

KIC 003749348

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})
003749348-01	OBS	No	0.705463	132.135791	17.9	2.560	11.2	10.0	3.53	6669	1.52	59694.43
003749348-02	OBS	No	97.537133	188.168158	187.9	2.164	7.5	8.0	3.53	6669	5.40	83.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749348-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
003749348-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

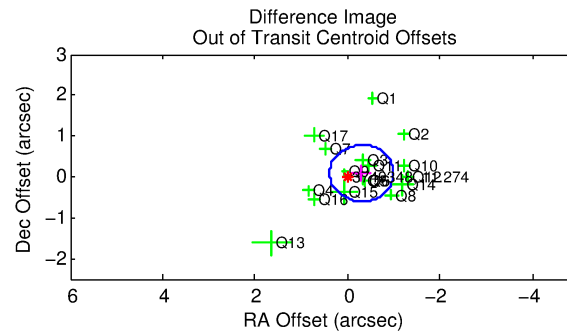
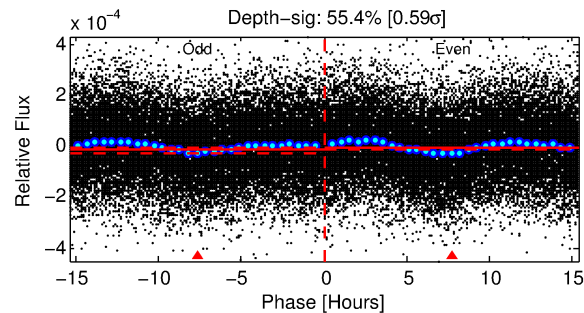
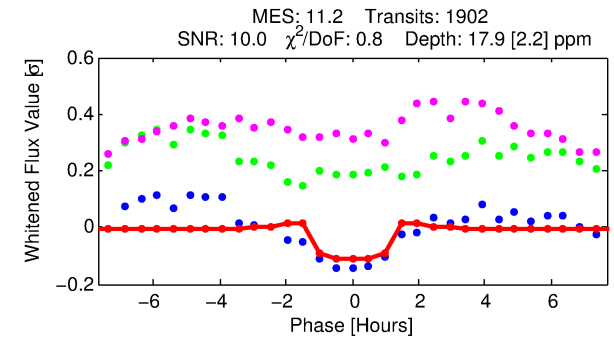
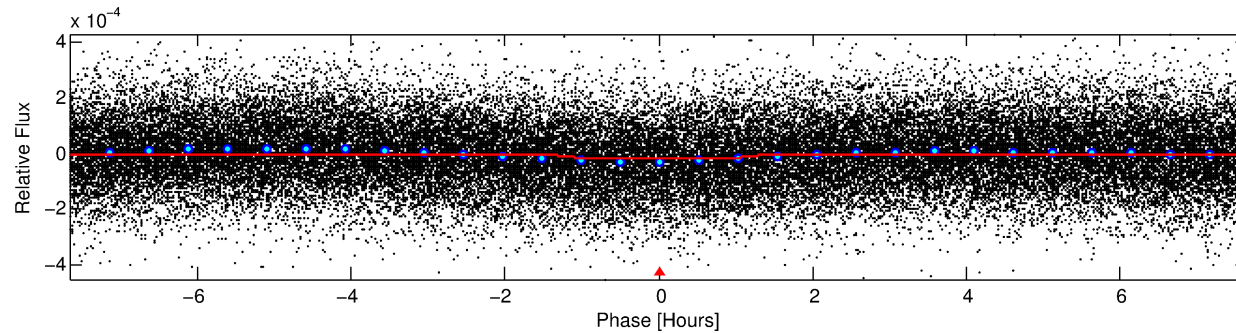
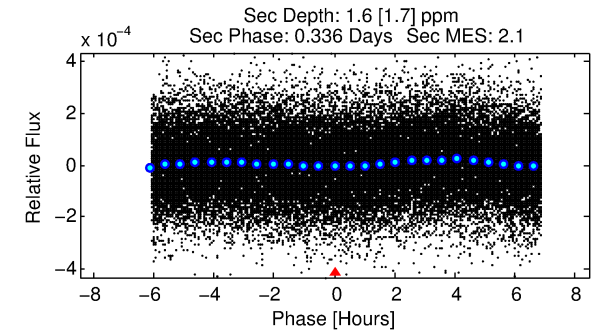
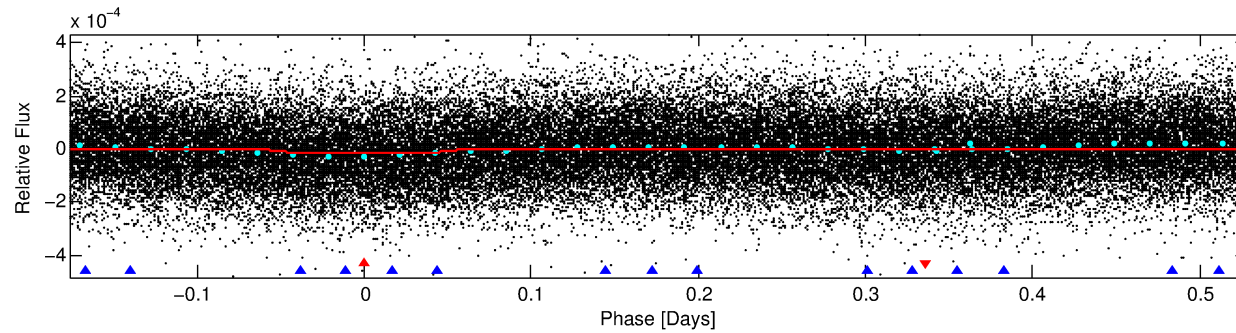
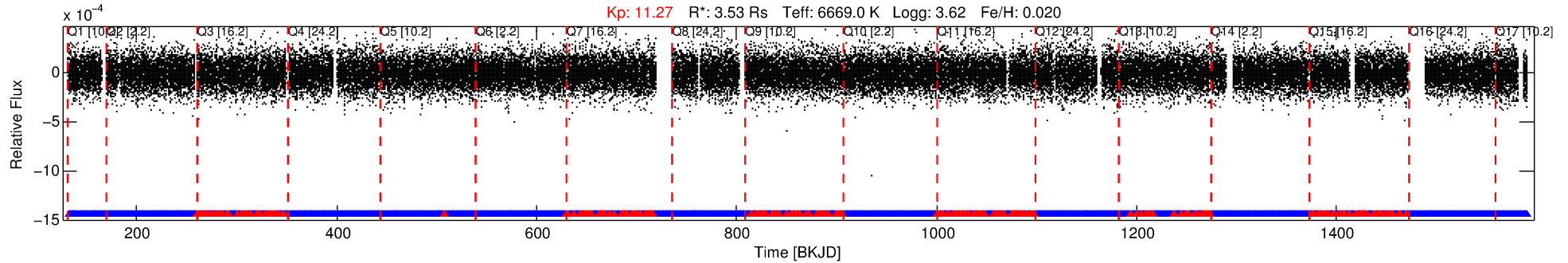
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749348-01

No Significant Match Found

DV One-Page Summary

KIC: 3749348 Candidate: 1 of 2 Period: 0.705 d



DV Fit Results:

Period = 0.70546 [0.00001] d
Epoch = 132.1358 [0.0023] BKJD
Rp/R* = 0.0039 [0.0016]
a/R* = 2.12 [3.65]
b = 0.29 [7.13]
Seff = 59694.43 [31158.28]
Teq = 3986 [520] K
Rp = 1.52 [0.84] Re
a = 0.0193 [0.0064] AU
Ag = 0.14 [0.20] [-4.36σ]
Teffp = 3748 [1273] K [-0.17σ]

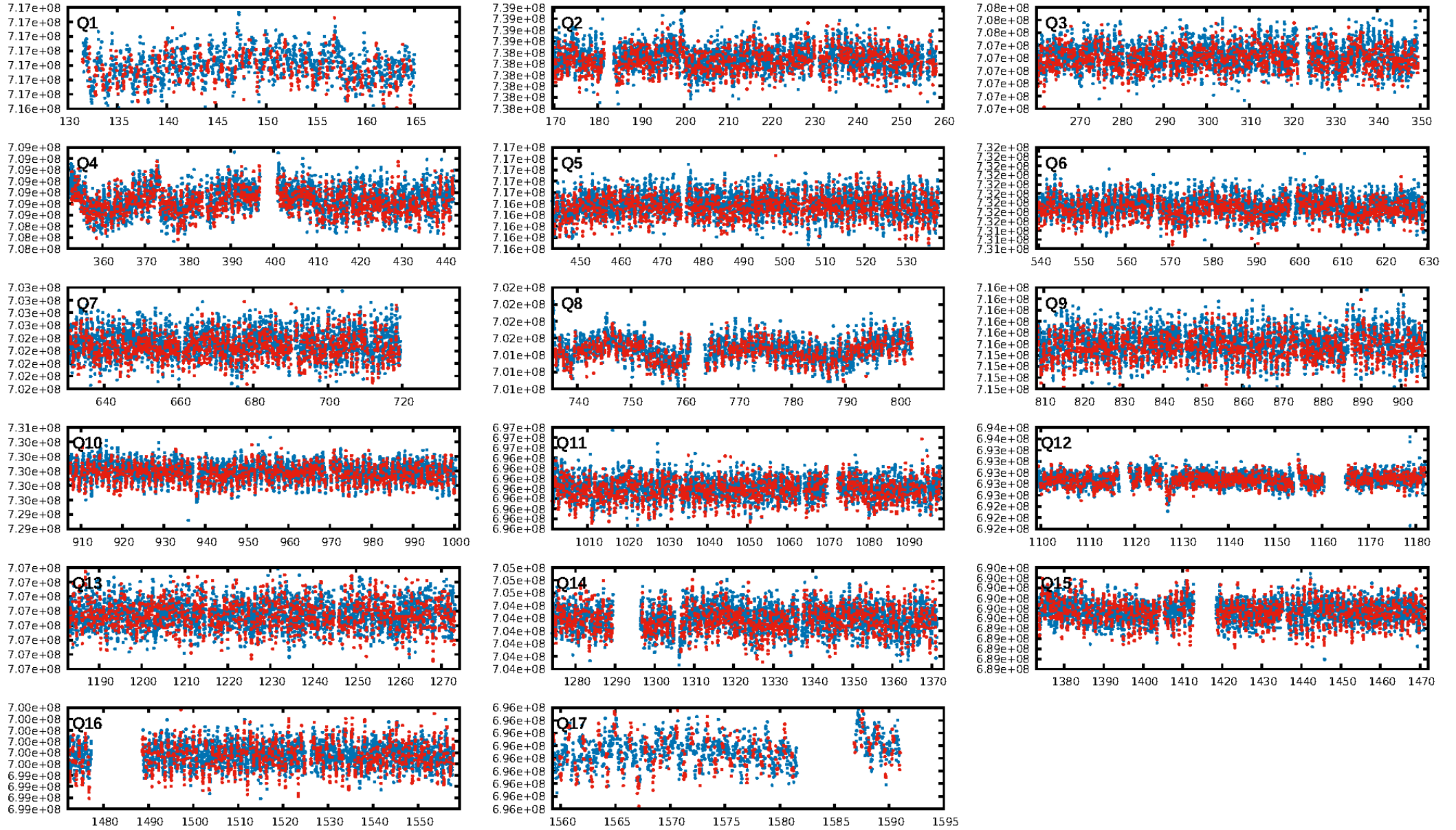
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [693.24σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.47e-21
RollingBand-fgt: 0.87 [1586/1816]
GhostDiagnostic-chr: 2.626
Centroid-sig: 22.4%
Centroid-so: 0.434 arcsec [1.02σ]
OotOffset-rm: 0.310 arcsec [1.35σ]
KicOffset-rm: 0.309 arcsec [1.36σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

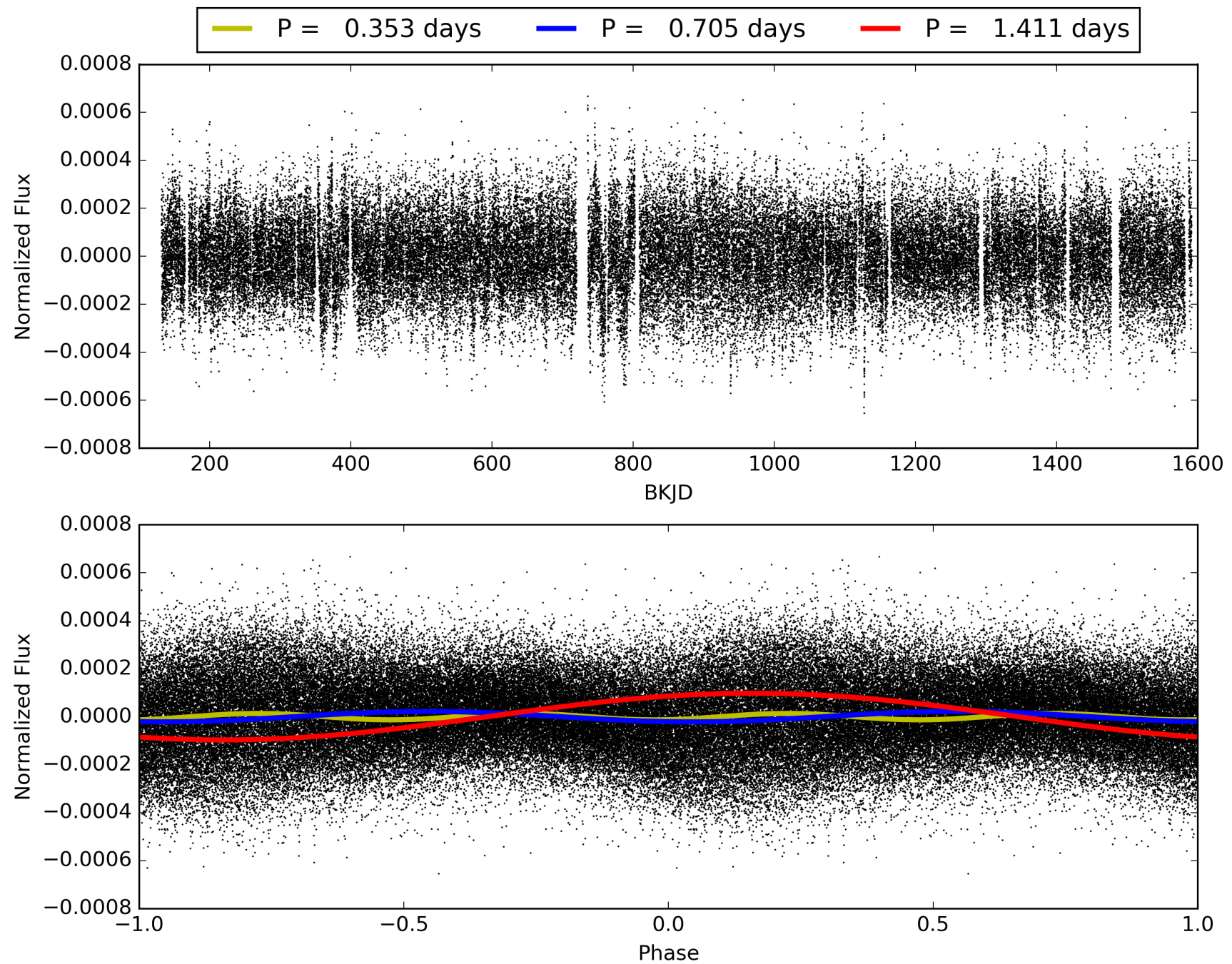
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:03:12 Z

