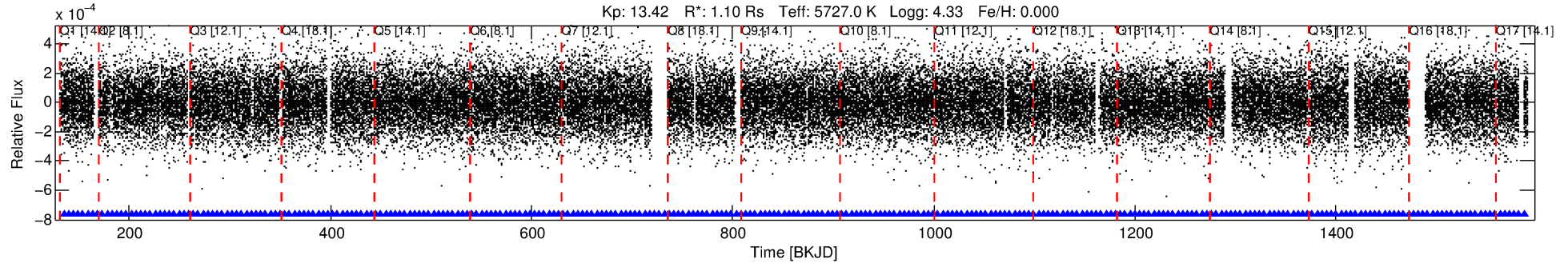
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006607357-02

No Significant Match Found

DV One-Page Summary

KIC: 6607357 Candidate: 2 of 2 Period: 4.775 d
KOI: K02838.02 Corr: 0.987



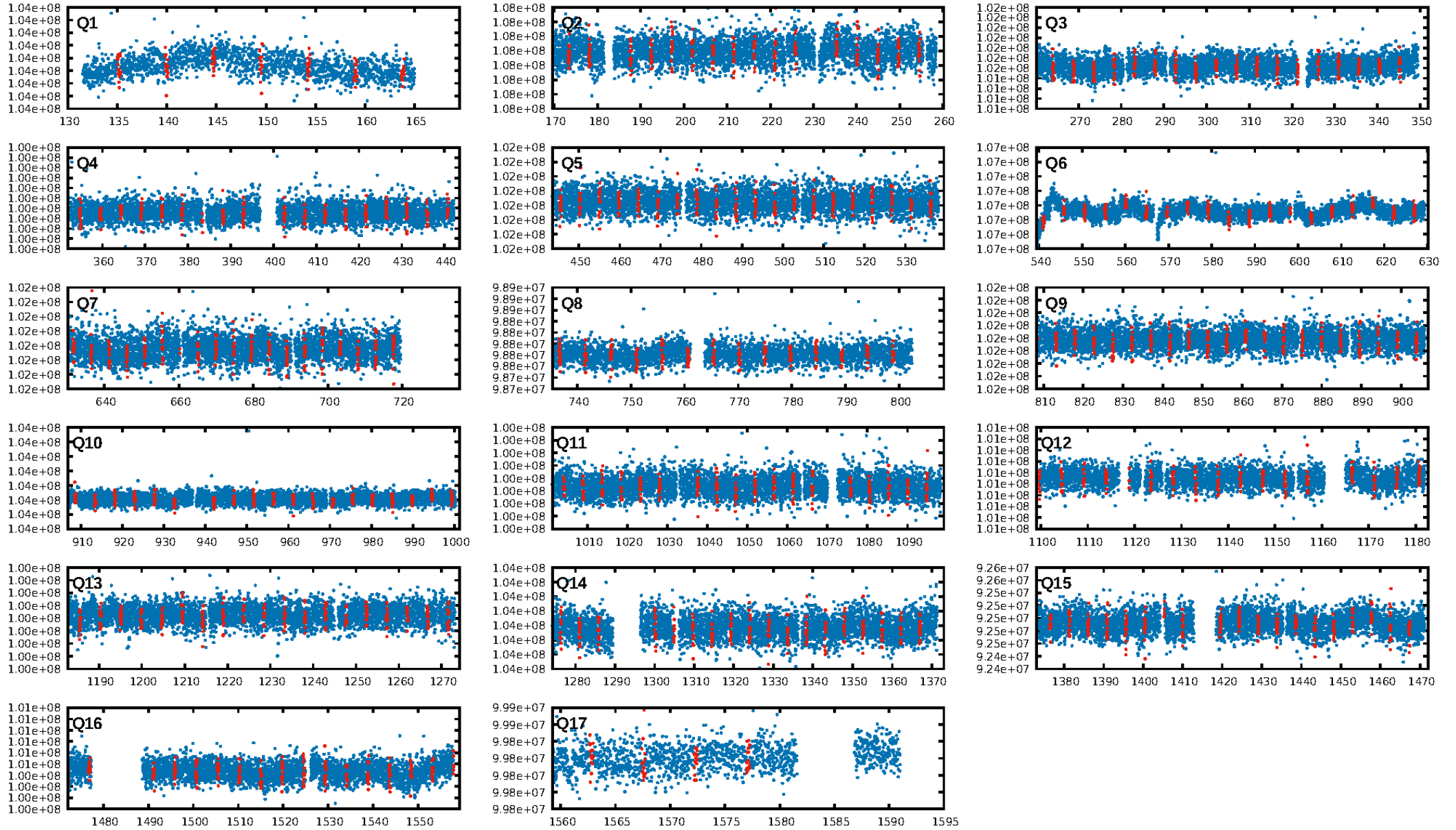
DV Fit Results:

Period = 4.77467 [0.00003] d
Epoch = 135.1621 [0.0049] BKJD
Rp/R* = 0.0077 [0.0031]
a/R* = 4.59 [8.26]
b = 0.89 [0.46]
Seff = 395.66 [94.73]
Teq = 1137 [68] K
Rp = 0.92 [0.39] Re
a = 0.0545 [0.0077] AU
Ag = 10.74 [11.62] [0.84 σ]
Teffp = 3183 [844] K [2.42 σ]

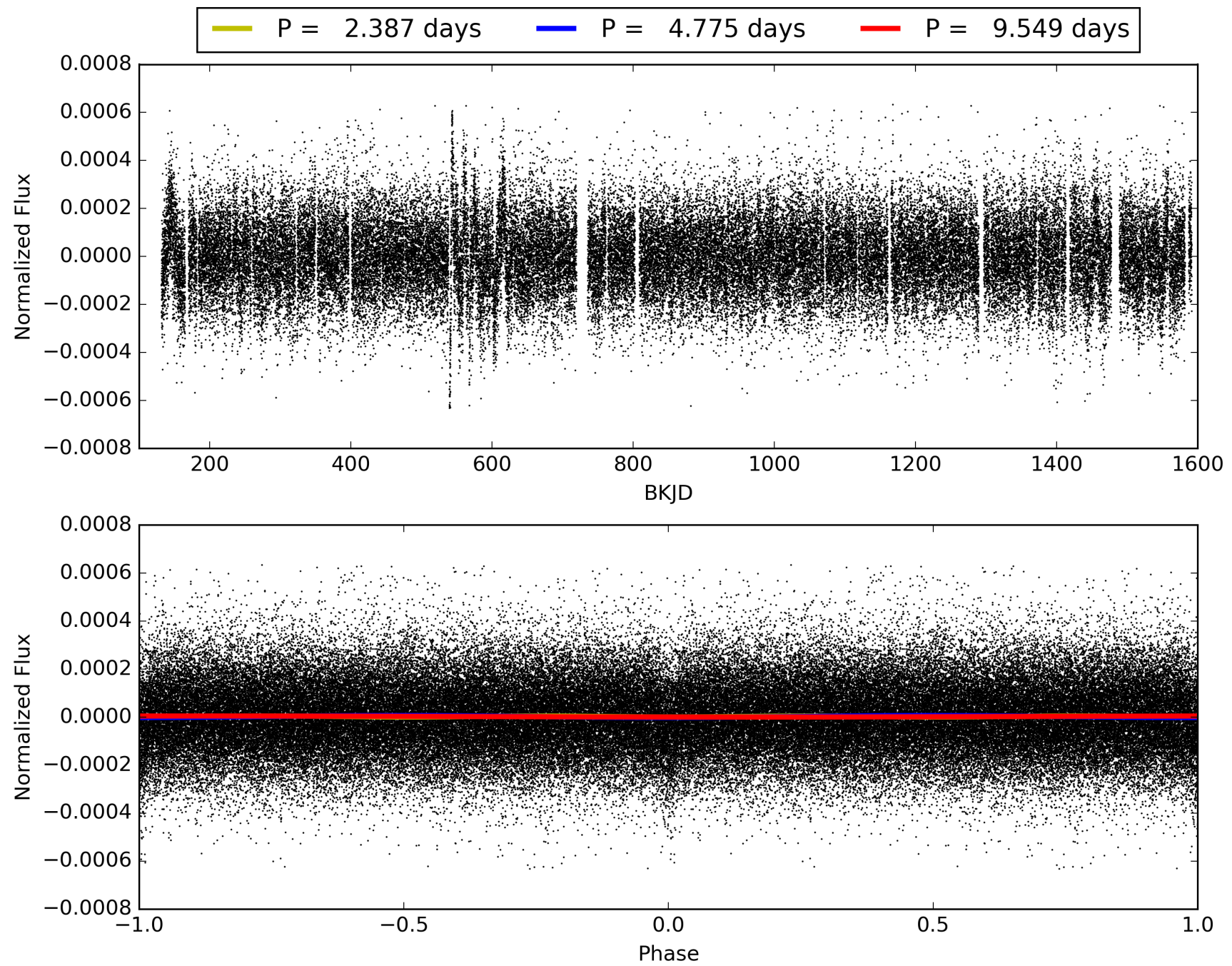
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [12.12 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.40e-34
RollingBand-fgt: 1.00 [254/254]
GhostDiagnostic-chr: 3.038
Centroid-sig: 0.3%
Centroid-so: 1.803 arcsec [2.27 σ]
OotOffset-rm: 0.906 arcsec [1.65 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.918 arcsec [3.39 σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006607357-02, PDC Light Curves

