

KIC 007030610

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})
007030610-01	OBS	No	2.849305	132.916892	16.9	3.390	10.2	4.0	3.21	6498	1.54	7776.57
007030610-02	OBS	No	2.849342	132.090872	26.0	5.024	8.9	5.9	3.21	6498	1.70	7776.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007030610-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007030610-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— SAME_NTL_PERIOD

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

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

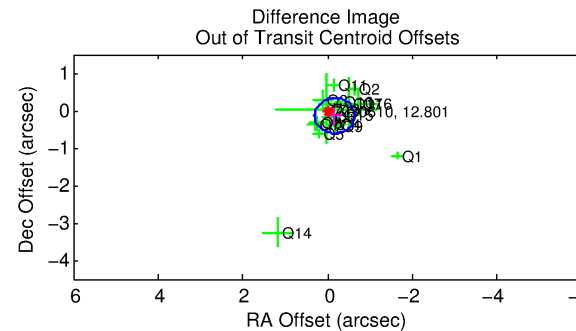
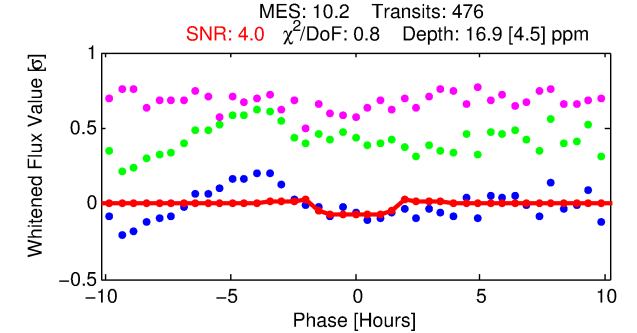
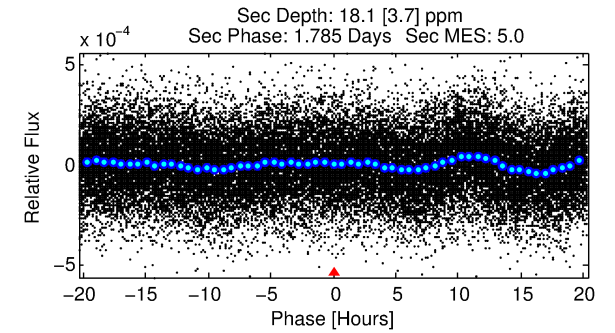
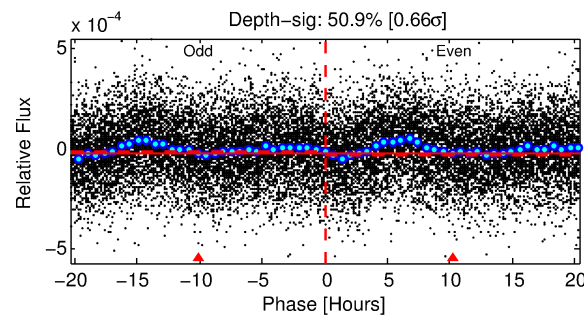
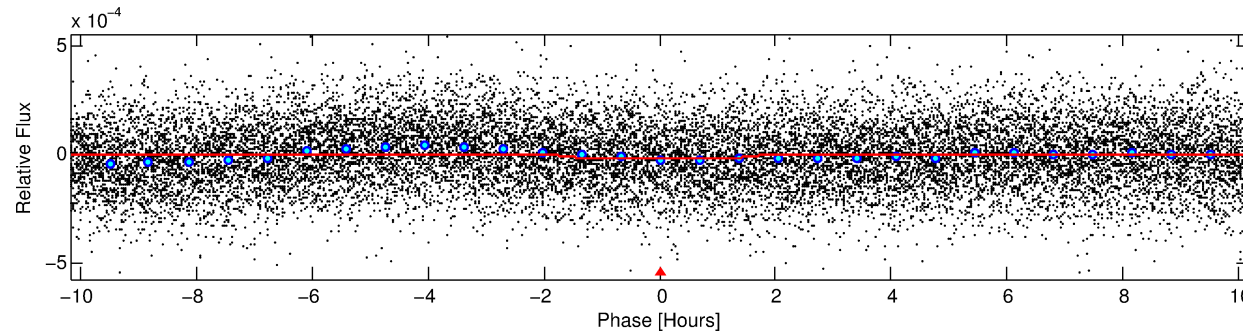
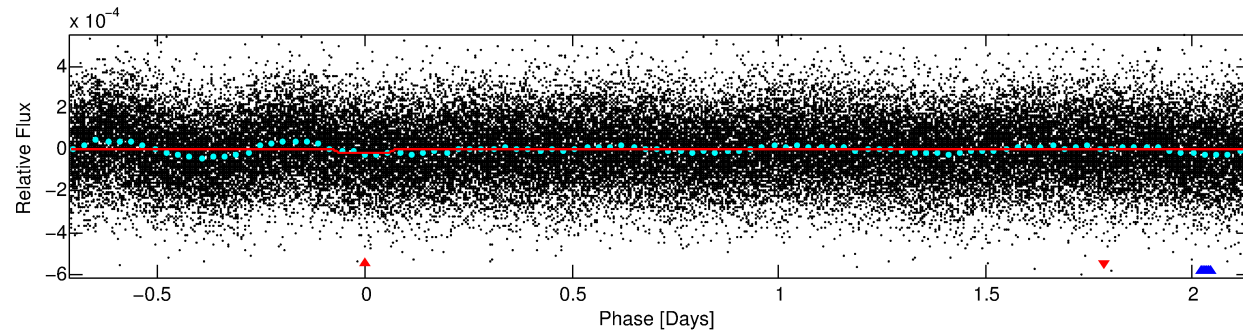
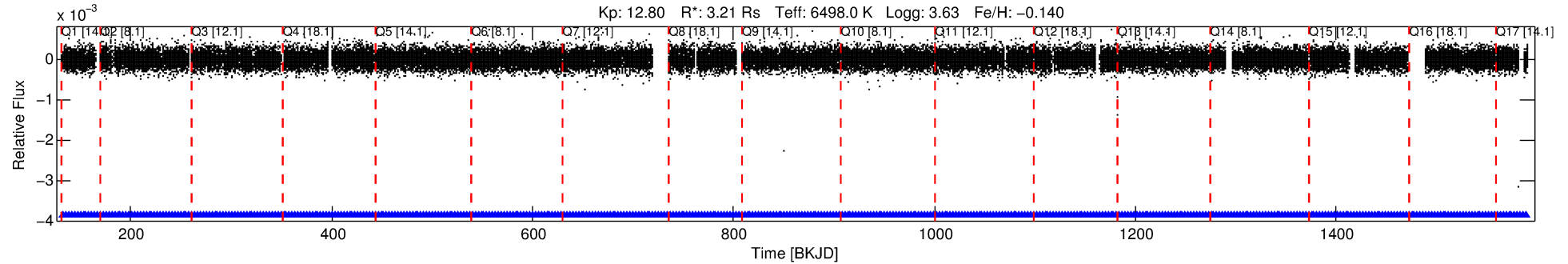
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007030610-01

No Significant Match Found

DV One-Page Summary

KIC: 7030610 Candidate: 1 of 2 Period: 2.849 d



DV Fit Results:

Period = 2.84931 [0.00004] d
Epoch = 132.9169 [0.0081] BKJD
Rp/R* = 0.0044 [0.0020]
a/R* = 3.02 [6.74]
b = 0.90 [0.54]
Seff = 7776.57 [4144.01]
Teq = 2395 [319] K
Rp = 1.54 [0.88] Re
a = 0.0460 [0.0152] AU
Ag = 8.87 [9.37] [0.84 σ]
Teffp = 6389 [1477] K [2.64 σ]

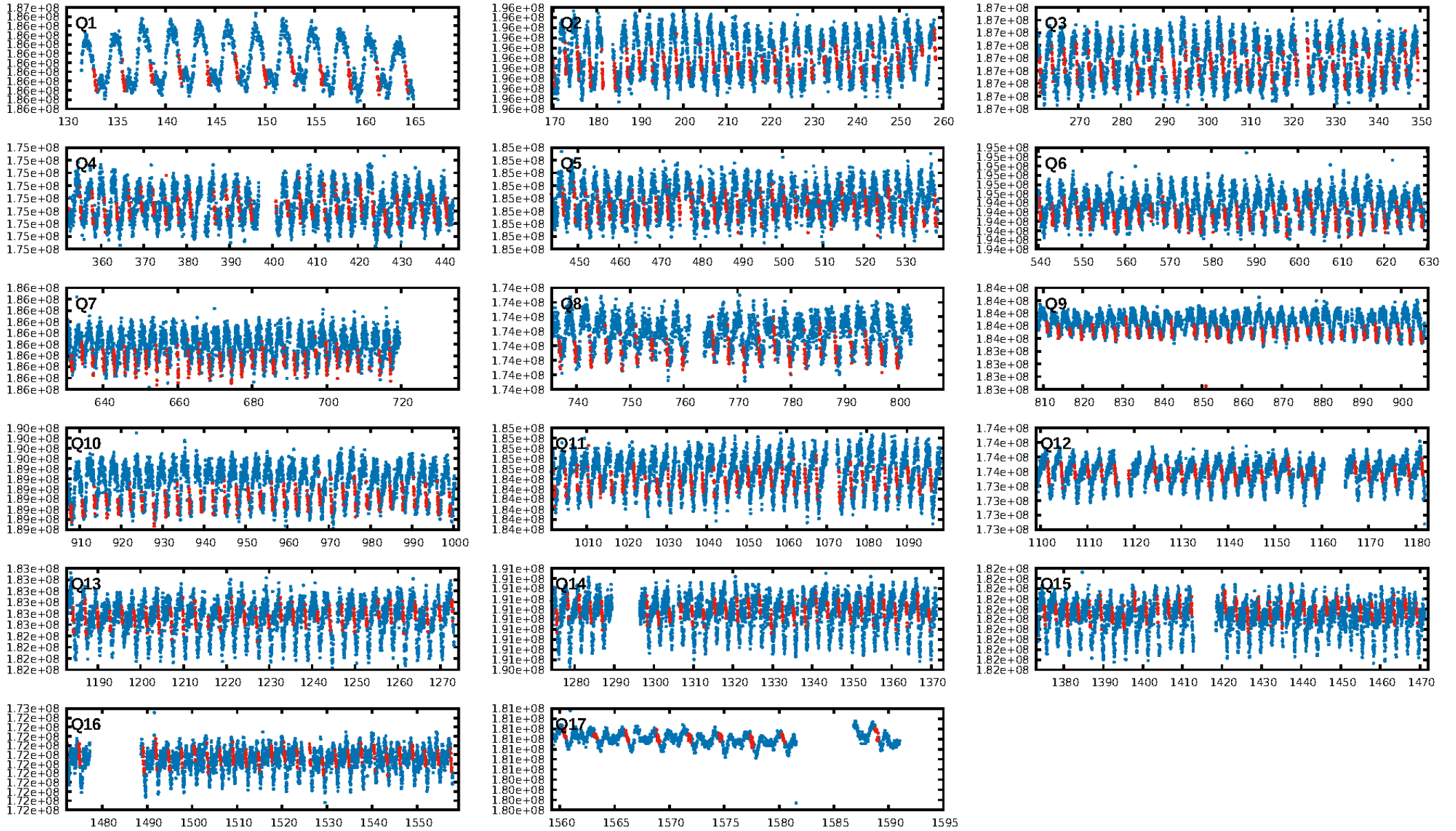
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.54e-18
RollingBand-fgt: 1.00 [455/455]
GhostDiagnostic-chr: 0.6653
Centroid-sig: 77.7%
Centroid-so: 0.771 arcsec [0.53 σ]
OotOffset-rm: 0.210 arcsec [1.34 σ]
KicOffset-rm: 0.178 arcsec [1.33 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.69 [11/16]
DiffImageOverlap-fno: 1.00 [17/17]

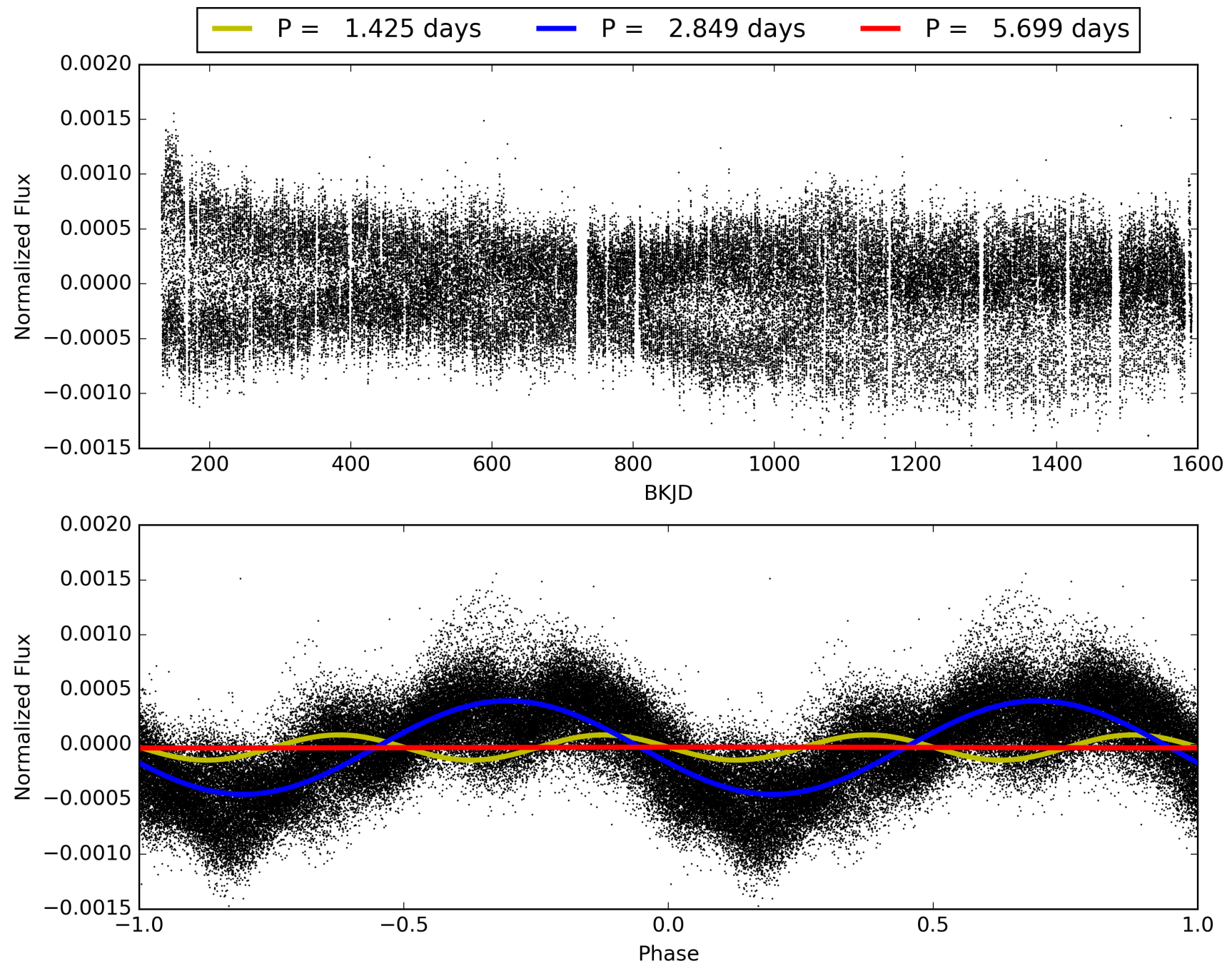
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:18:47 Z