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

TCE 003749348-01, PDC Light Curves

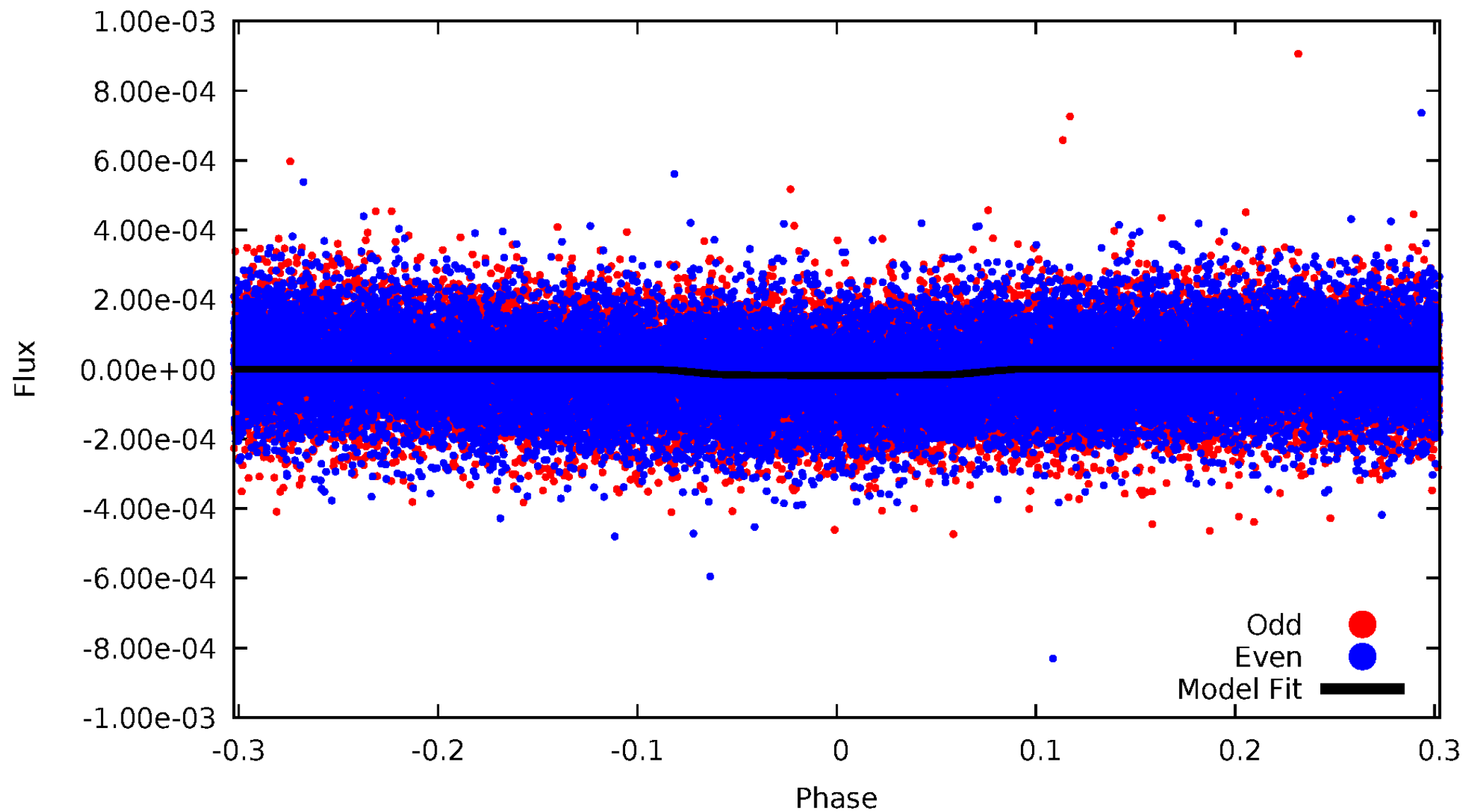


TCE 003749348-01



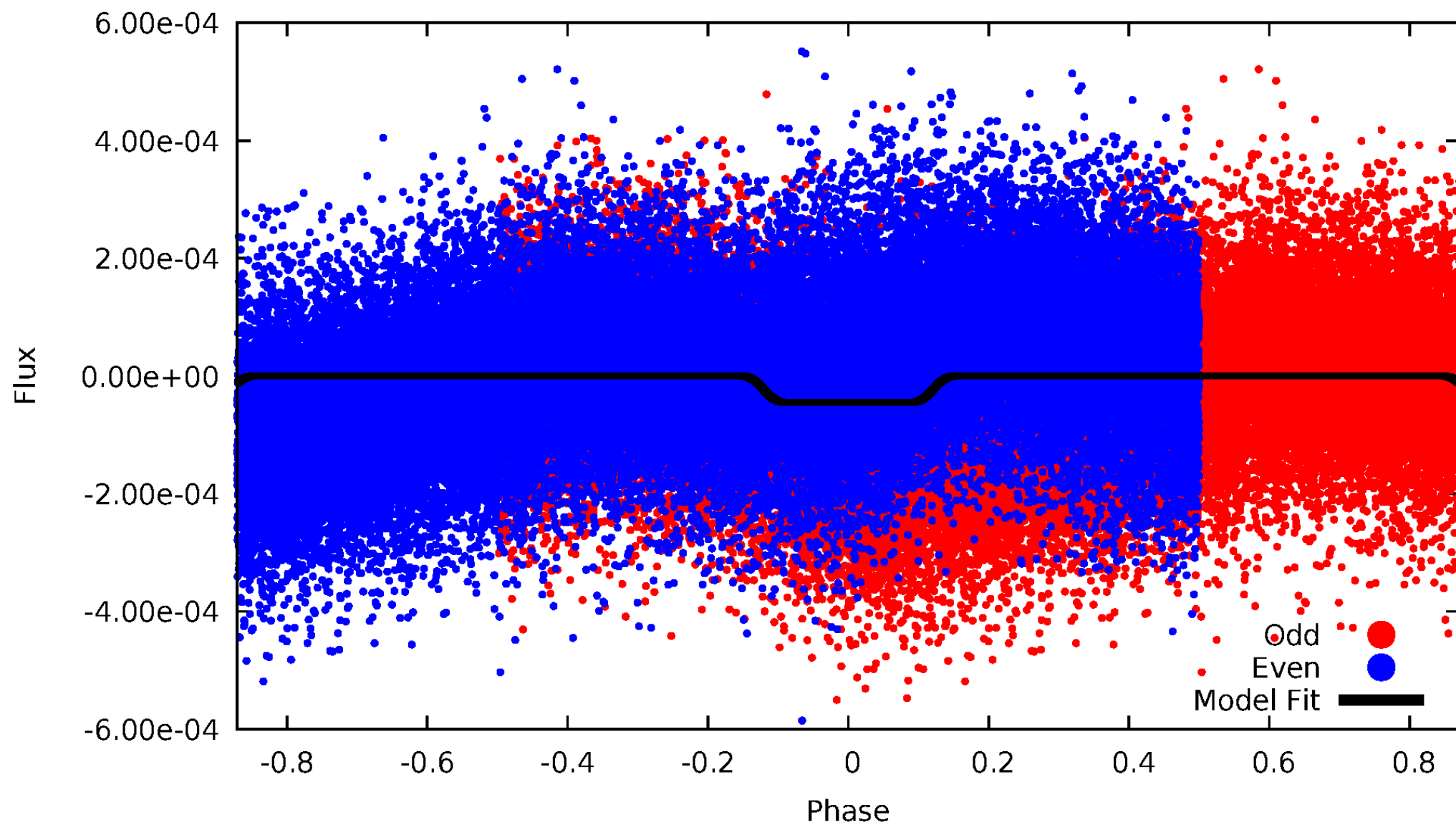
DV Odd/Even

TCE 003749348-01



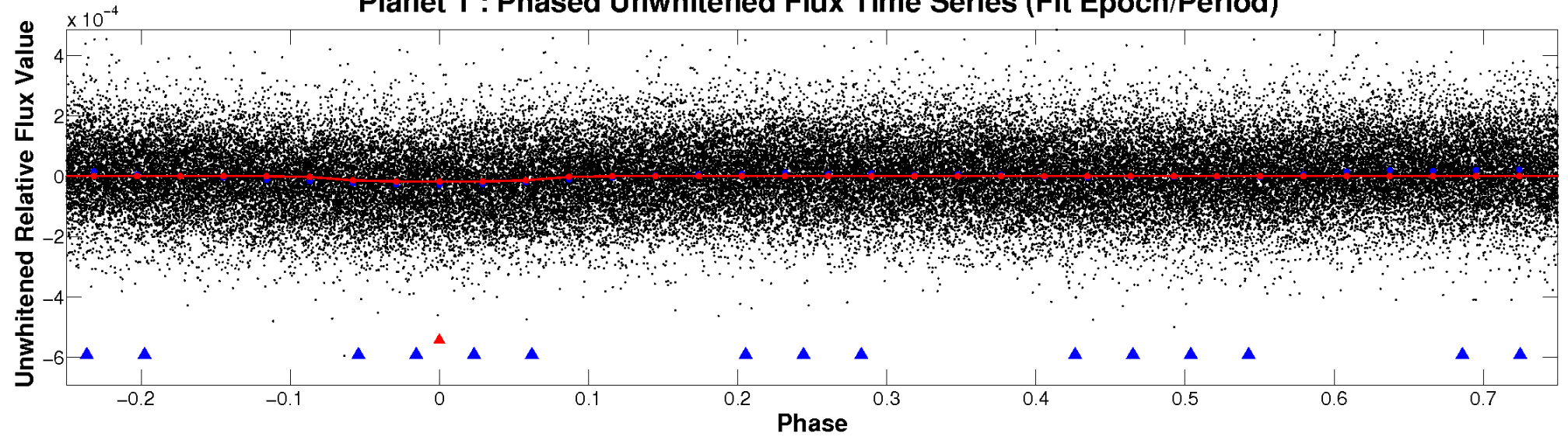
ALT Odd/Even

TCE 003749348-01

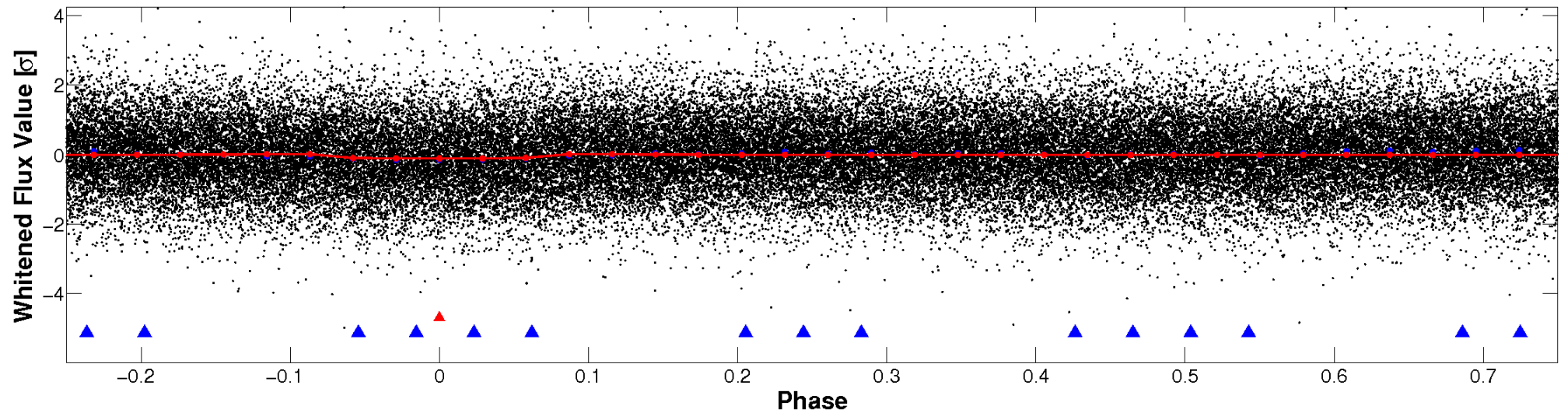


Non-Whitened Vs. Whitened Light Curve

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

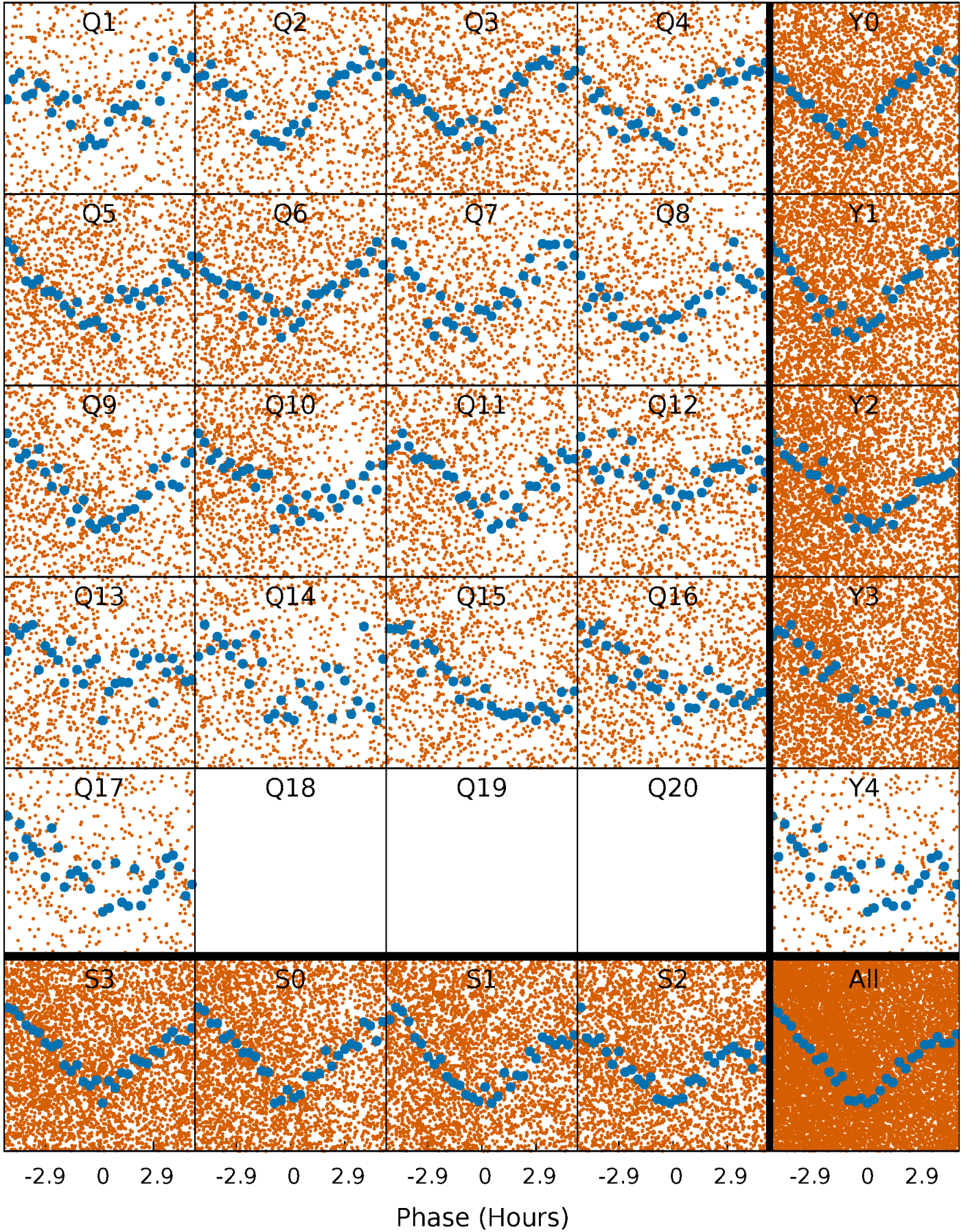


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



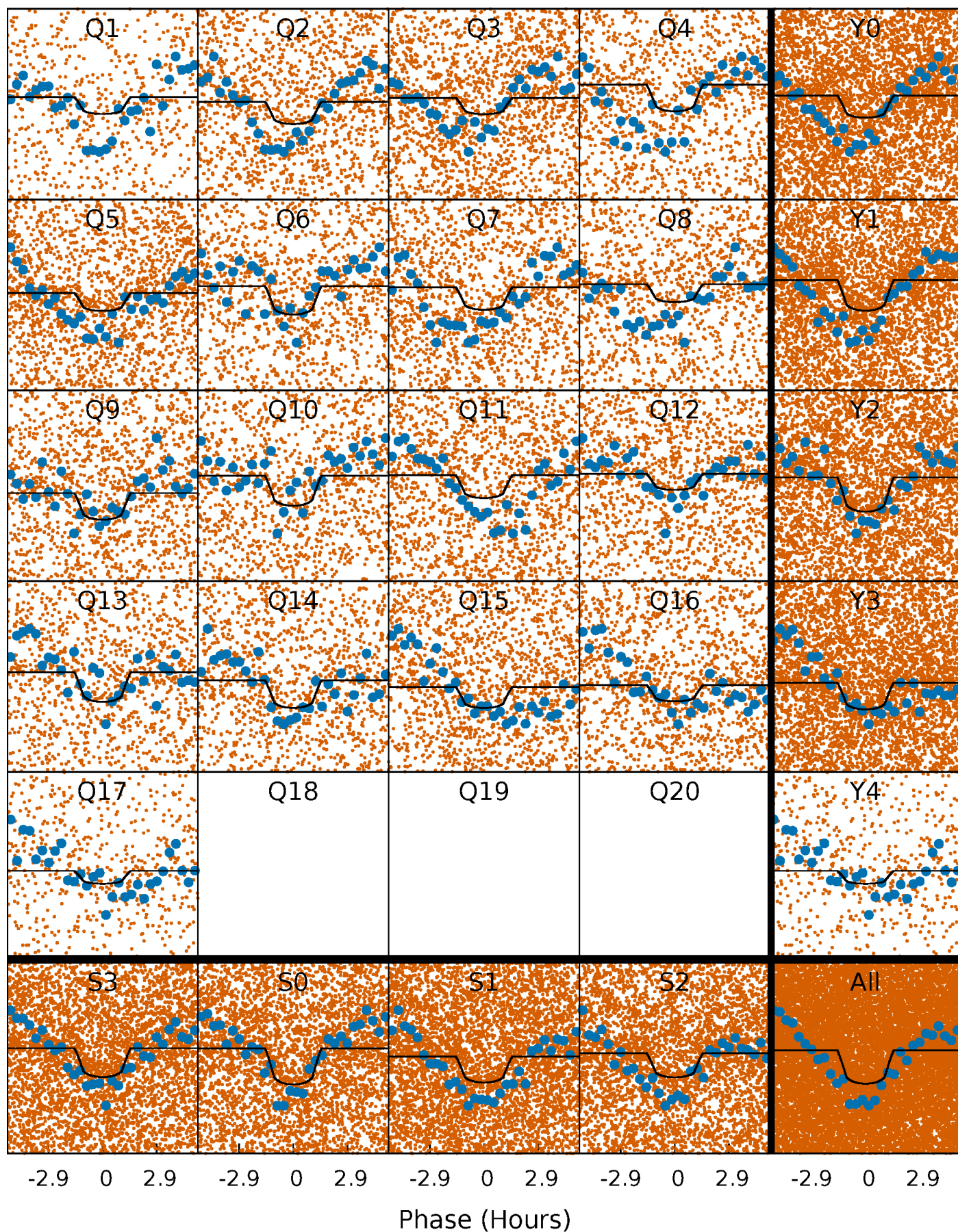
PDC Quarter-Phased Transit Curves

TCE 003749348-01 P= 0.705463 Days $T_0=132.135791$ (BKJD)