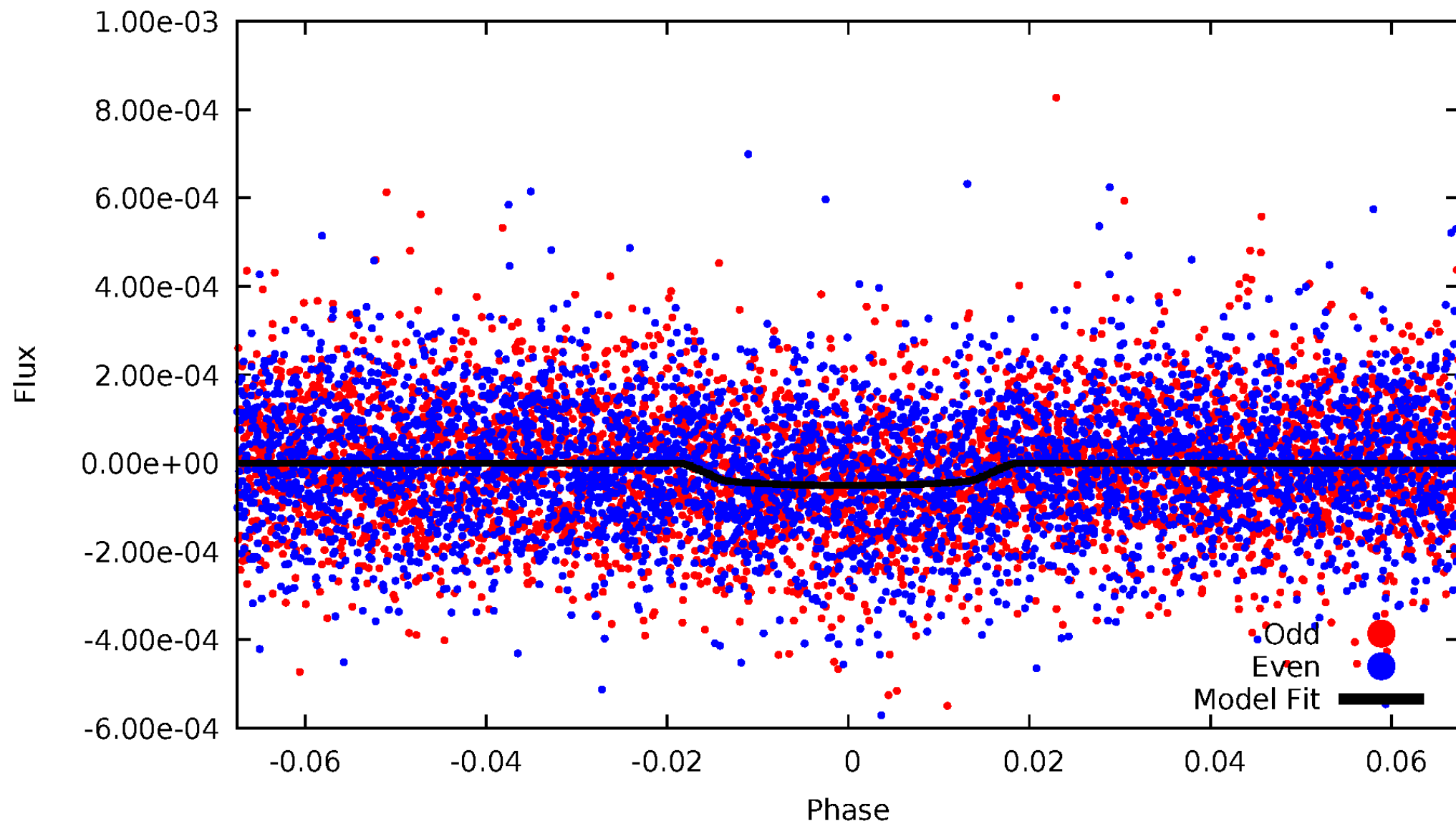


TCE 006607357-02



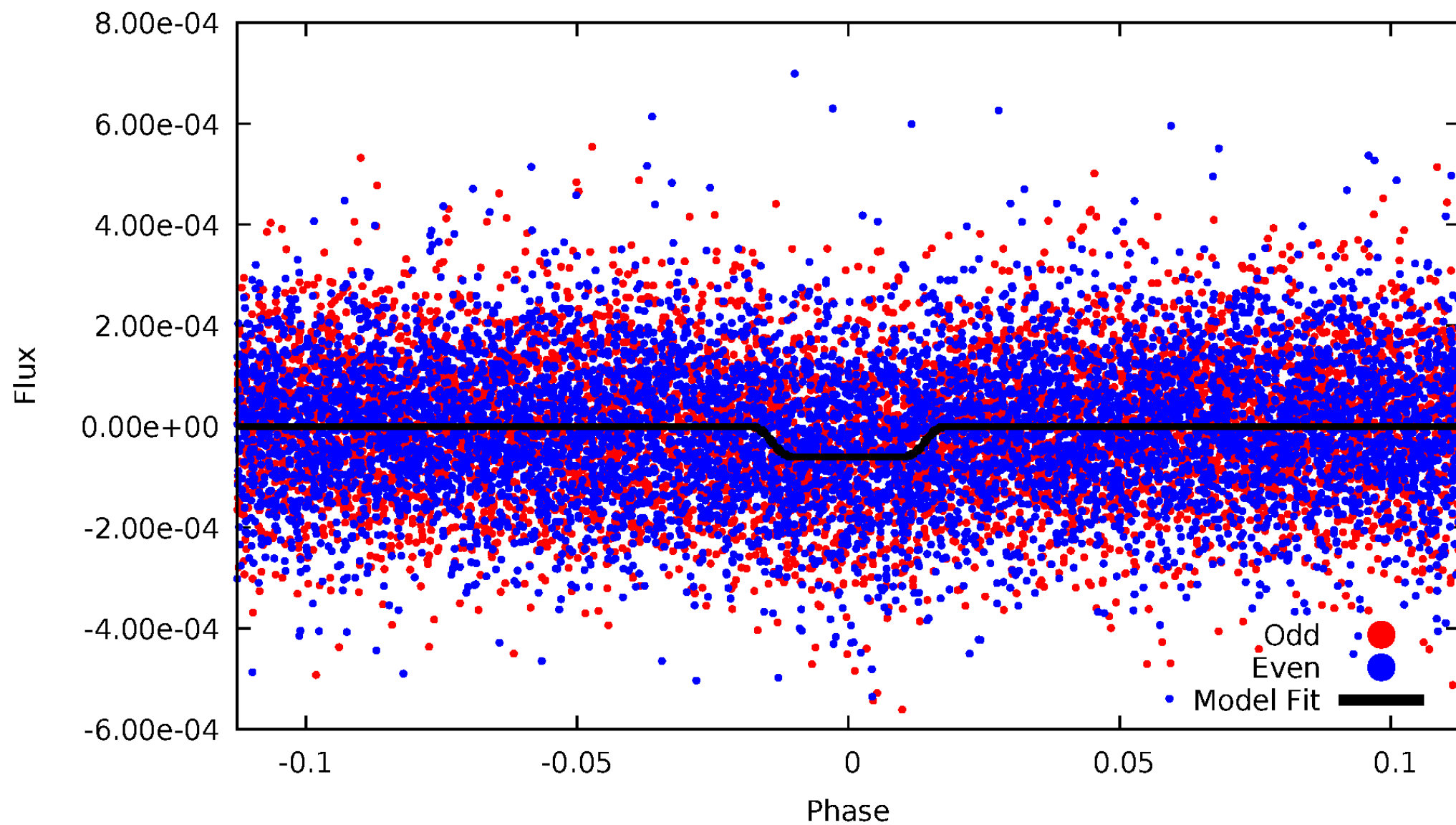
DV Odd/Even

TCE 006607357-02



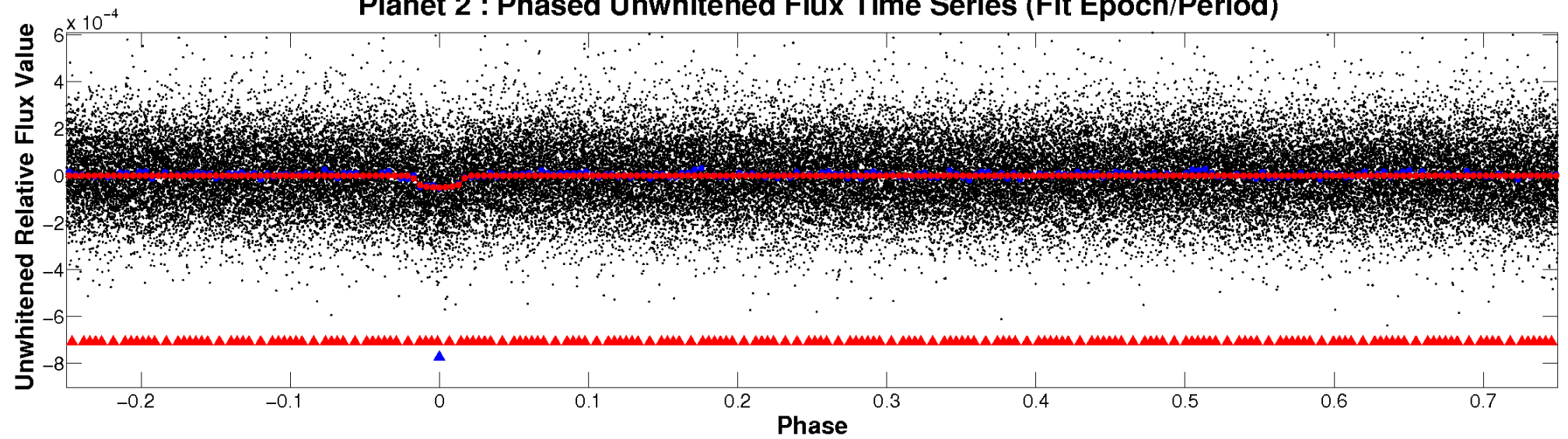
ALT Odd/Even

TCE 006607357-02

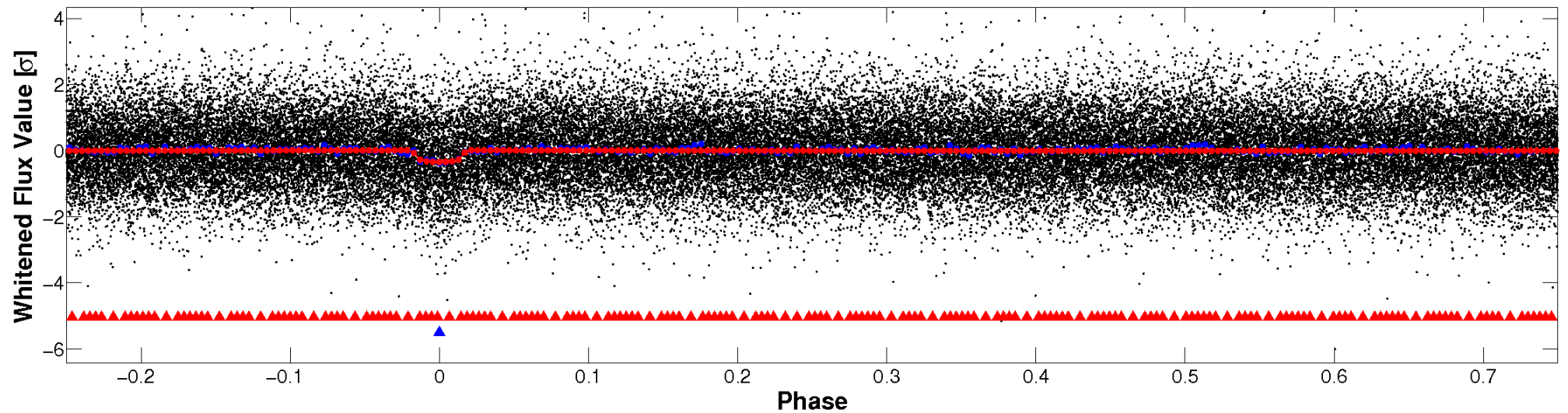


Non-Whitened Vs. Whitened Light Curve