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

TCE 007030610-01, PDC Light Curves

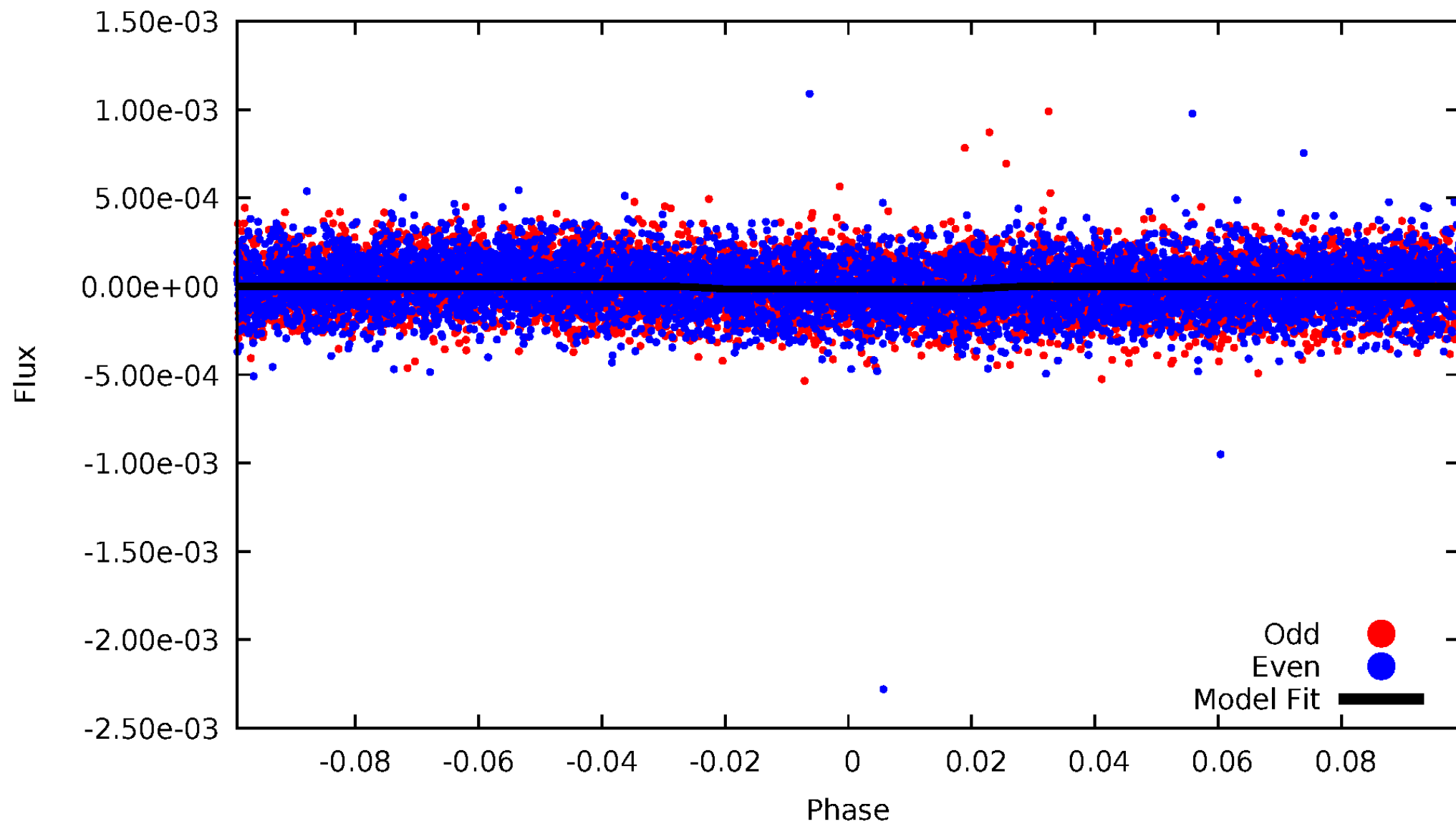


TCE 007030610-01



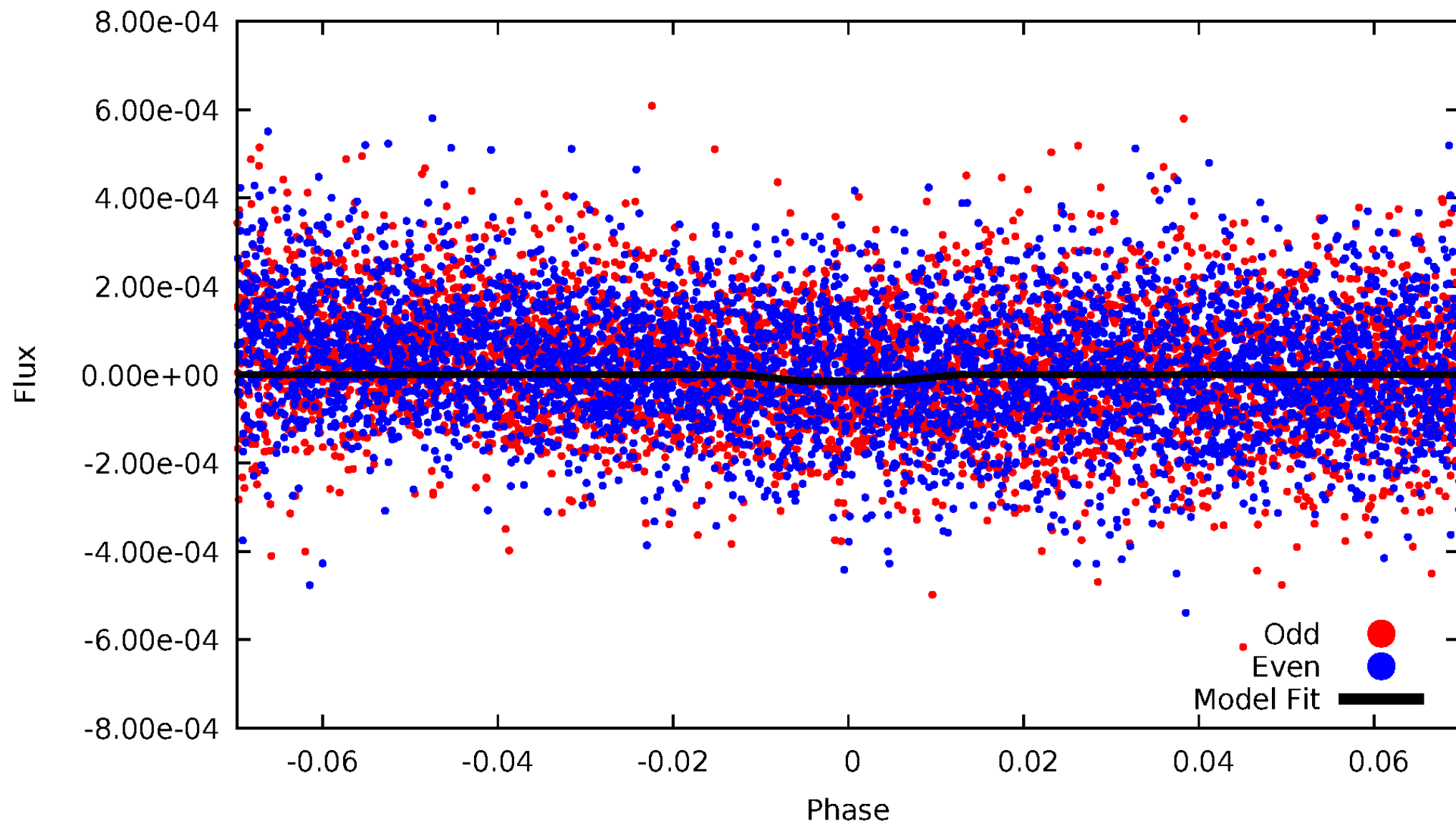
DV Odd/Even

TCE 007030610-01



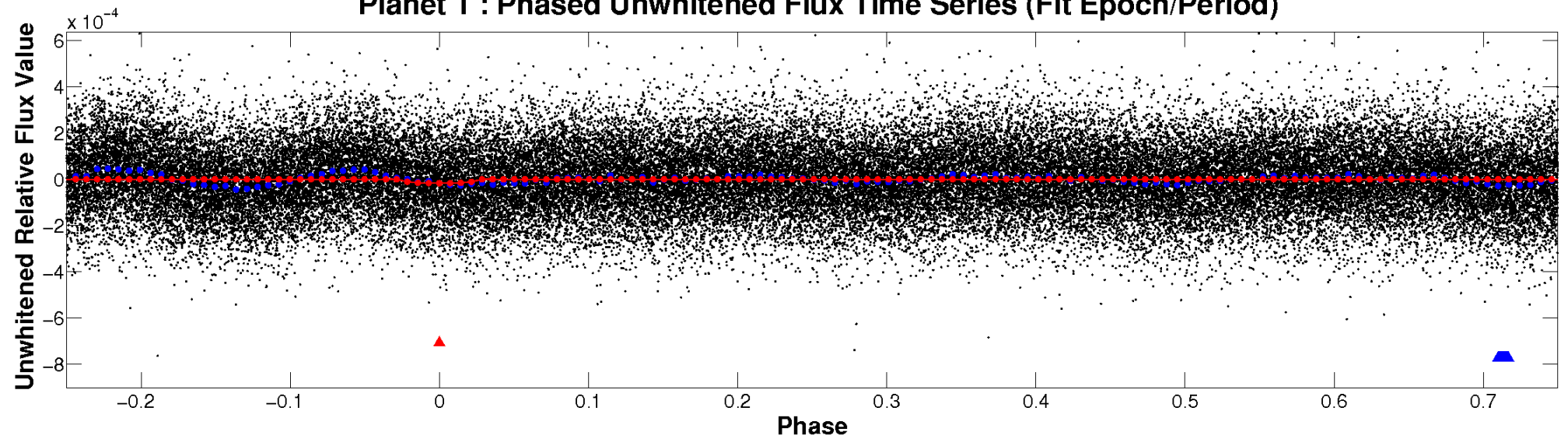
ALT Odd/Even

TCE 007030610-01

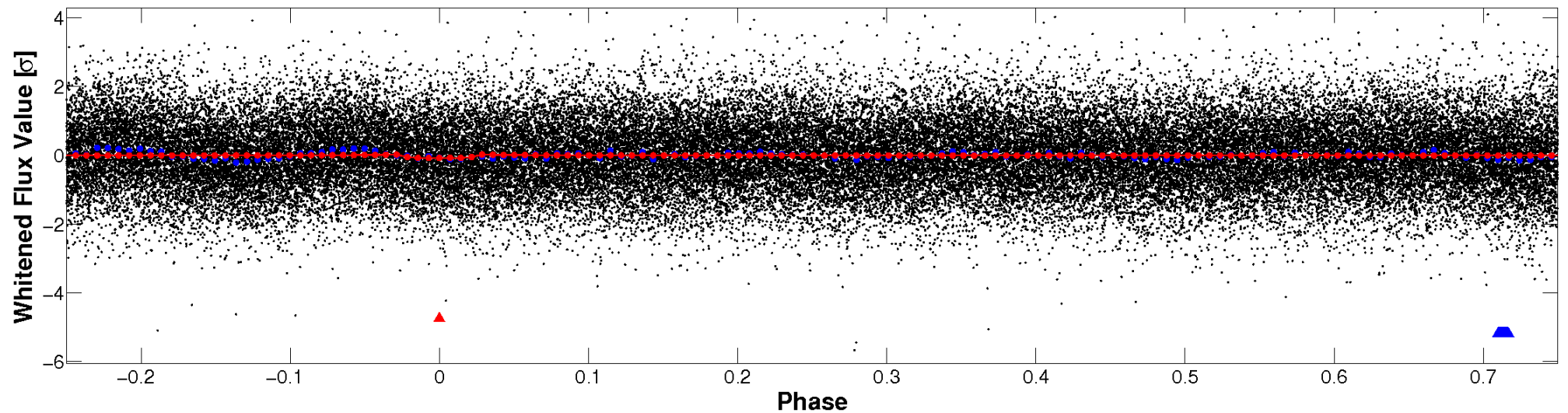


Non-Whitened Vs. Whitened Light Curve

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

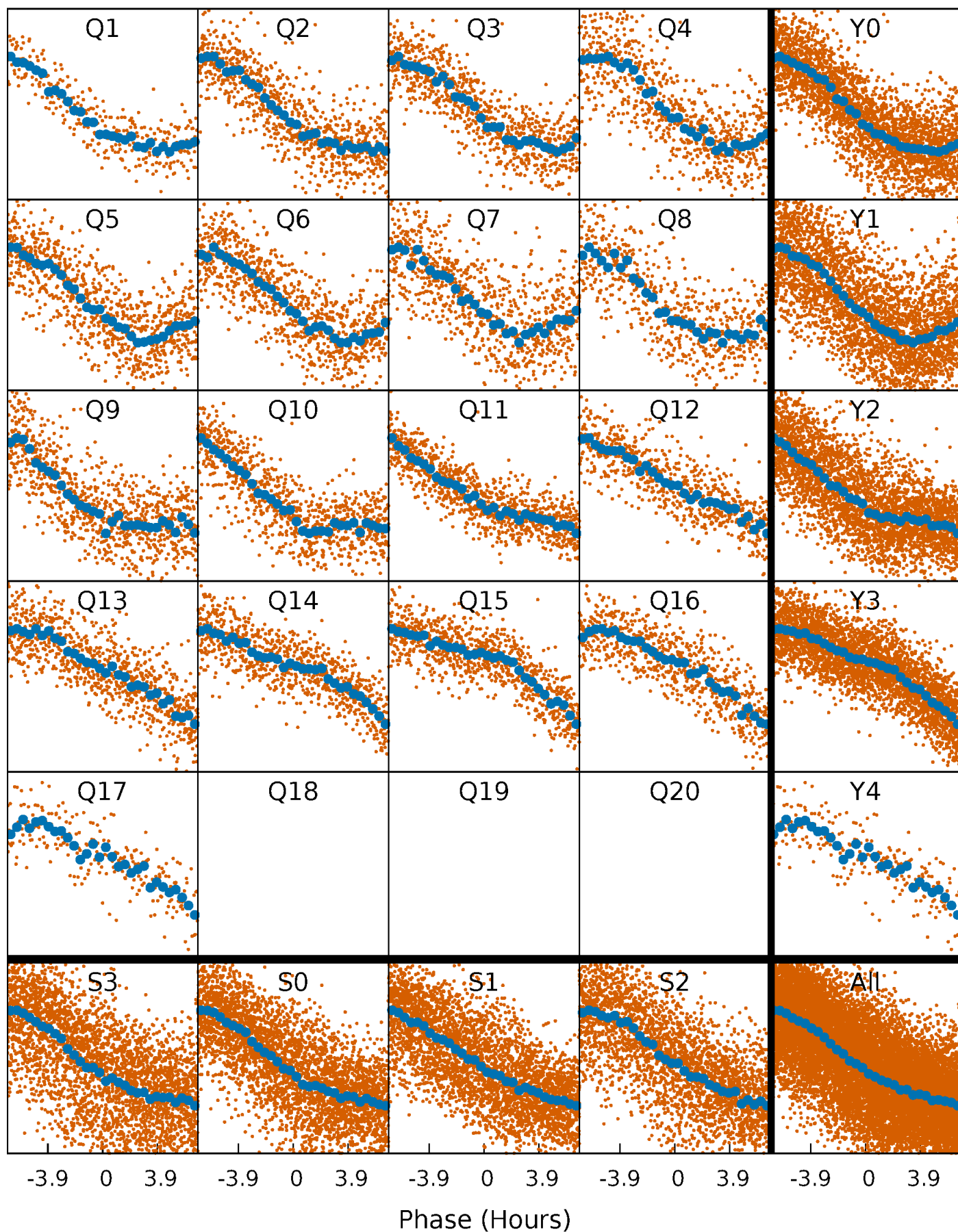


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



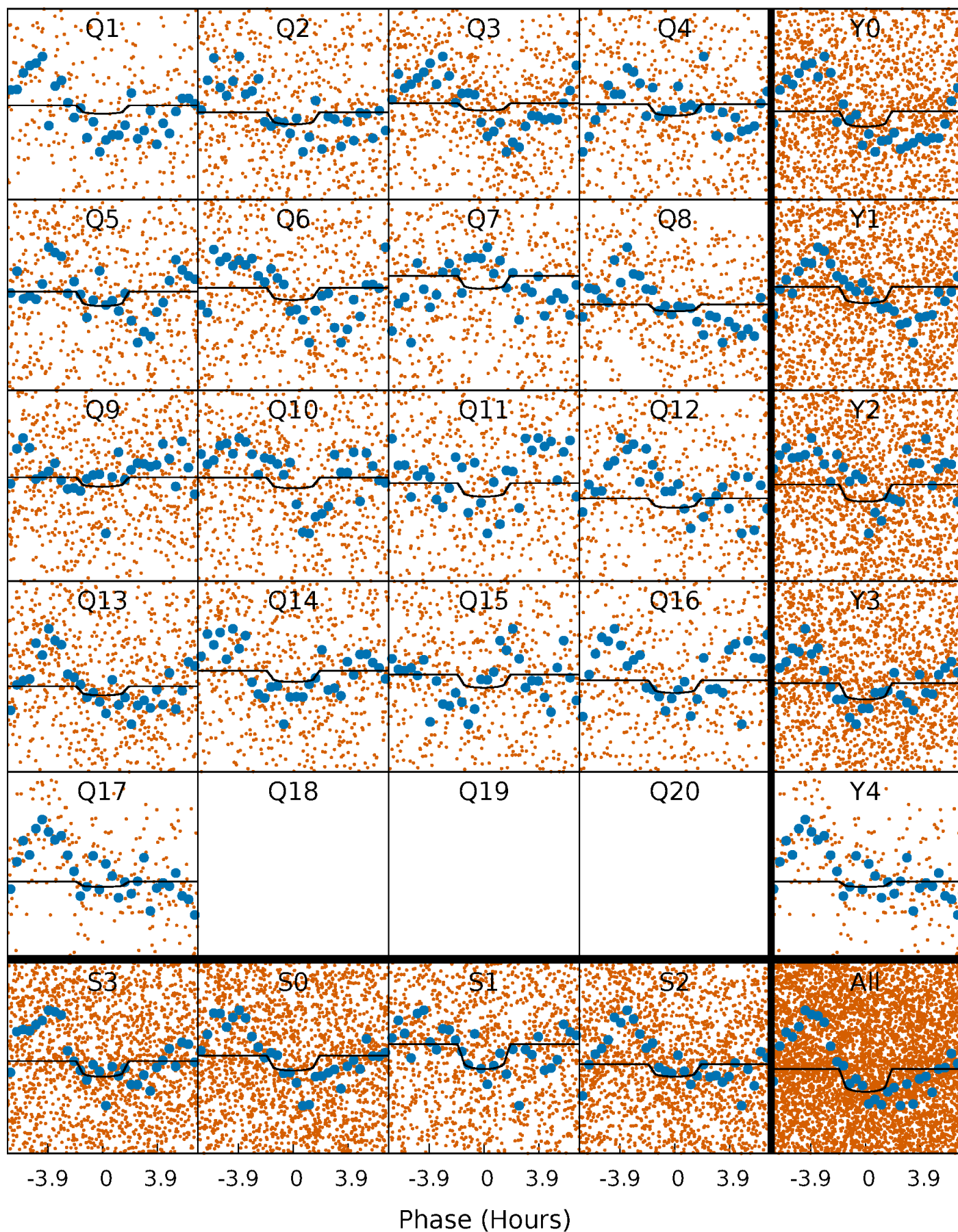
PDC Quarter-Phased Transit Curves

TCE 007030610-01 P= 2.849305 Days $T_0=132.916892$ (BKJD)



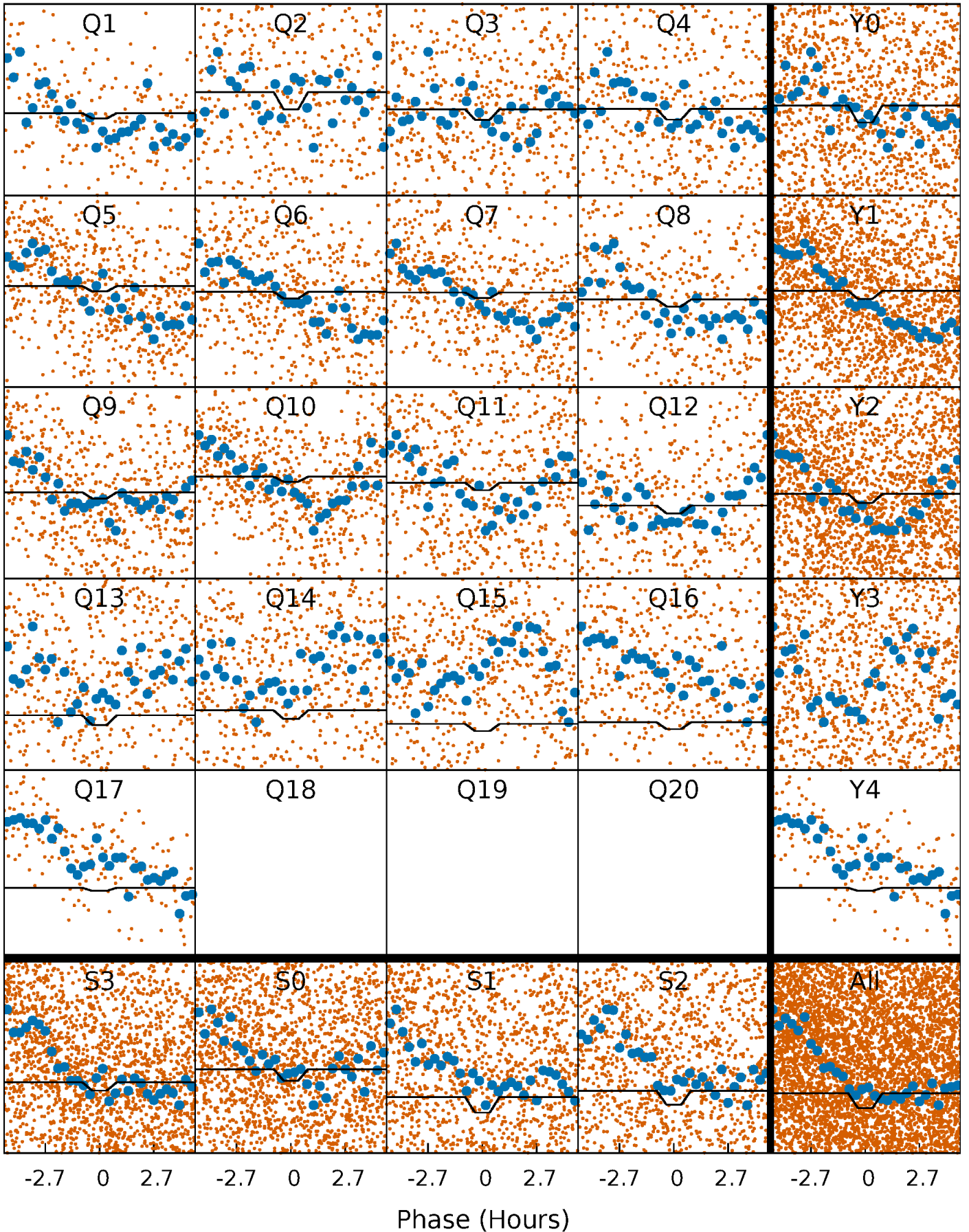
DV Quarter-Phased Transit Curves

TCE 007030610-01 P= 2.849305 Days $T_0=132.916892$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

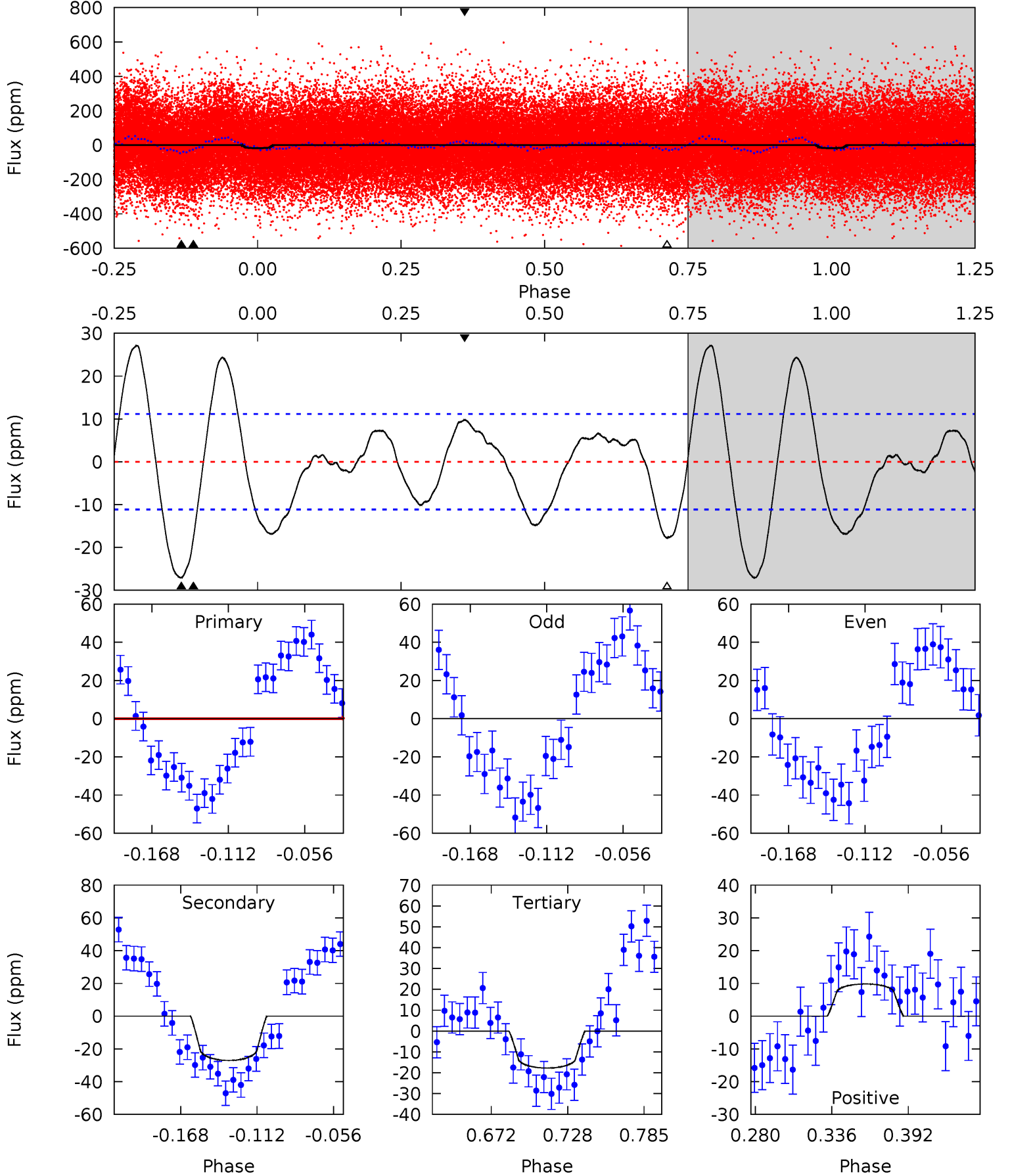
TCE 007030610-01 P= 2.849280 Days $T_0=132.909177$ (BKJD)



DV Model-Shift Uniqueness Test

007030610-01, P = 2.849305 Days, E = 130.067587 Days

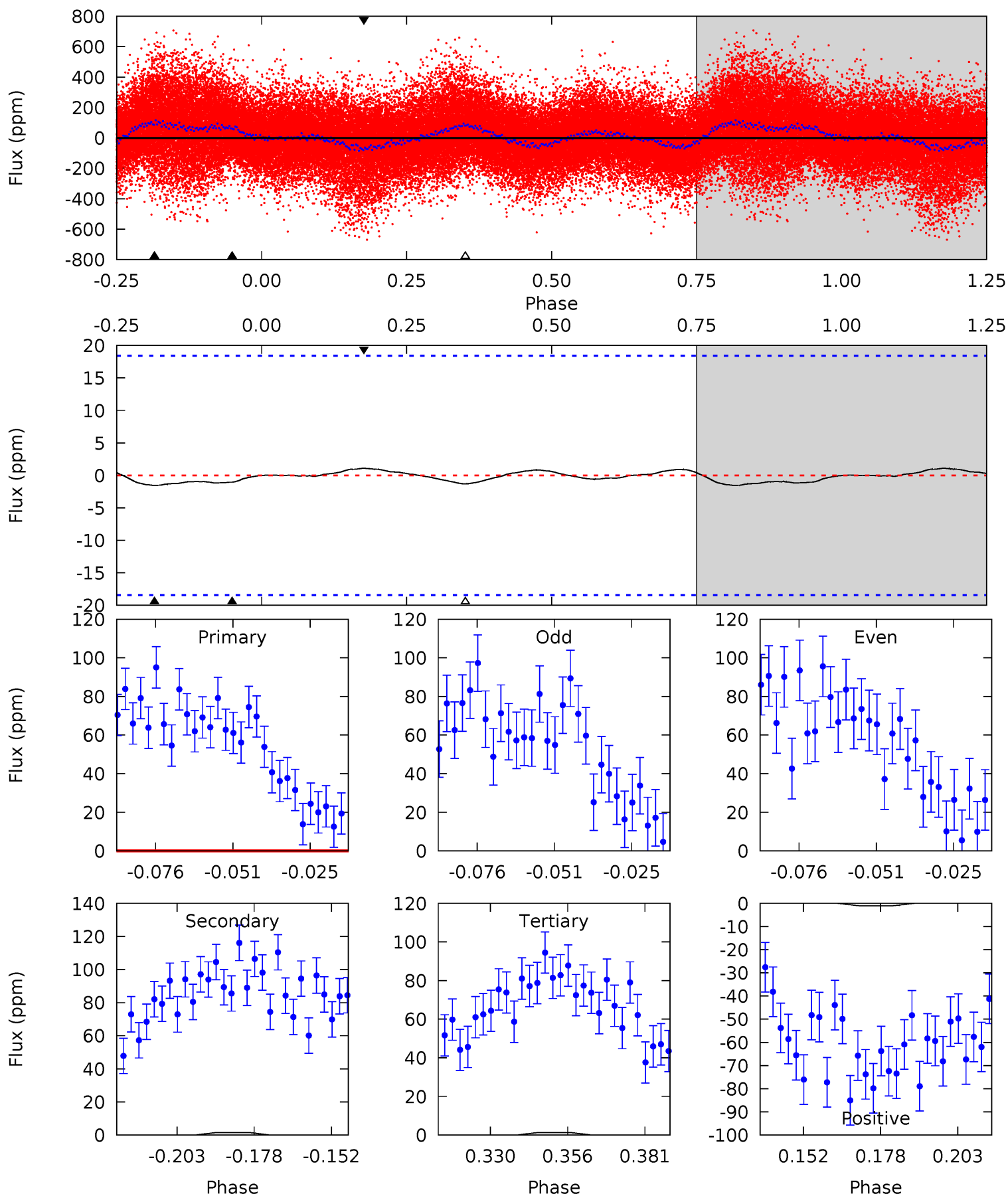
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.47	11.4	7.46	4.12	4.68	1.91	4.14	0.01	3.35	3.91	7.25	0.51	0.81	0.50	3.34