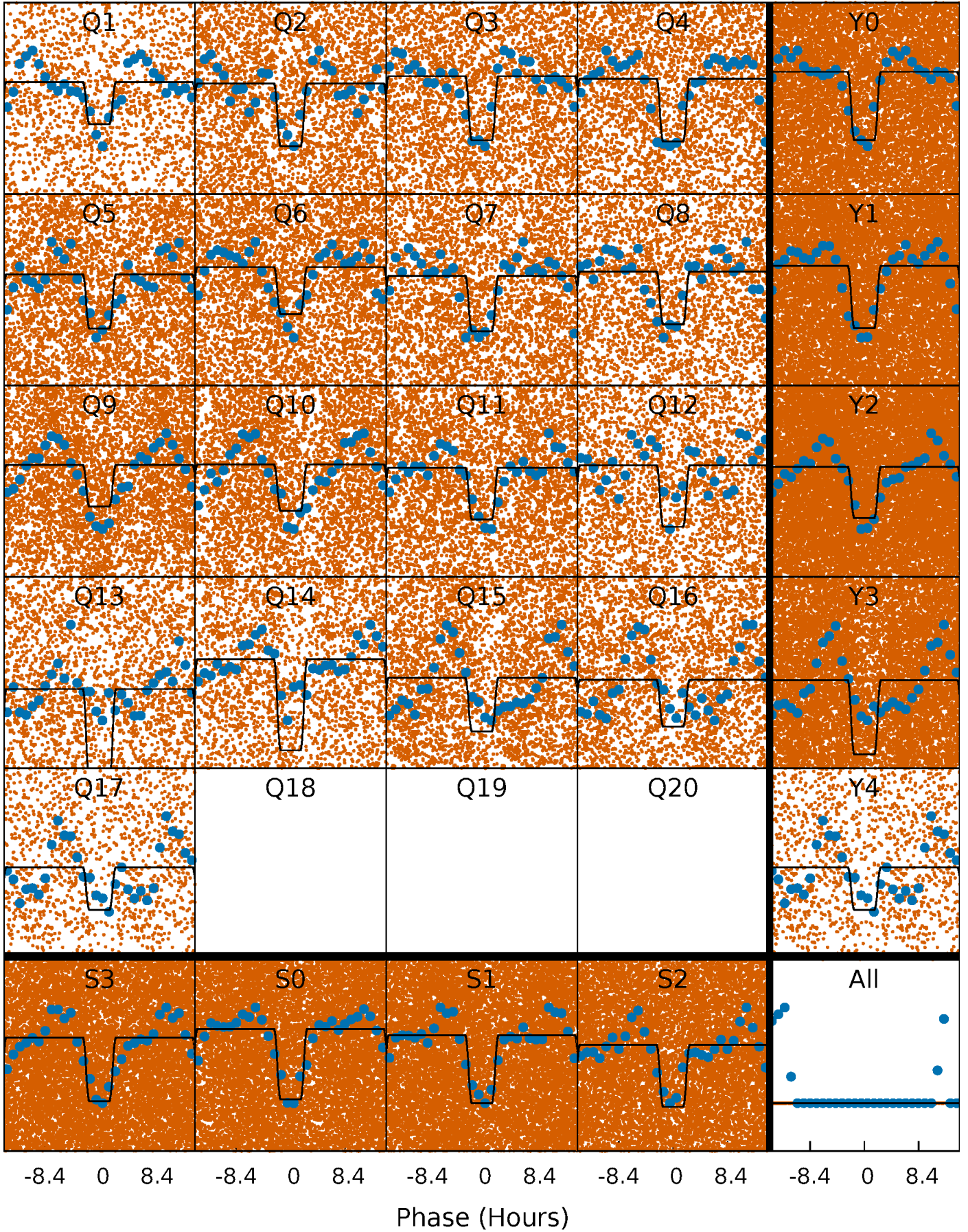
DV Quarter-Phased Transit Curves

TCE 003749348-01 P= 0.705463 Days $T_0=132.135791$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

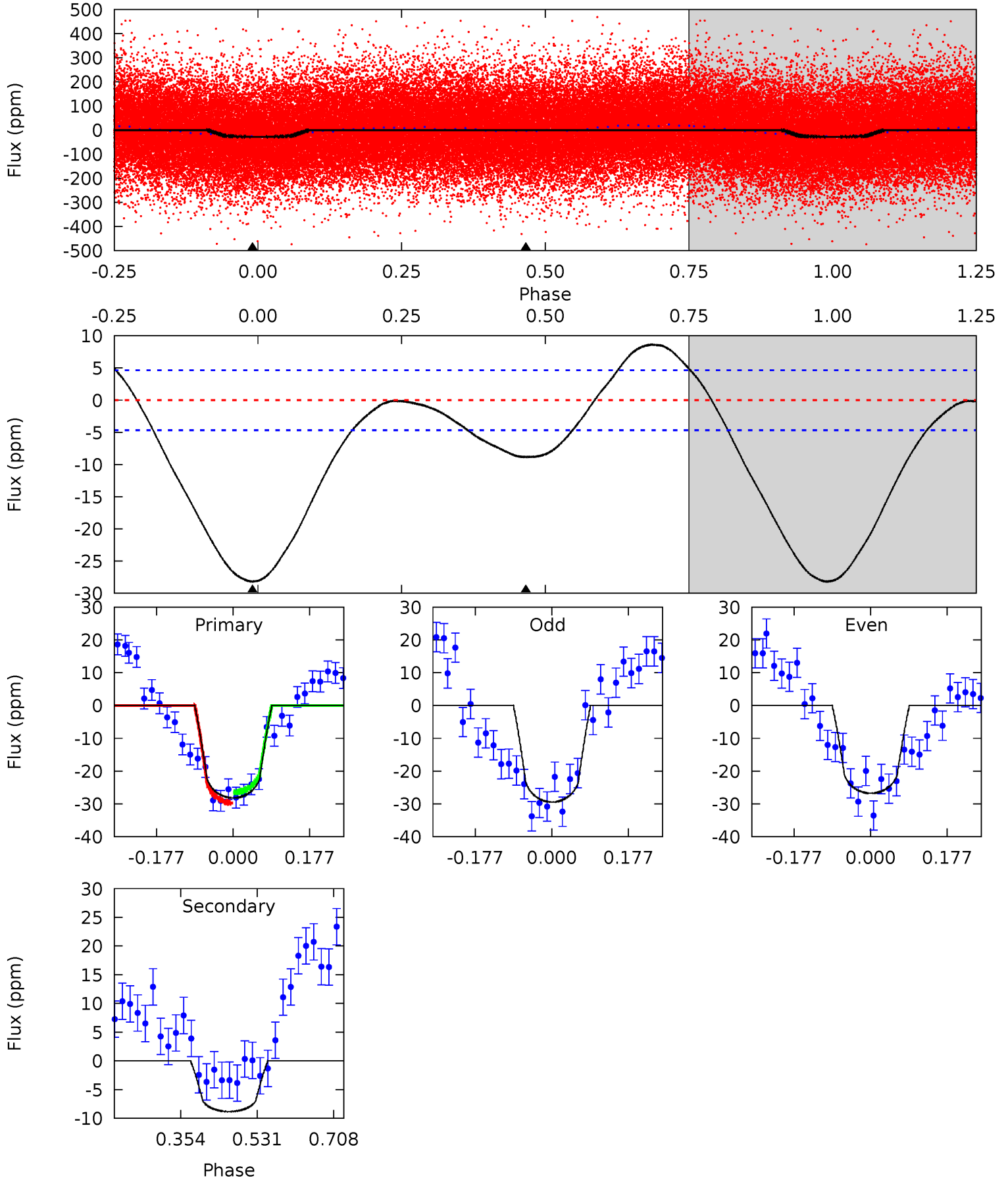
TCE 003749348-01 P= 0.705488 Days $T_0=132.112311$ (BKJD)



DV Model-Shift Uniqueness Test

003749348-01, P = 0.705463 Days, E = 131.430328 Days

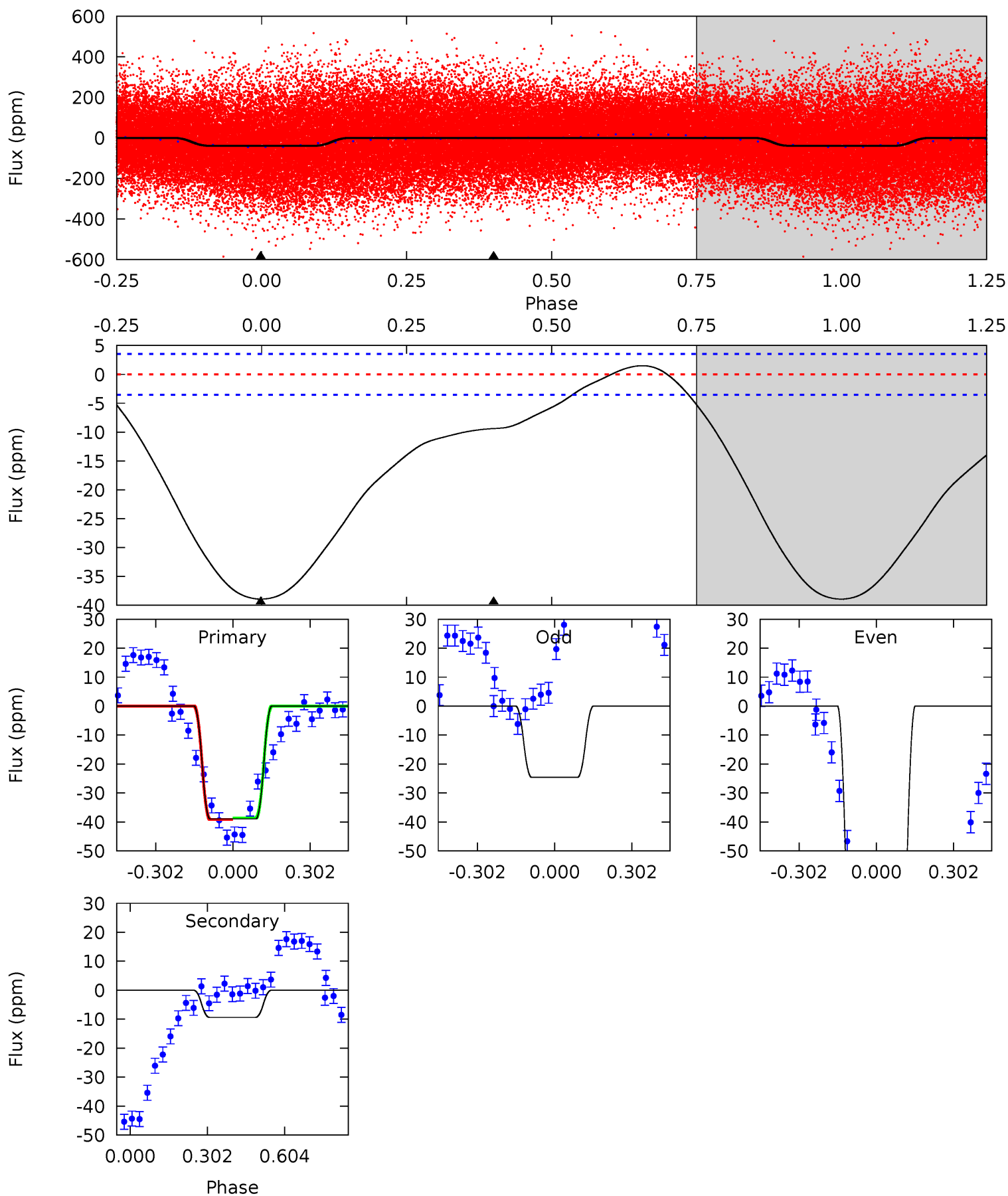
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	8.42	0	0	4.44	1.35	4.04	26.9	26.9	8.42	8.42	1.28	1.01	0.23	1.56



Alt Model-Shift Uniqueness Test

003749348-01, P = 0.705488 Days, E = 131.406823 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.5	11.5	0	0	4.33	1.03	2.57	47.5	47.5	11.5	11.5	46.4	0.90	0.04	0.28



Stellar Parameters For KIC 003749348

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6669^{+160}_{-200}	$3.623^{+0.288}_{-0.054}$	$0.020^{+0.250}_{-0.250}$	$3.533^{+0.331}_{-1.326}$	$1.910^{+0.172}_{-0.401}$	$0.061^{+0.132}_{-0.011}$
	+2%/-3%	+8%/-1%	+1250%/-1250%	+9%/-38%	+9%/-21%	+217%/-18%
Source	PHO1	FLK73	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 003749348-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 1	$1.39^{+0.60}_{-0.57}$	5446^{+265}_{-501}	5338^{+1762}_{-1221}	$0.944^{+1.571}_{-0.471}$
Alt.	-9 ± 1	$2.39^{+0.69}_{-0.64}$	5441^{+261}_{-466}	3232^{+1269}_{-7057}	$0.341^{+0.266}_{-0.142}$

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

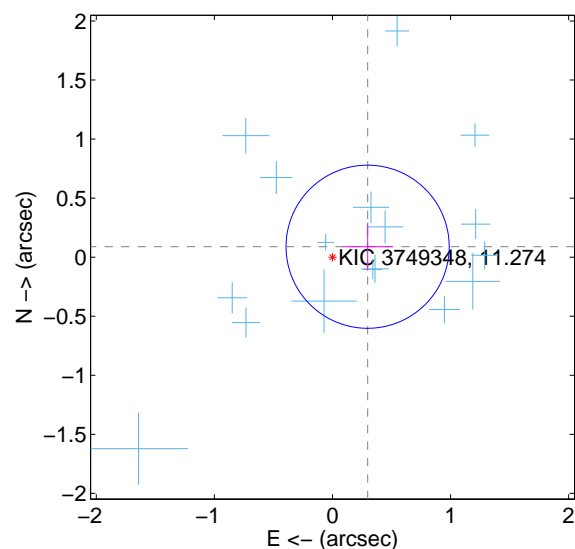
Supplemental centroid analysis for 003749348-01. **Kepler magnitude: 11.27.** Transit SNR 10.05

There are 17 quarters with good PRF difference image offsets

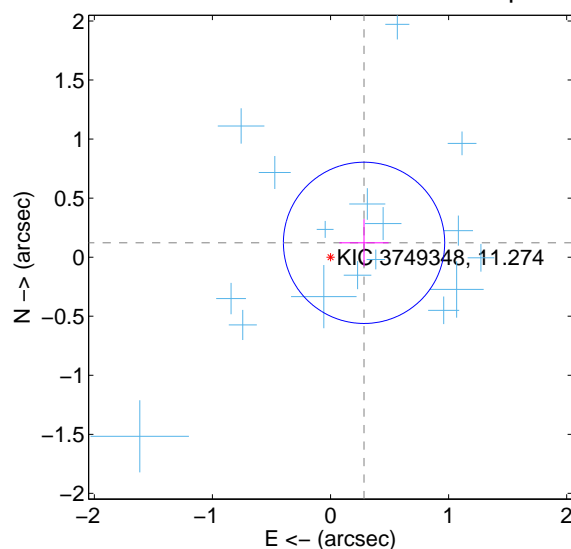
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.310 ± 0.230	1.35	-0.298 ± 0.213	0.088 ± 0.203
PRF-fit source offset from KIC position	0.309 ± 0.228	1.36	-0.284 ± 0.208	0.121 ± 0.201
photometric centroid source offset	0.43 ± 0.42	1.02	0.33 ± 0.40	-0.28 ± 0.46

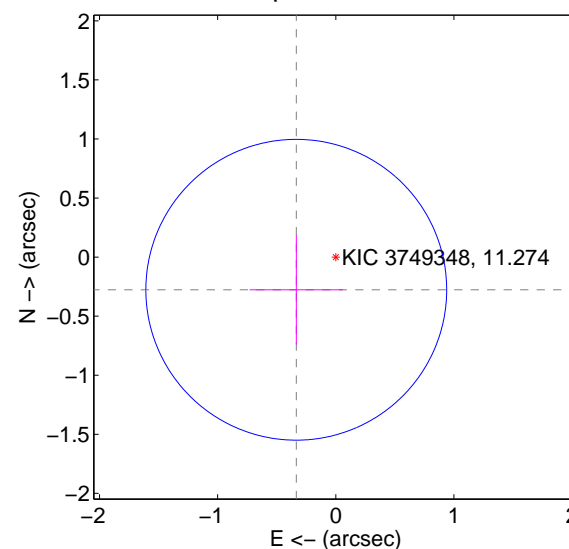
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