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

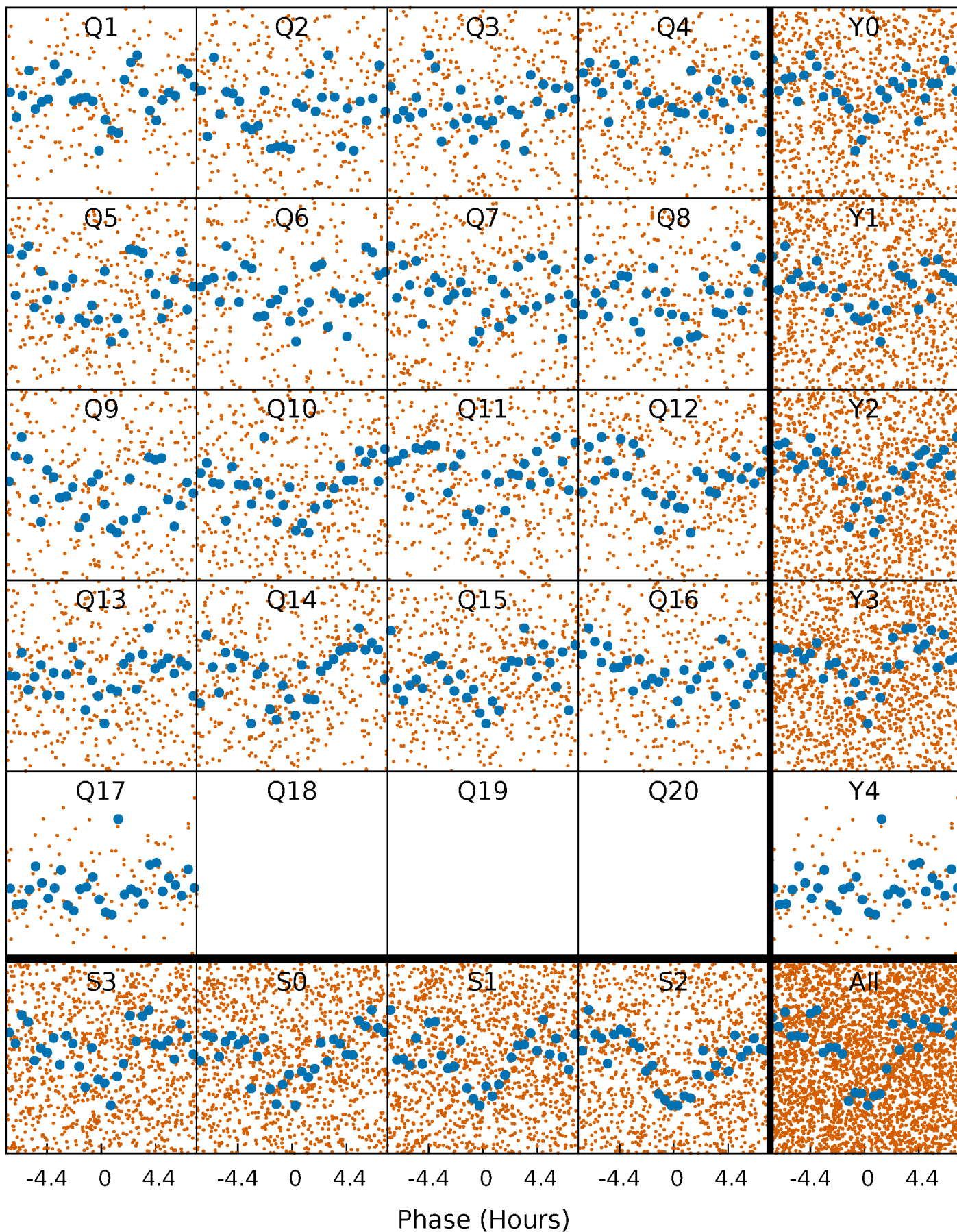


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



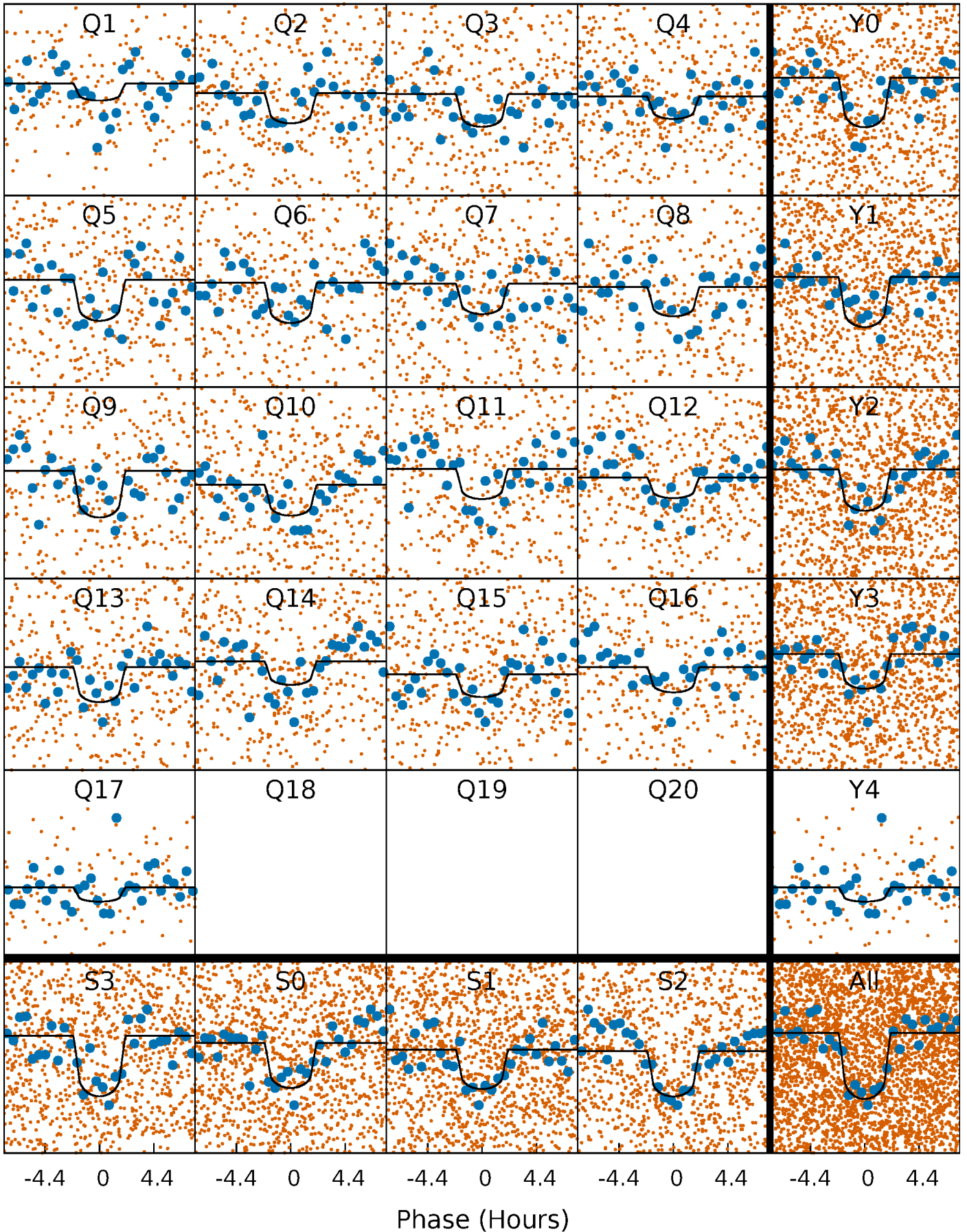
PDC Quarter-Phased Transit Curves

TCE 006607357-02 $P = 4.774665$ Days $T_0 = 135.162095$ (BKJD)



