

KIC 003975085

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})
003975085-01	OBS	No	2.009828	131.961572	80.5	12.652	9.8	9.5	2.03	7757	2.11	9470.18
003975085-02	OBS	No	78.528369	142.985487	1568.0	4.926	12.0	11.4	2.03	7757	10.18	71.43
003975085-03	OBS	No	58.828151	136.843263	478.0	9.473	10.1	7.2	2.03	7757	4.85	104.98
003975085-04	OBS	No	99.802914	200.101690	760.0	4.995	8.7	5.6	2.03	7757	6.18	51.88
003975085-06	OBS	No	12.581793	132.266373	218.4	25.656	8.5	8.0	2.03	7757	3.26	820.82
003975085-07	OBS	No	150.726597	191.249685	243.4	7.705	9.6	4.0	2.03	7757	3.46	29.94
003975085-08	OBS	No	66.693977	192.425115	1047.8	3.546	8.0	7.2	2.03	7757	7.62	88.81
003975085-09	OBS	No	82.265583	150.962779	1145.8	2.558	7.8	8.3	2.03	7757	8.23	67.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003975085-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003975085-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

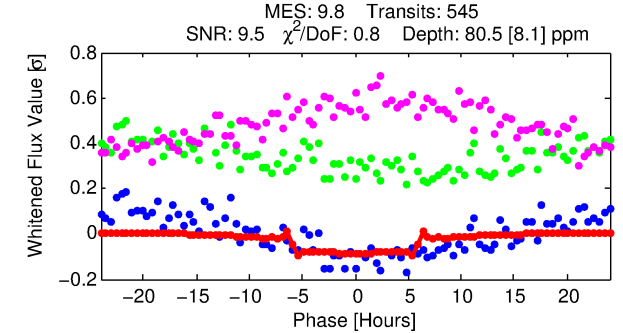
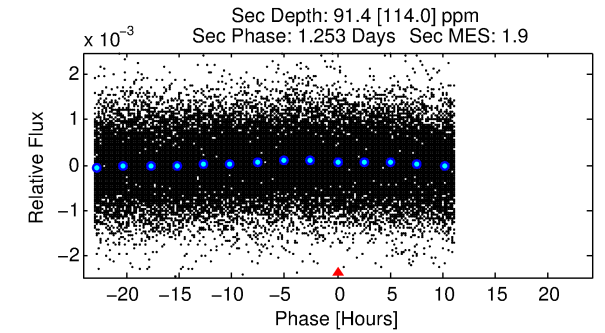
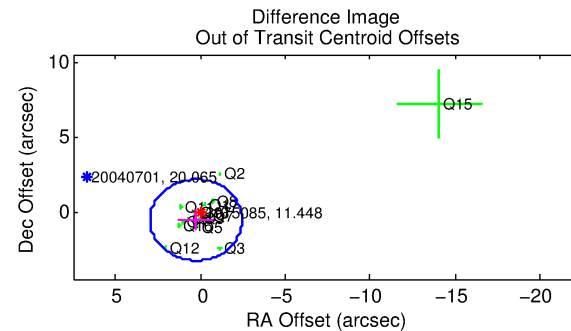
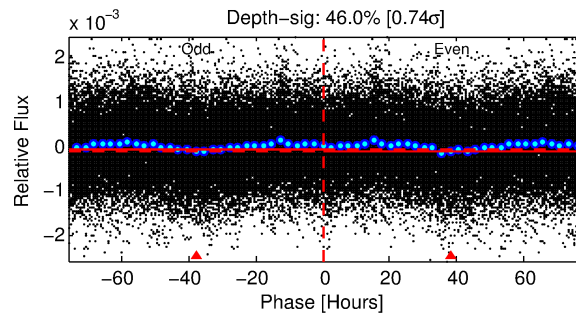
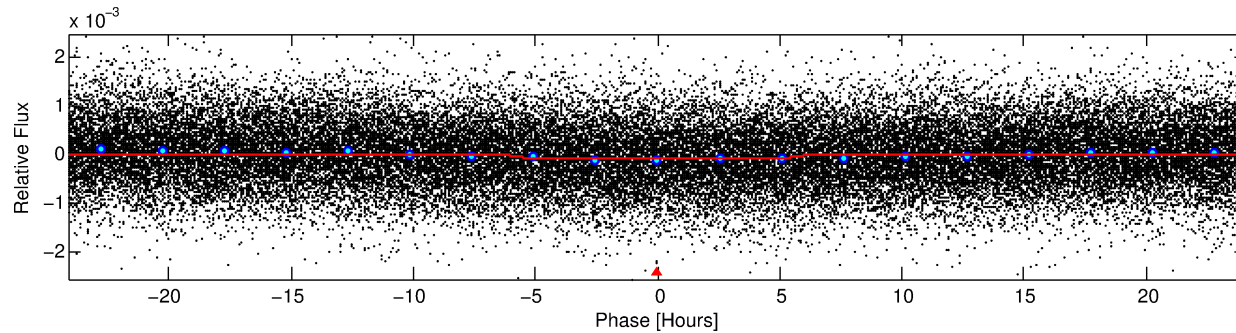
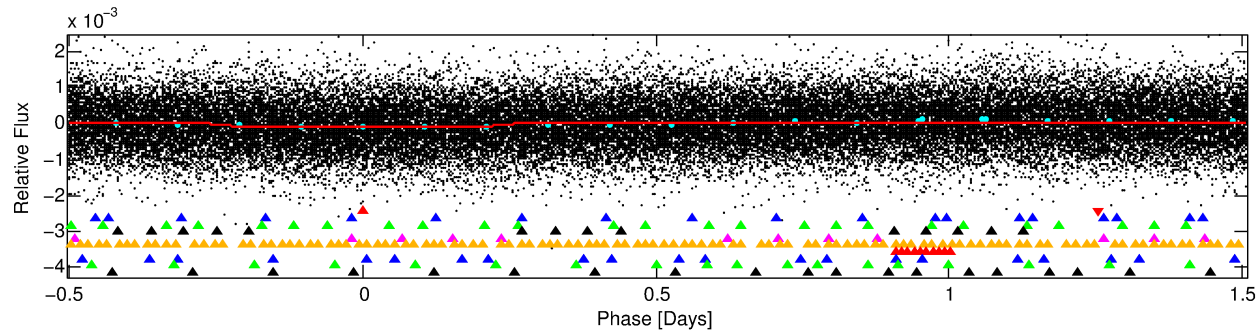
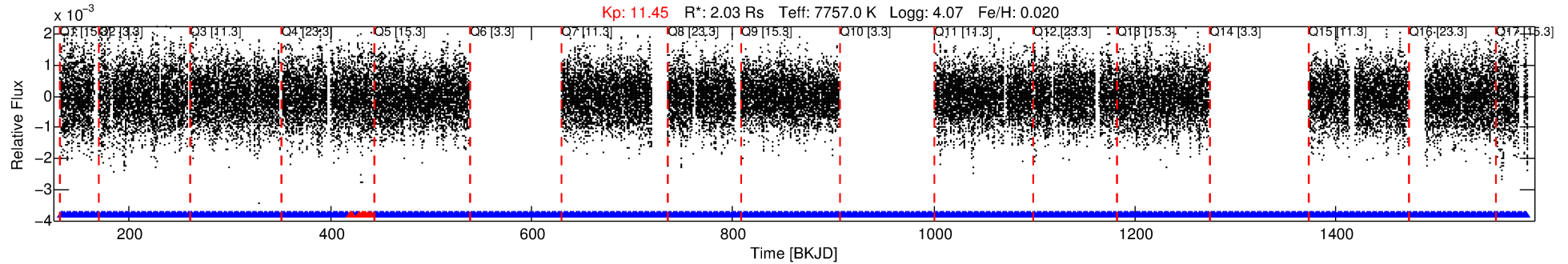
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003975085-01

No Significant Match Found

DV One-Page Summary

KIC: 3975085 Candidate: 1 of 10 Period: 2.010 d



DV Fit Results:

Period = 2.00983 [0.00003] d
Epoch = 131.9616 [0.0064] BKJD
Rp/R* = 0.0095 [0.0007]
a/R* = 1.09 [0.07]
b = 0.90 [0.08]
Seff = 9470.18 [2146.58]
Teq = 2515 [143] K
Rp = 2.11 [0.42] Re
a = 0.0376 [0.0057] AU
Ag = 15.98 [20.40] [0.73 σ]
Teffp = 7776 [2446] K [2.15 σ]

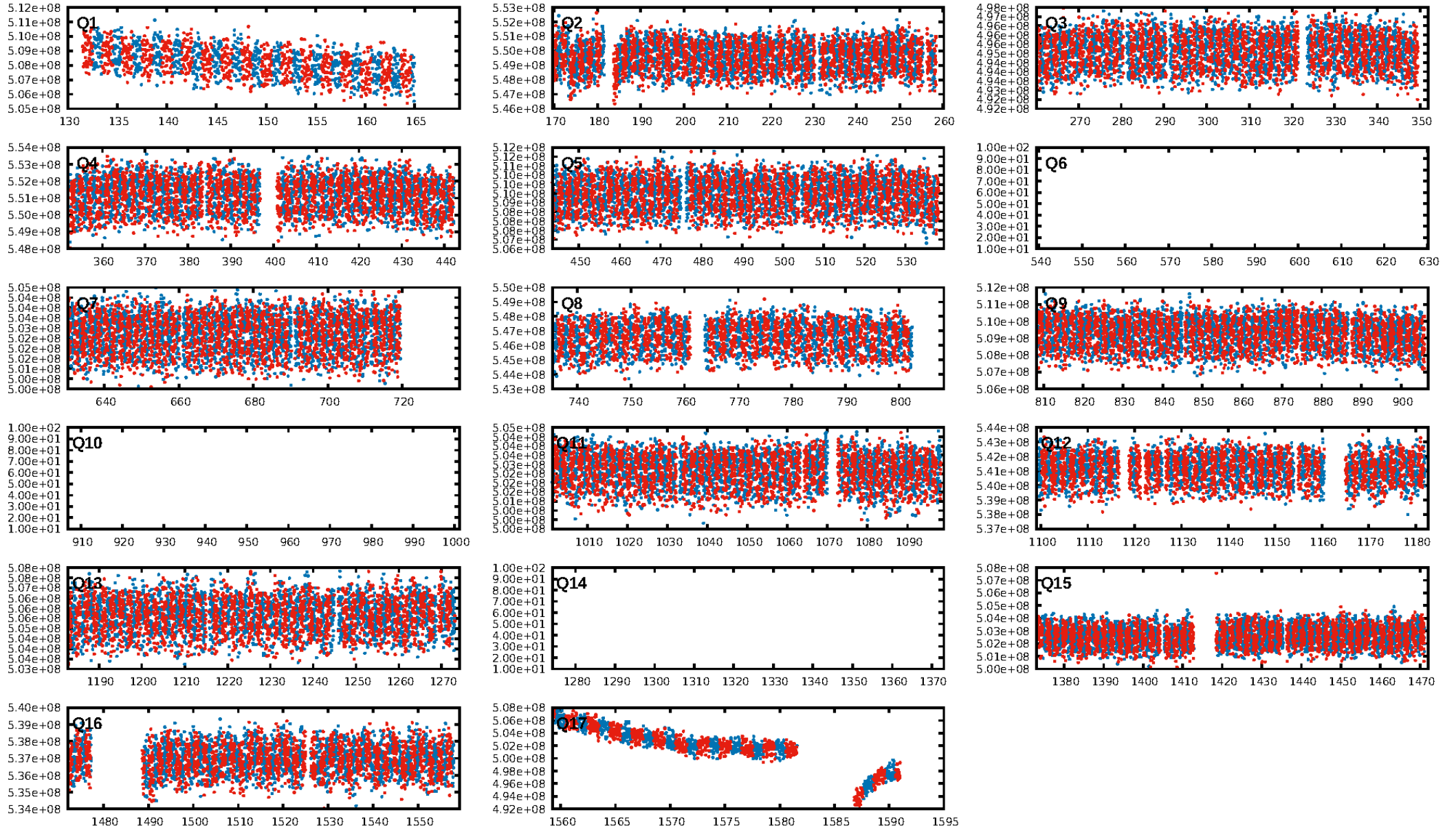
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [8.87 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.99e-18
RollingBand-fgt: 0.98 [506/514]
GhostDiagnostic-chr: 0.9108
Centroid-sig: 85.0%
Centroid-so: 0.109 arcsec [0.80 σ]
OotOffset-rm: 0.618 arcsec [0.68 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-rm: 0.563 arcsec [0.67 σ]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 1.00 [14/14]

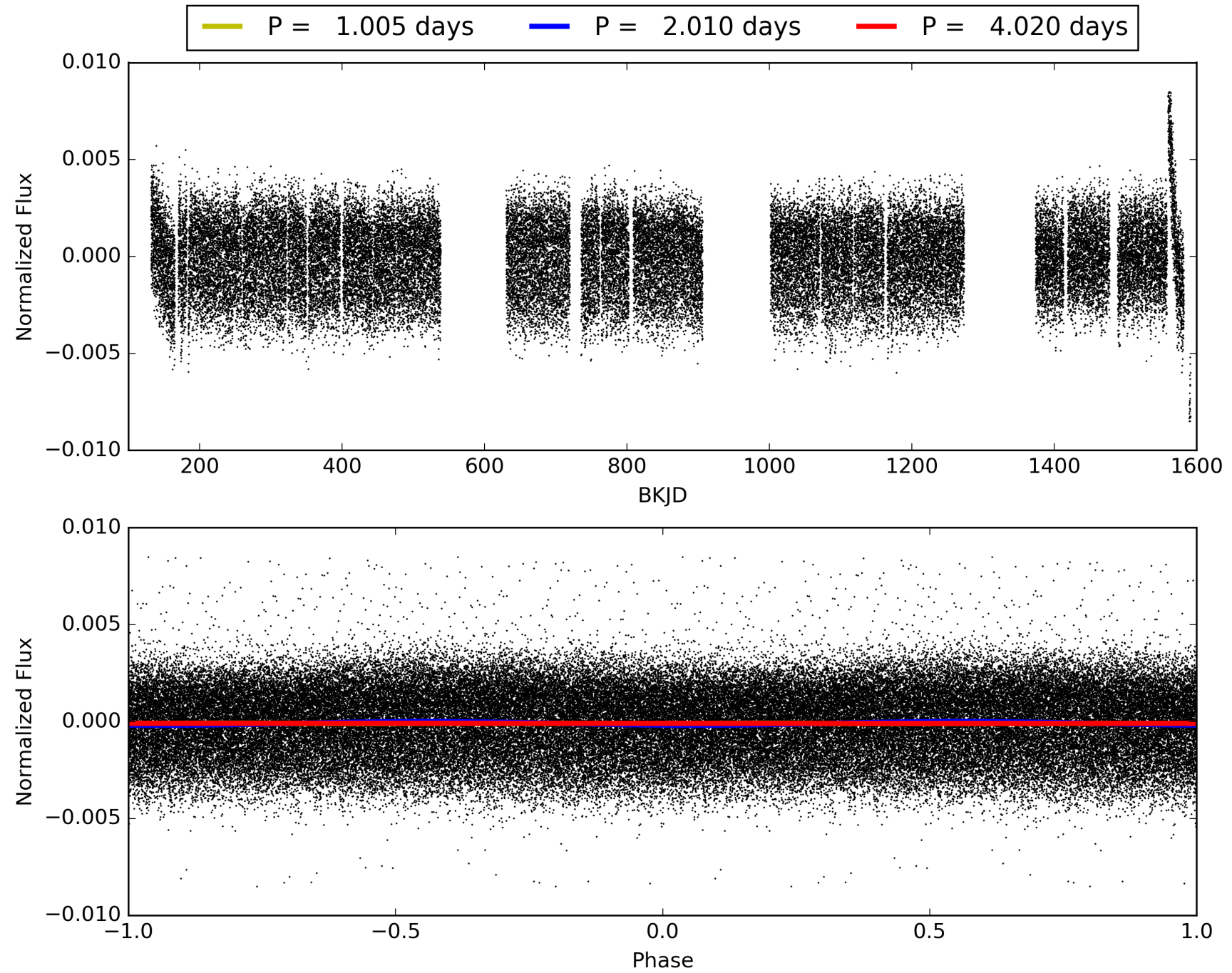
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:22:19 Z

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

TCE 003975085-01, PDC Light Curves

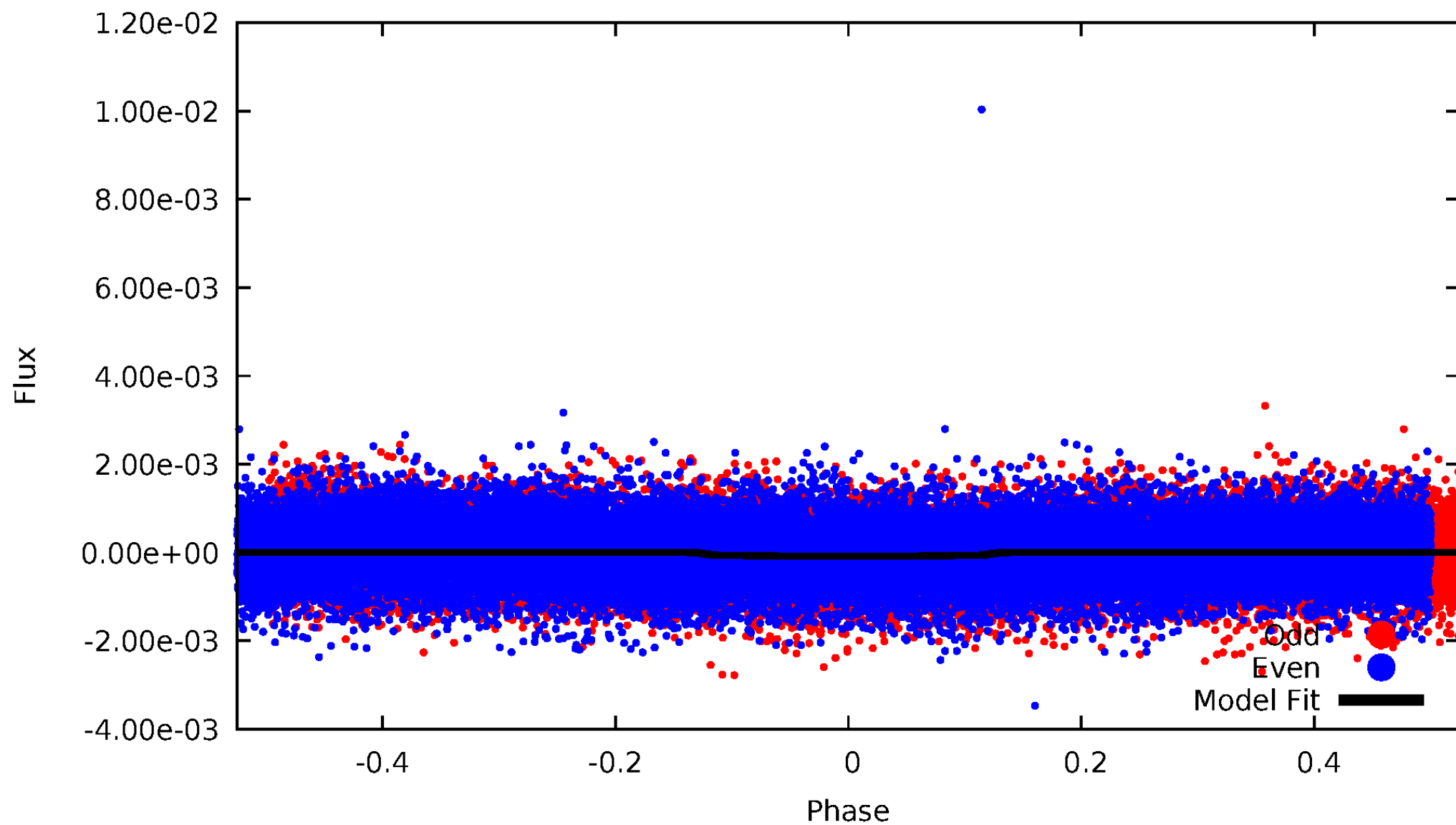


TCE 003975085-01



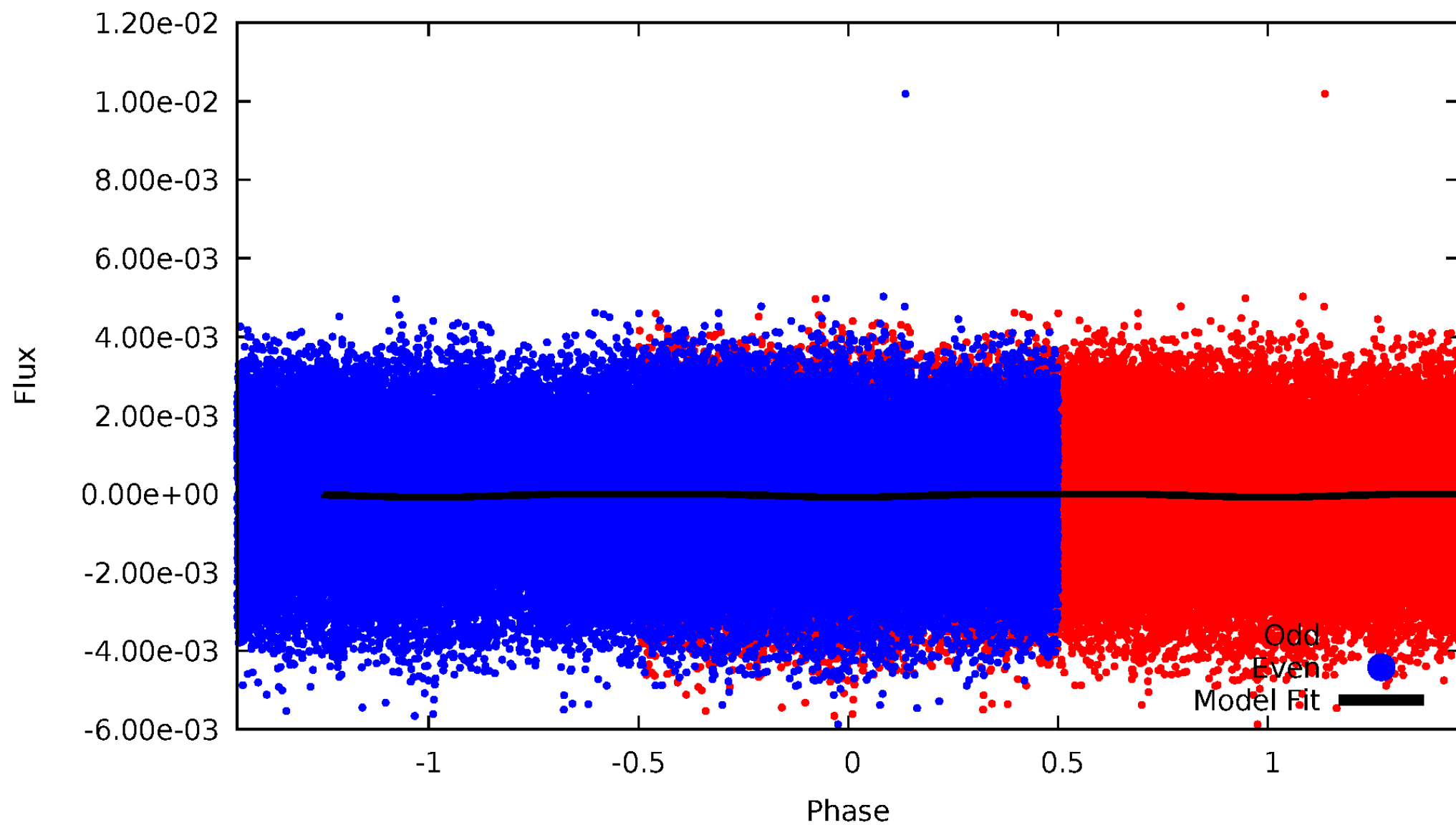
DV Odd/Even

TCE 003975085-01



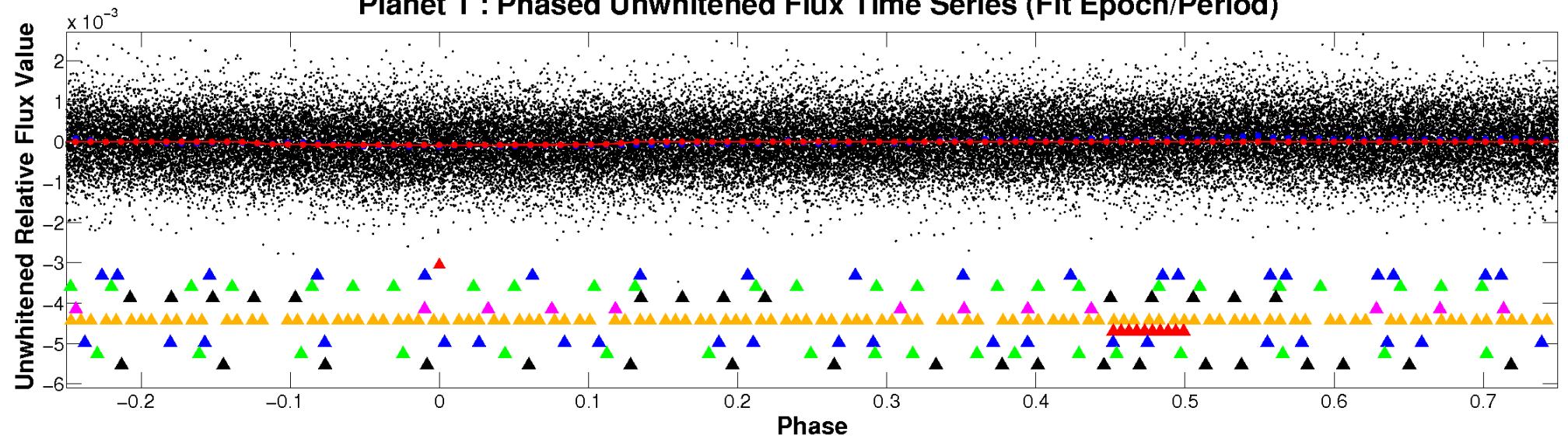
ALT Odd/Even

TCE 003975085-01

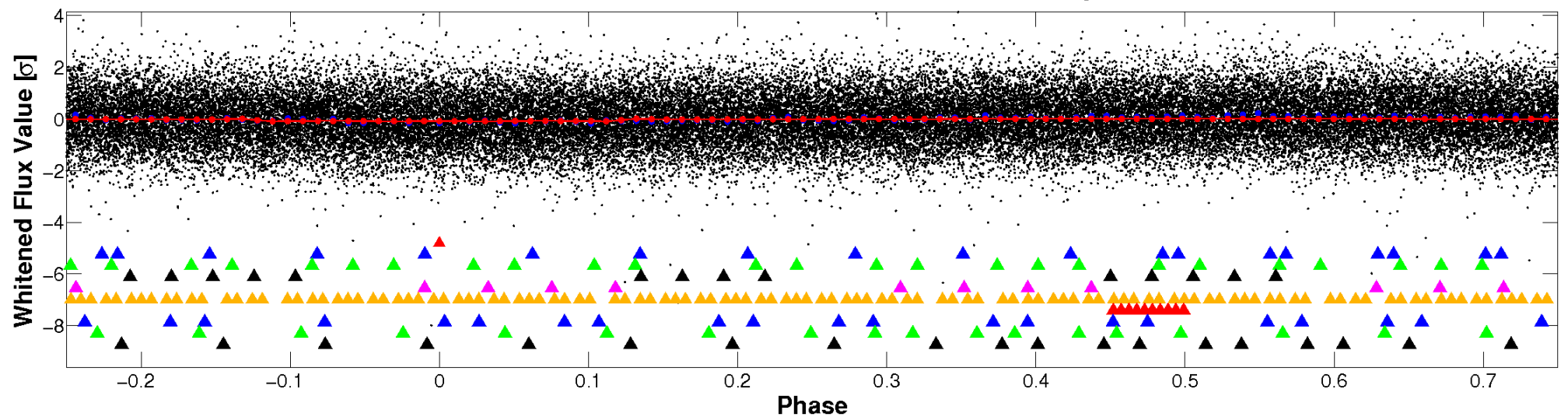


Non-Whitened Vs. Whitened Light Curve

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

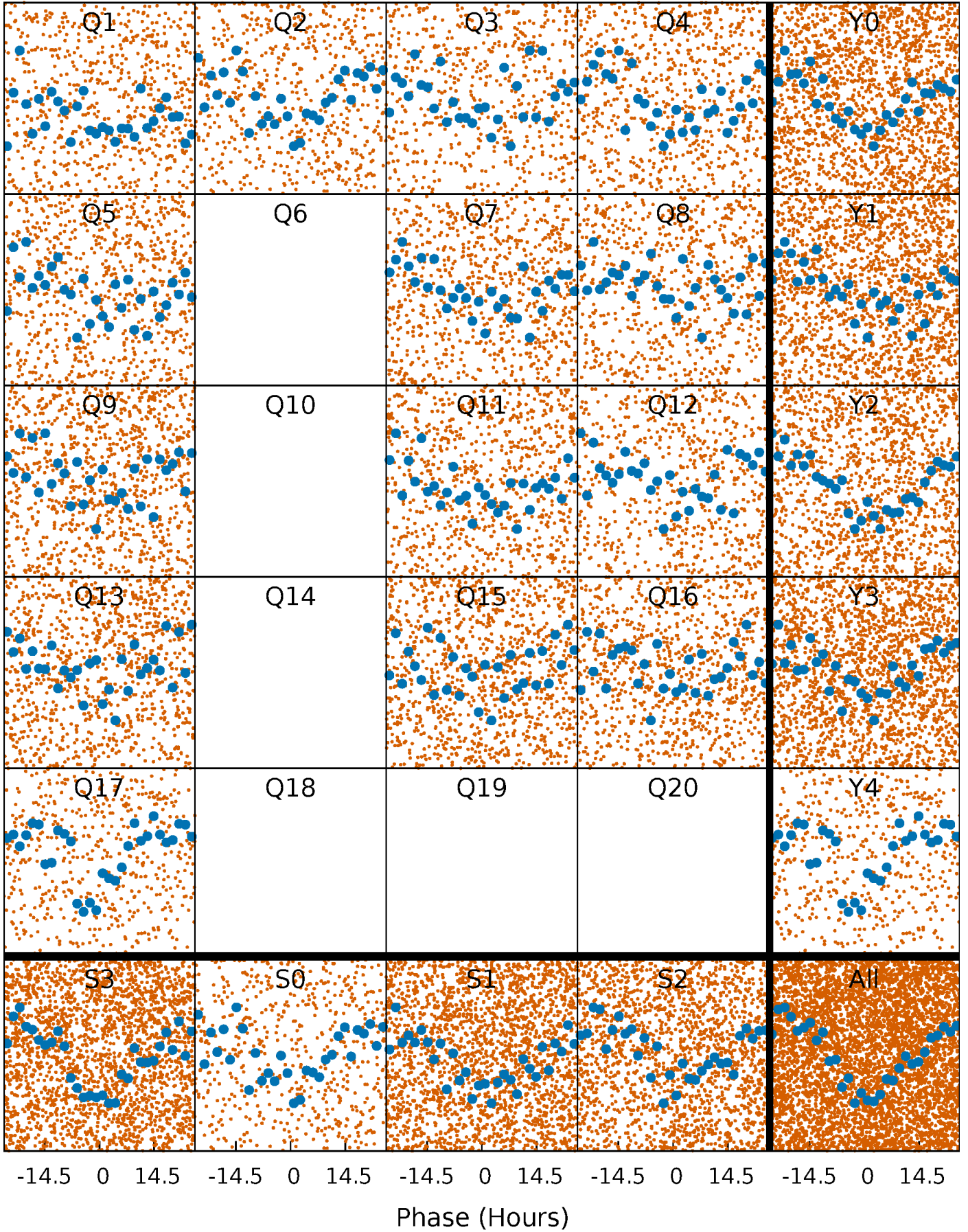


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



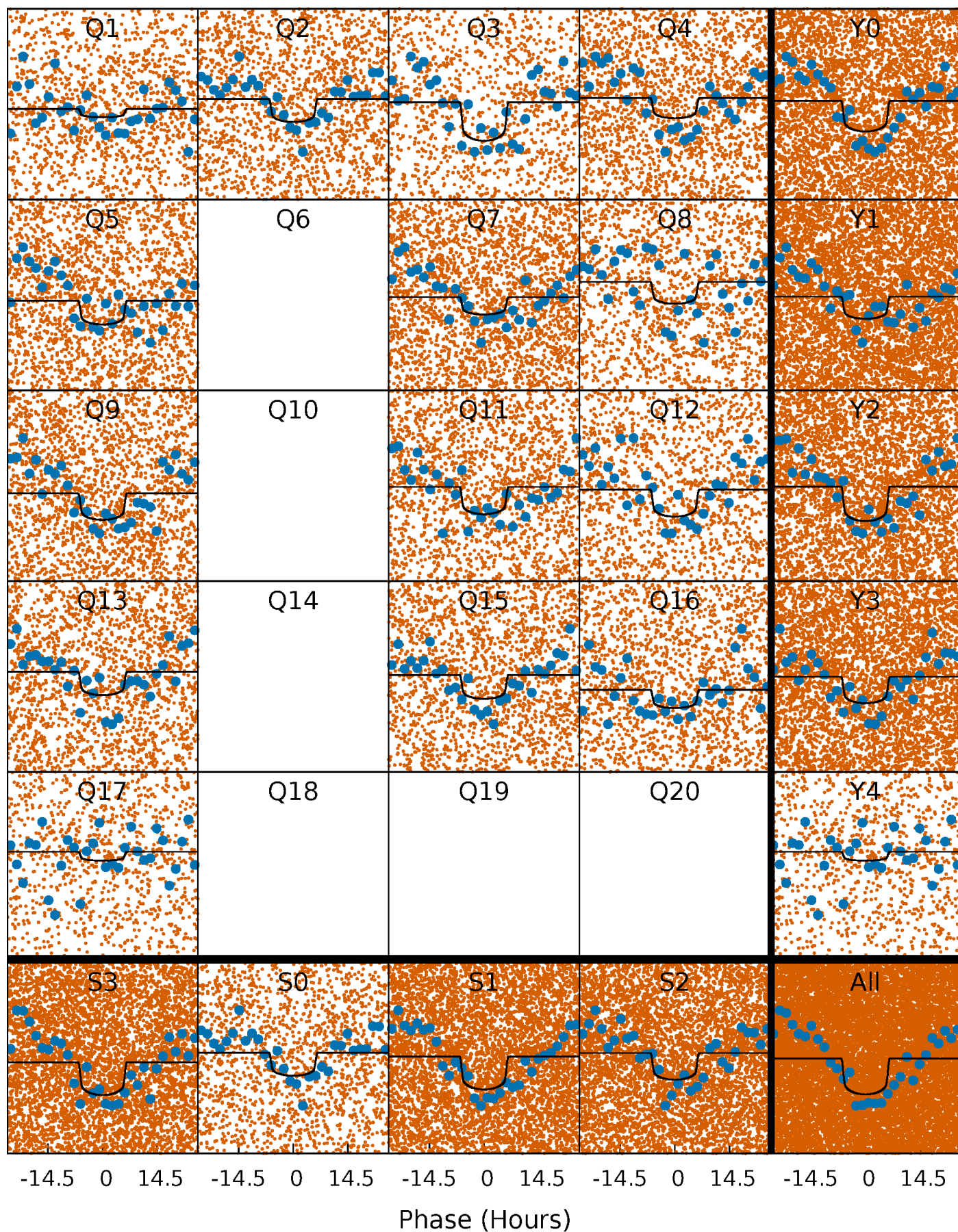
PDC Quarter-Phased Transit Curves

TCE 003975085-01 P= 2.009828 Days $T_0=131.961572$ (BKJD)



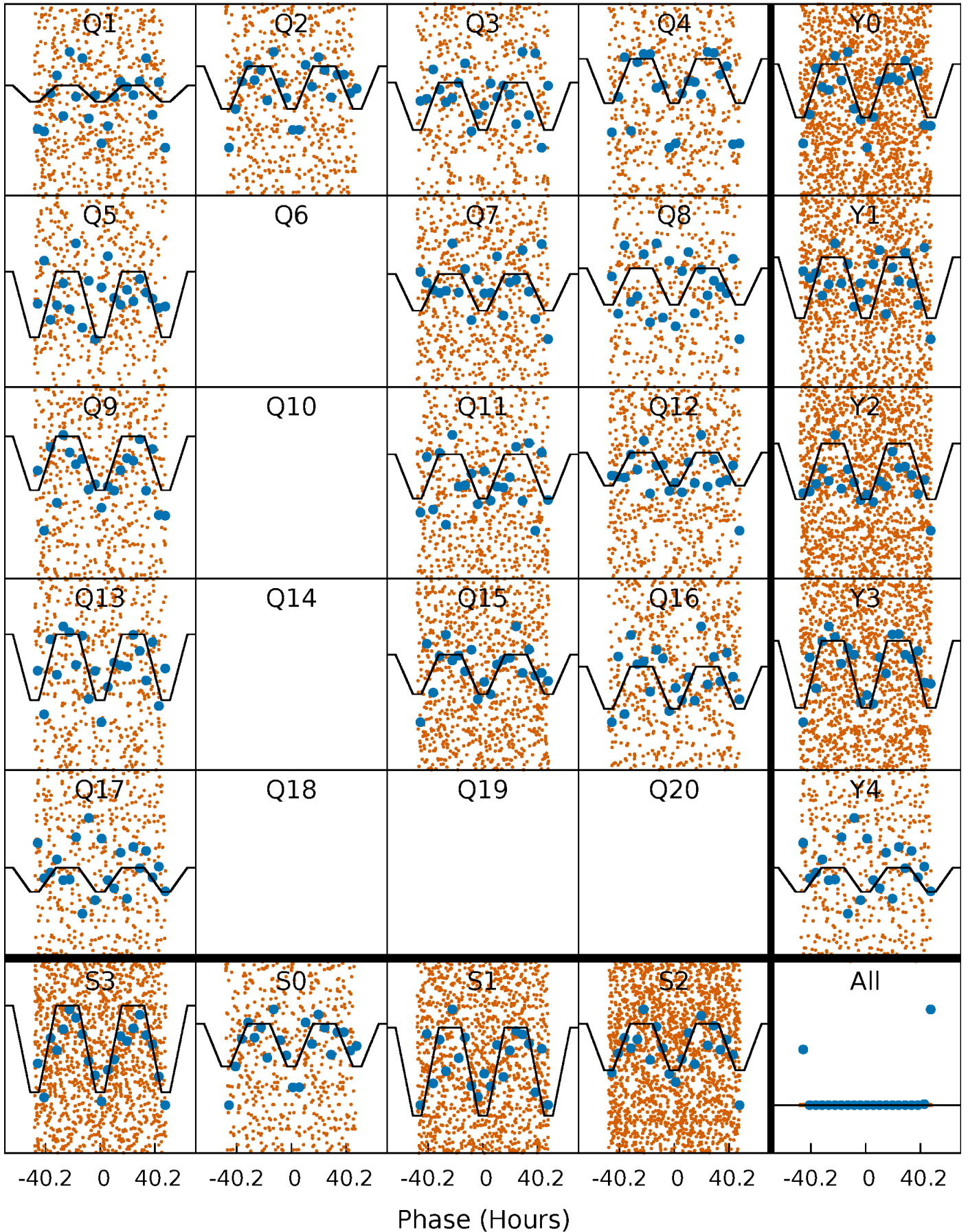
DV Quarter-Phased Transit Curves

TCE 003975085-01 P= 2.009828 Days $T_0=131.961572$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