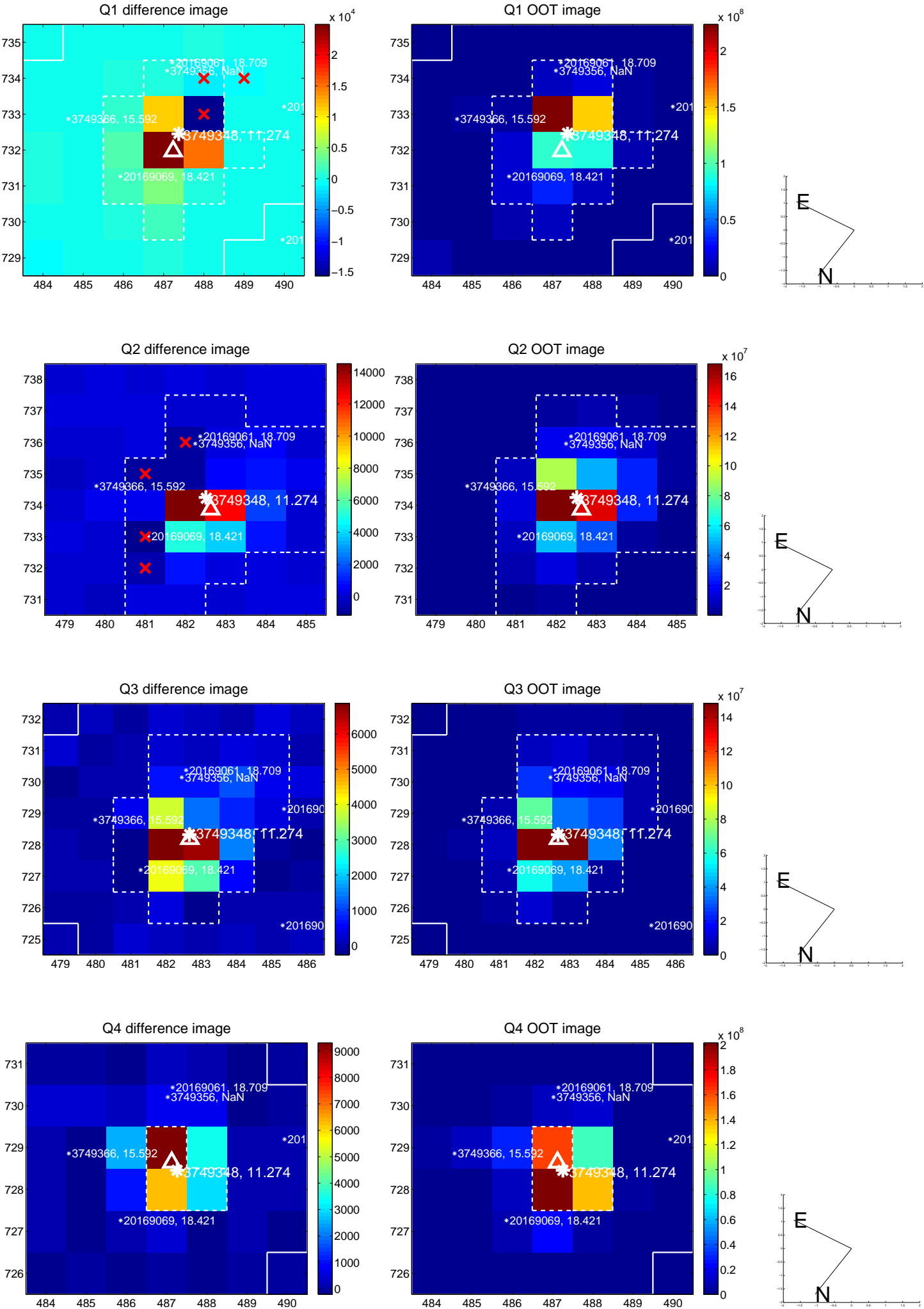


offset from photometric centroids

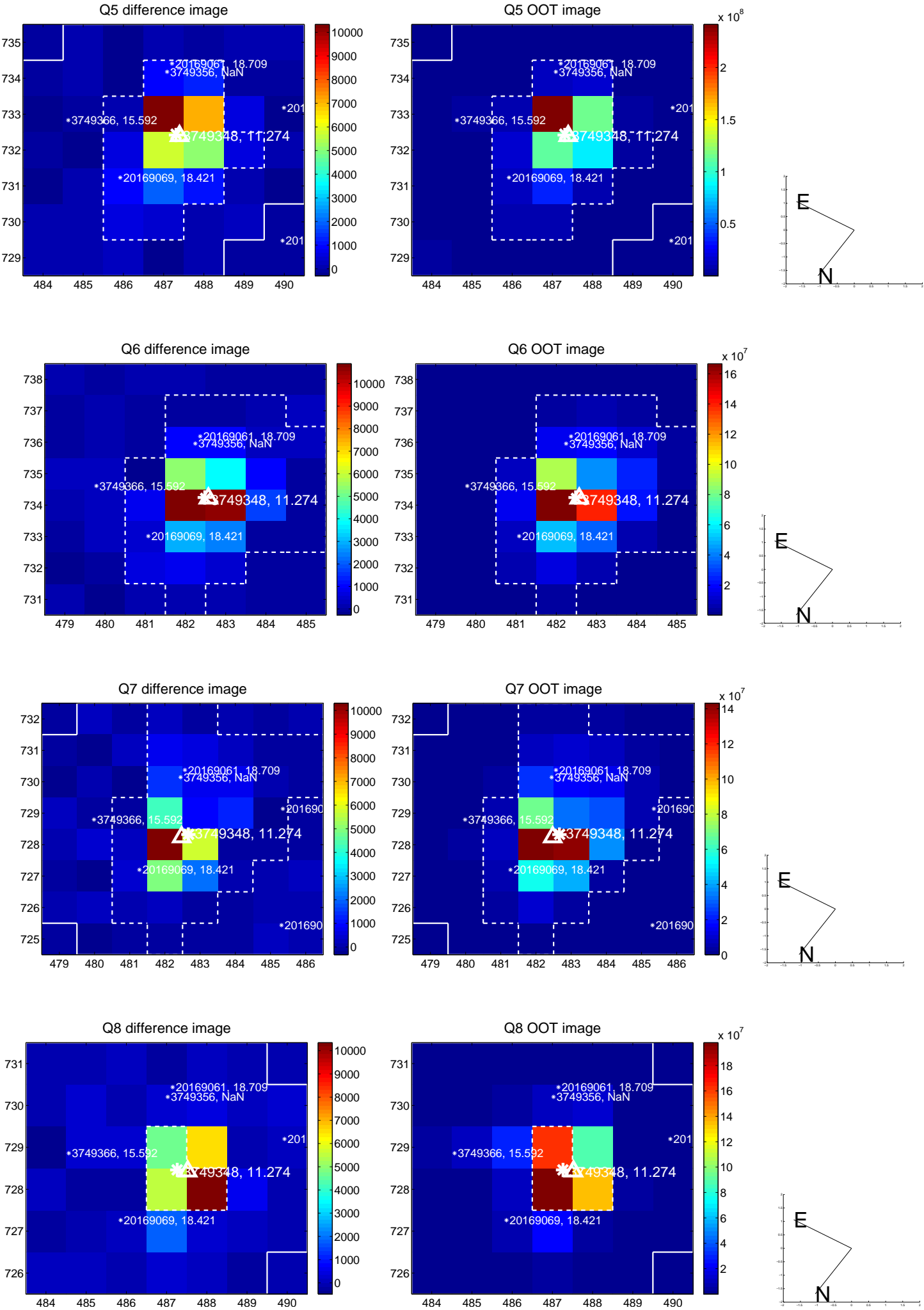


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

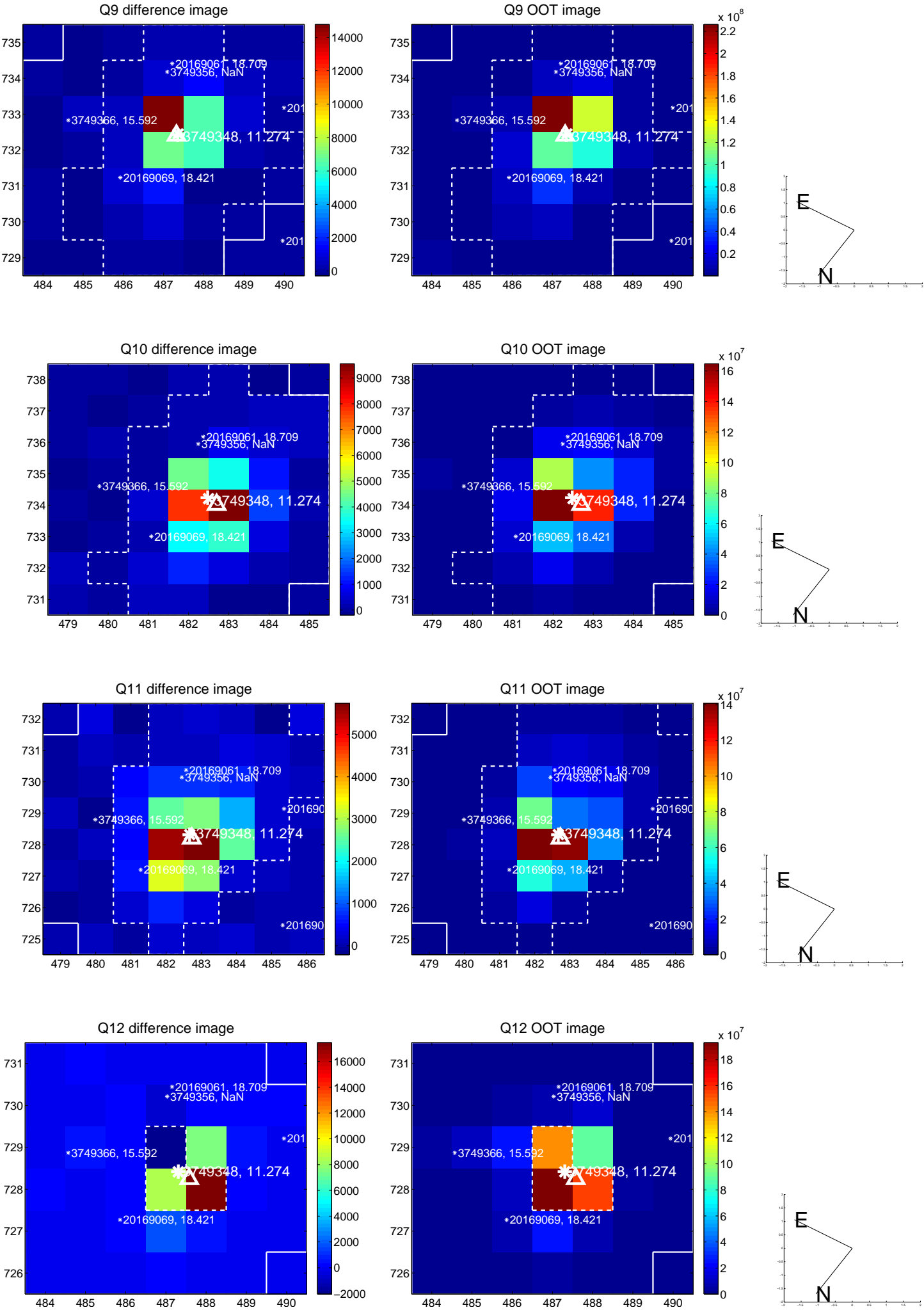
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



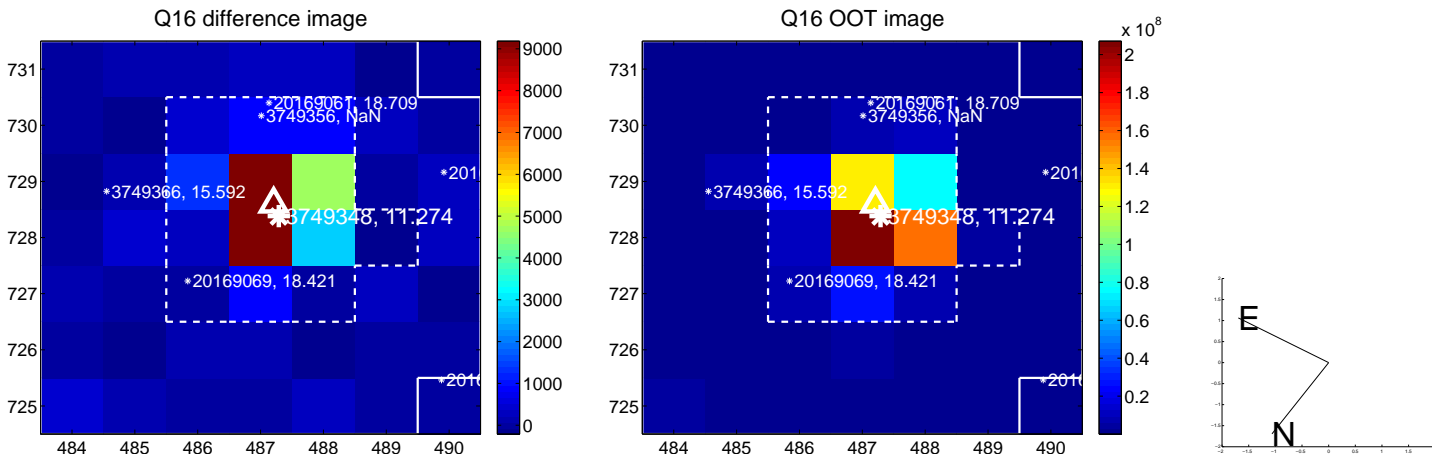
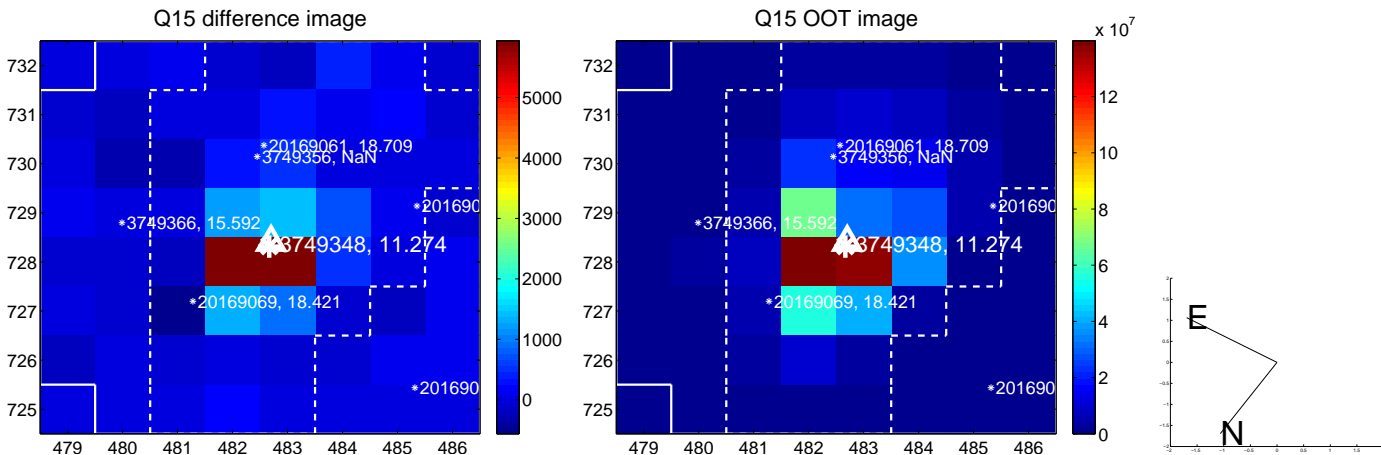
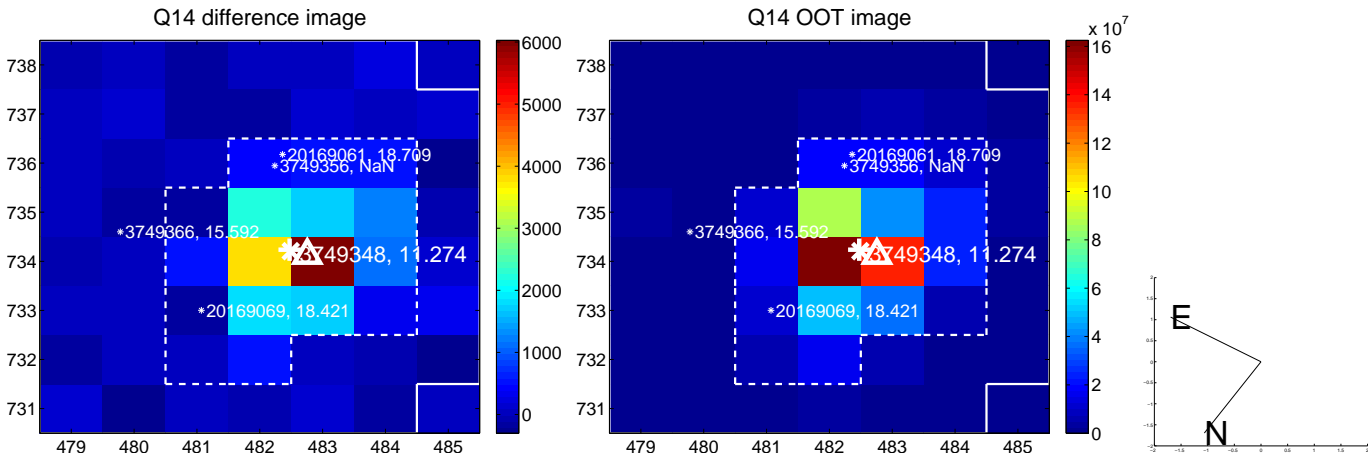
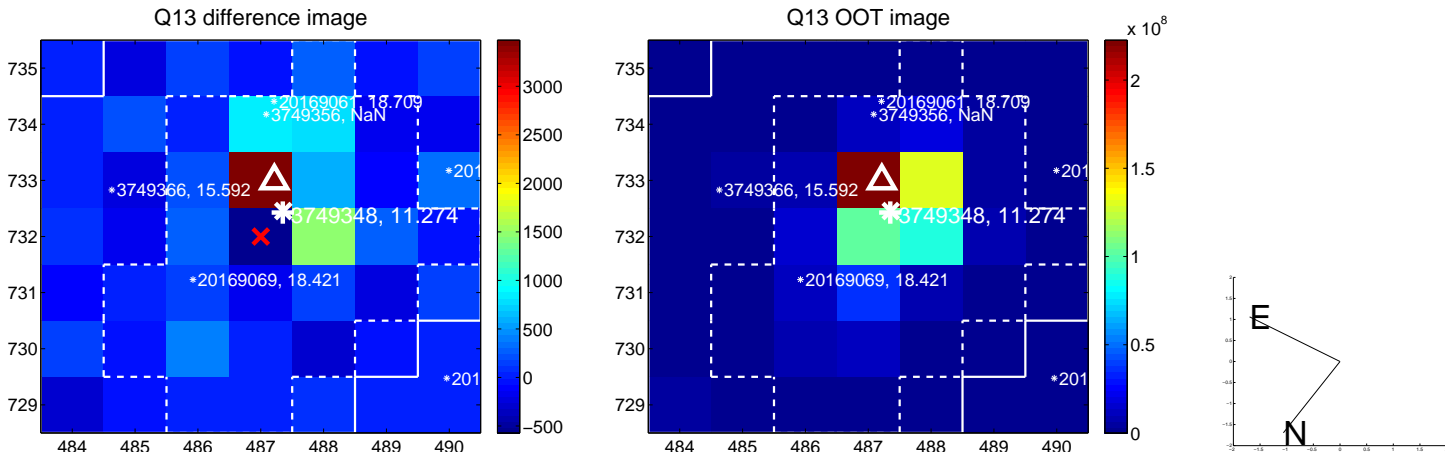
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