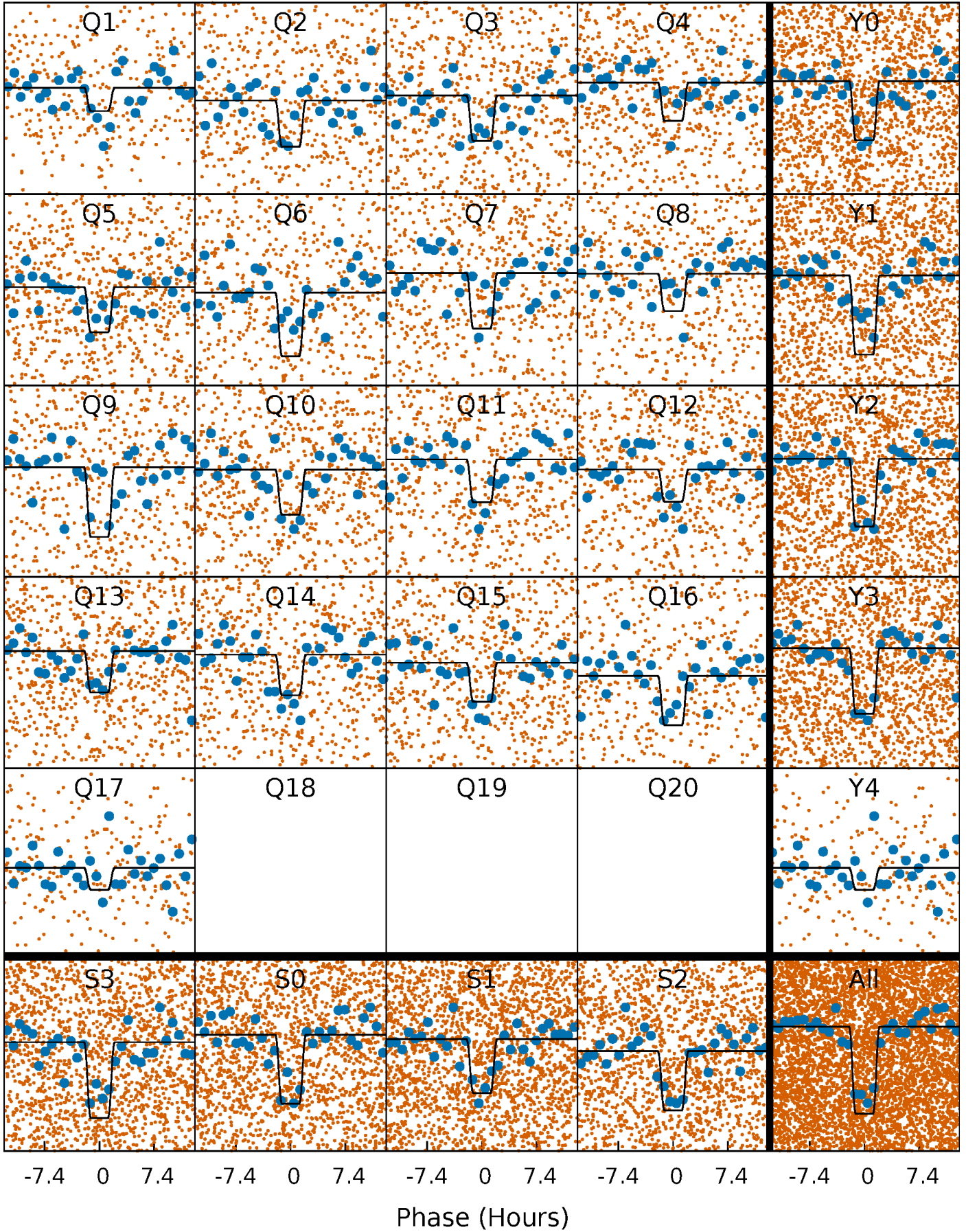
DV Quarter-Phased Transit Curves

TCE 006607357-02 P= 4.774665 Days $T_0=135.162095$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

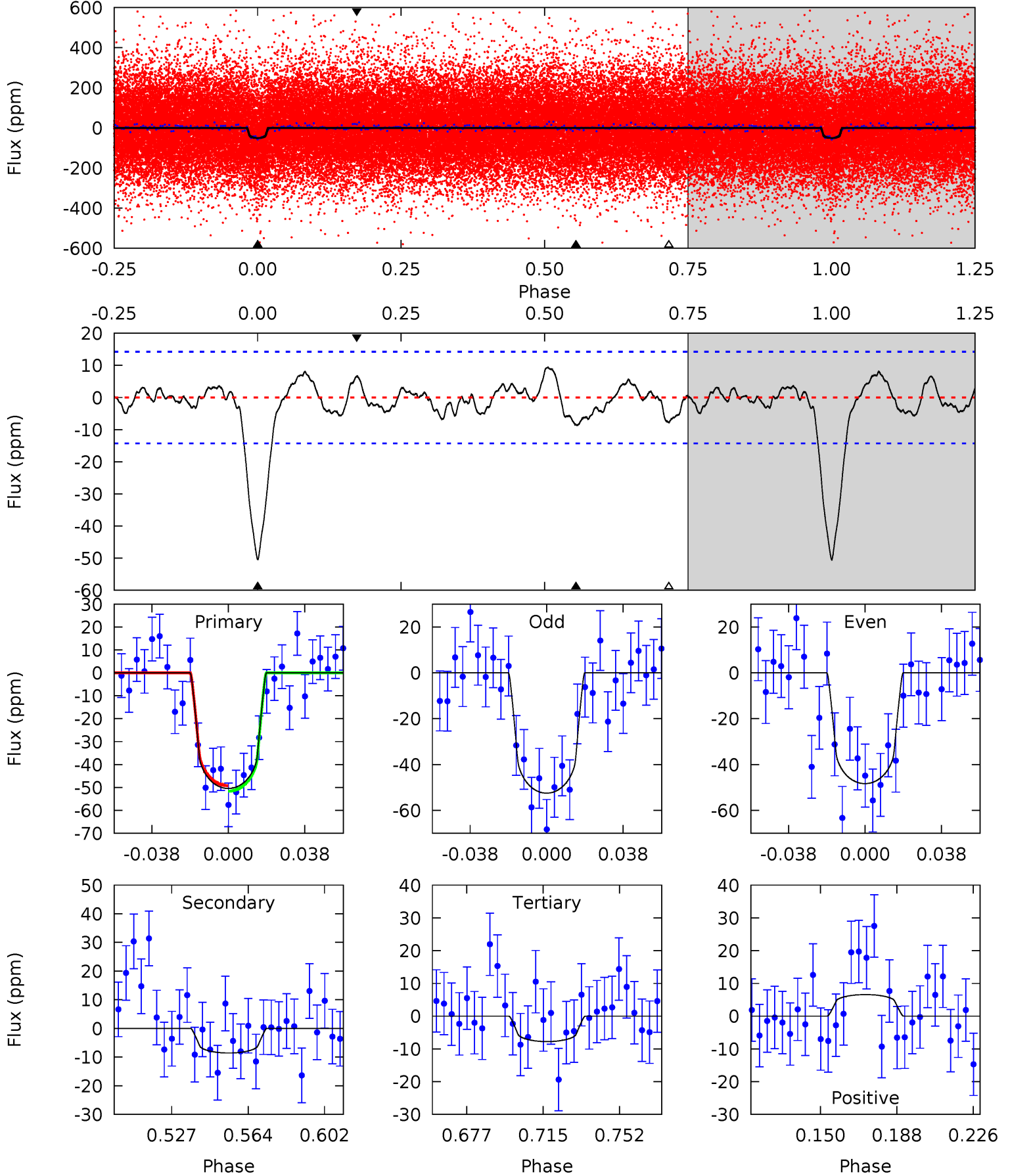
TCE 006607357-02 P= 4.774725 Days $T_0=135.151129$ (BKJD)



DV Model-Shift Uniqueness Test

006607357-02, P = 4.774665 Days, E = 130.387430 Days

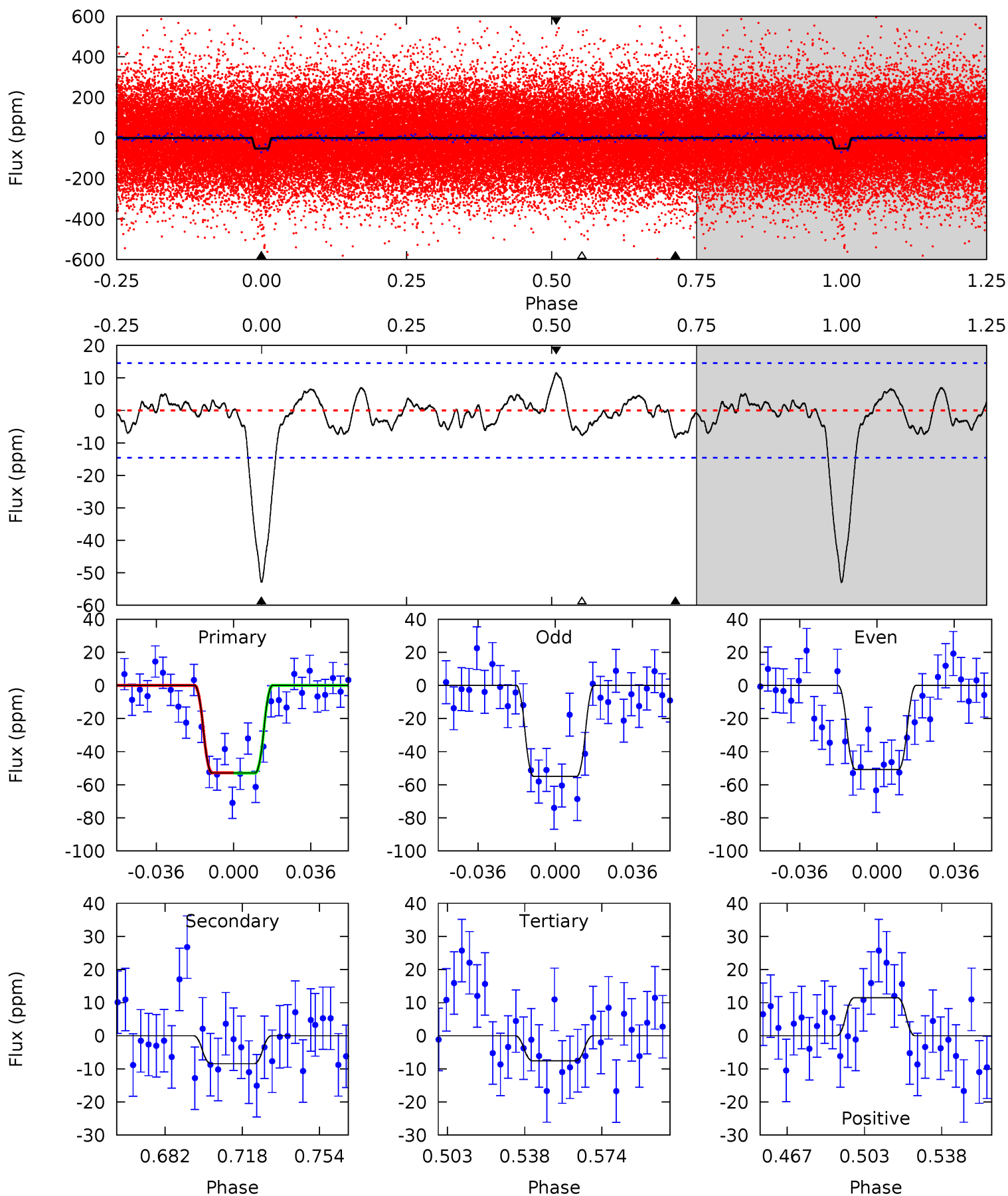
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	2.87	2.60	2.20	4.77	2.08	1.15	14.3	14.7	0.27	0.67	0.70	0.95	0.16	0.40



