

KIC 005350447

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})
005350447-01	OBS	4008.01	70.751120	175.373262	843.6	6.180	18.3	19.9	0.94	5771	4.67	8.99
005350447-02	OBS	No	70.751890	134.144032	410.2	6.480	10.4	11.0	0.94	5771	2.41	8.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005350447-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005350447-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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

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

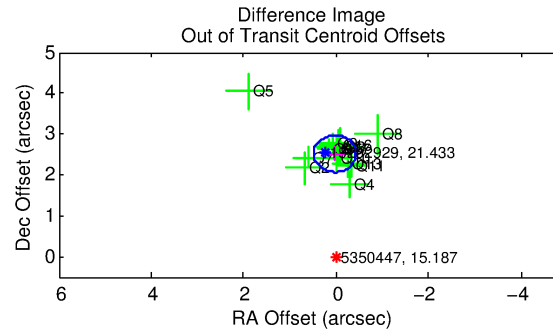
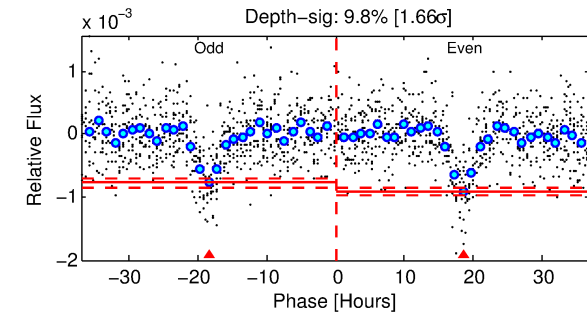
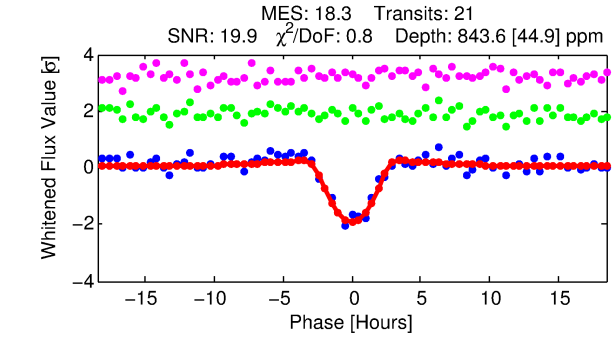
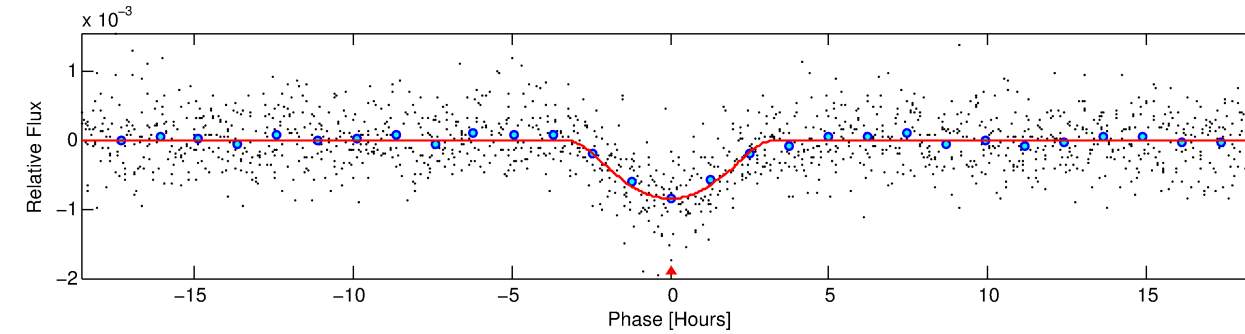
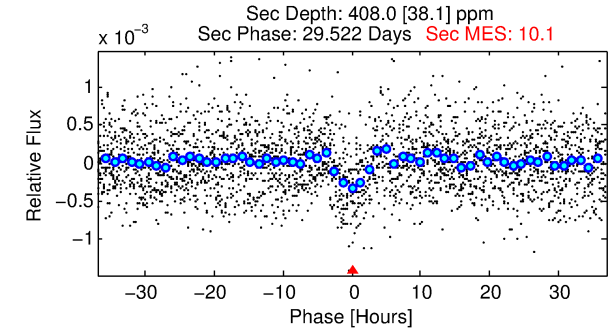
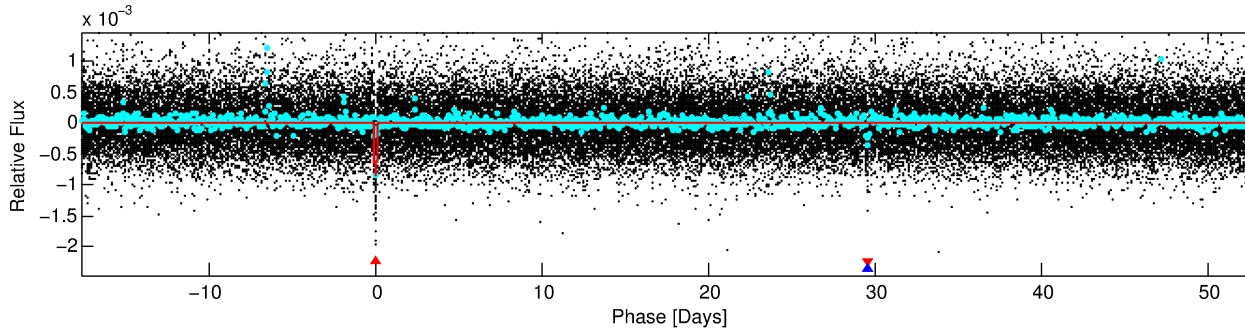
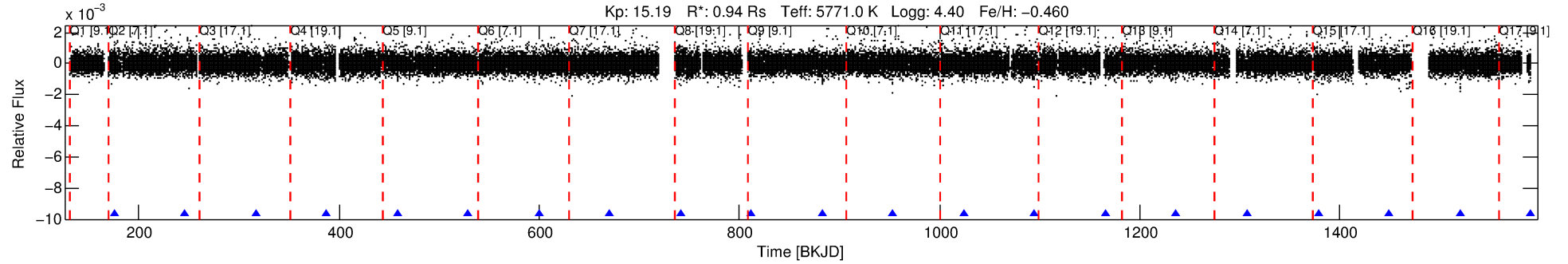
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005350447-01

No Significant Match Found

DV One-Page Summary

KIC: 5350447 Candidate: 1 of 2 Period: 70.751 d
KOI: K04008.01 Corr: 0.988



DV Fit Results:

Period = 70.75112 [0.00054] d
Epoch = 175.3733 [0.0063] BKJD
Rp/R* = 0.0457 [0.0501]
a/R* = 29.29 [9.48]
b = 0.99 [0.08]
Seff = 8.99 [3.22]
Teq = 442 [40] K
Rp = 4.67 [5.27] Re
a = 0.3112 [0.0712] AU
Ag = 996.96 [2212.08] [0.45σ]
Teffp = 3836 [2106] K [1.61σ]

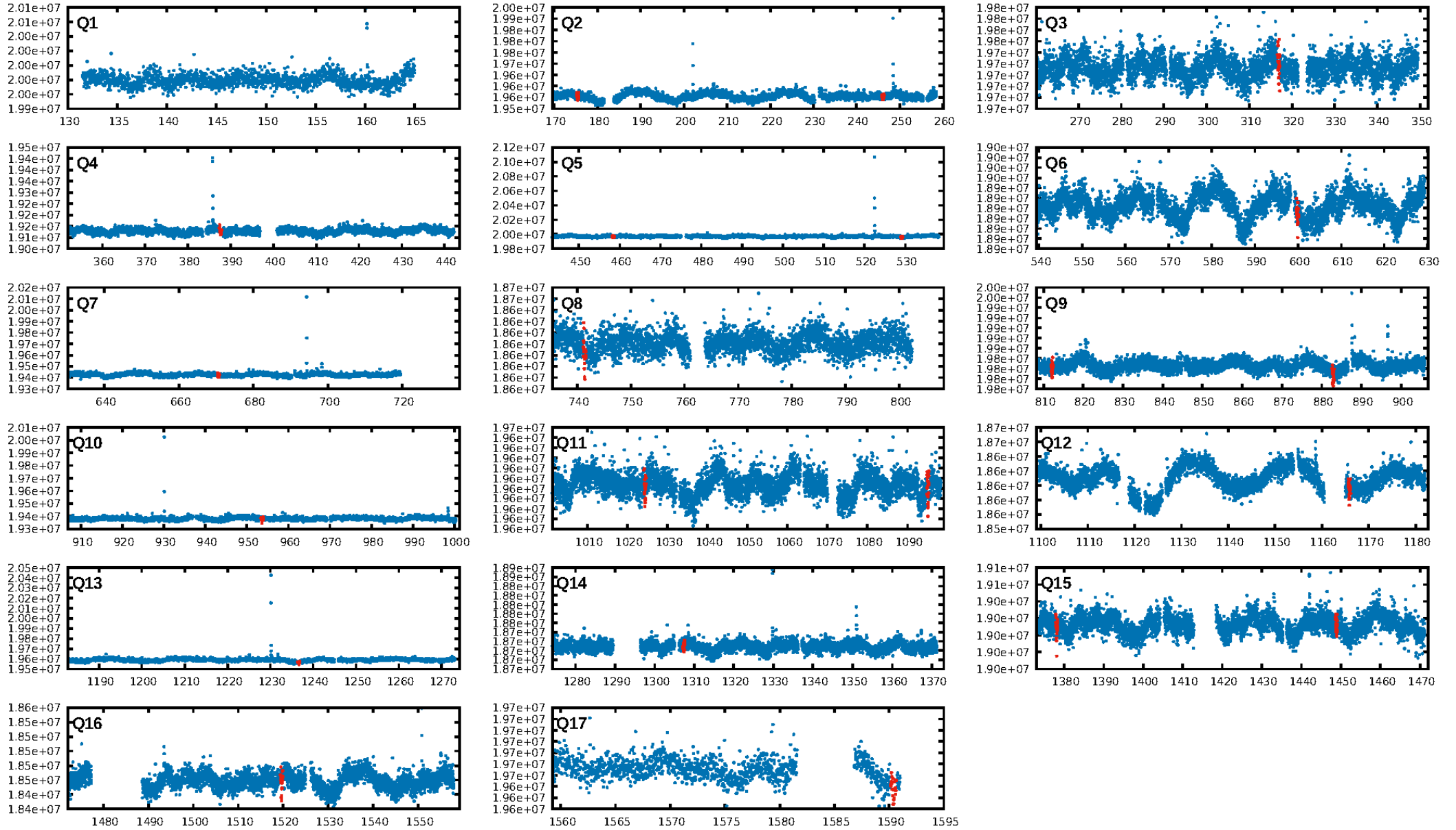
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 12.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.24e-70
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: 1.296
Centroid-sig: 0.0%
Centroid-so: 3.029 arcsec [5.18σ]
OotOffset-rm: 2.518 arcsec [16.66σ]
KicOffset-rm: 2.565 arcsec [14.75σ]
OotOffset-st: 2/4/3/4 [13]
KicOffset-st: 2/4/3/4 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [13/13]

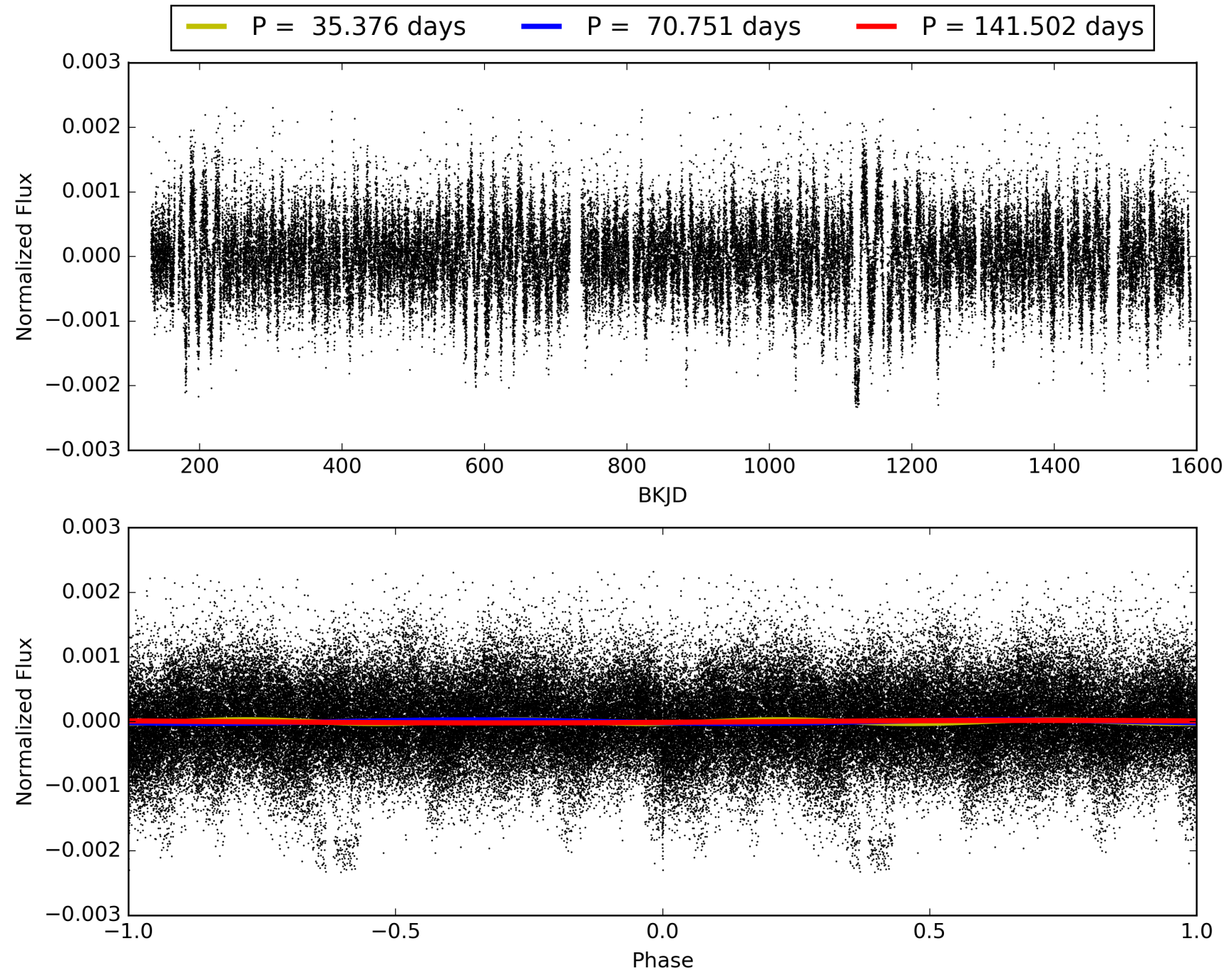
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:29:00 Z