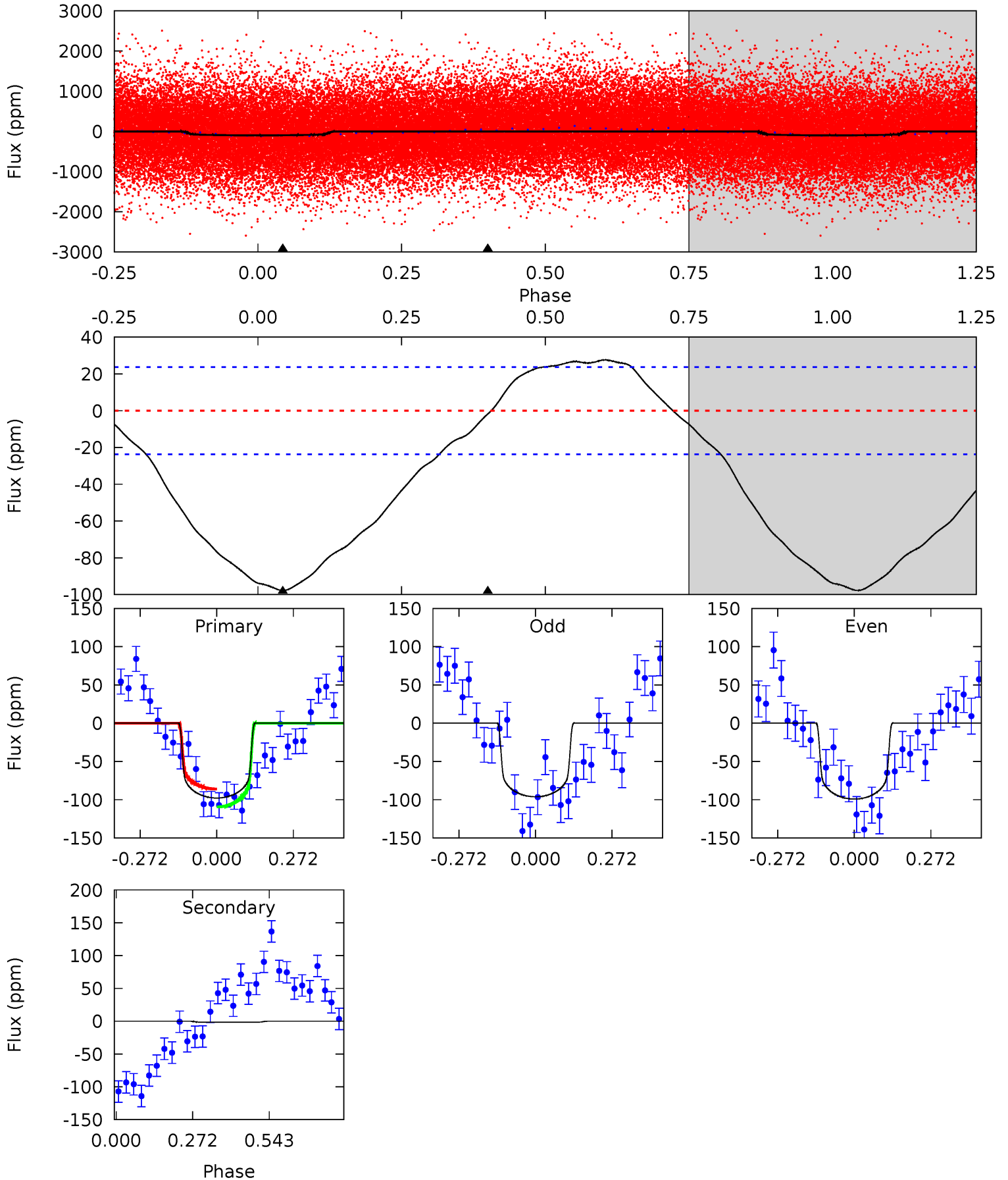
TCE 003975085-01 $P = 2.009762$ Days $T_0 = 131.960847$ (BKJD)



DV Model-Shift Uniqueness Test

003975085-01, P = 2.009828 Days, E = 129.951744 Days

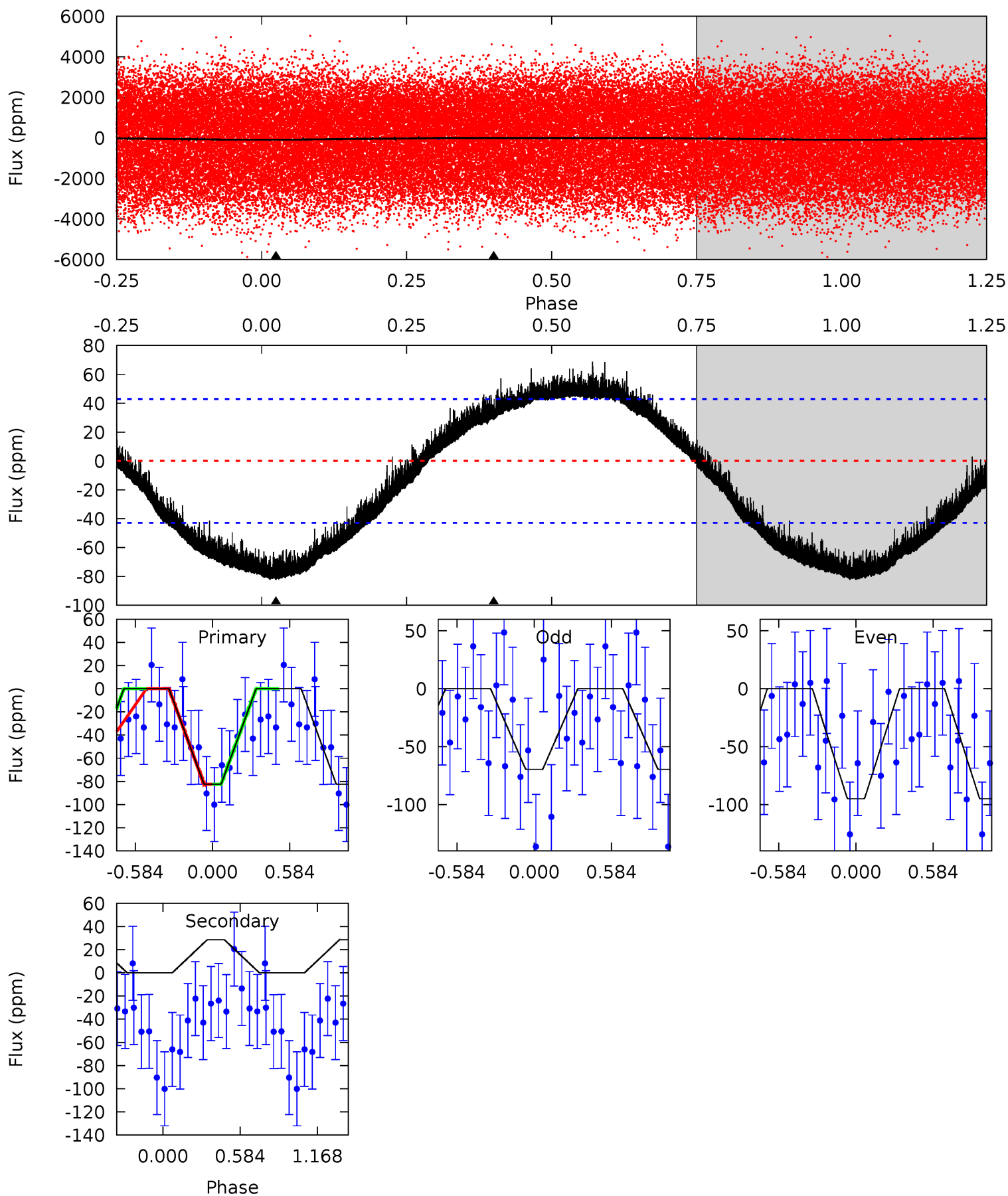
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	0.32	0	0	4.35	1.10	1.60	17.9	17.9	0.32	0.32	0.27	0.92	0.22	2.13



Alt Model-Shift Uniqueness Test

003975085-01, P = 2.009762 Days, E = 129.951085 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.03	-2.78	0	0	4.18	0.55	1.21	8.03	8.03	-2.78	-2.78	1.24	0.86	0.45	0.00



Stellar Parameters For KIC 003975085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7757^{+69}_{-92}	$4.067^{+0.099}_{-0.121}$	$0.020^{+0.050}_{-0.200}$	$2.034^{+0.369}_{-0.302}$	$1.760^{+0.149}_{-0.164}$	$0.295^{+0.135}_{-0.109}$
	+1%/-1%	+2%/-3%	+250%/-1000%	+18%/-15%	+8%/-9%	+46%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003975085-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 5	$2.12^{+0.27}_{-0.24}$	3525^{+157}_{-128}	-2719^{+6751}_{-1412}	$0.234^{+0.959}_{-0.934}$
Alt.	29 ± 10	$2.06^{+0.26}_{-0.22}$	3521^{+163}_{-139}	-5827^{+543}_{-492}	$-4.978^{+1.936}_{-2.551}$

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

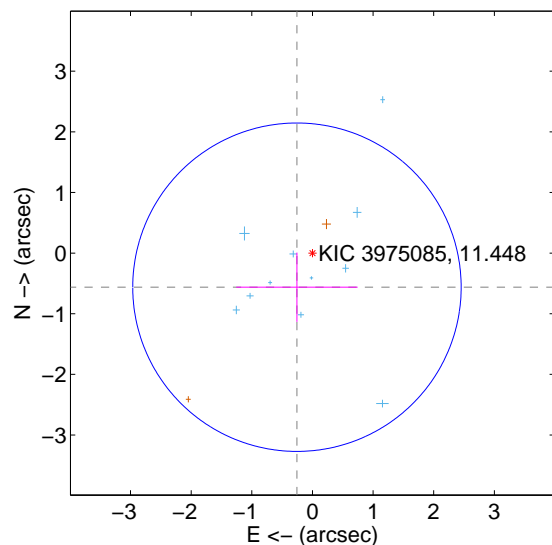
Supplemental centroid analysis for 003975085-01. **Kepler magnitude: 11.45.** Transit SNR 9.51

There are 11 quarters with good PRF difference image offsets

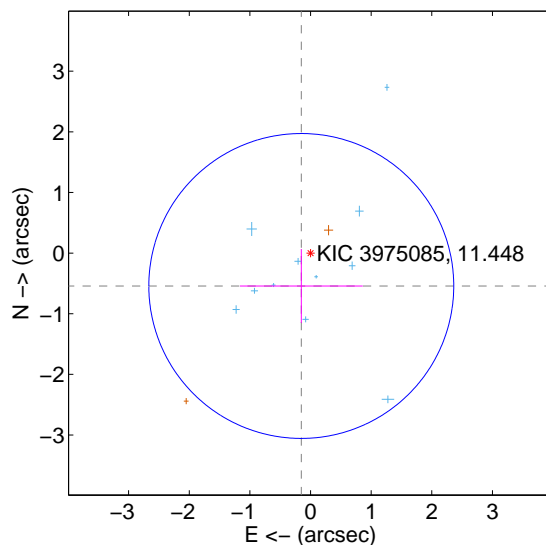
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.618 ± 0.903	0.68	0.255 ± 1.001	-0.563 ± 0.571
PRF-fit source offset from KIC position	0.563 ± 0.838	0.67	0.152 ± 1.012	-0.542 ± 0.609
photometric centroid source offset	0.11 ± 0.14	0.80	-0.10 ± 0.13	0.05 ± 0.16

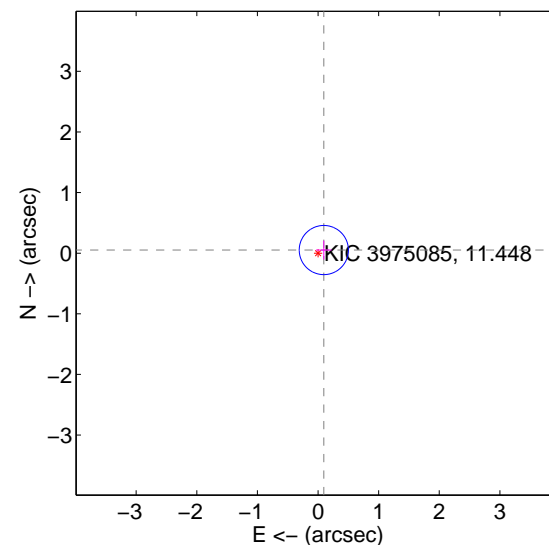
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

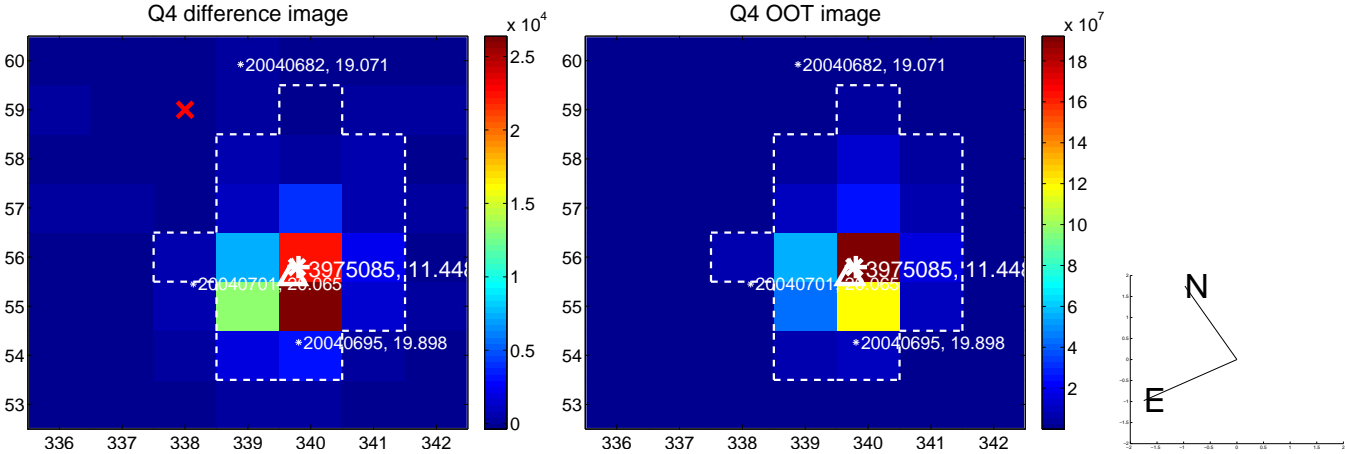
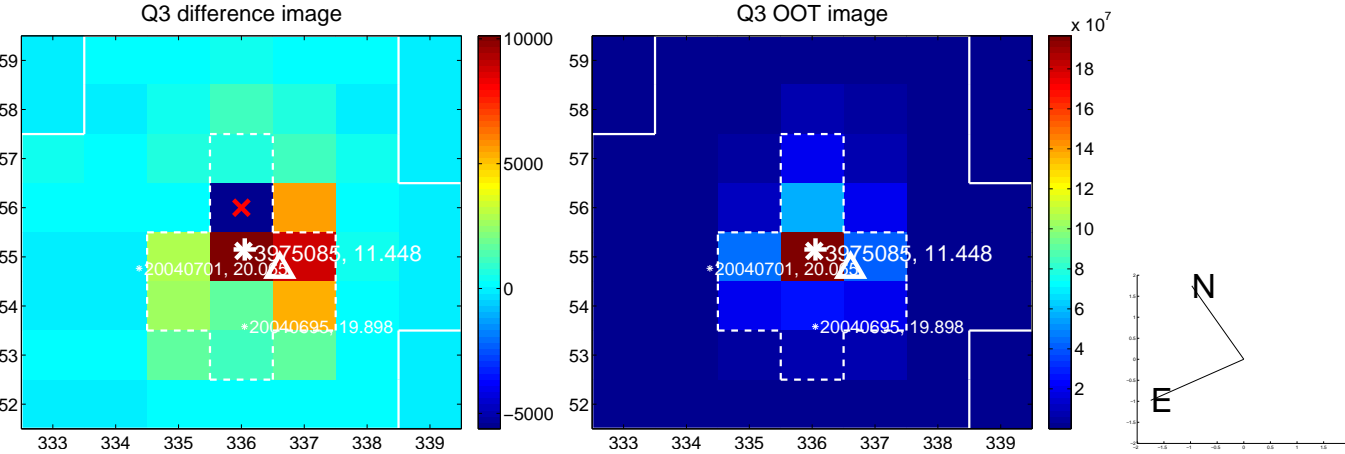
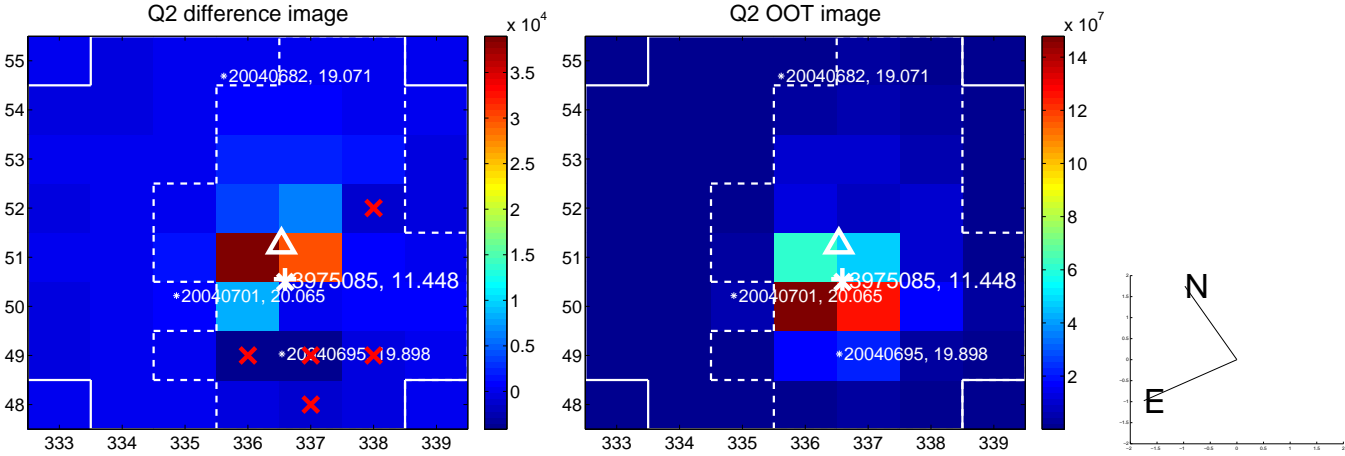
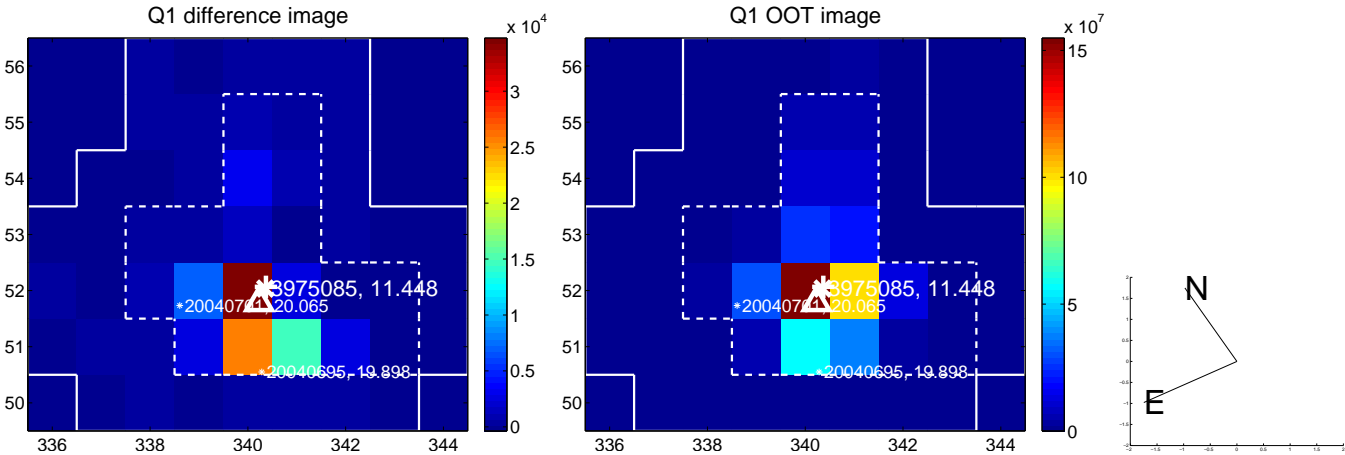


offset from photometric centroids

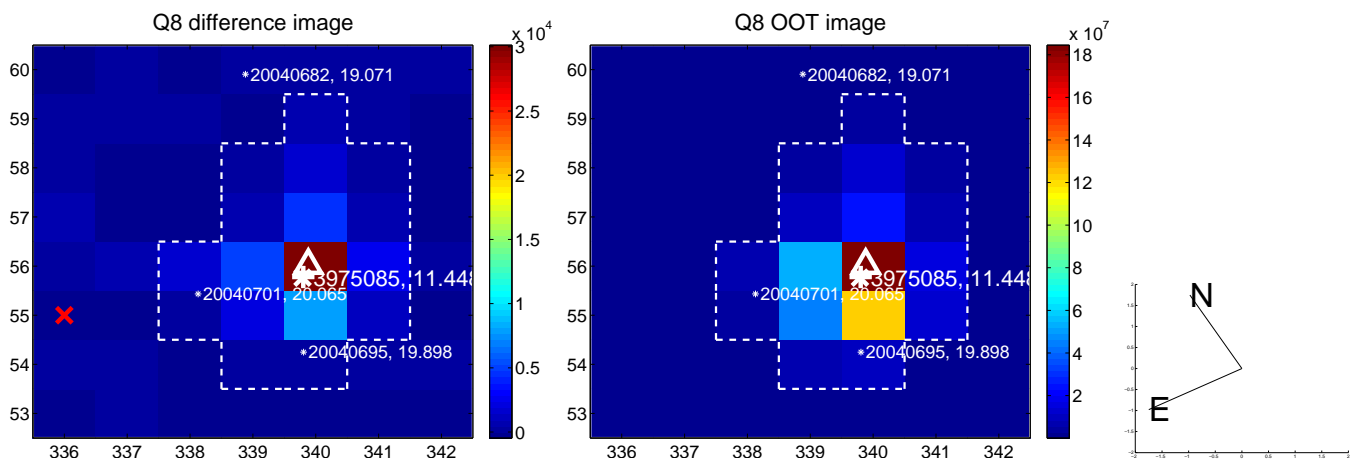
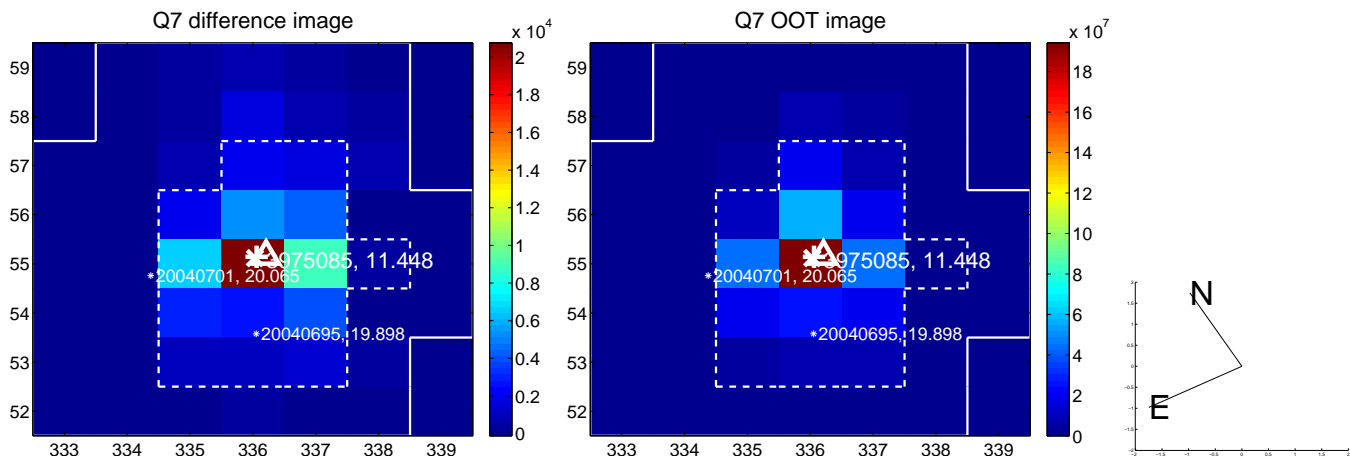
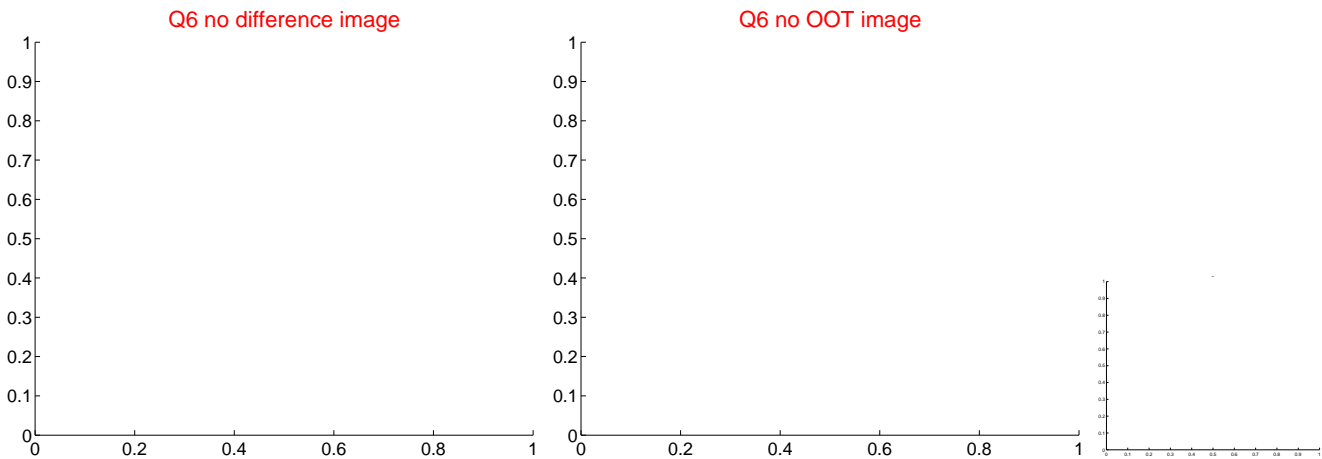
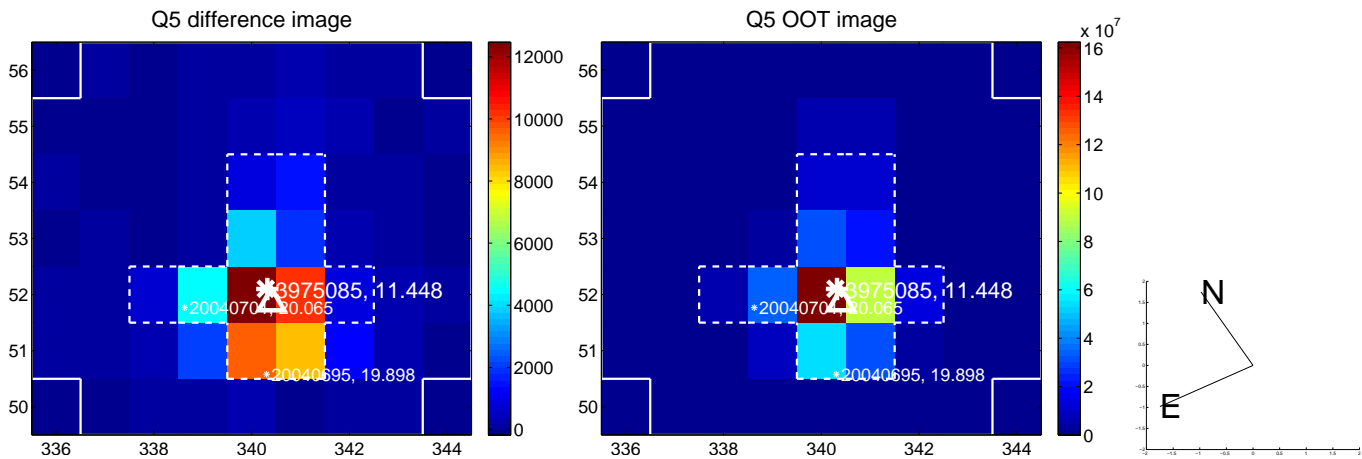


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

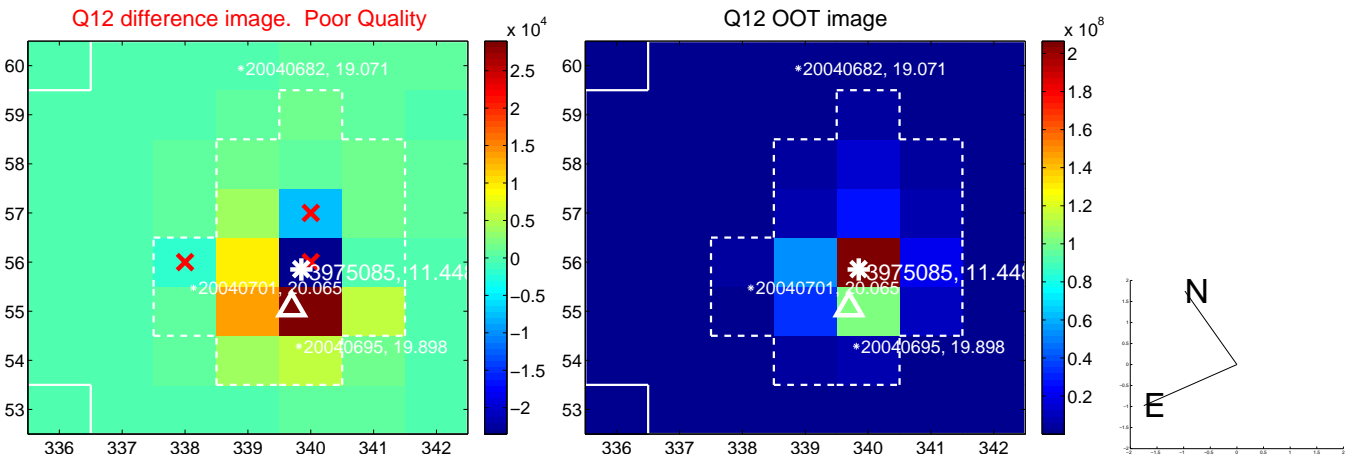
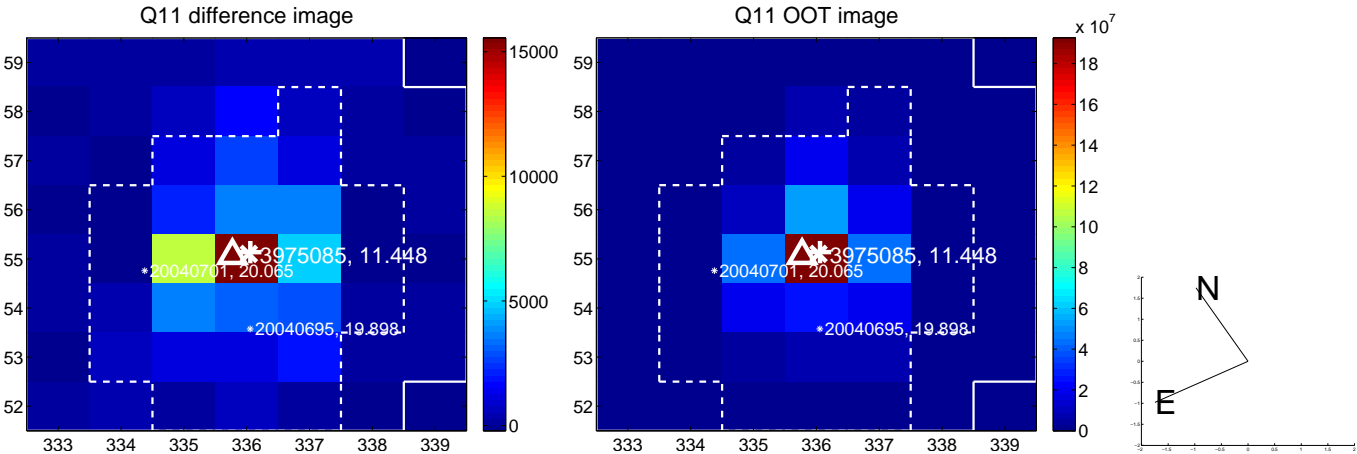
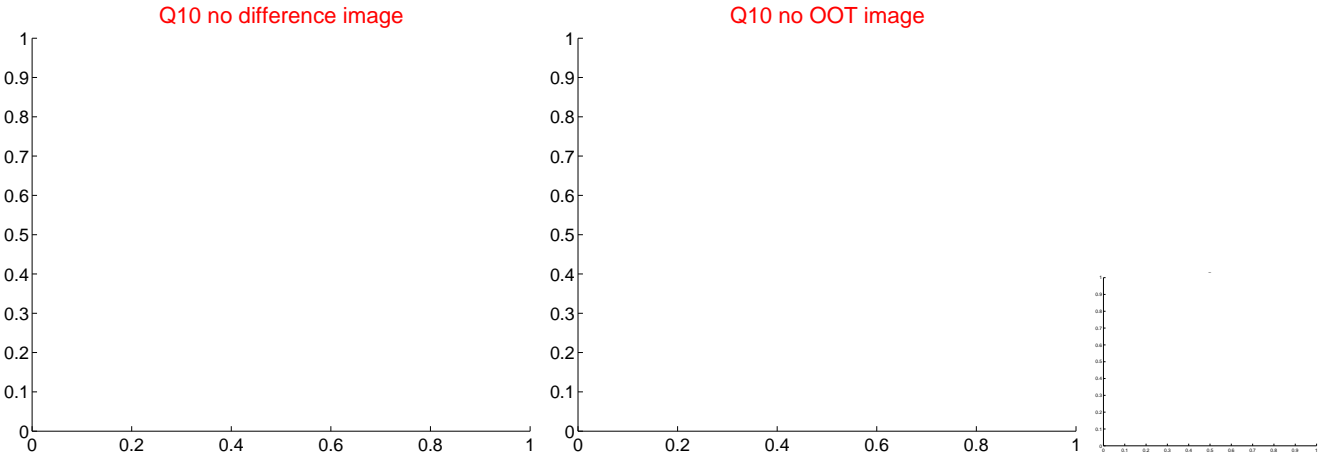
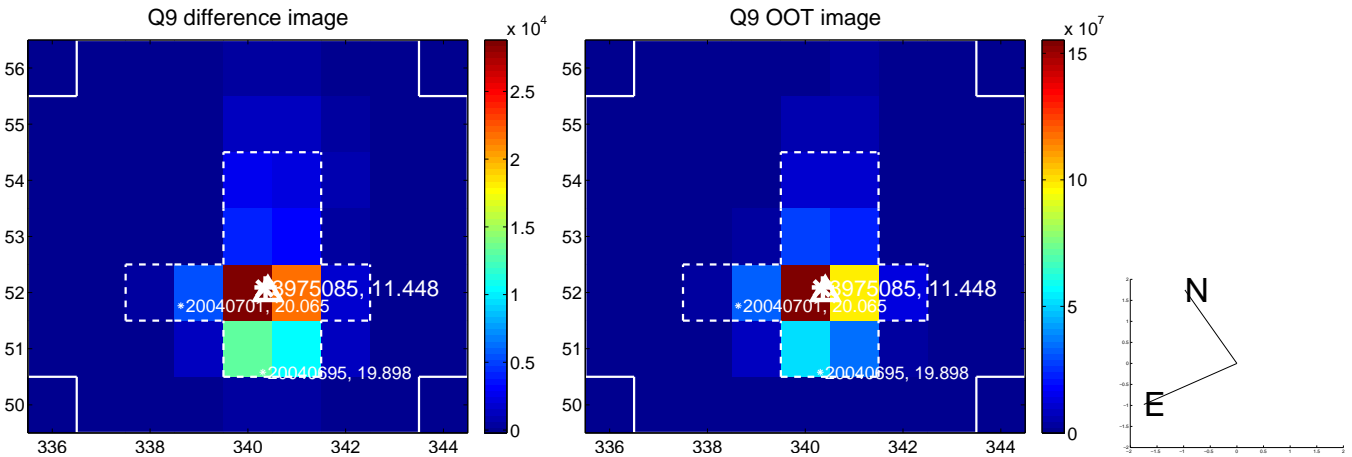
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