Alt Model-Shift Uniqueness Test

006607357-02, P = 4.774725 Days, E = 130.376404 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	2.77	2.49	3.77	4.78	2.10	1.21	14.8	13.6	0.28	-1.00	0.69	1.09	0.18	0.03



Stellar Parameters For KIC 006607357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5727^{+115}_{-104}	$4.328^{+0.132}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$1.104^{+0.164}_{-0.164}$	$0.946^{+0.079}_{-0.057}$	$0.989^{+0.594}_{-0.317}$
	+2%/-2%	+3%/-2%	+inf%/-inf%	+15%/-15%	+8%/-6%	+60%/-32%
Source	SPE57	SPE57	SPE57	DSEP		

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

Secondary Eclipse Parameters for KIC 006607357-02 / KOI 2838.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 3	$0.91^{+0.39}_{-0.36}$	1587^{+70}_{-70}	3860^{+810}_{-479}	16^{+28}_{-9}
Alt.	-8 ± 3	$0.93^{+0.37}_{-0.34}$	1590^{+71}_{-69}	3836^{+739}_{-471}	15^{+25}_{-8}

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

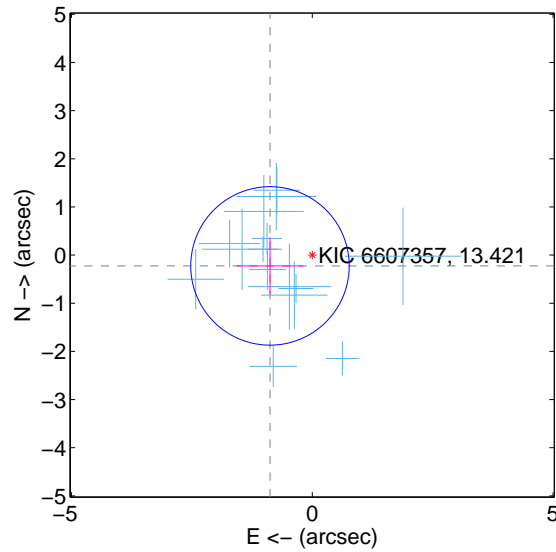
Supplemental centroid analysis for 006607357-02. Kepler magnitude: 13.42. Transit SNR 12.94

There are 15 quarters with good PRF difference image offsets

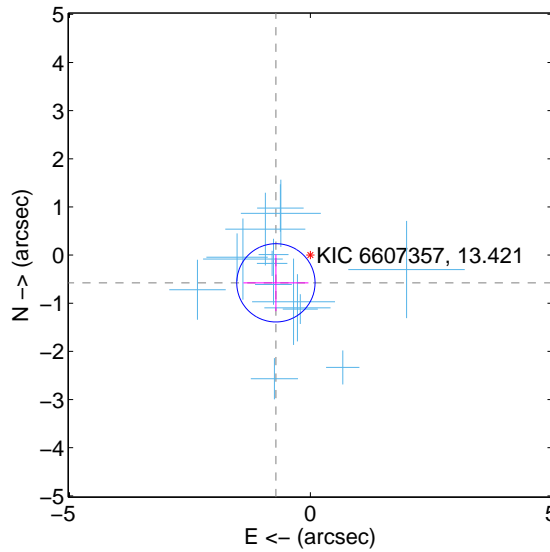
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.906 ± 0.549	1.65	0.878 ± 0.694	-0.225 ± 0.595
PRF-fit source offset from KIC position	0.918 ± 0.271	3.39	0.715 ± 0.675	-0.576 ± 0.589
photometric centroid source offset	1.80 ± 0.80	2.27	-0.64 ± 0.83	-1.69 ± 0.79

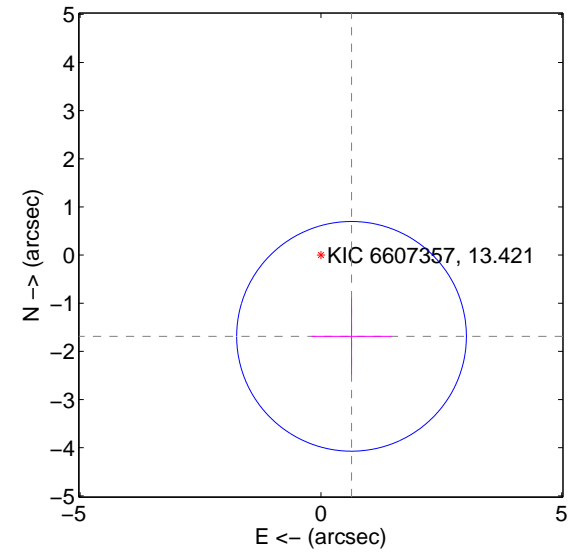
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