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

TCE 005350447-01, PDC Light Curves

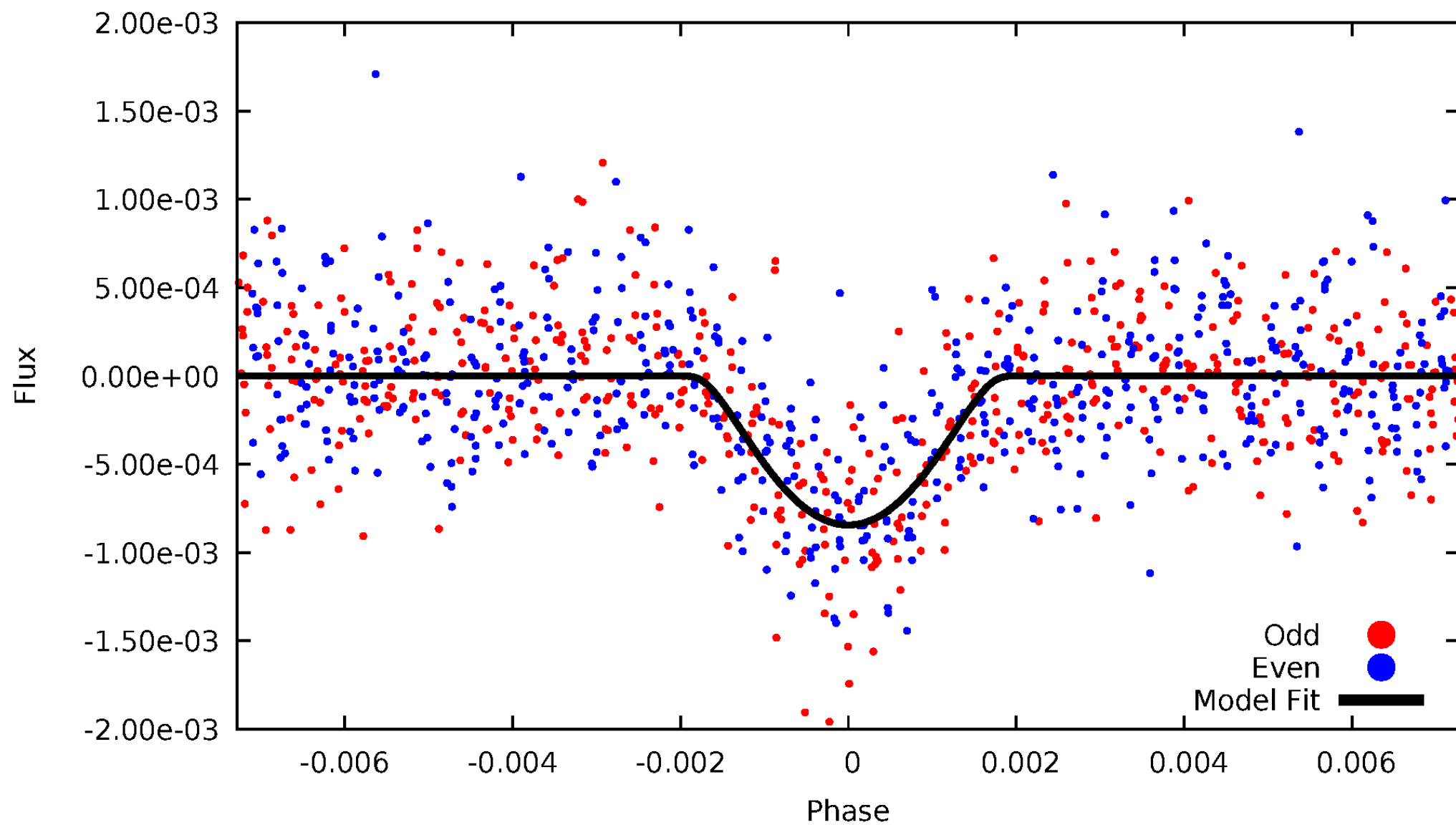


TCE 005350447-01



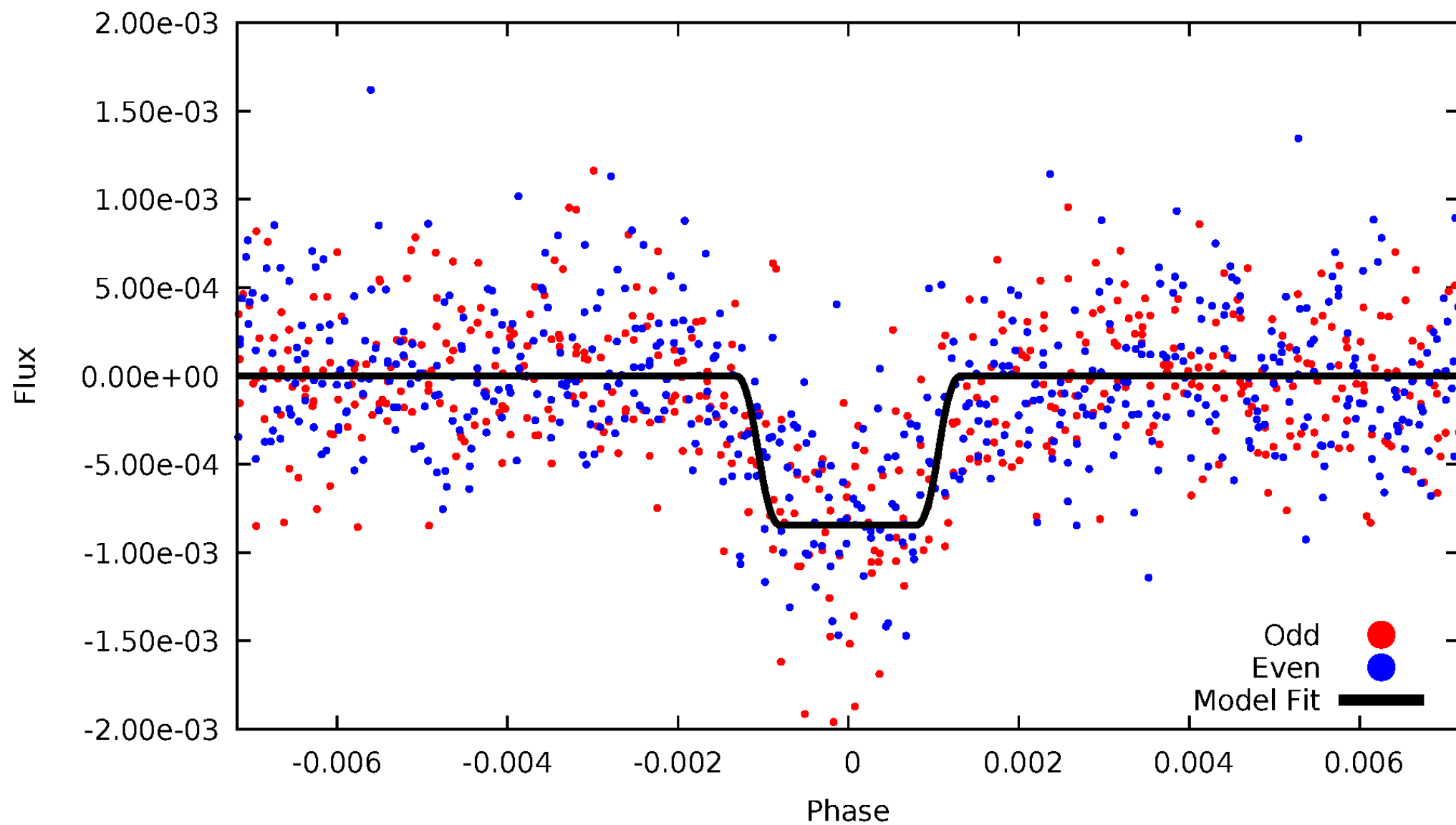
DV Odd/Even

TCE 005350447-01

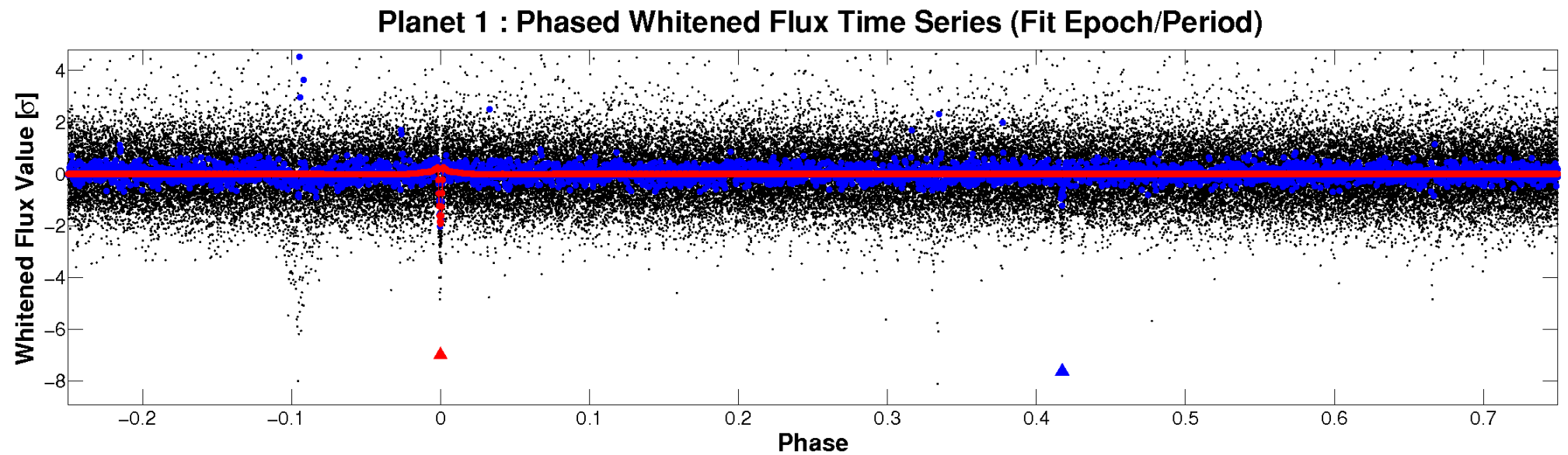
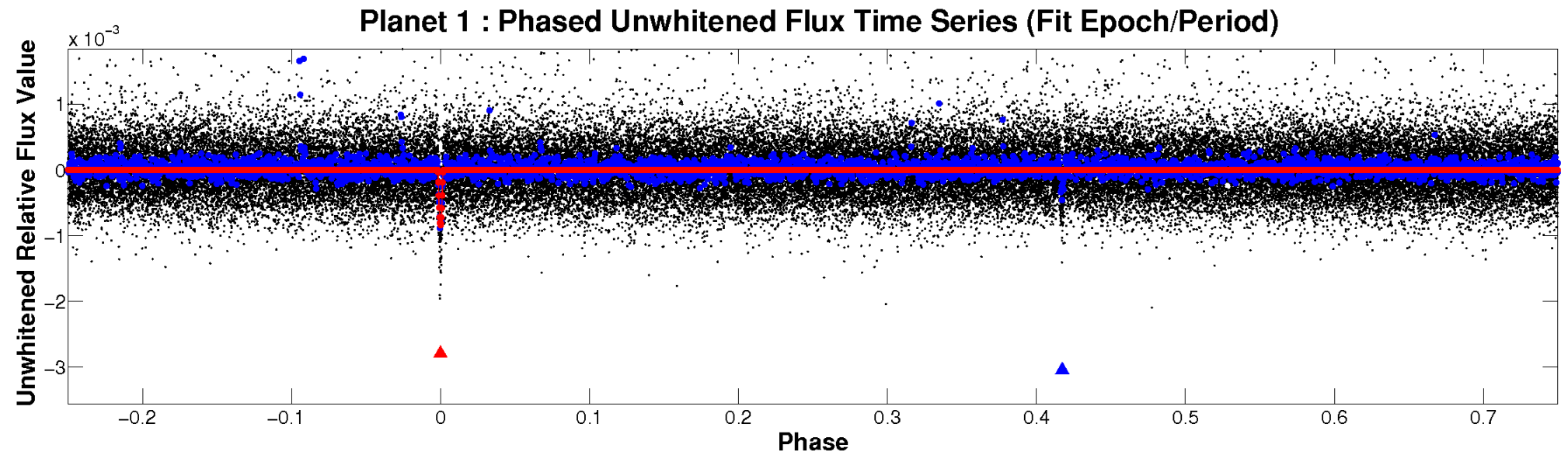


ALT Odd/Even

TCE 005350447-01

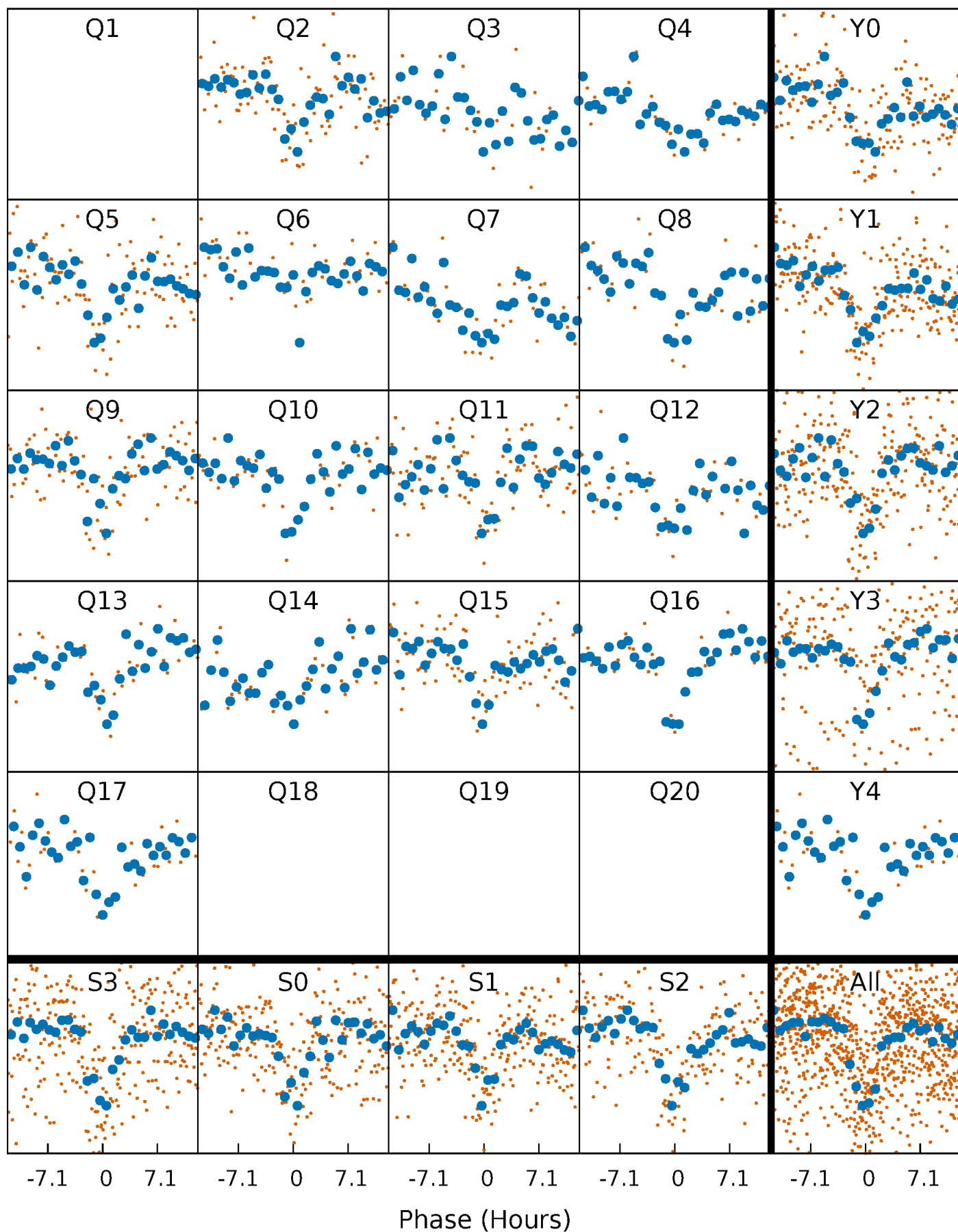


Non-Whitened Vs. Whitened Light Curve



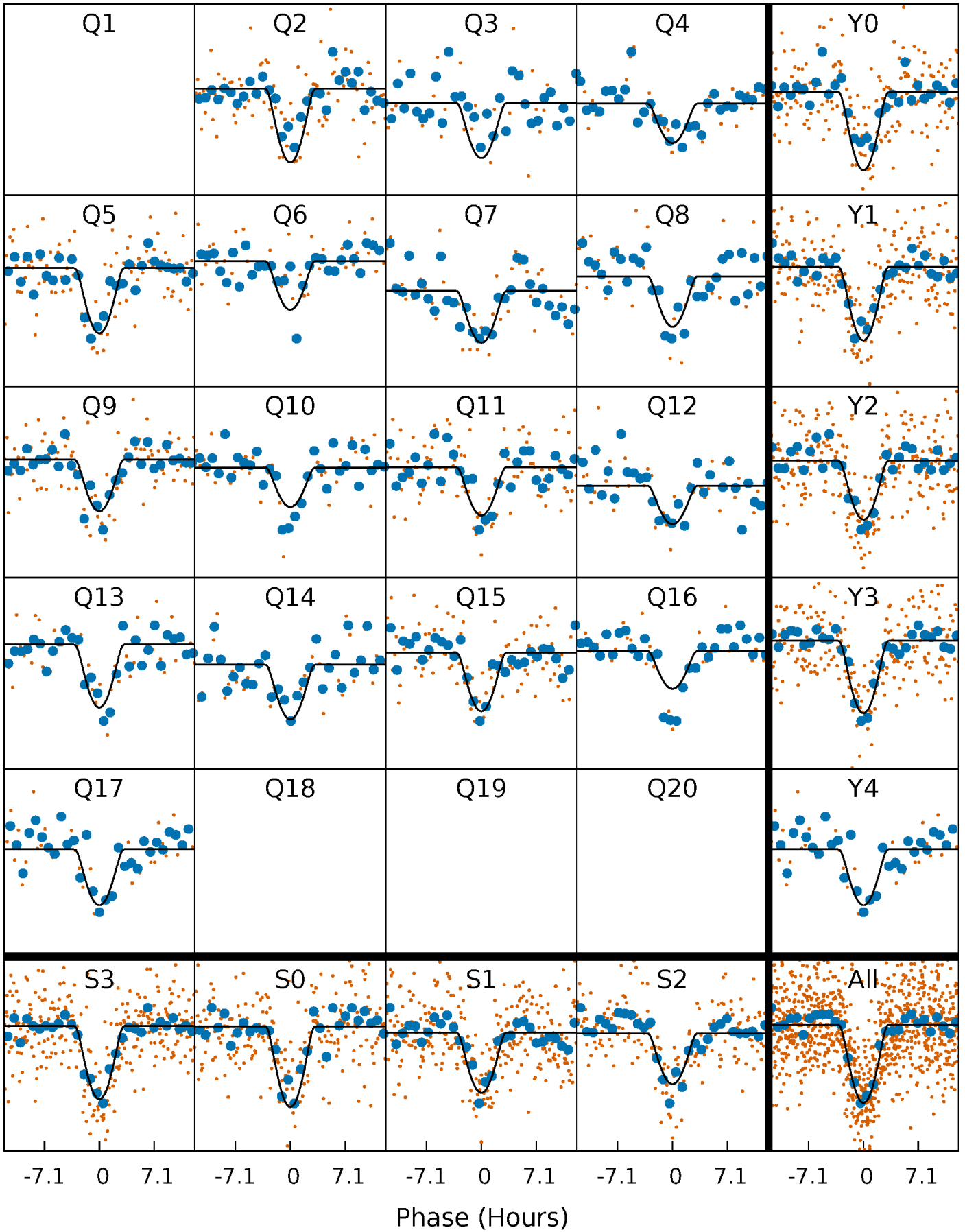
PDC Quarter-Phased Transit Curves

TCE 005350447-01 P= 70.751120 Days $T_0=175.373262$ (BKJD)



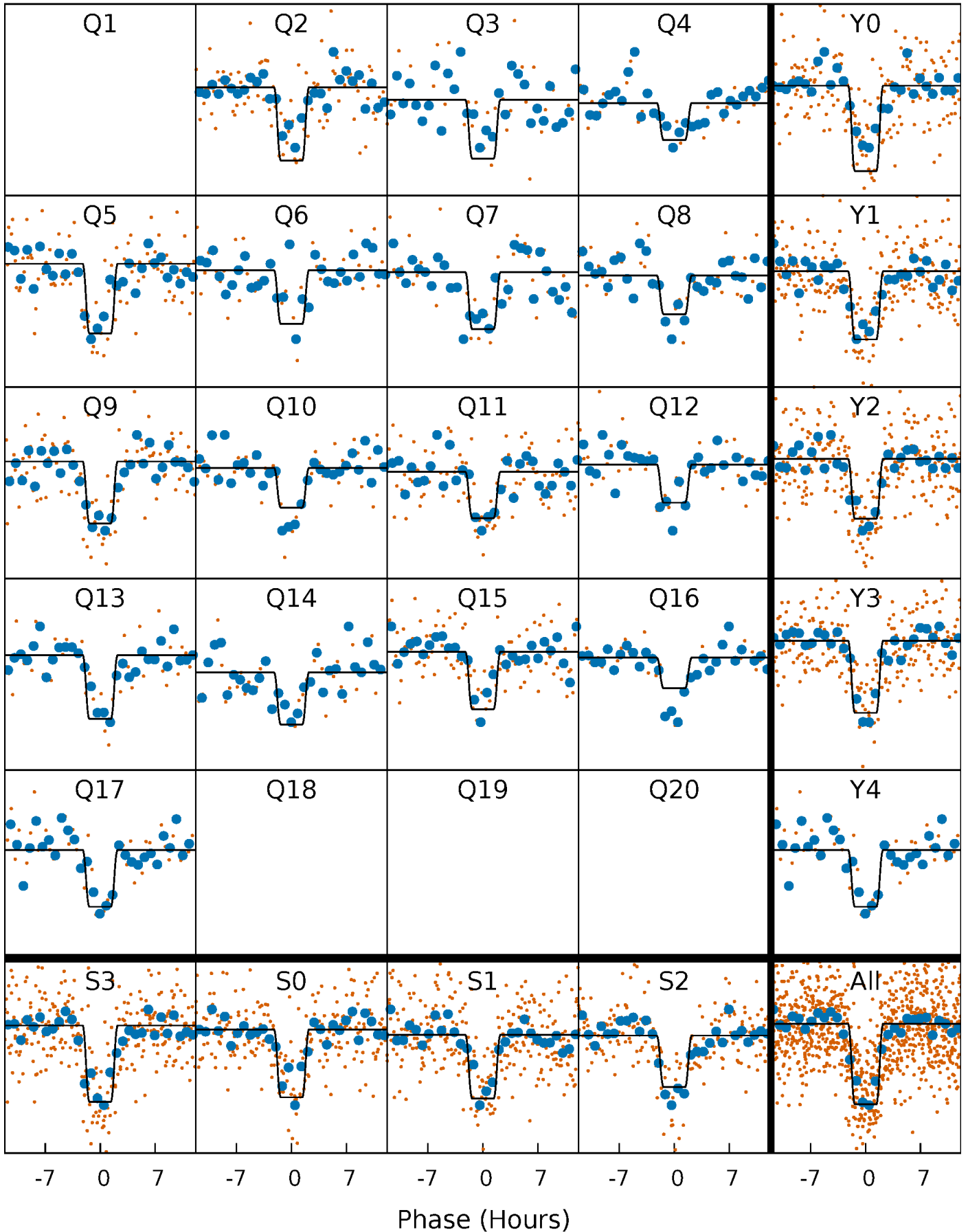
DV Quarter-Phased Transit Curves

TCE 005350447-01 P= 70.751120 Days $T_0=175.373262$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

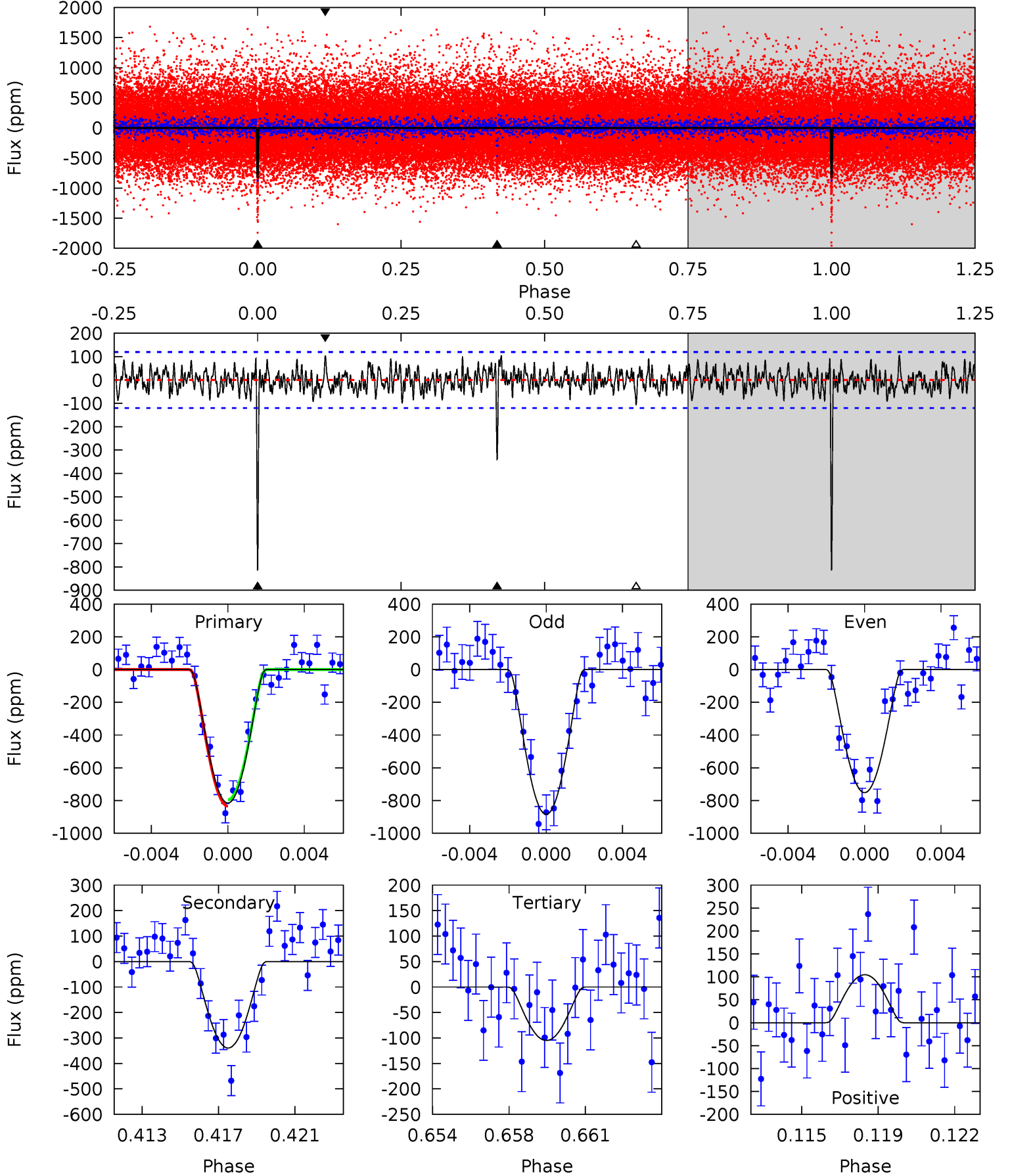
TCE 005350447-01 P= 70.750550 Days $T_0=175.379255$ (BKJD)