Alt Model-Shift Uniqueness Test

007030610-01, P = 2.849280 Days, E = 130.059897 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.28	0.41	0.35	0.29	4.84	2.24	0.17	-0.07	-0.01	0.06	0.12	0.28	-0.04	0.42	0.28



Stellar Parameters For KIC 007030610

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6498^{+176}_{-176}	$3.629^{+0.304}_{-0.076}$	$-0.140^{+0.300}_{-0.250}$	$3.211^{+0.482}_{-1.124}$	$1.601^{+0.218}_{-0.327}$	$0.068^{+0.143}_{-0.017}$
	+3%/-3%	+8%/-2%	+214%/-179%	+15%/-35%	+14%/-20%	+210%/-25%
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 007030610-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-27 ± 2	$1.47^{+0.71}_{-0.69}$	3279^{+181}_{-257}	7023^{+3231}_{-1221}	15^{+38}_{-8}
Alt.	-2 ± 4	$1.26^{+0.69}_{-0.66}$	3272^{+191}_{-294}	3589^{+2047}_{-8109}	$0.862^{+5.739}_{-2.694}$

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

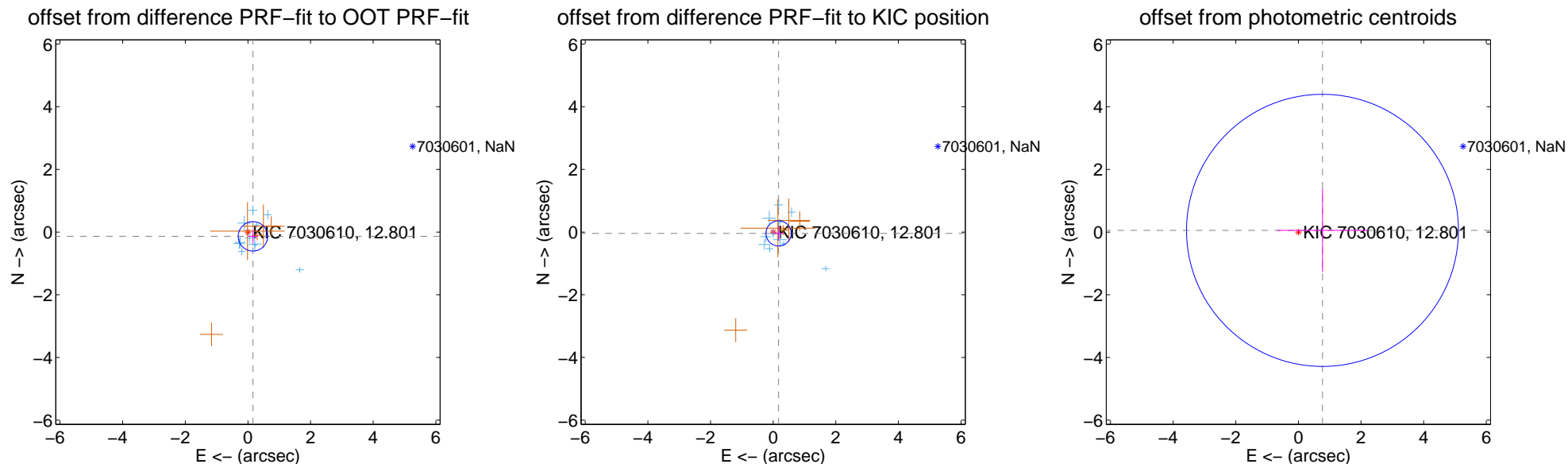
DV Centroid Data

Supplemental centroid analysis for 007030610-01. Kepler magnitude: 12.80. Transit SNR 3.95

There are 11 quarters with good PRF difference image offsets

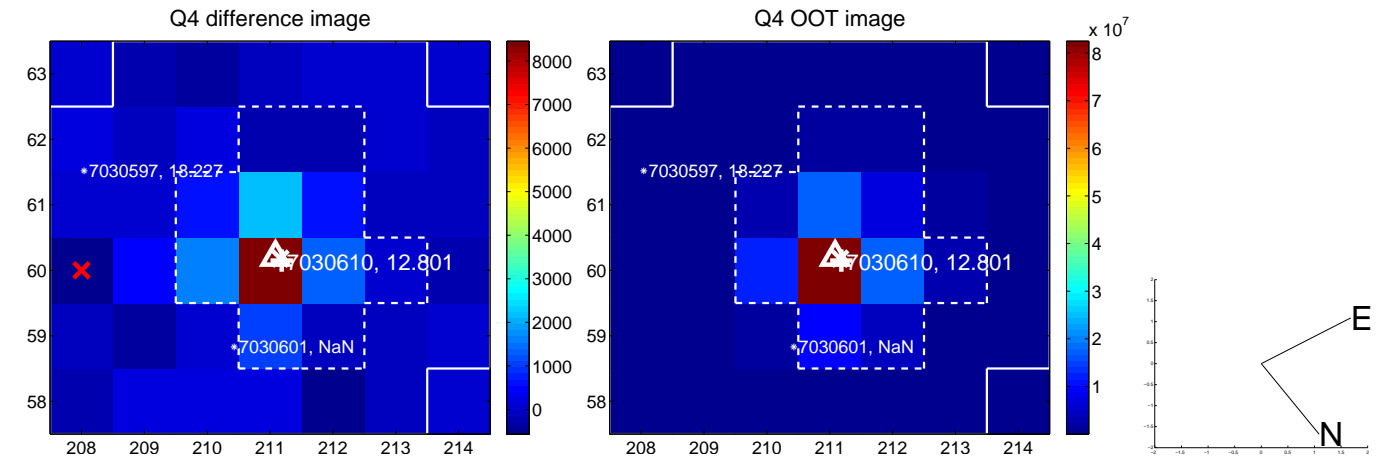
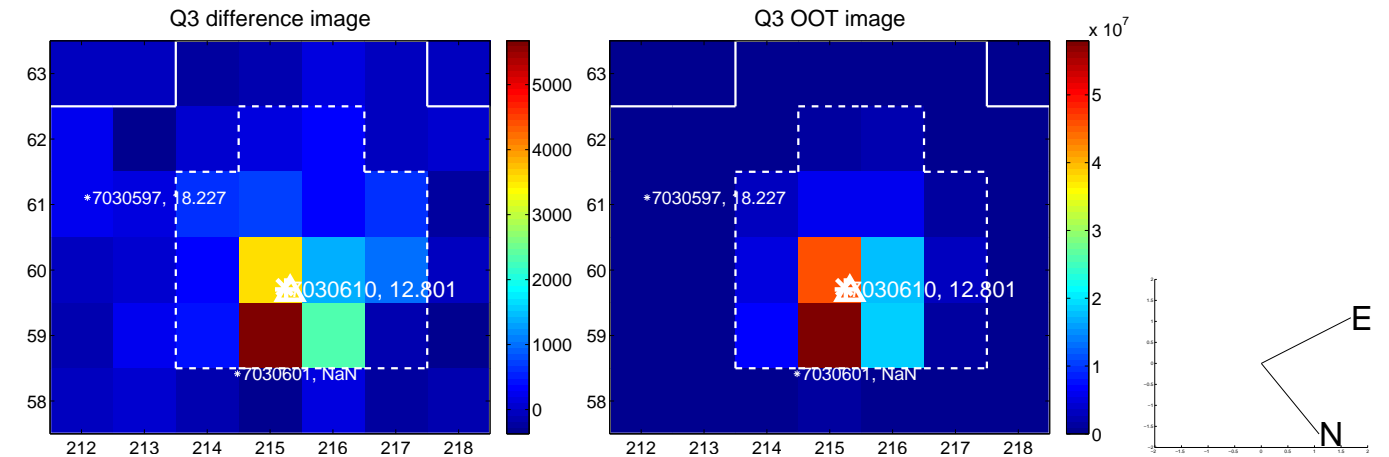
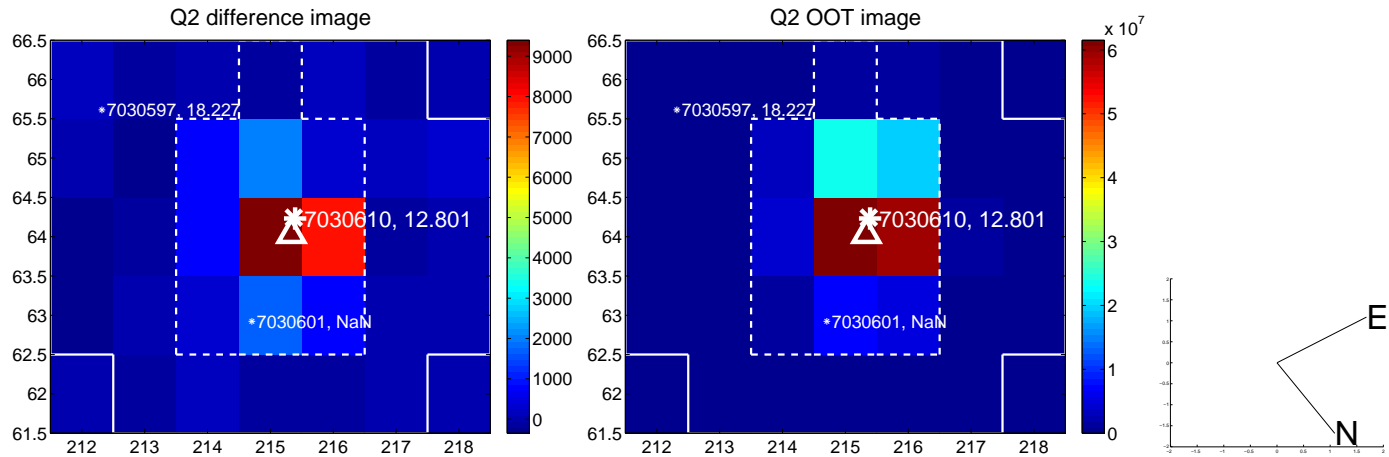
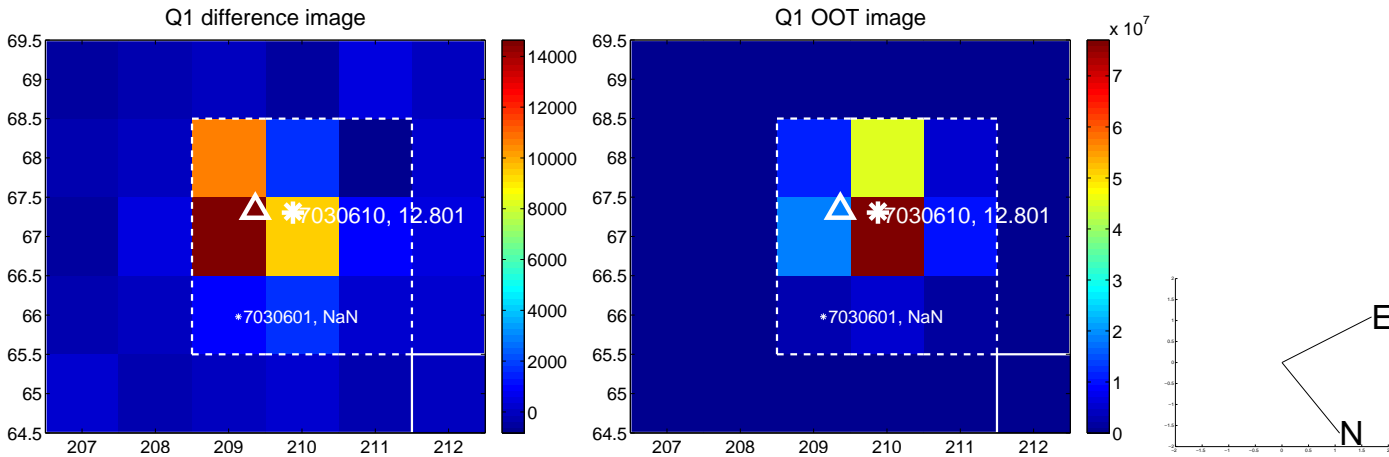
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.210 ± 0.157	1.34	-0.160 ± 0.163	-0.136 ± 0.231
PRF-fit source offset from KIC position	0.178 ± 0.134	1.33	-0.174 ± 0.152	-0.041 ± 0.234
photometric centroid source offset	0.77 ± 1.45	0.53	-0.77 ± 1.45	0.05 ± 1.33

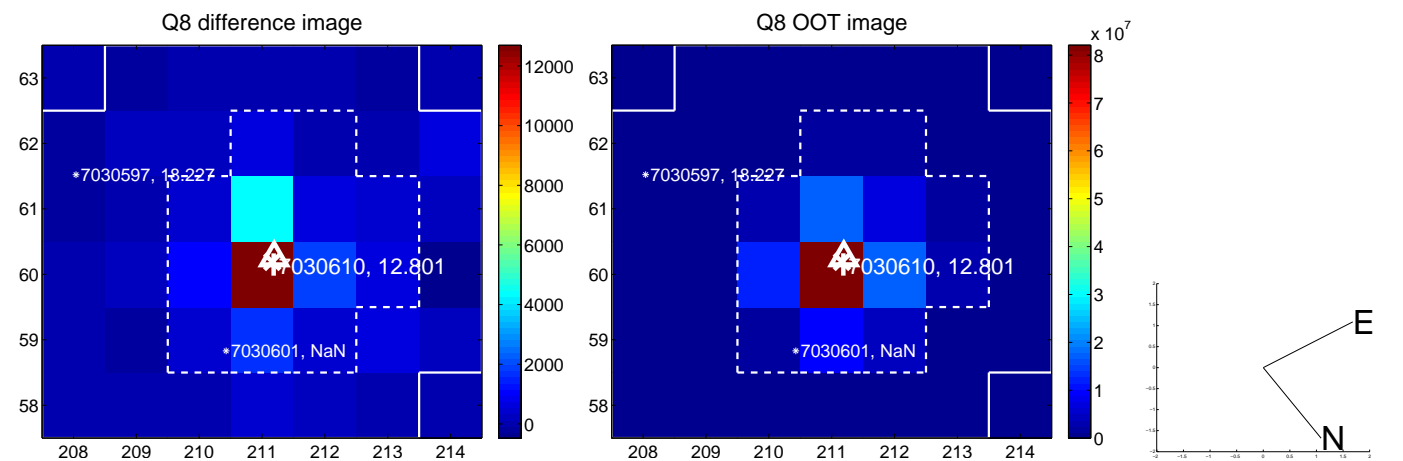
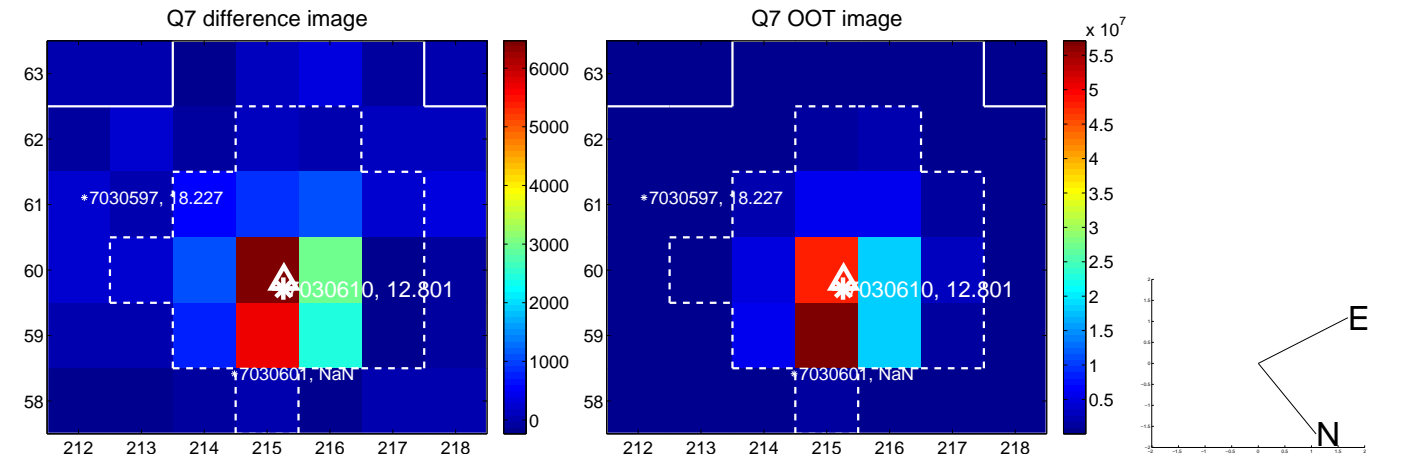
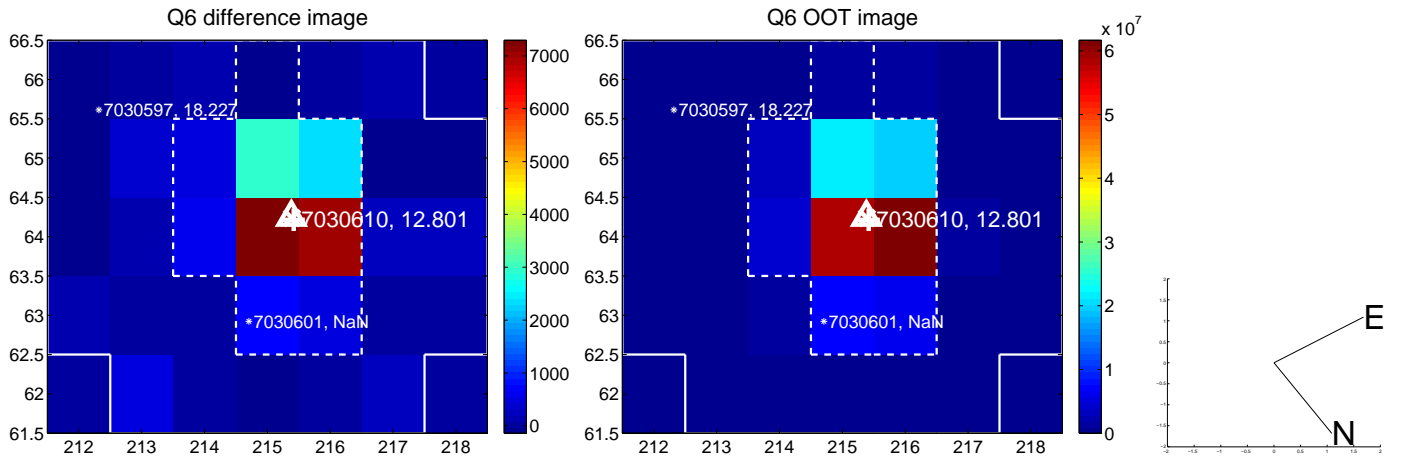
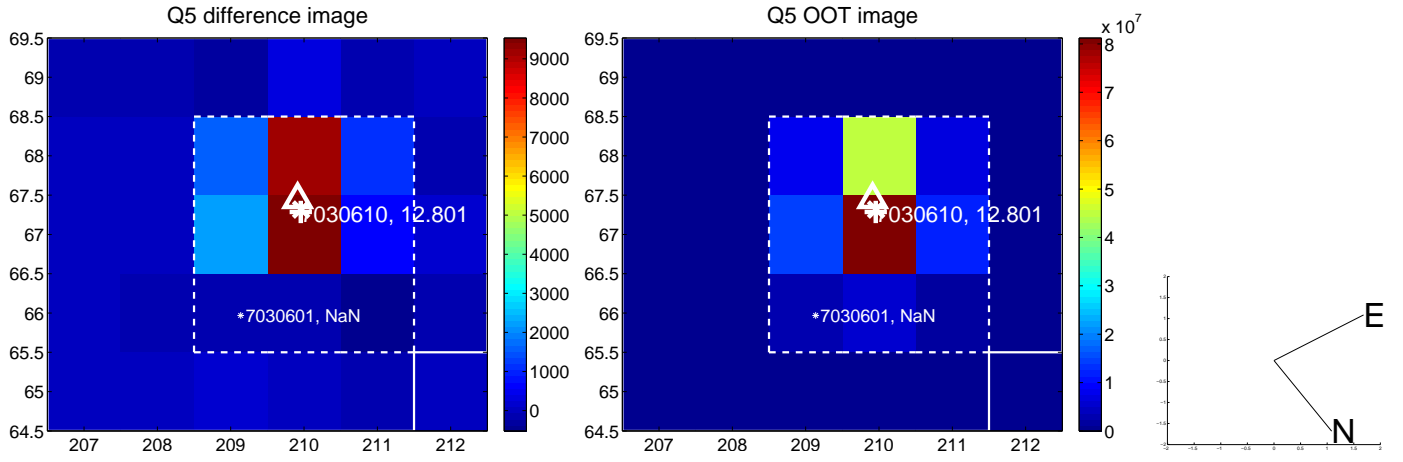