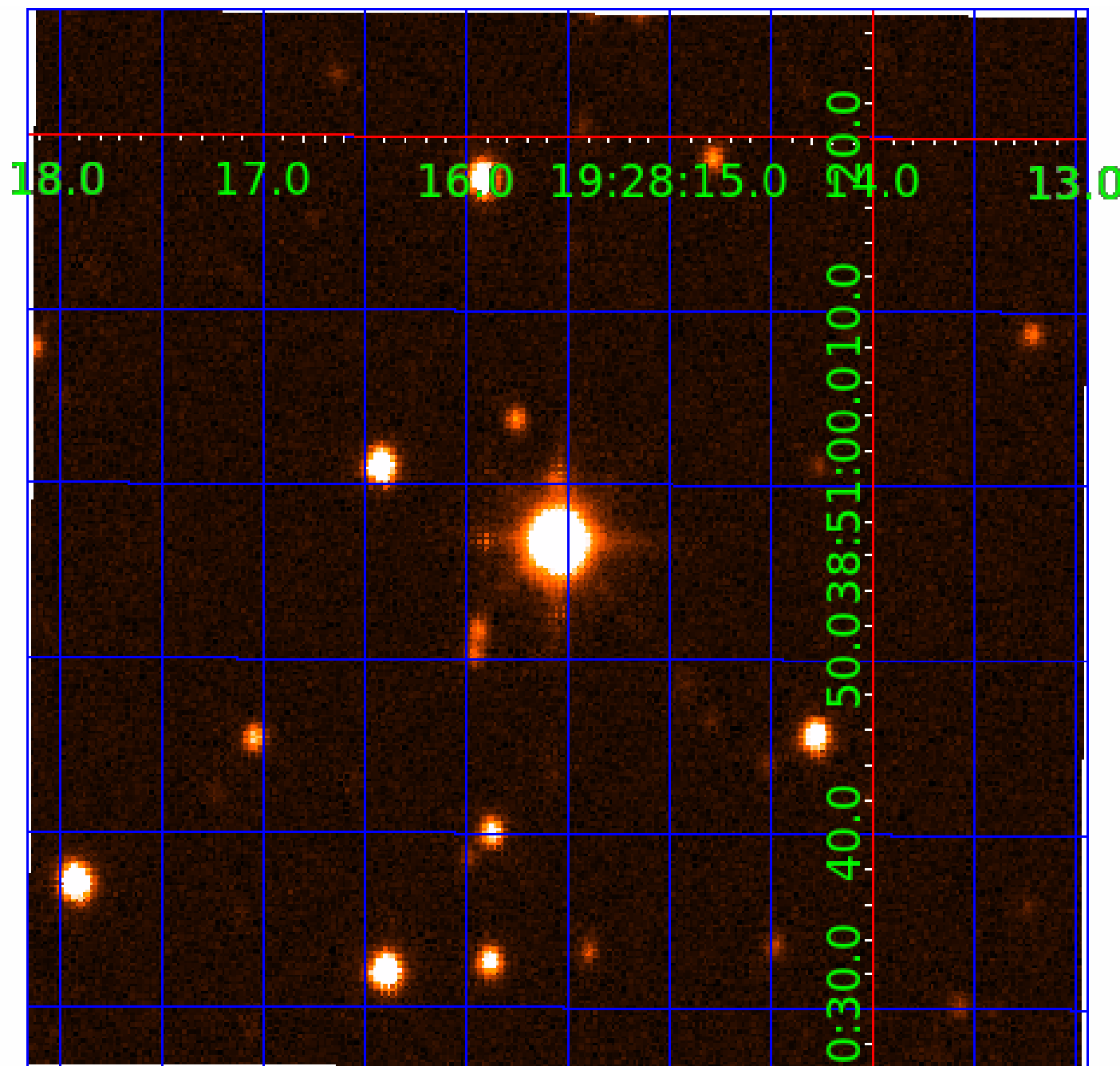


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003749348

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})
003749348-01	OBS	No	0.705463	132.135791	17.9	2.560	11.2	10.0	3.53	6669	1.52	59694.43
003749348-02	OBS	No	97.537133	188.168158	187.9	2.164	7.5	8.0	3.53	6669	5.40	83.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749348-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
003749348-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

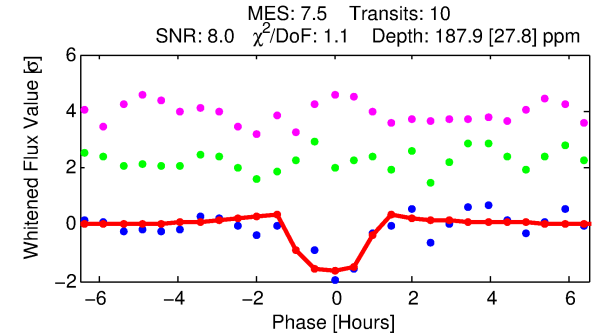
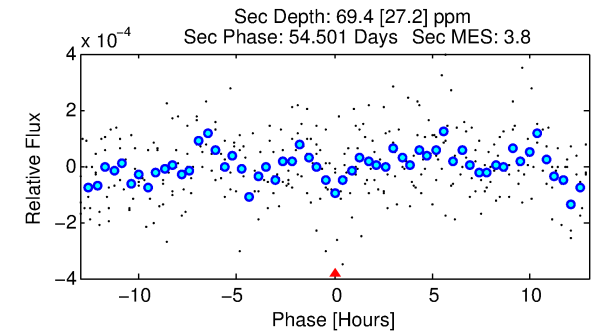
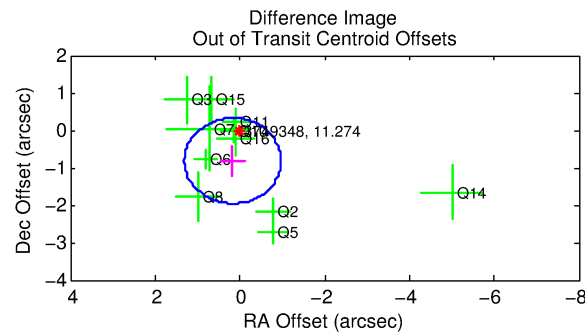
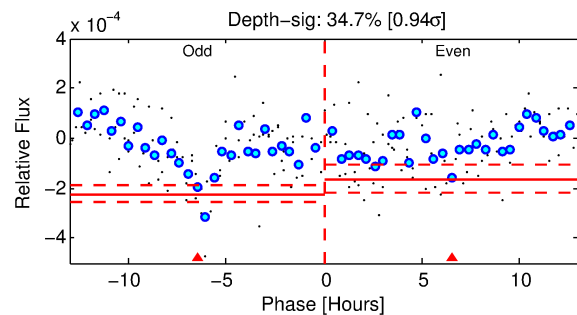
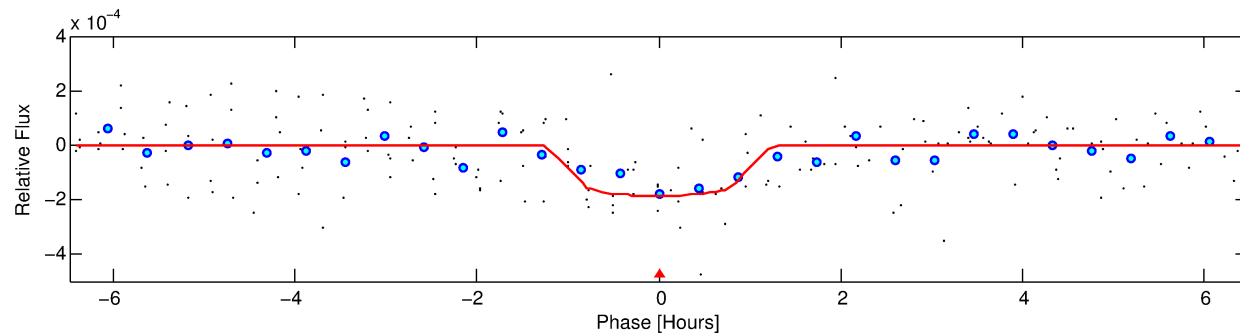
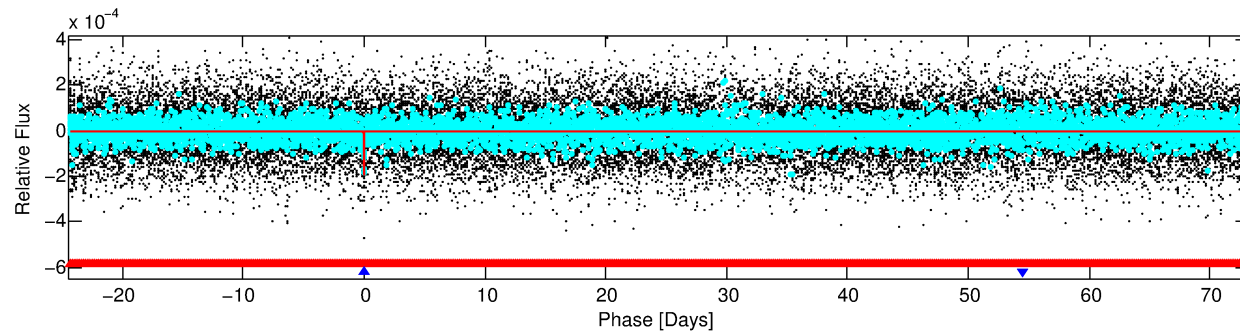
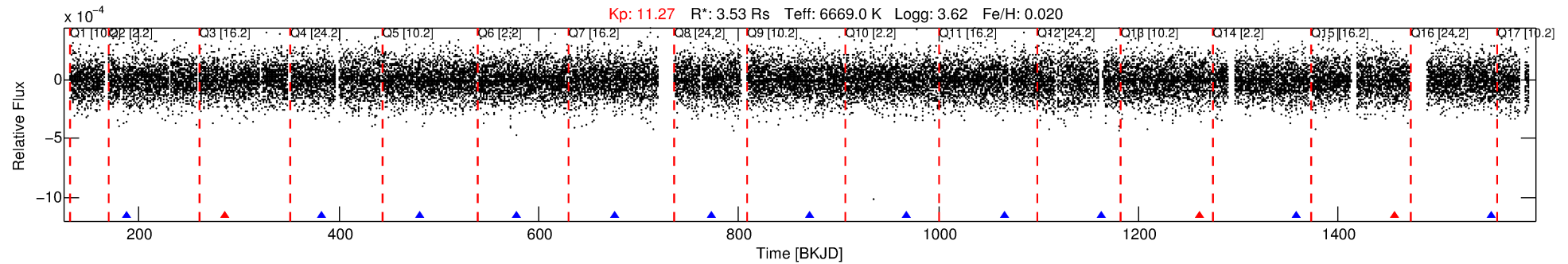
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749348-02

No Significant Match Found

DV One-Page Summary

KIC: 3749348 Candidate: 2 of 2 Period: 97.537 d



DV Fit Results:

Period = 97.53713 [0.00078] d
Epoch = 188.1682 [0.0060] BKJD
Rp/R* = 0.0140 [0.0125]
a/R* = 204.50 [1040.12]
b = 0.82 [2.03]
Seff = 83.50 [43.58]
Teff = 771 [101] K
Rp = 5.40 [5.24] Re
a = 0.5147 [0.1718] AU
Ag = 346.95 [659.62] [0.52 σ]
Teffp = 5143 [2361] K [1.85 σ]

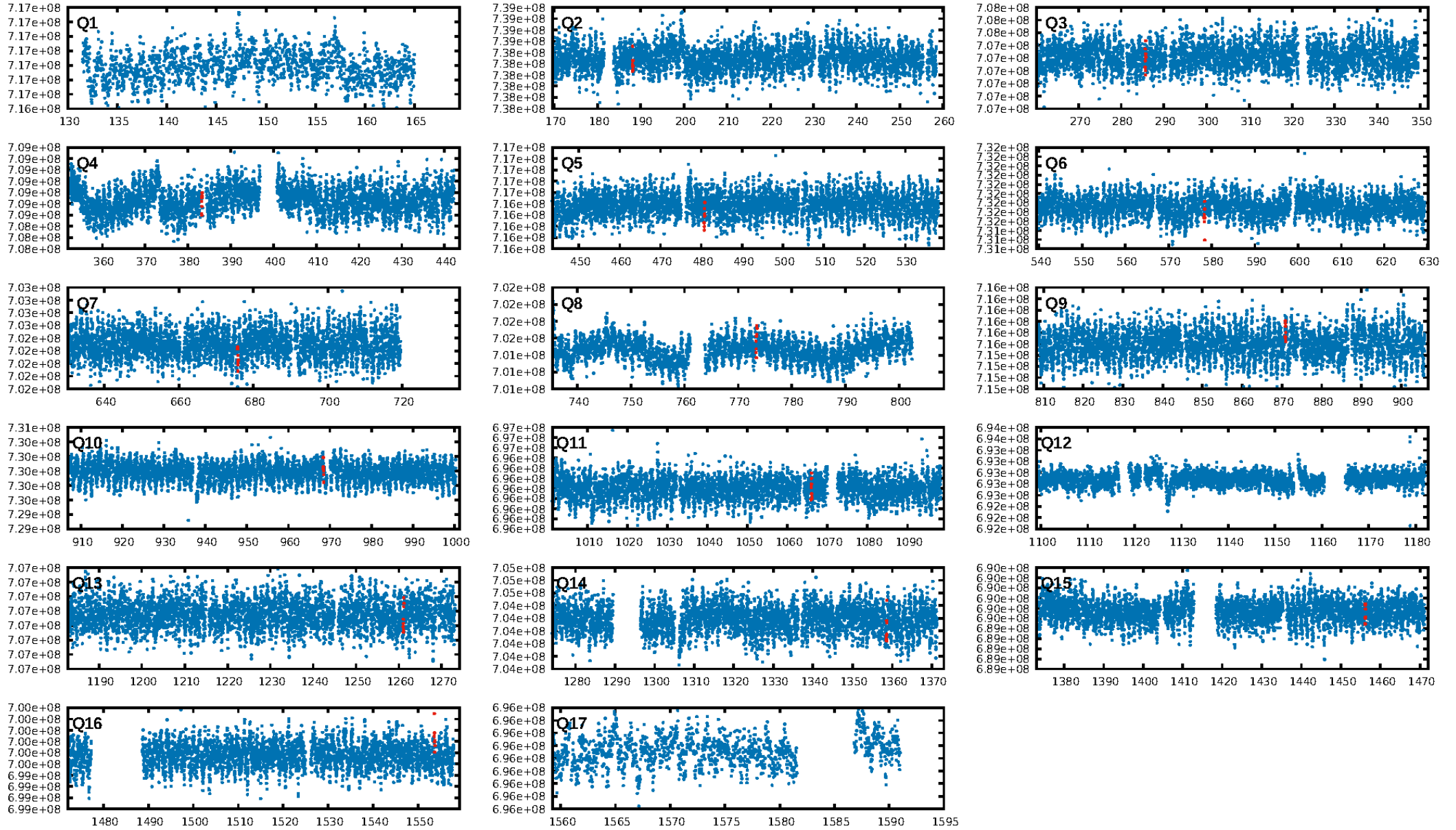
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [693.24 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 41.9%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 2.59e-10
RollingBand-fgt: 0.70 [7/10]
GhostDiagnostic-chr: 9.562
Centroid-sig: 9.7%
Centroid-so: 0.643 arcsec [1.28 σ]
OotOffset-rm: 0.835 arcsec [2.19 σ]
OotOffset-st: 4/4/2/1 [11]
KicOffset-rm: 0.879 arcsec [2.31 σ]
KicOffset-st: 4/4/2/1 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 0.08 [1/13]

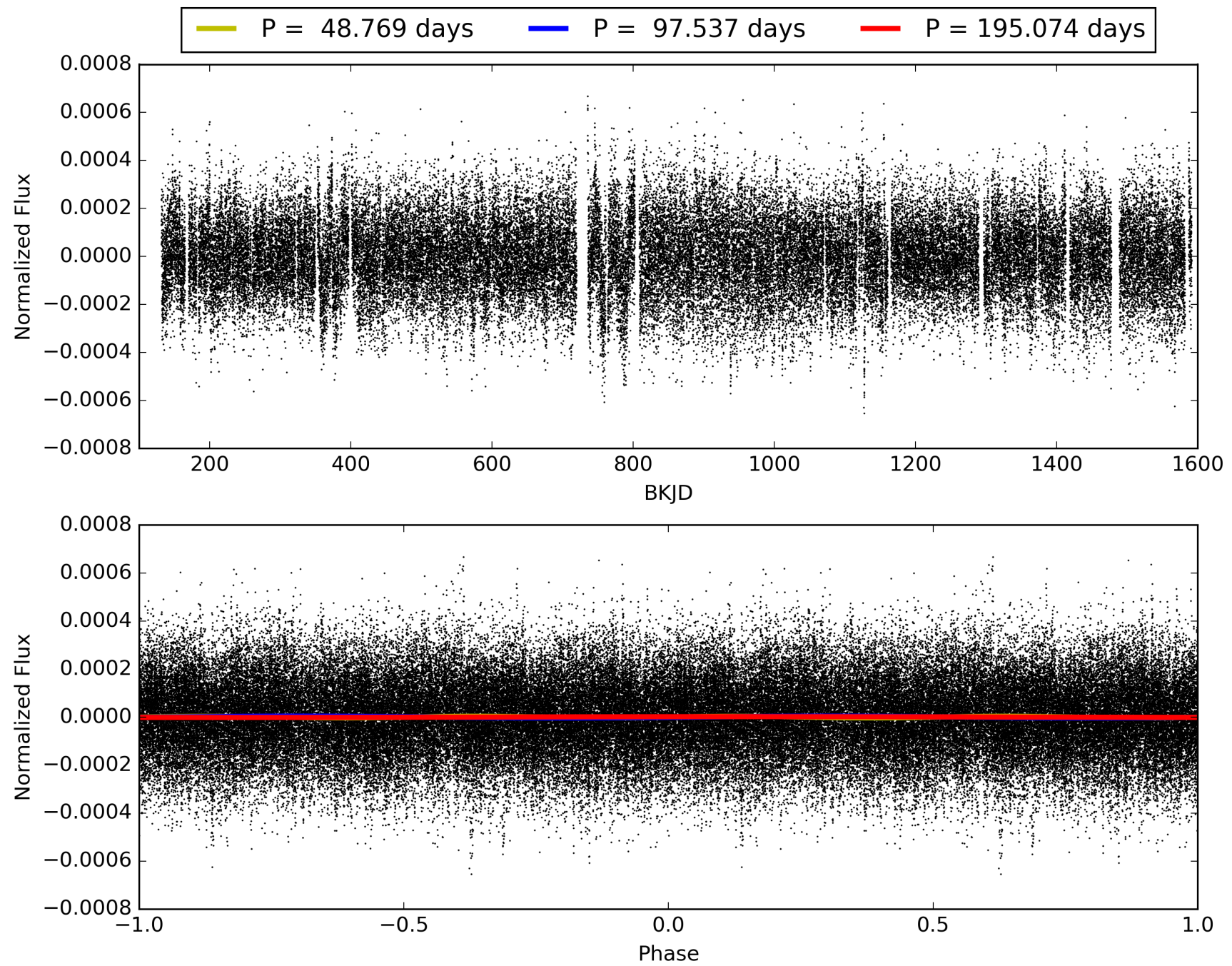
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:03:24 Z