DV Model-Shift Uniqueness Test

005350447-01, $P = 70.751120$ Days, $E = 104.622142$ Days

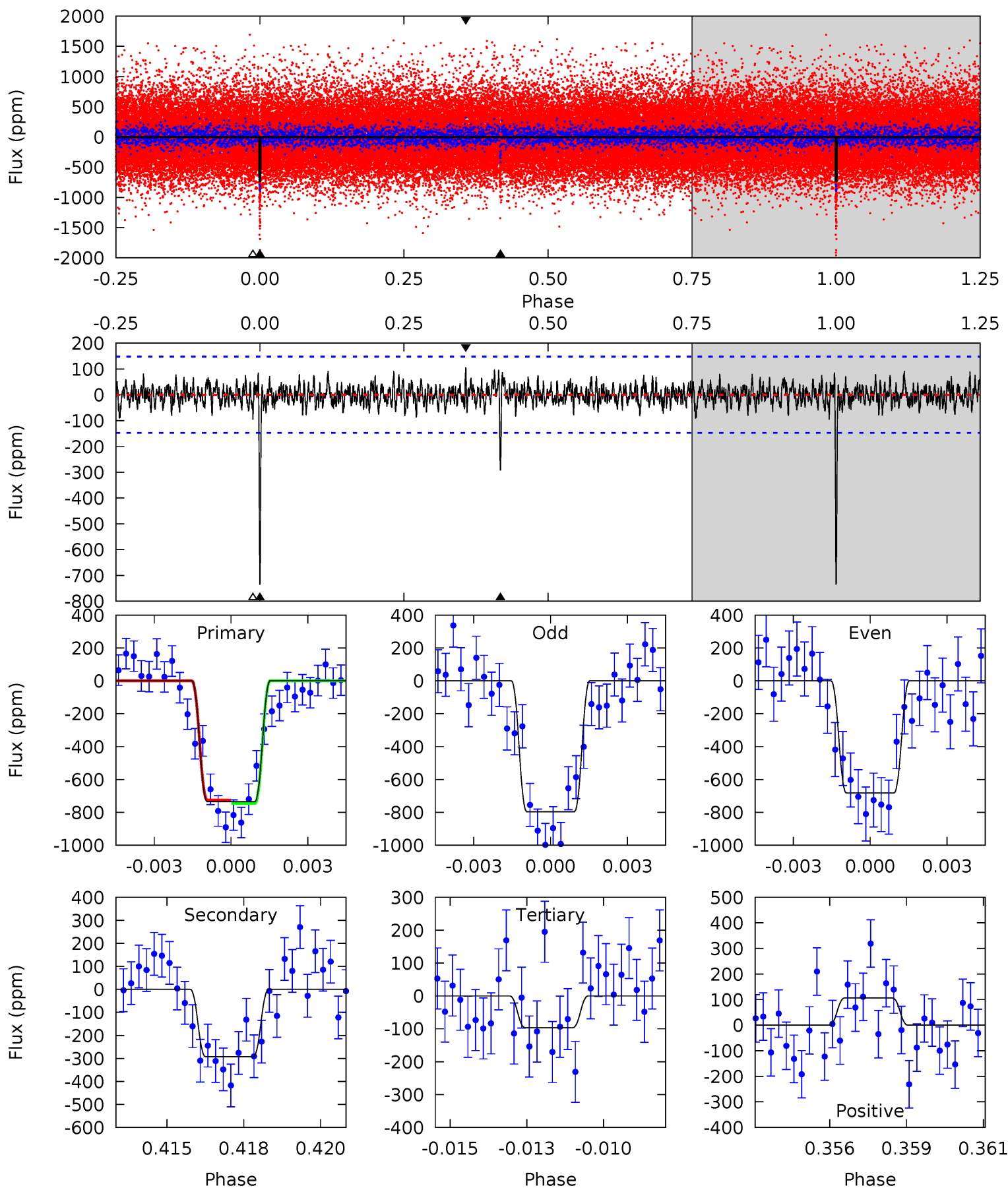
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.4	14.7	4.56	4.54	5.21	2.89	1.55	30.9	30.9	10.2	10.2	2.87	1.00	0.11	0.84



Alt Model-Shift Uniqueness Test

005350447-01, P = 70.750550 Days, E = 104.628705 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	10.5	3.46	3.81	5.28	3.01	1.08	22.8	22.5	7.02	6.67	2.04	1.03	0.13	0.38



Stellar Parameters For KIC 005350447

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5771^{+173}_{-173}	$4.400^{+0.153}_{-0.187}$	$-0.460^{+0.300}_{-0.300}$	$0.936^{+0.250}_{-0.167}$	$0.802^{+0.118}_{-0.055}$	$1.379^{+1.028}_{-0.687}$
	+3%/-3%	+3%/-4%	+65%/-65%	+27%/-18%	+15%/-7%	+75%/-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 005350447-01 / KOI 4008.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-339 ± 23	$5.70^{+5.32}_{-3.59}$	619^{+47}_{-39}	3726^{+1691}_{-671}	558^{+3635}_{-404}
Alt.	-293 ± 28	$5.19^{+4.86}_{-3.48}$	621^{+43}_{-39}	3759^{+2020}_{-656}	595^{+4694}_{-440}

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 $A_{obs} \gg 1.0$

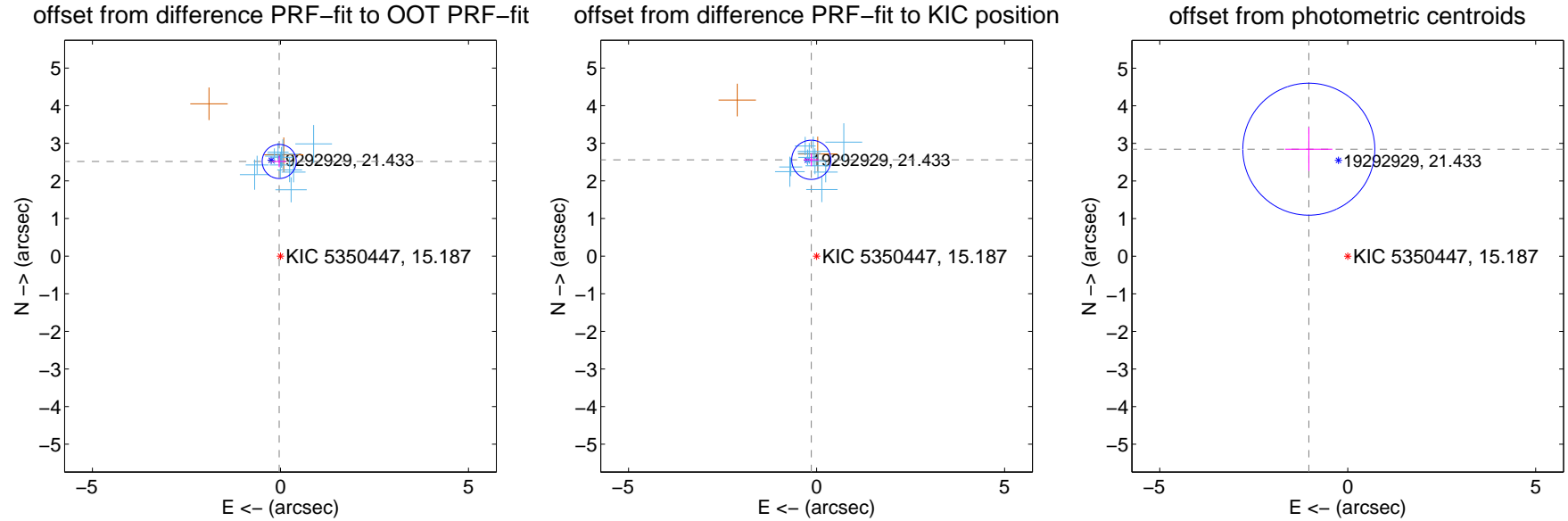
DV Centroid Data

Supplemental centroid analysis for 005350447-01. Kepler magnitude: 15.19. Transit SNR 19.92

There are 11 quarters with good PRF difference image offsets

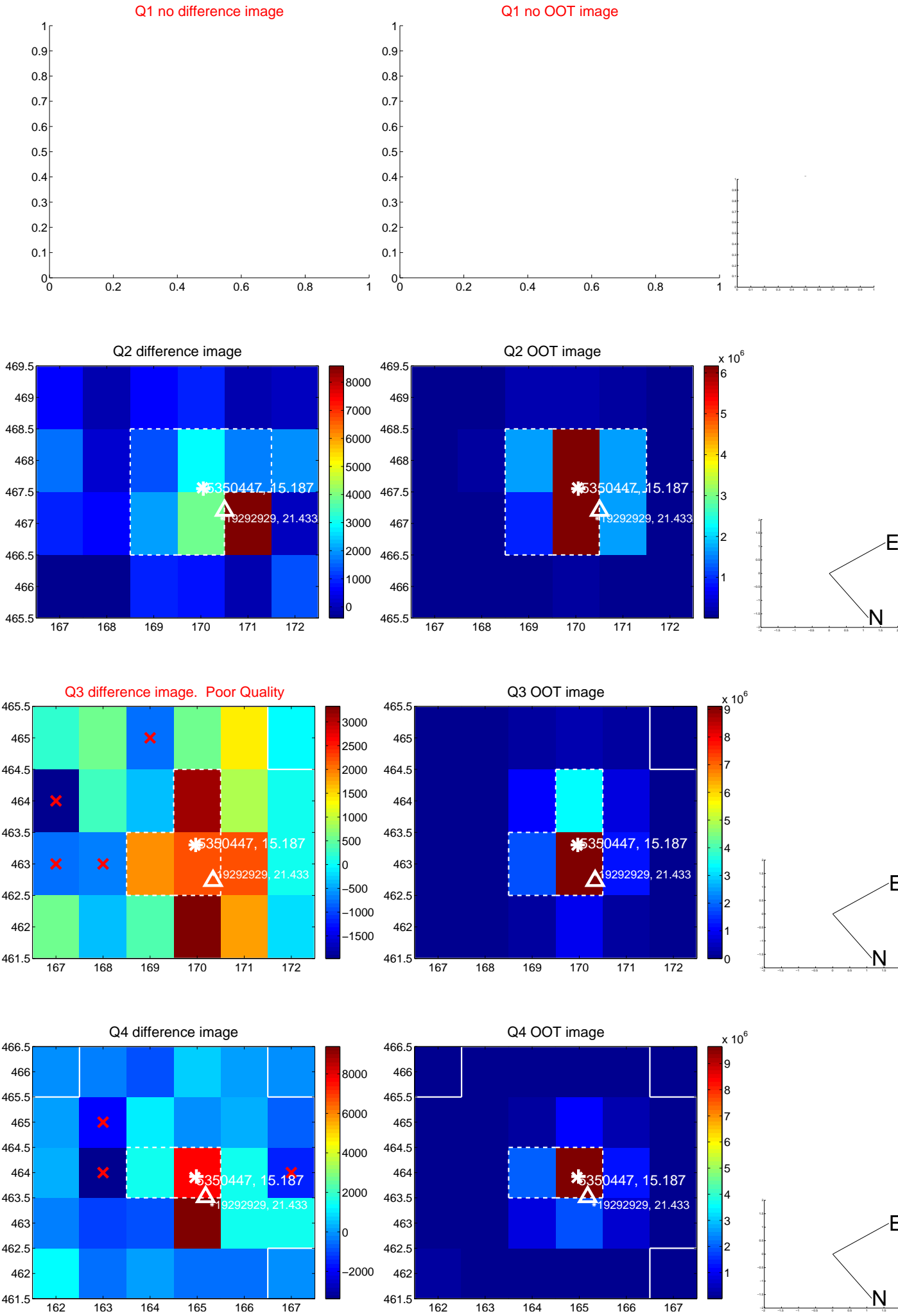
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.518 ± 0.151	16.66	0.033 ± 0.186	2.518 ± 0.150
PRF-fit source offset from KIC position	2.565 ± 0.174	14.75	0.141 ± 0.198	2.561 ± 0.168
photometric centroid source offset	3.03 ± 0.59	5.18	1.04 ± 0.63	2.85 ± 0.58

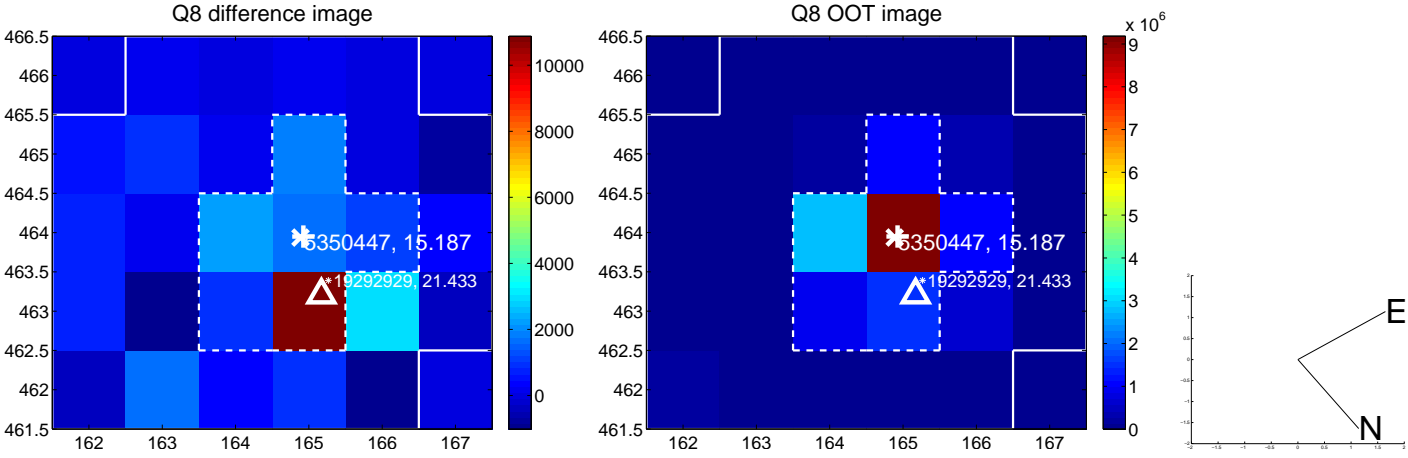
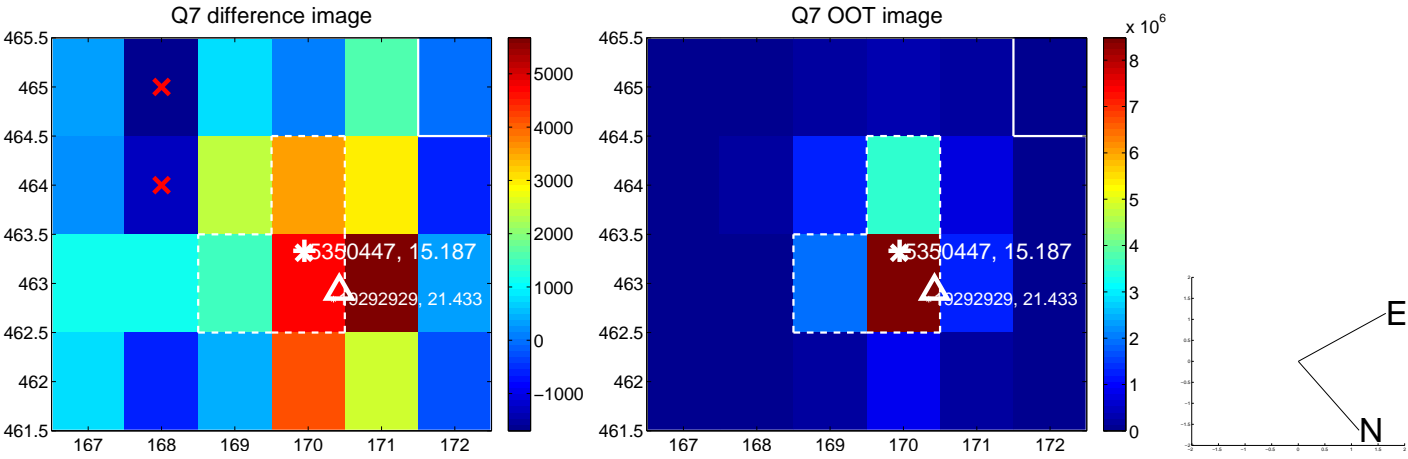
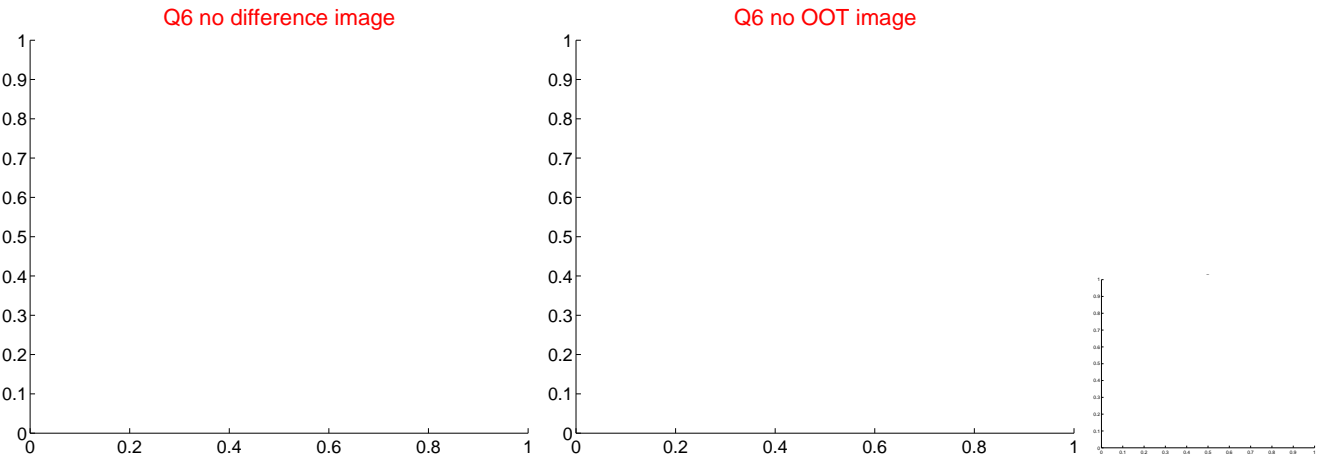
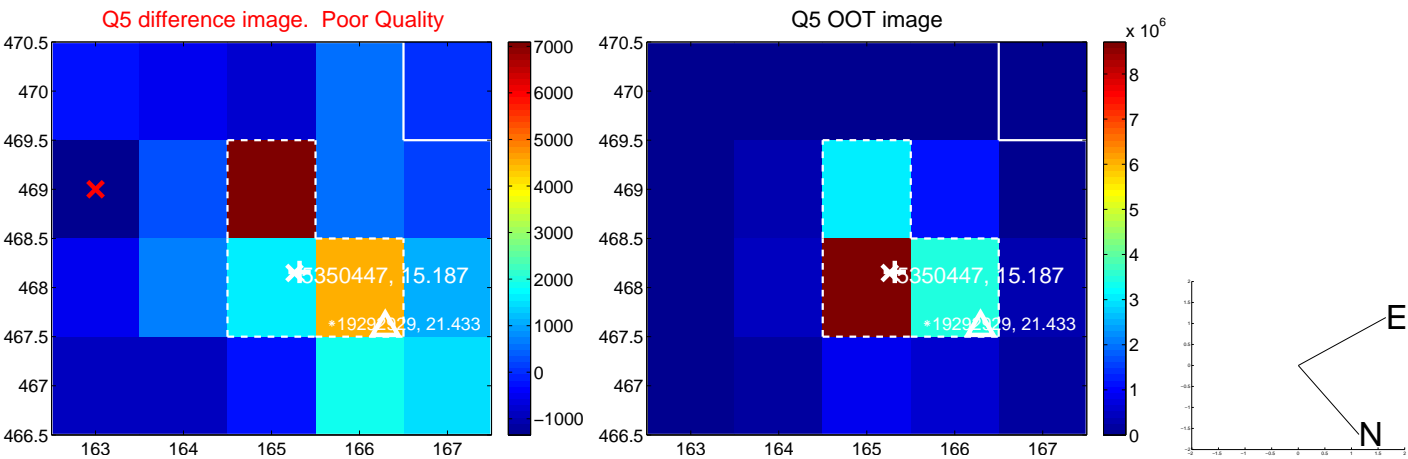