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

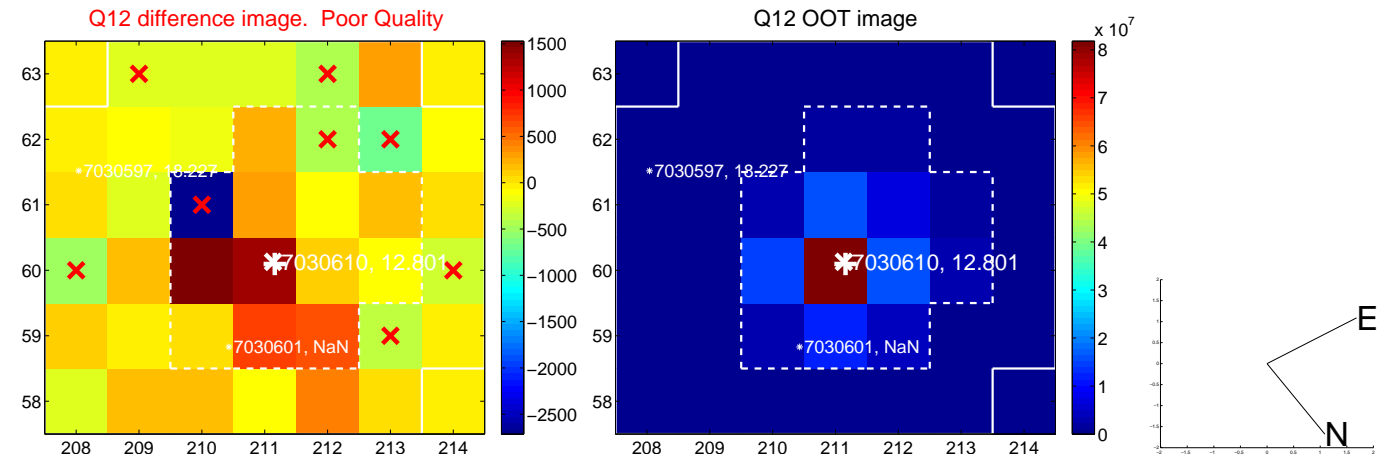
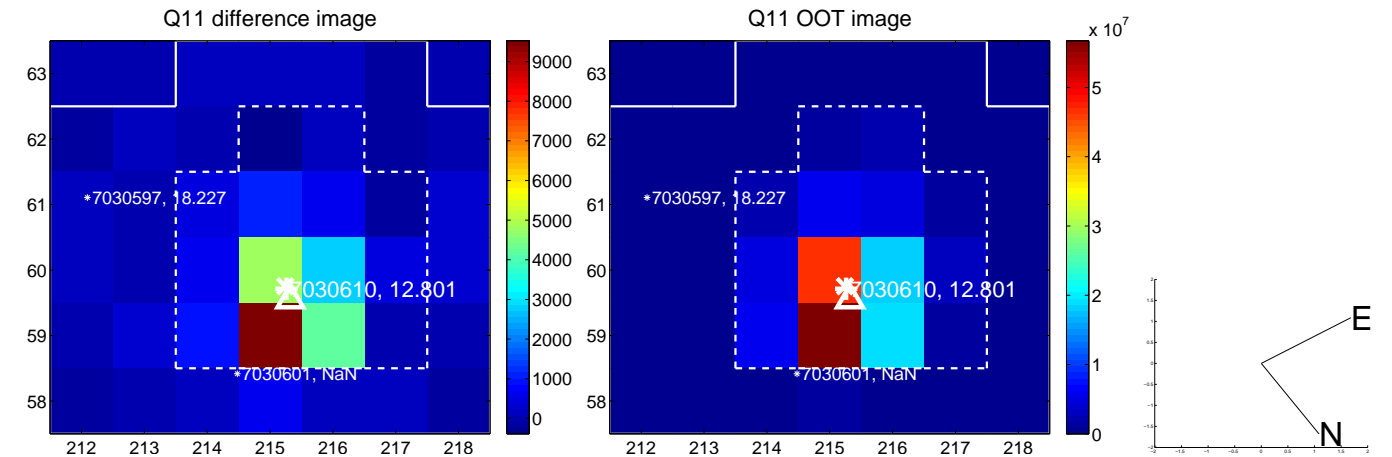
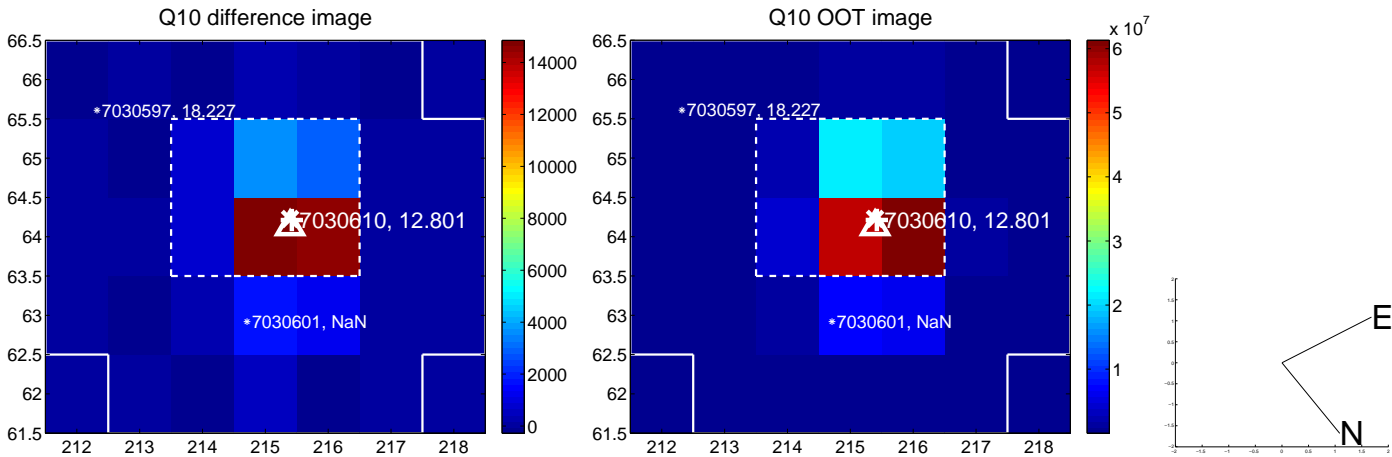
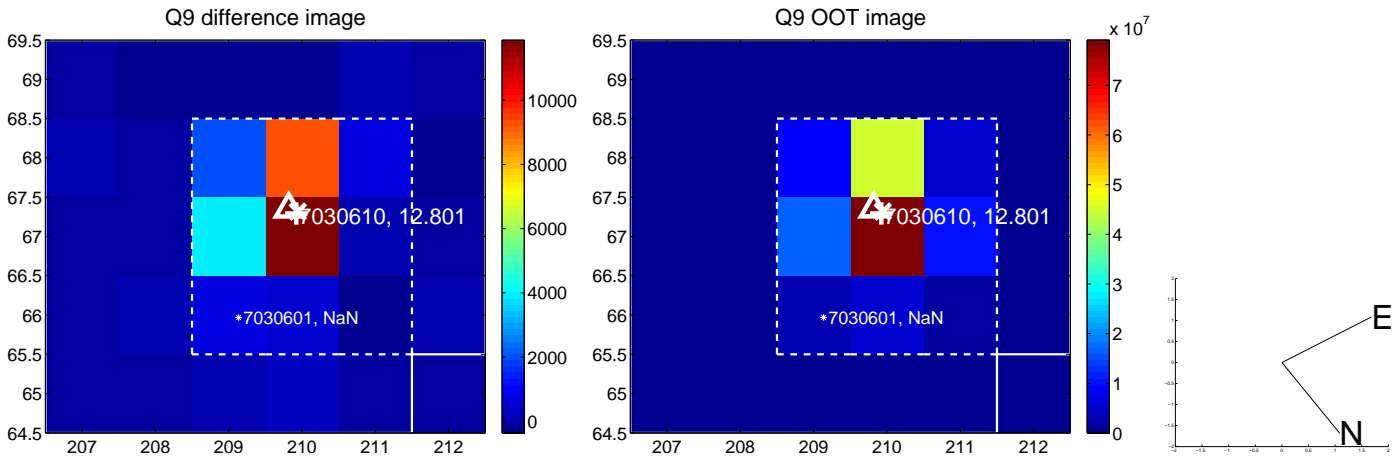
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



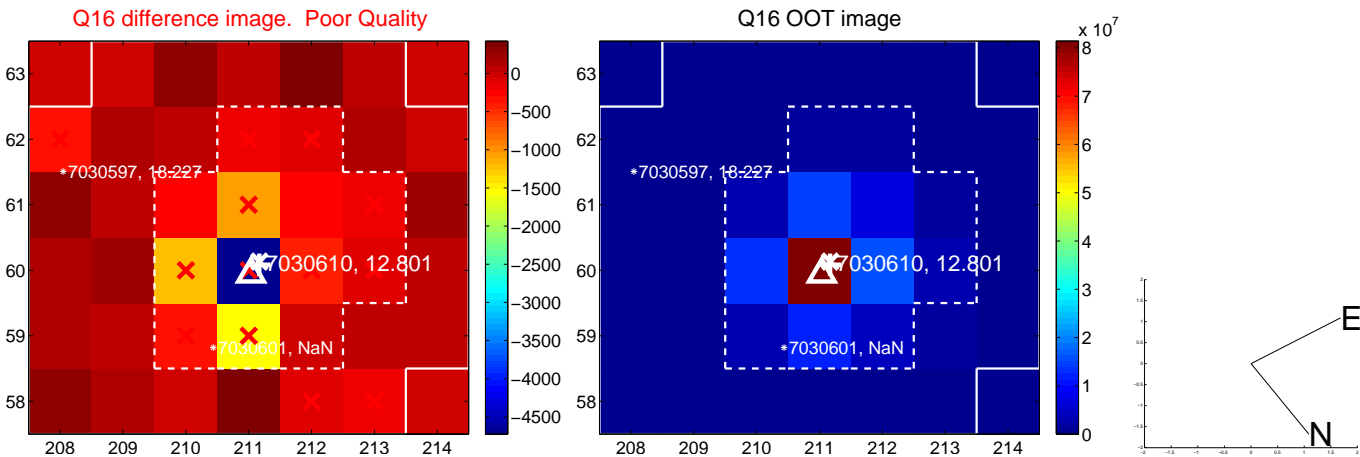
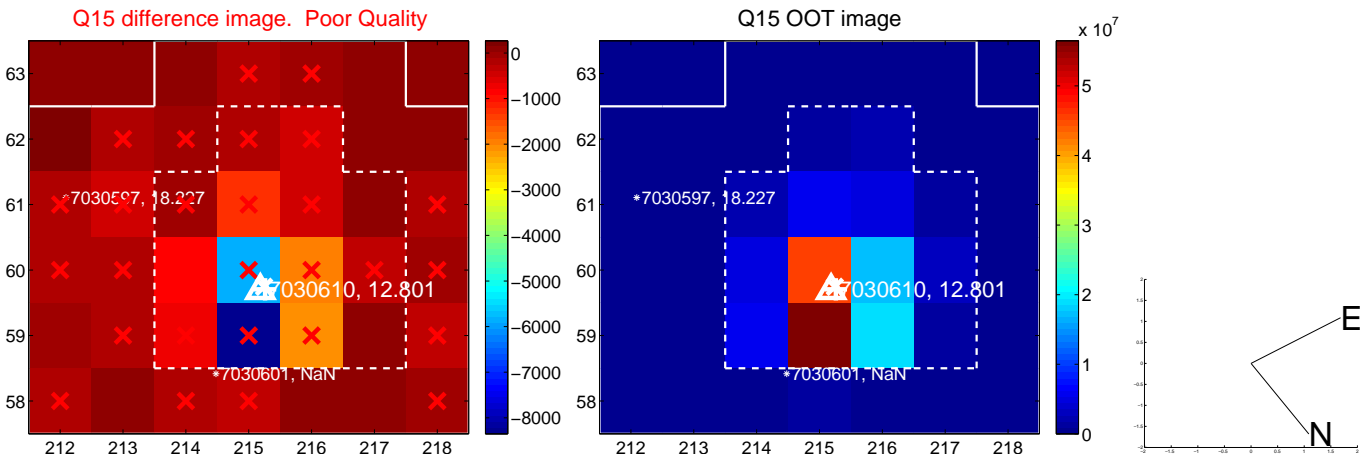
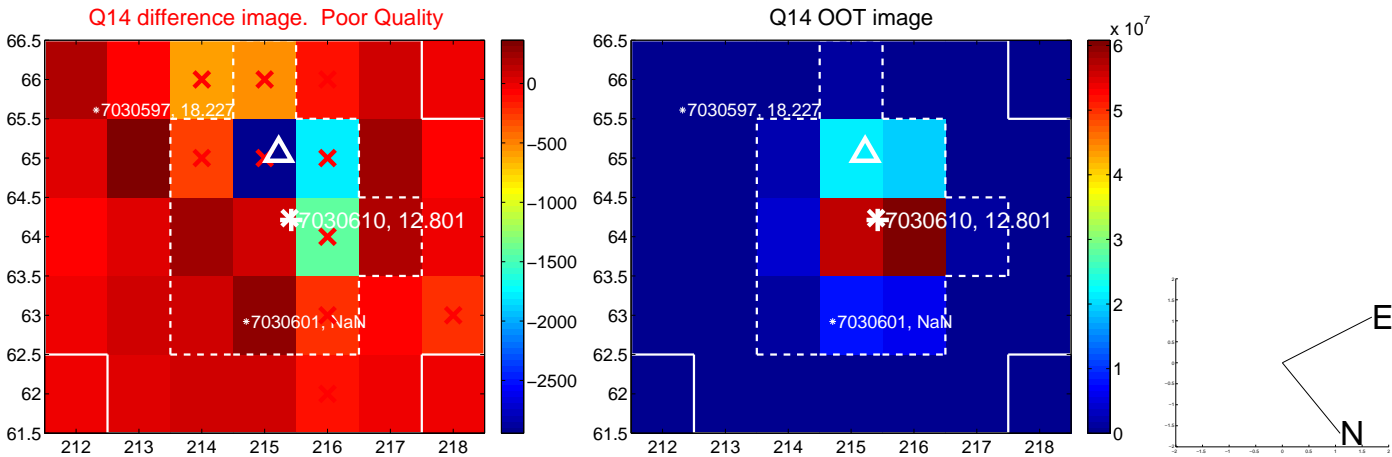
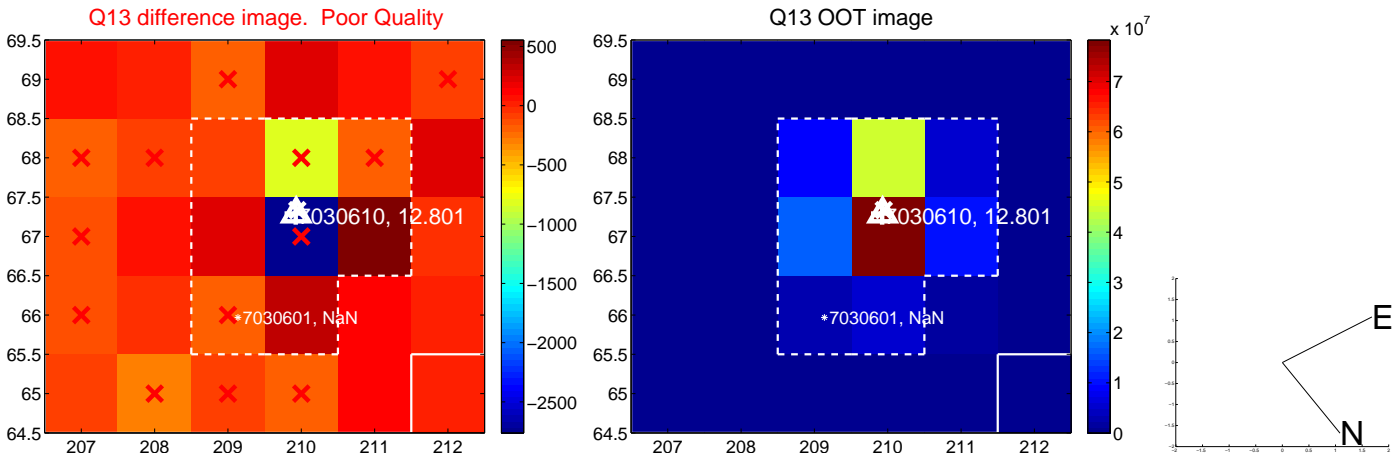
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



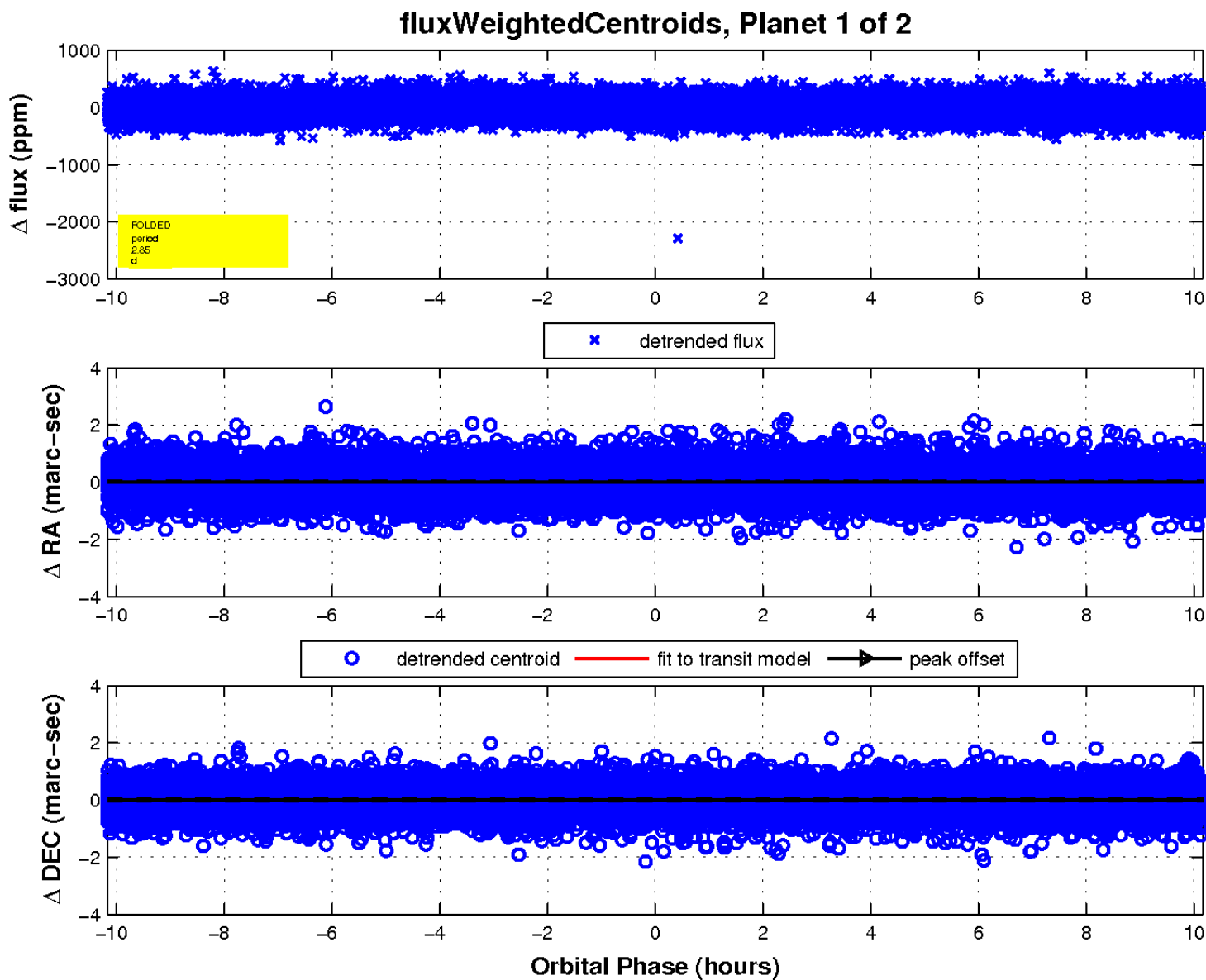
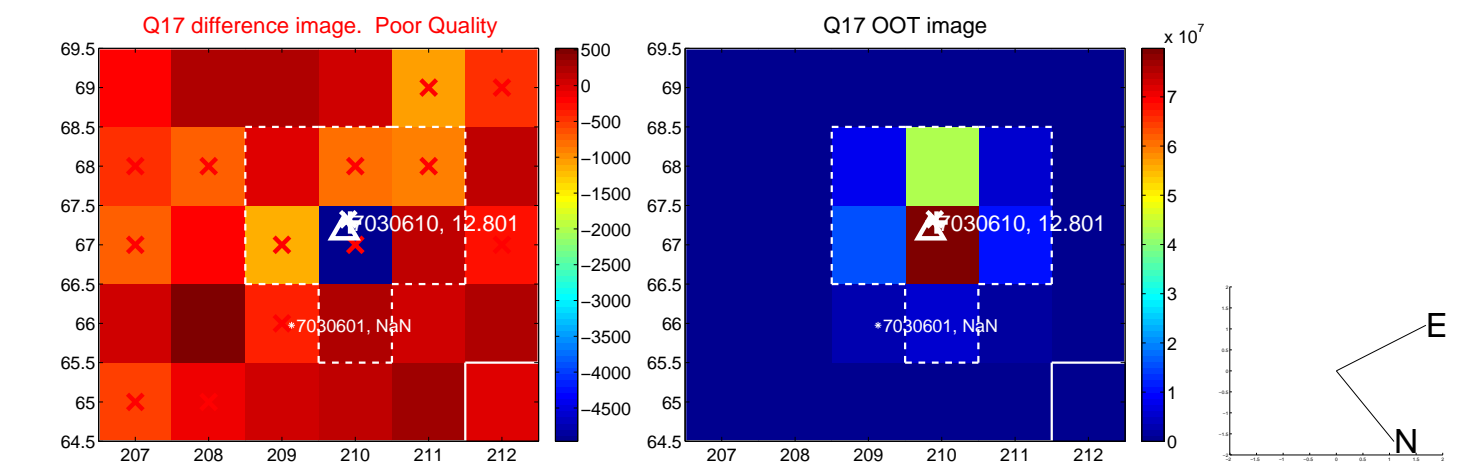
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