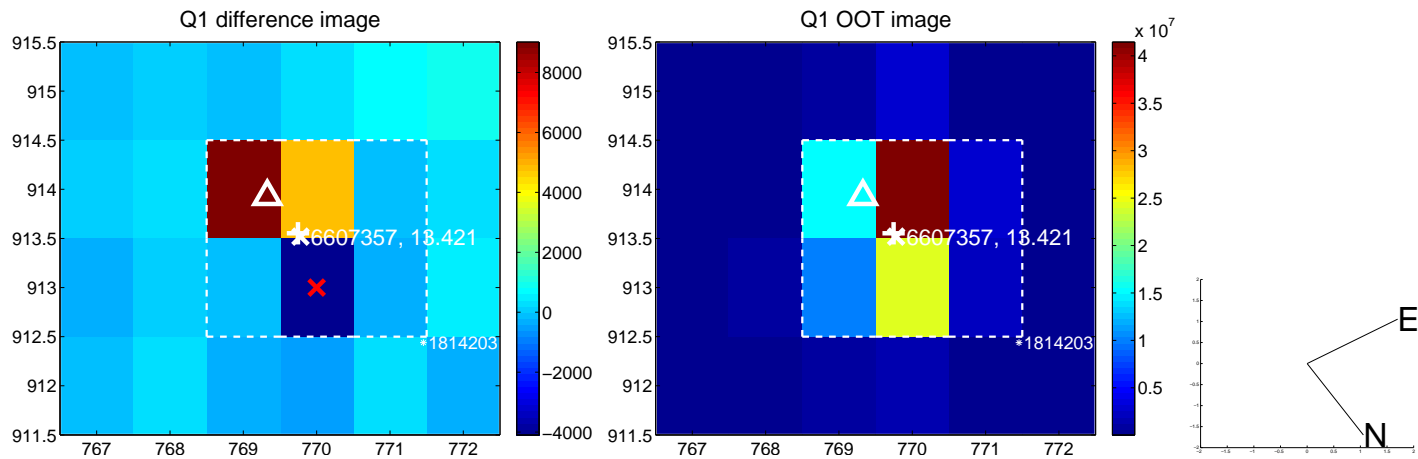


offset from photometric centroids

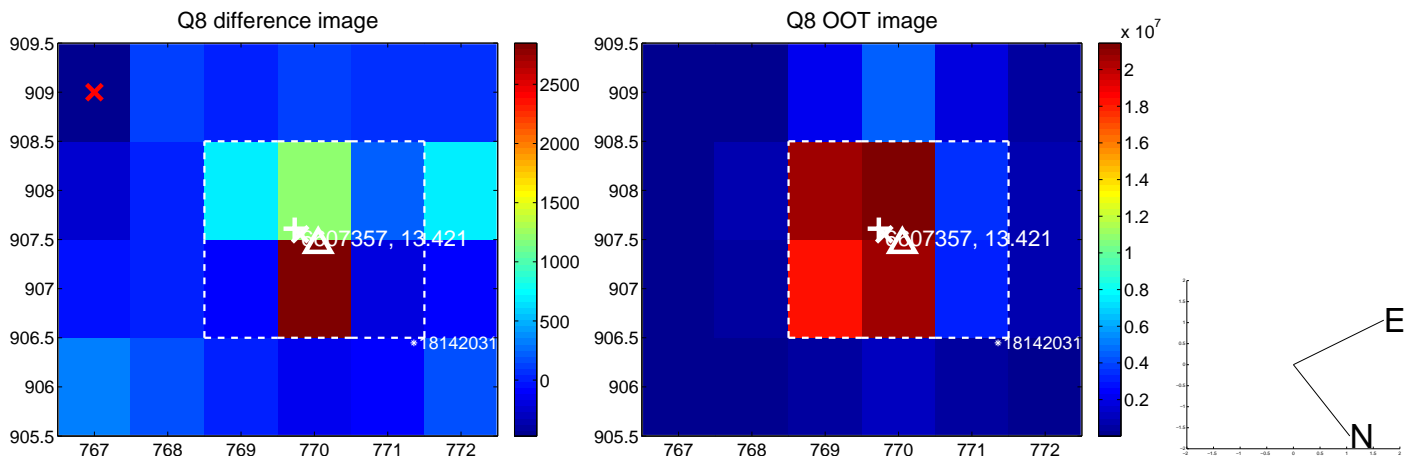
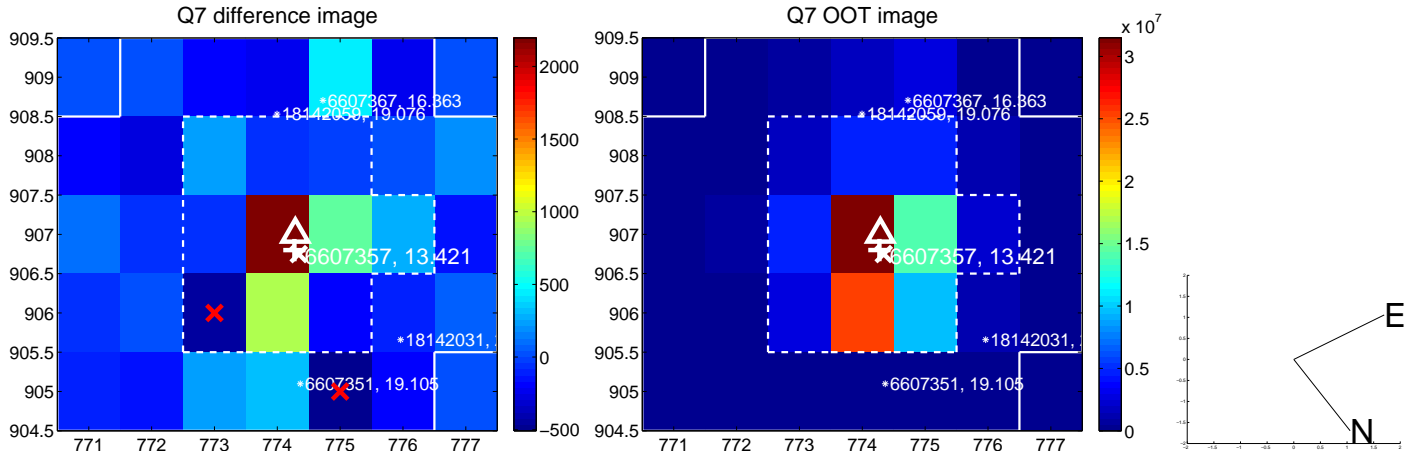
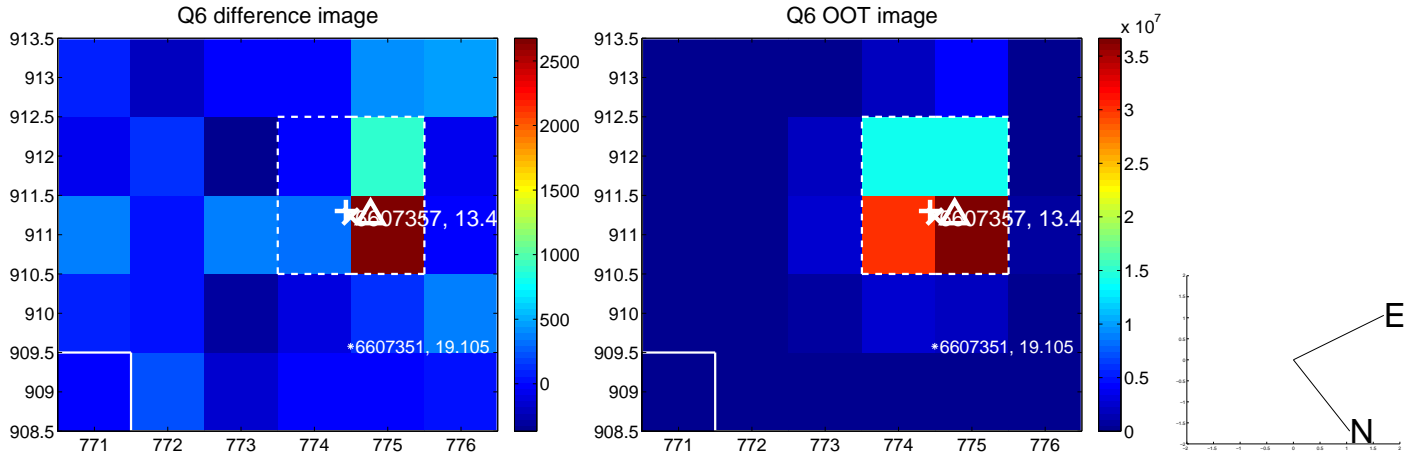
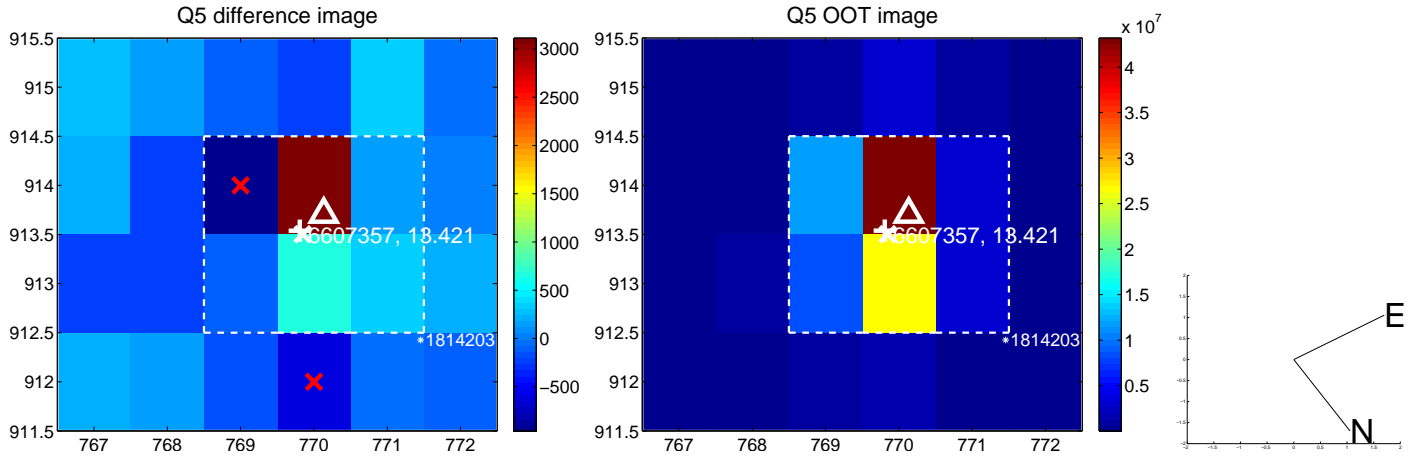