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

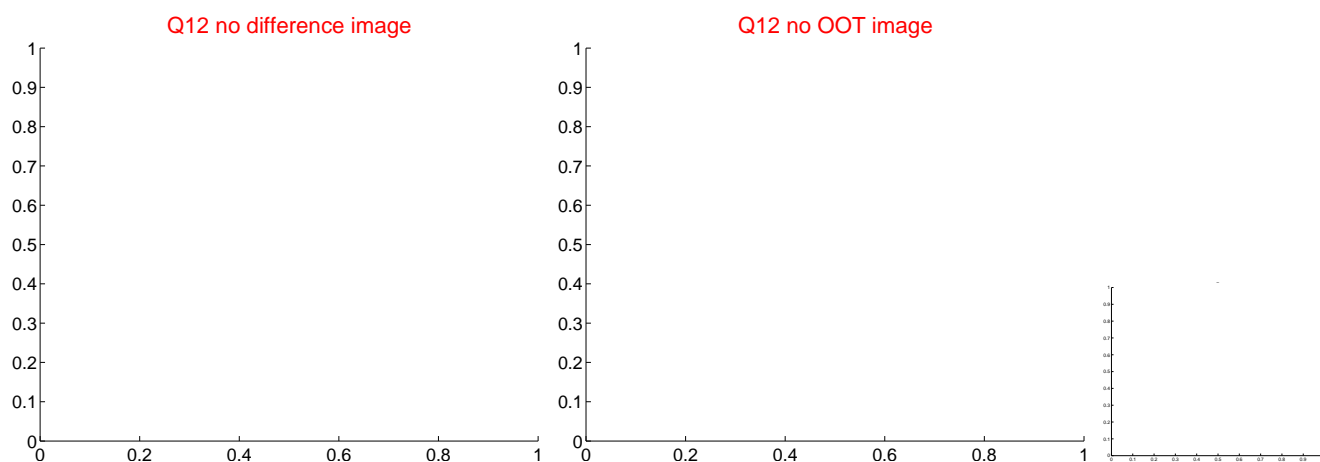
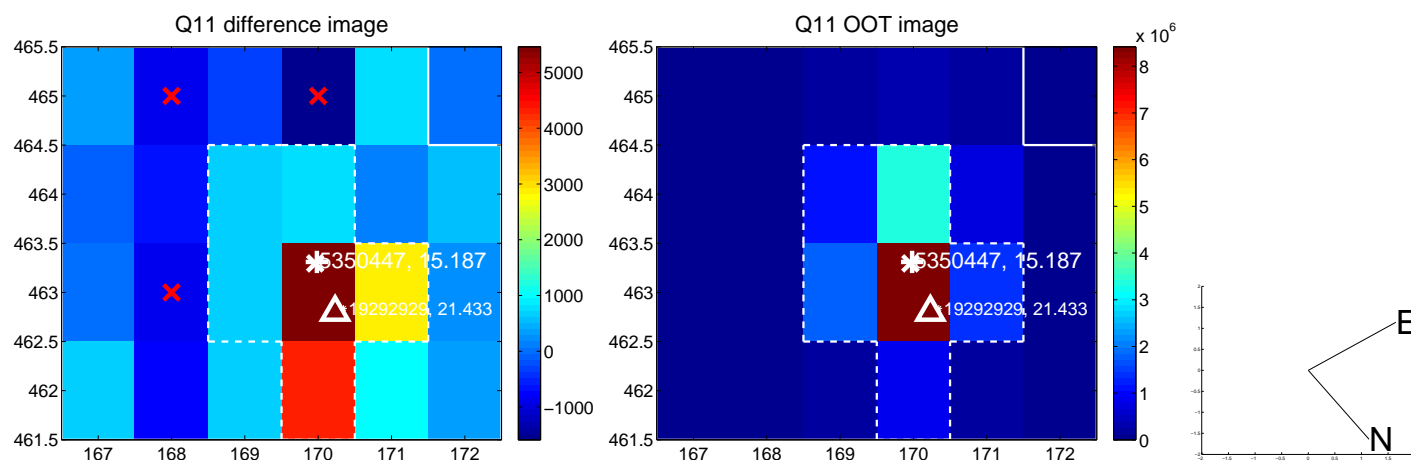
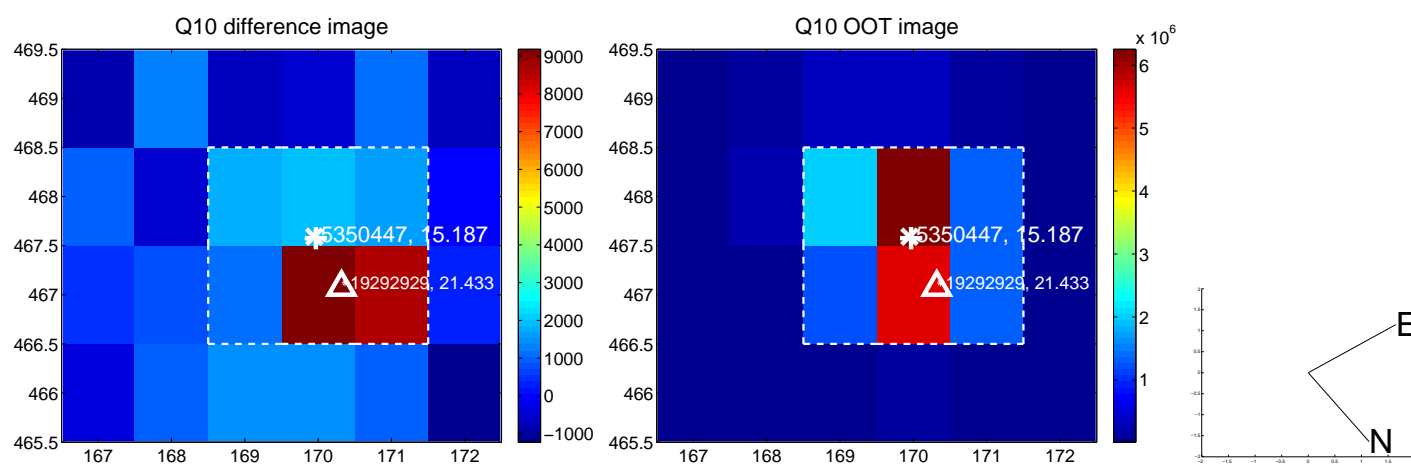
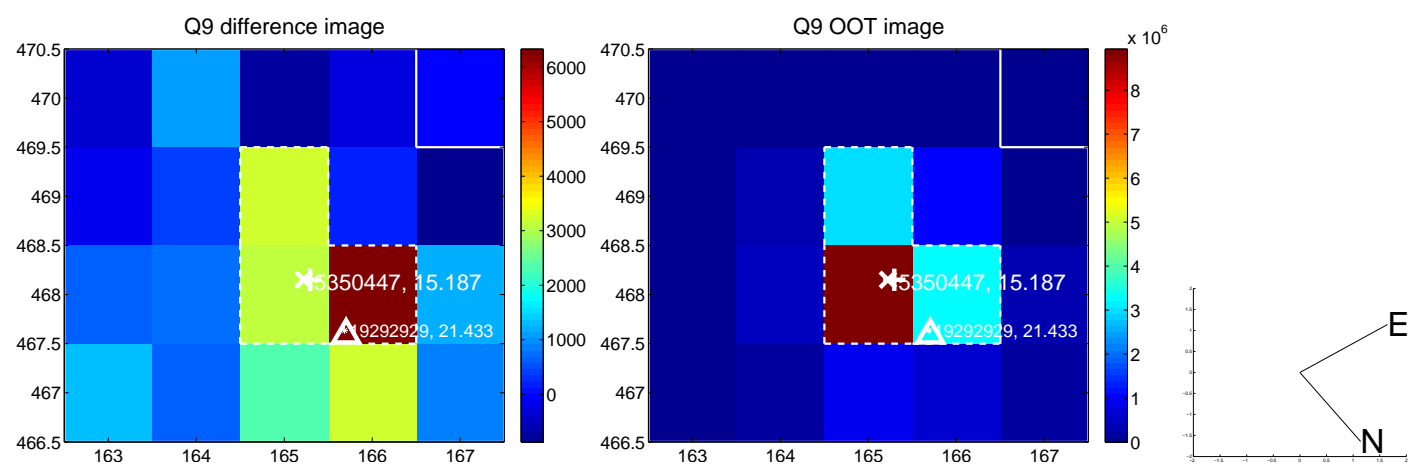
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



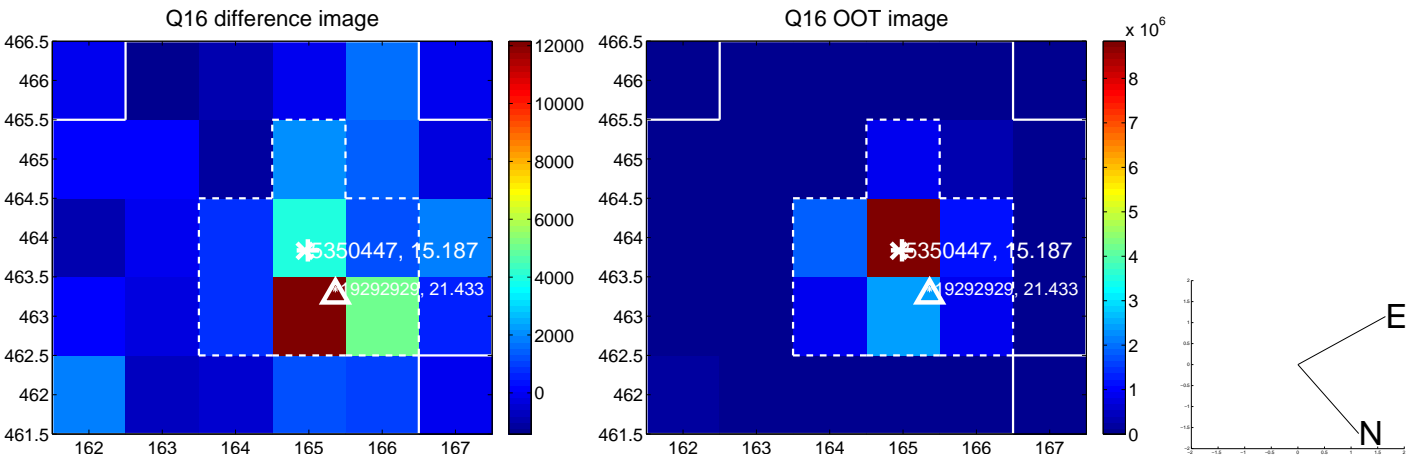
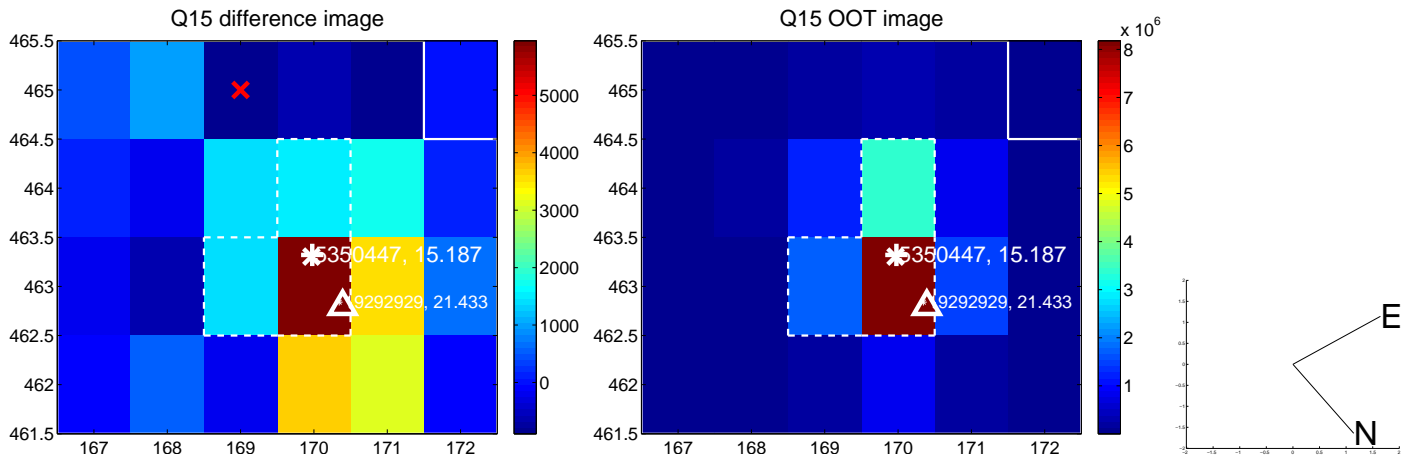
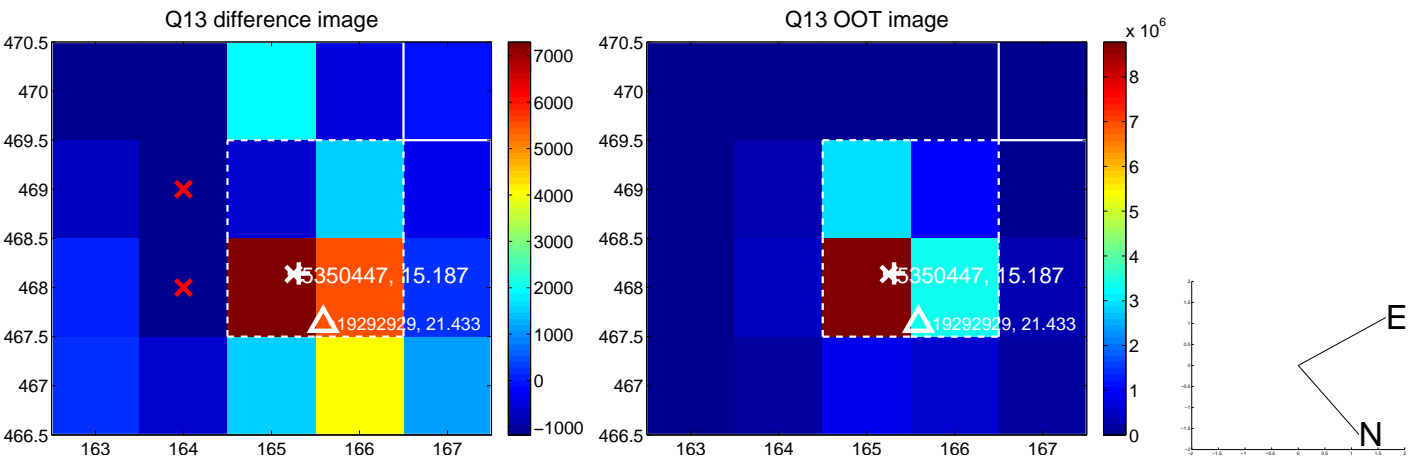
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



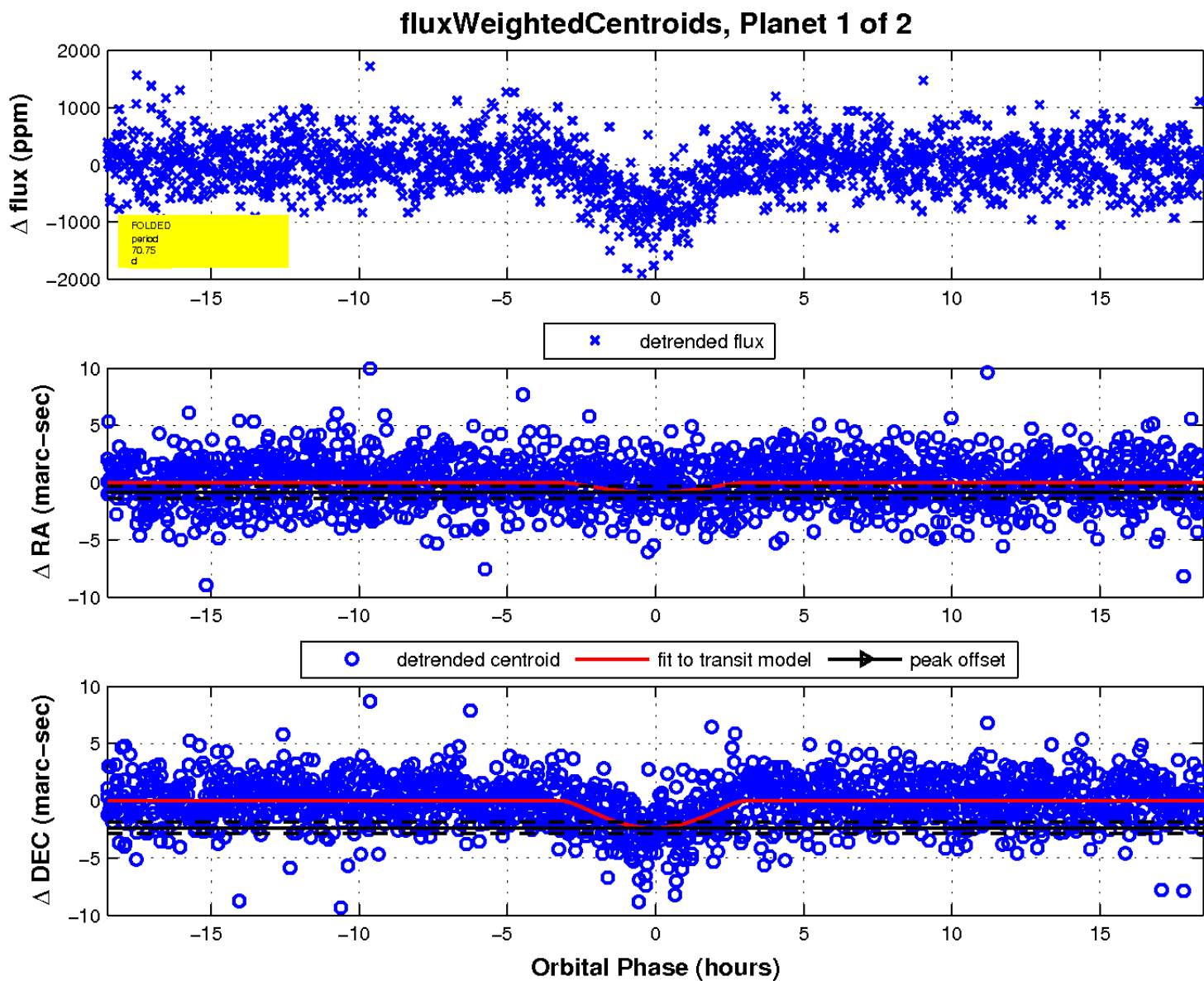
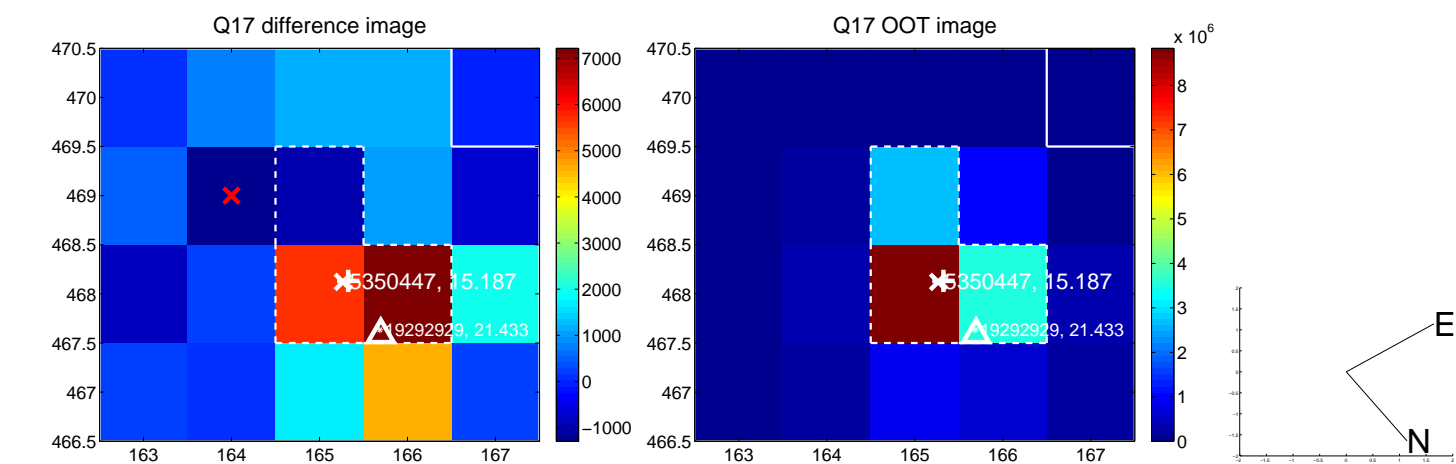
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