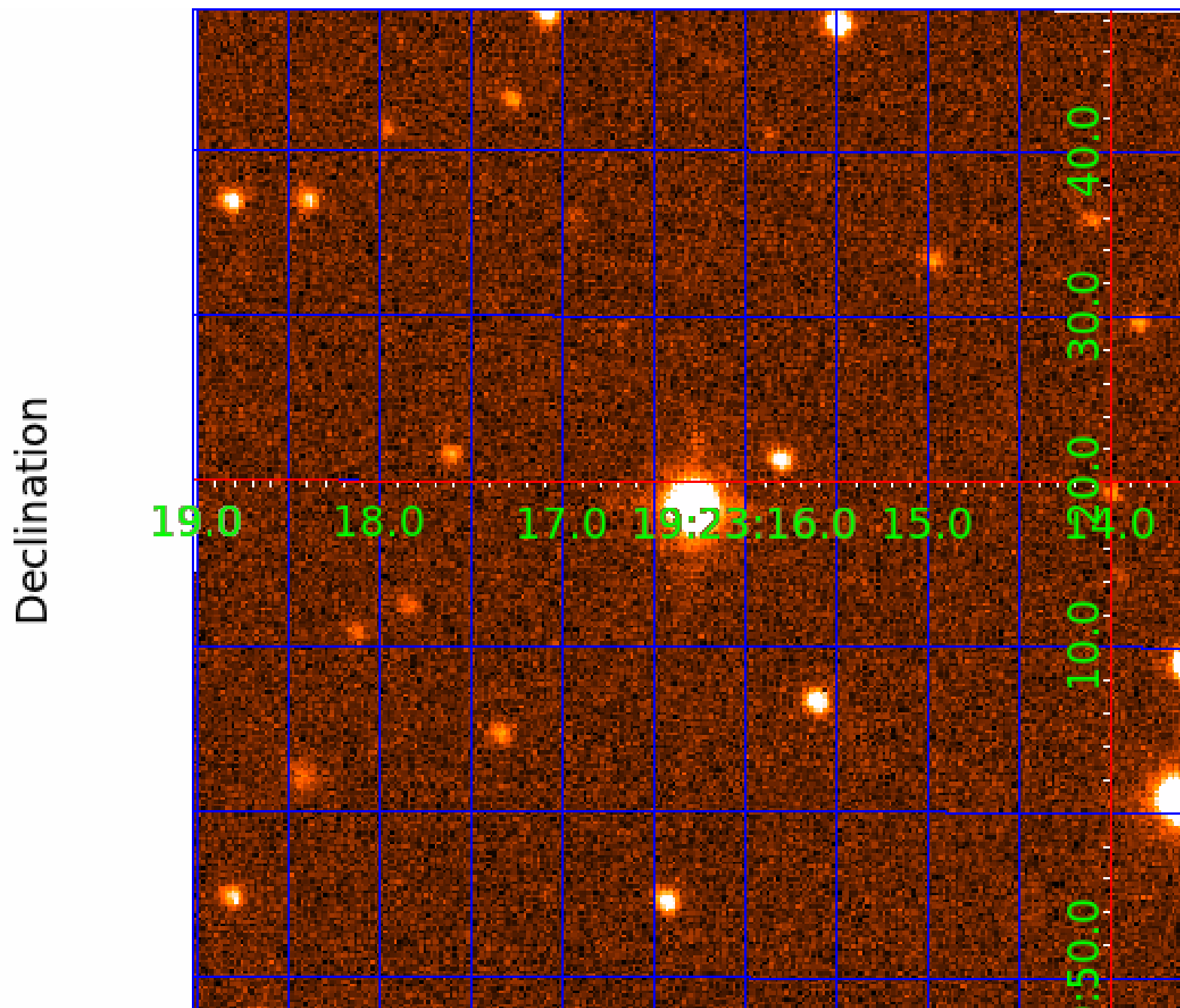
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007030610

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})
007030610-01	OBS	No	2.849305	132.916892	16.9	3.390	10.2	4.0	3.21	6498	1.54	7776.57
007030610-02	OBS	No	2.849342	132.090872	26.0	5.024	8.9	5.9	3.21	6498	1.70	7776.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007030610-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007030610-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— SAME_NTL_PERIOD

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

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

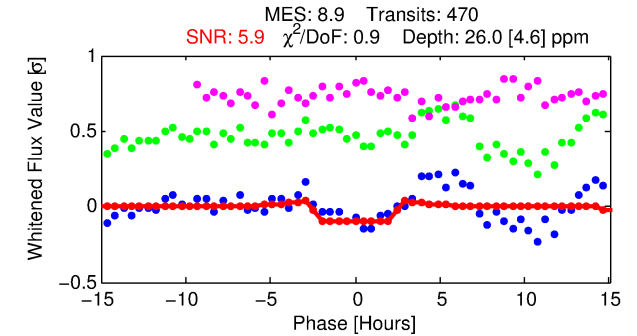
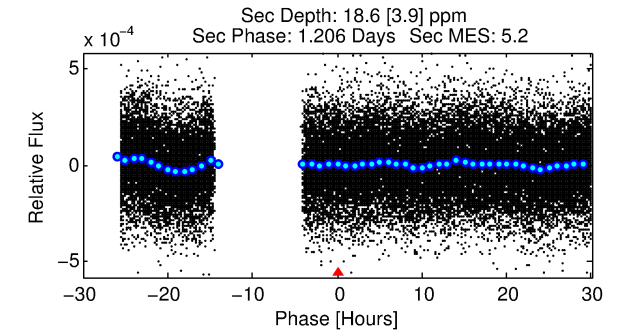
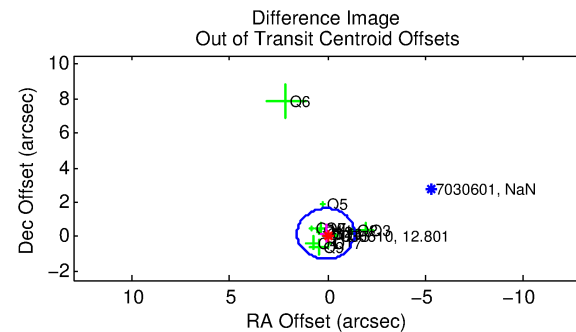
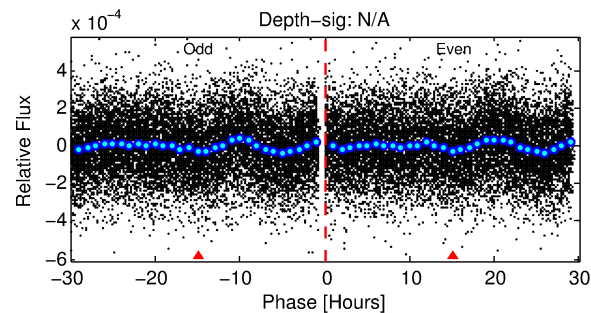
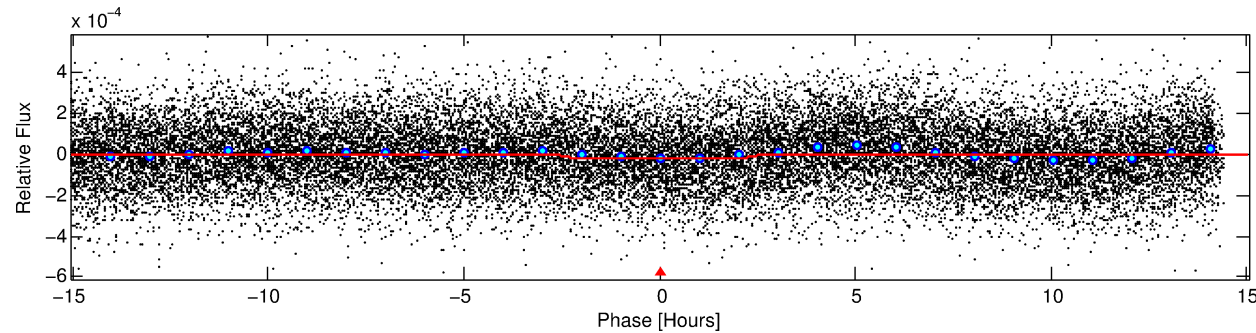
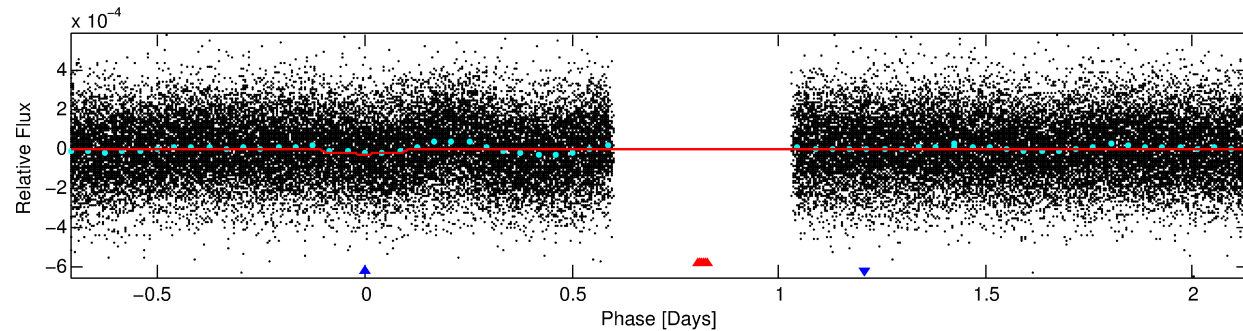
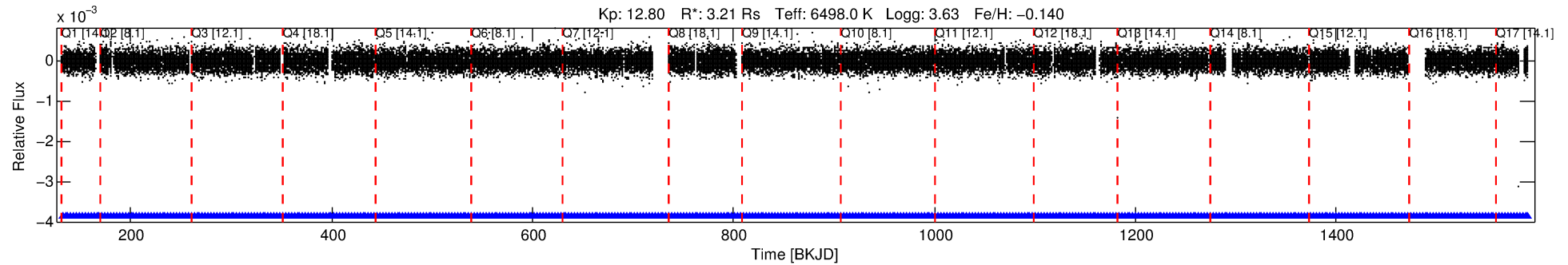
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007030610-02

No Significant Match Found

DV One-Page Summary

KIC: 7030610 Candidate: 2 of 2 Period: 2.849 d



DV Fit Results:

Period = 2.84934 [0.00004] d
Epoch = 132.0909 [0.0171] BKJD
Rp/R* = 0.0049 [0.0017]
a/R* = 3.73 [6.44]
b = 0.55 [2.40]
Seff = 7776.44 [4143.94]
Teq = 2395 [319] K
Rp = 1.70 [0.85] Re
a = 0.0460 [0.0152] AU
Ag = 7.47 [6.78] [0.95σ]
Teffp = 6121 [1148] K [3.13σ]

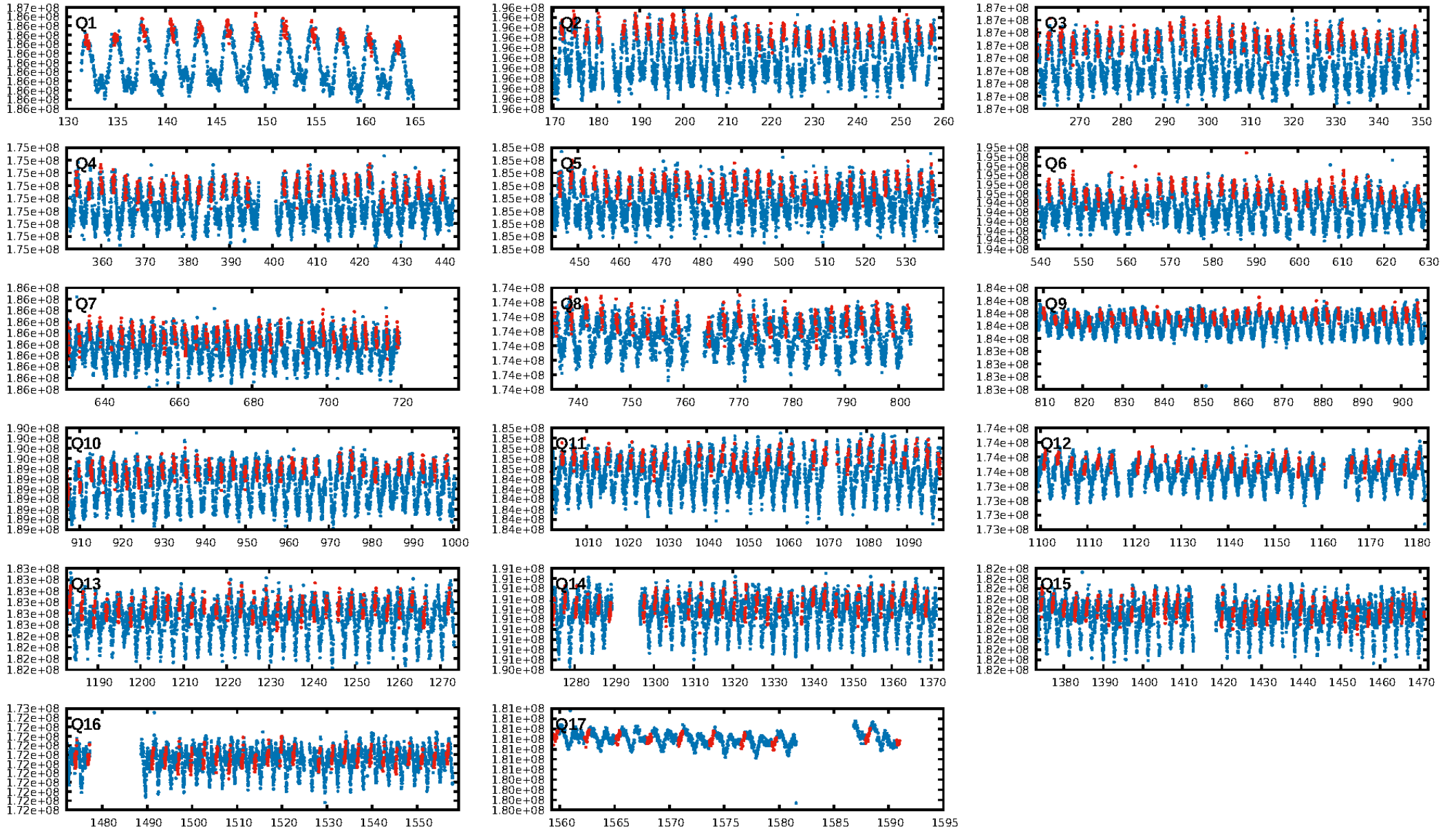
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.55e-14
RollingBand-fgt: 1.00 [448/448]
GhostDiagnostic-chr: 3.588
Centroid-sig: 0.9%
Centroid-so: 1.475 arcsec [1.98σ]
OotOffset-rm: 0.202 arcsec [0.41σ]
KicOffset-rm: 0.320 arcsec [0.64σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
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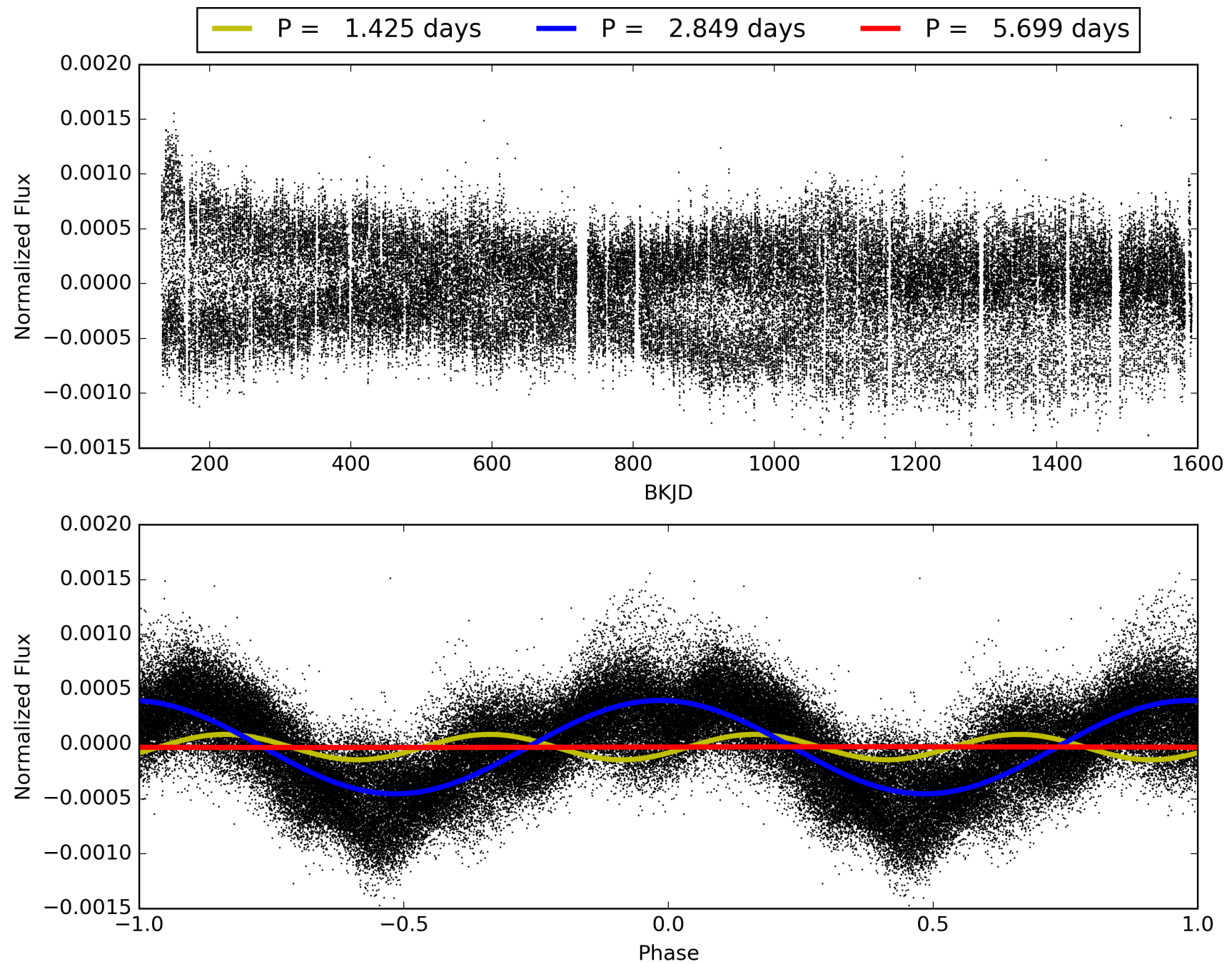
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:18:56 Z