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

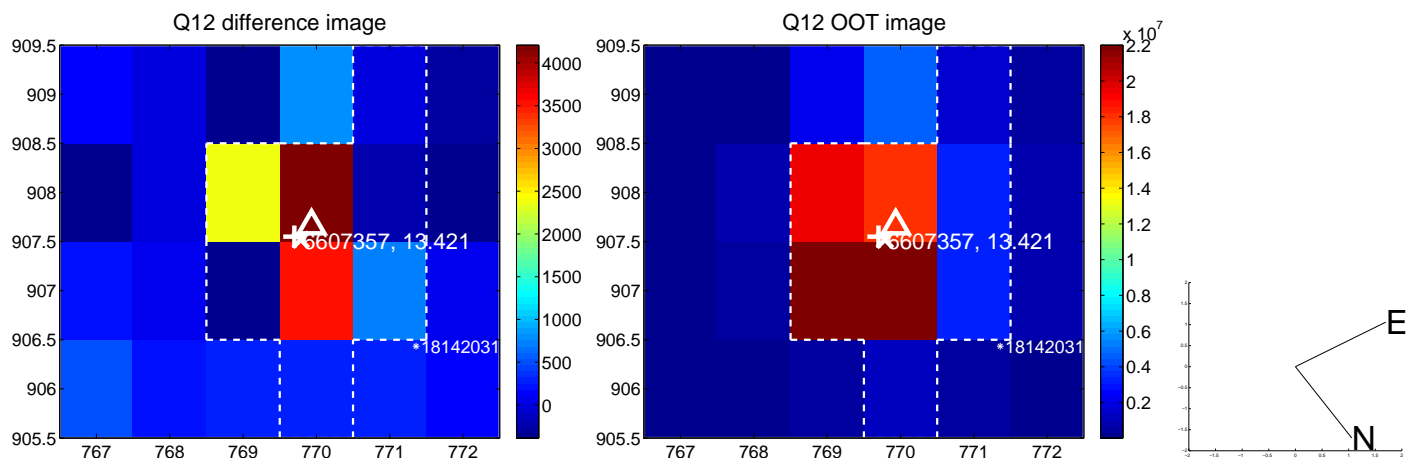
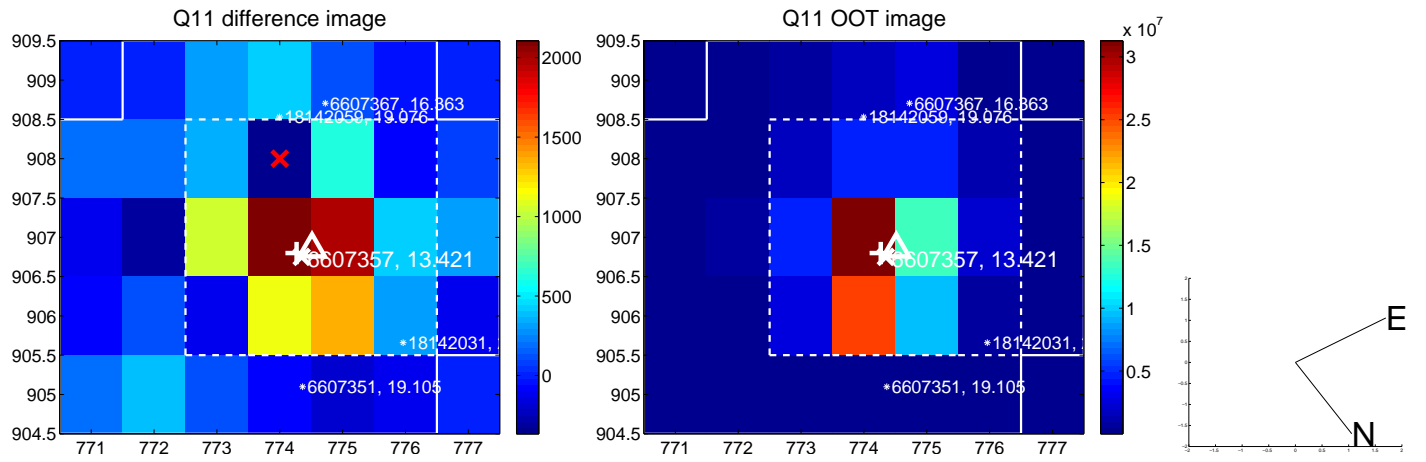
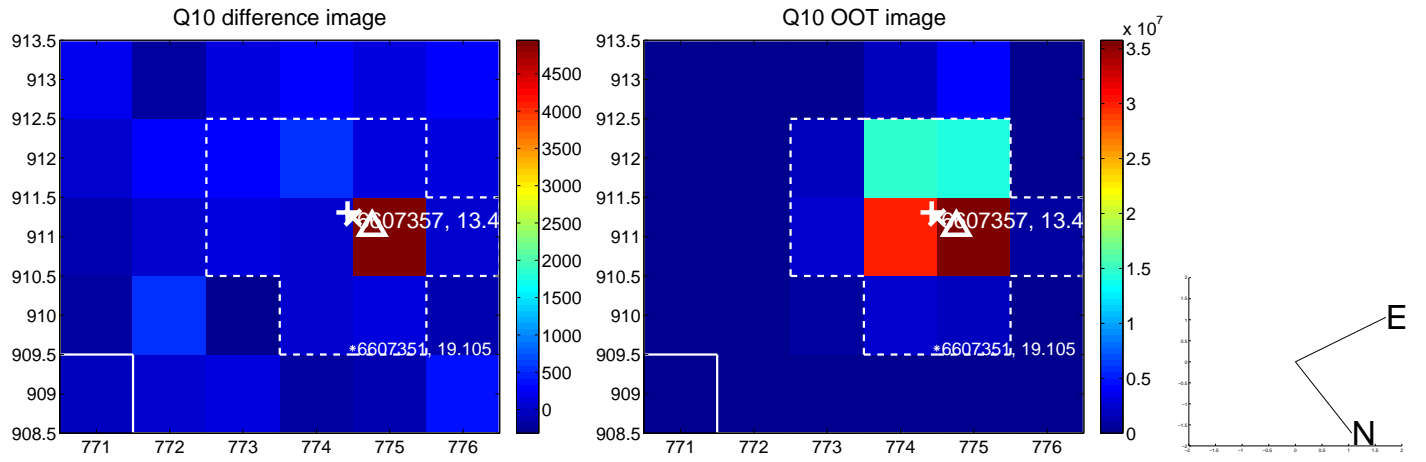
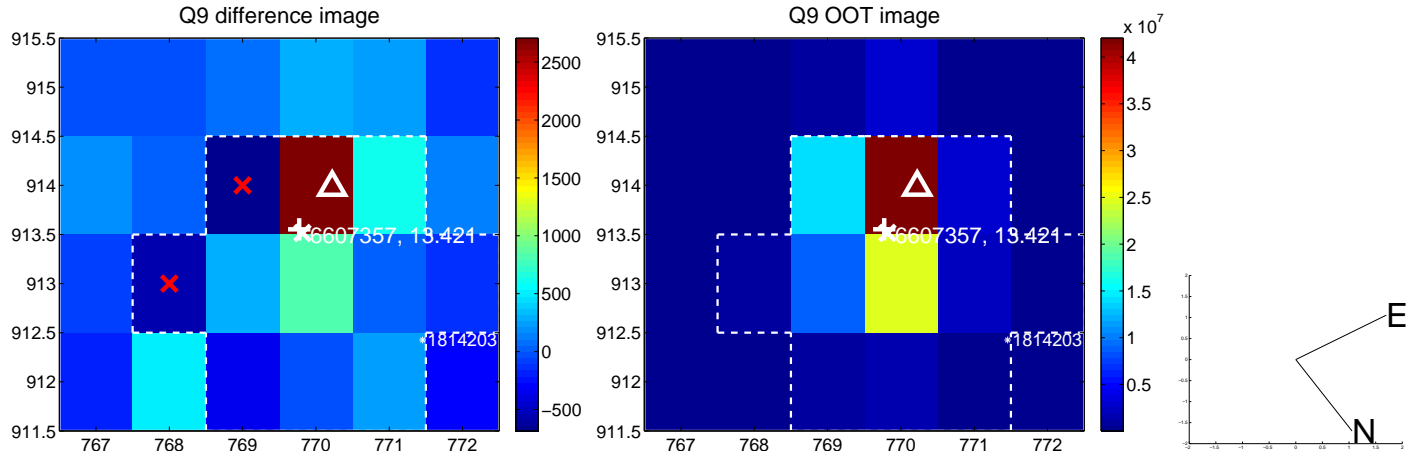
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



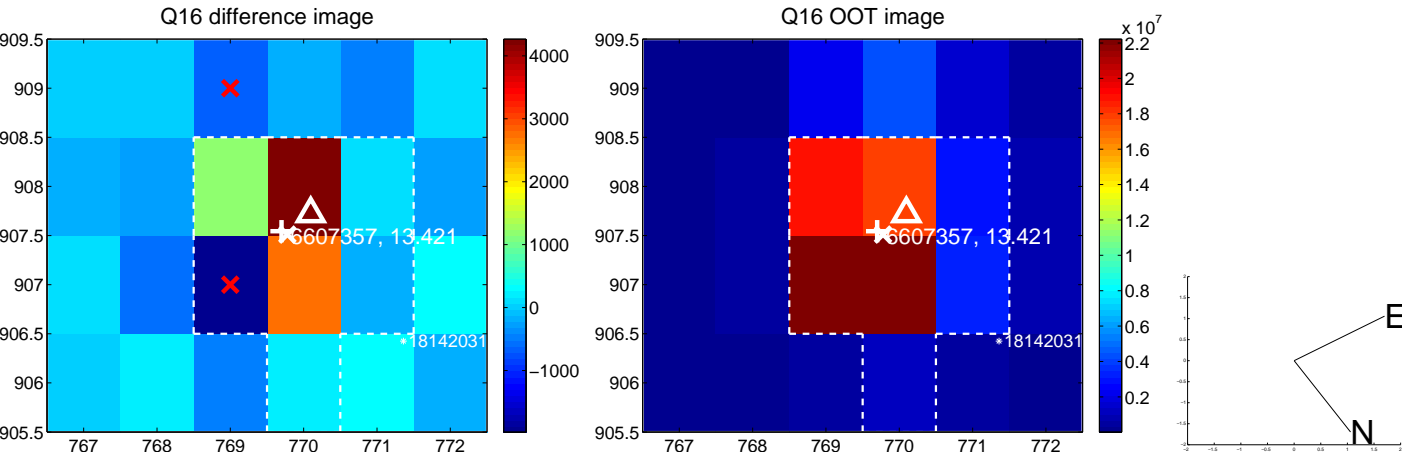
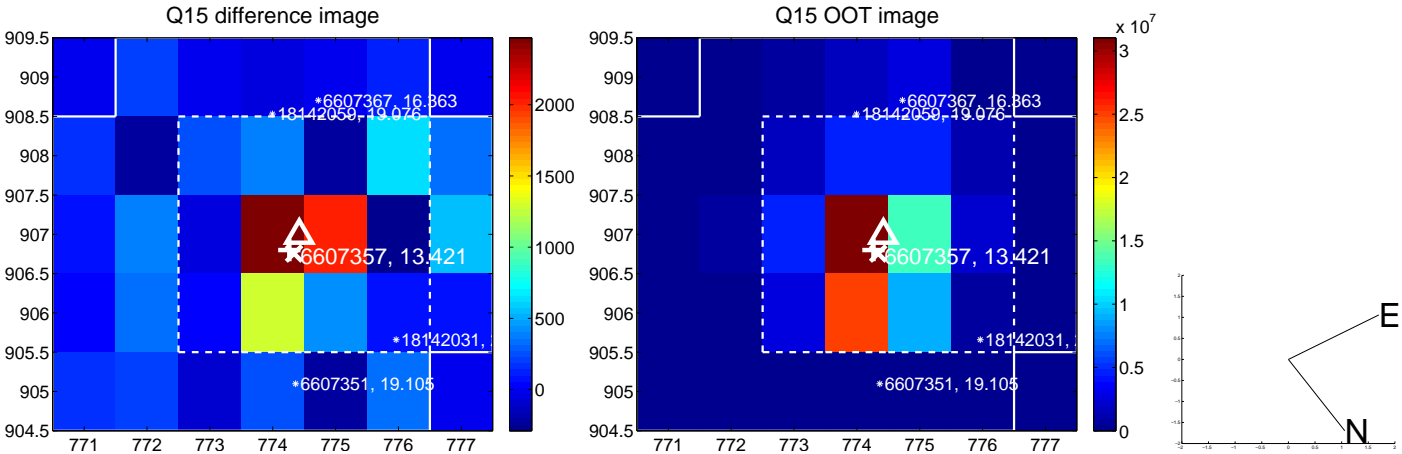
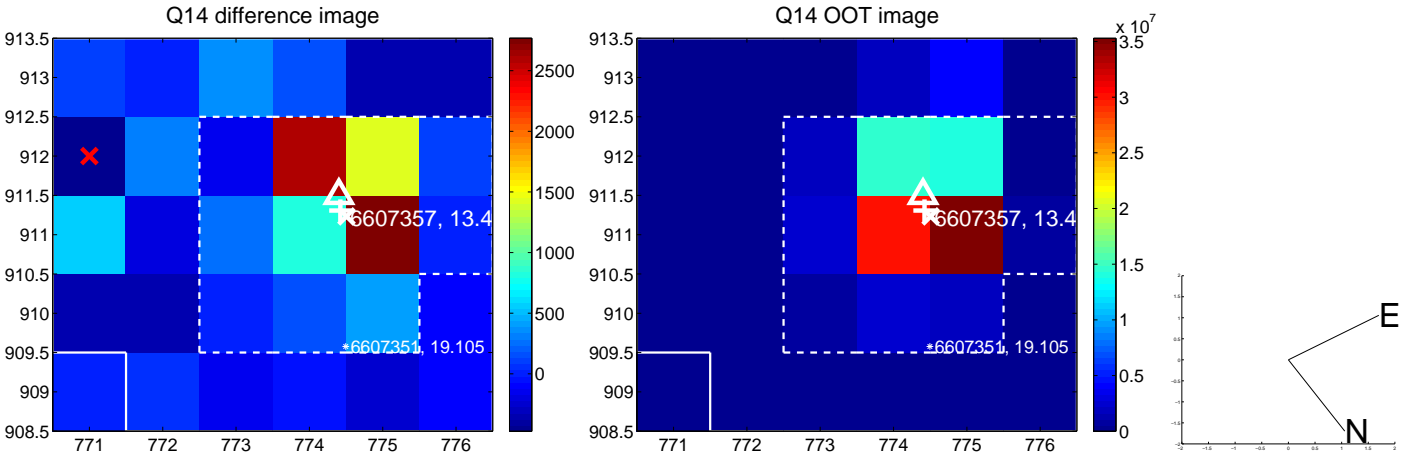
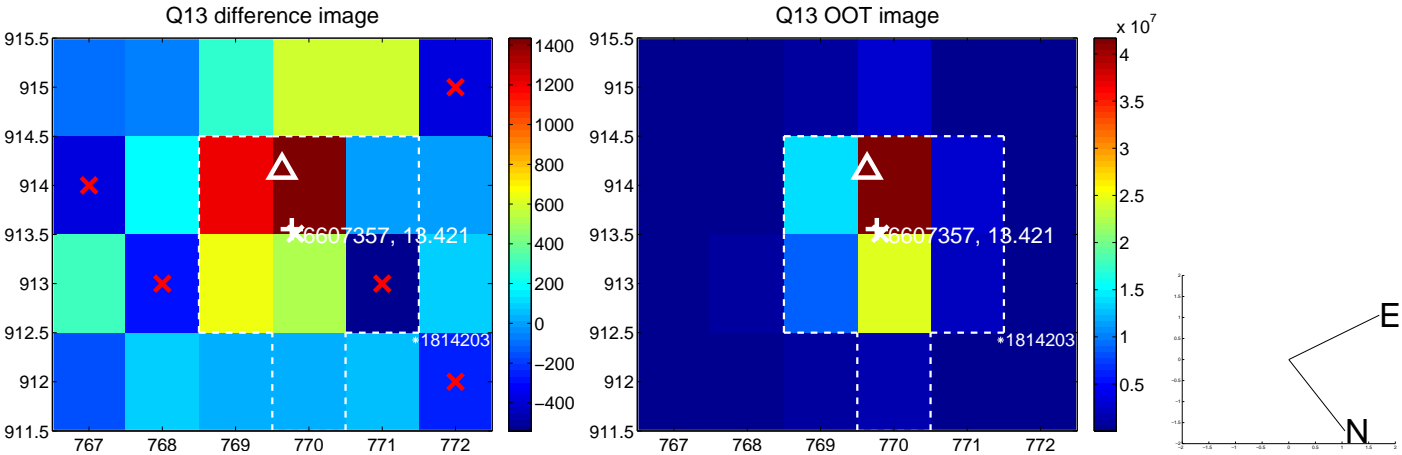
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