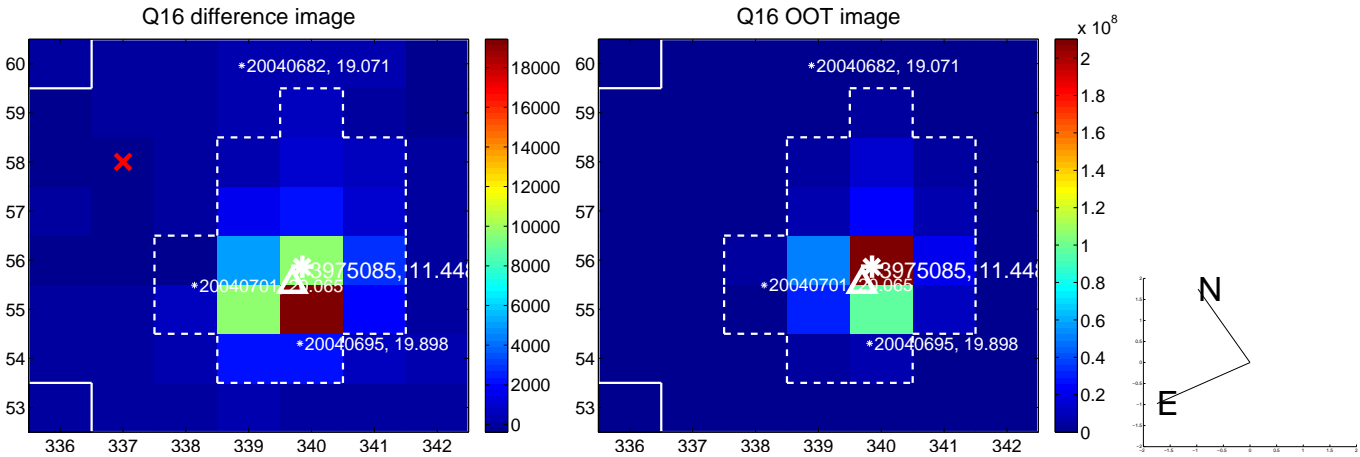
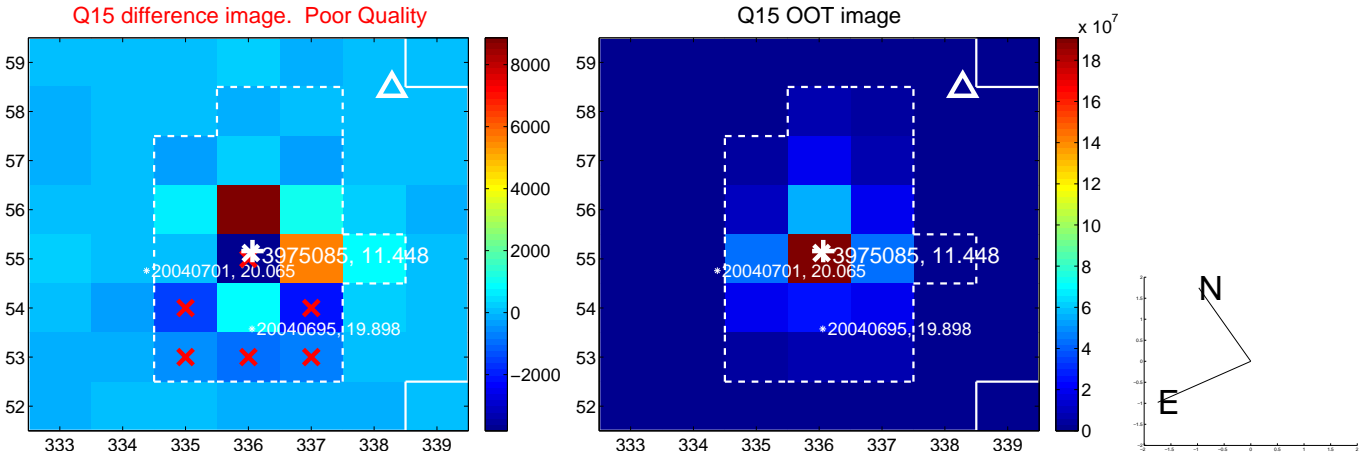
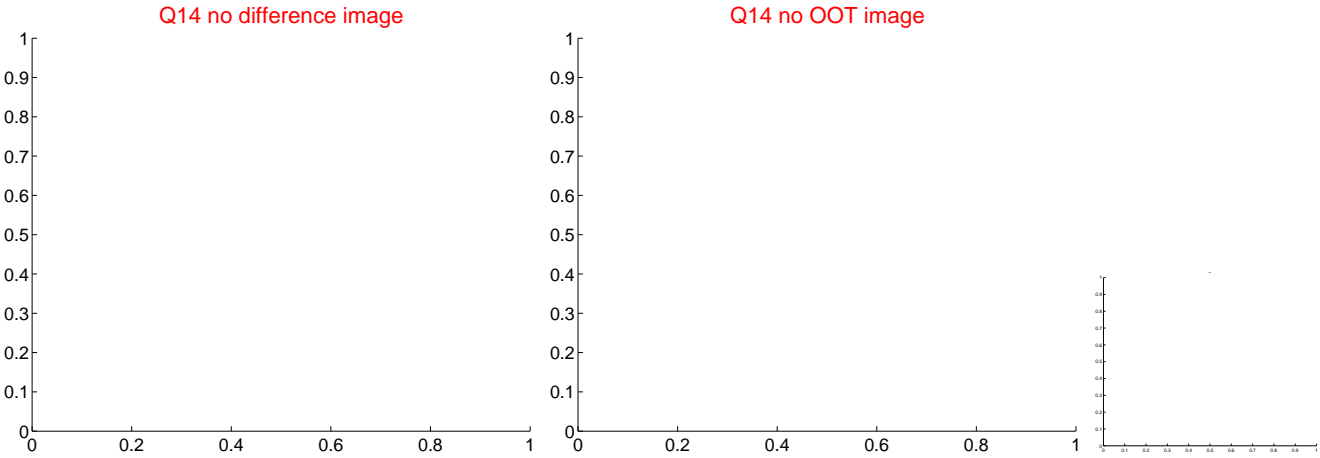
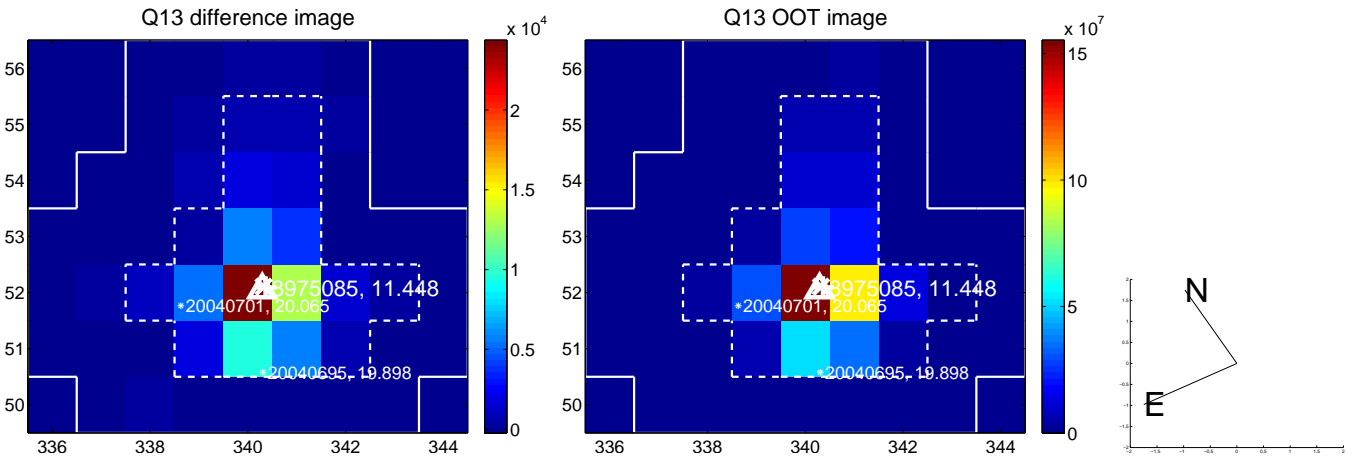
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



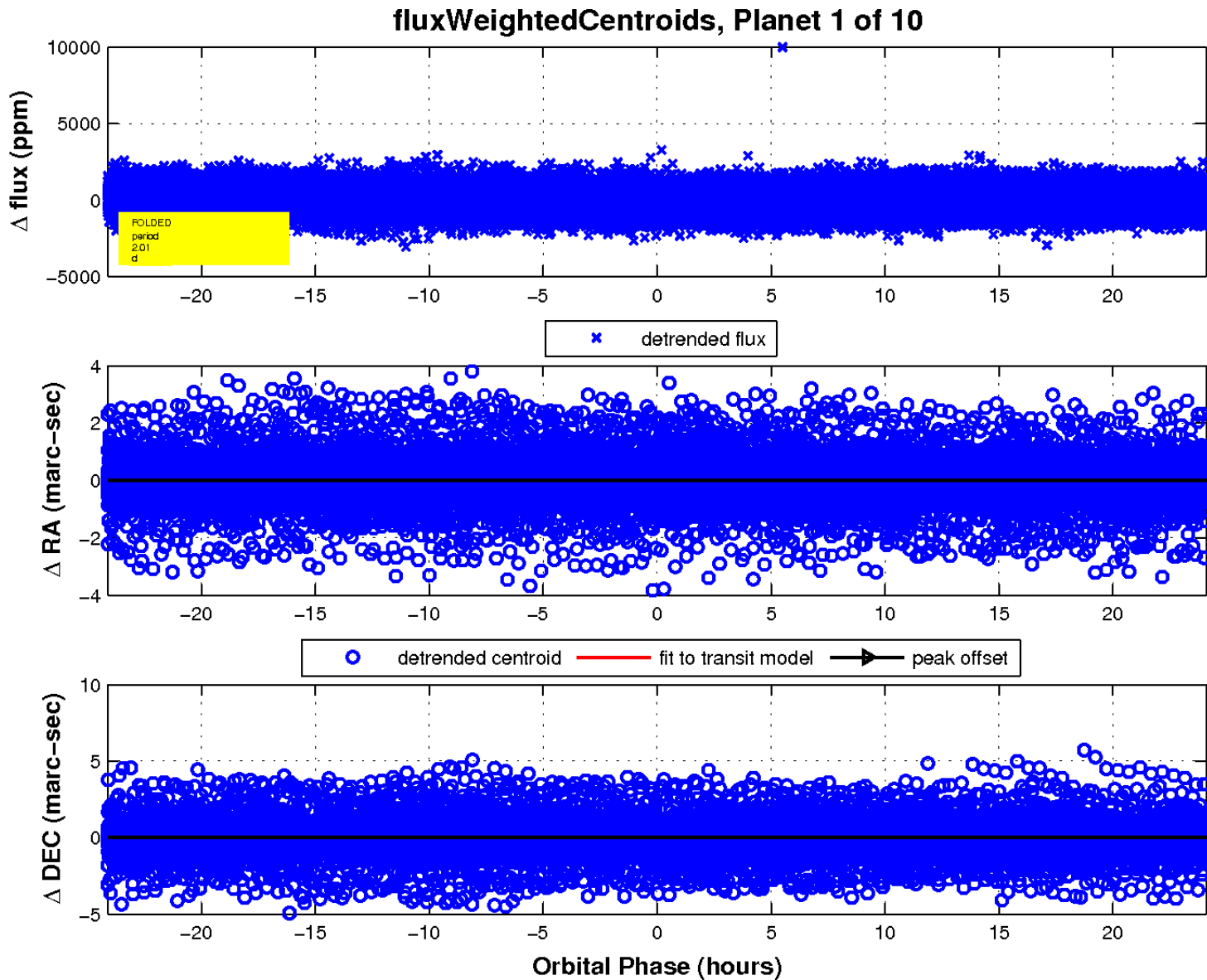
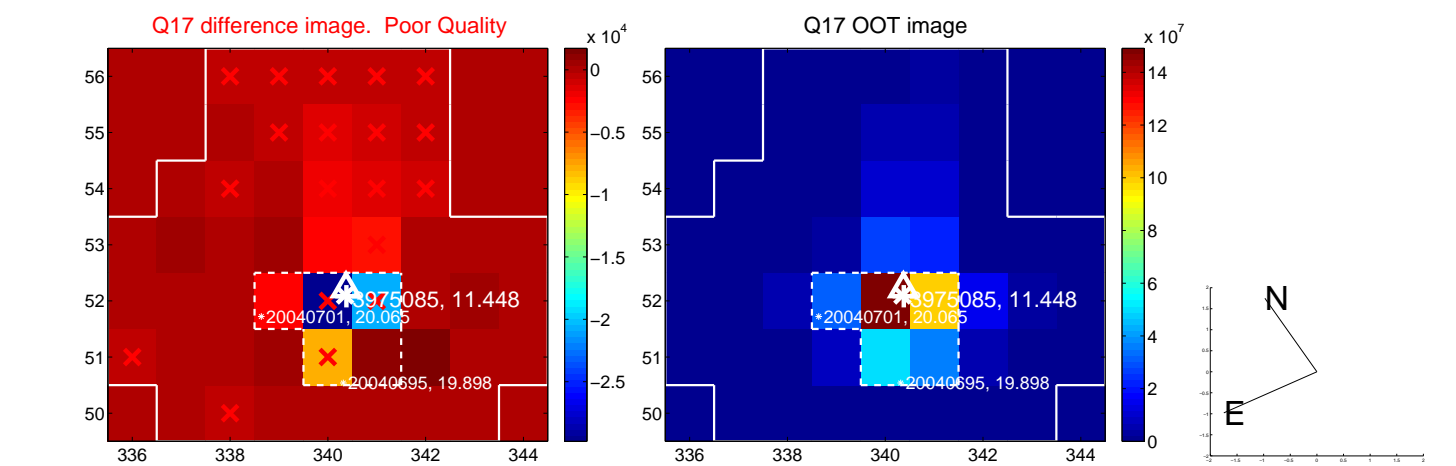
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

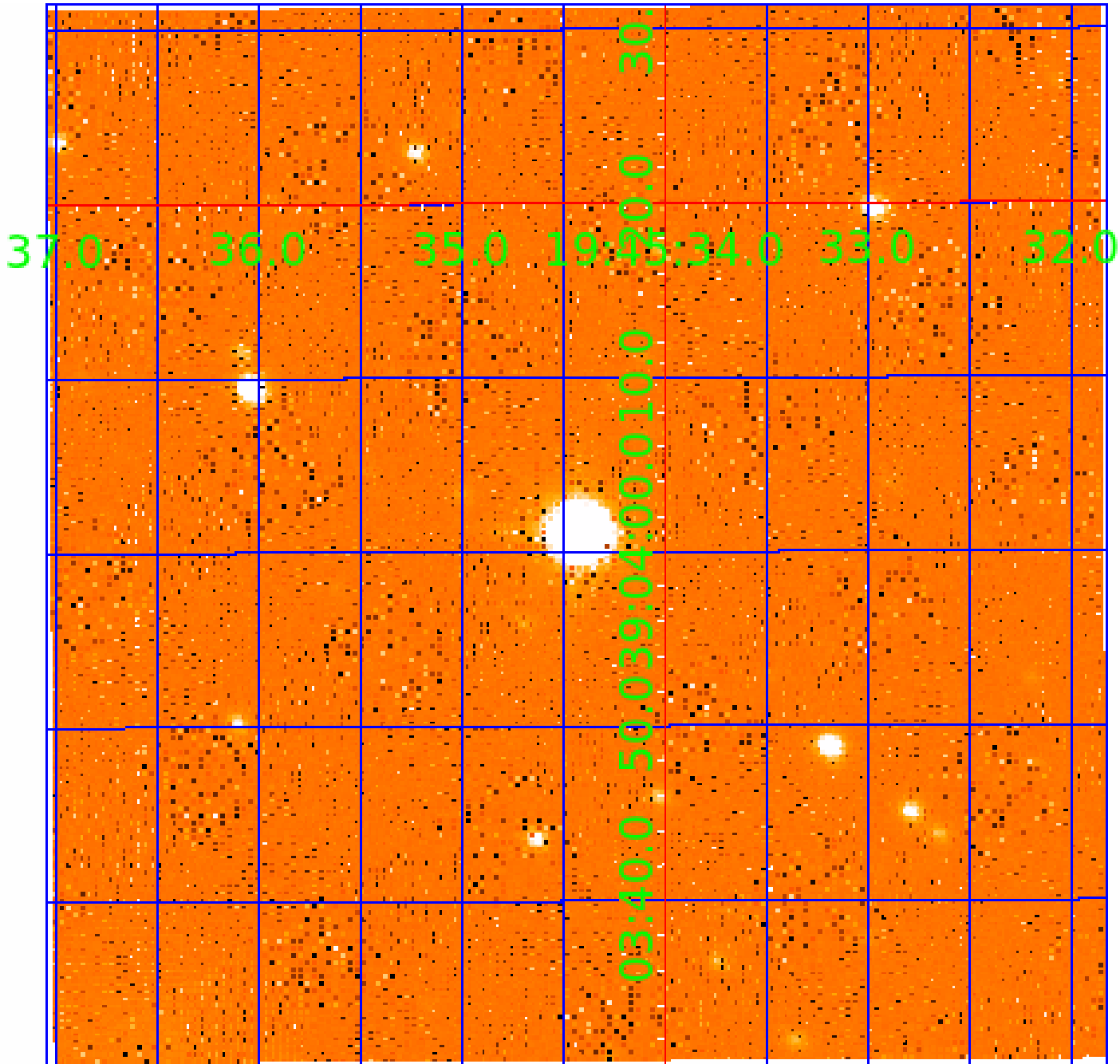


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003975085

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})
003975085-01	OBS	No	2.009828	131.961572	80.5	12.652	9.8	9.5	2.03	7757	2.11	9470.18
003975085-02	OBS	No	78.528369	142.985487	1568.0	4.926	12.0	11.4	2.03	7757	10.18	71.43
003975085-03	OBS	No	58.828151	136.843263	478.0	9.473	10.1	7.2	2.03	7757	4.85	104.98
003975085-04	OBS	No	99.802914	200.101690	760.0	4.995	8.7	5.6	2.03	7757	6.18	51.88
003975085-06	OBS	No	12.581793	132.266373	218.4	25.656	8.5	8.0	2.03	7757	3.26	820.82
003975085-07	OBS	No	150.726597	191.249685	243.4	7.705	9.6	4.0	2.03	7757	3.46	29.94
003975085-08	OBS	No	66.693977	192.425115	1047.8	3.546	8.0	7.2	2.03	7757	7.62	88.81
003975085-09	OBS	No	82.265583	150.962779	1145.8	2.558	7.8	8.3	2.03	7757	8.23	67.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003975085-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003975085-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

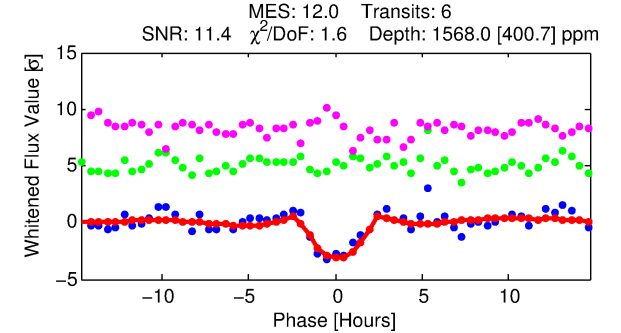
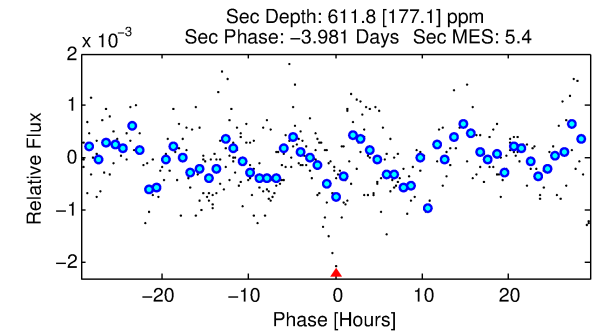
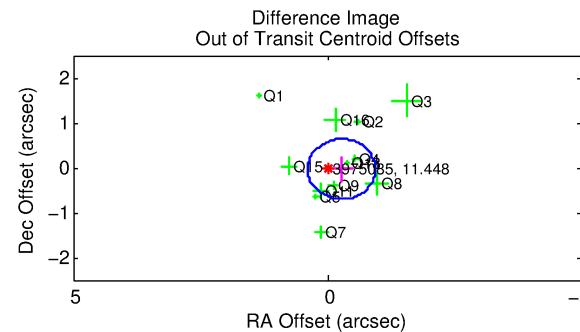
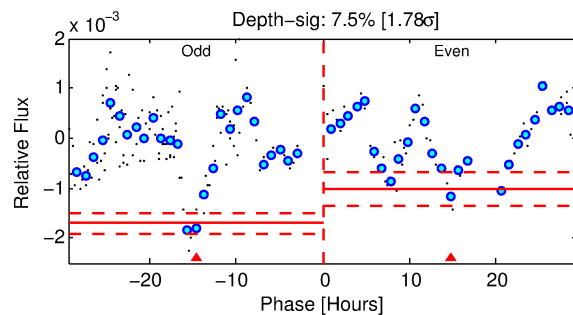
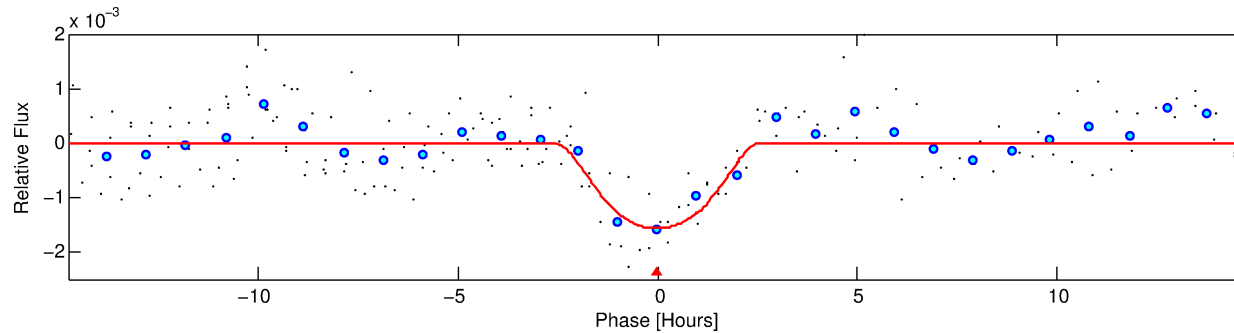
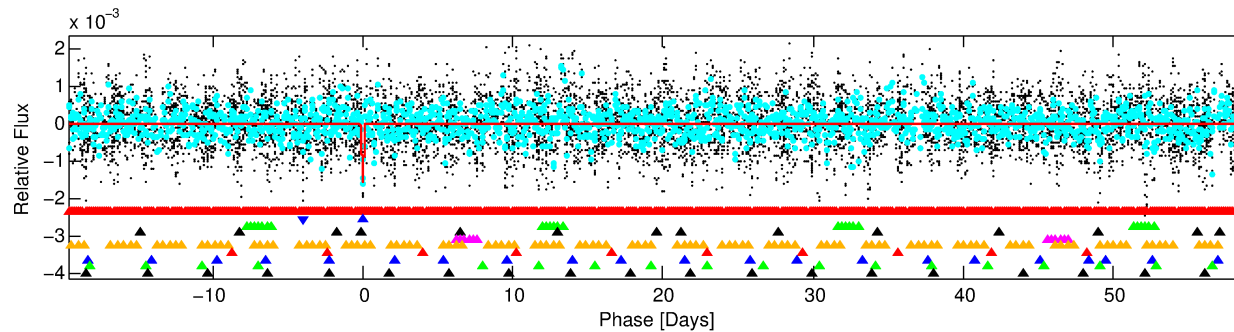
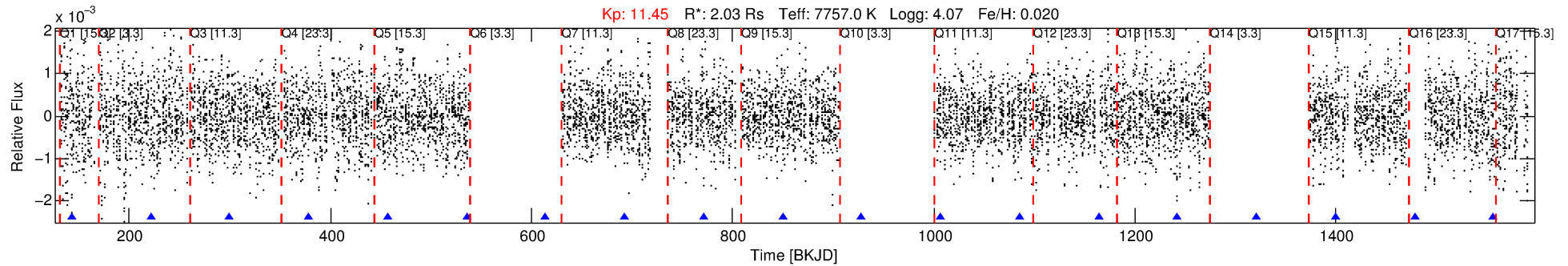
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003975085-02

No Significant Match Found

DV One-Page Summary

KIC: 3975085 Candidate: 2 of 10 Period: 78.528 d



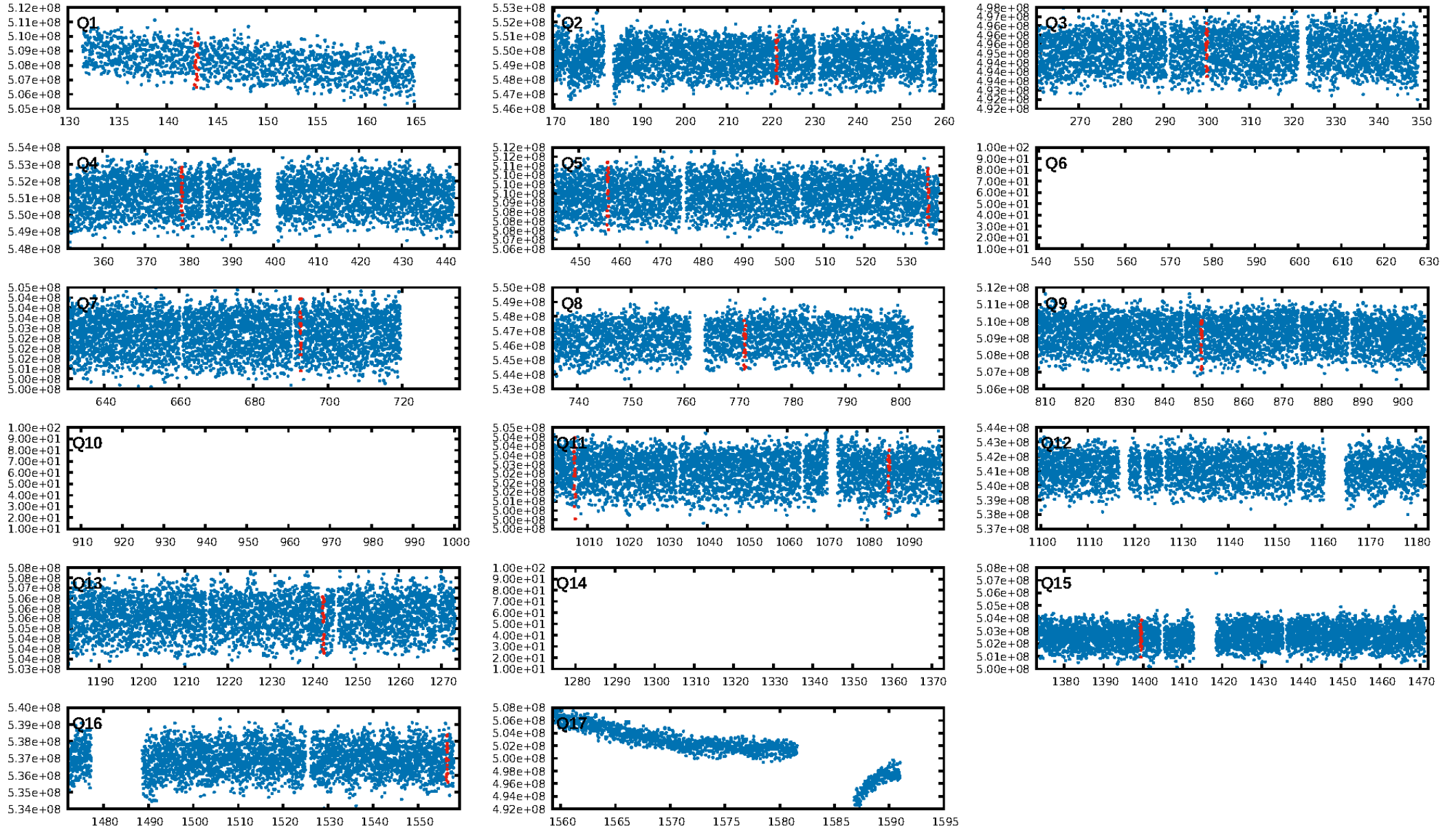
DV Fit Results:

Period = 78.52837 [0.00094] d
Epoch = 142.9855 [0.0066] BKJD
Rp/R* = 0.0459 [0.0139]
a/R* = 50.56 [12.56]
b = 0.96 [0.04]
Seff = 71.43 [16.19]
Teq = 741 [42] K
Rp = 10.18 [3.60] Re
a = 0.4335 [0.0661] AU
Ag = 609.67 [431.18] [1.41 σ]
Teffp = 5695 [959] K [5.16 σ]

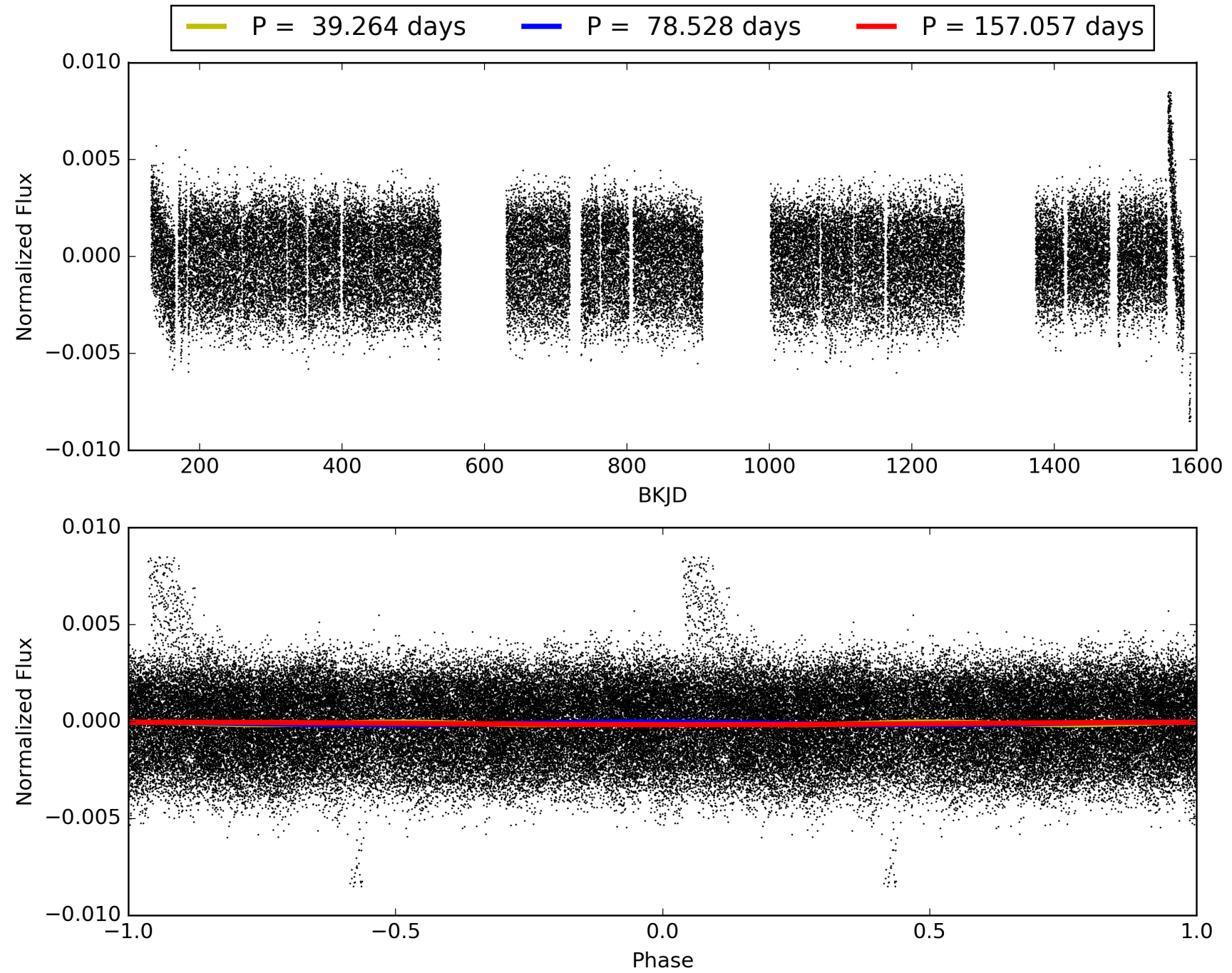
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.83 σ]
LongPeriod-sig: 100.0% [16.16 σ]
ModelChiSquare2-sig: 1.3%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 2.34e-15
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 2.014
Centroid-sig: 22.2%
Centroid-so: 0.229 arcsec [3.15 σ]
OotOffset-rm: 0.275 arcsec [1.23 σ]
KicOffset-rm: 0.401 arcsec [1.91 σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 0.42 [5/12]