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

TCE 003749348-02, PDC Light Curves

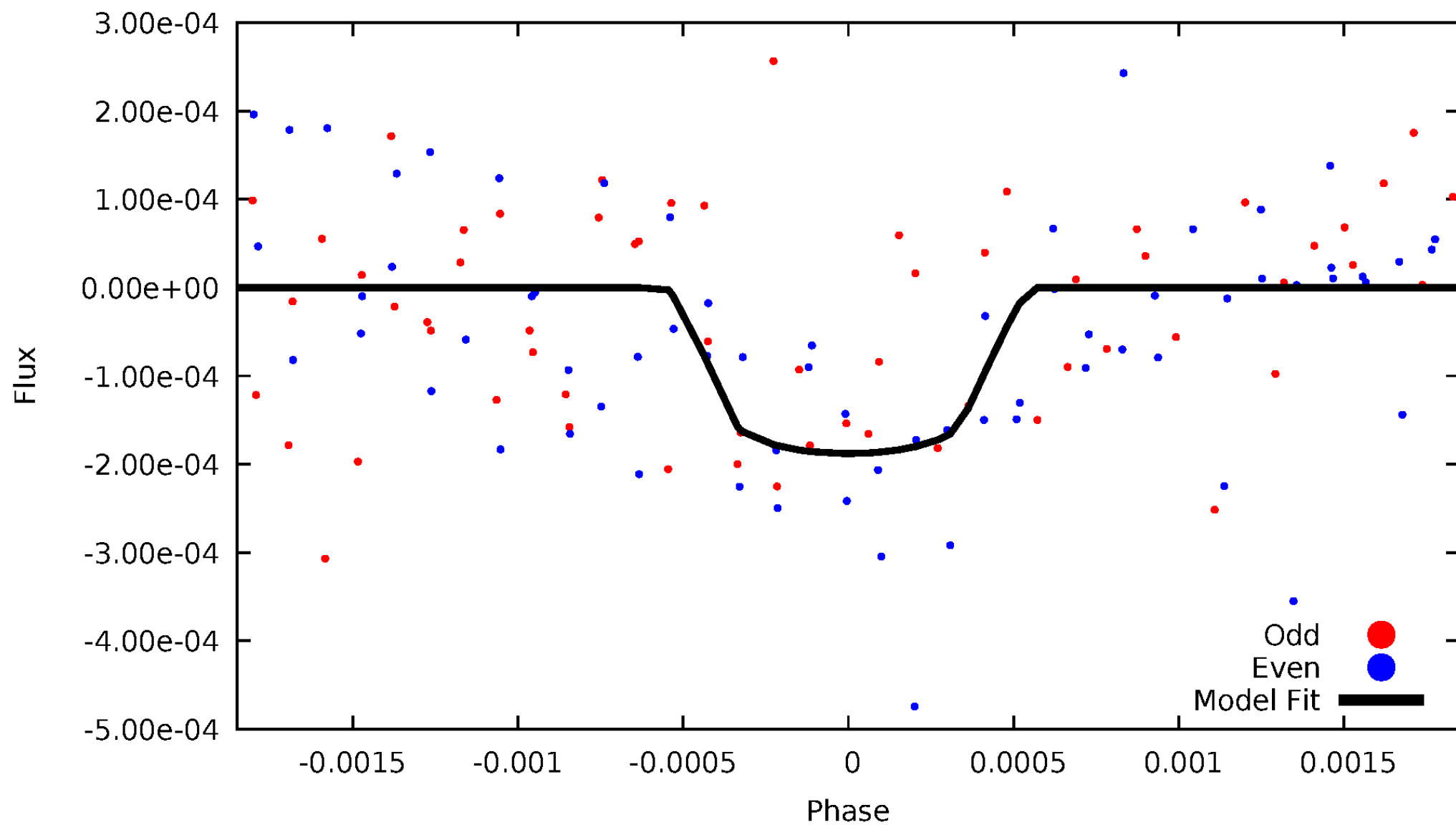


TCE 003749348-02



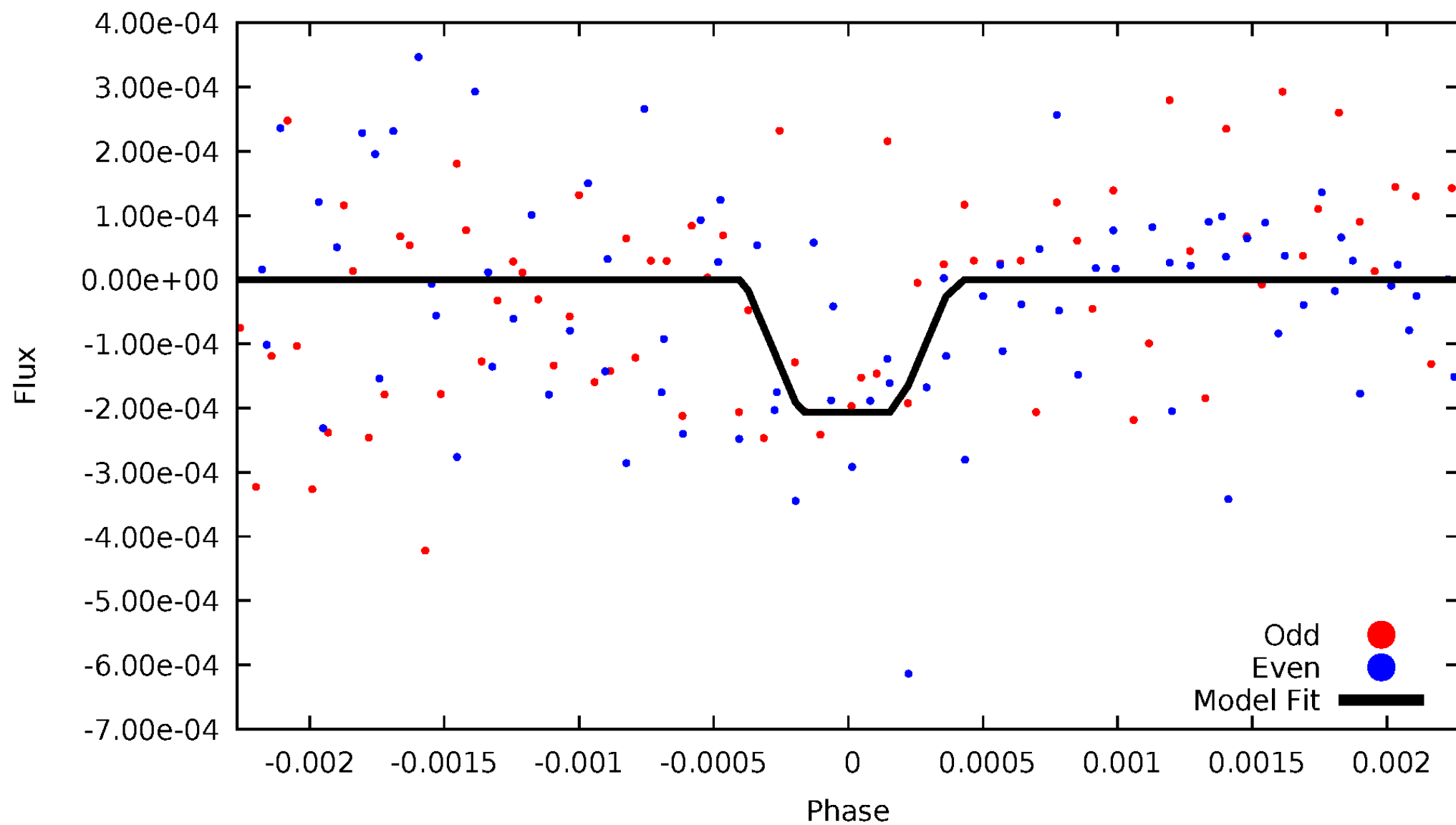
DV Odd/Even

TCE 003749348-02



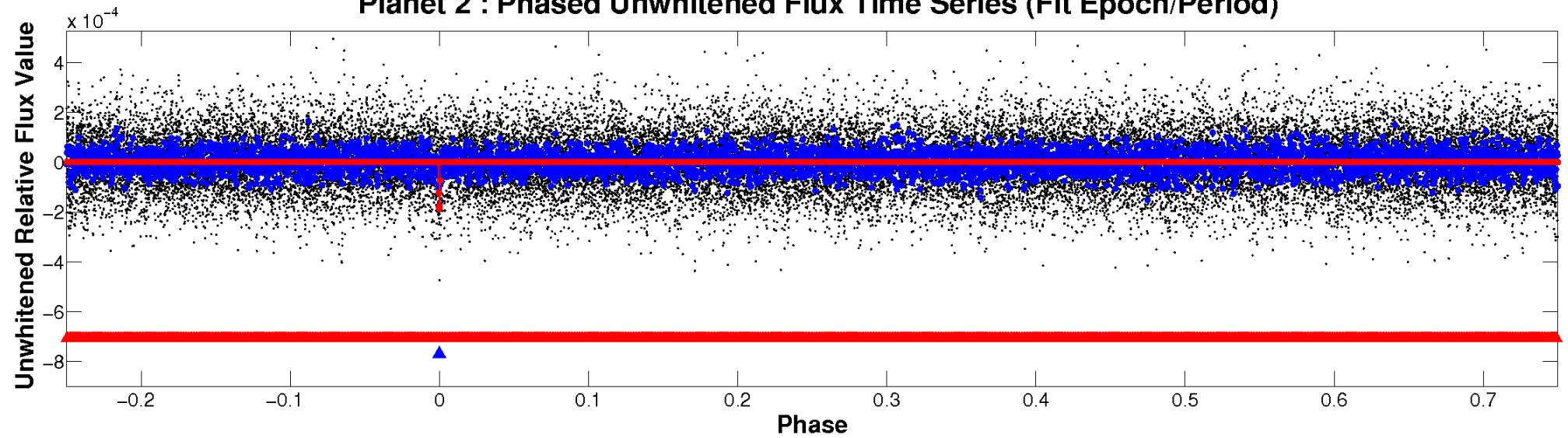
ALT Odd/Even

TCE 003749348-02

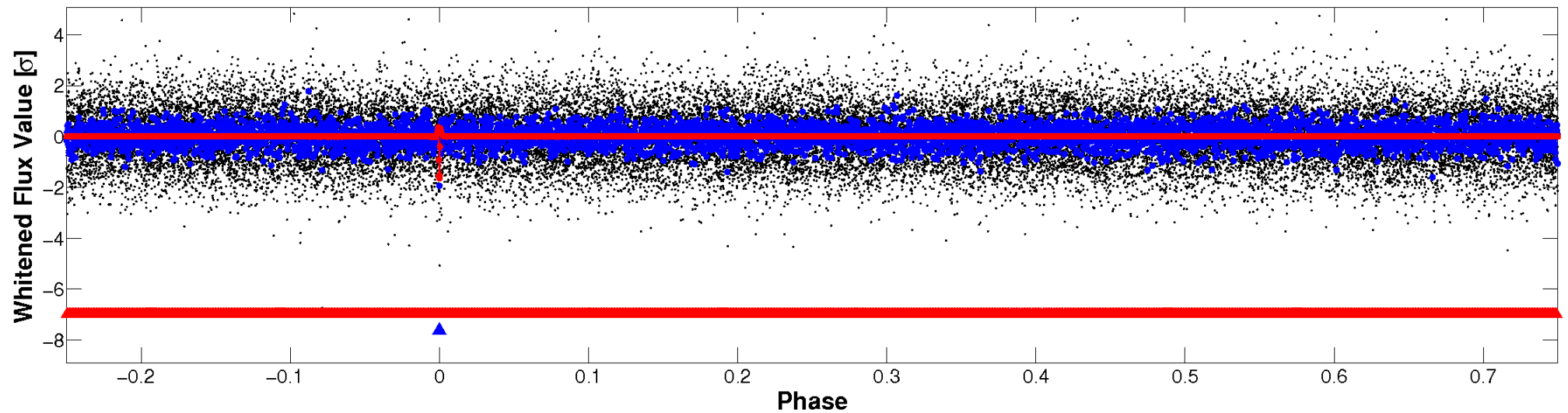


Non-Whitened Vs. Whitened Light Curve

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

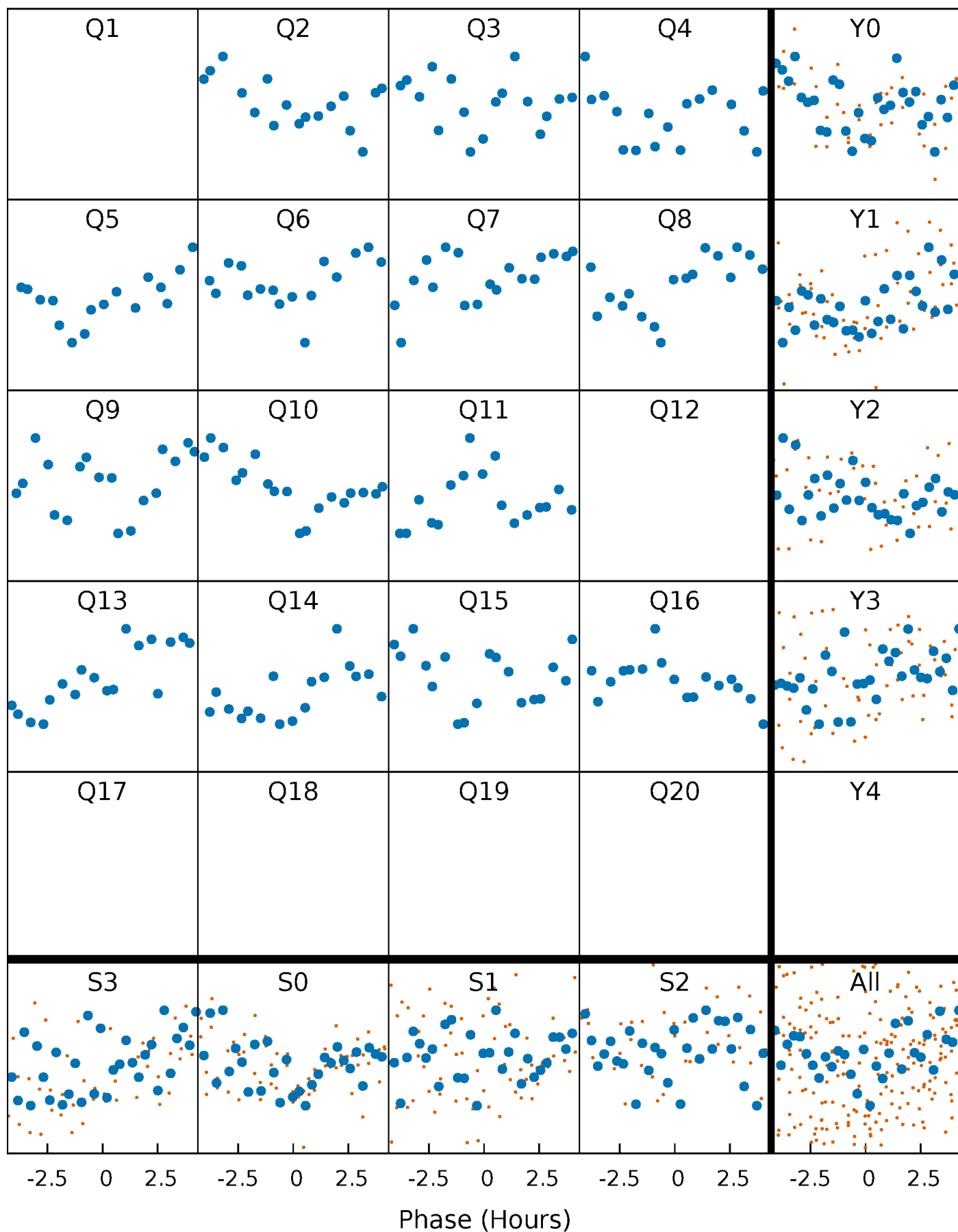


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



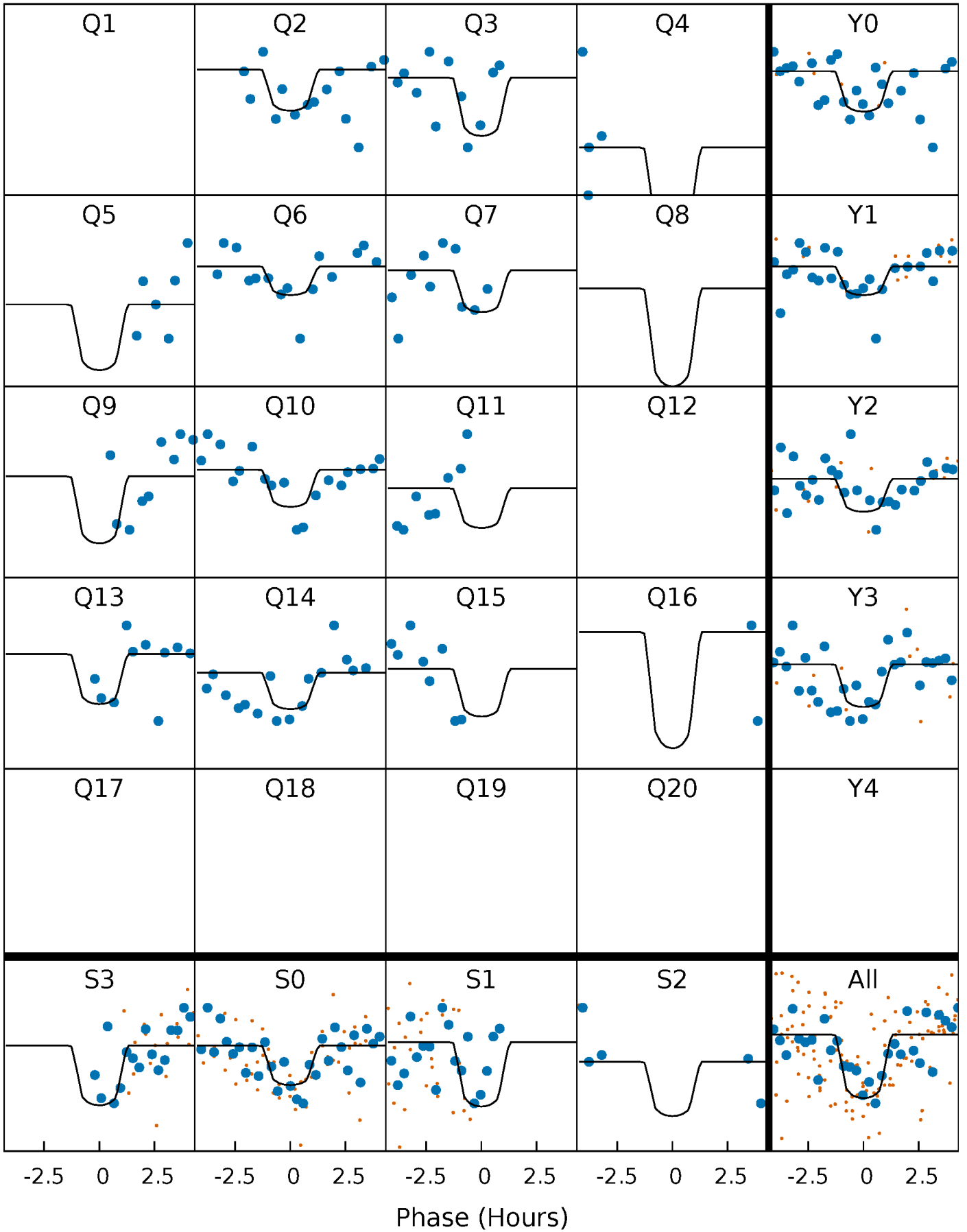
PDC Quarter-Phased Transit Curves

TCE 003749348-02 P= 97.537133 Days $T_0=188.168158$ (BKJD)