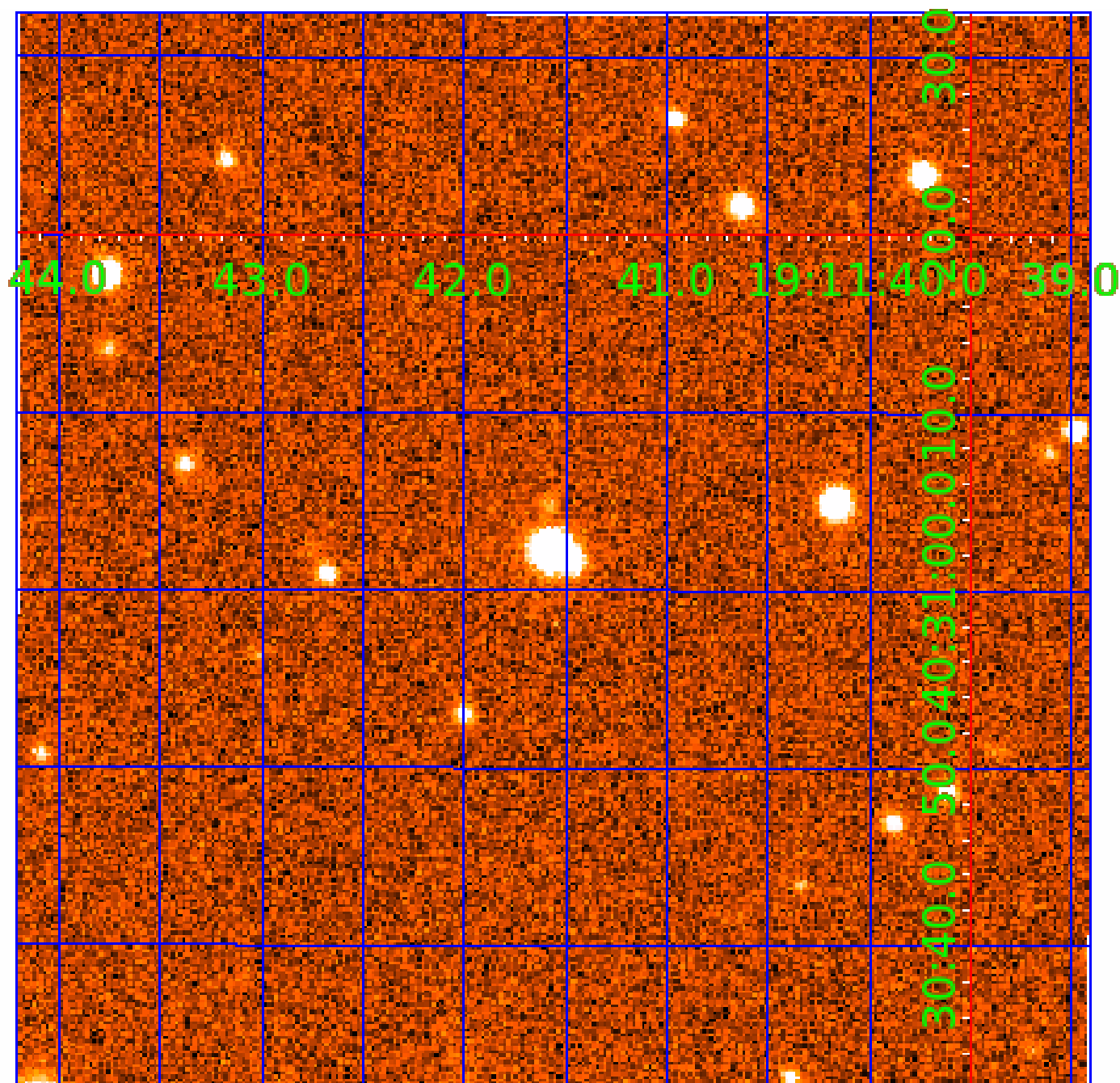


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005350447

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})
005350447-01	OBS	4008.01	70.751120	175.373262	843.6	6.180	18.3	19.9	0.94	5771	4.67	8.99
005350447-02	OBS	No	70.751890	134.144032	410.2	6.480	10.4	11.0	0.94	5771	2.41	8.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005350447-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005350447-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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 005350447-02

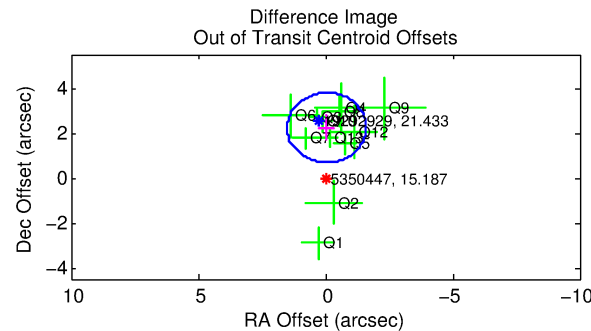
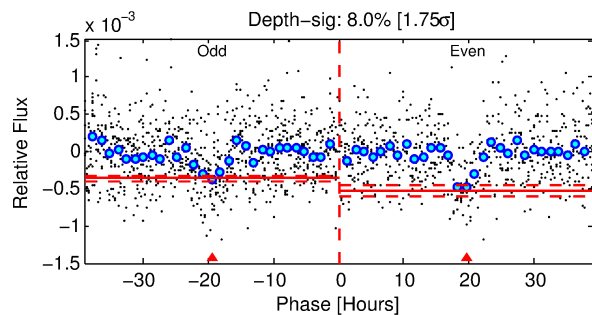
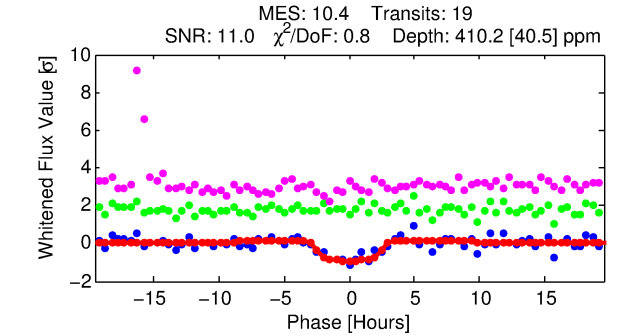
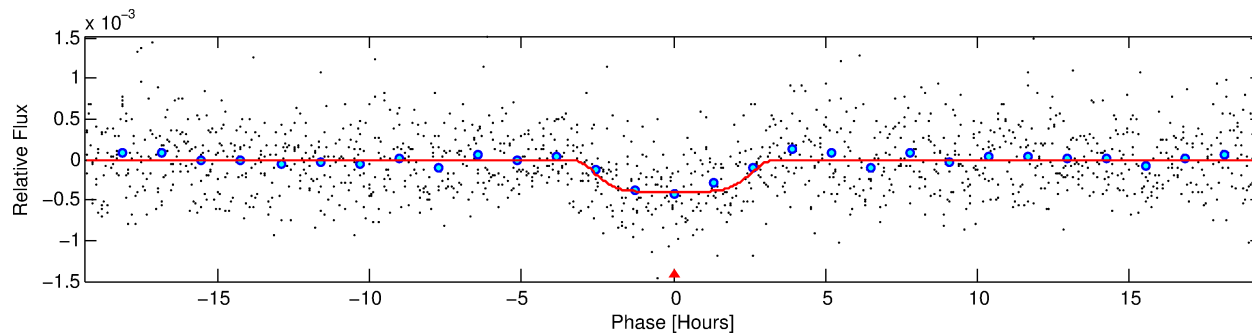
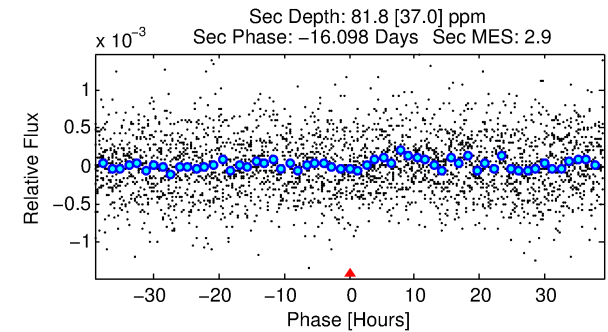
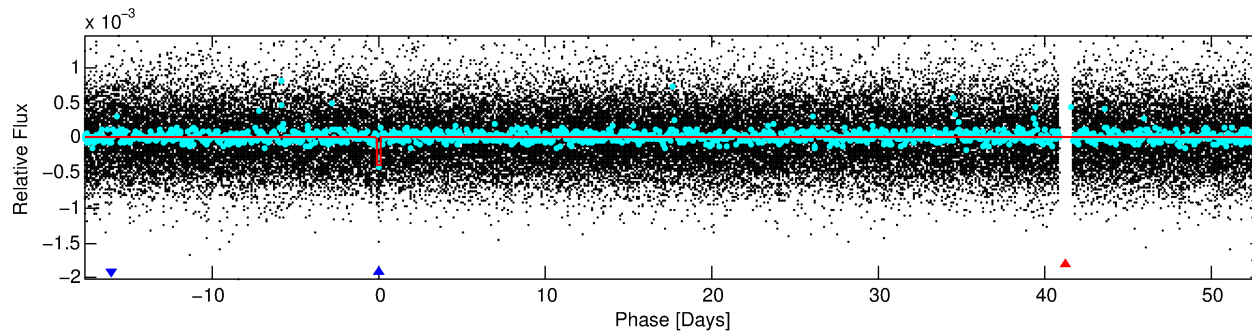
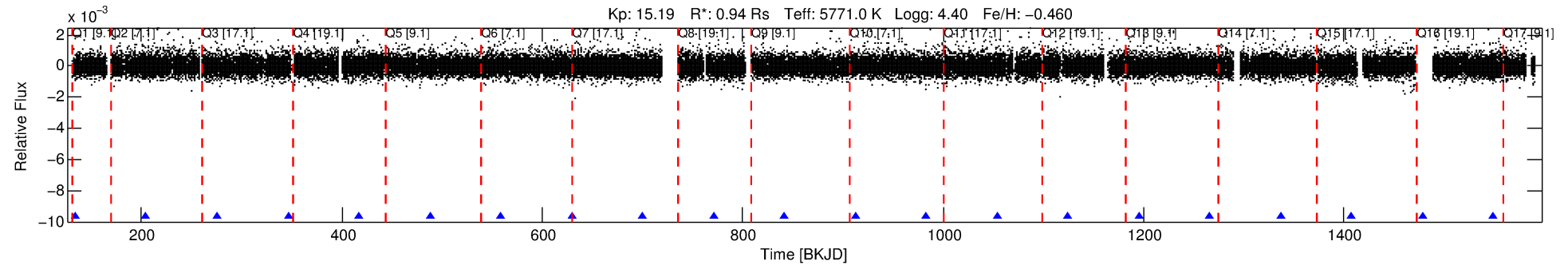
No Significant Match Found

DV One-Page Summary

KIC: 5350447 Candidate: 2 of 2 Period: 70.752 d

KOI: K04008 Corr: No Ephemeris Match

Kp: 15.19 R*: 0.94 Rs Teff: 5771.0 K Logg: 4.40 Fe/H: -0.460



DV Fit Results:

Period = 70.75189 [0.00104] d
Epoch = 134.1440 [0.0110] BKJD
Rp/R* = 0.0236 [0.0019]
a/R* = 30.80 [8.43]
b = 0.95 [0.03]
Seff = 8.99 [3.22]
Teq = 442 [40] K
Rp = 2.41 [0.67] Re
a = 0.3112 [0.0712] AU
Ag = 752.82 [442.28] [1.70σ]
Teffp = 3576 [443] K [7.05σ]

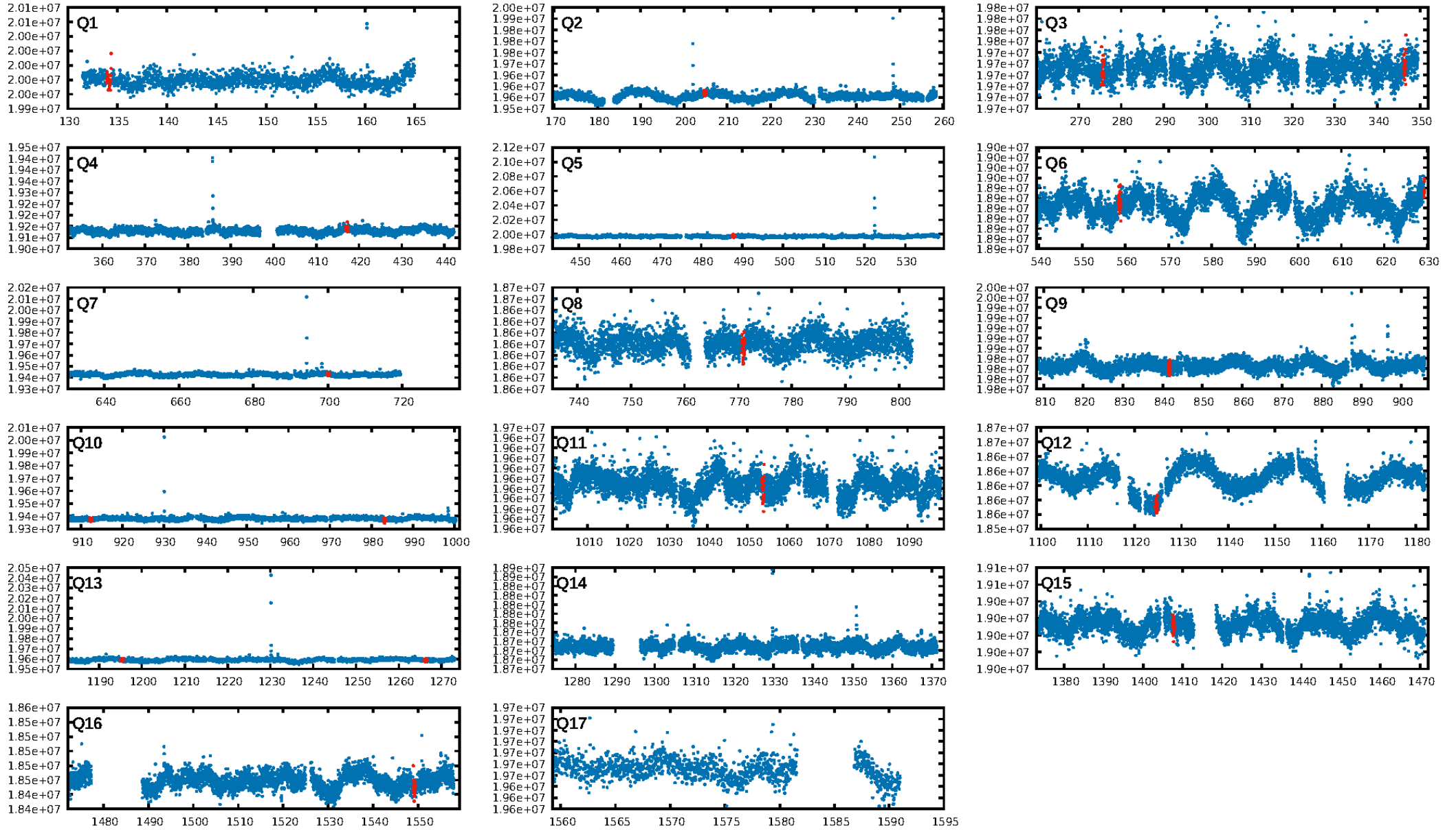
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 71.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.03e-24
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: 1.02
Centroid-sig: 0.0%
Centroid-so: 5.338 arcsec [4.99σ]
OotOffset-rm: 2.235 arcsec [4.32σ]
KicOffset-rm: 2.314 arcsec [4.57σ]
OotOffset-st: 3/2/3/4 [12]
KicOffset-st: 3/2/3/4 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 1.00 [14/14]

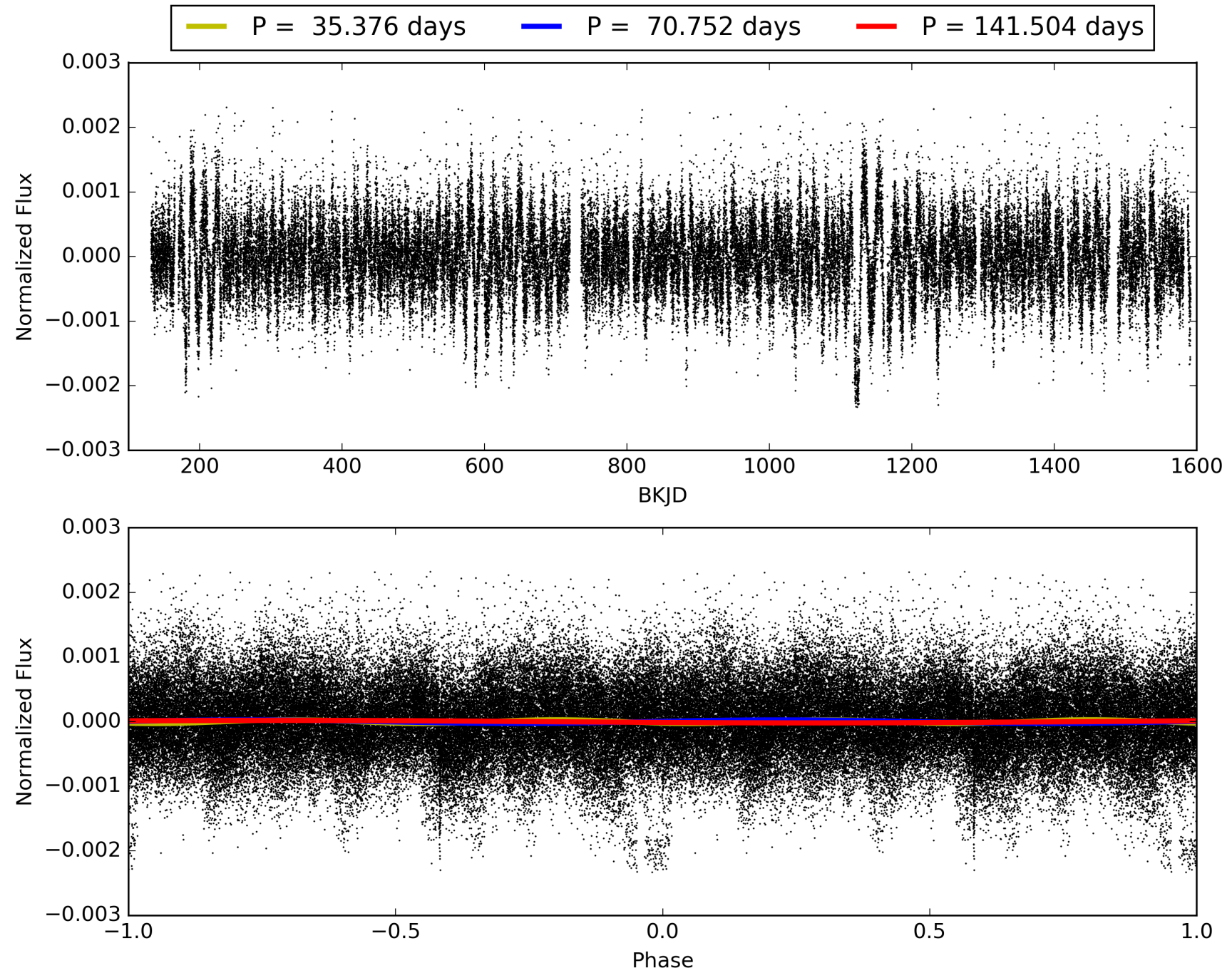
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:29:07 Z