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

TCE 007030610-02, PDC Light Curves

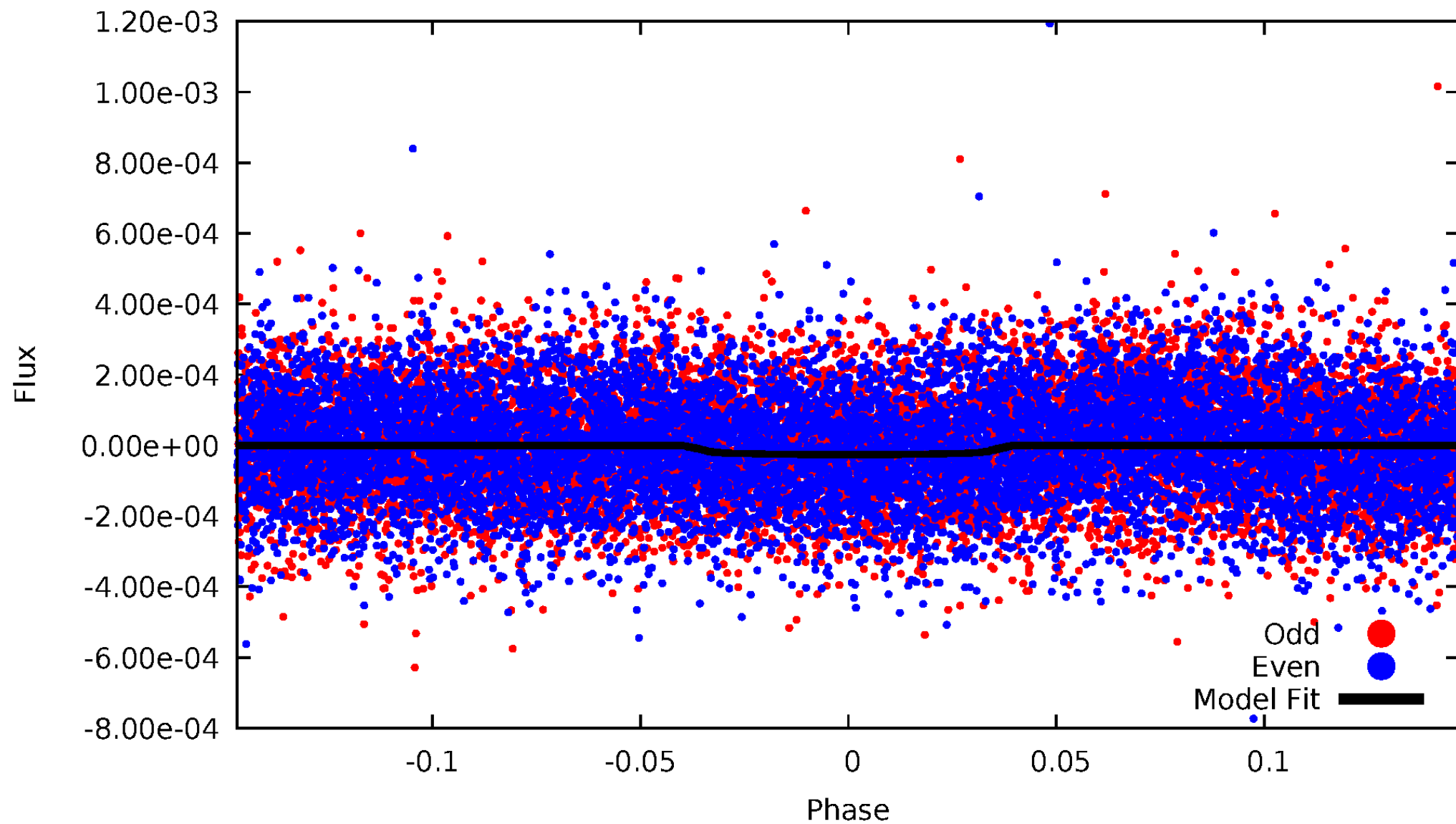


TCE 007030610-02



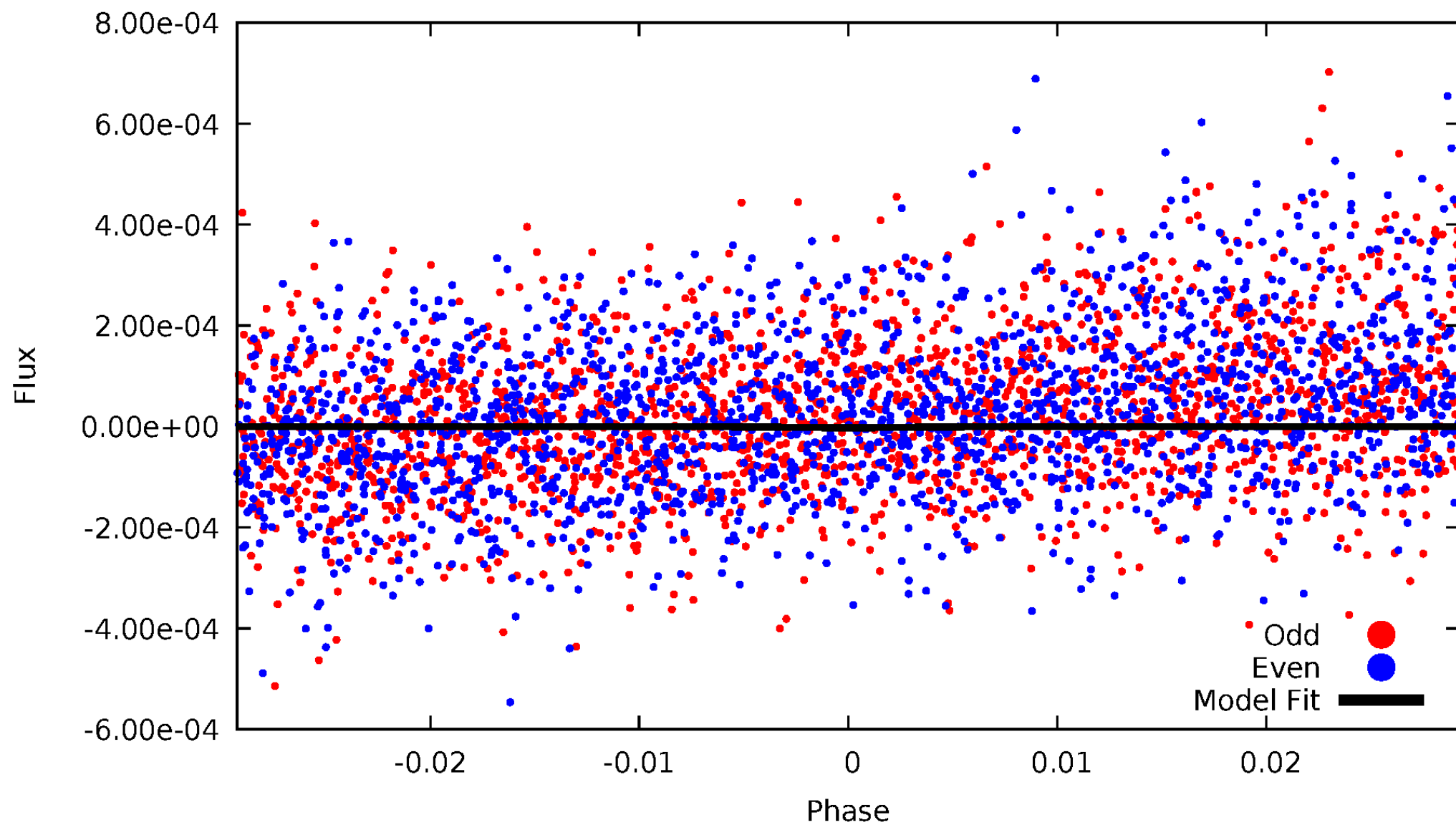
DV Odd/Even

TCE 007030610-02



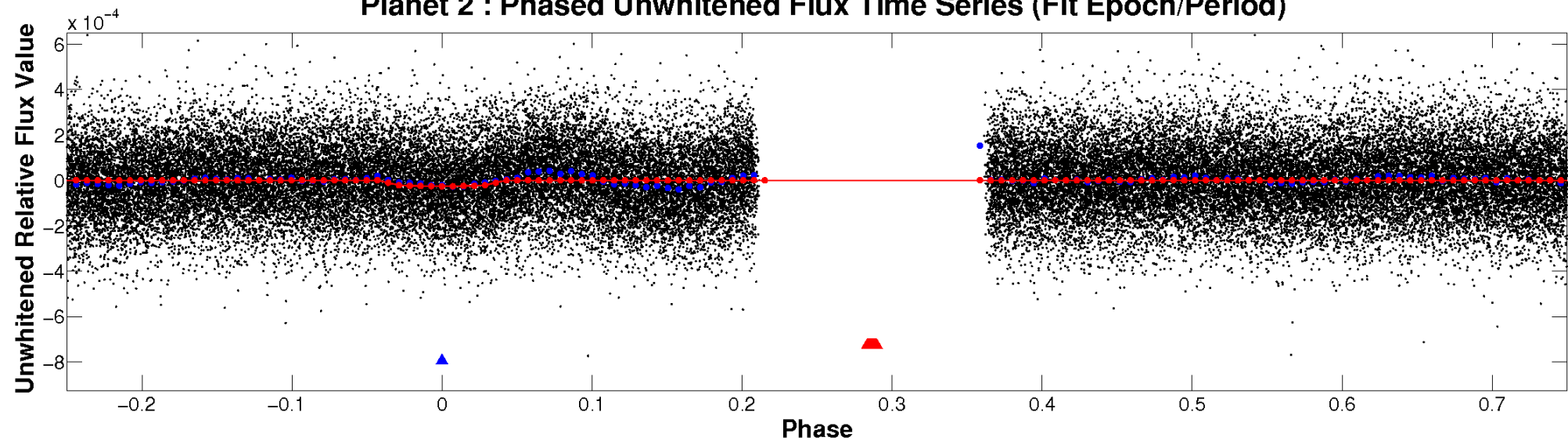
ALT Odd/Even

TCE 007030610-02

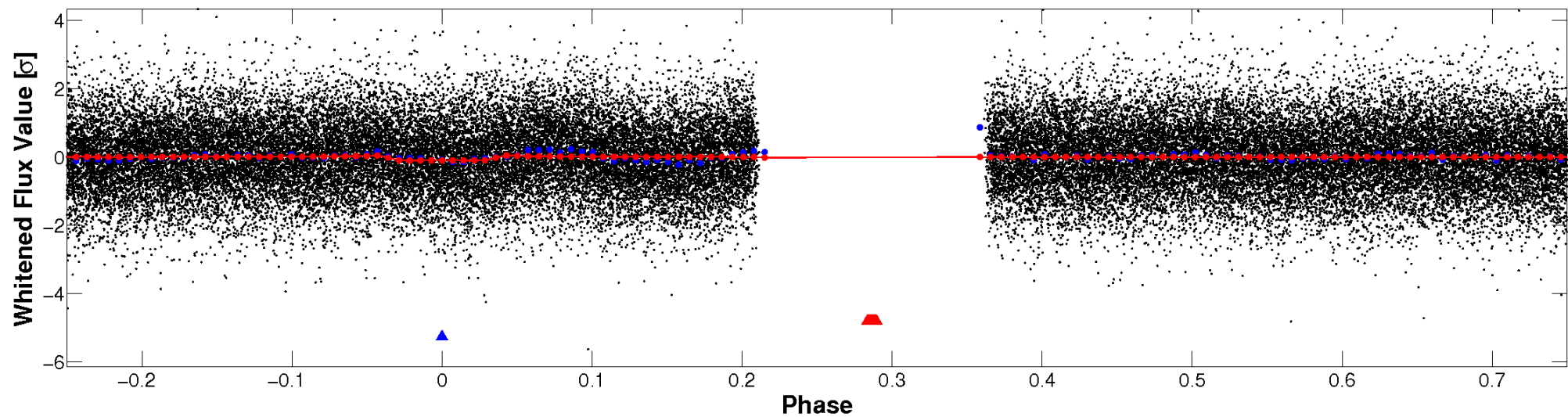


Non-Whitened Vs. Whitened Light Curve

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

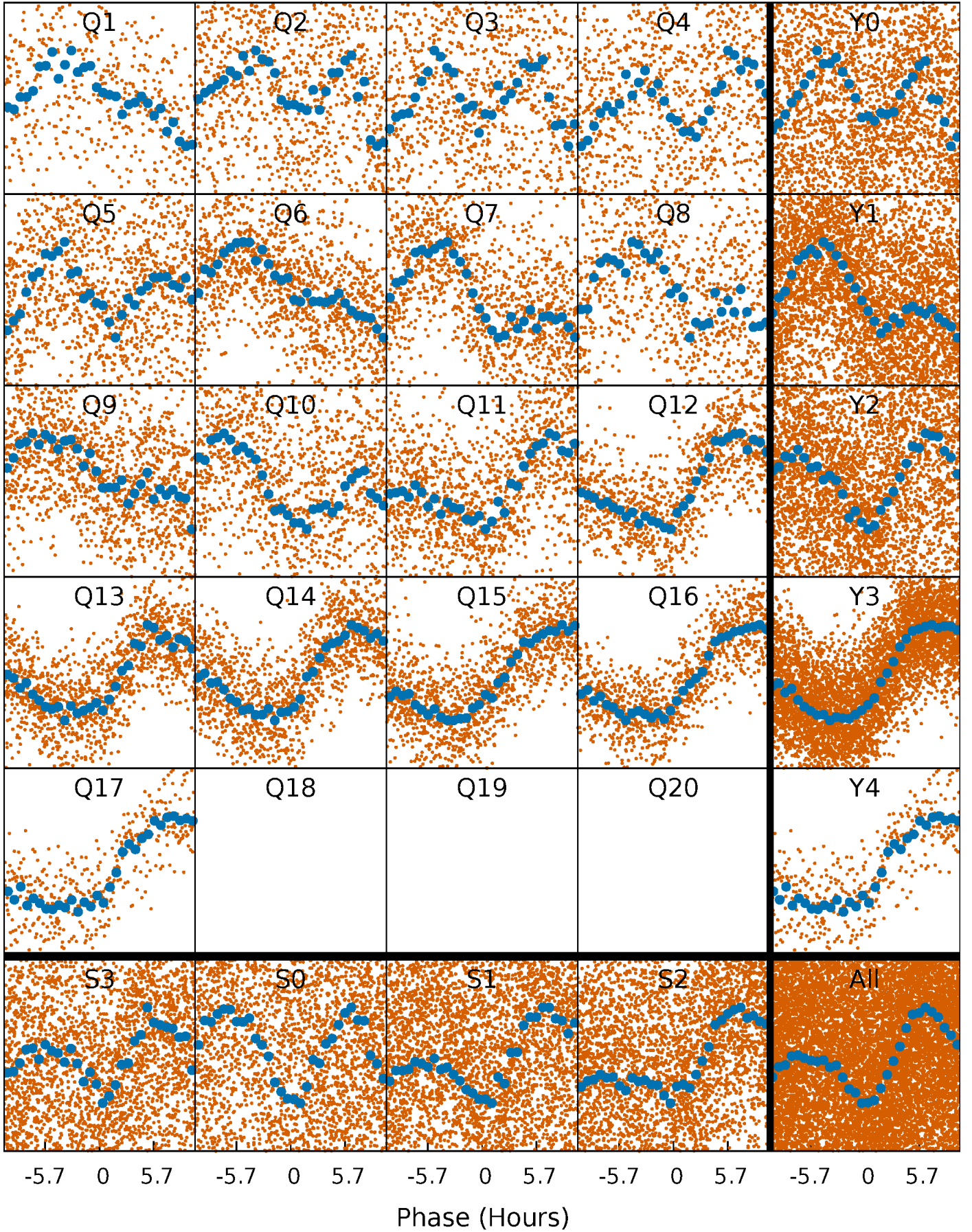


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



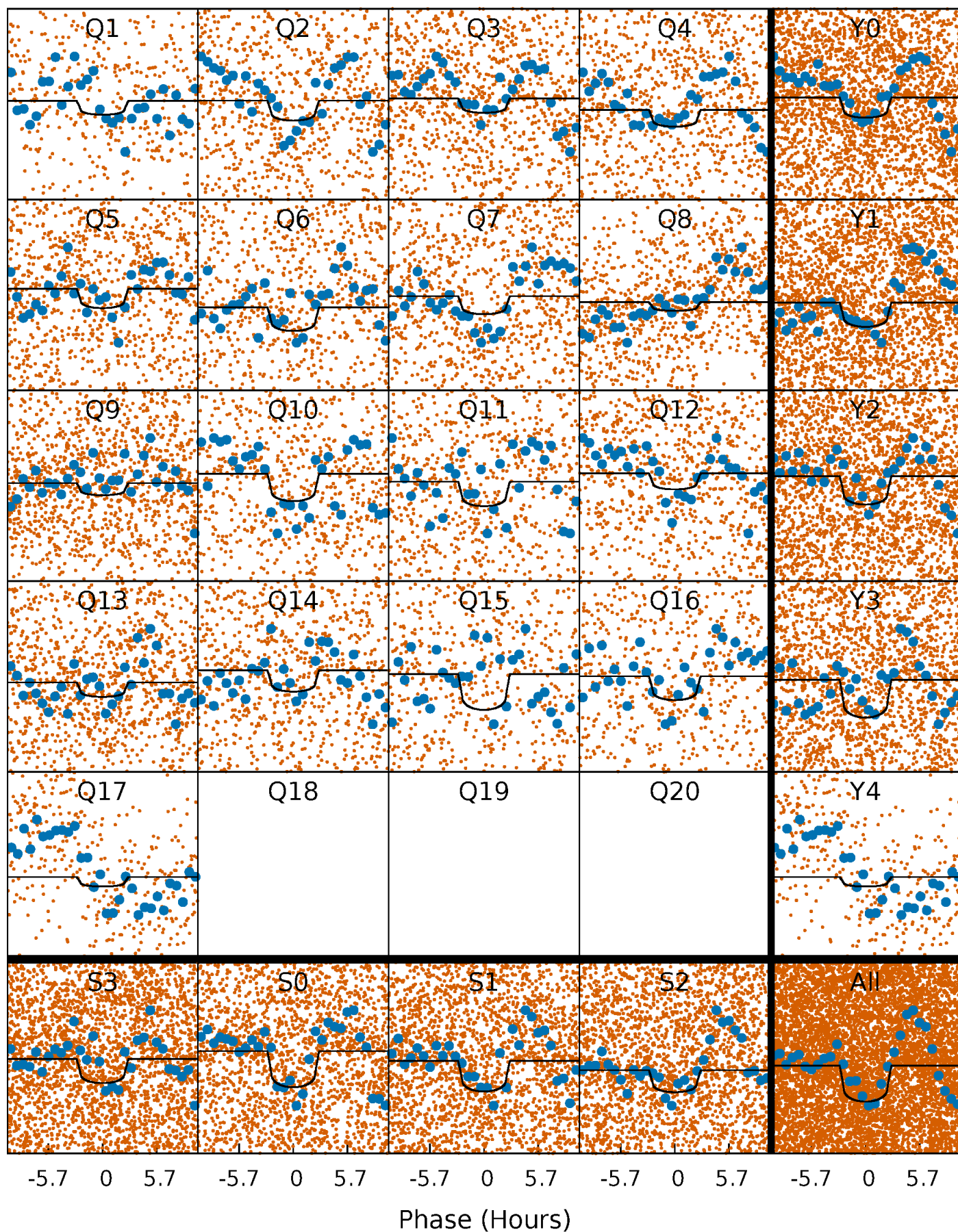
PDC Quarter-Phased Transit Curves

TCE 007030610-02 P= 2.849342 Days $T_0=132.090872$ (BKJD)



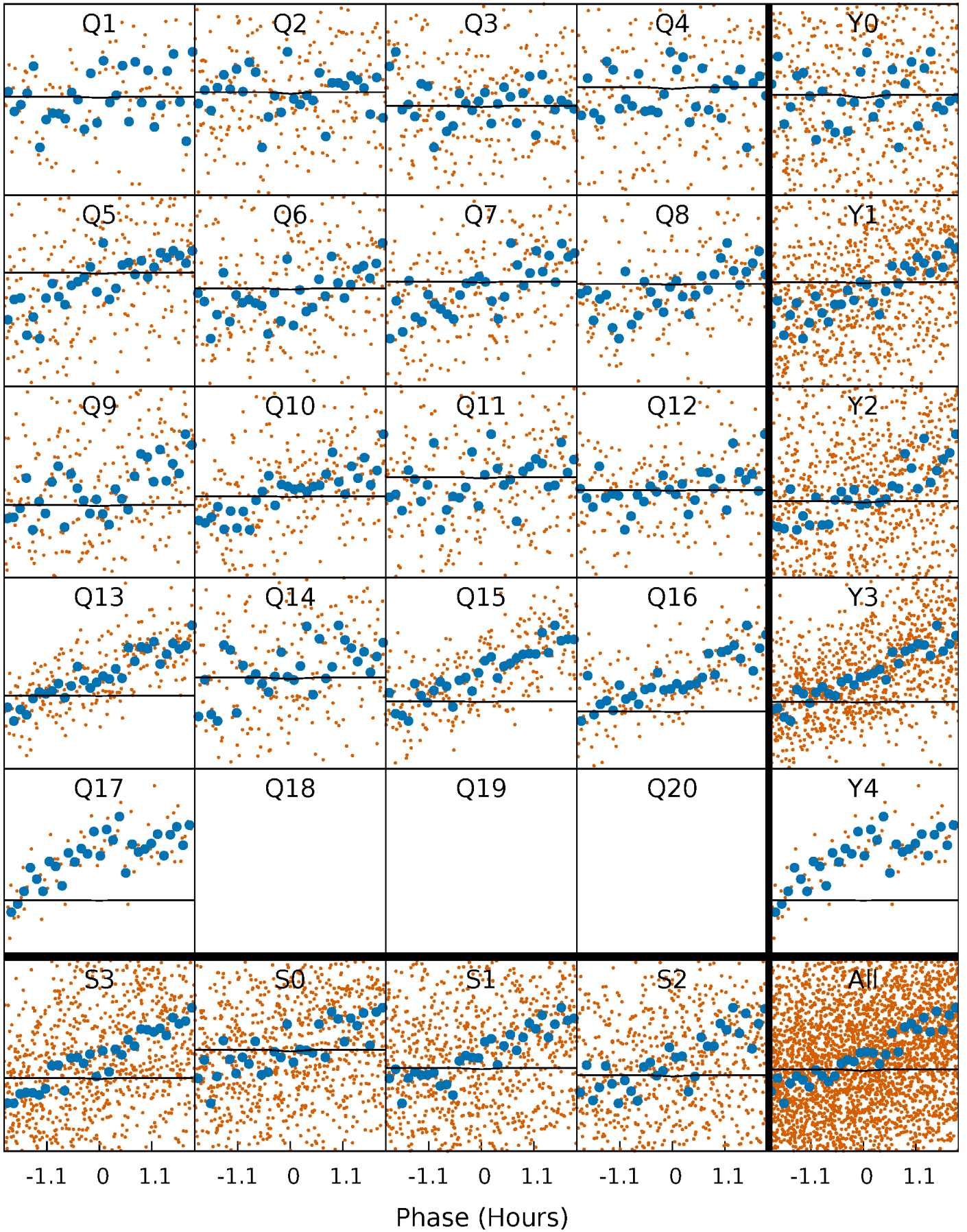
DV Quarter-Phased Transit Curves

TCE 007030610-02 P= 2.849342 Days $T_0=132.090872$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

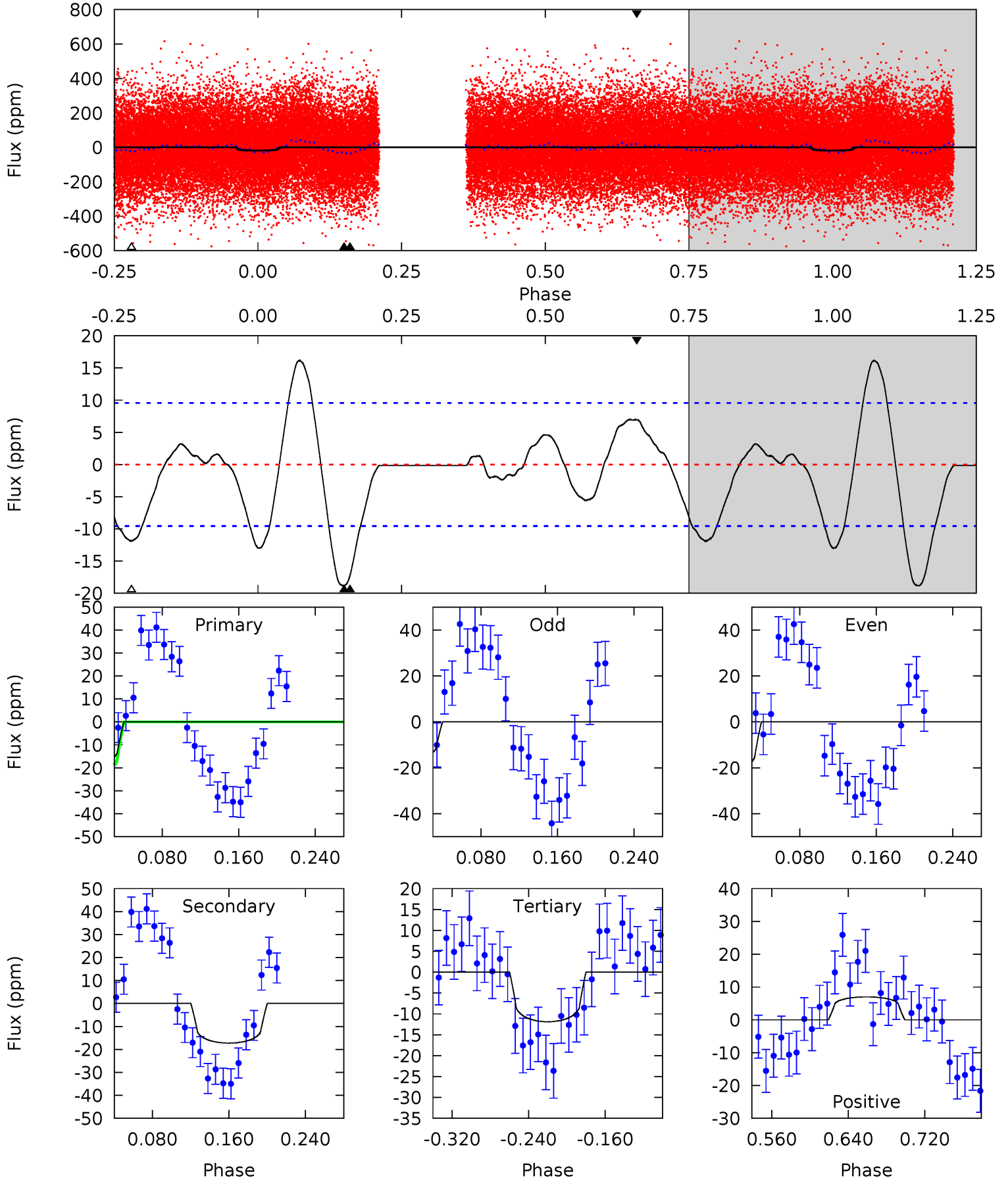
TCE 007030610-02 P= 2.849288 Days $T_0=132.232493$ (BKJD)