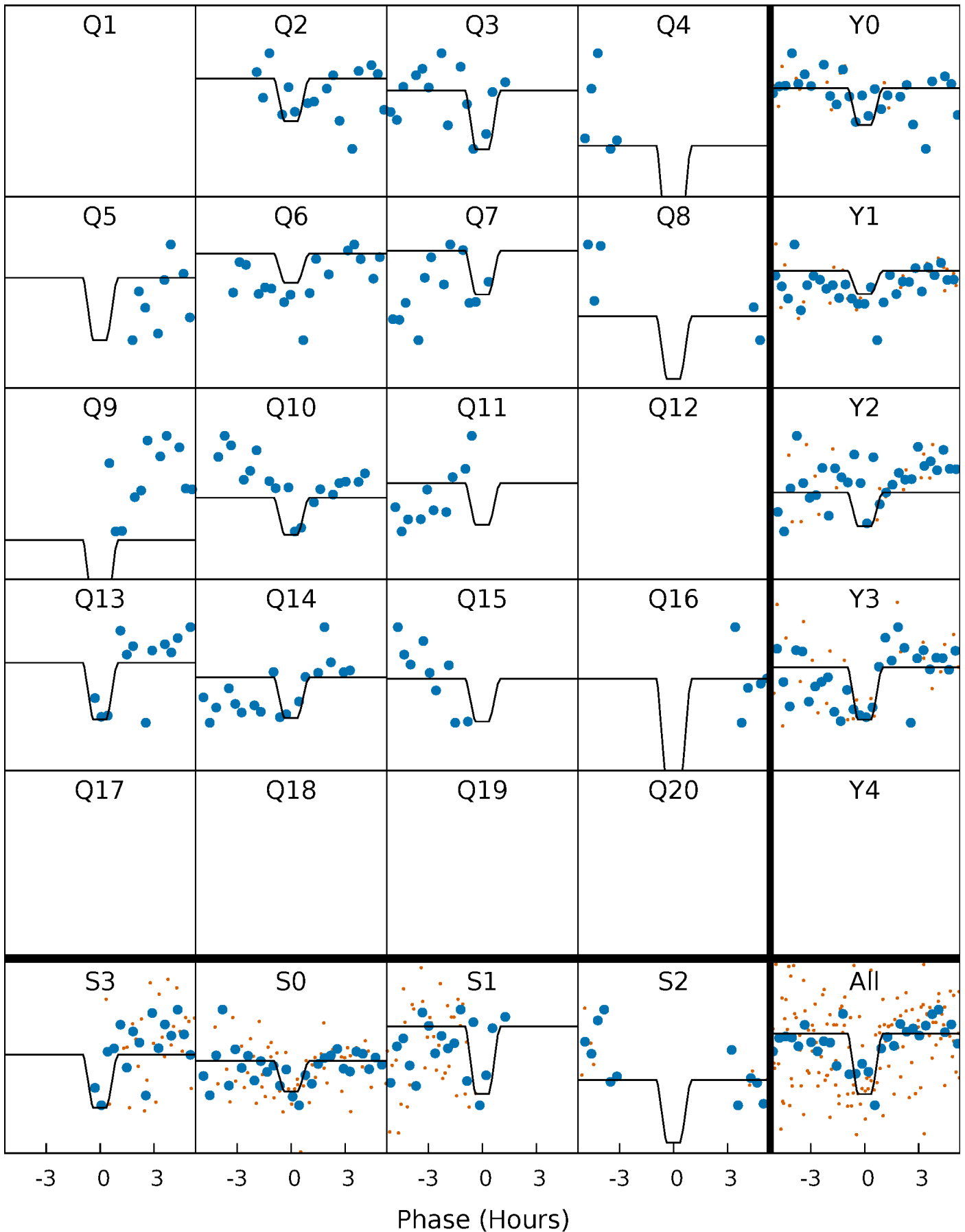
DV Quarter-Phased Transit Curves

TCE 003749348-02 P= 97.537133 Days $T_0=188.168158$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

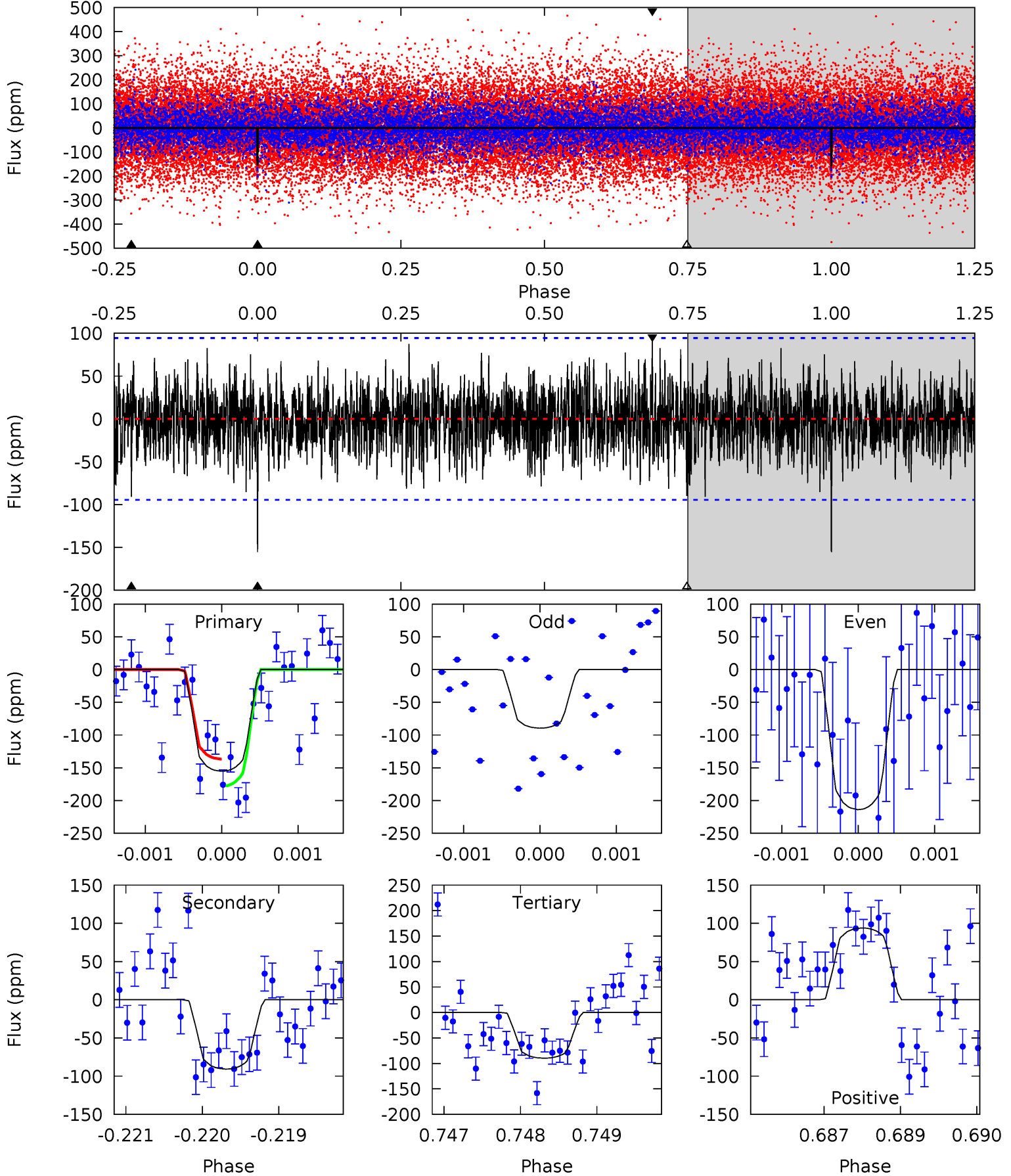
TCE 003749348-02 P= 97.538137 Days $T_0=188.161930$ (BKJD)



DV Model-Shift Uniqueness Test

003749348-02, P = 97.537133 Days, E = 90.631025 Days

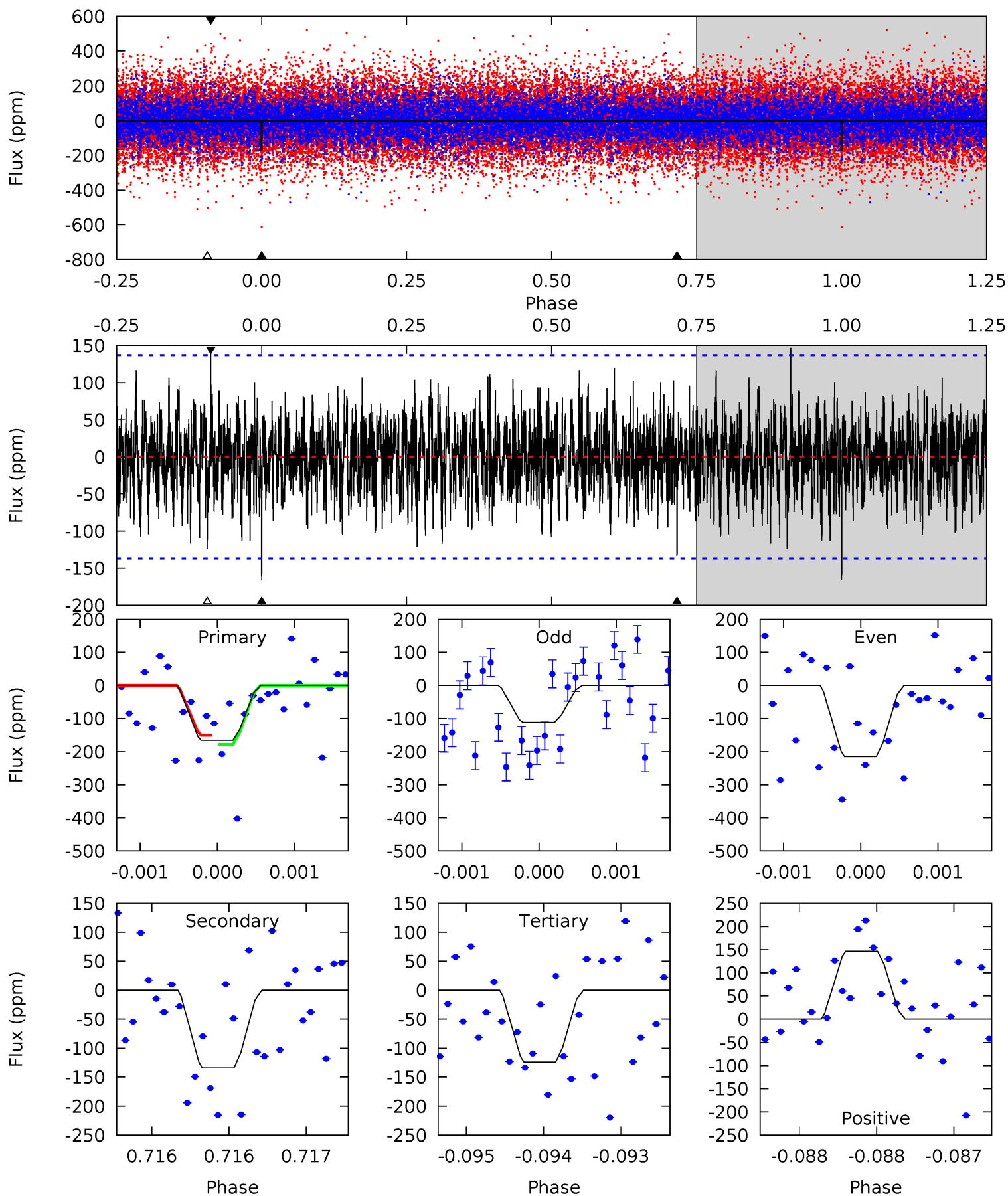
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.94	5.22	5.16	5.41	5.43	3.26	1.58	3.78	3.53	0.06	-0.18	3.57	0.76	0.38	1.17



Alt Model-Shift Uniqueness Test

003749348-02, P = 97.538137 Days, E = 90.623793 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.67	5.38	4.97	5.88	5.50	3.36	1.54	1.70	0.79	0.41	-0.50	2.08	0.90	0.47	0.55



Stellar Parameters For KIC 003749348

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6669^{+160}_{-200}	$3.623^{+0.288}_{-0.054}$	$0.020^{+0.250}_{-0.250}$	$3.533^{+0.331}_{-1.326}$	$1.910^{+0.172}_{-0.401}$	$0.061^{+0.132}_{-0.011}$
	+2%/-3%	+8%/-1%	+1250%/-1250%	+9%/-38%	+9%/-21%	+217%/-18%
Source	PHO1	FLK73	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 003749348-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-91 ± 17	$5.59^{+4.31}_{-3.41}$	1051^{+56}_{-84}	5213^{+3574}_{-1034}	410^{+2435}_{-272}
Alt.	-134 ± 25	$5.66^{+4.31}_{-3.39}$	1048^{+54}_{-84}	5643^{+3892}_{-1171}	574^{+3131}_{-375}

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 $A_{obs} \gg 1.0$

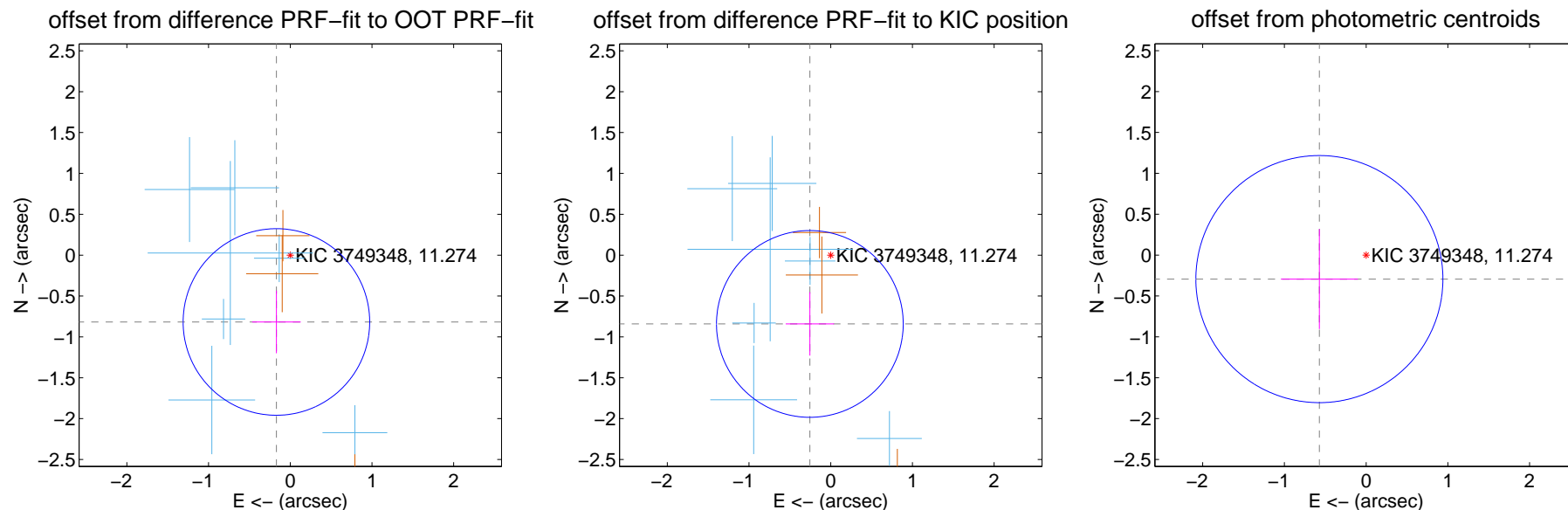
DV Centroid Data

Supplemental centroid analysis for 003749348-02. **Kepler magnitude: 11.27.** Transit SNR 7.99