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

TCE 005350447-02, PDC Light Curves

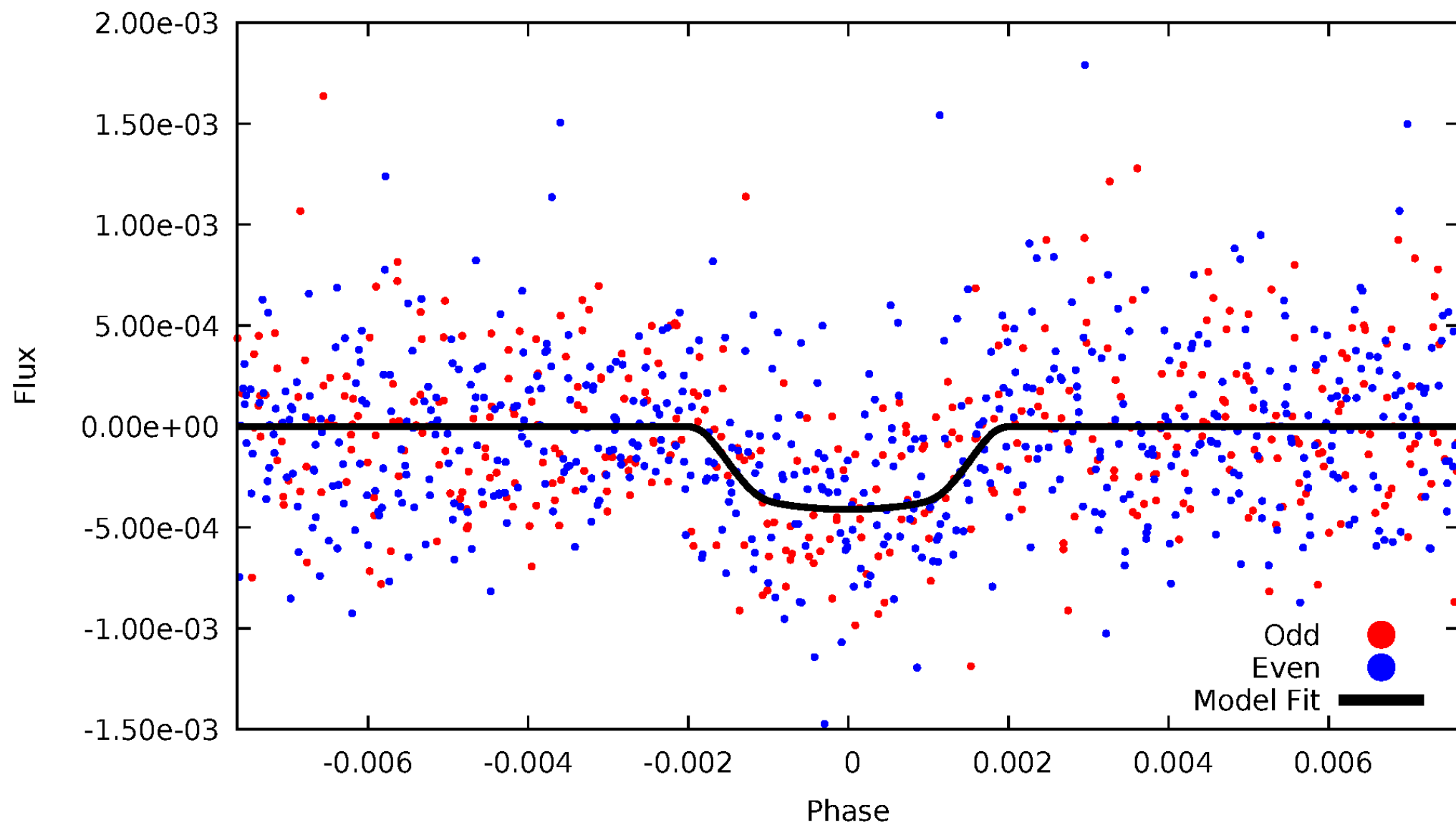


TCE 005350447-02



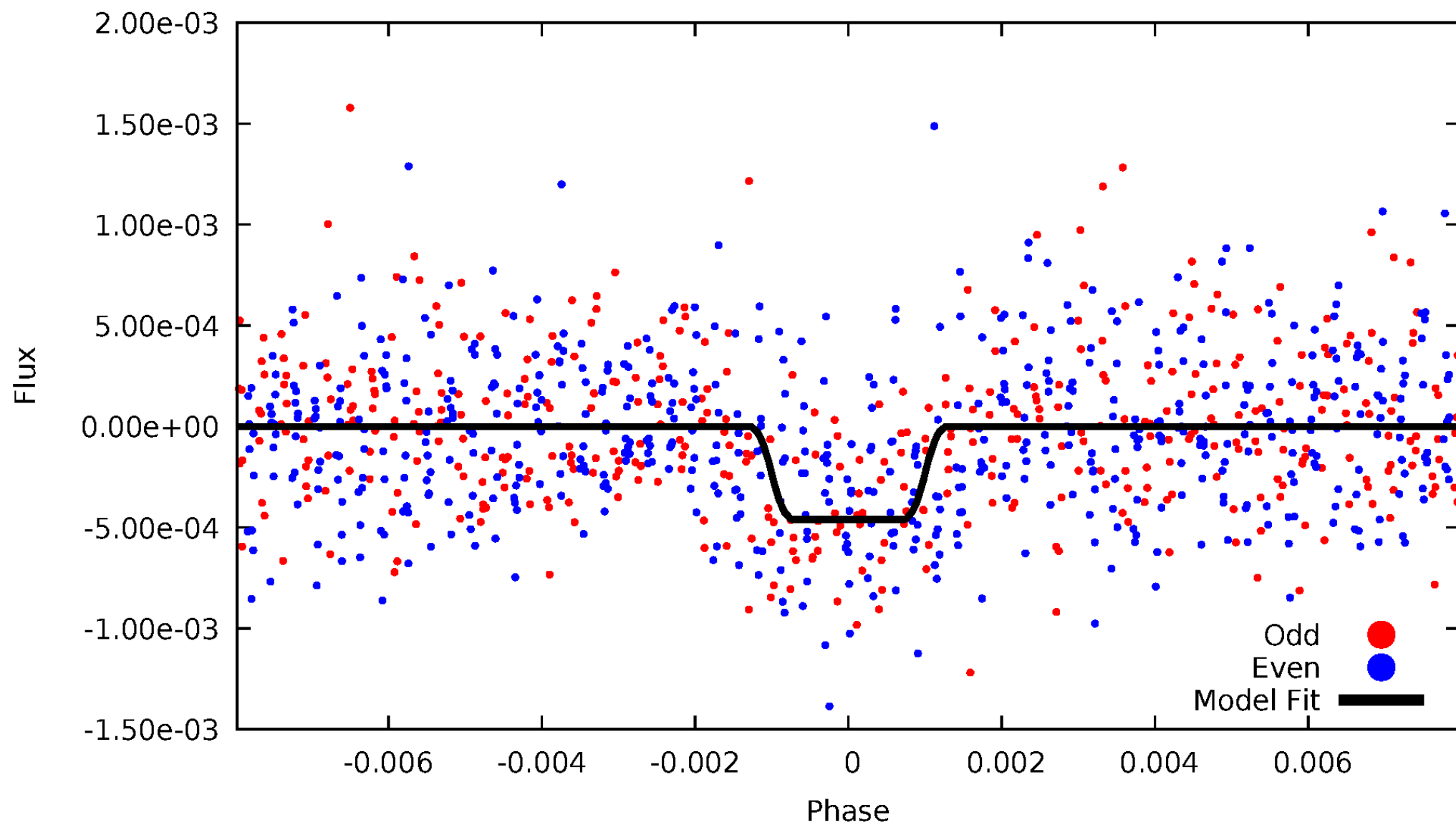
DV Odd/Even

TCE 005350447-02



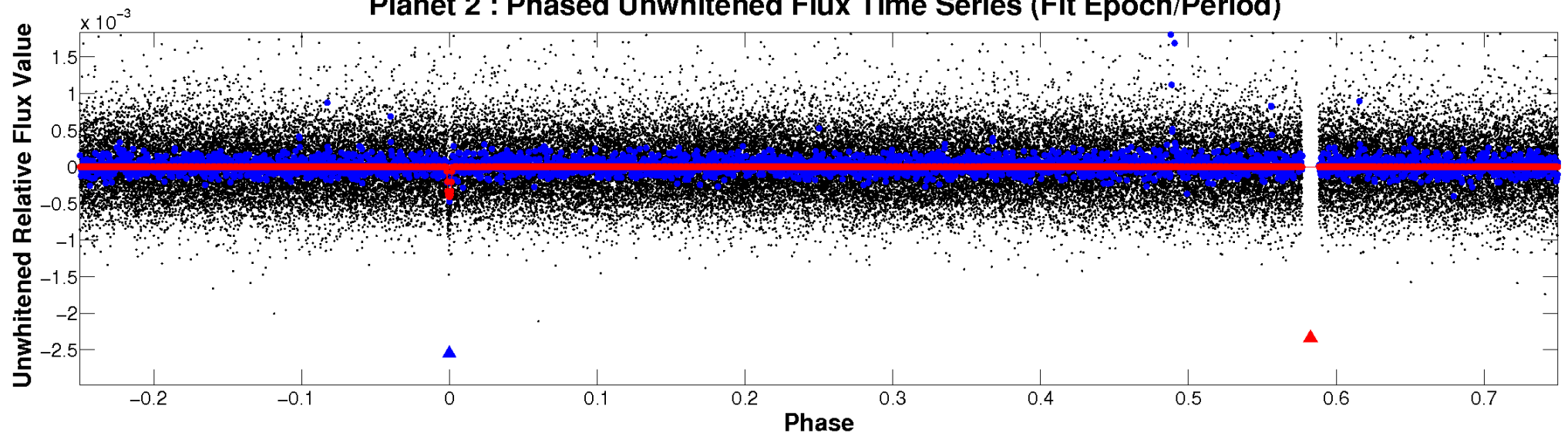
ALT Odd/Even

TCE 005350447-02

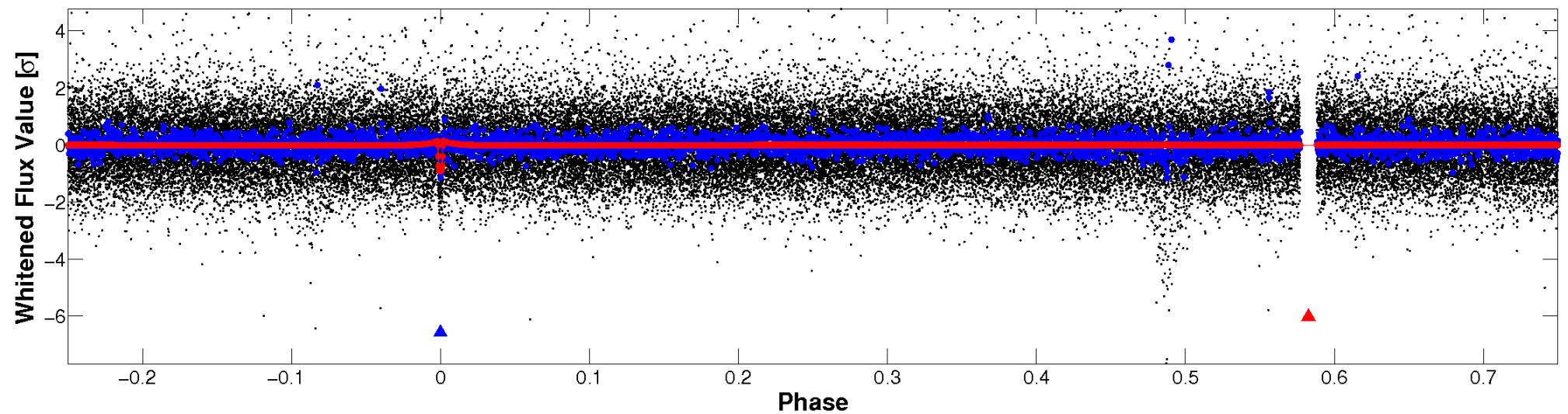


Non-Whitened Vs. Whitened Light Curve

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

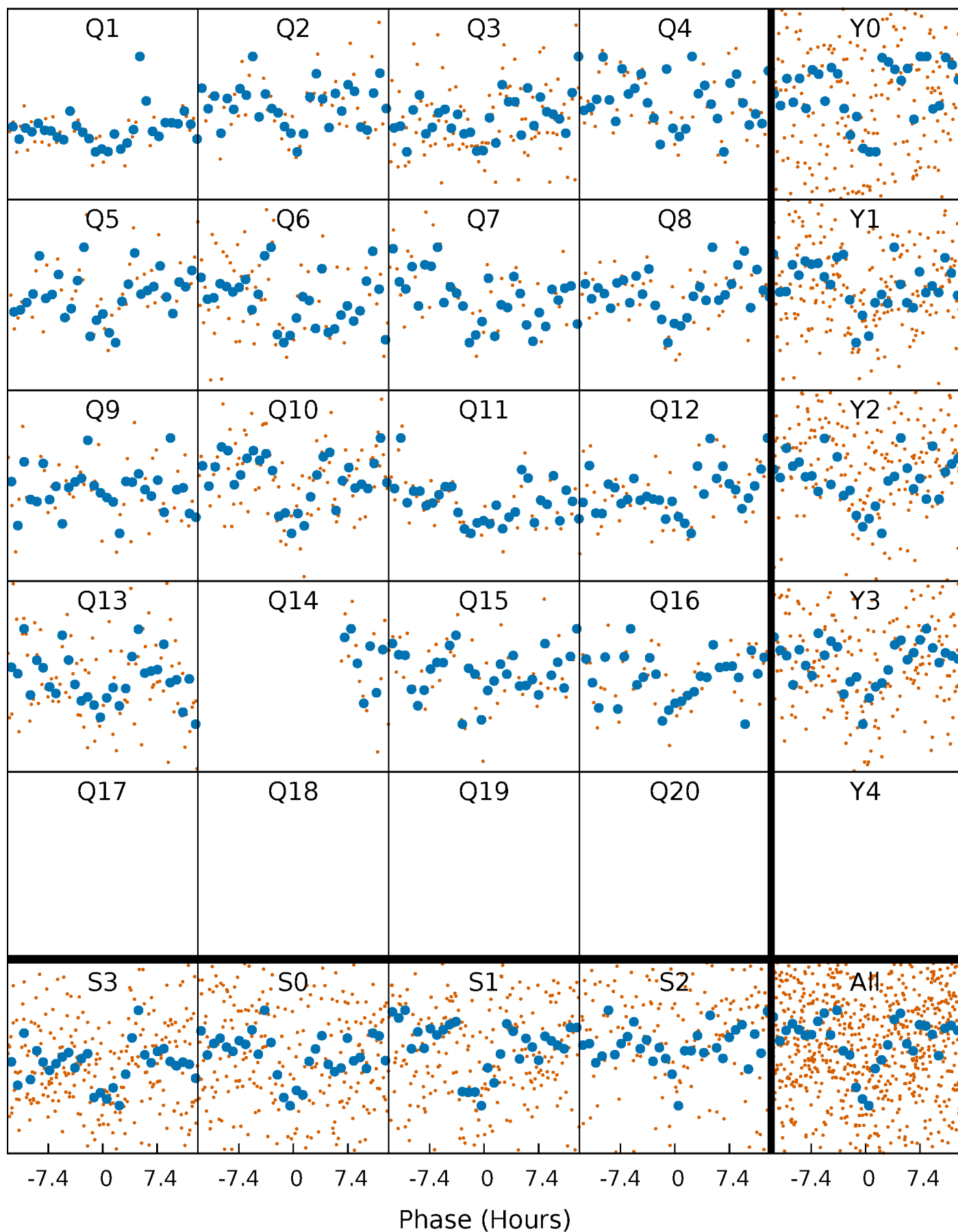


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



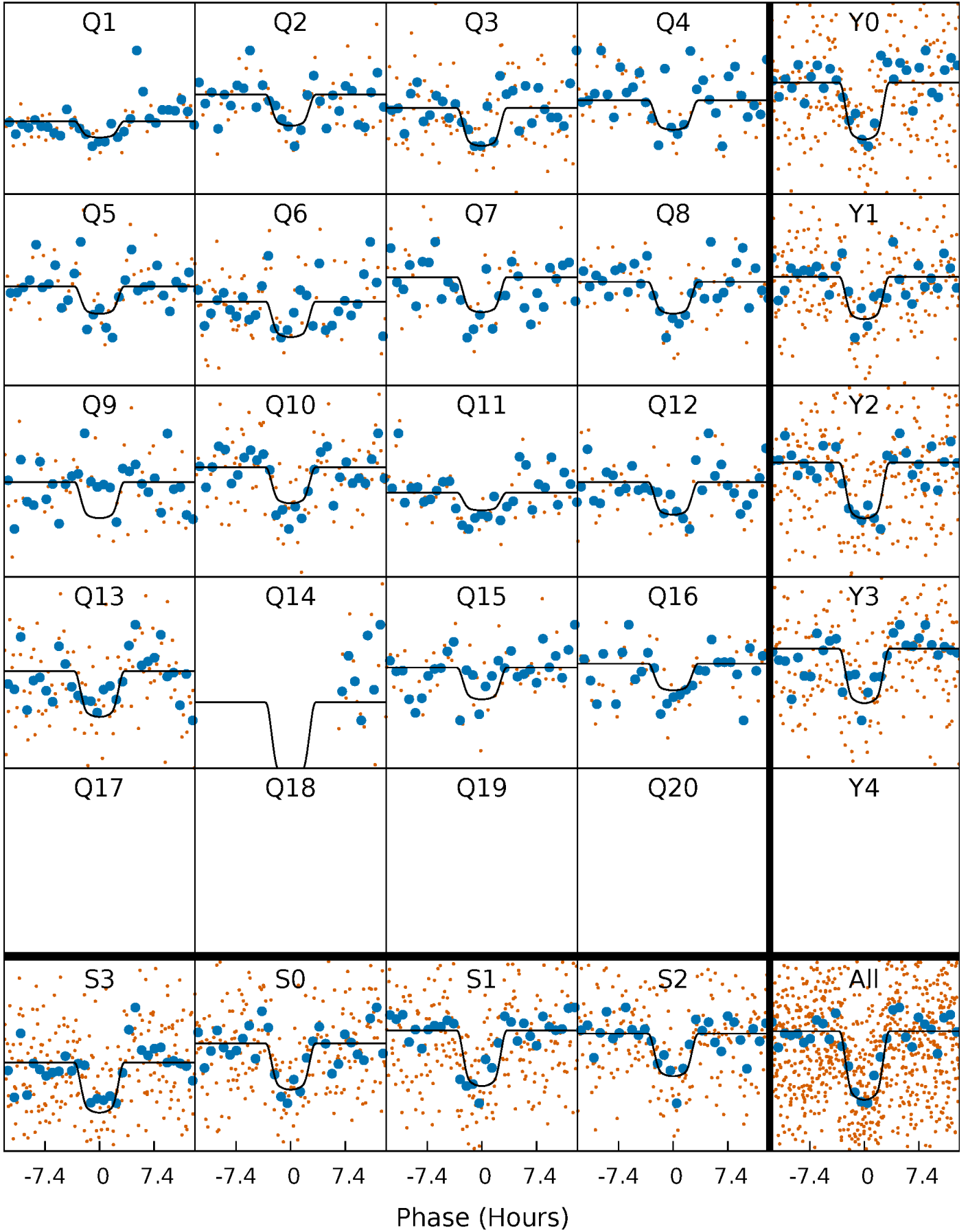
PDC Quarter-Phased Transit Curves

TCE 005350447-02 P= 70.751890 Days $T_0=134.144032$ (BKJD)



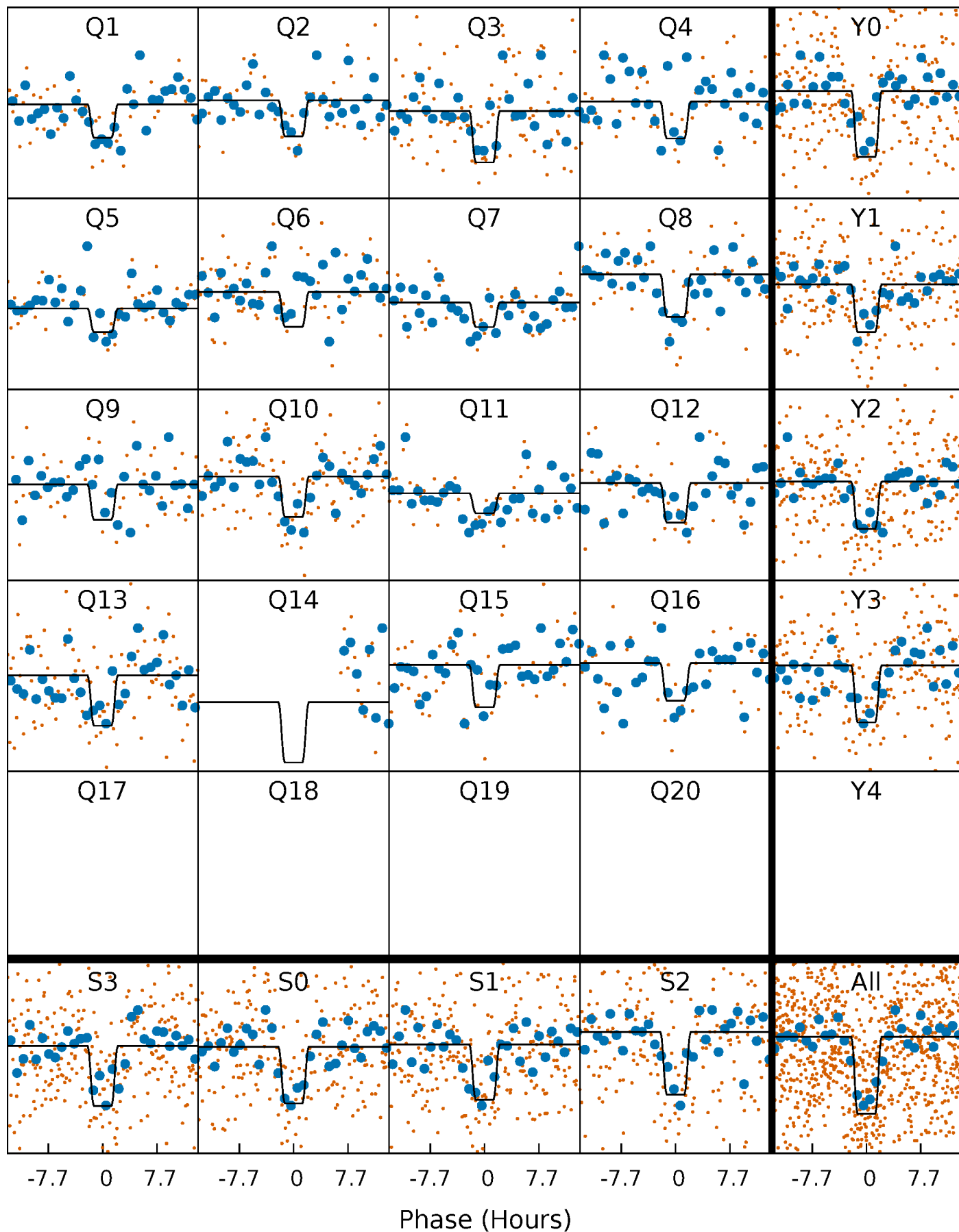
DV Quarter-Phased Transit Curves

TCE 005350447-02 P= 70.751890 Days $T_0=134.144032$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

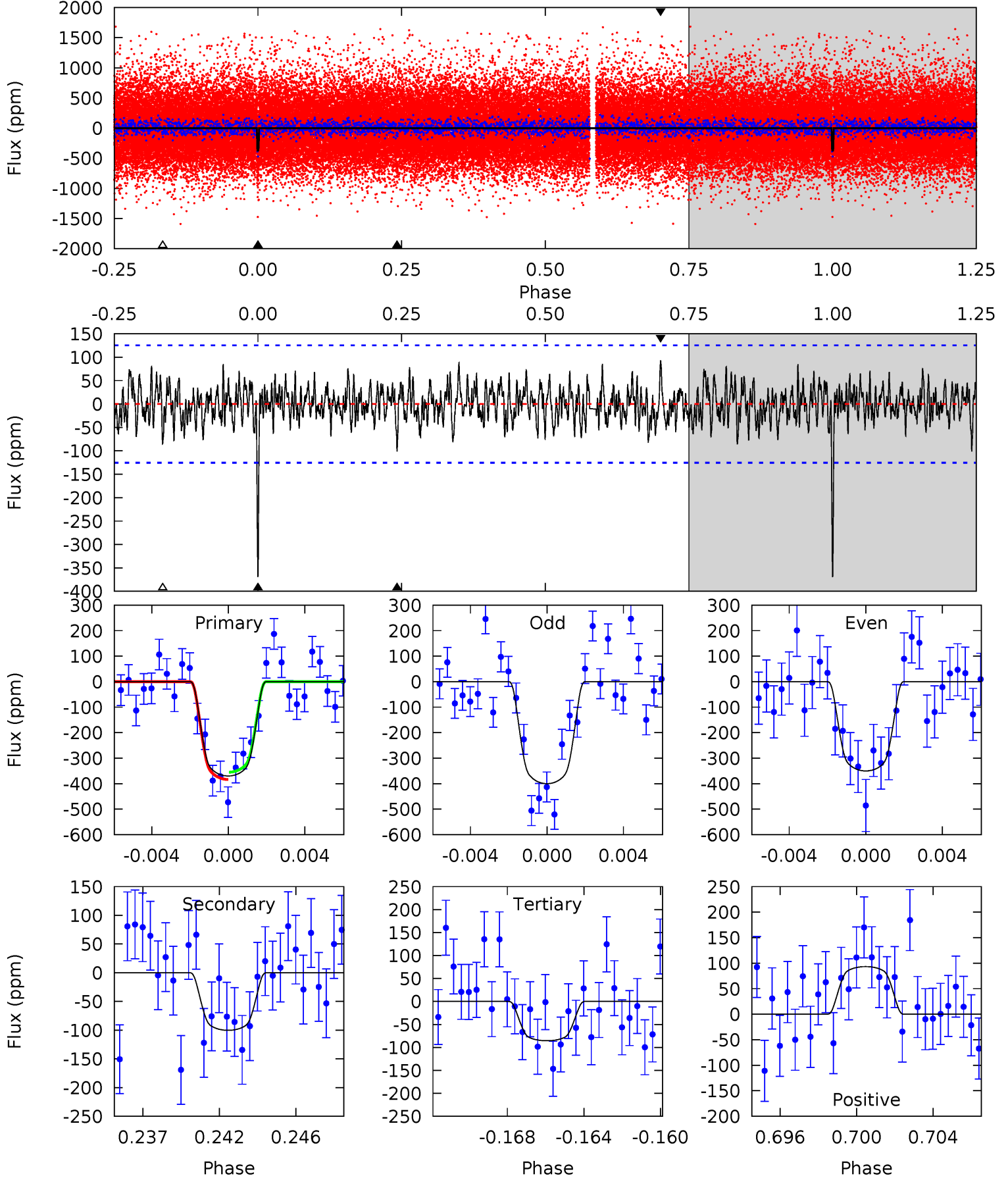
TCE 005350447-02 P= 70.751266 Days $T_0=134.148009$ (BKJD)