DV Model-Shift Uniqueness Test

007030610-02, P = 2.849342 Days, E = 129.241530 Days

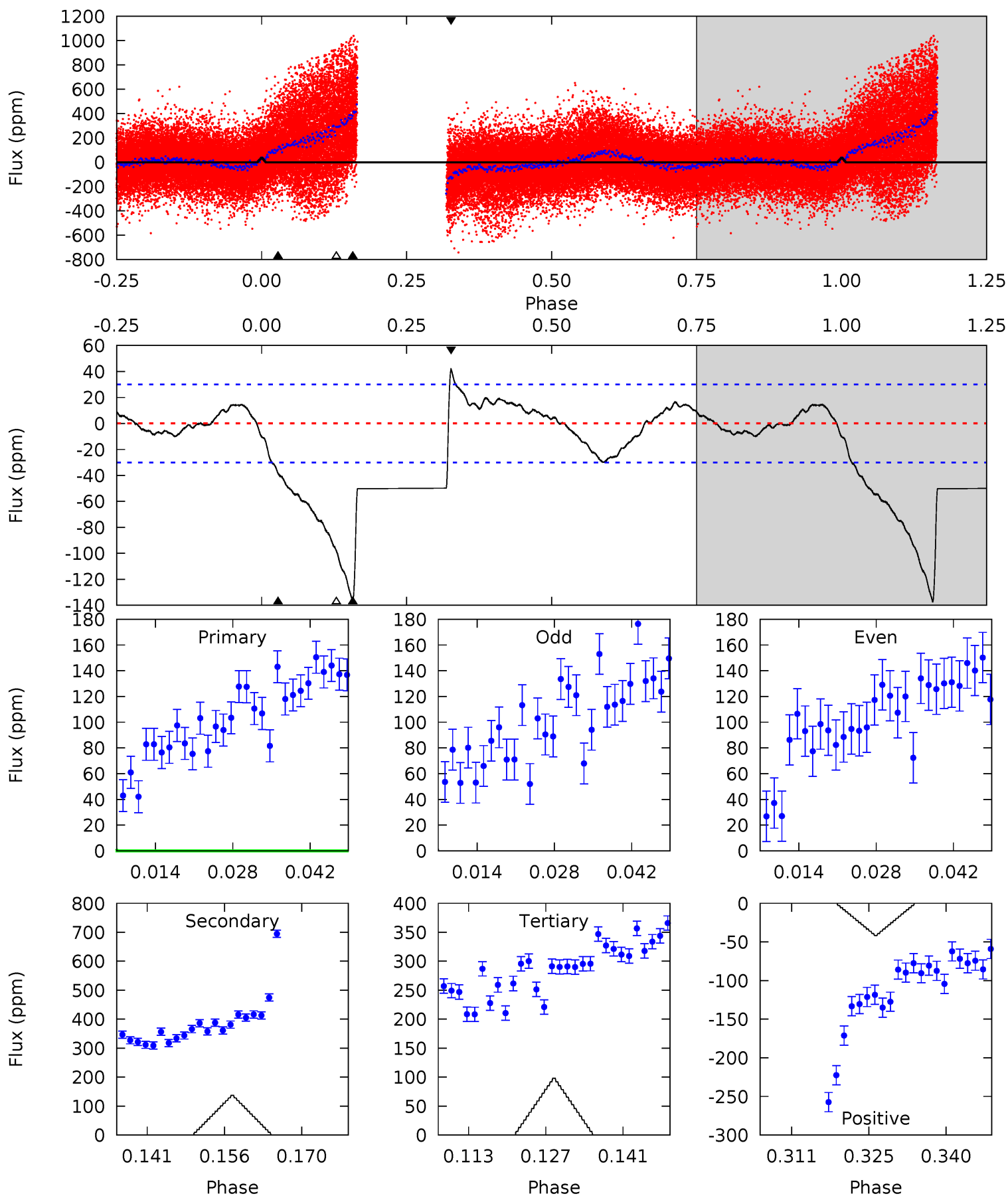
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.10	8.33	5.74	3.38	4.61	1.75	2.69	3.36	5.72	2.59	4.95	1.23	0.80	0.46	2.00



Alt Model-Shift Uniqueness Test

007030610-02, P = 2.849288 Days, E = 129.383205 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.33	22.6	16.2	6.88	4.96	2.45	4.78	-9.85	-0.54	6.44	15.7	0.85	1.46	0.23	0.73



Stellar Parameters For KIC 007030610

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6498^{+176}_{-176}	$3.629^{+0.304}_{-0.076}$	$-0.140^{+0.300}_{-0.250}$	$3.211^{+0.482}_{-1.124}$	$1.601^{+0.218}_{-0.327}$	$0.068^{+0.143}_{-0.017}$
	+3%/-3%	+8%/-2%	+214%/-179%	+15%/-35%	+14%/-20%	+210%/-25%
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 007030610-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 2	$1.62^{+0.61}_{-0.64}$	3270^{+179}_{-287}	5846^{+1678}_{-785}	$7.609^{+12.885}_{-3.645}$
Alt.	-137 ± 6	$0.63^{+0.50}_{-0.40}$	3257^{+186}_{-275}	$30478^{+111827}_{-15181}$	411^{+2484}_{-287}

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

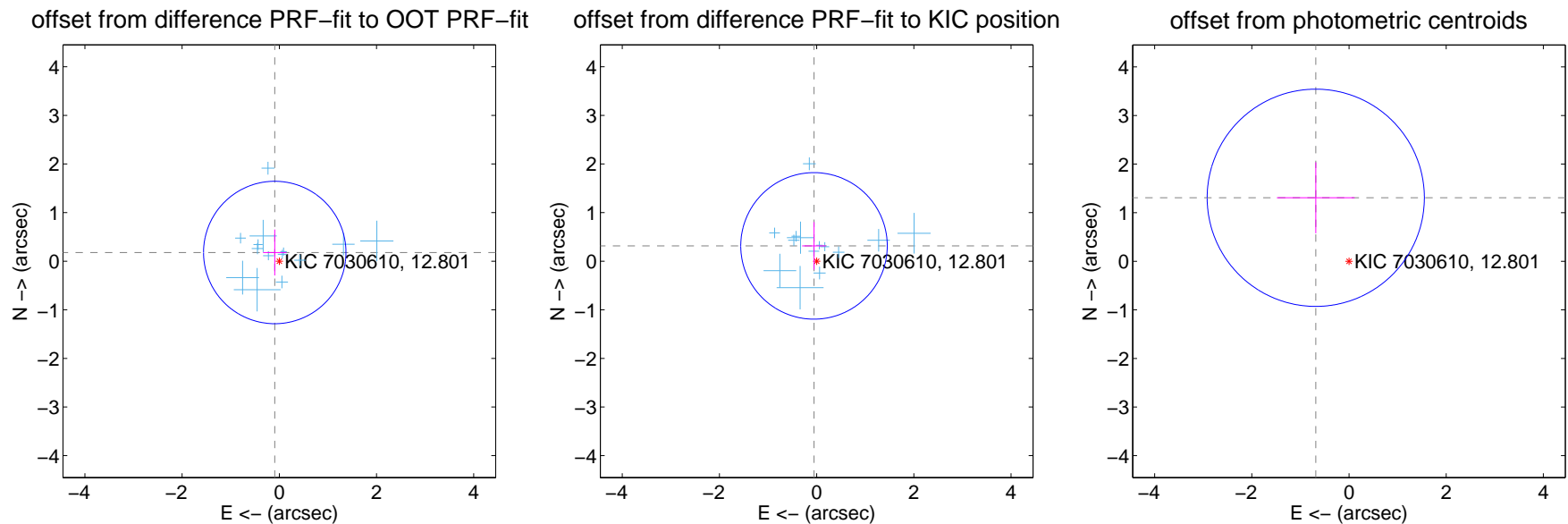
DV Centroid Data

Supplemental centroid analysis for 007030610-02. Kepler magnitude: 12.80. Transit SNR 5.89

There are 14 quarters with good PRF difference image offsets

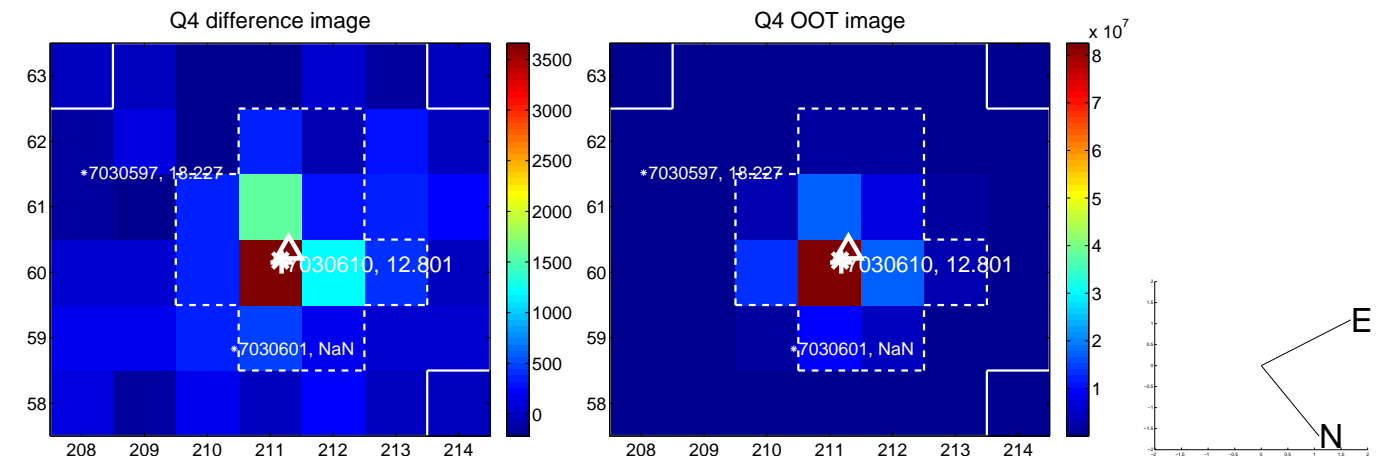
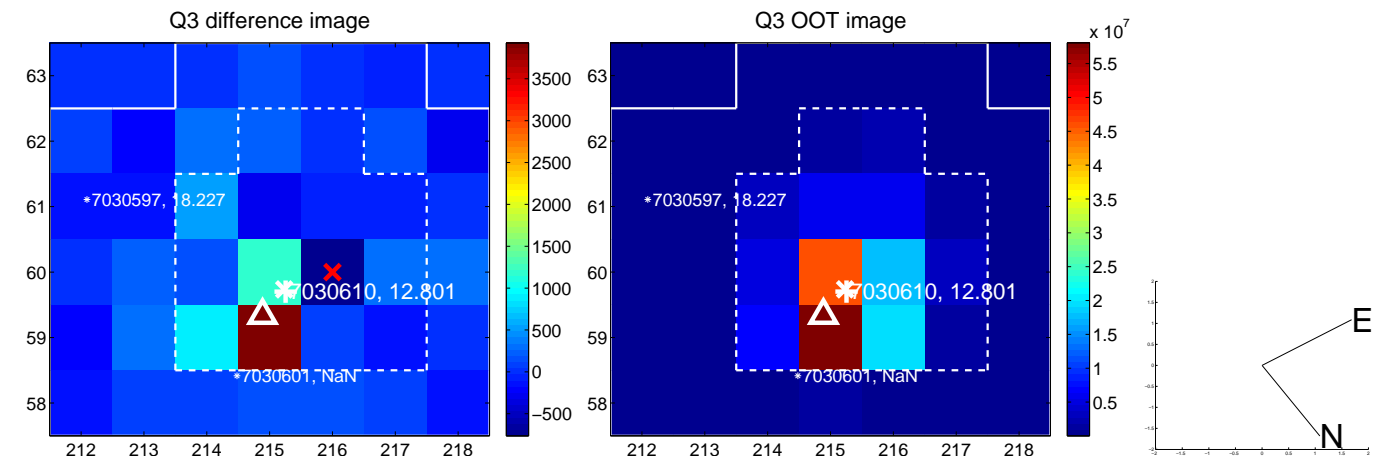
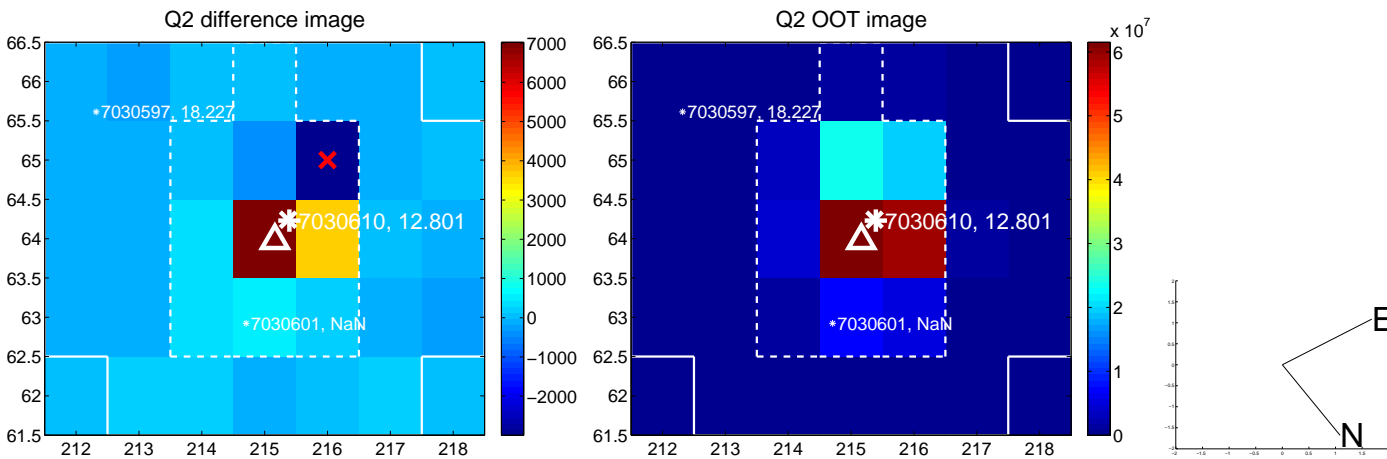
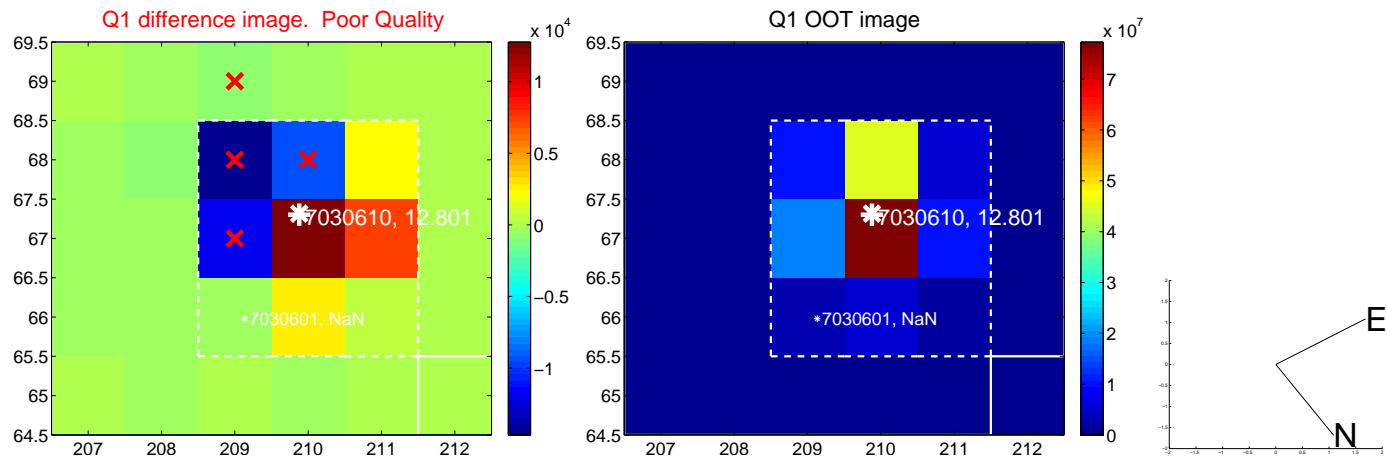
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.202 ± 0.488	0.41	0.094 ± 0.241	0.179 ± 0.473
PRF-fit source offset from KIC position	0.320 ± 0.502	0.64	0.054 ± 0.244	0.315 ± 0.489
photometric centroid source offset	1.47 ± 0.75	1.98	0.68 ± 0.80	1.31 ± 0.73

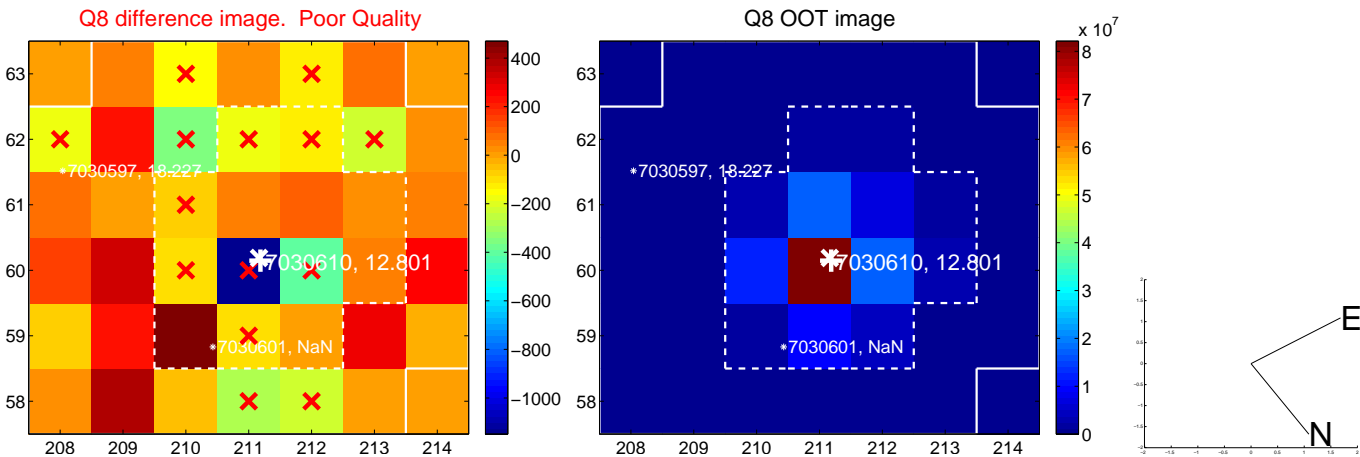
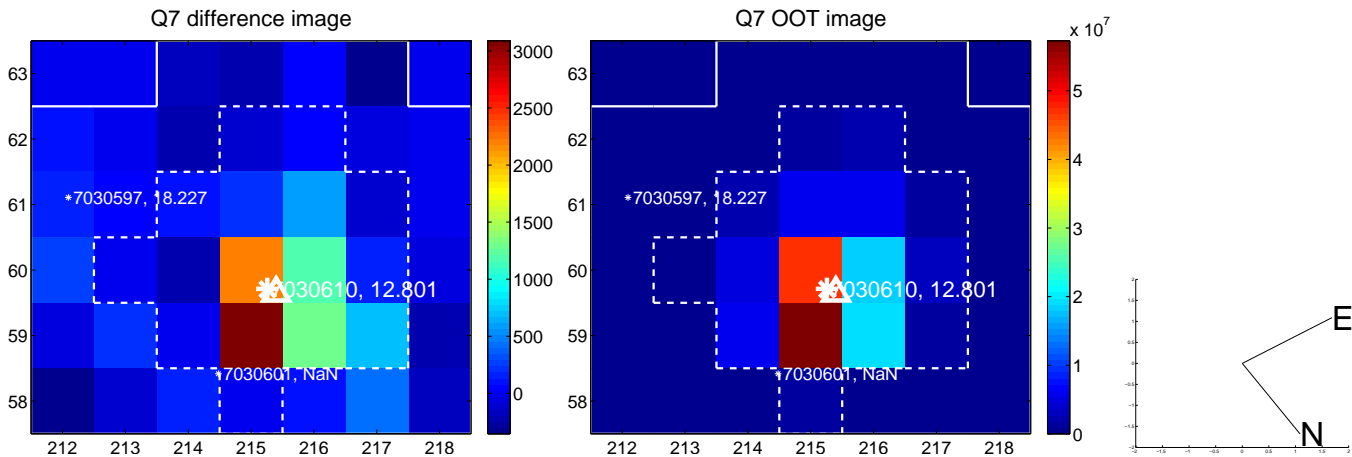
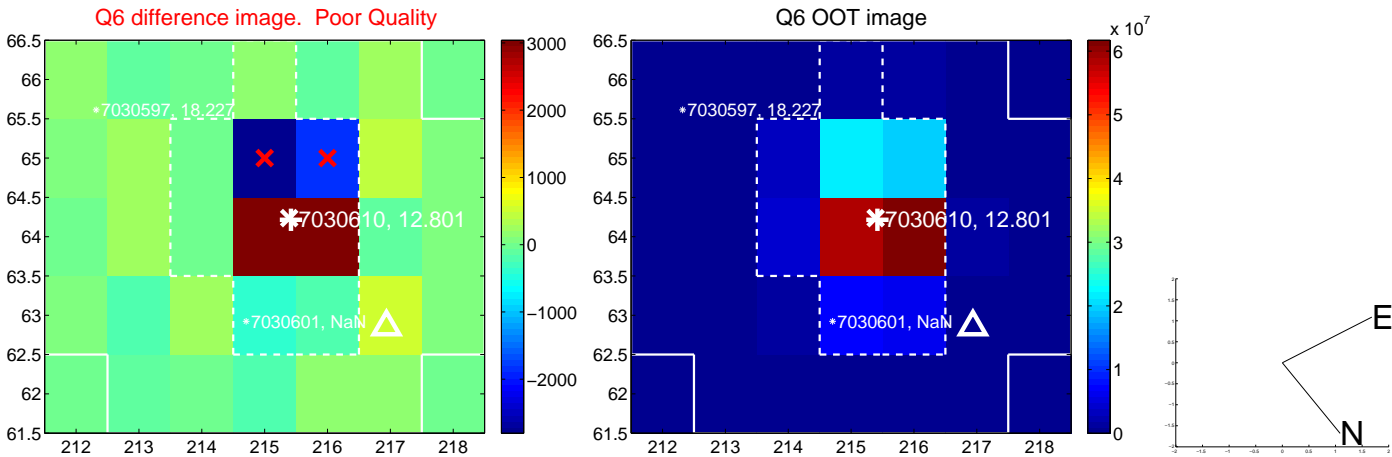
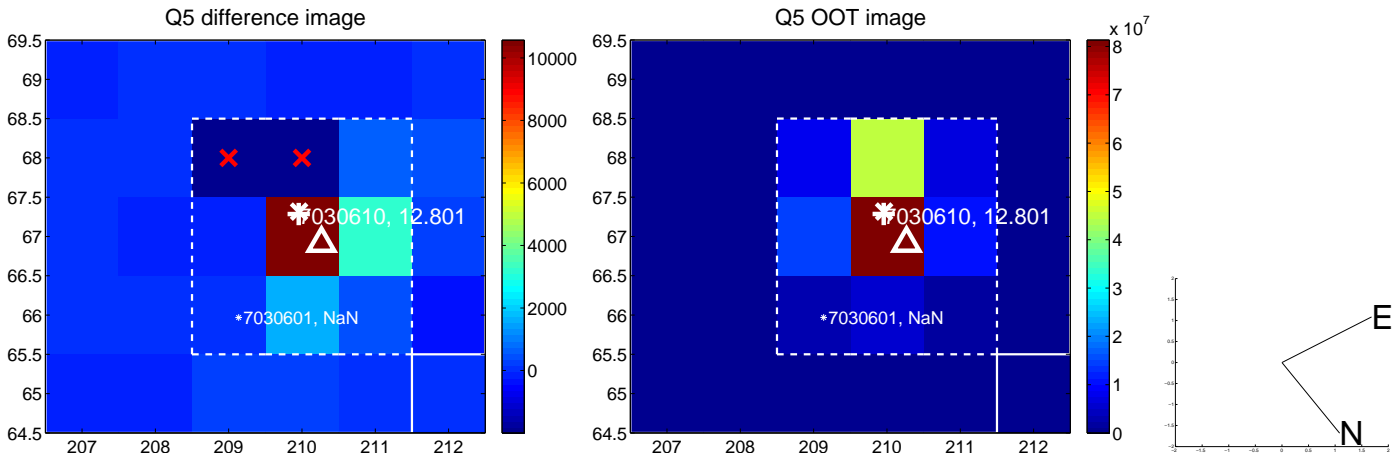