There are 7 quarters with good PRF difference image offsets

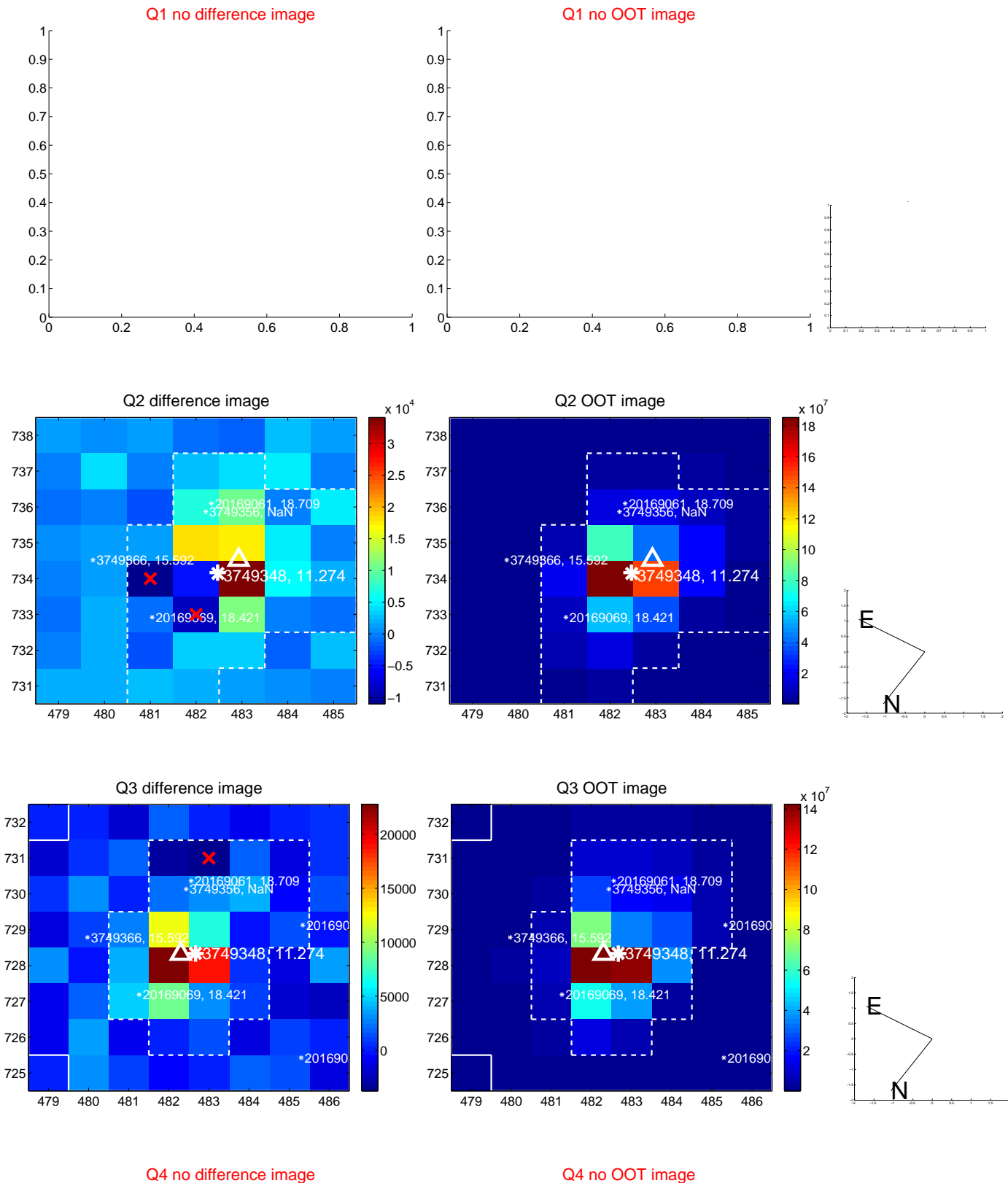
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.835 ± 0.380	2.19	0.170 ± 0.298	-0.817 ± 0.384
PRF-fit source offset from KIC position	0.879 ± 0.381	2.31	0.255 ± 0.296	-0.841 ± 0.388
photometric centroid source offset	0.64 ± 0.50	1.28	0.57 ± 0.47	-0.29 ± 0.61

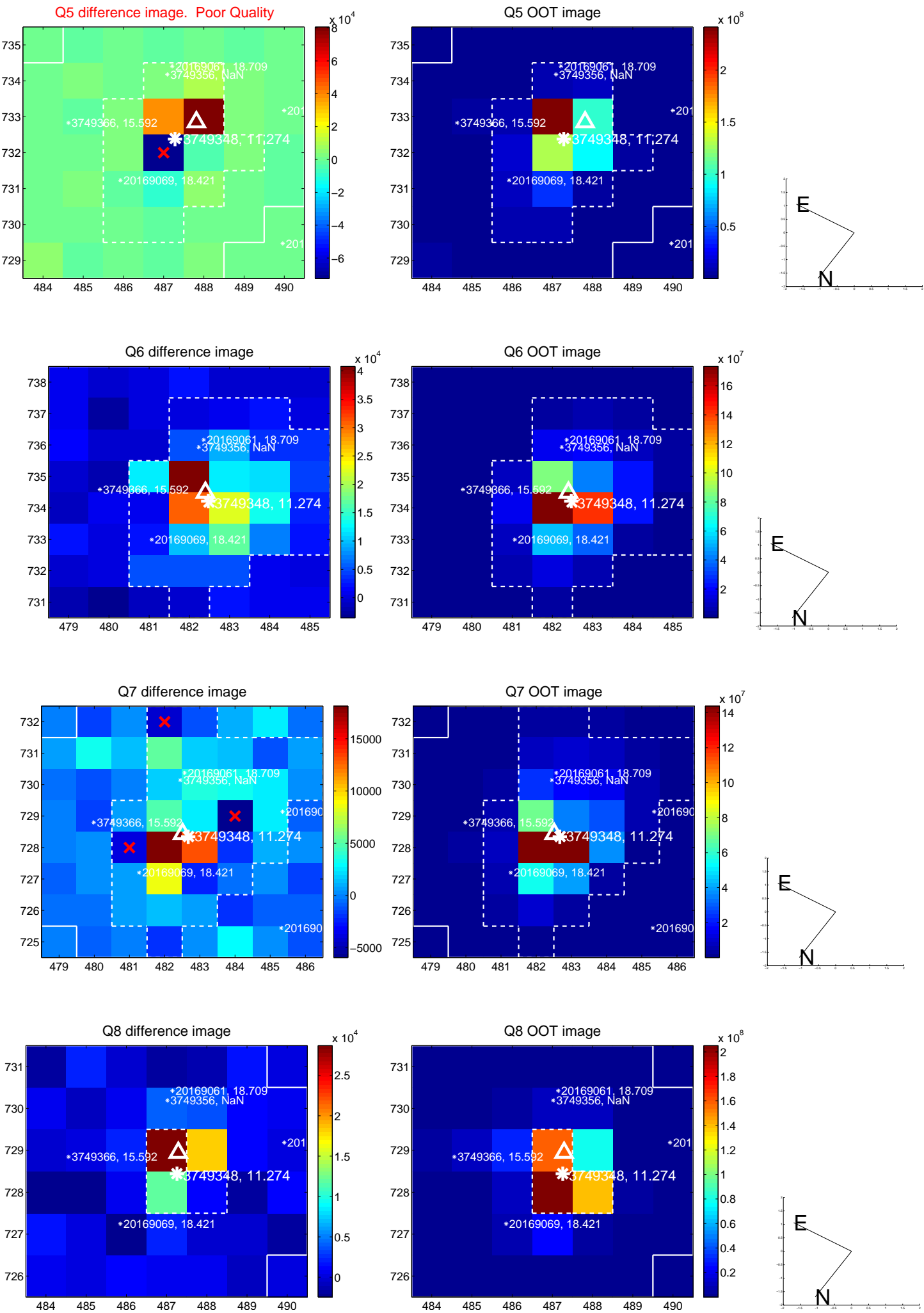


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

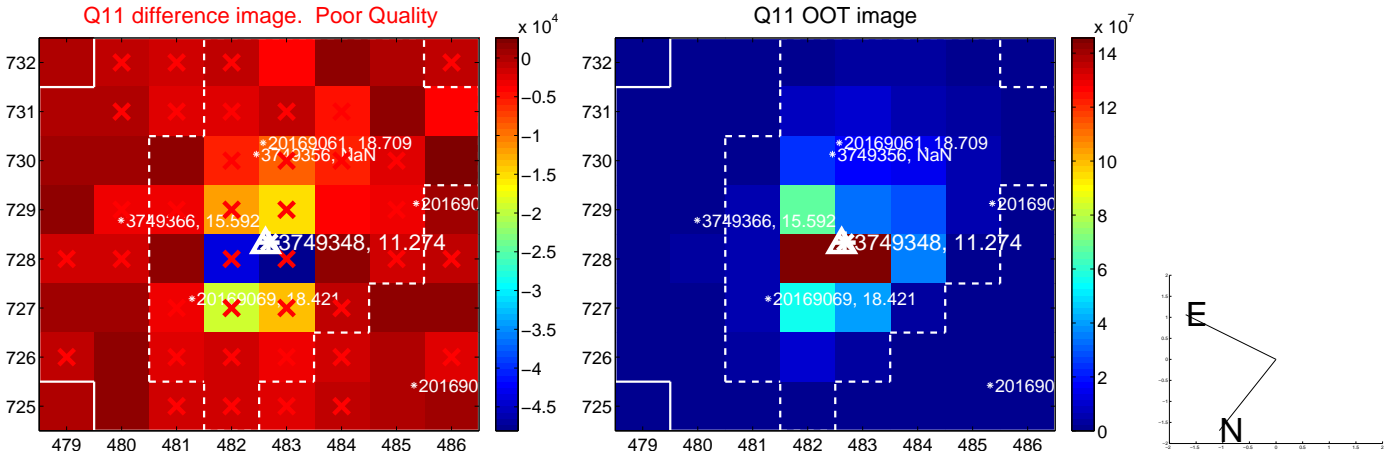
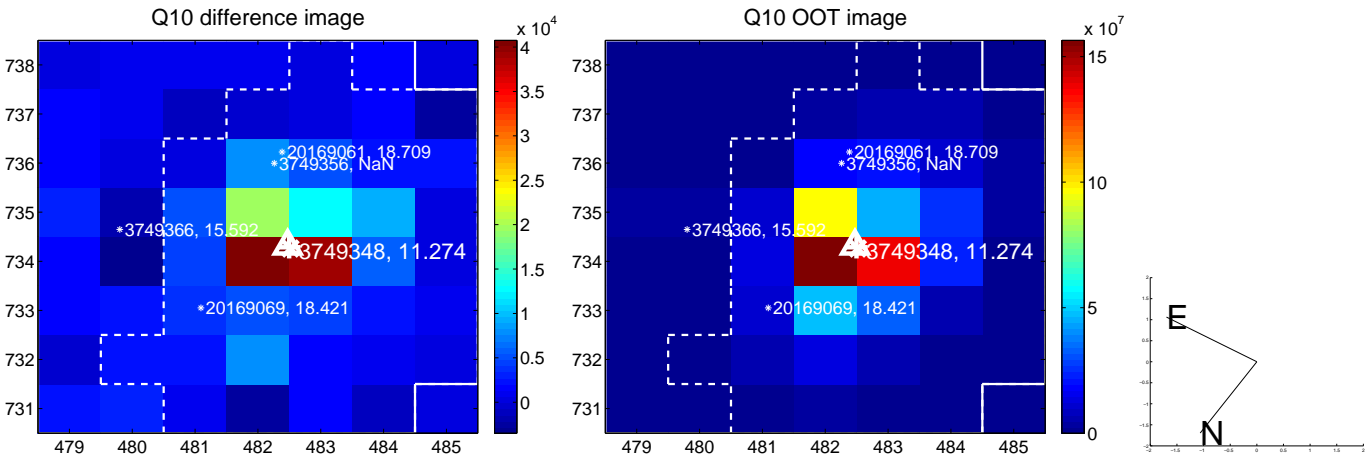
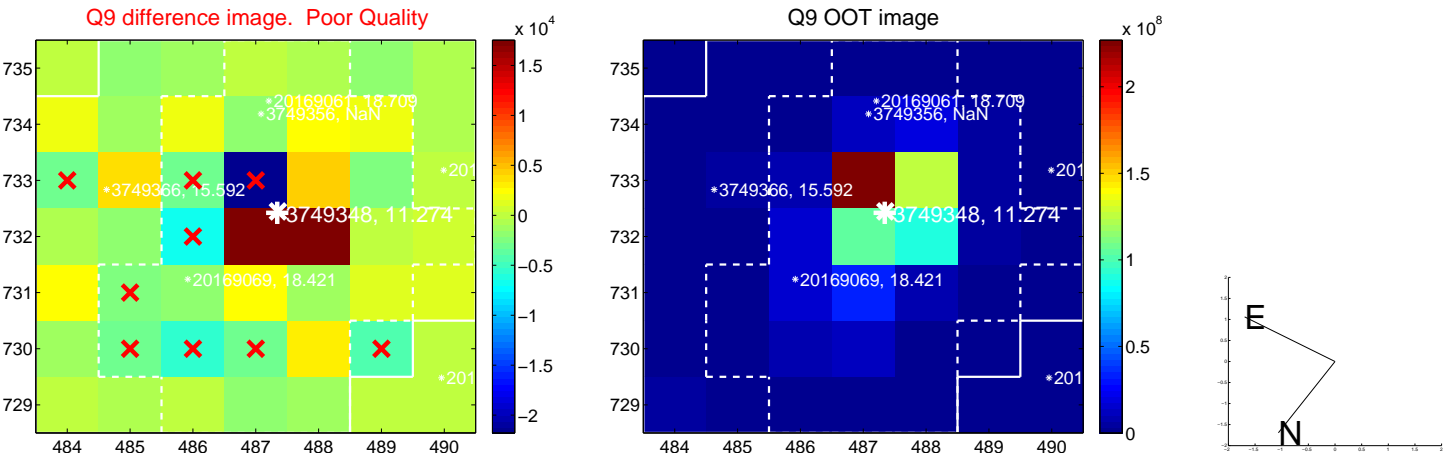
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



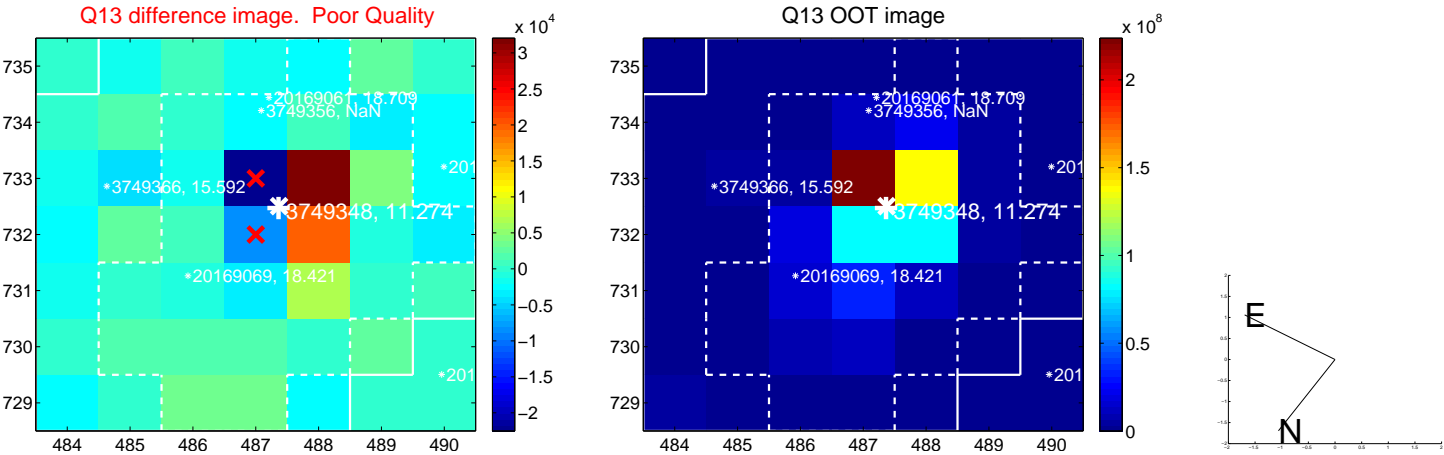
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



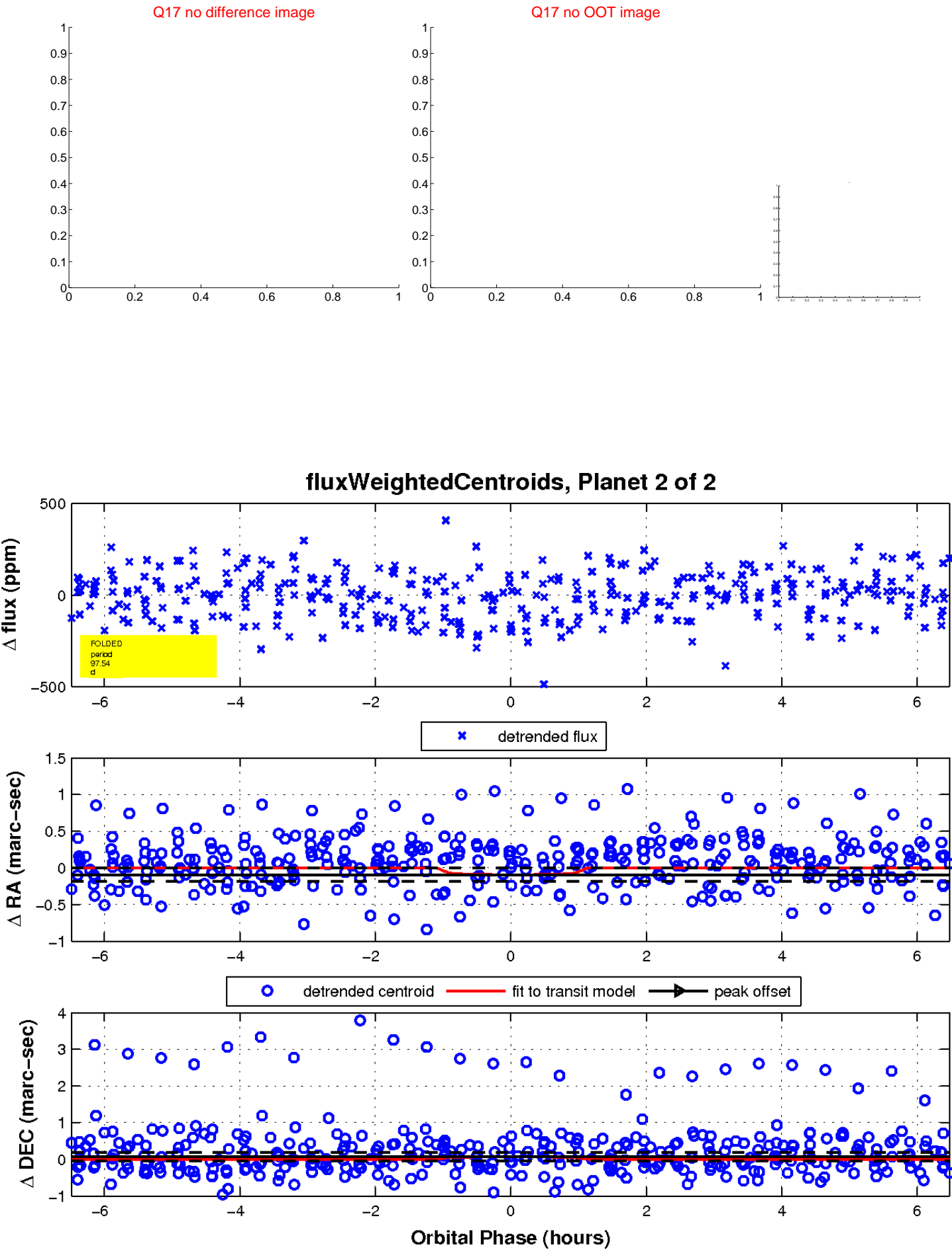
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