DV Model-Shift Uniqueness Test

005350447-02, P = 70.751890 Days, E = 63.392142 Days

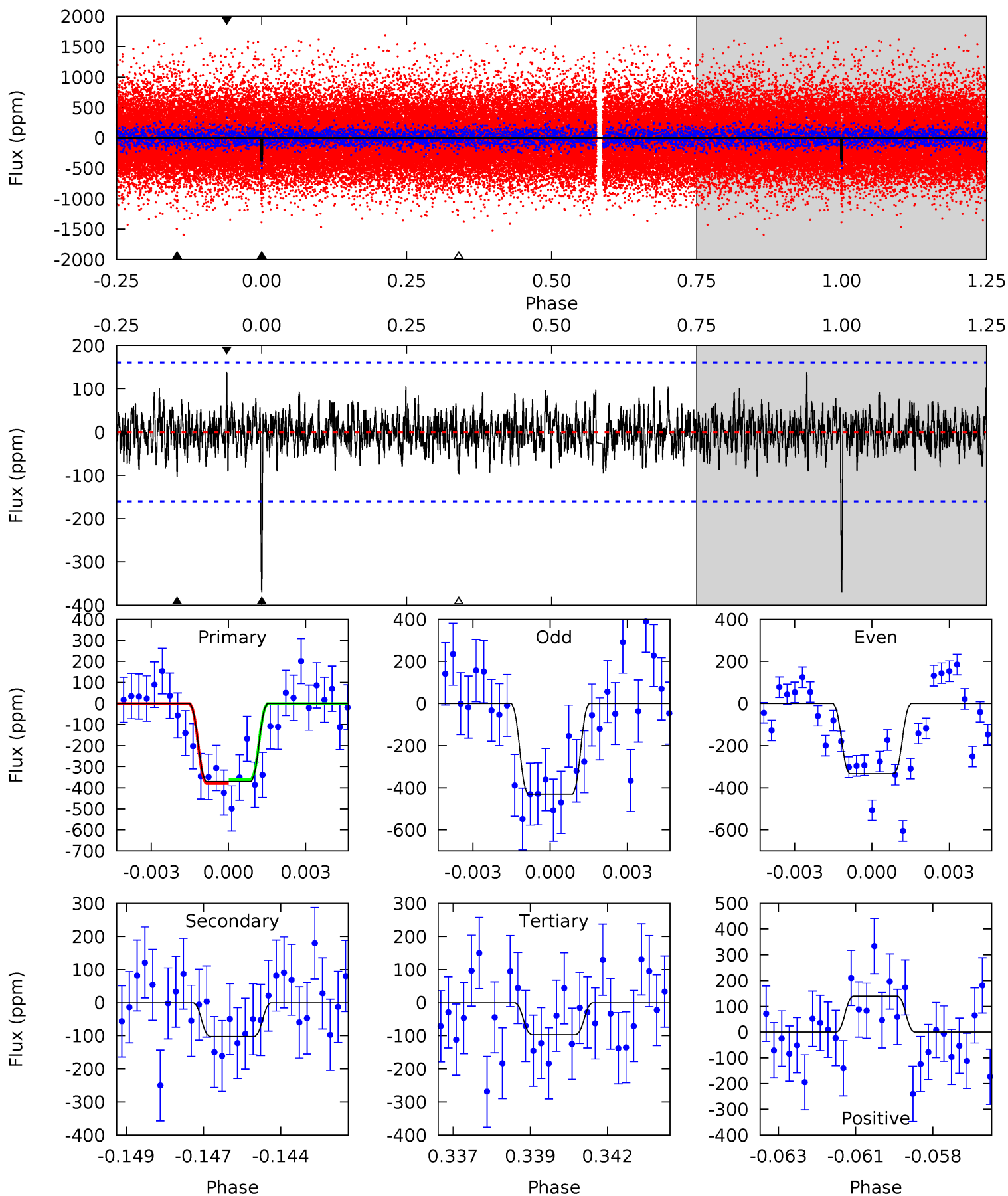
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	4.15	3.54	3.86	5.20	2.87	1.30	11.8	11.4	0.61	0.29	1.01	0.92	0.20	0.59



Alt Model-Shift Uniqueness Test

005350447-02, P = 70.751266 Days, E = 63.396743 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	3.37	3.18	4.57	5.28	3.02	1.10	9.03	7.64	0.20	-1.20	1.55	0.86	0.27	0.28



Stellar Parameters For KIC 005350447

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5771^{+173}_{-173}	$4.400^{+0.153}_{-0.187}$	$-0.460^{+0.300}_{-0.300}$	$0.936^{+0.250}_{-0.167}$	$0.802^{+0.118}_{-0.055}$	$1.379^{+1.028}_{-0.687}$
	+3%/-3%	+3%/-4%	+65%/-65%	+27%/-18%	+15%/-7%	+75%/-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 005350447-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-100 ± 24	$2.45^{+0.41}_{-0.32}$	618^{+48}_{-39}	4032^{+262}_{-233}	871^{+406}_{-292}
Alt.	-102 ± 30	$2.23^{+0.41}_{-0.35}$	617^{+53}_{-37}	4215^{+273}_{-325}	1094^{+561}_{-409}

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 $A_{obs} \gg 1.0$

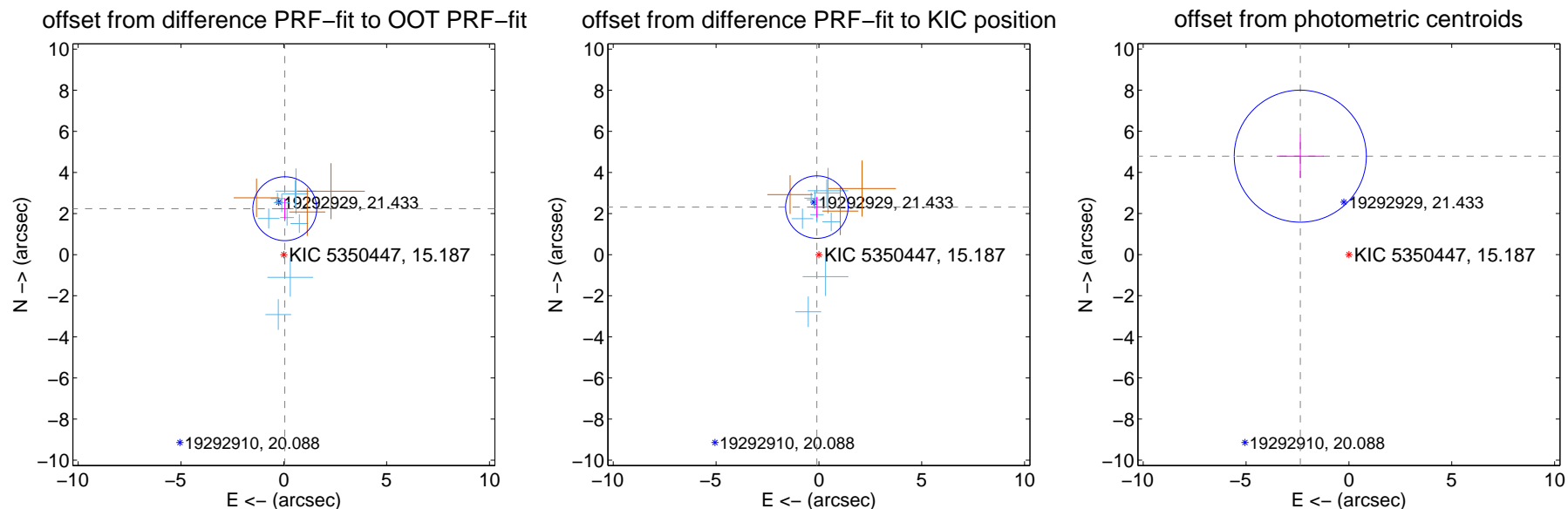
DV Centroid Data

Supplemental centroid analysis for 005350447-02. Kepler magnitude: 15.19. Transit SNR 10.97

There are 9 quarters with good PRF difference image offsets

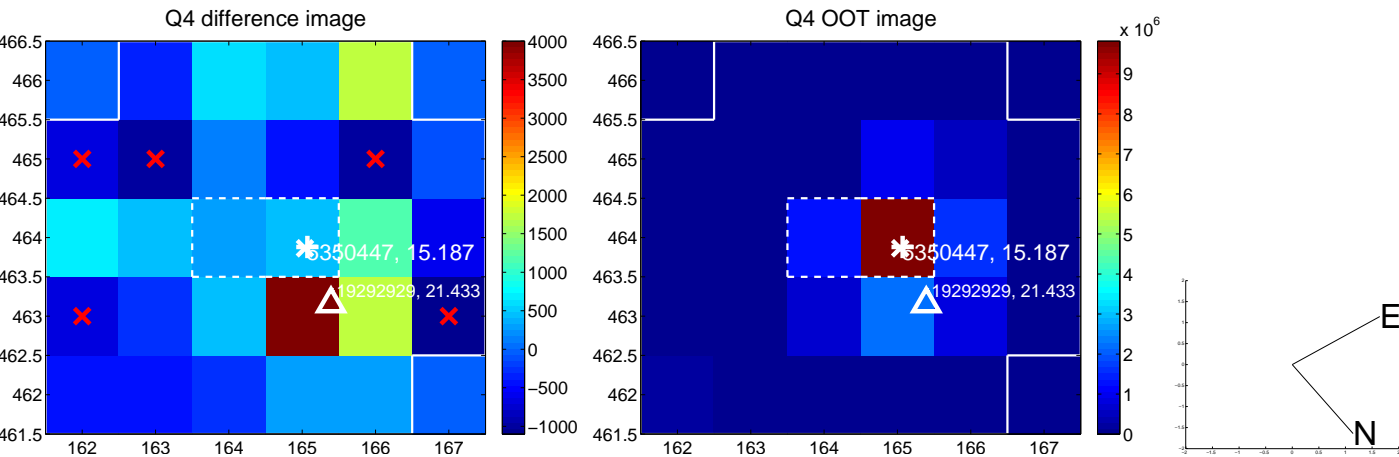
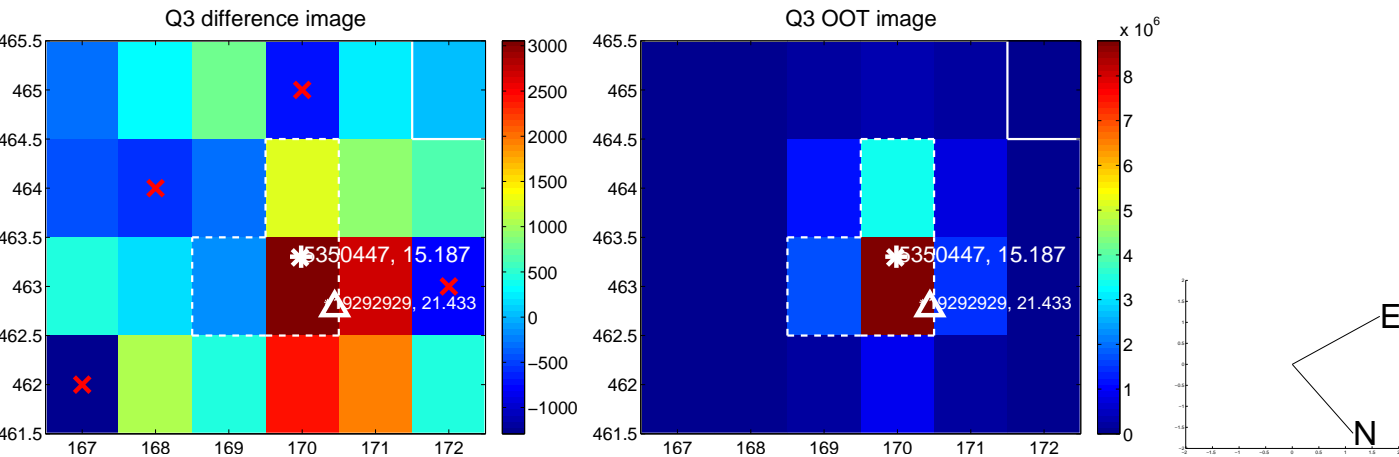
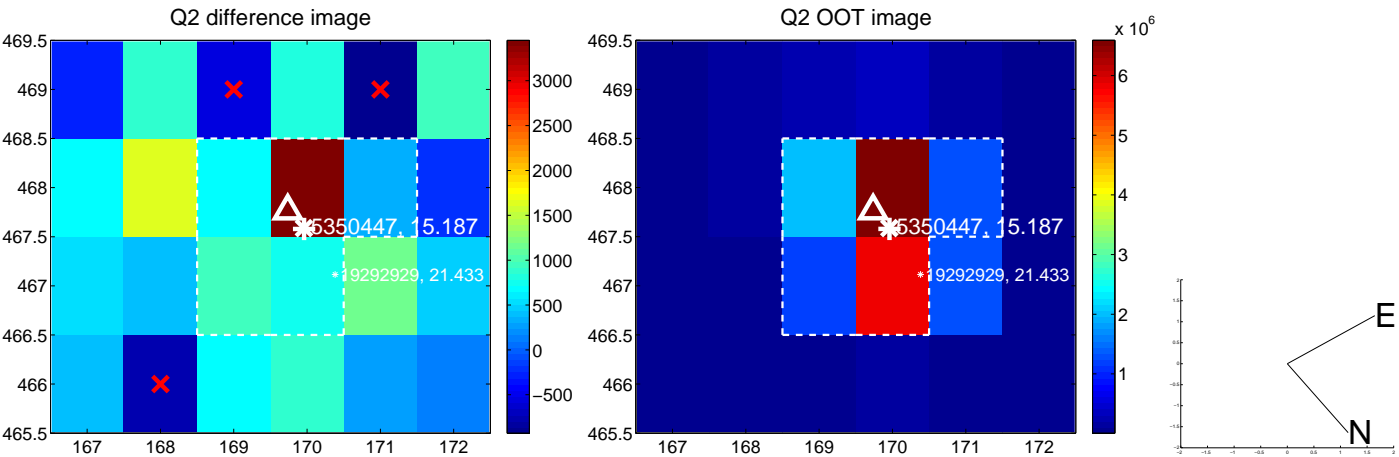
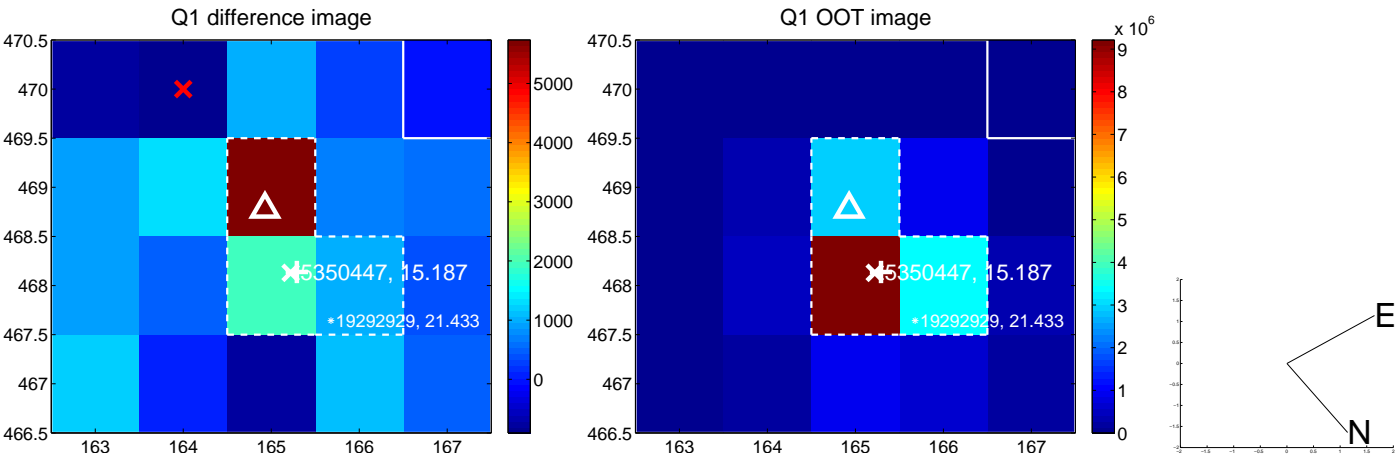
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.235 ± 0.518	4.32	-0.046 ± 0.283	2.235 ± 0.516
PRF-fit source offset from KIC position	2.314 ± 0.507	4.57	0.099 ± 0.249	2.312 ± 0.508
photometric centroid source offset	5.34 ± 1.07	4.99	2.36 ± 1.14	4.79 ± 1.05