TCE 003975085-02, PDC Light Curves

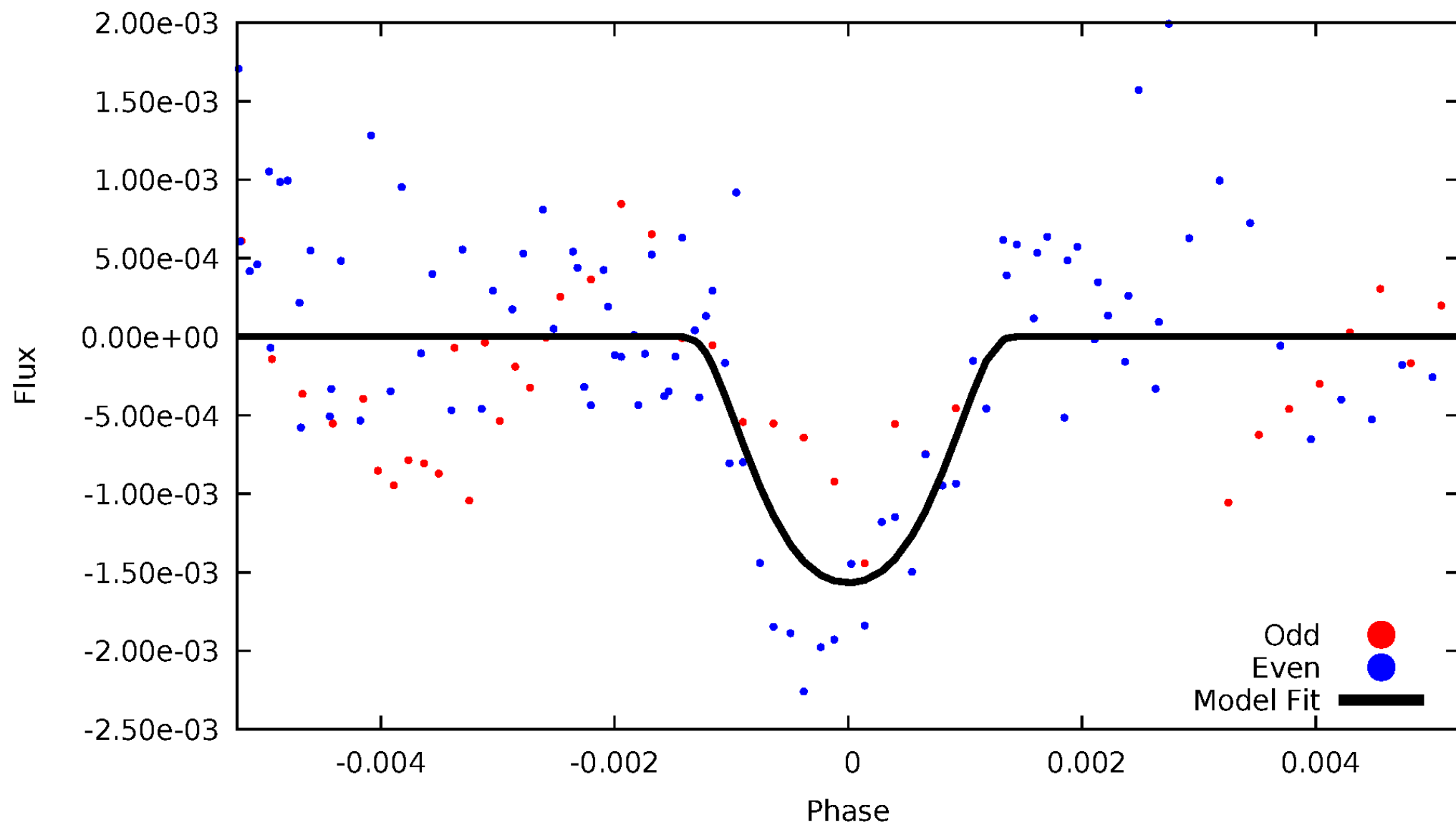


TCE 003975085-02



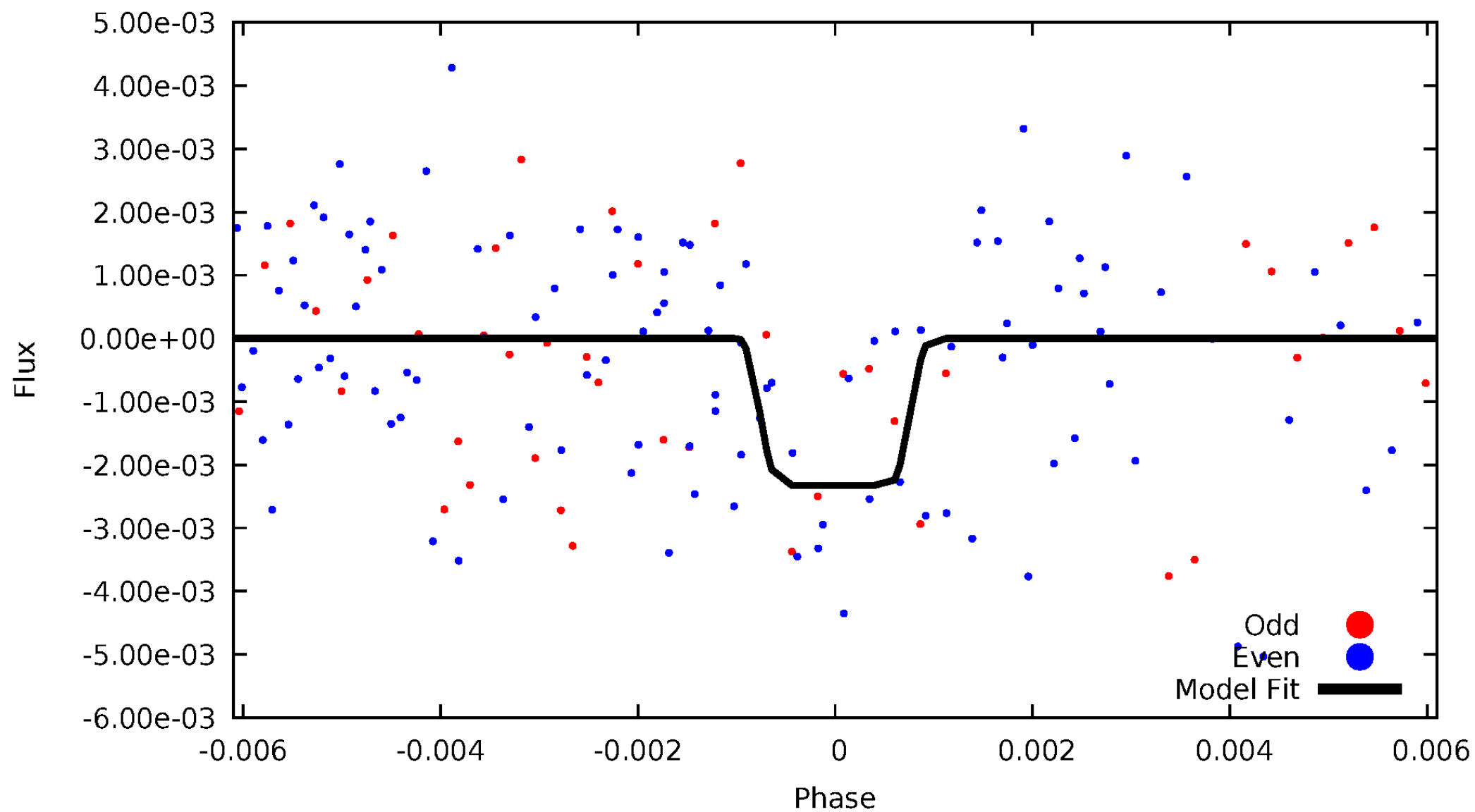
DV Odd/Even

TCE 003975085-02



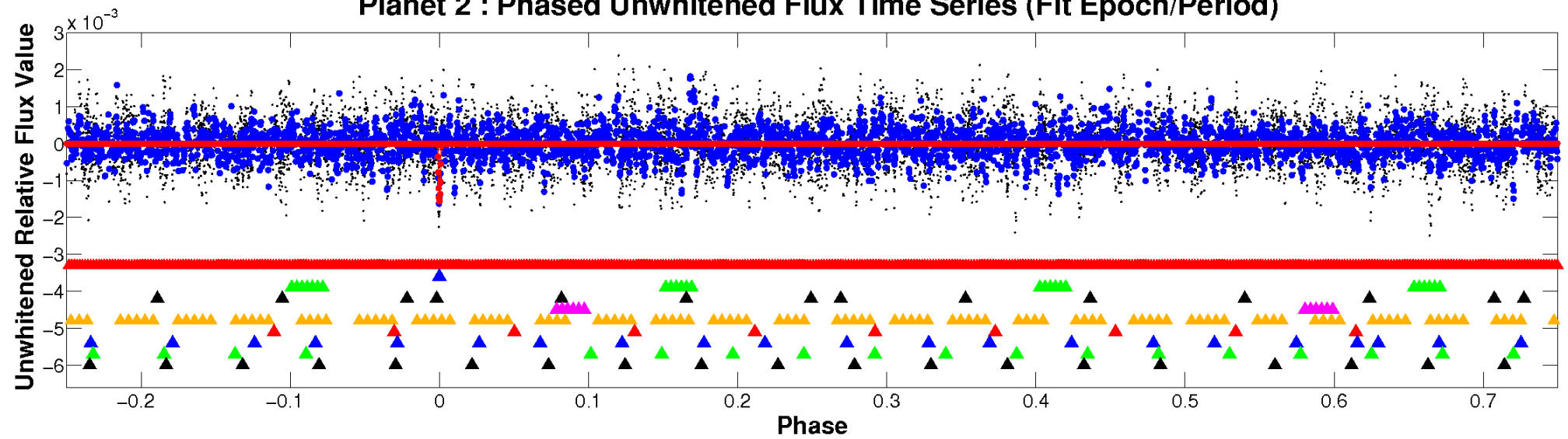
ALT Odd/Even

TCE 003975085-02

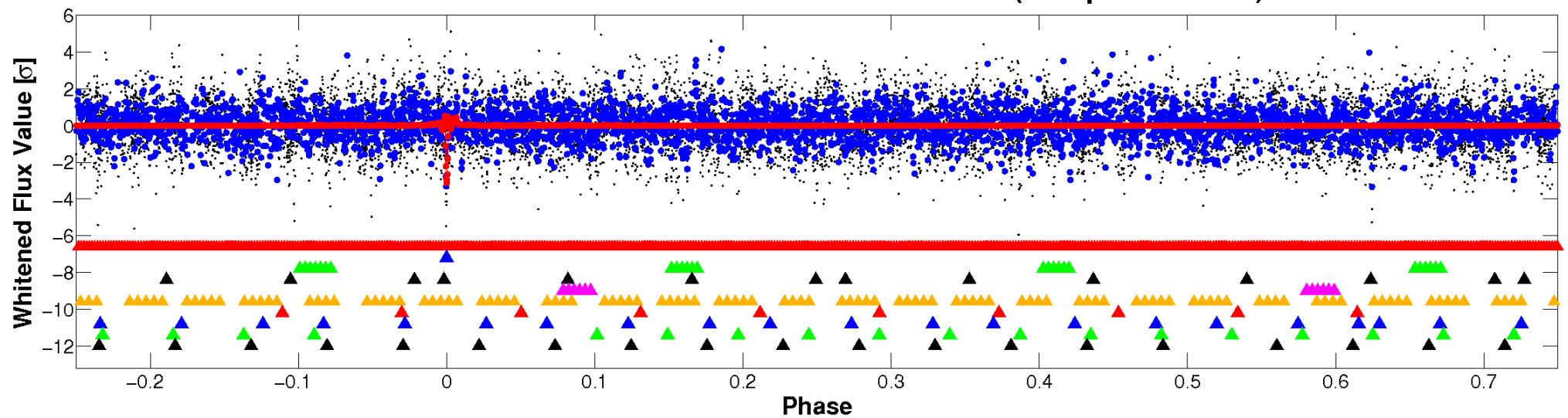


Non-Whitened Vs. Whitened Light Curve

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

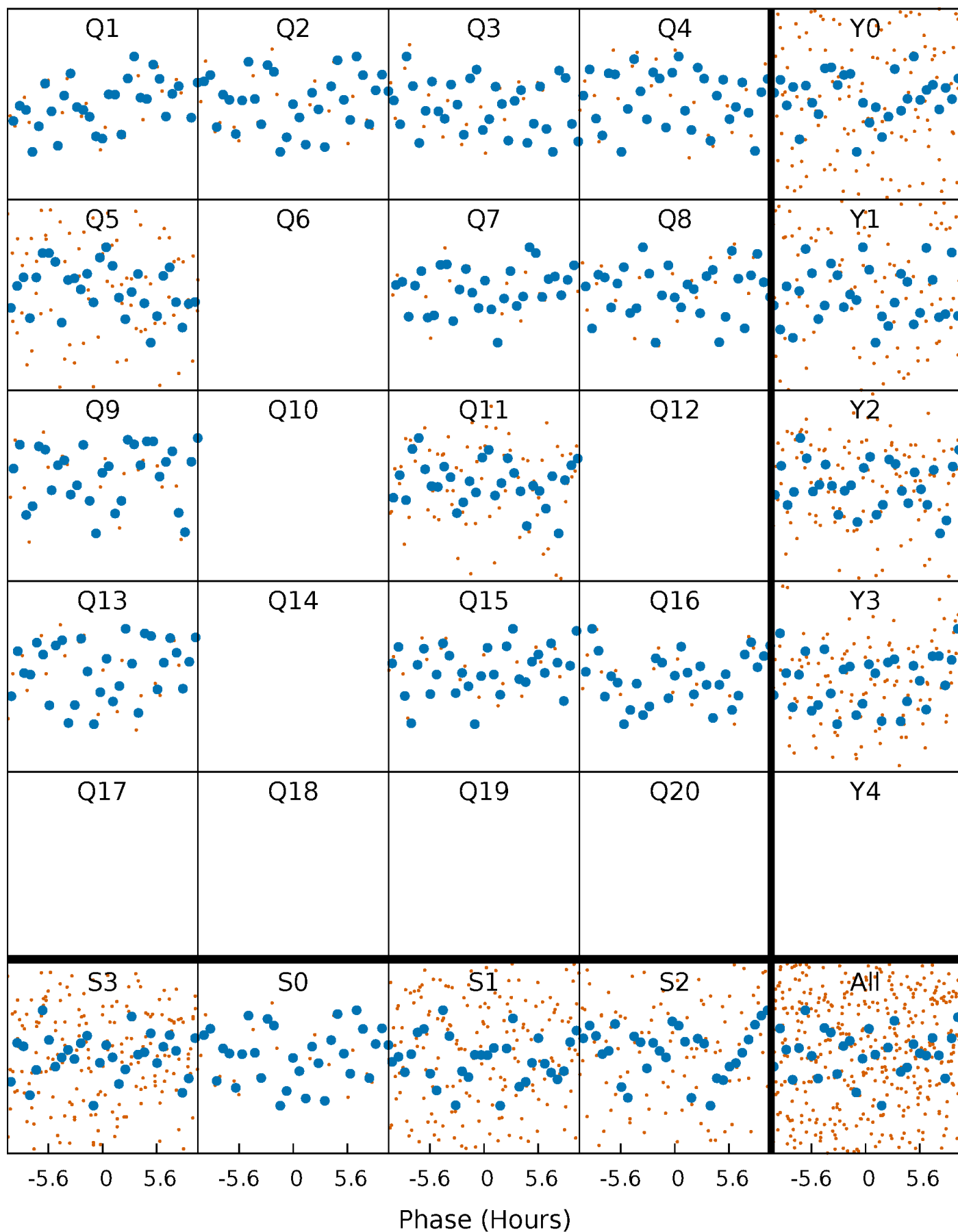


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



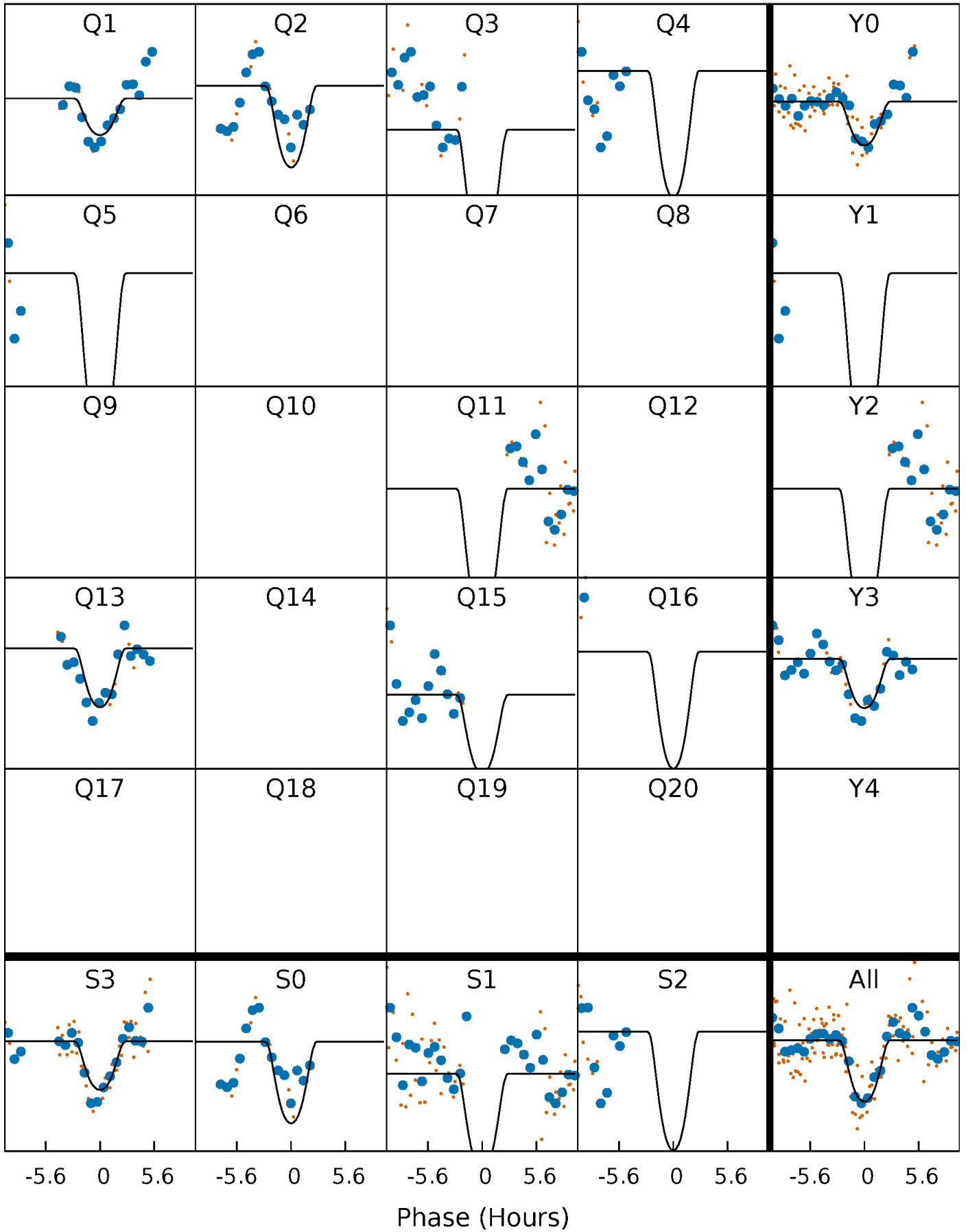
PDC Quarter-Phased Transit Curves

TCE 003975085-02 P= 78.528369 Days $T_0=142.985487$ (BKJD)



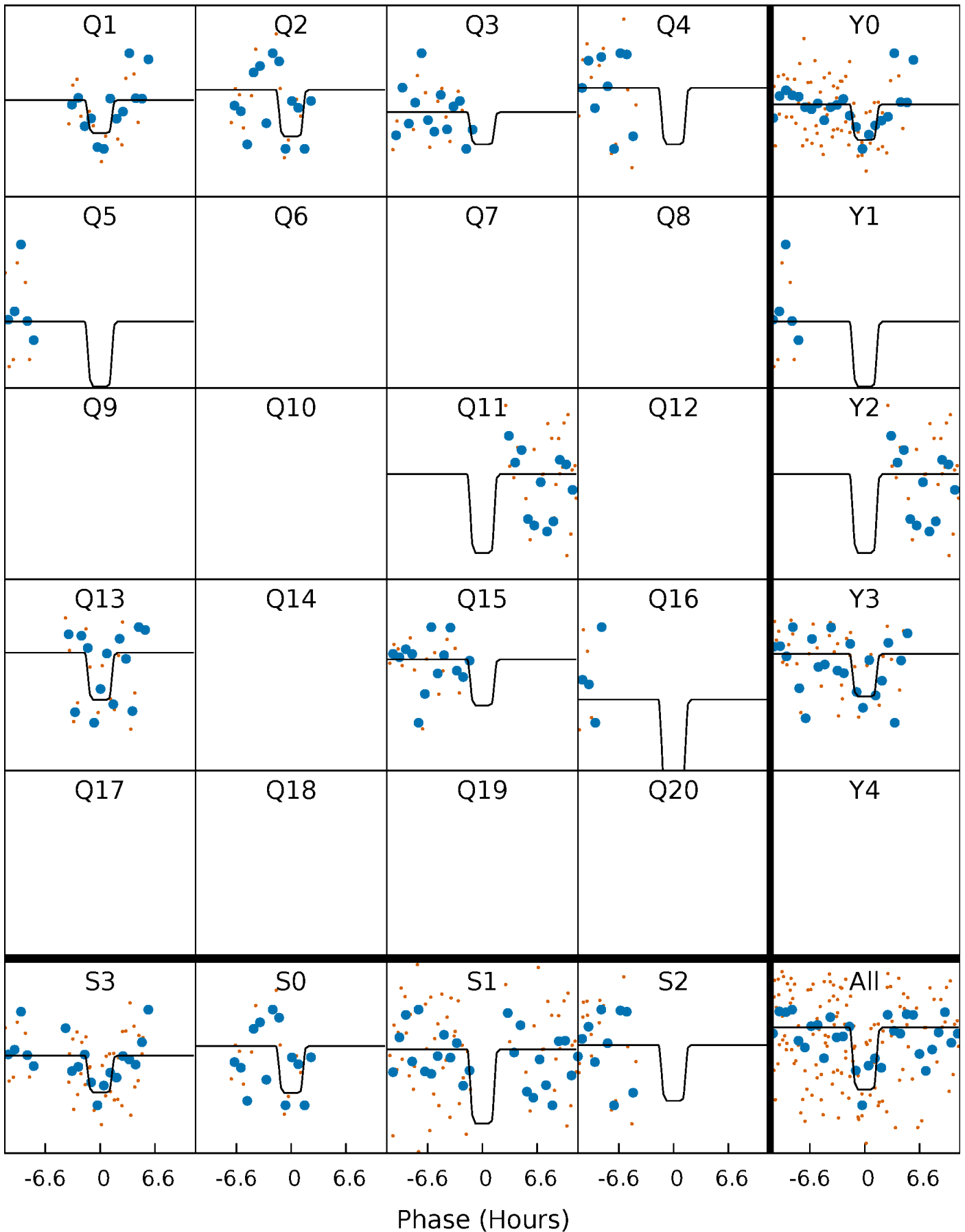
DV Quarter-Phased Transit Curves

TCE 003975085-02 P= 78.528369 Days $T_0=142.985487$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

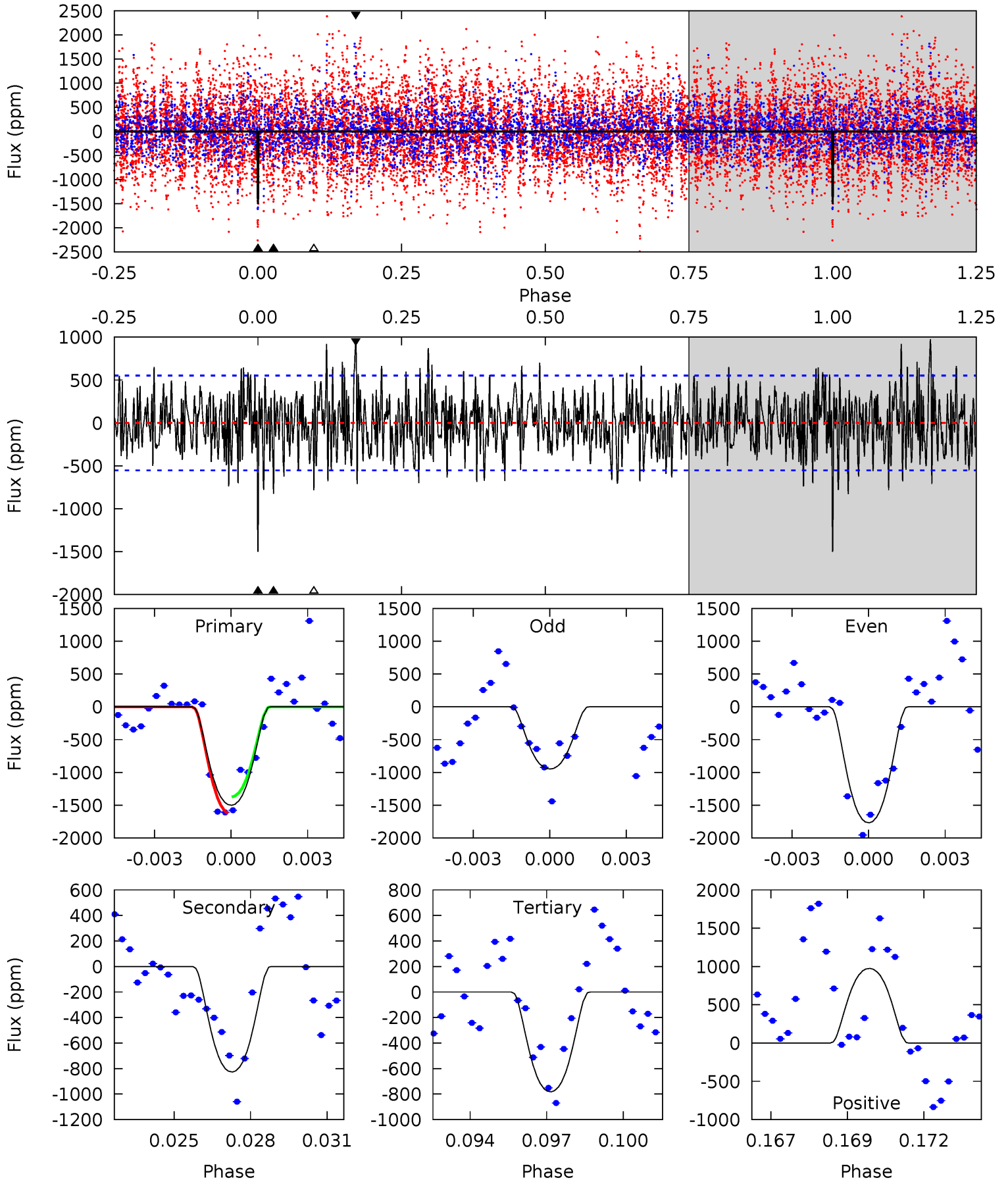
TCE 003975085-02 P= 78.528918 Days $T_0=142.969039$ (BKJD)



DV Model-Shift Uniqueness Test

003975085-02, P = 78.528369 Days, E = 64.457118 Days

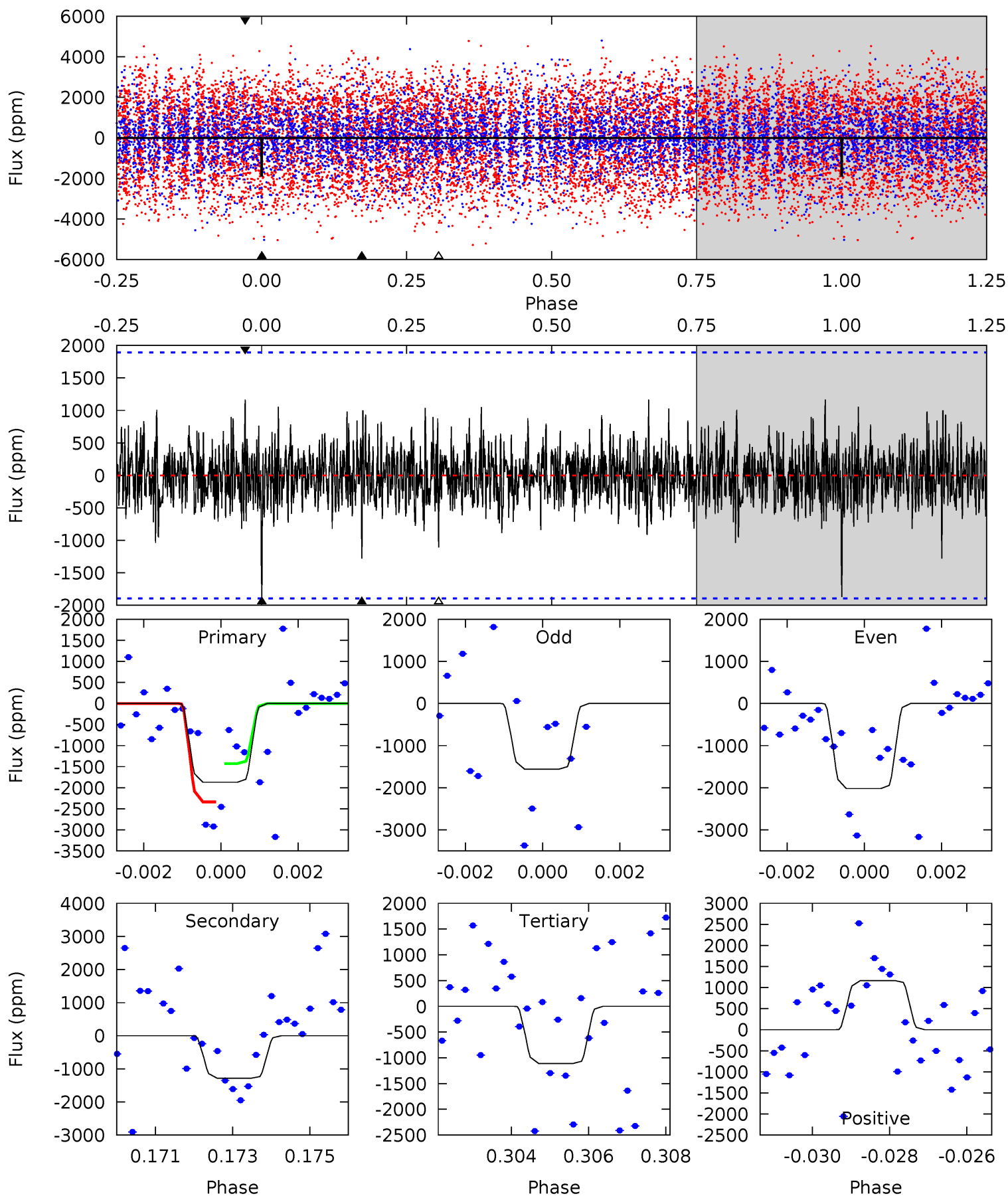
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	7.89	7.47	9.31	5.27	2.99	2.57	6.87	5.03	0.43	-1.41	3.53	0.58	0.39	1.19



Alt Model-Shift Uniqueness Test

003975085-02, P = 78.528918 Days, E = 64.440121 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.27	3.61	3.13	3.29	5.34	3.11	0.92	2.14	1.98	0.48	0.32	0.60	1.06	0.38	1.28



Stellar Parameters For KIC 003975085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7757^{+69}_{-92}	$4.067^{+0.099}_{-0.121}$	$0.020^{+0.050}_{-0.200}$	$2.034^{+0.369}_{-0.302}$	$1.760^{+0.149}_{-0.164}$	$0.295^{+0.135}_{-0.109}$
	+1%/-1%	+2%/-3%	+250%/-1000%	+18%/-15%	+8%/-9%	+46%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003975085-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-827 ± 105	$10.17^{+3.78}_{-2.89}$	1042^{+46}_{-40}	6040^{+1205}_{-777}	823^{+770}_{-386}
Alt.	-1281 ± 355	$10.66^{+3.35}_{-3.28}$	1038^{+49}_{-39}	6636^{+1444}_{-940}	1166^{+1358}_{-529}

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 $A_{obs} \gg 1.0$

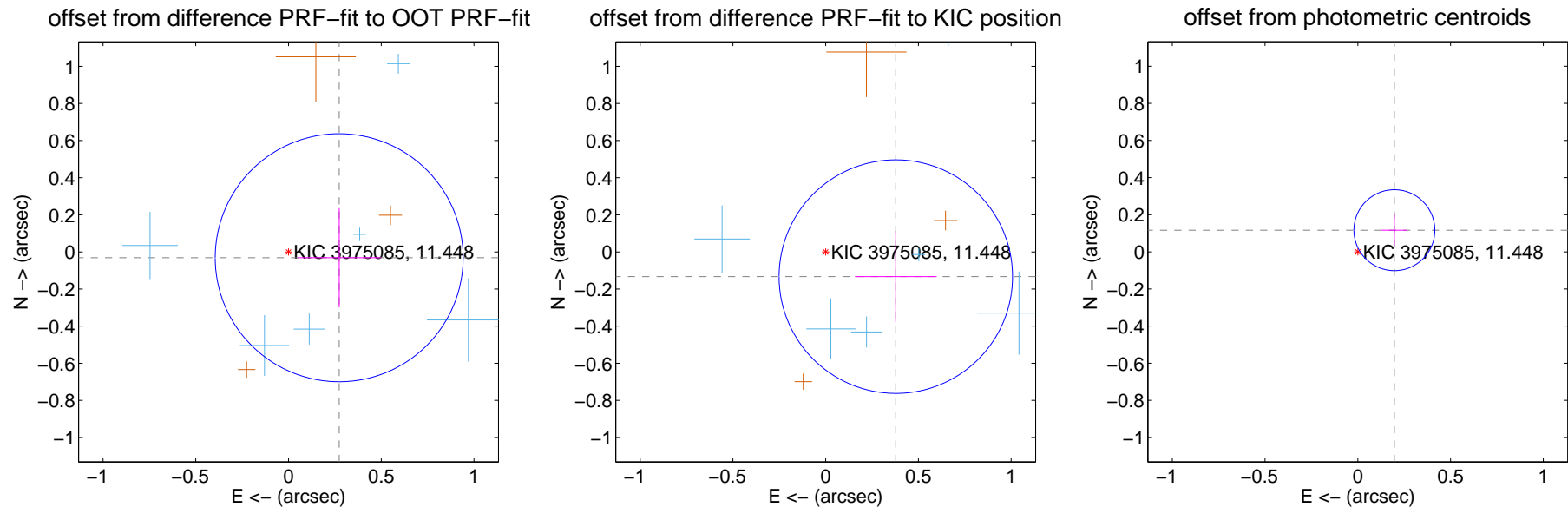
DV Centroid Data

Supplemental centroid analysis for 003975085-02. **Kepler magnitude: 11.45.** Transit SNR 11.45

There are 9 quarters with good PRF difference image offsets

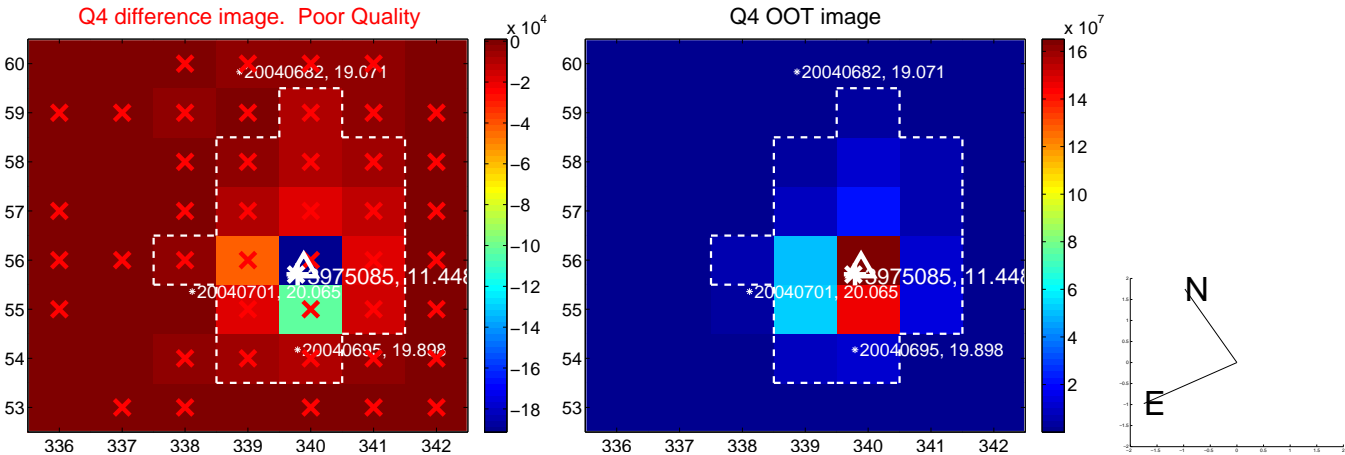
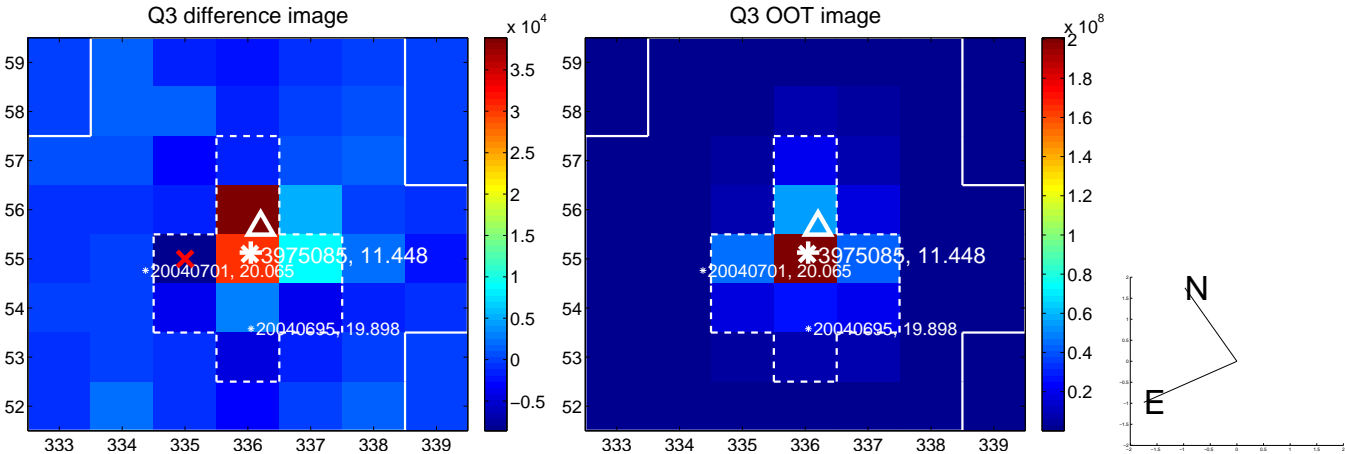
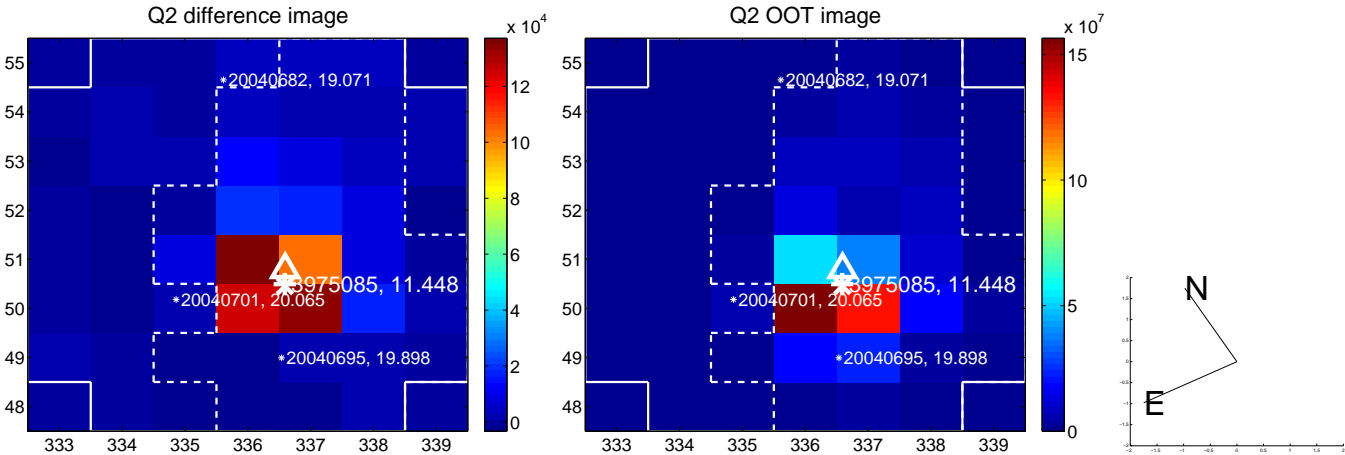
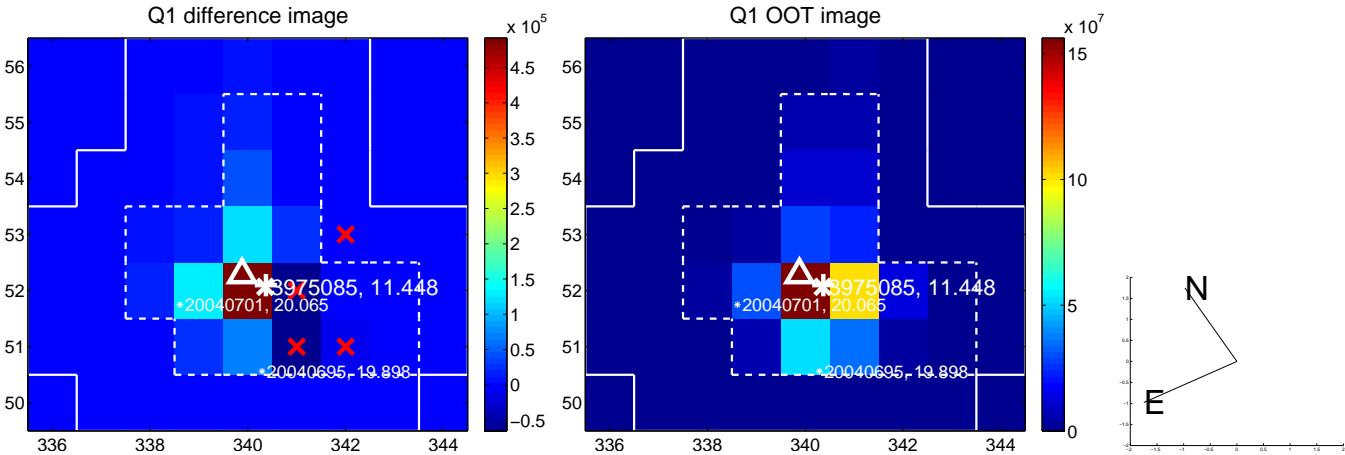
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.275 ± 0.223	1.23	-0.273 ± 0.224	-0.031 ± 0.267
PRF-fit source offset from KIC position	0.401 ± 0.210	1.91	-0.378 ± 0.220	-0.133 ± 0.246
photometric centroid source offset	0.23 ± 0.07	3.15	-0.20 ± 0.07	0.12 ± 0.08

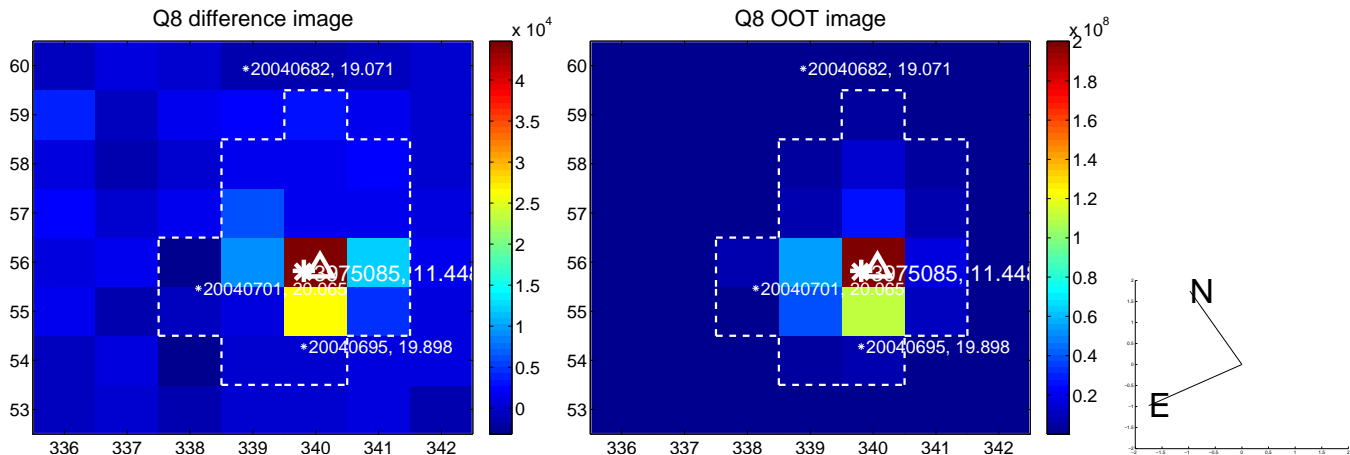
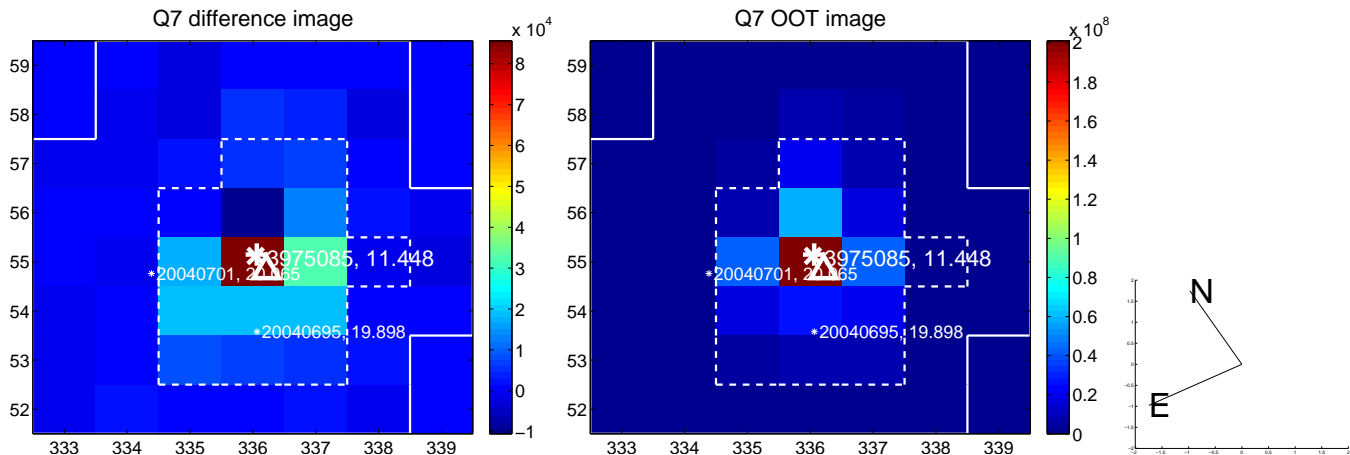
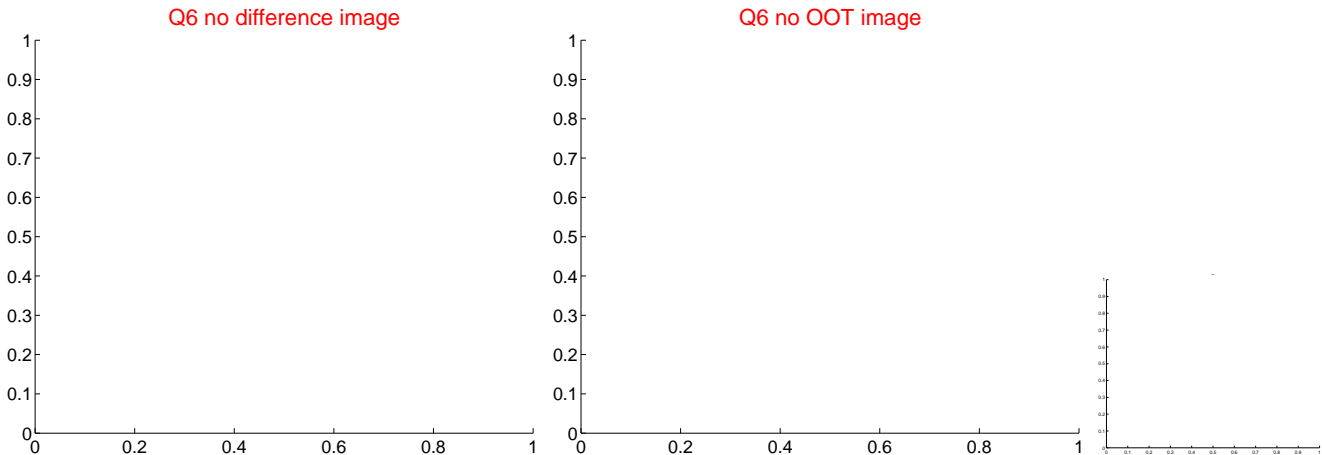
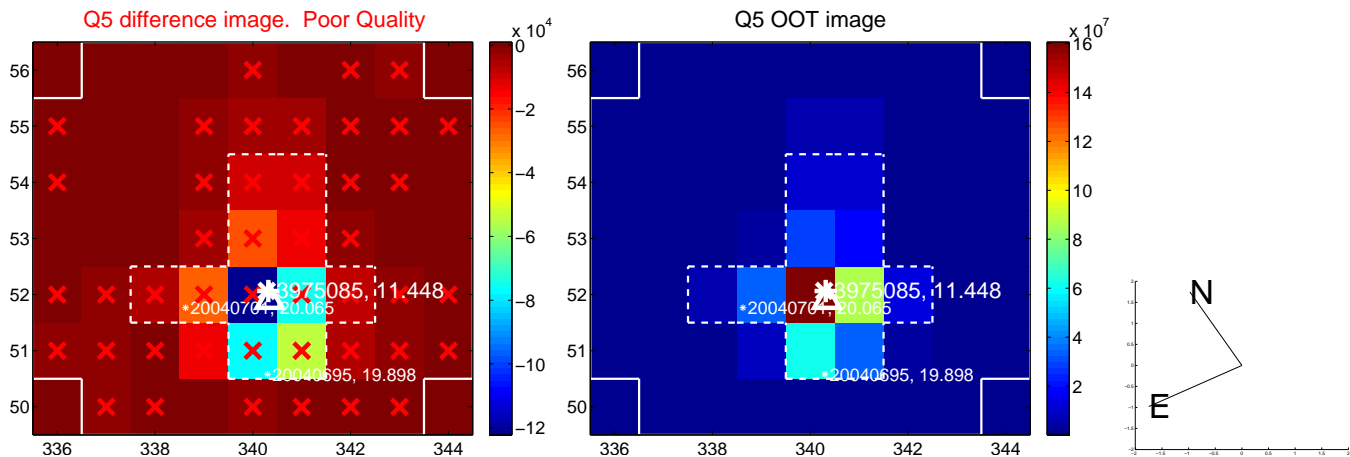