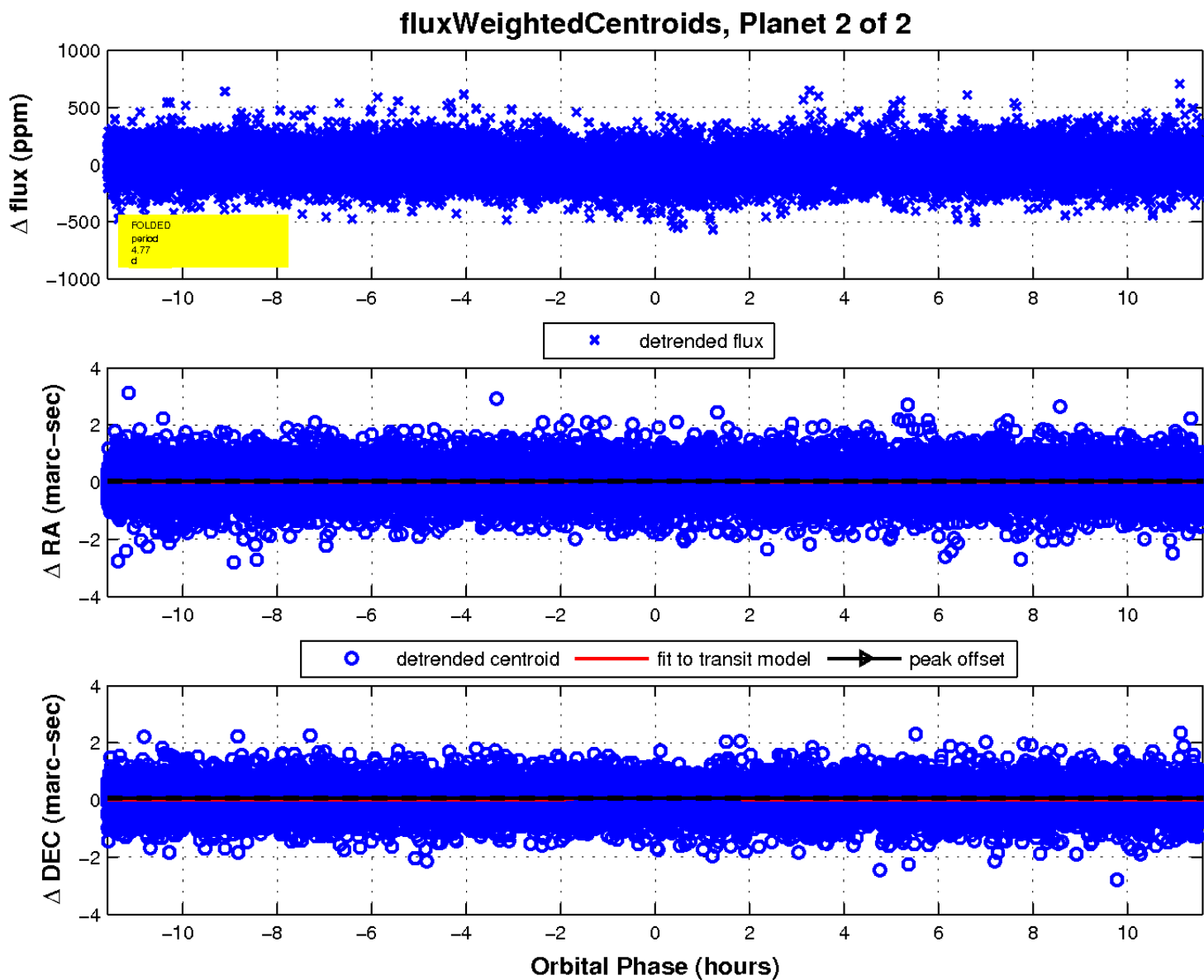
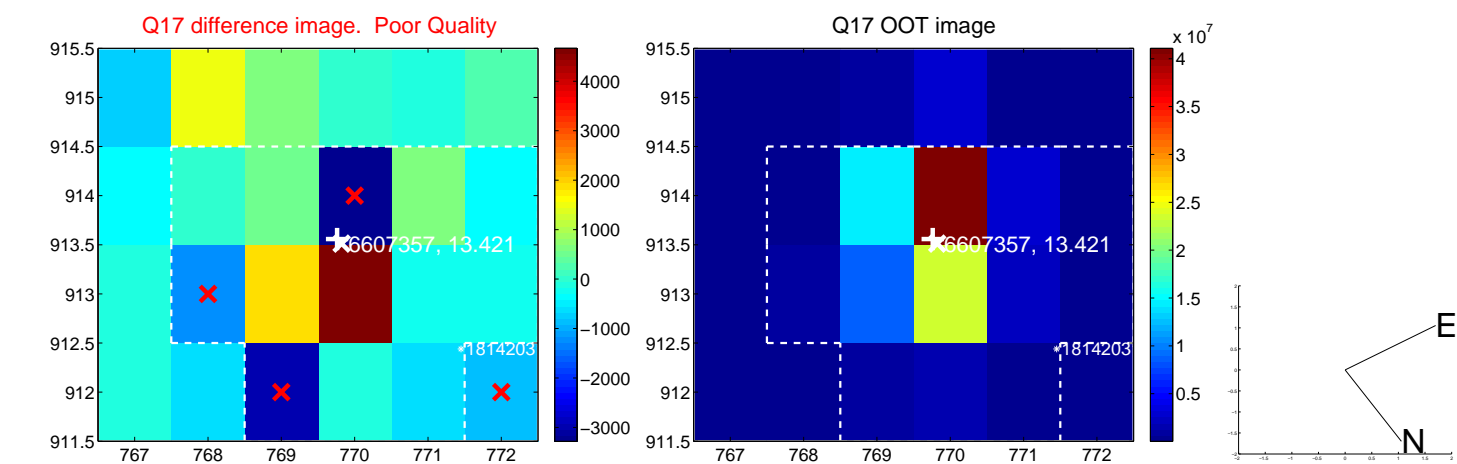
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