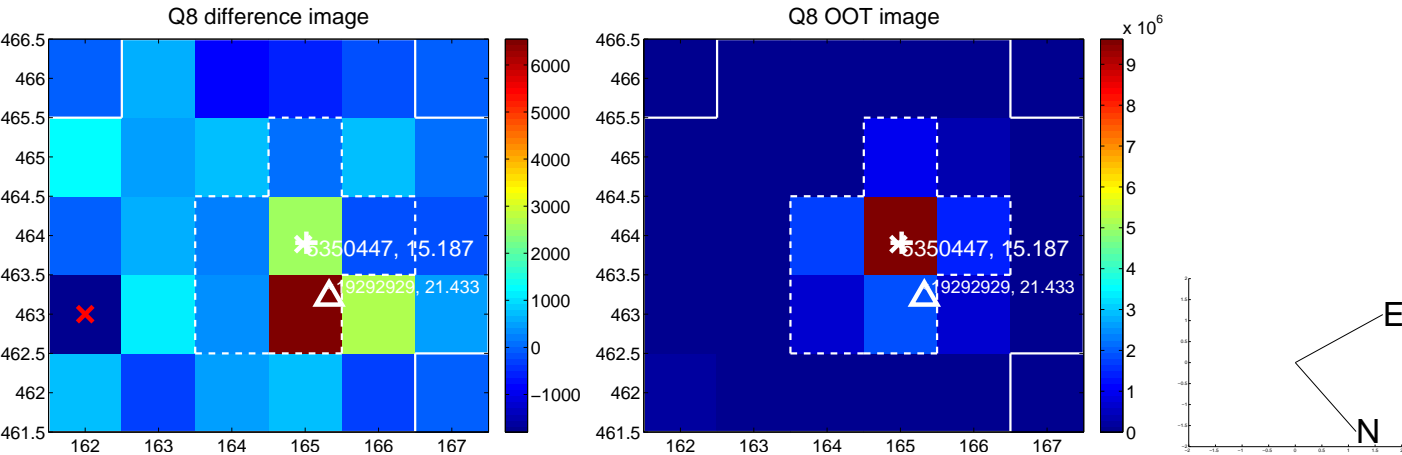
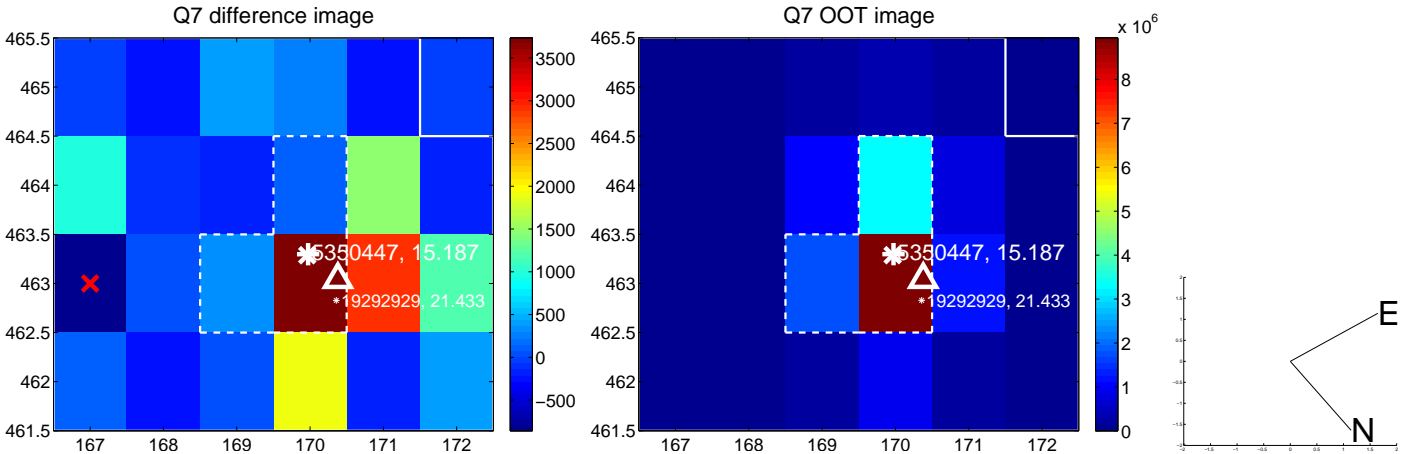
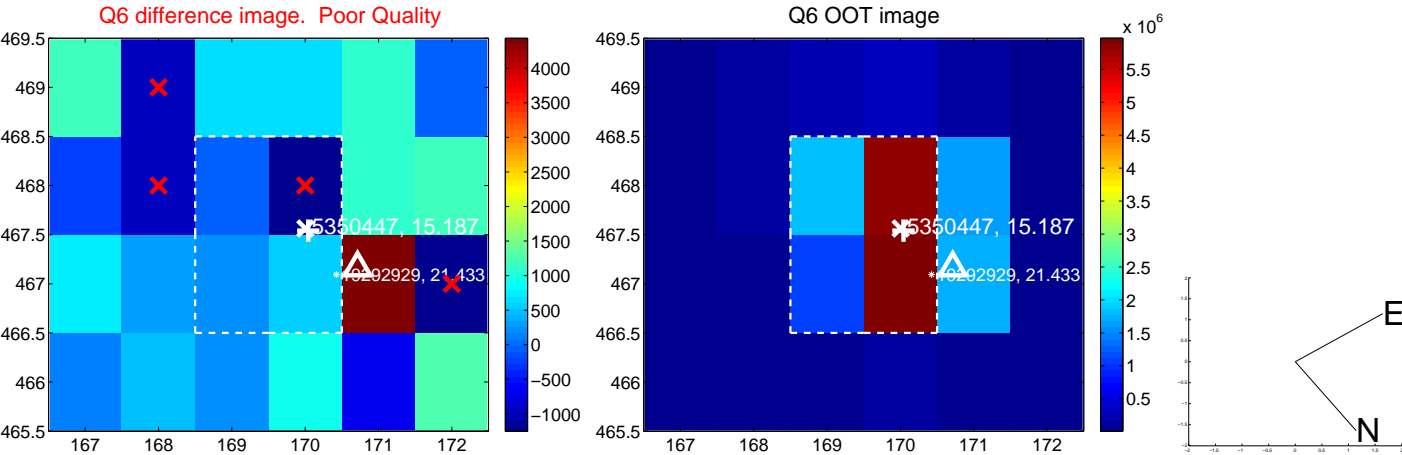
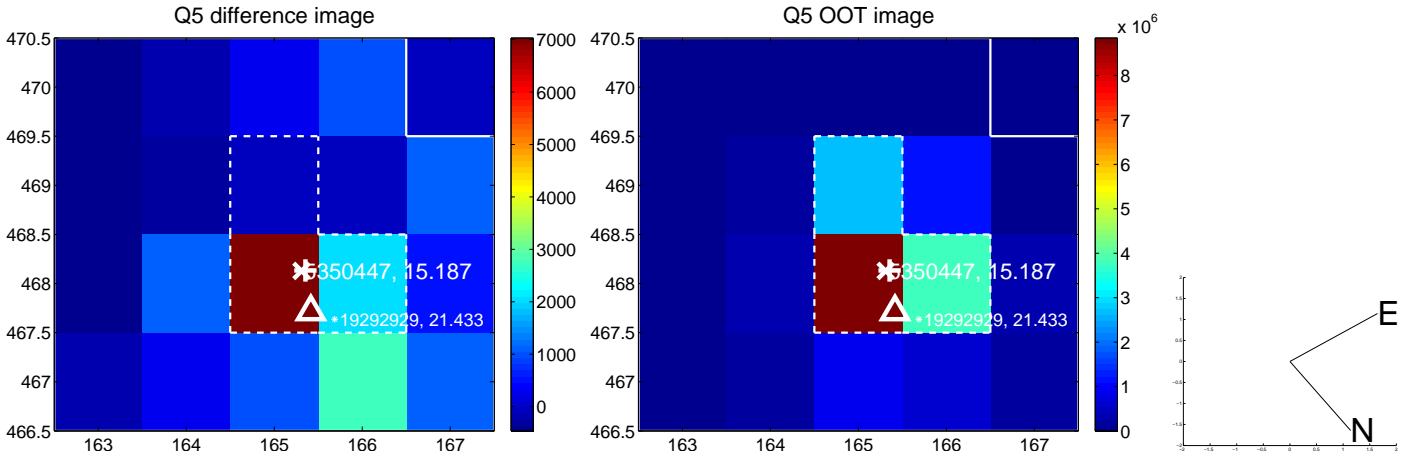


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

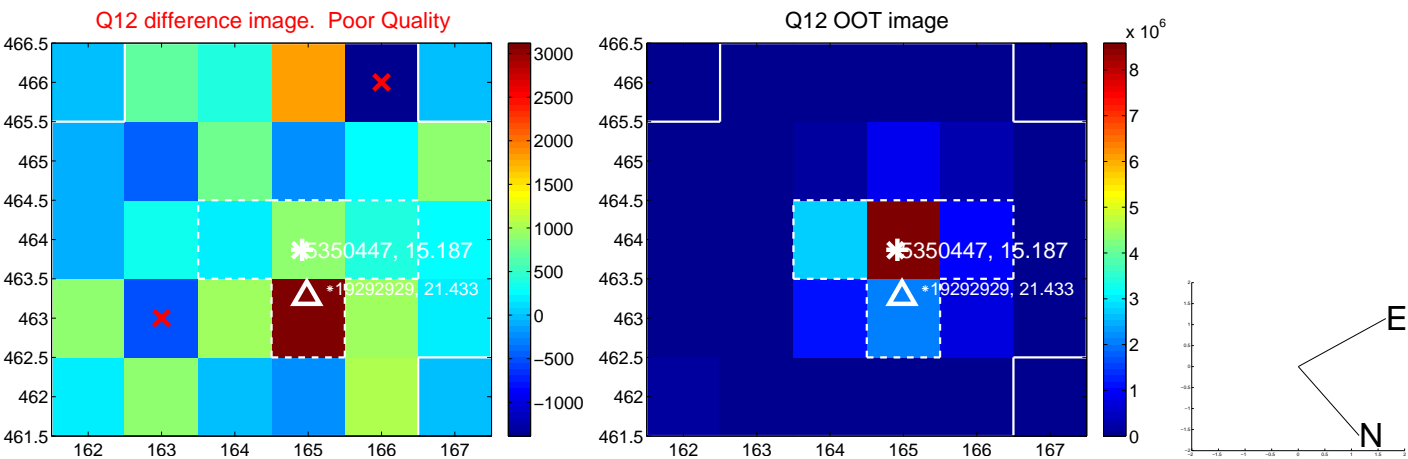
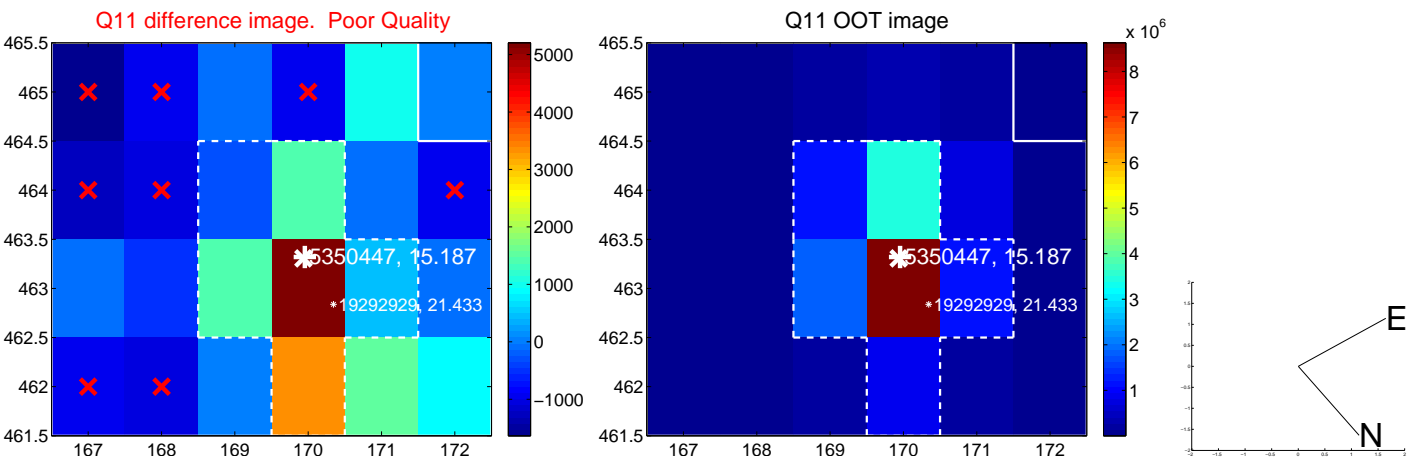
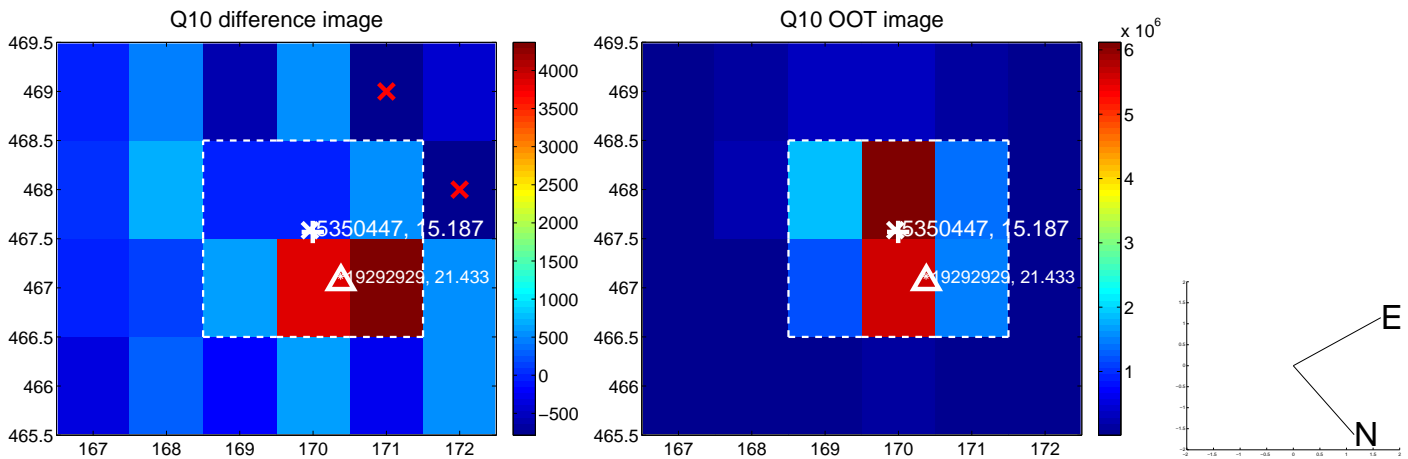
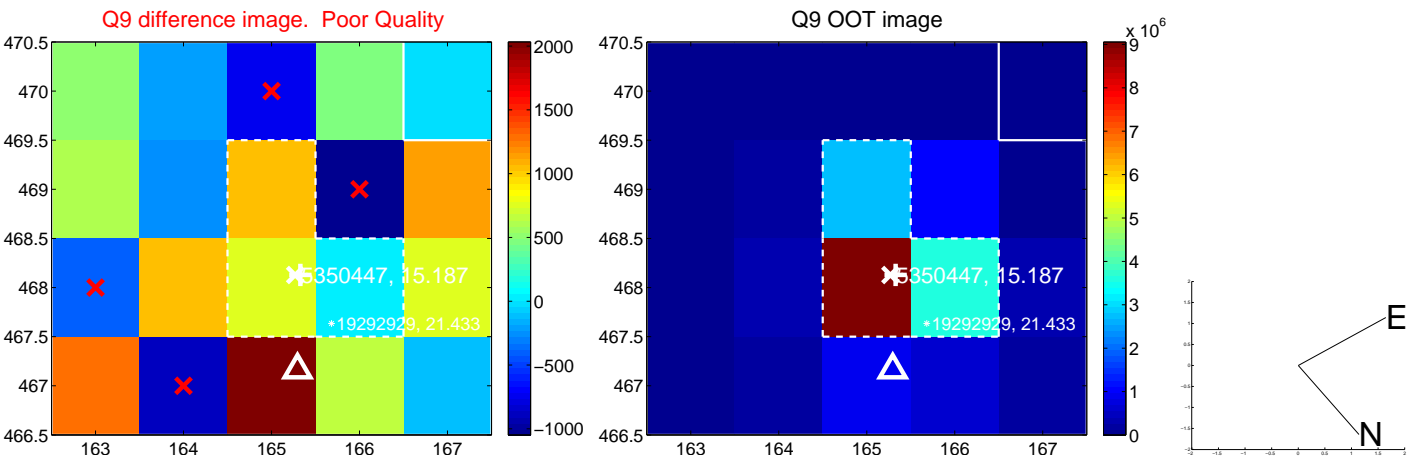
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



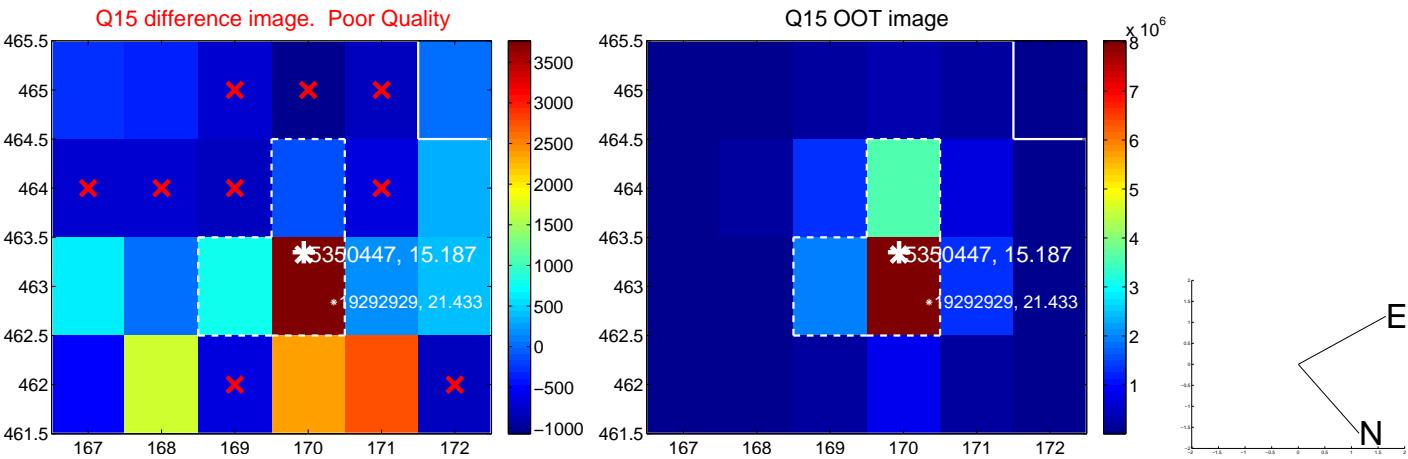
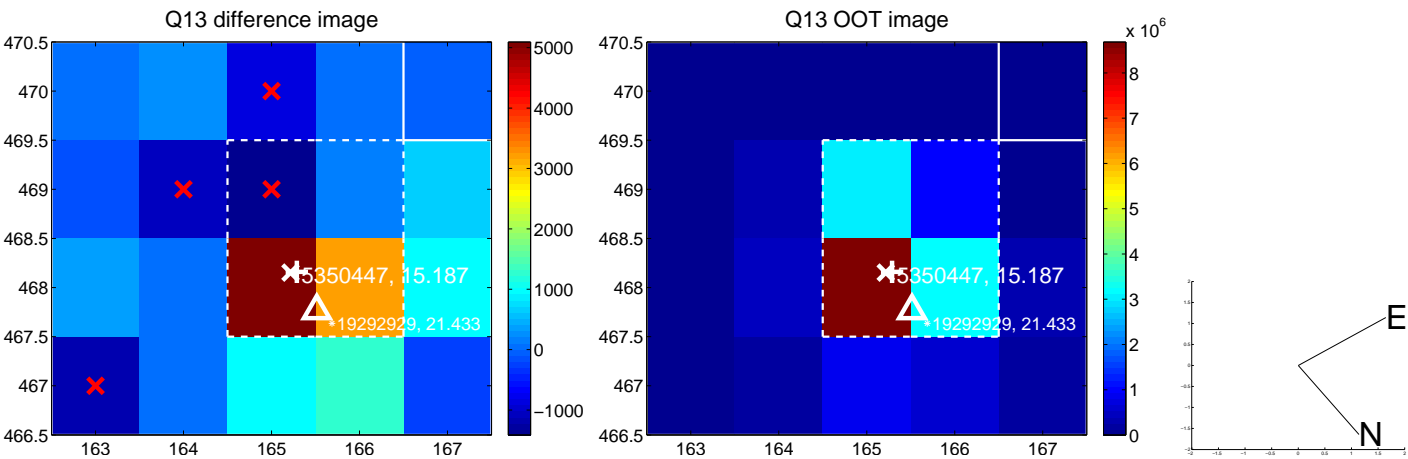
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



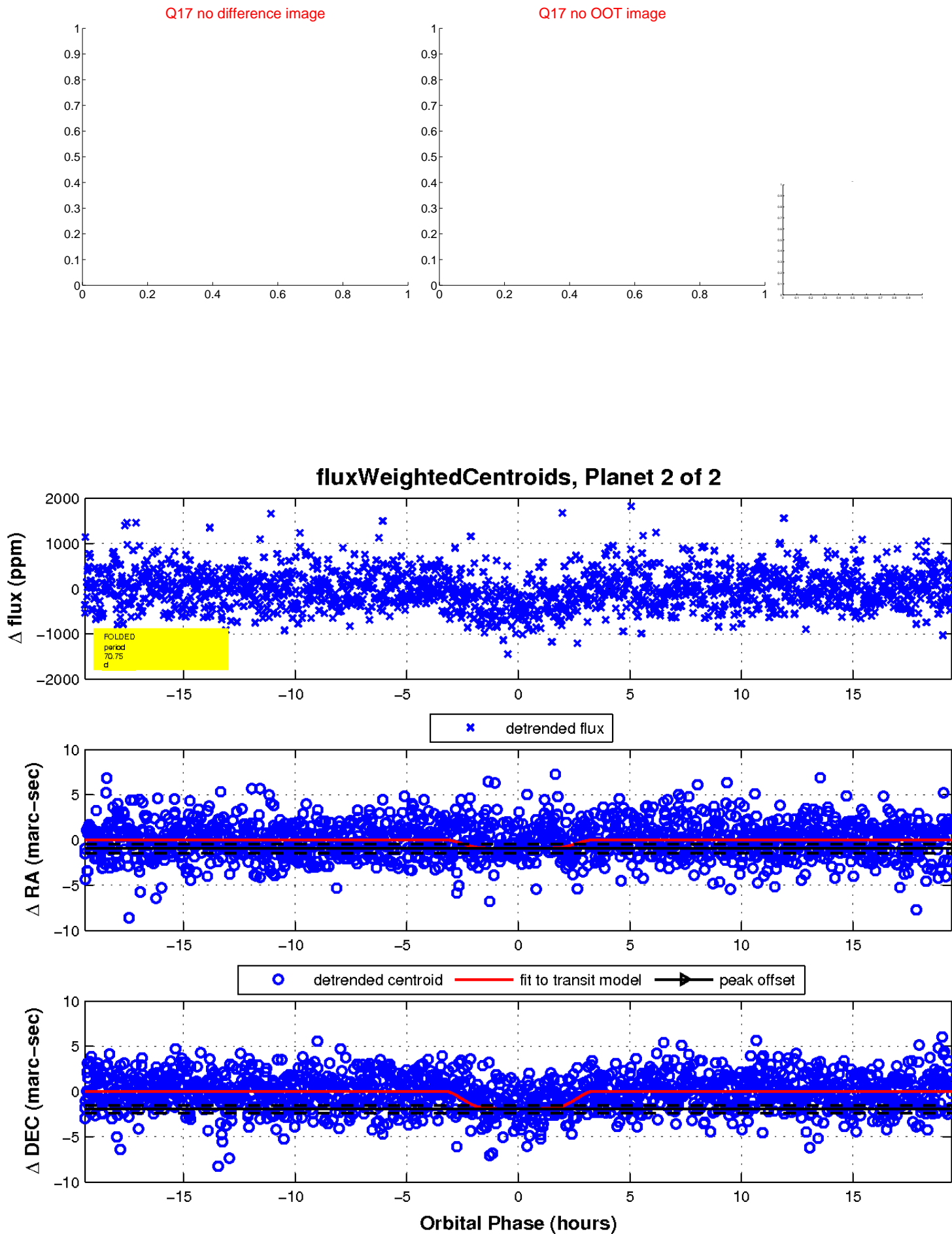
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