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

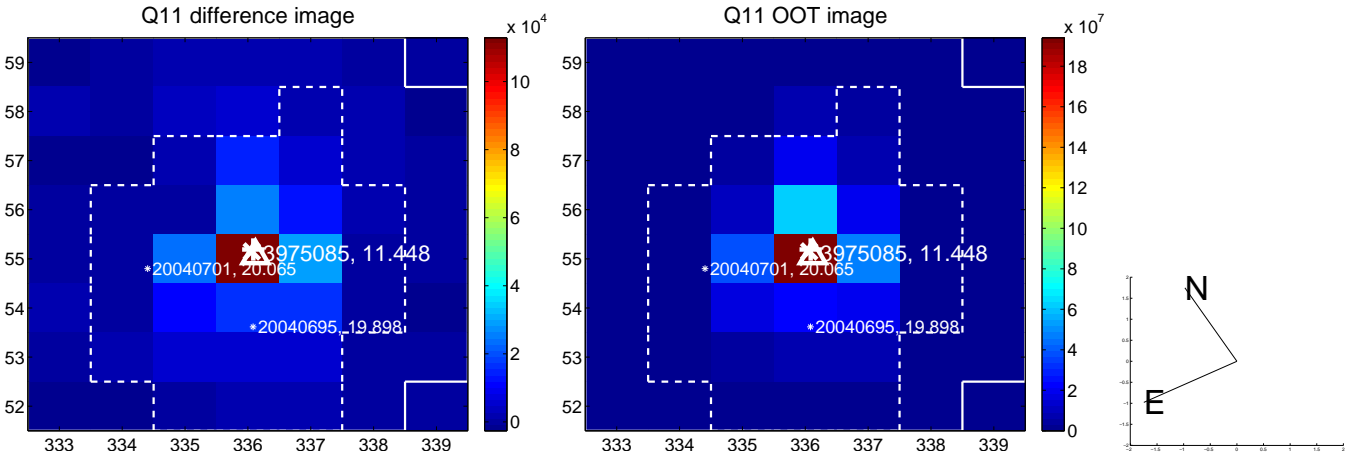
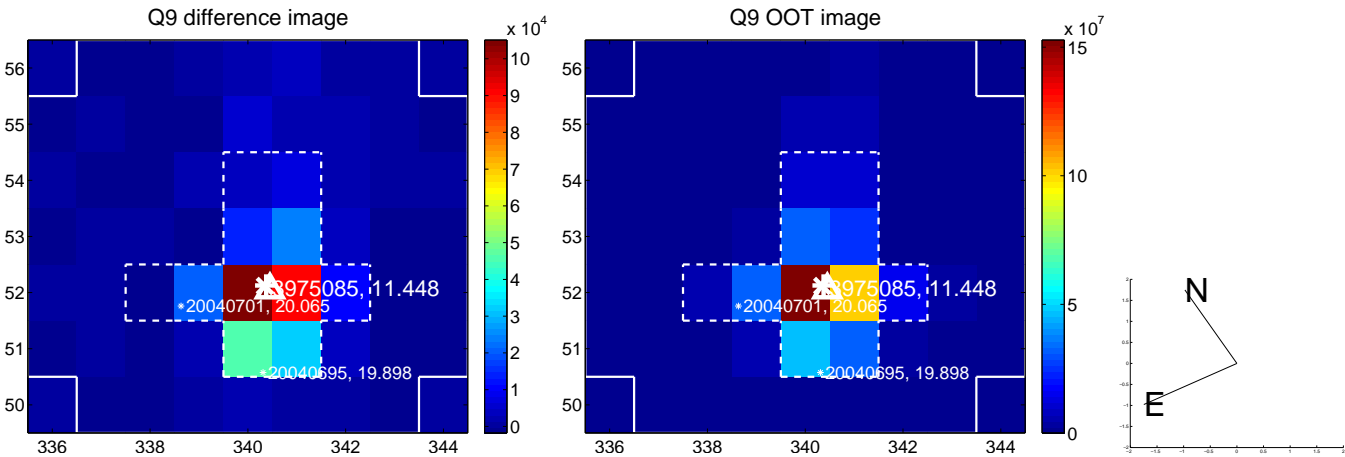
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



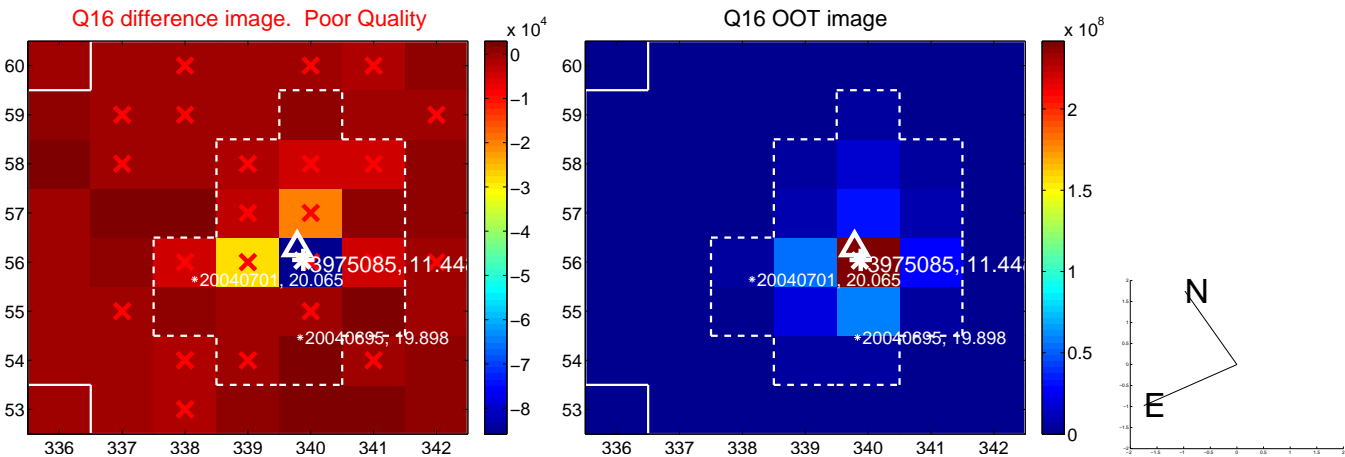
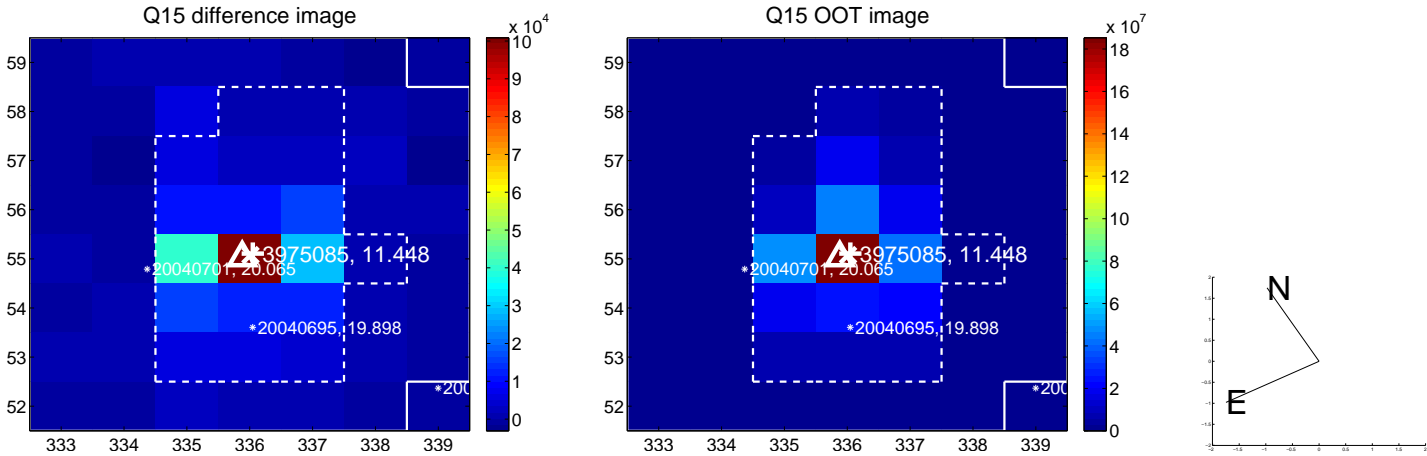
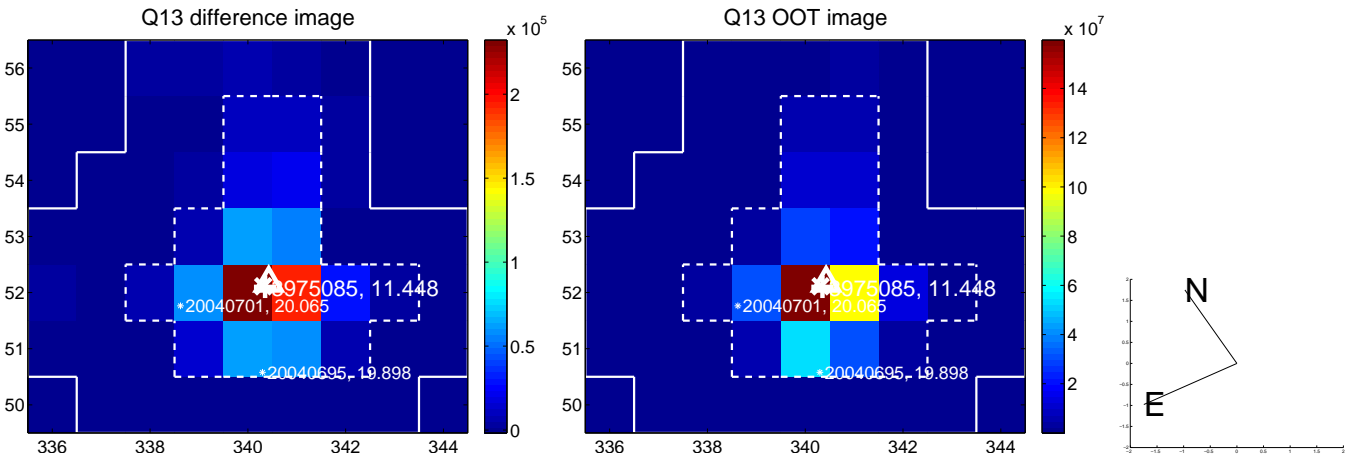
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



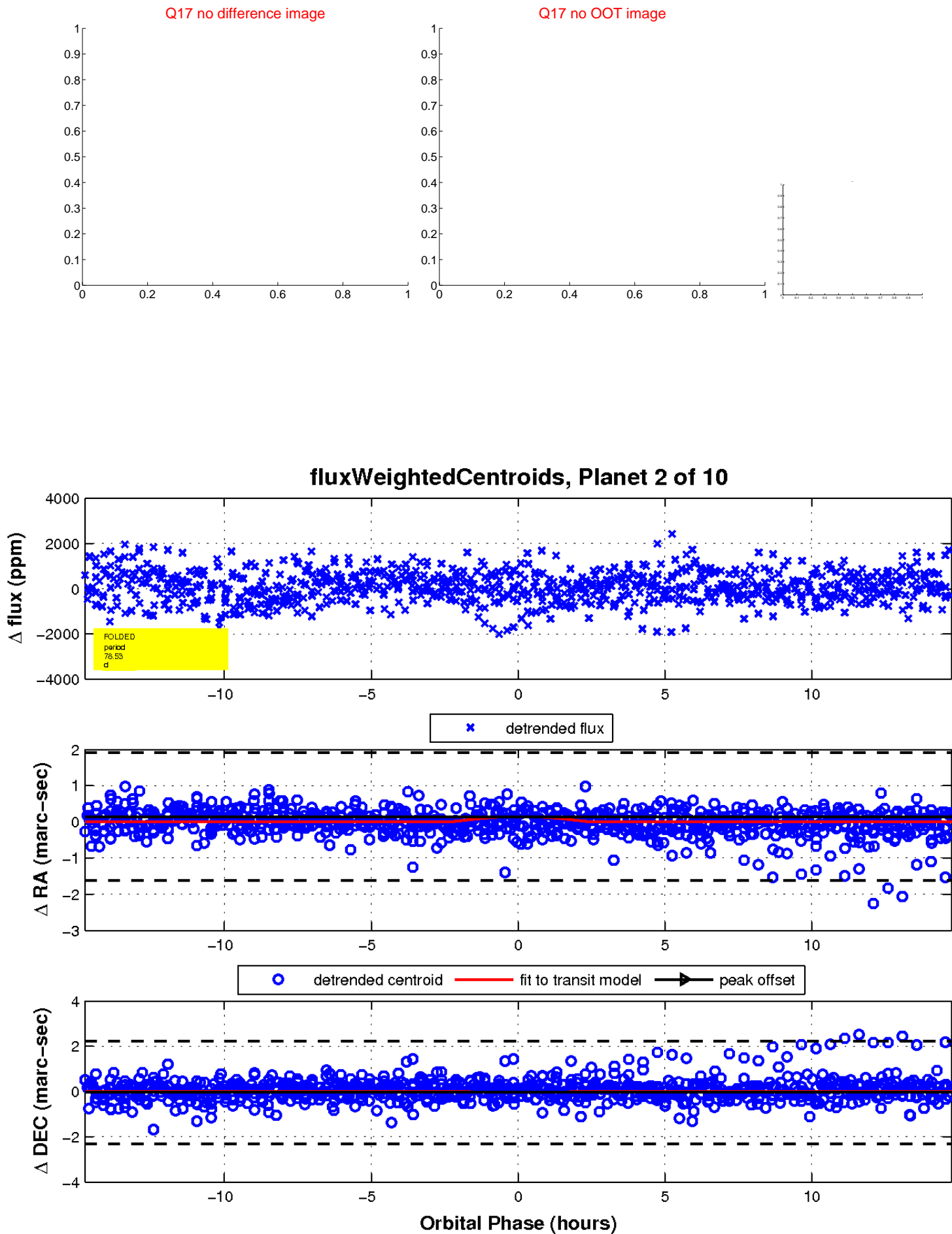
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

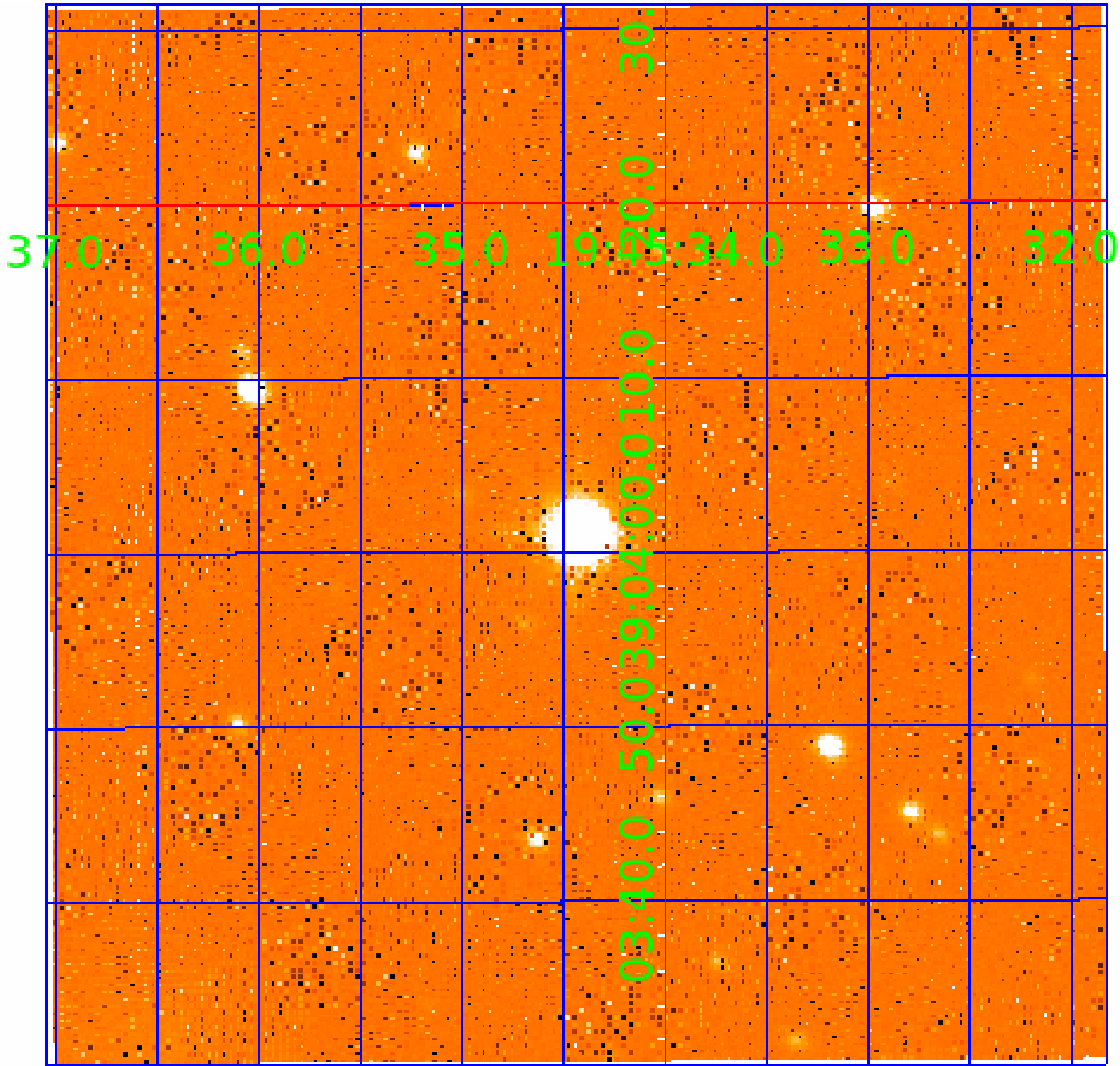


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003975085

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})
003975085-01	OBS	No	2.009828	131.961572	80.5	12.652	9.8	9.5	2.03	7757	2.11	9470.18
003975085-02	OBS	No	78.528369	142.985487	1568.0	4.926	12.0	11.4	2.03	7757	10.18	71.43
003975085-03	OBS	No	58.828151	136.843263	478.0	9.473	10.1	7.2	2.03	7757	4.85	104.98
003975085-04	OBS	No	99.802914	200.101690	760.0	4.995	8.7	5.6	2.03	7757	6.18	51.88
003975085-06	OBS	No	12.581793	132.266373	218.4	25.656	8.5	8.0	2.03	7757	3.26	820.82
003975085-07	OBS	No	150.726597	191.249685	243.4	7.705	9.6	4.0	2.03	7757	3.46	29.94
003975085-08	OBS	No	66.693977	192.425115	1047.8	3.546	8.0	7.2	2.03	7757	7.62	88.81
003975085-09	OBS	No	82.265583	150.962779	1145.8	2.558	7.8	8.3	2.03	7757	8.23	67.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003975085-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003975085-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

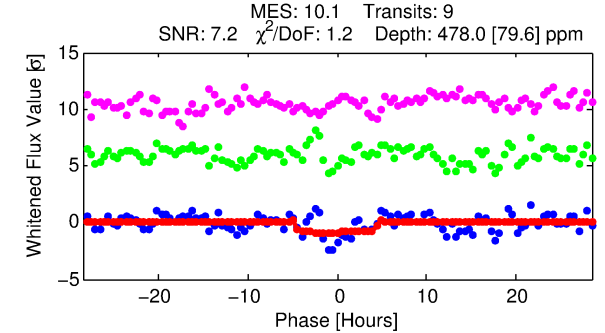
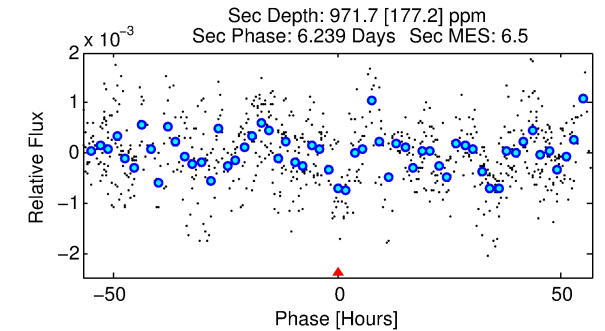
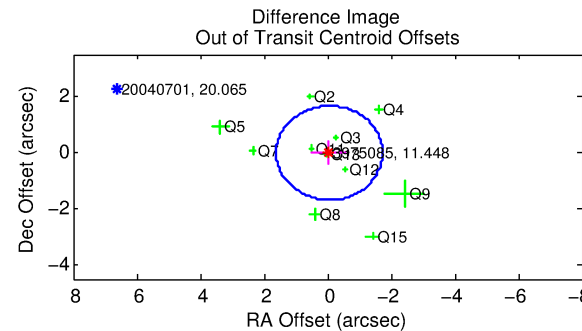
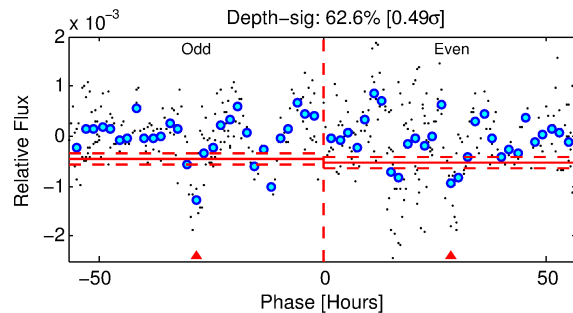
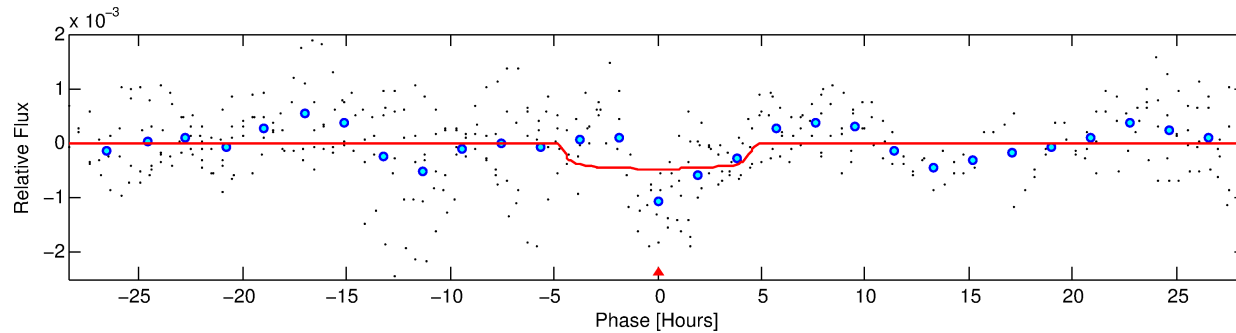
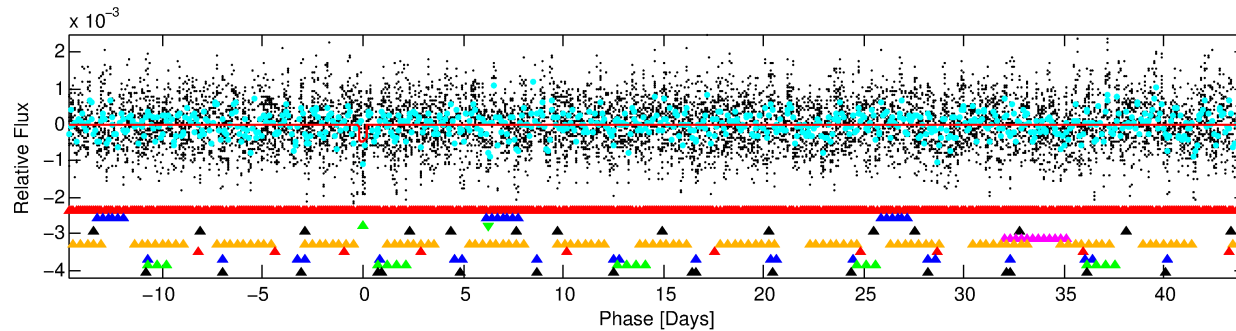
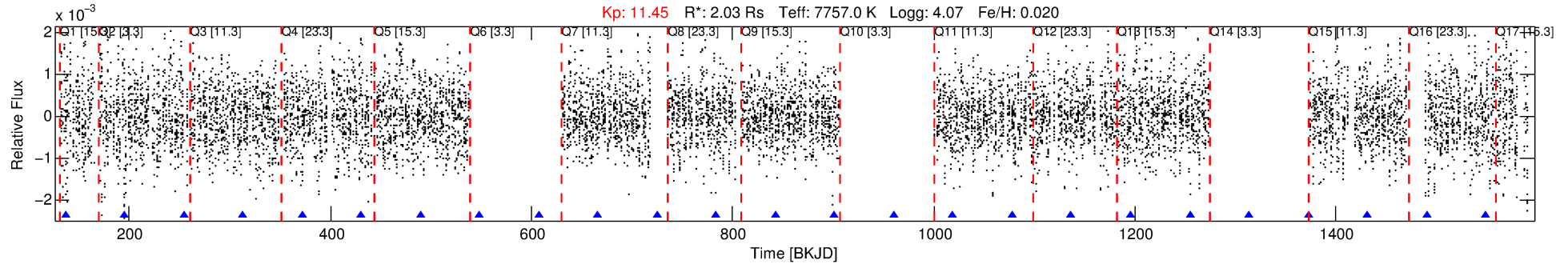
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003975085-03

No Significant Match Found

DV One-Page Summary

KIC: 3975085 Candidate: 3 of 10 Period: 58.828 d



DV Fit Results:

Period = 58.82815 [0.00103] d
Epoch = 136.8433 [0.0141] BKJD
Rp/R* = 0.0219 [0.0069]
a/R* = 31.96 [61.65]
b = 0.77 [1.03]
Seff = 104.98 [23.80]
Teq = 816 [46] K
Rp = 4.85 [1.77] Re
a = 0.3575 [0.0545] AU
Ag = 2903.93 [2023.98] [1.43 σ]
Teffp = 9264 [1534] K [5.50 σ]

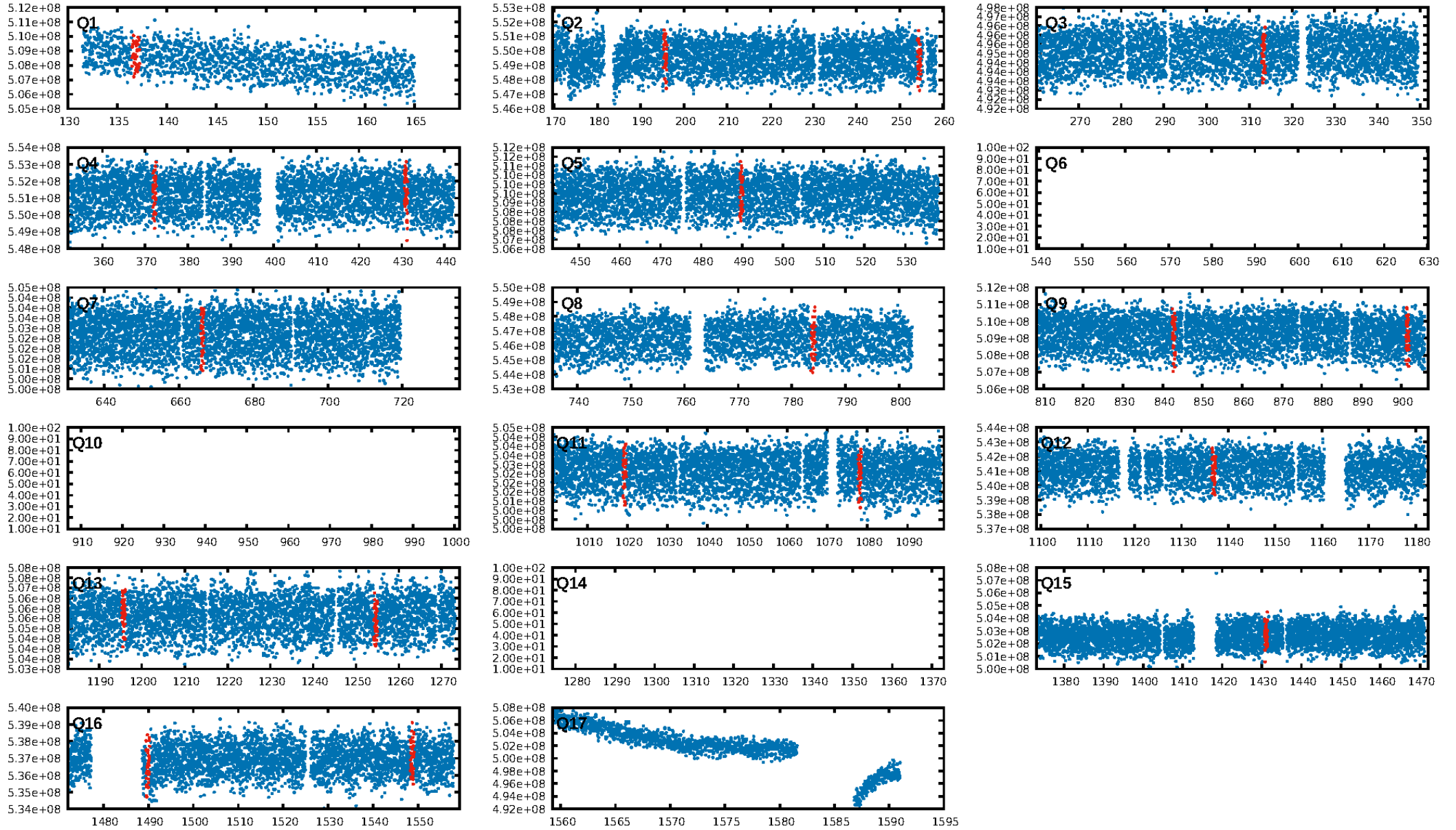
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.58 σ]
LongPeriod-sig: 100.0% [18.66 σ]
ModelChiSquare2-sig: 55.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.96e-11
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -3.102
Centroid-sig: 5.8%
Centroid-so: 0.172 arcsec [1.14 σ]
OotOffset-rm: 0.054 arcsec [0.10 σ]
KicOffset-rm: 0.139 arcsec [0.31 σ]
OotOffset-st: 1/4/3/3 [11]
KicOffset-st: 1/4/3/3 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 0.00 [0/12]

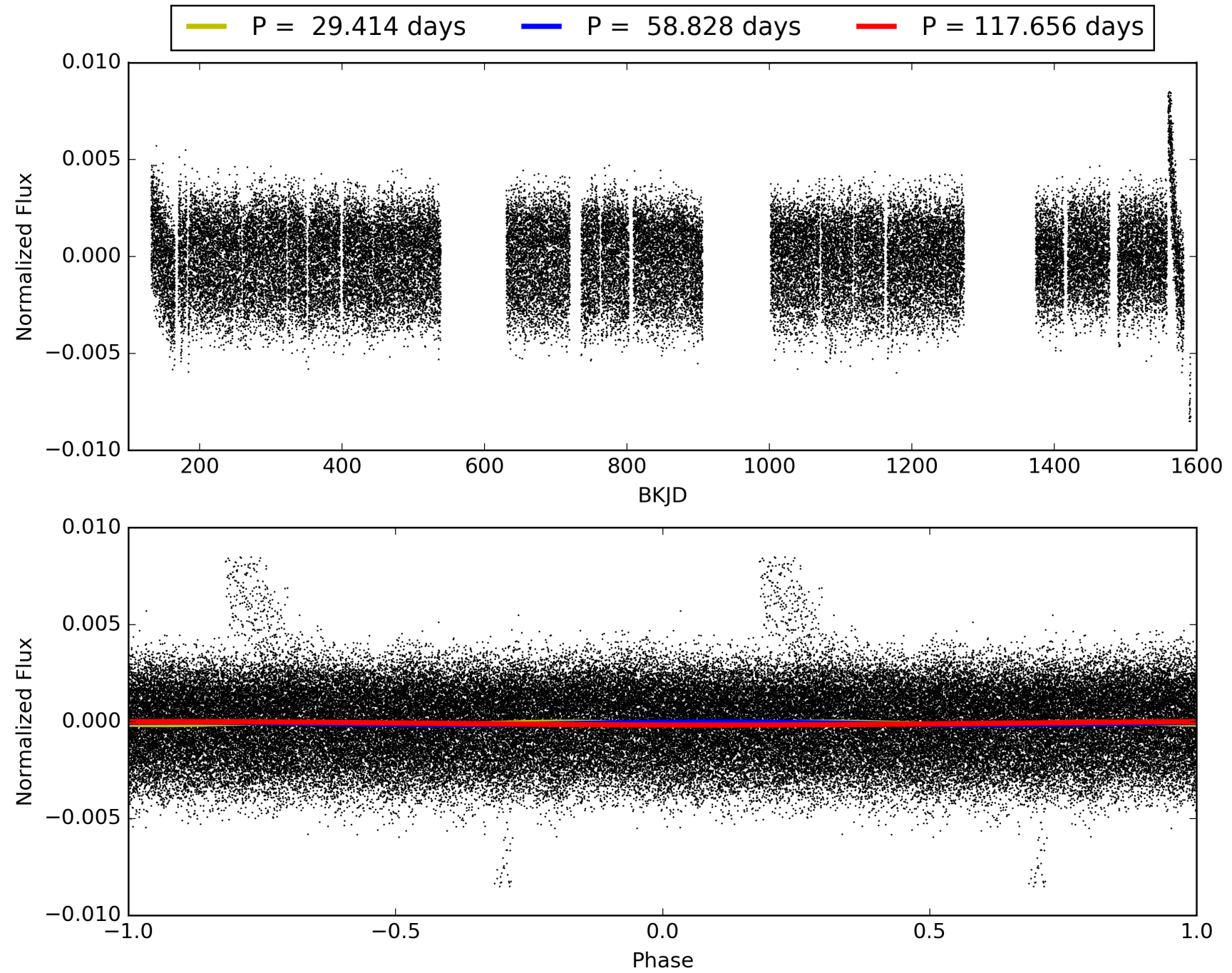
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:22:32 Z