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

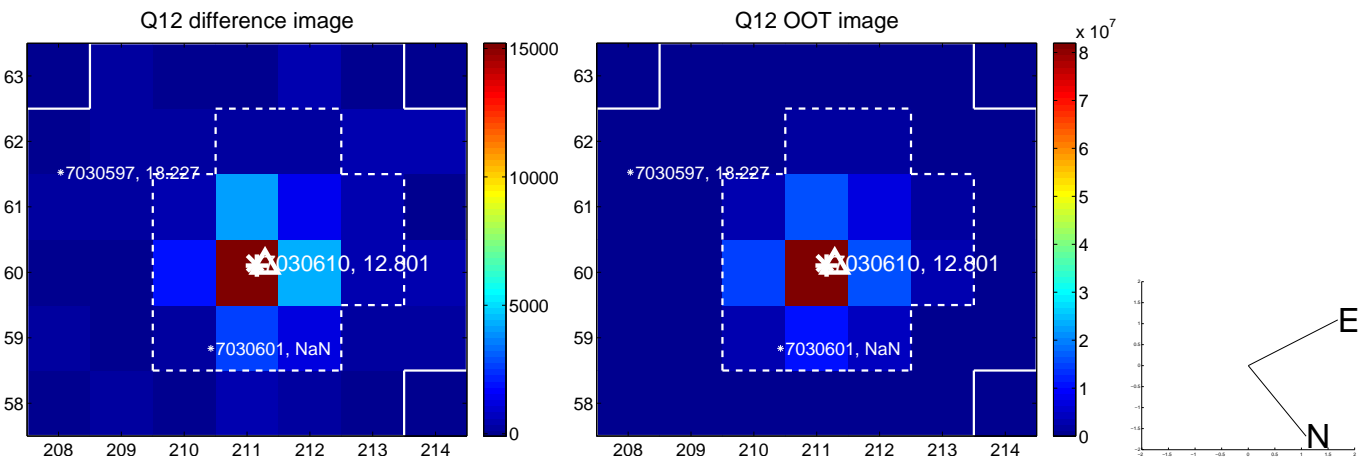
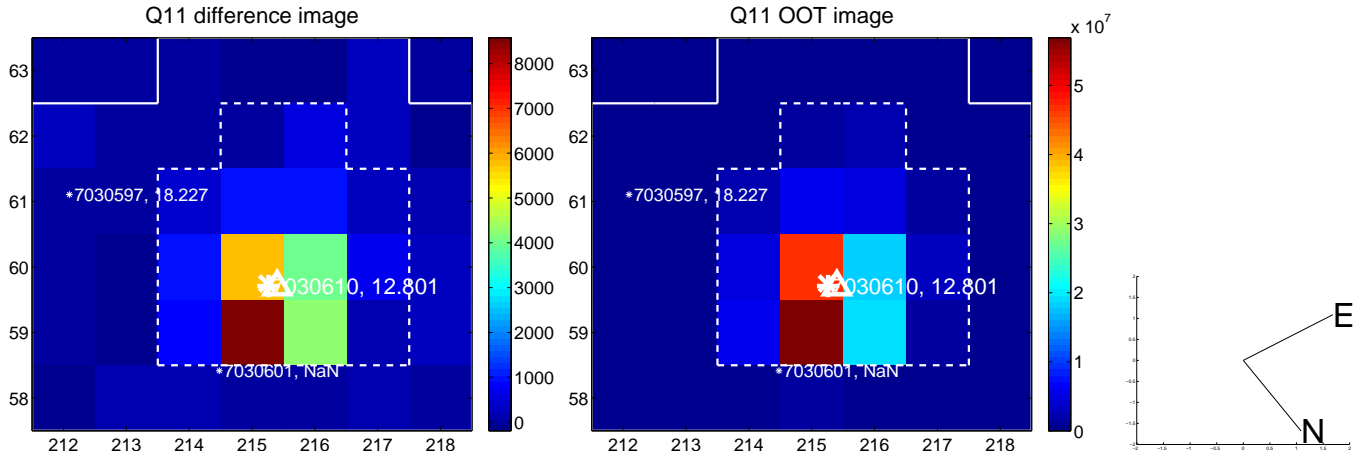
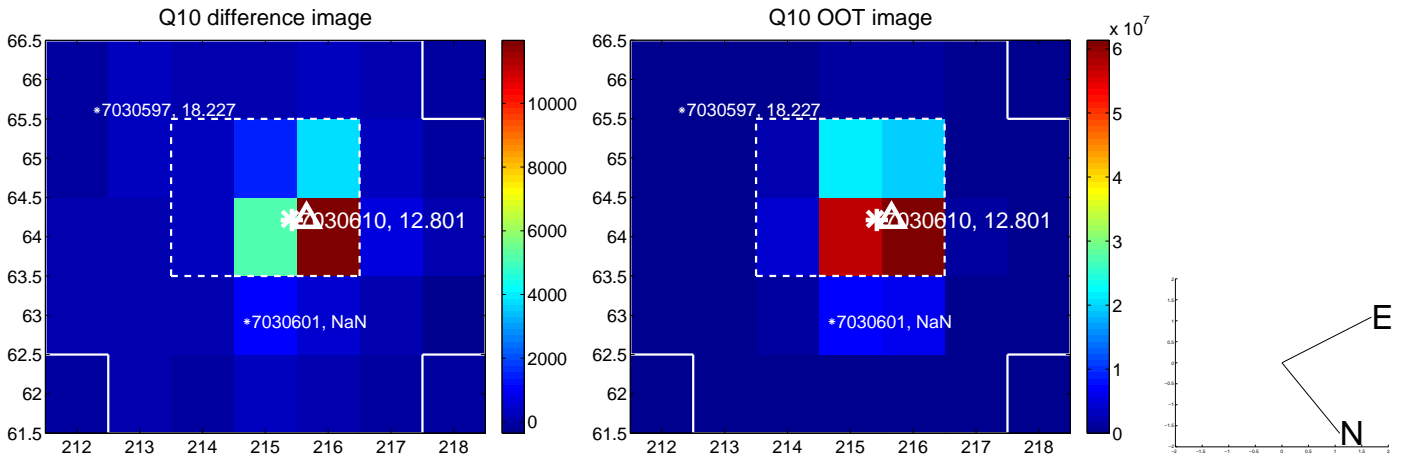
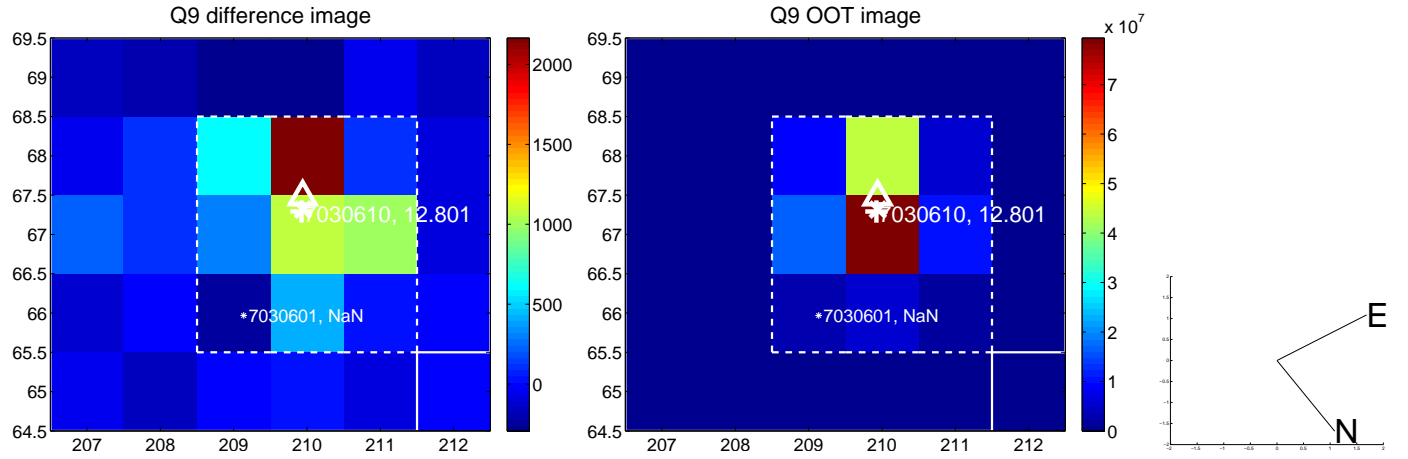
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



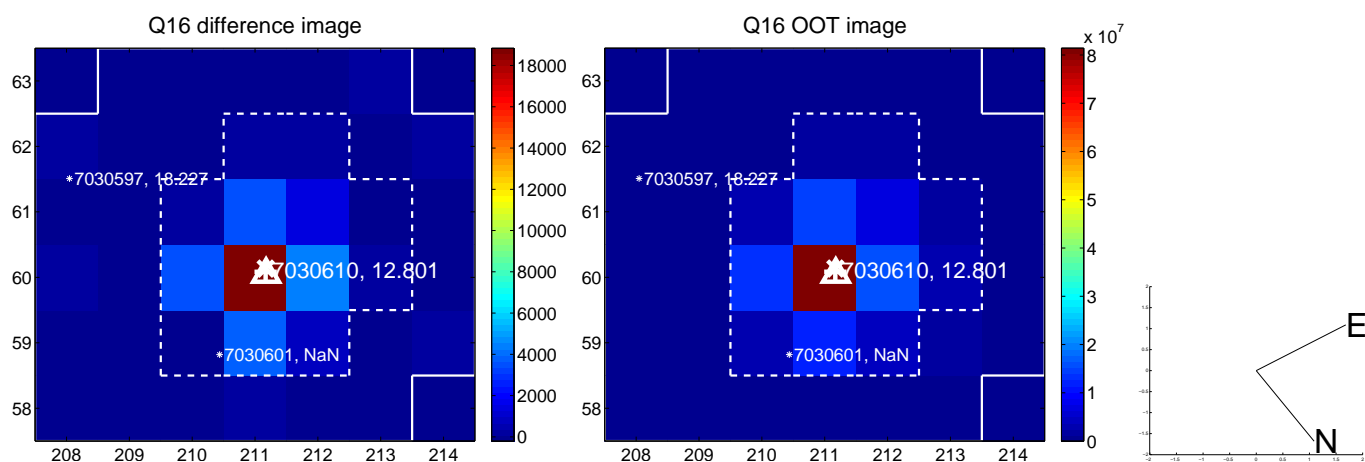
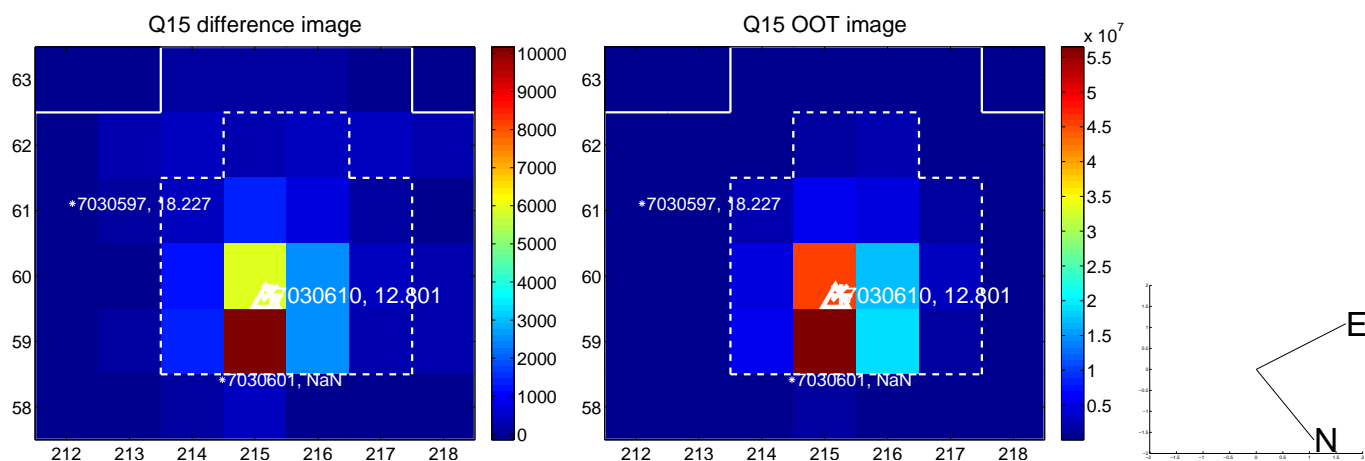
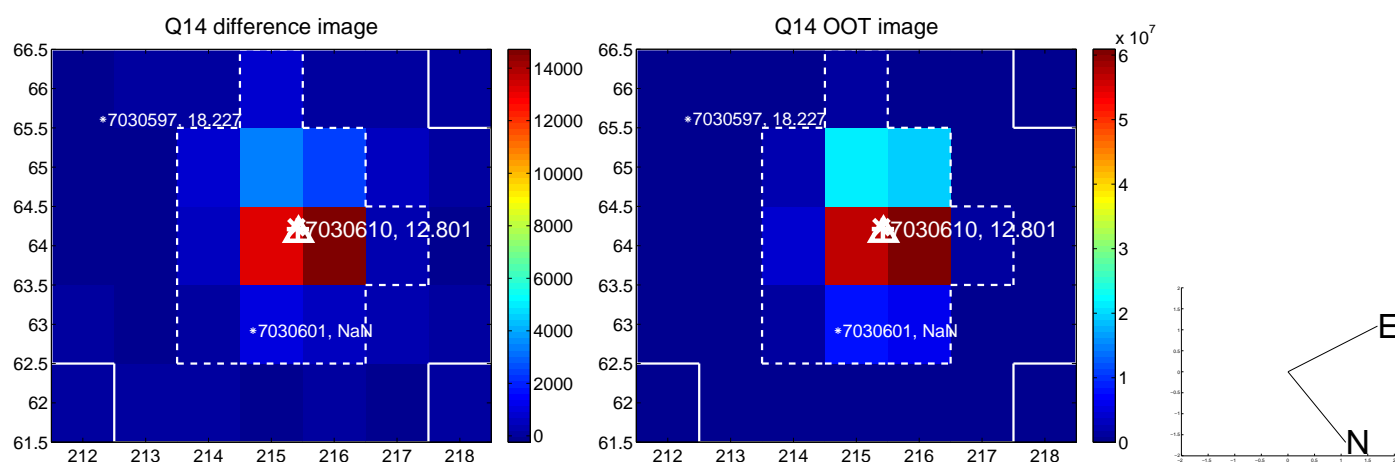
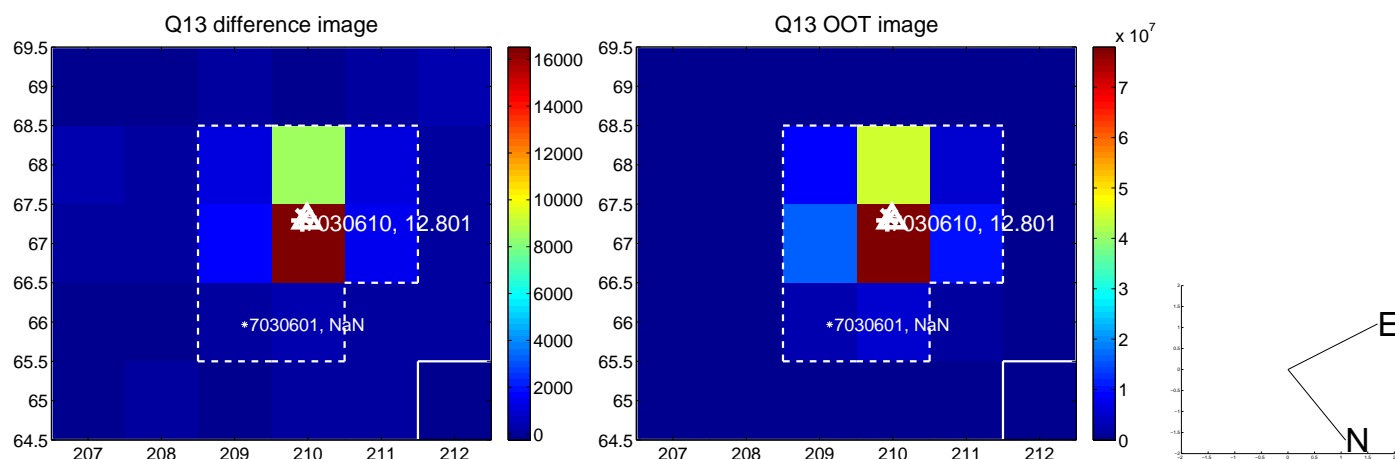
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



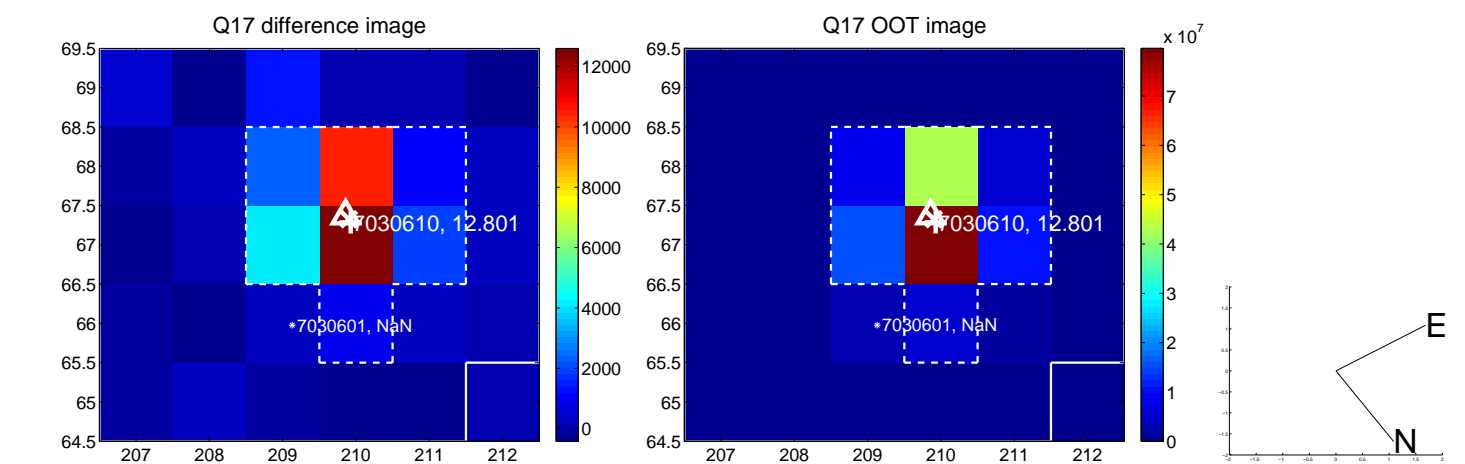
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



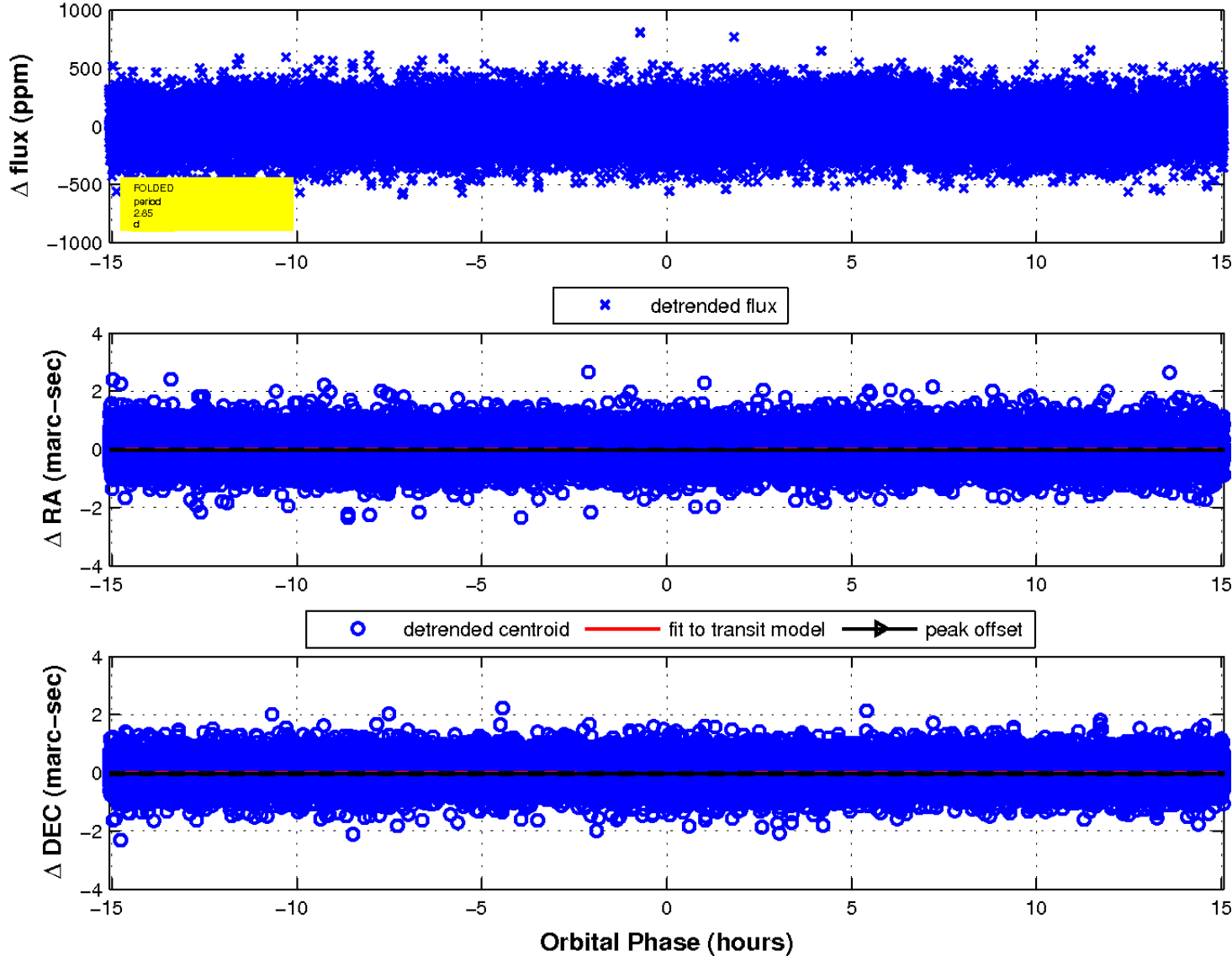
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