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

TCE 003975085-03, PDC Light Curves

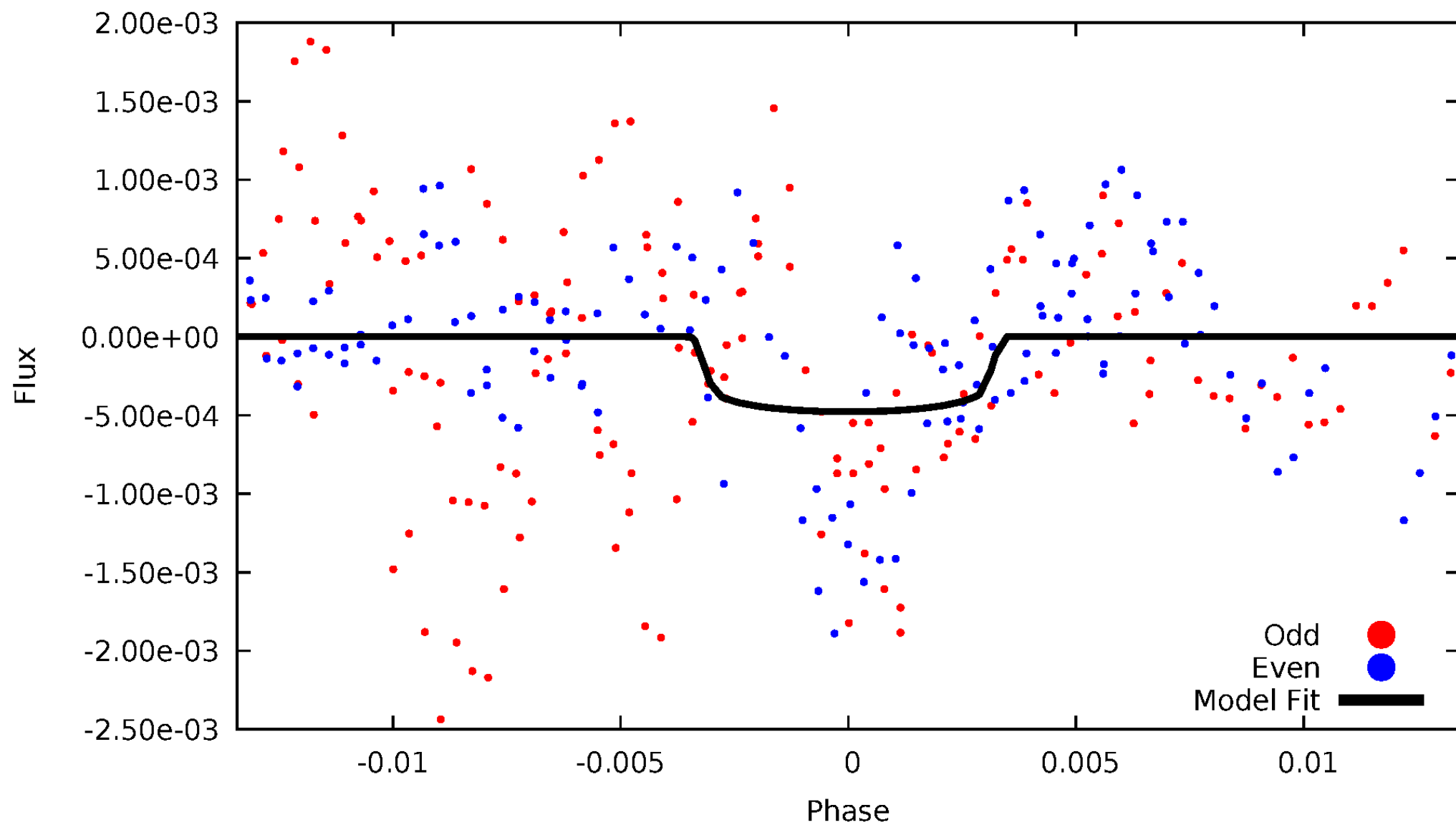


TCE 003975085-03



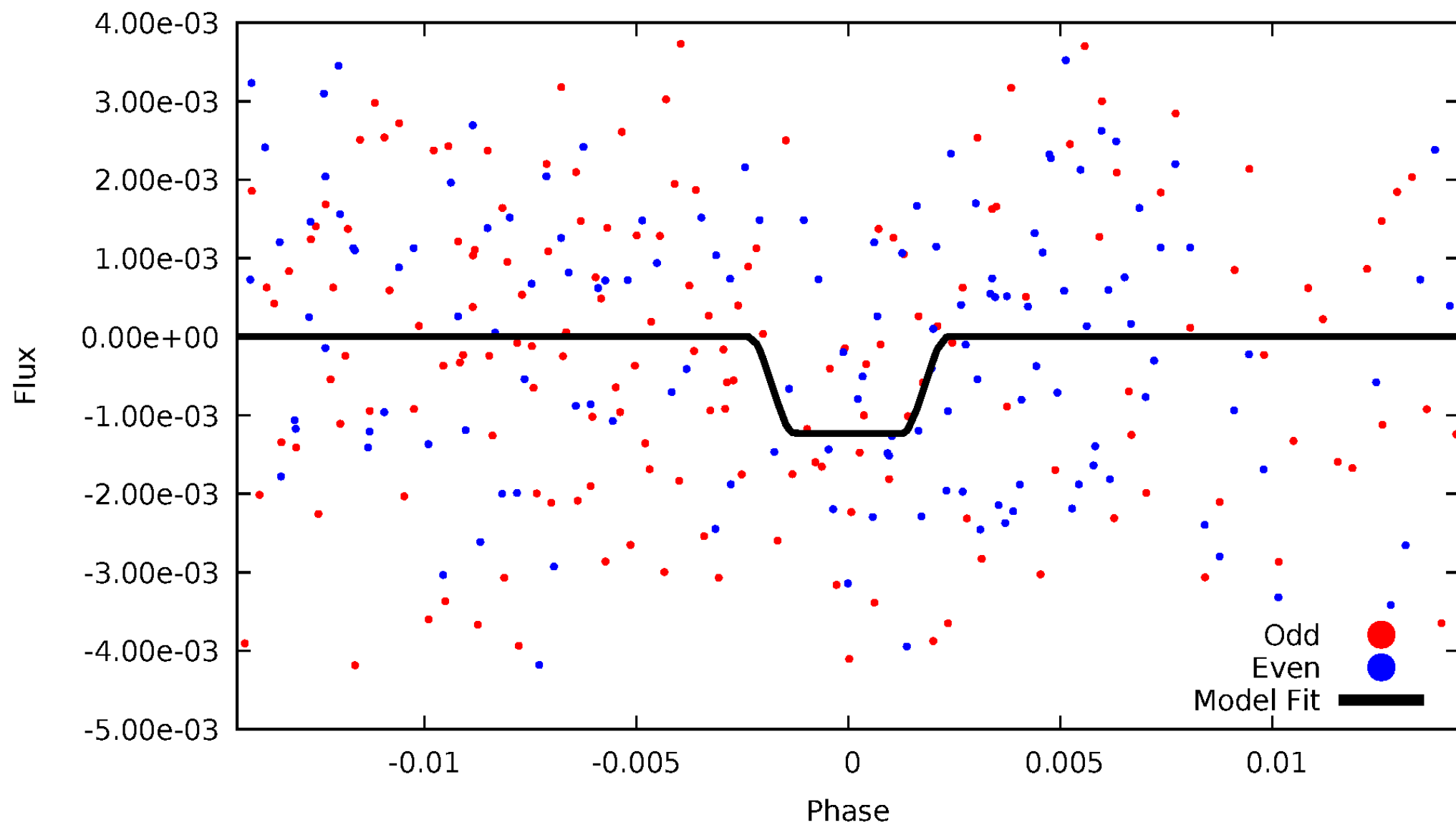
DV Odd/Even

TCE 003975085-03



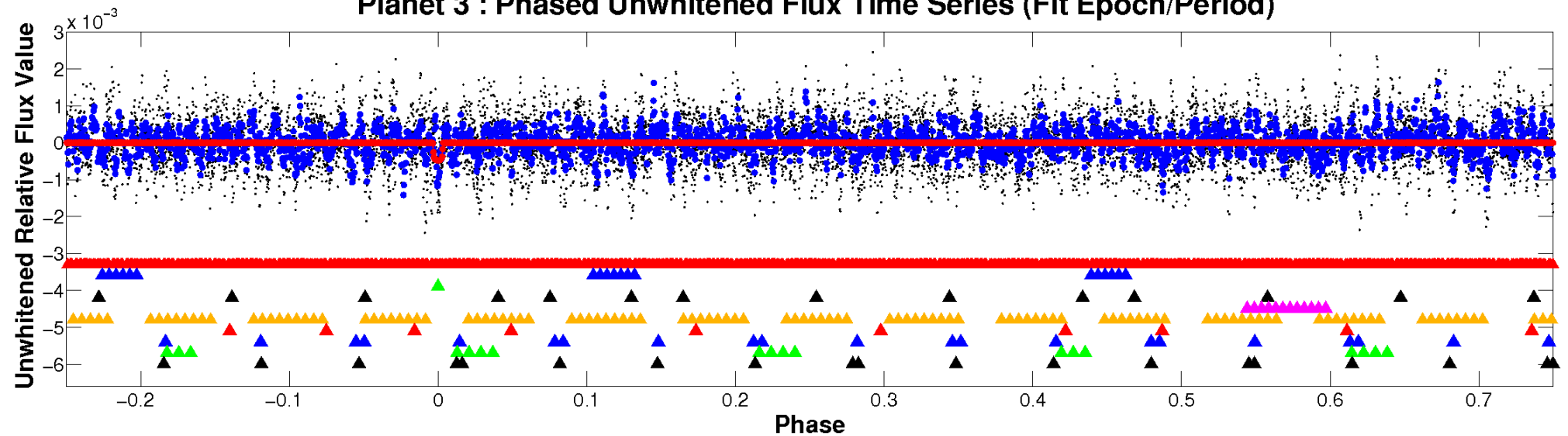
ALT Odd/Even

TCE 003975085-03

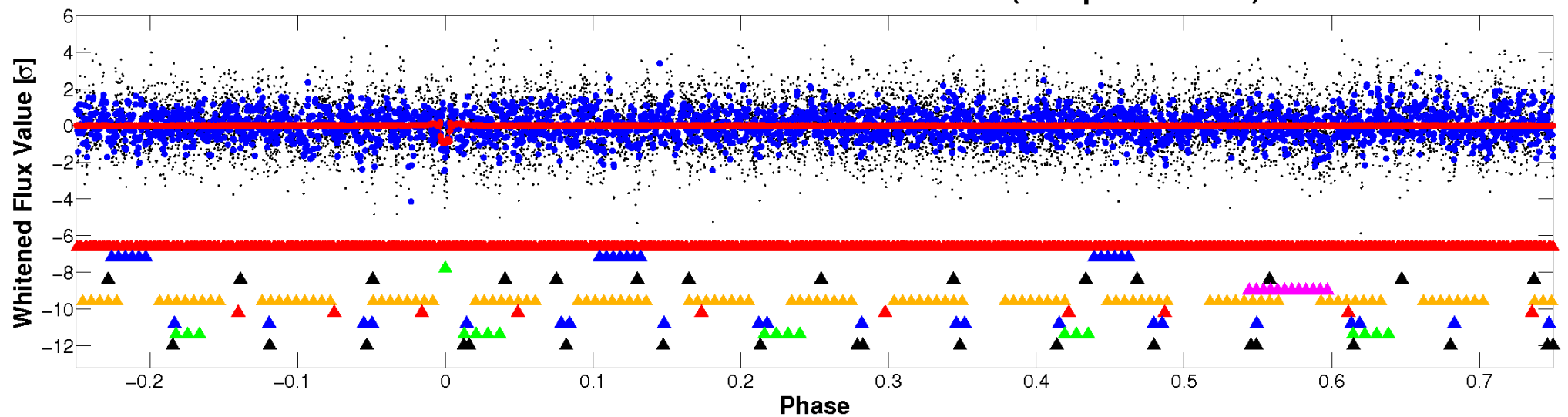


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

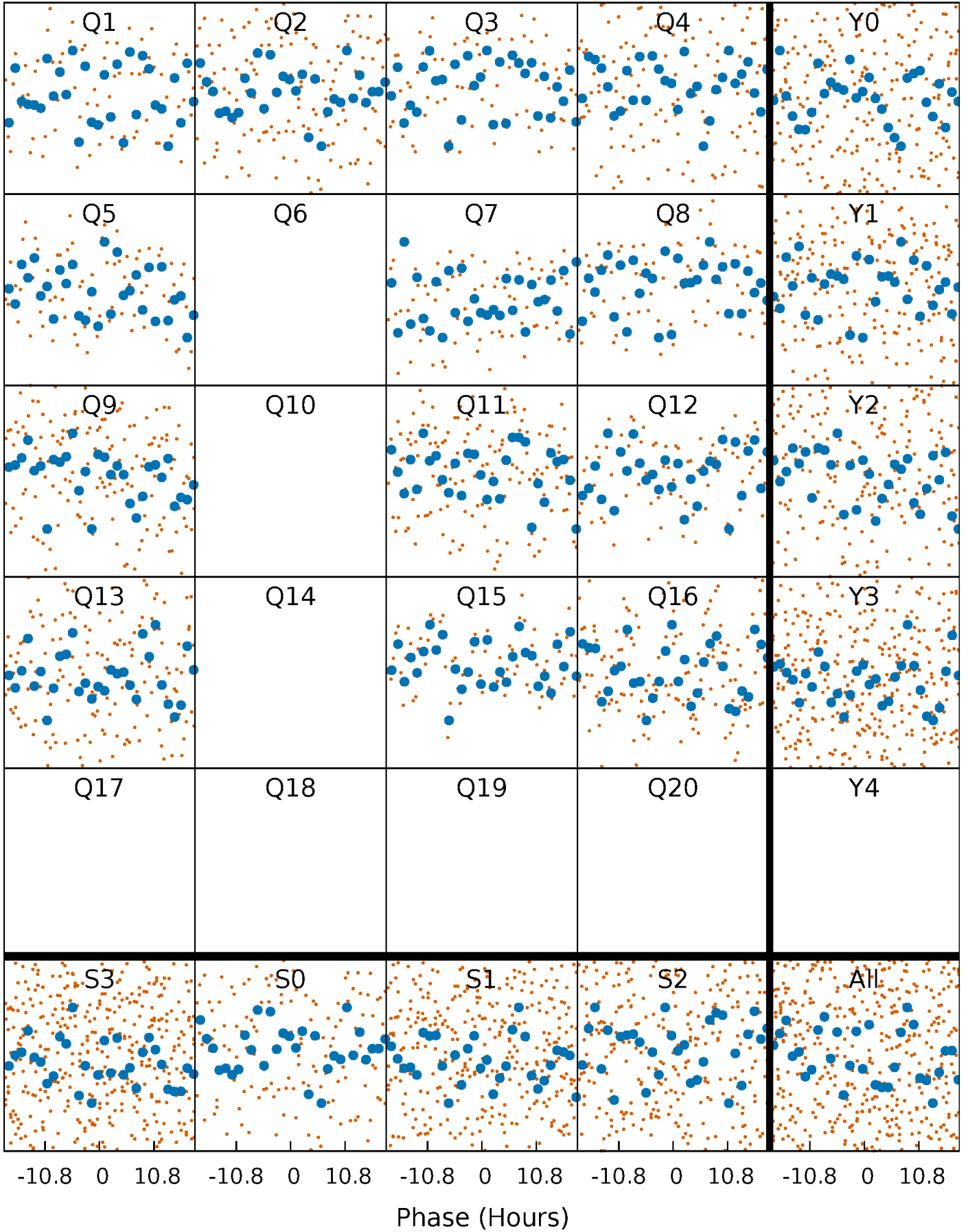


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



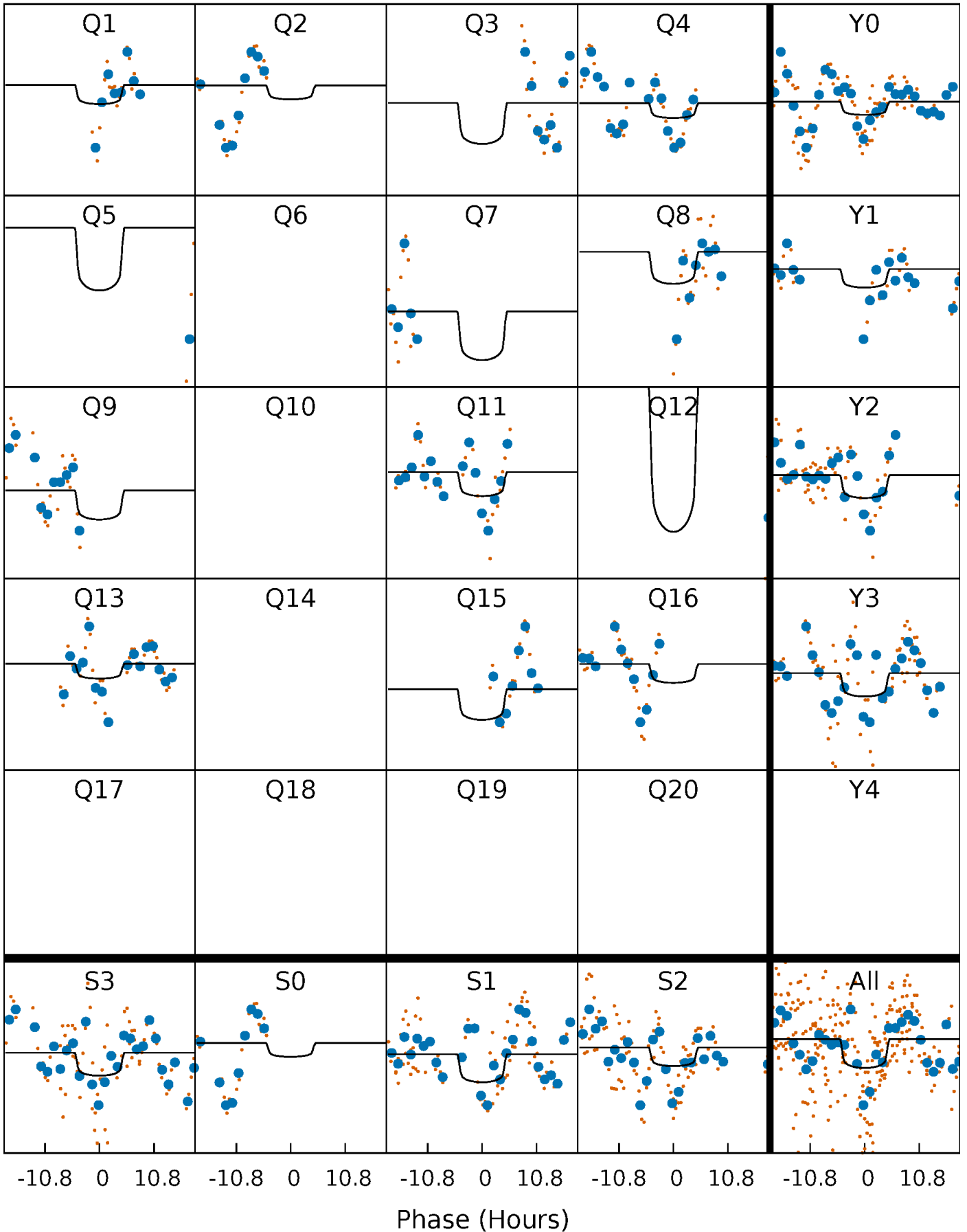
PDC Quarter-Phased Transit Curves

TCE 003975085-03 $P = 58.828151$ Days $T_0 = 136.843263$ (BKJD)



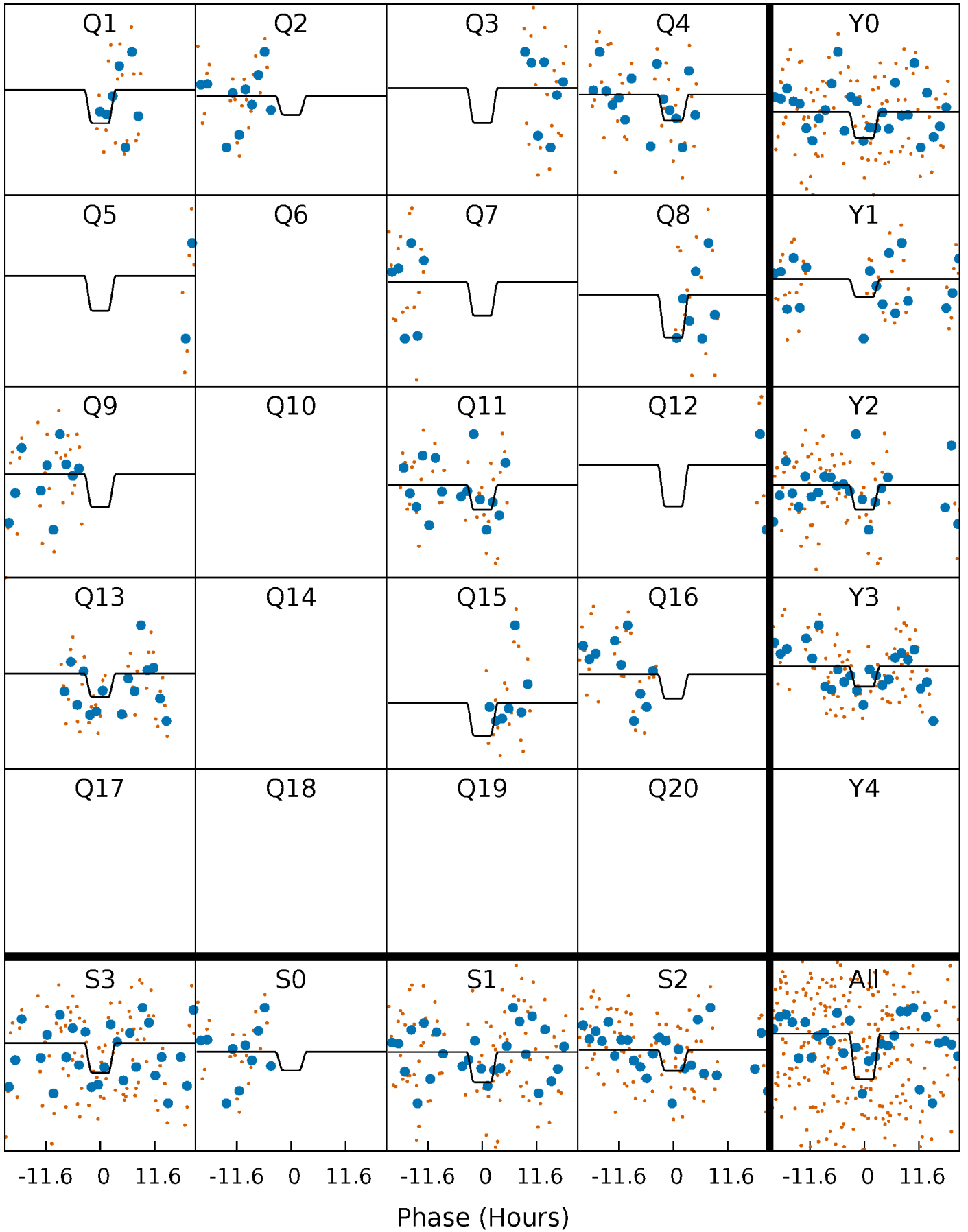
DV Quarter-Phased Transit Curves

TCE 003975085-03 $P = 58.828151$ Days $T_0 = 136.843263$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

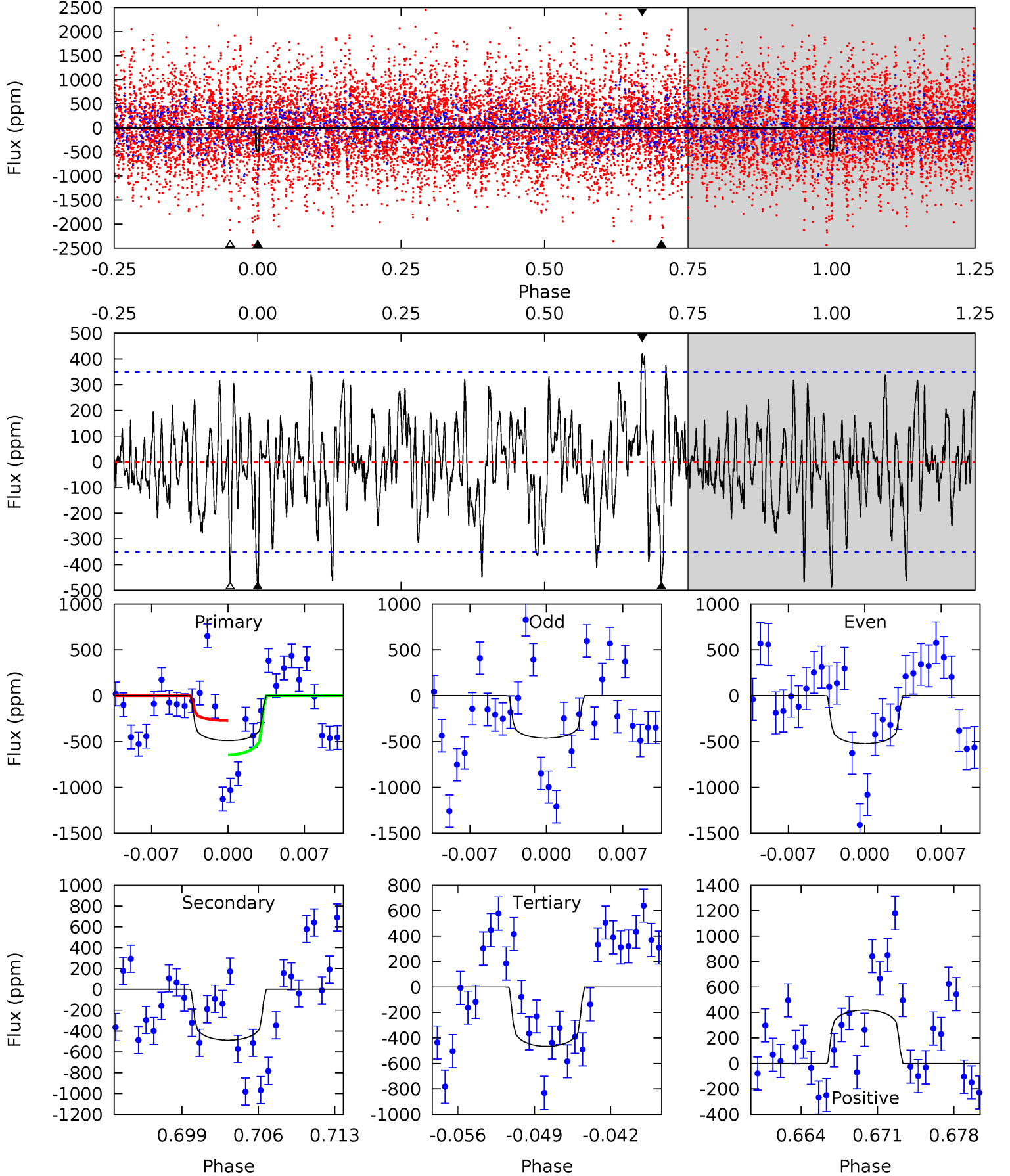
TCE 003975085-03 P= 58.830972 Days $T_0=136.811887$ (BKJD)



DV Model-Shift Uniqueness Test

003975085-03, P = 58.828151 Days, E = 78.015112 Days

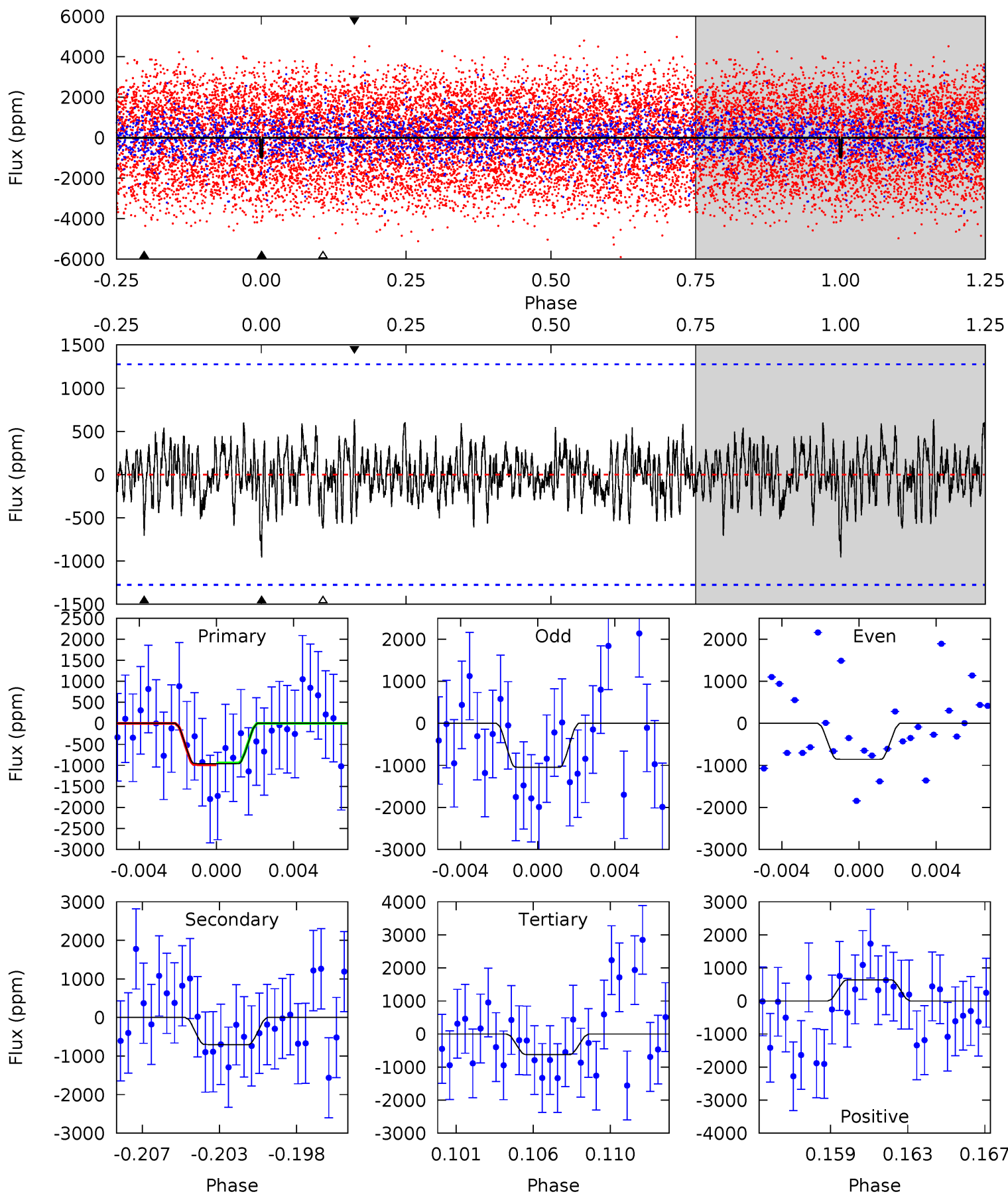
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.12	7.10	6.77	6.09	5.09	2.70	2.18	0.35	1.04	0.32	1.01	0.44	0.94	0.46	2.69



Alt Model-Shift Uniqueness Test

003975085-03, P = 58.830972 Days, E = 77.980915 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.89	2.85	2.53	2.59	5.18	2.85	0.92	1.36	1.30	0.32	0.26	0.39	1.21	0.40	0.08



Stellar Parameters For KIC 003975085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7757^{+69}_{-92}	$4.067^{+0.099}_{-0.121}$	$0.020^{+0.050}_{-0.200}$	$2.034^{+0.369}_{-0.302}$	$1.760^{+0.149}_{-0.164}$	$0.295^{+0.135}_{-0.109}$
	+1%/-1%	+2%/-3%	+250%/-1000%	+18%/-15%	+8%/-9%	+46%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003975085-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-488 ± 69	$4.85^{+1.66}_{-1.63}$	1147^{+52}_{-47}	7825^{+2349}_{-1182}	1457^{+1733}_{-666}
Alt.	-701 ± 246	$7.80^{+1.85}_{-1.73}$	1142^{+57}_{-43}	6566^{+1123}_{-819}	769^{+659}_{-333}

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 $A_{obs} \gg 1.0$

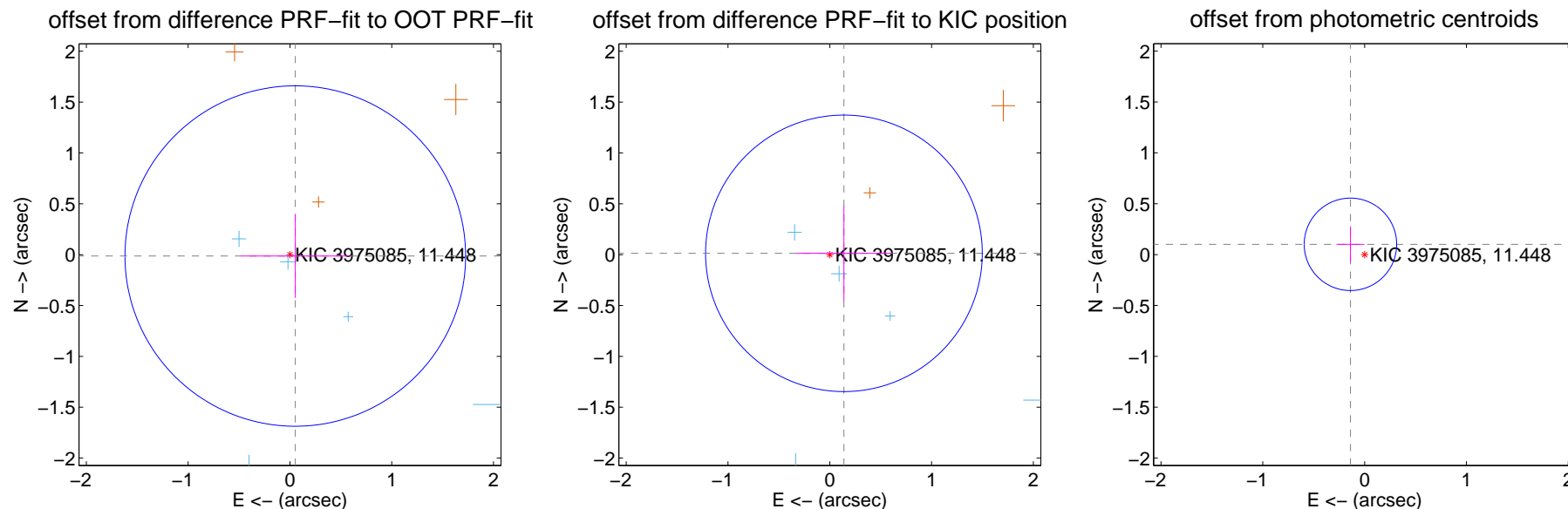
DV Centroid Data

Supplemental centroid analysis for 003975085-03. **Kepler magnitude: 11.45.** Transit SNR 7.20

There are 7 quarters with good PRF difference image offsets

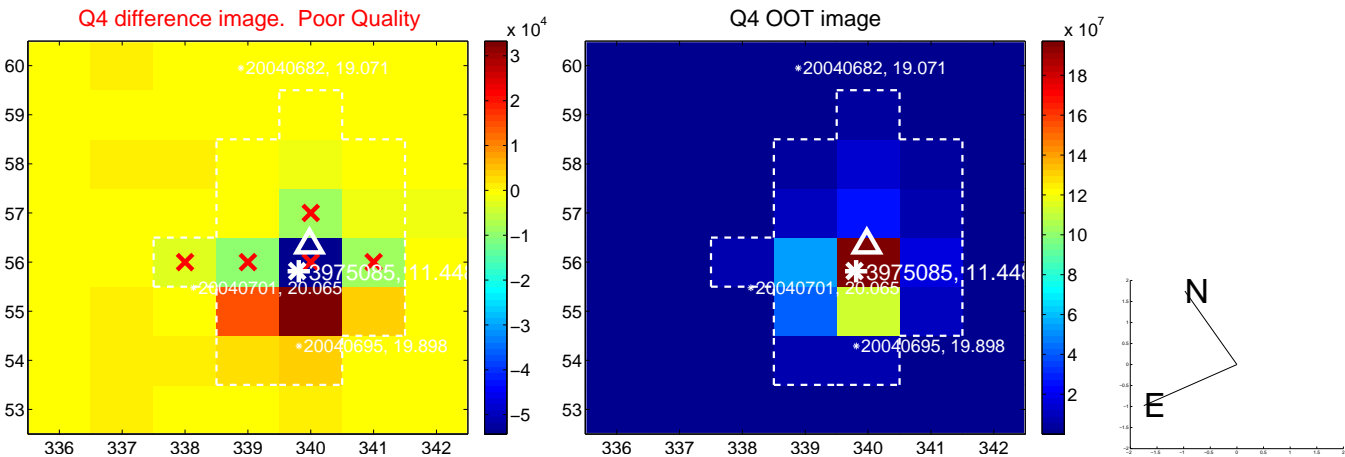
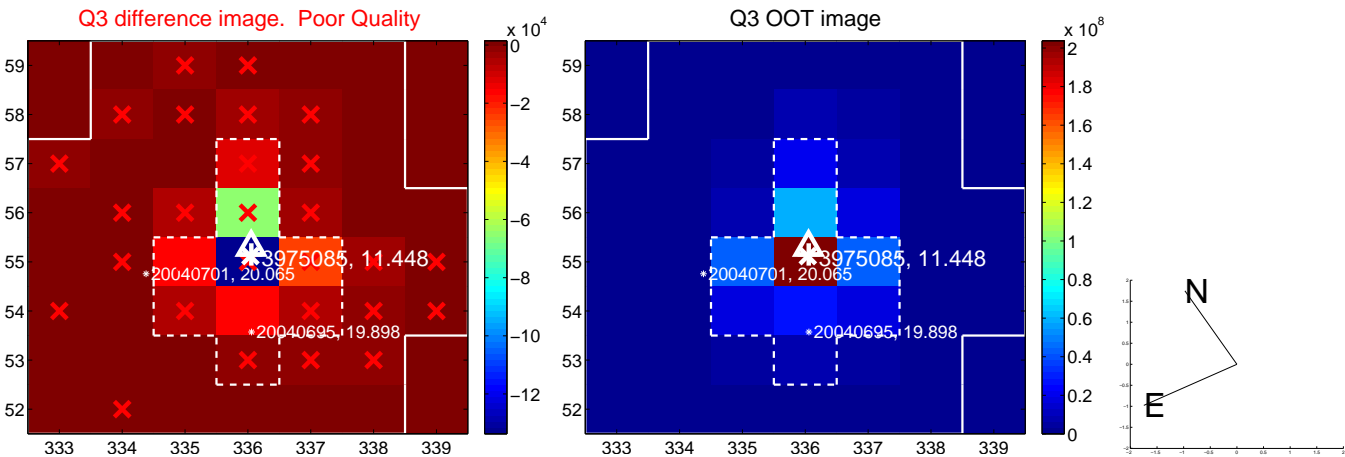
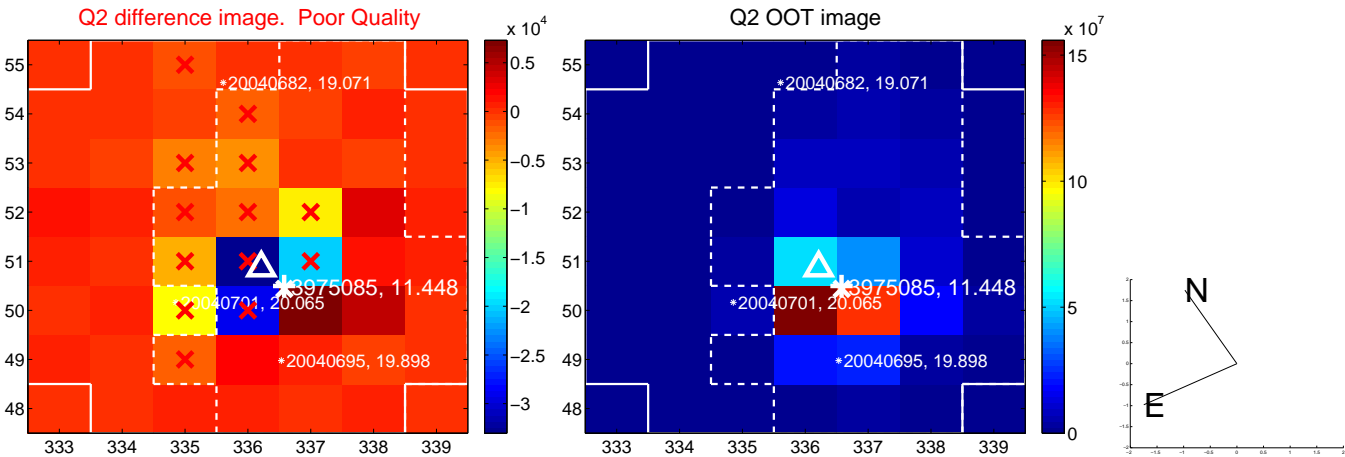
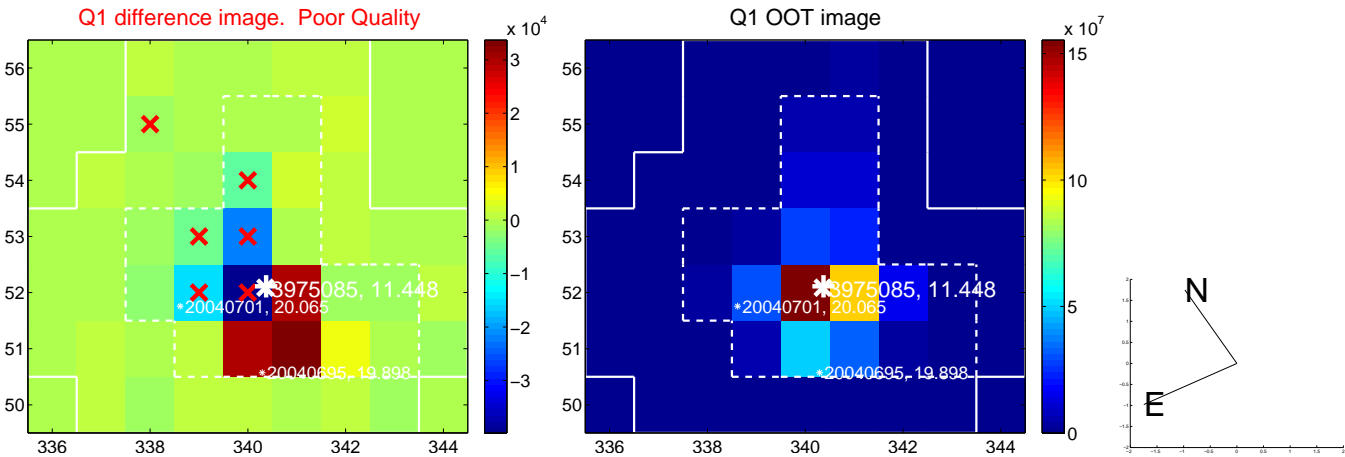
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.054 ± 0.558	0.10	-0.053 ± 0.530	-0.014 ± 0.411
PRF-fit source offset from KIC position	0.139 ± 0.453	0.31	-0.139 ± 0.468	0.013 ± 0.466
photometric centroid source offset	0.17 ± 0.15	1.14	0.14 ± 0.14	0.10 ± 0.18

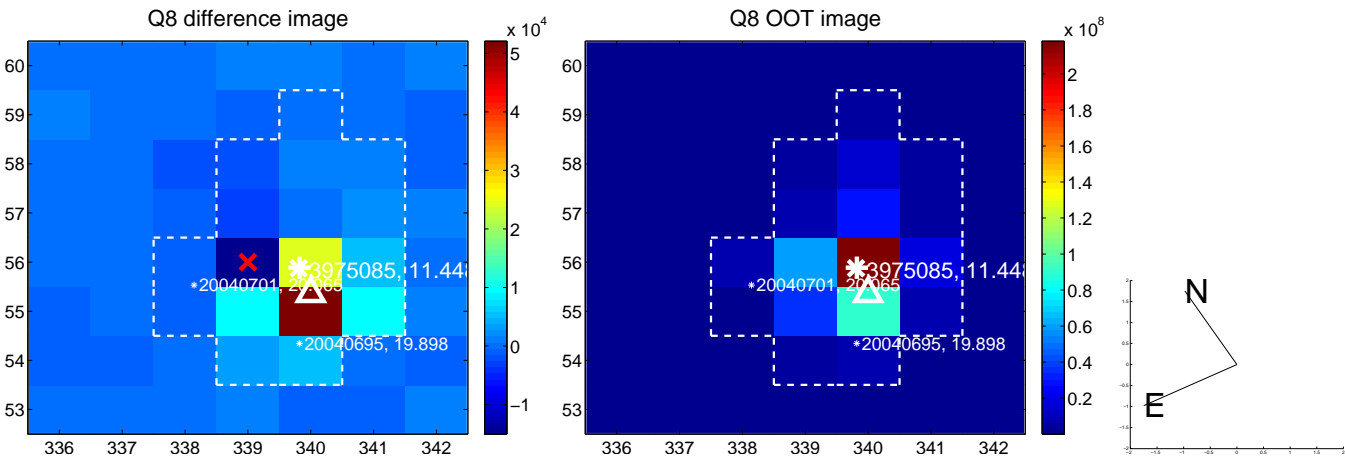
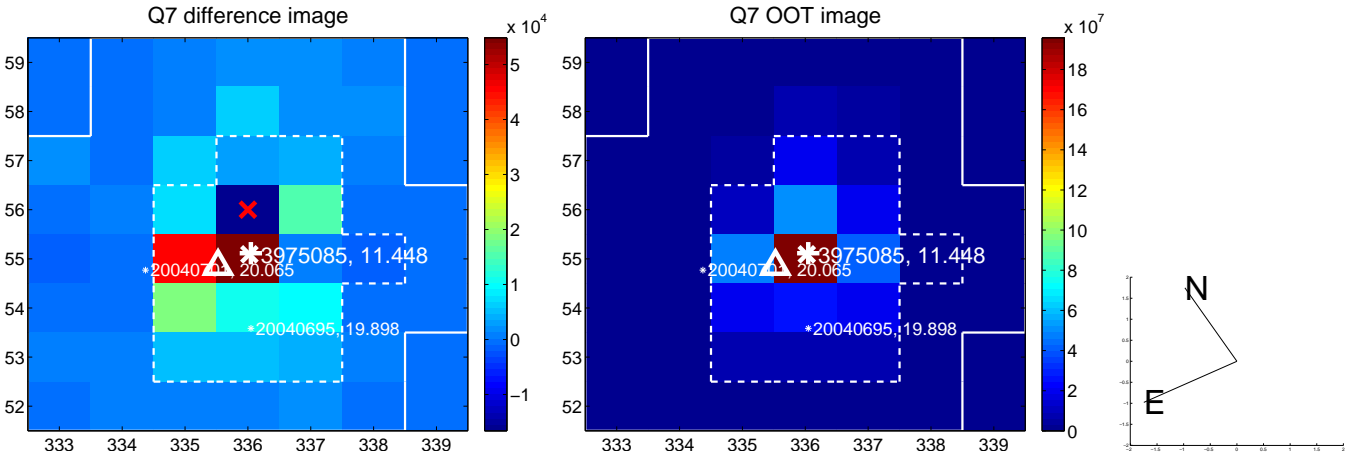
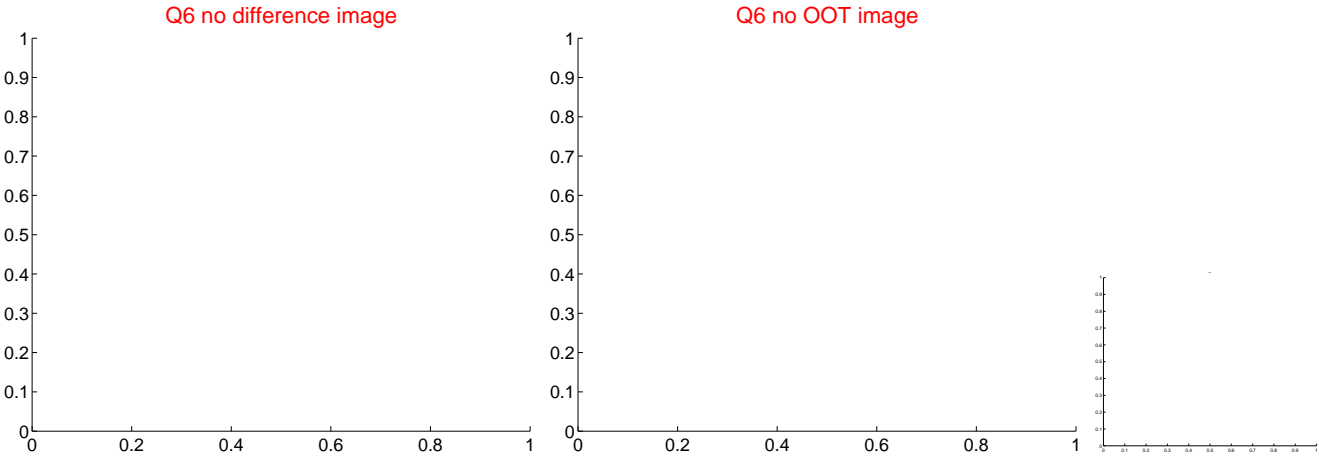
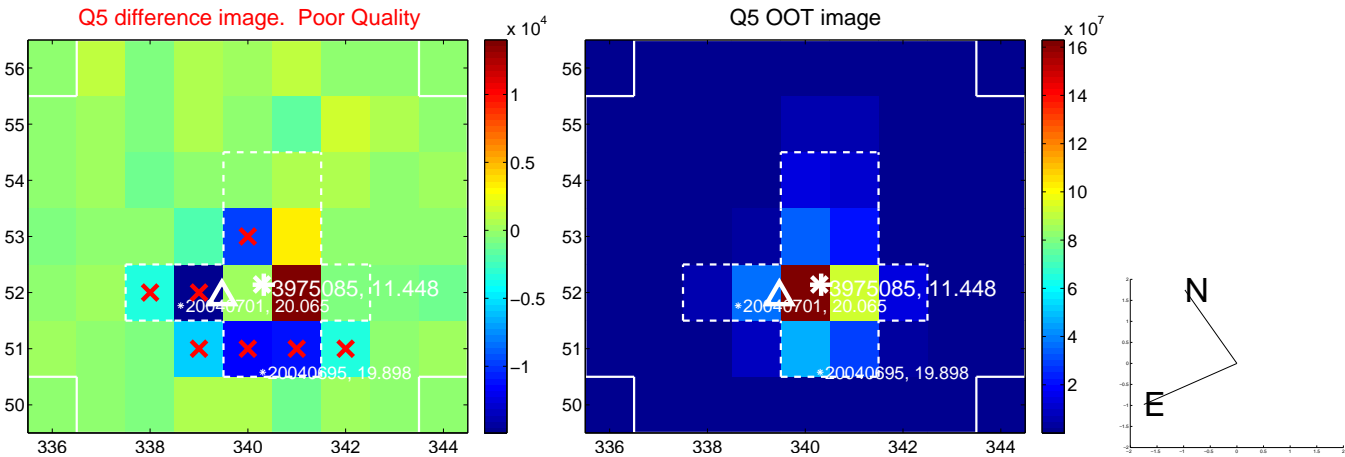


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

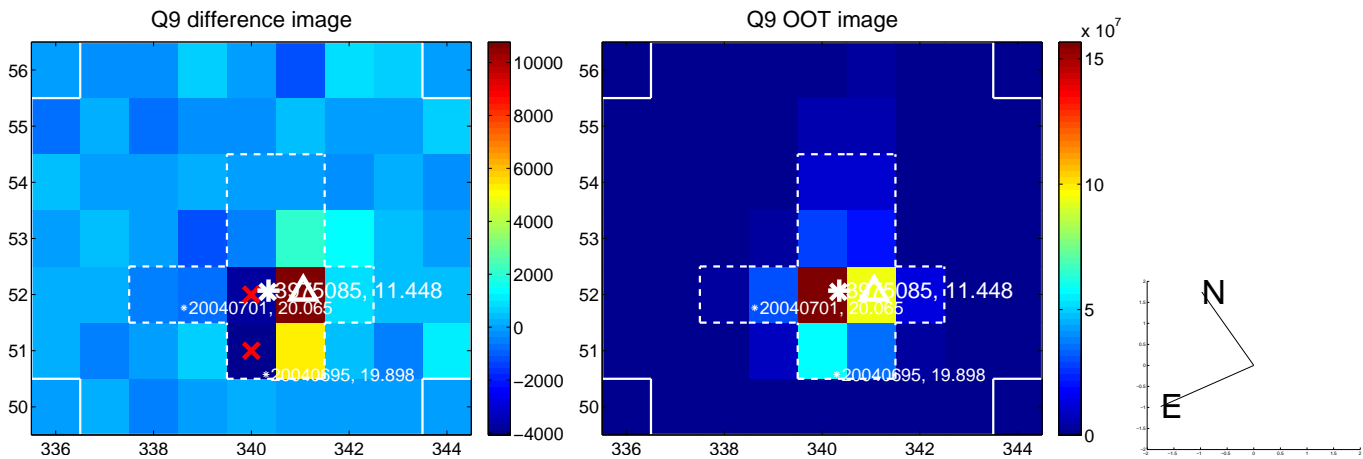
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



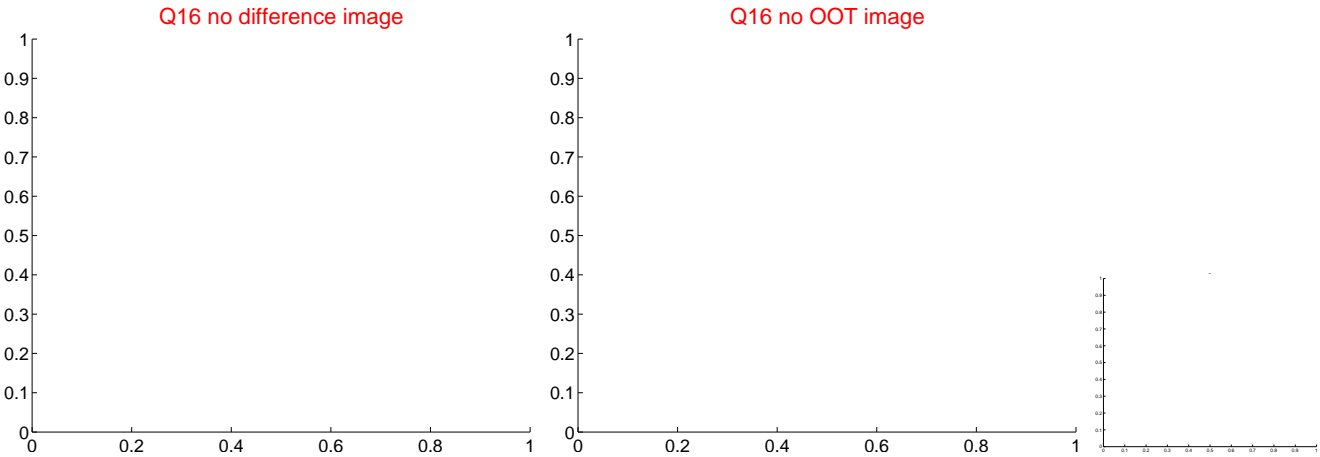
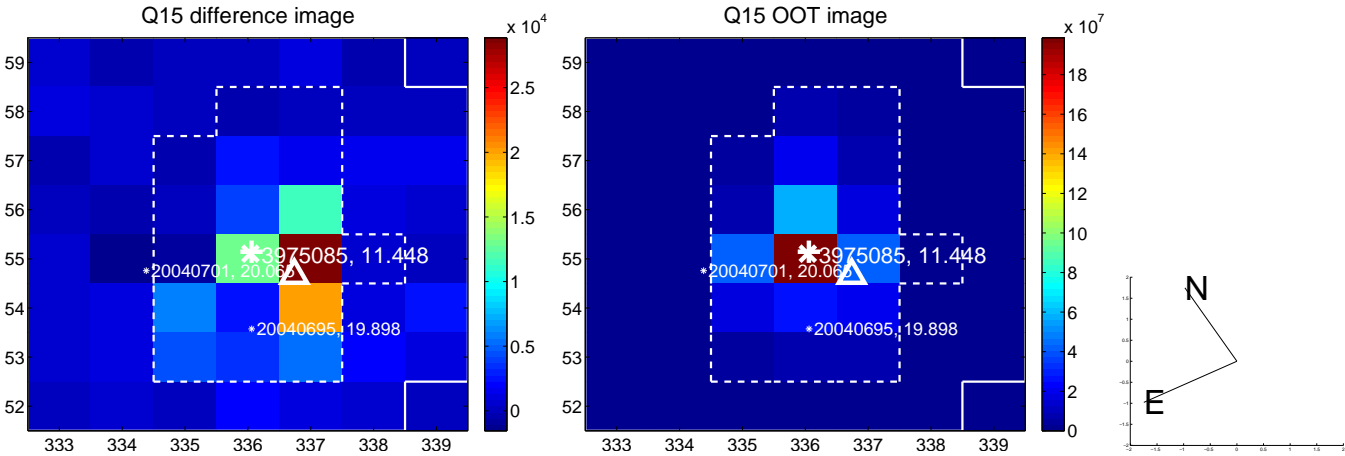
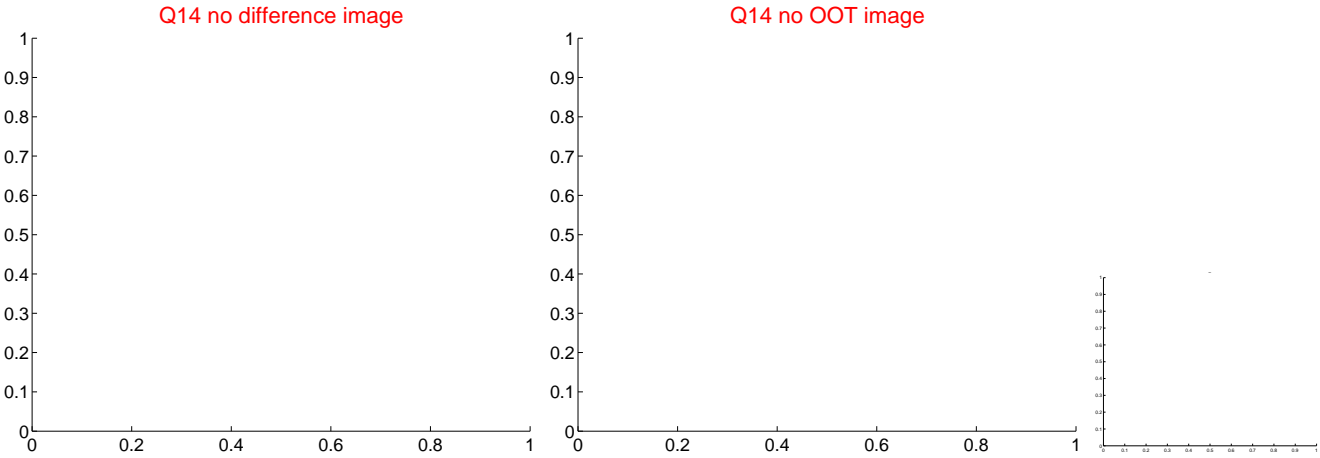
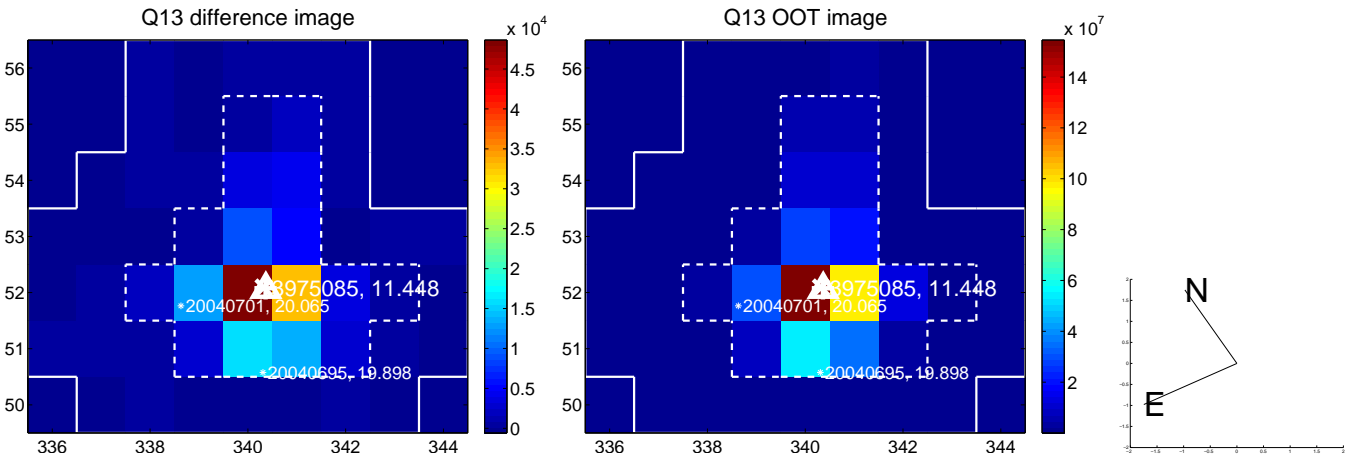
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



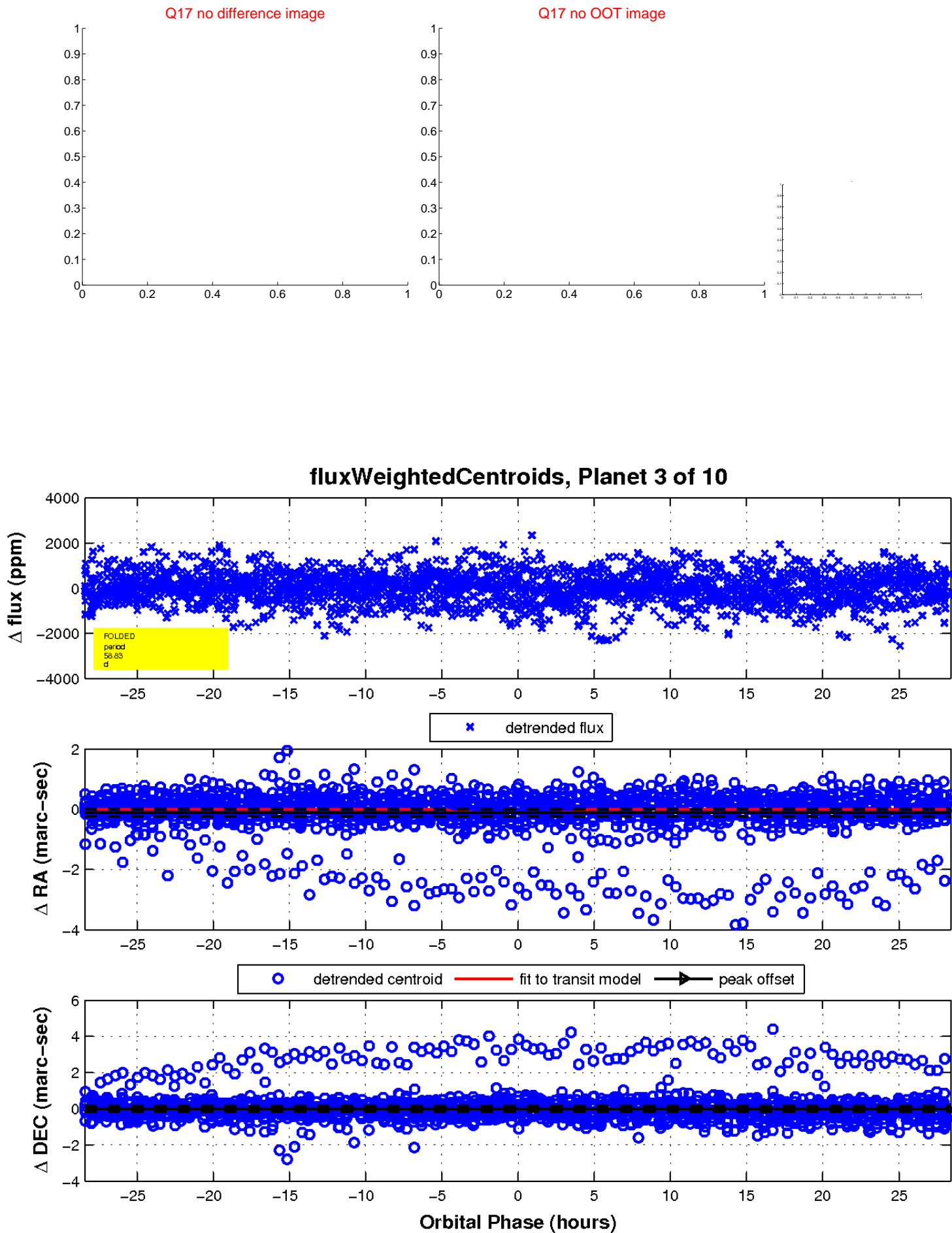
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

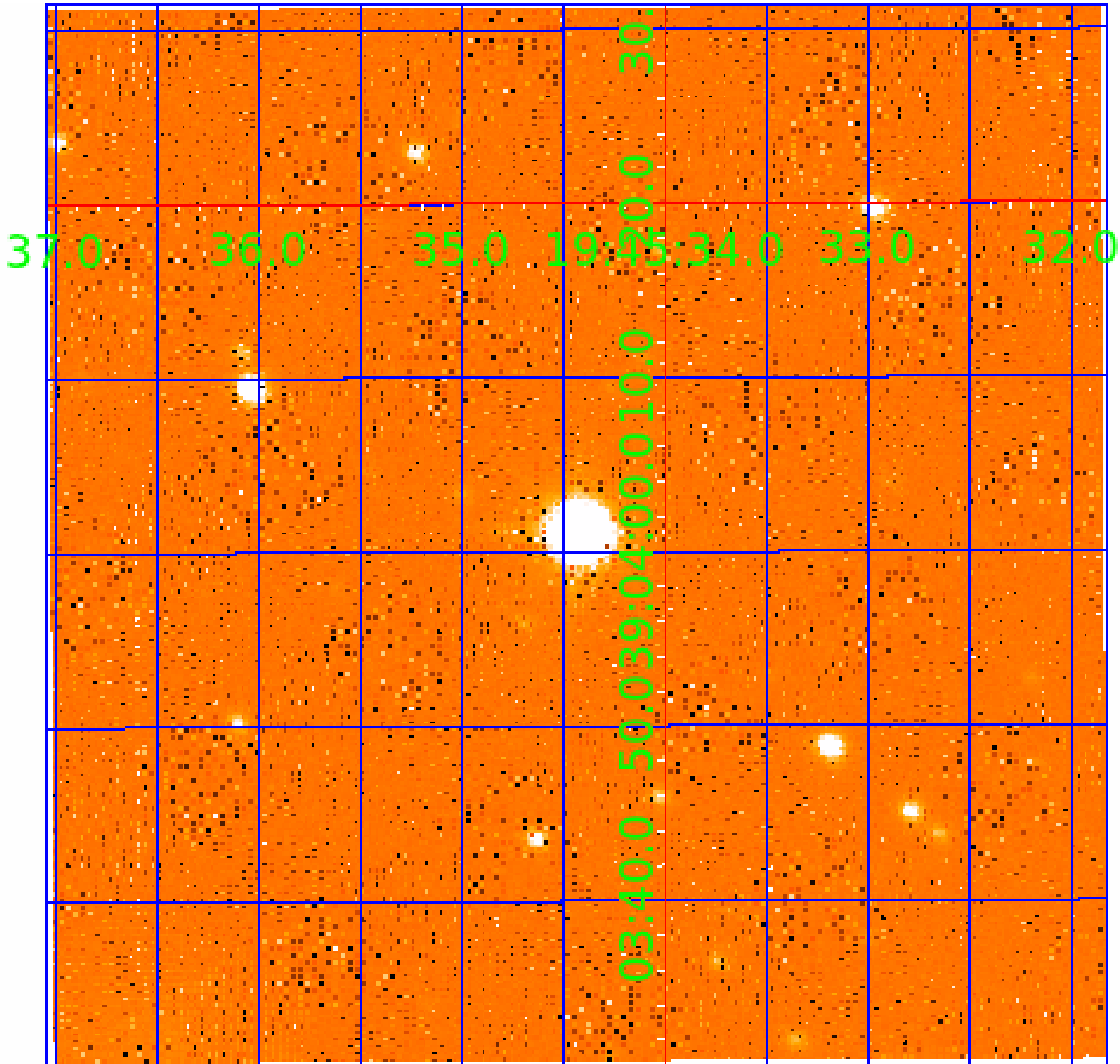


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003975085

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})
003975085-01	OBS	No	2.009828	131.961572	80.5	12.652	9.8	9.5	2.03	7757	2.11	9470.18
003975085-02	OBS	No	78.528369	142.985487	1568.0	4.926	12.0	11.4	2.03	7757	10.18	71.43
003975085-03	OBS	No	58.828151	136.843263	478.0	9.473	10.1	7.2	2.03	7757	4.85	104.98
003975085-04	OBS	No	99.802914	200.101690	760.0	4.995	8.7	5.6	2.03	7757	6.18	51.88
003975085-06	OBS	No	12.581793	132.266373	218.4	25.656	8.5	8.0	2.03	7757	3.26	820.82
003975085-07	OBS	No	150.726597	191.249685	243.4	7.705	9.6	4.0	2.03	7757	3.46	29.94
003975085-08	OBS	No	66.693977	192.425115	1047.8	3.546	8.0	7.2	2.03	7757	7.62	88.81
003975085-09	OBS	No	82.265583	150.962779	1145.8	2.558	7.8	8.3	2.03	7757	8.23	67.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003975085-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003975085-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

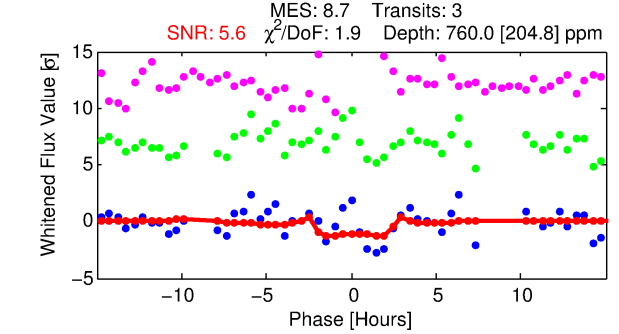
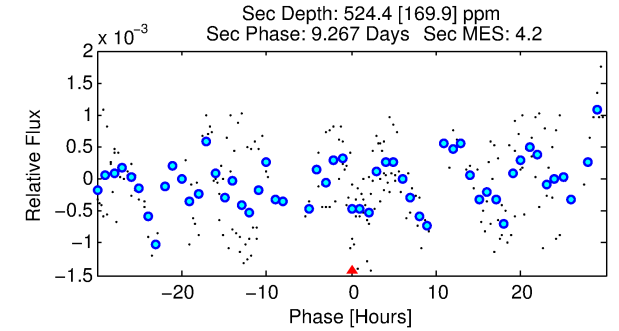
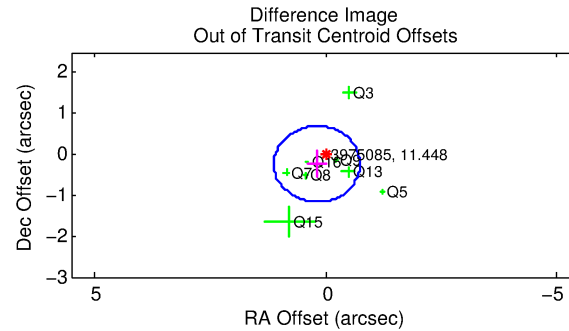
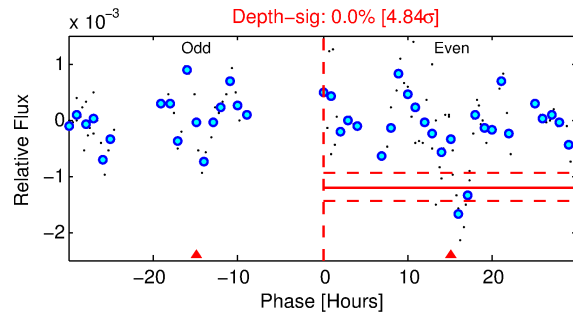
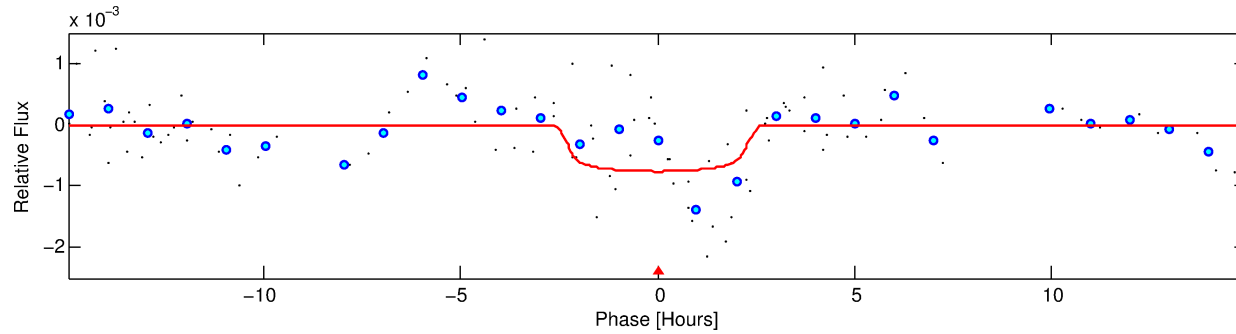
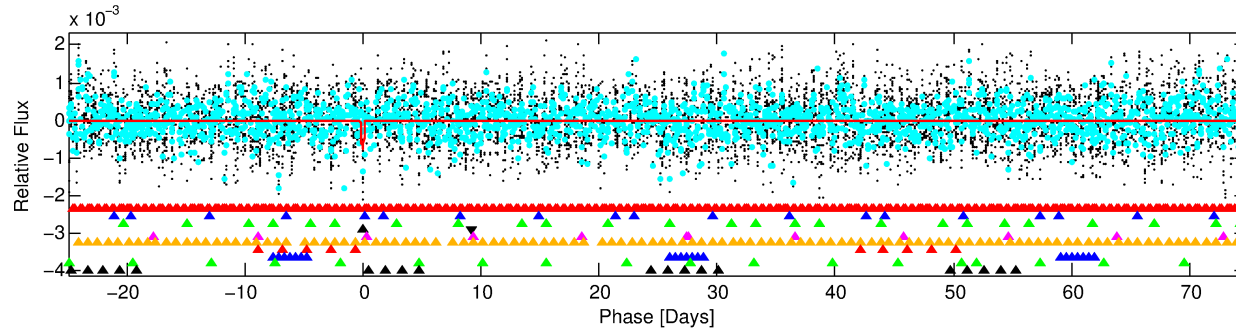
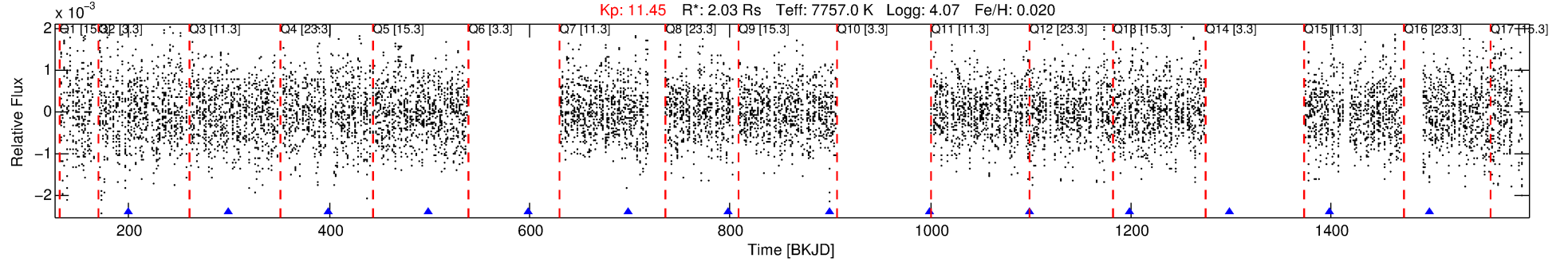
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003975085-04

No Significant Match Found

DV One-Page Summary

KIC: 3975085 Candidate: 4 of 10 Period: 99.803 d



DV Fit Results:

Period = 99.80291 [0.00386] d
Epoch = 200.1017 [0.0369] BKJD
Rp/R* = 0.0278 [0.0210]
a/R* = 98.66 [465.18]
b = 0.80 [2.11]
Seff = 51.89 [11.76]
Teq = 684 [39] K
Rp = 6.18 [4.80] Re
a = 0.5086 [0.0776] AU
Ag = 1954.50 [3053.33] [0.64 σ]
Teffp = 7035 [2721] K [2.33 σ]

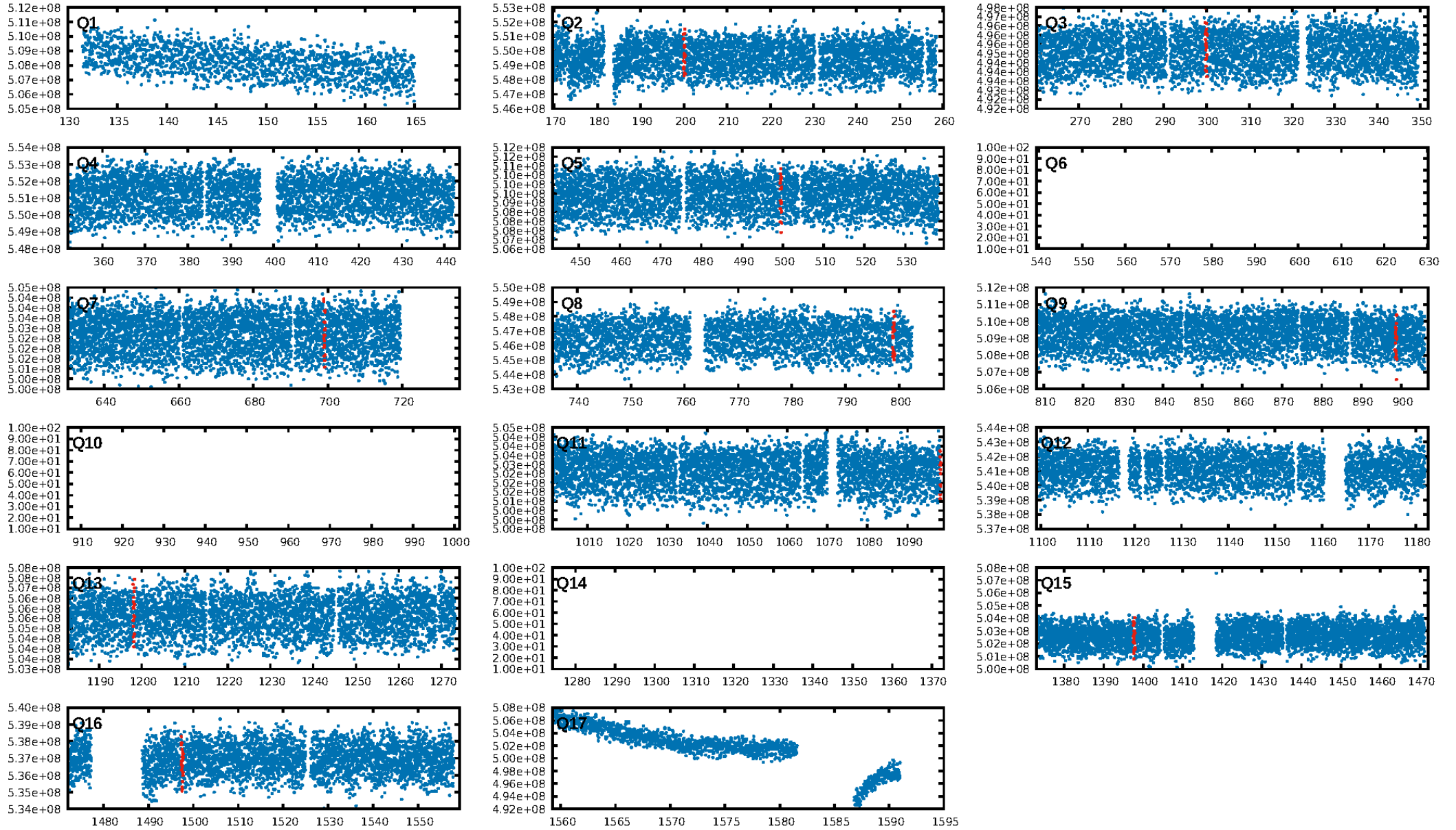
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [74.99 σ]
LongPeriod-sig: 100.0% [22.00 σ]
ModelChiSquare2-sig: 1.8%
ModelChiSquareGof-sig: 2.7%
Bootstrap-pfa: 3.33e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.596
Centroid-sig: 6.0%
Centroid-so: 0.370 arcsec [2.46 σ]
OotOffset-rm: 0.302 arcsec [0.97 σ]
KicOffset-rm: 0.296 arcsec [0.78 σ]
OotOffset-st: 0/3/2/3 [8]
KicOffset-st: 0/3/2/3 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 0.38 [3/8]

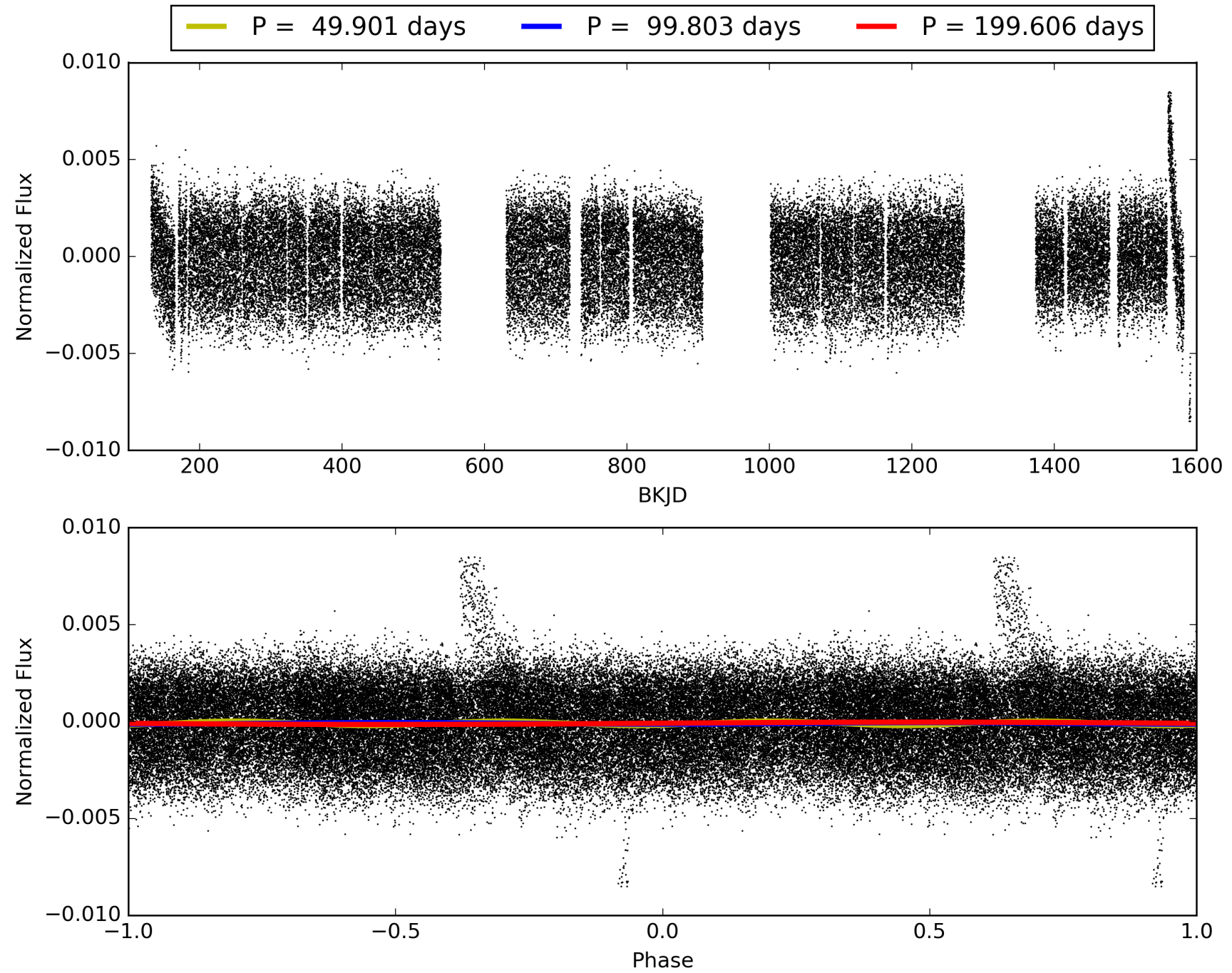
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:22:36 Z

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

TCE 003975085-04, PDC Light Curves

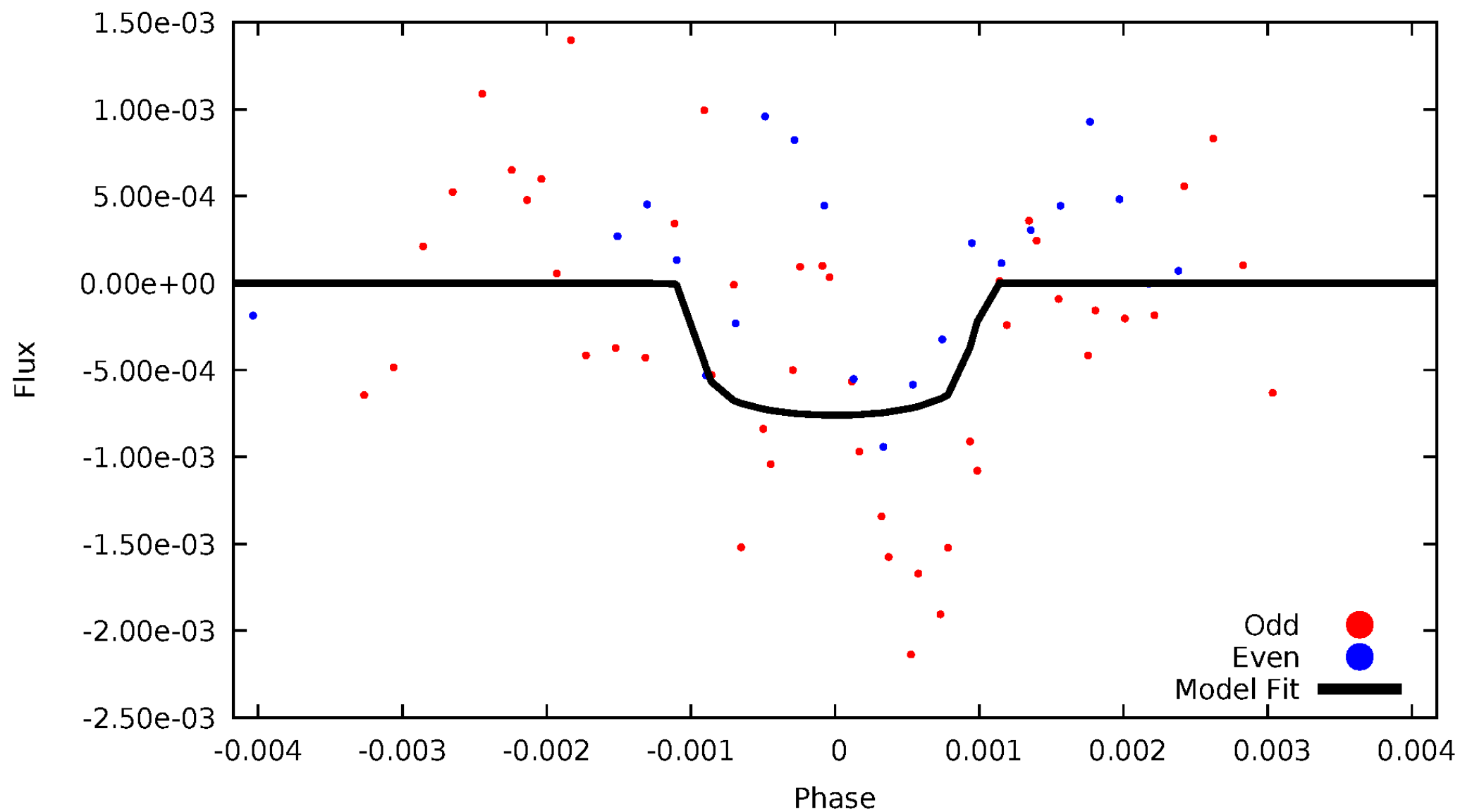


TCE 003975085-04



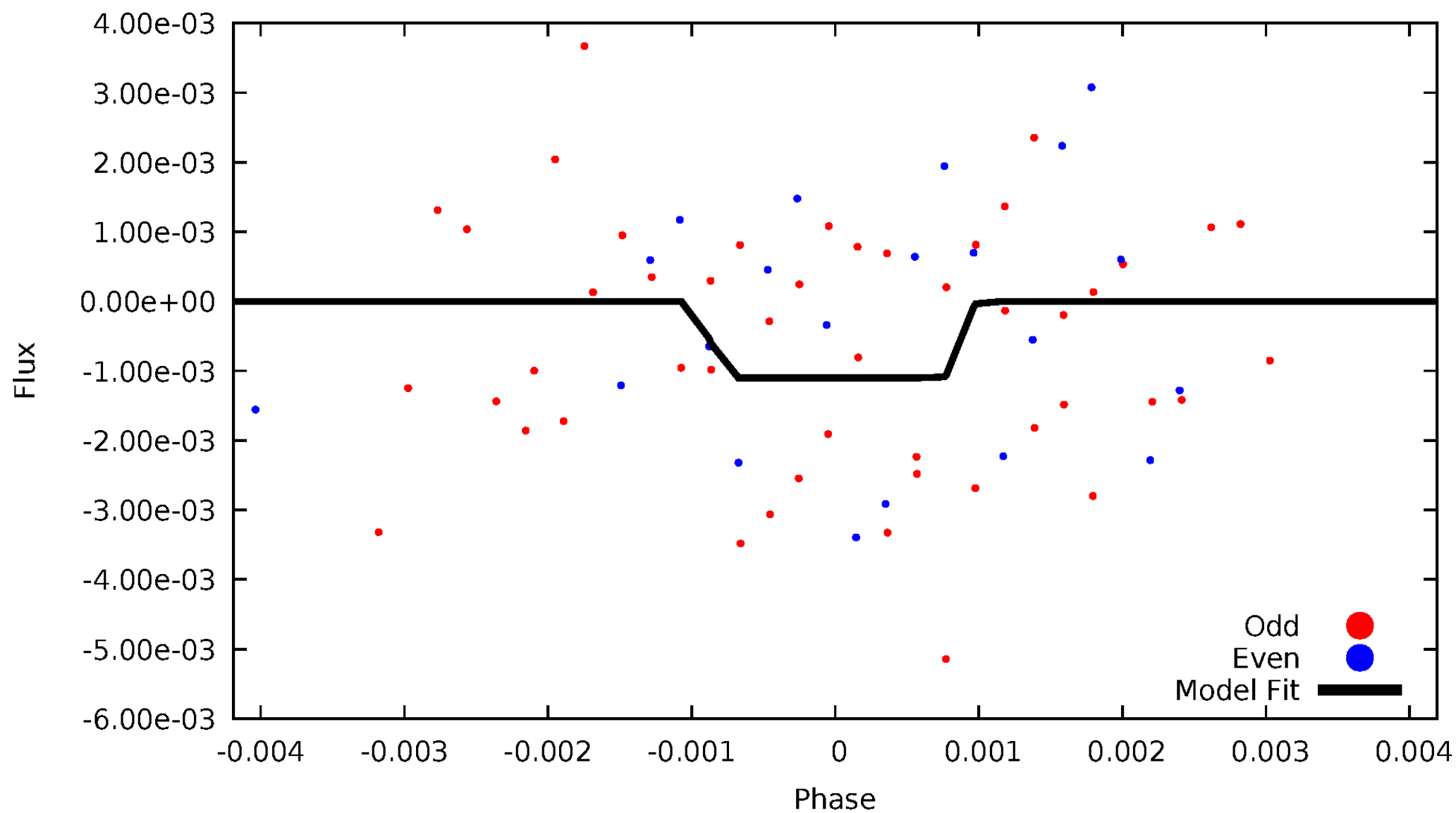
DV Odd/Even

TCE 003975085-04



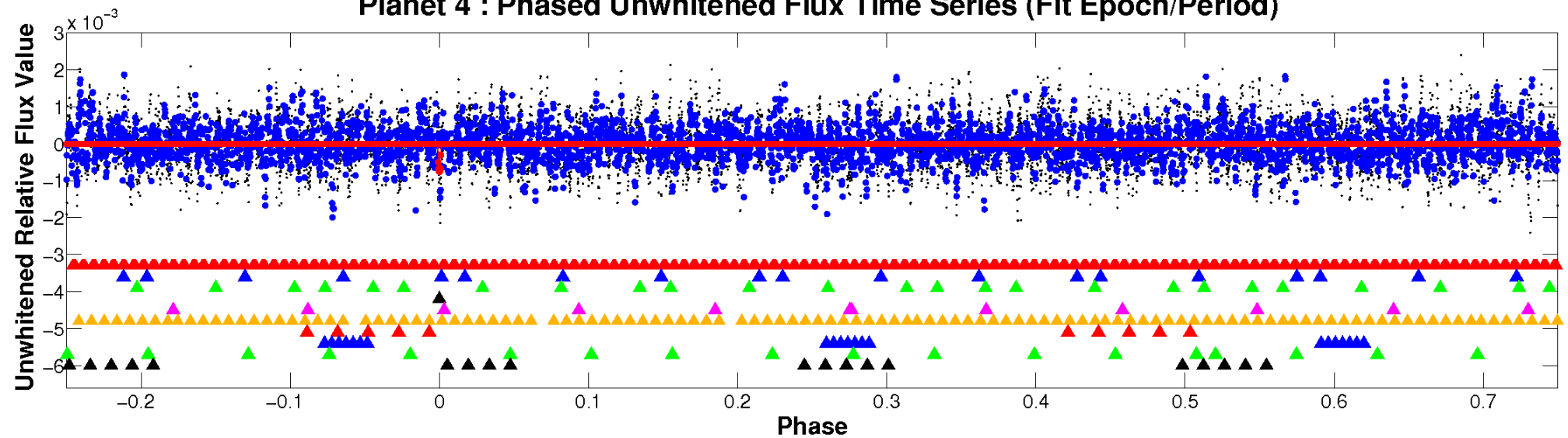
ALT Odd/Even

TCE 003975085-04

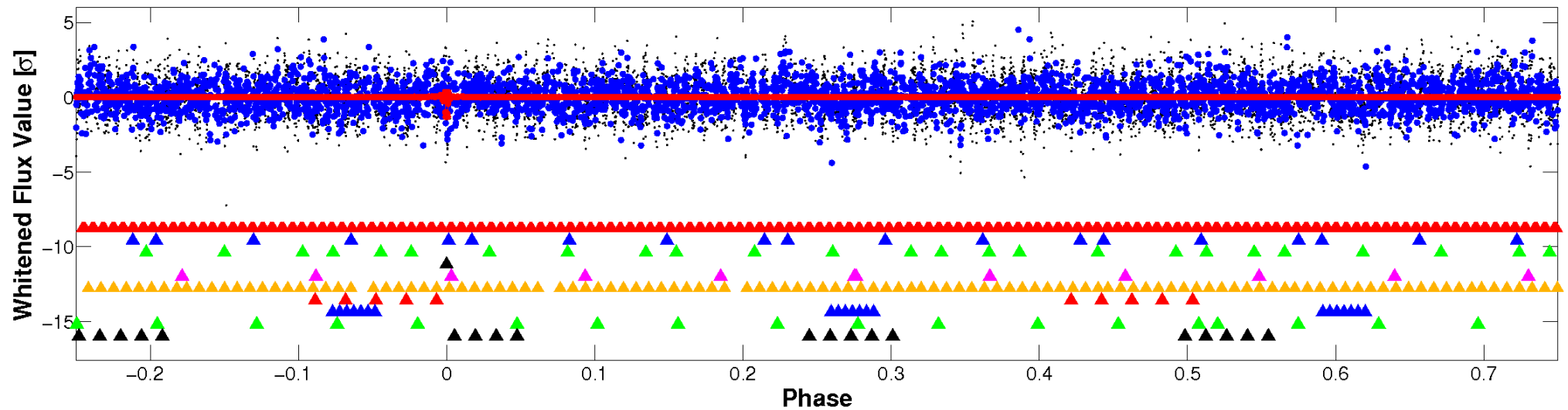


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

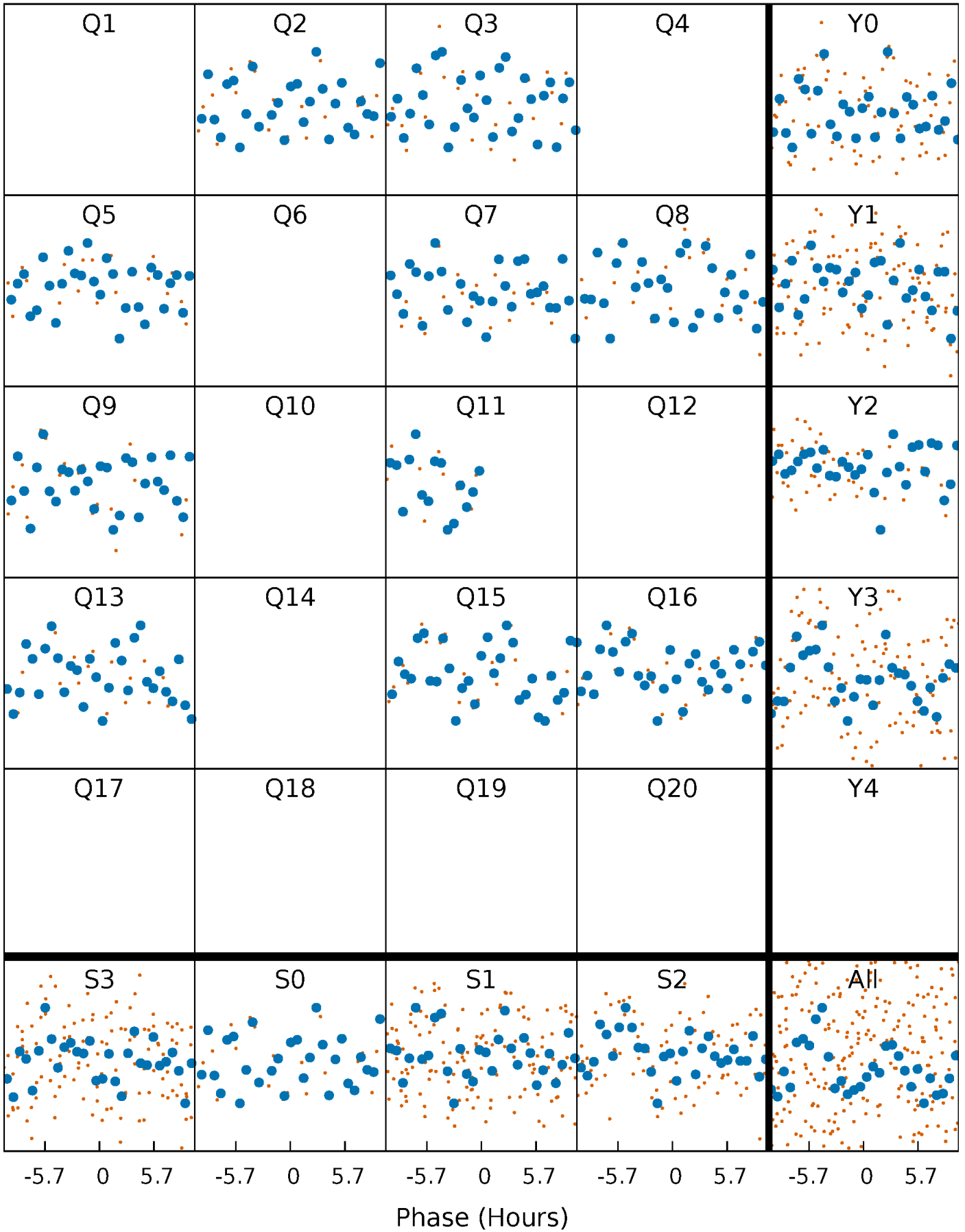


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



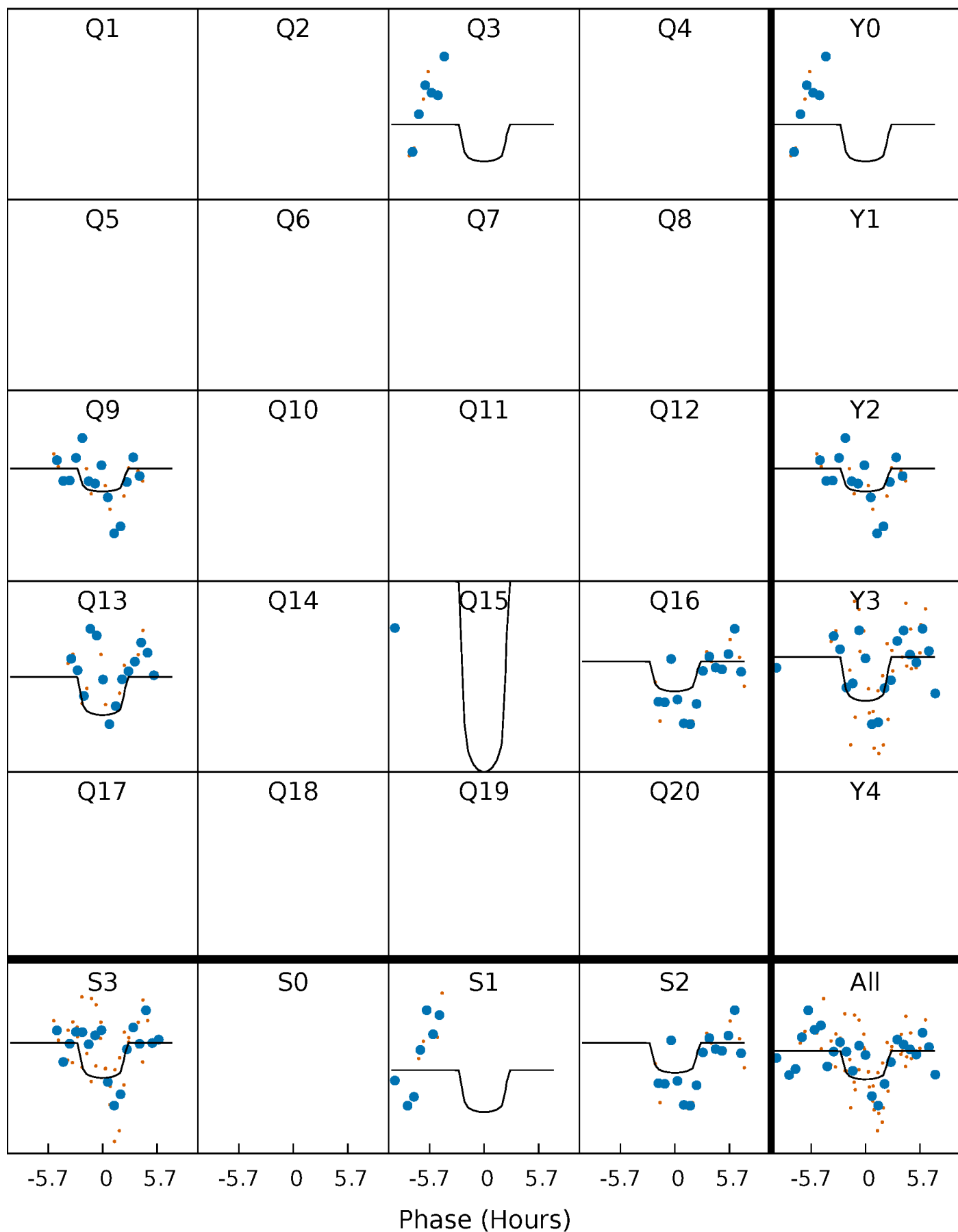
PDC Quarter-Phased Transit Curves

TCE 003975085-04 P= 99.802914 Days $T_0=200.101690$ (BKJD)



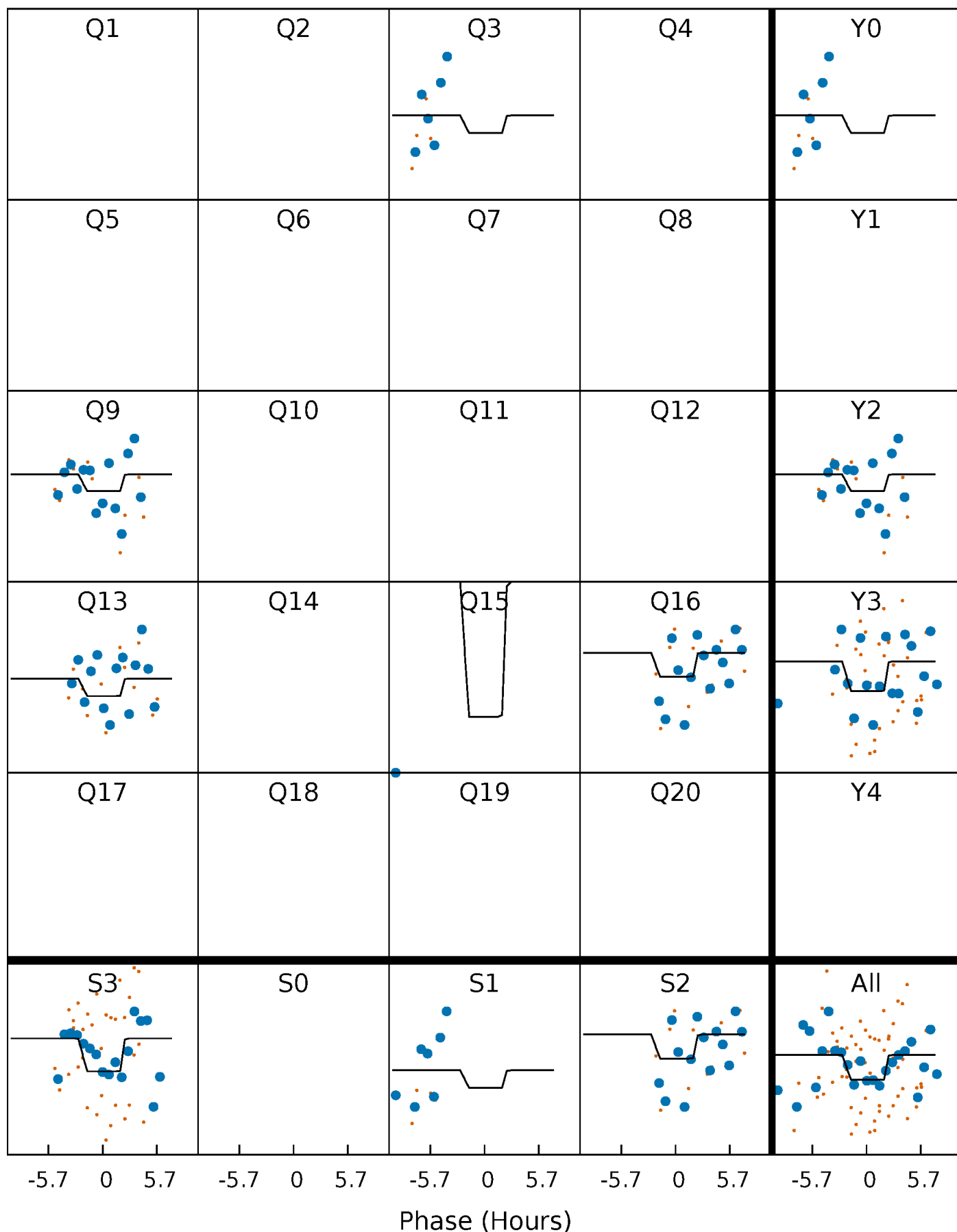
DV Quarter-Phased Transit Curves

TCE 003975085-04 P= 99.802914 Days $T_0=200.101690$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

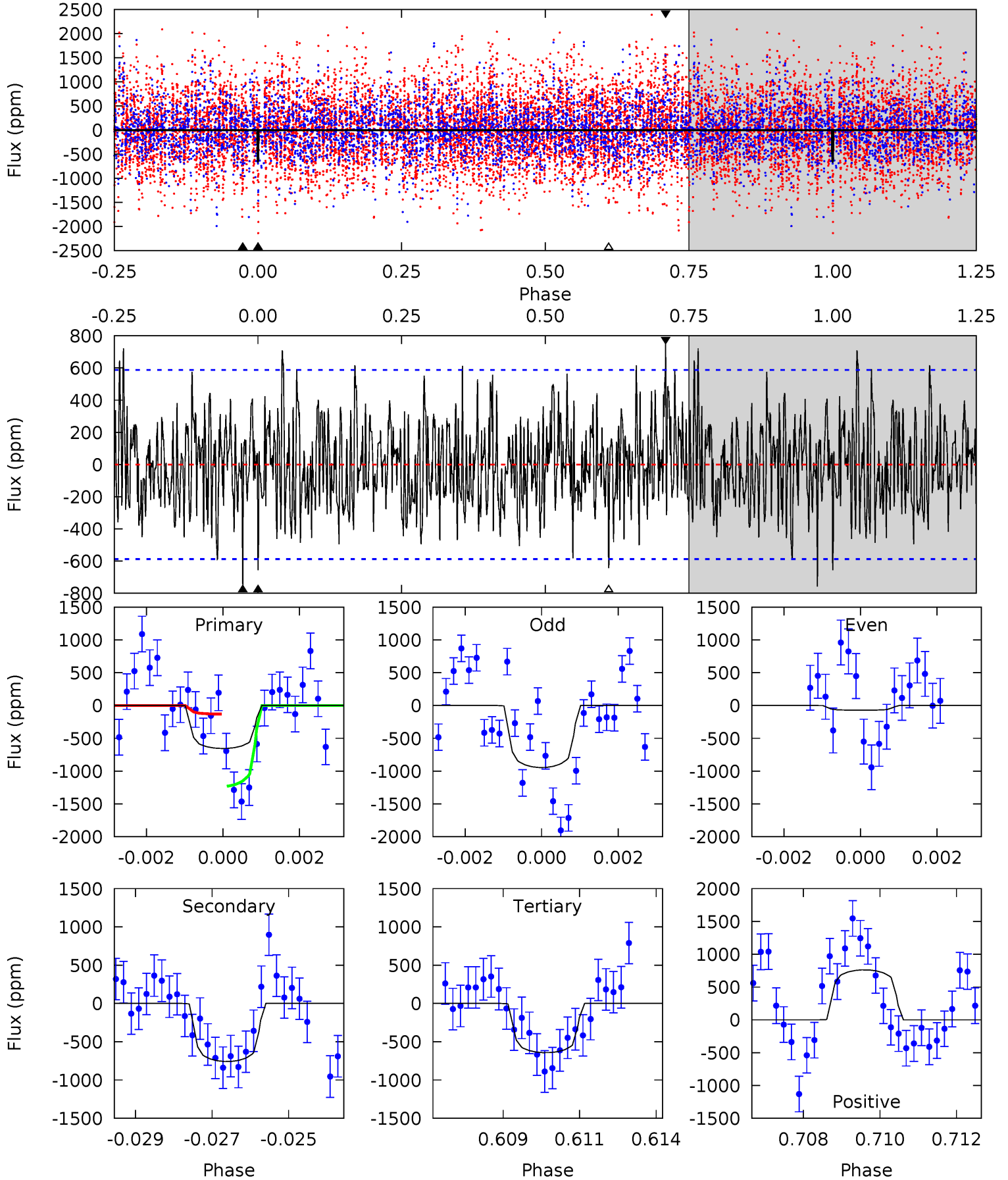
TCE 003975085-04 P= 99.803693 Days $T_0=200.092279$ (BKJD)



DV Model-Shift Uniqueness Test

003975085-04, P = 99.802914 Days, E = 100.298776 Days

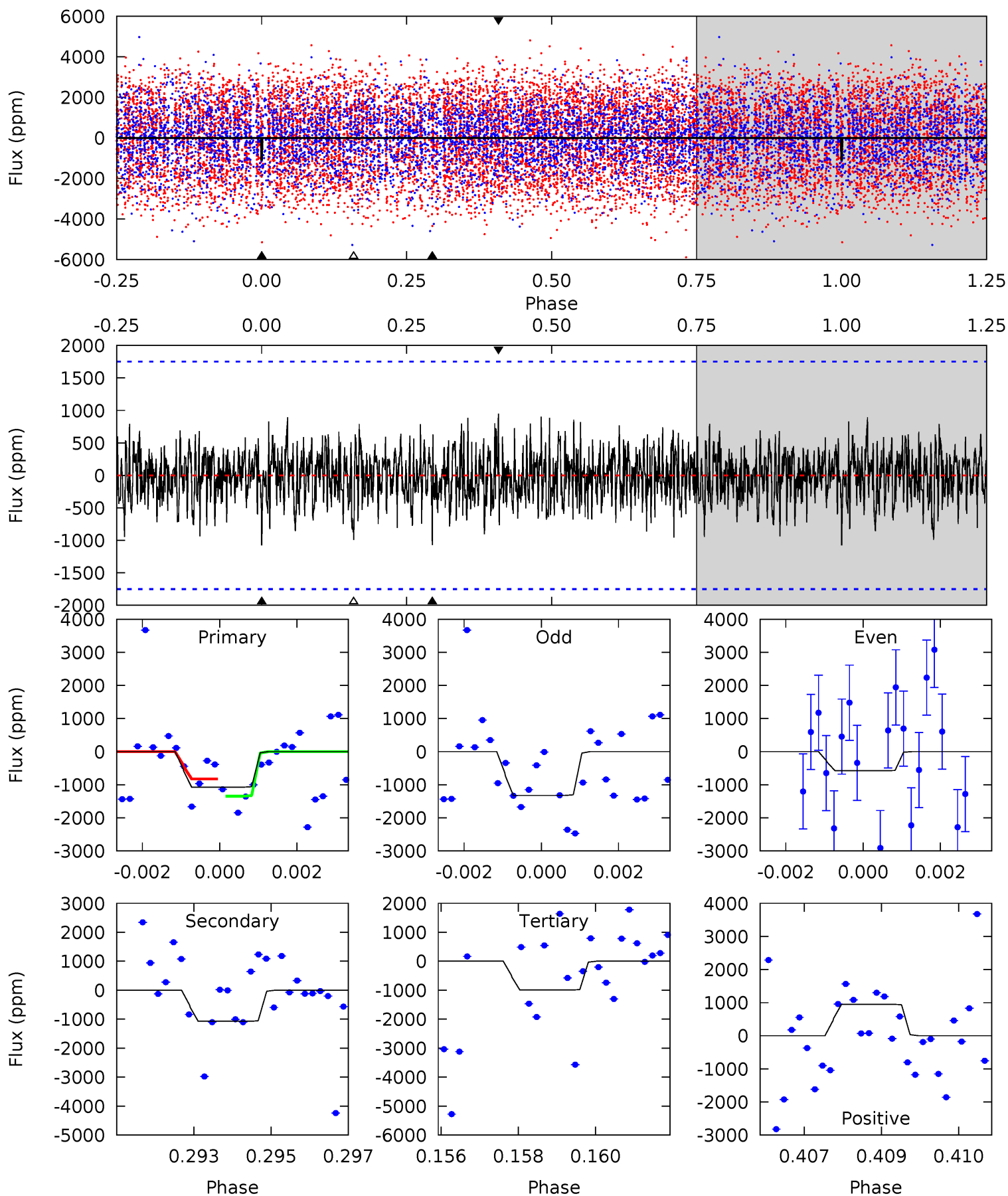
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.91	6.84	5.80	6.88	5.31	3.06	2.02	0.11	-0.96	1.04	-0.03	3.69	0.78	0.50	4.96



Alt Model-Shift Uniqueness Test

003975085-04, P = 99.803693 Days, E = 100.288586 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.28	3.27	3.03	2.90	5.34	3.11	0.94	0.25	0.38	0.24	0.37	1.07	0.92	0.47	0.80



Stellar Parameters For KIC 003975085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7757^{+69}_{-92}	$4.067^{+0.099}_{-0.121}$	$0.020^{+0.050}_{-0.200}$	$2.034^{+0.369}_{-0.302}$	$1.760^{+0.149}_{-0.164}$	$0.295^{+0.135}_{-0.109}$
	+1%/-1%	+2%/-3%	+250%/-1000%	+18%/-15%	+8%/-9%	+46%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003975085-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-758 ± 111	$6.75^{+4.70}_{-3.87}$	959^{+43}_{-39}	7330^{+6089}_{-1733}	2432^{+10628}_{-1624}
Alt.	-1071 ± 328	$7.79^{+4.33}_{-4.30}$	957^{+42}_{-38}	7398^{+5665}_{-1659}	2453^{+9410}_{-1542}

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 $A_{obs} \gg 1.0$

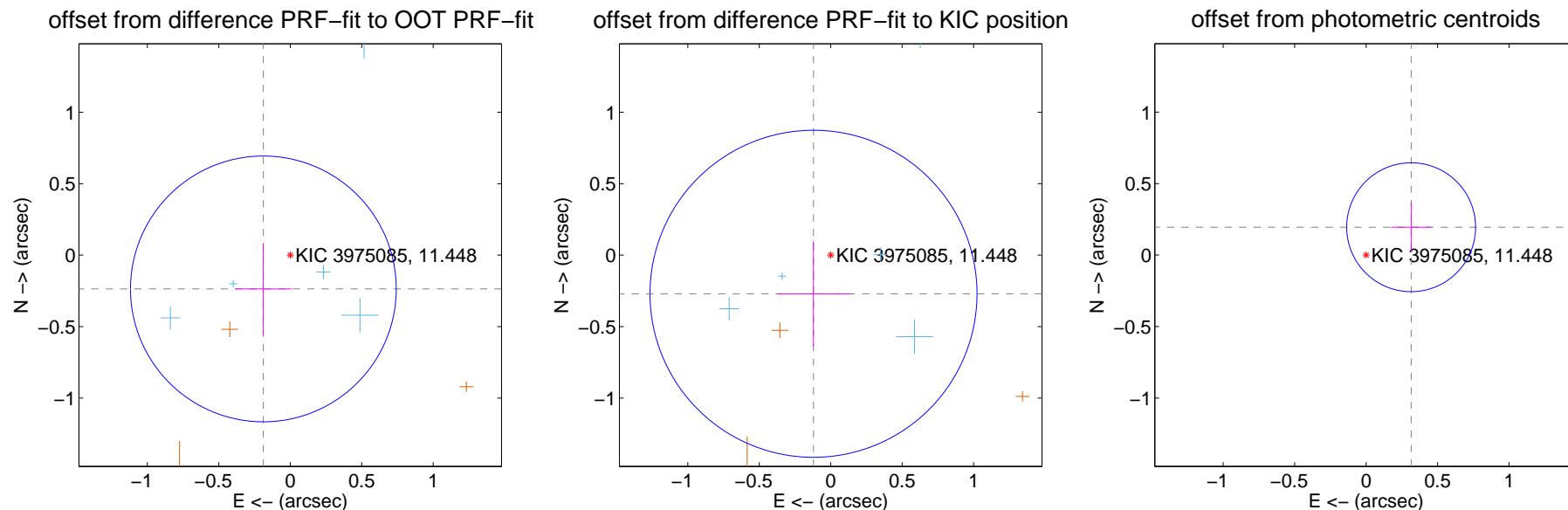
DV Centroid Data

Supplemental centroid analysis for 003975085-04. **Kepler magnitude: 11.45.** Transit SNR 5.58

There are 5 quarters with good PRF difference image offsets

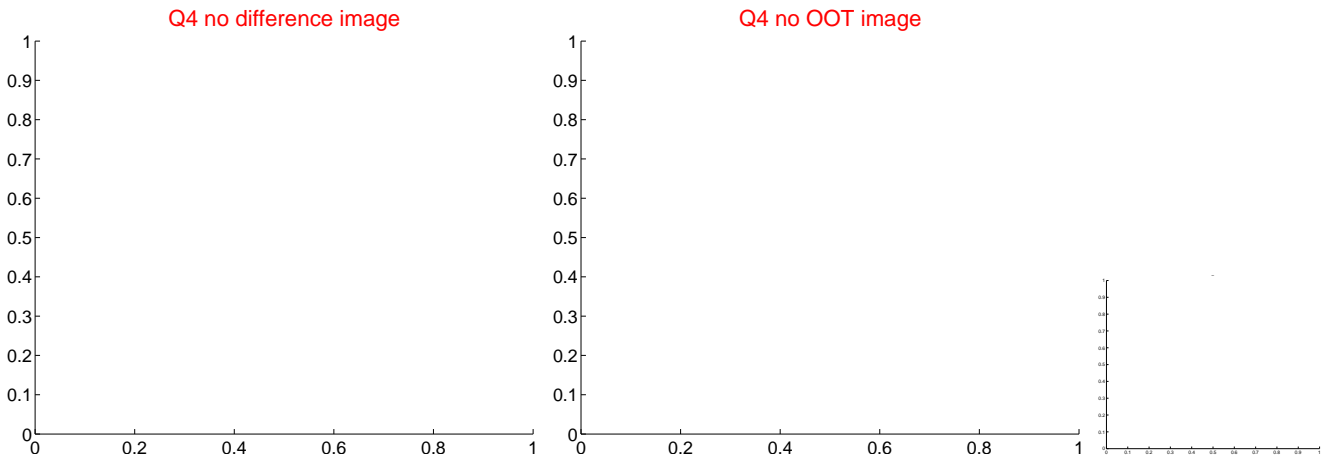
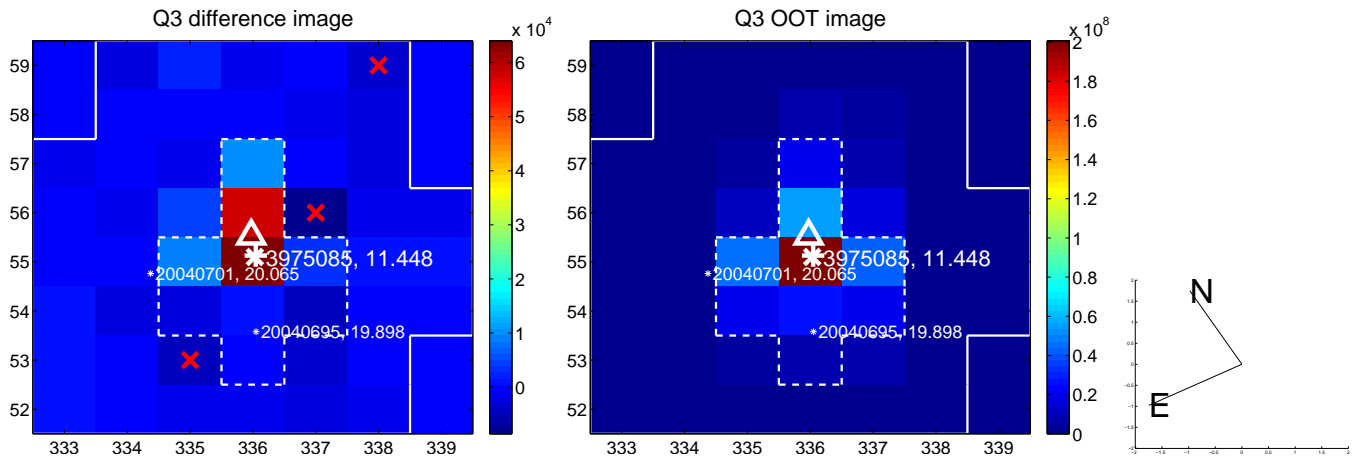
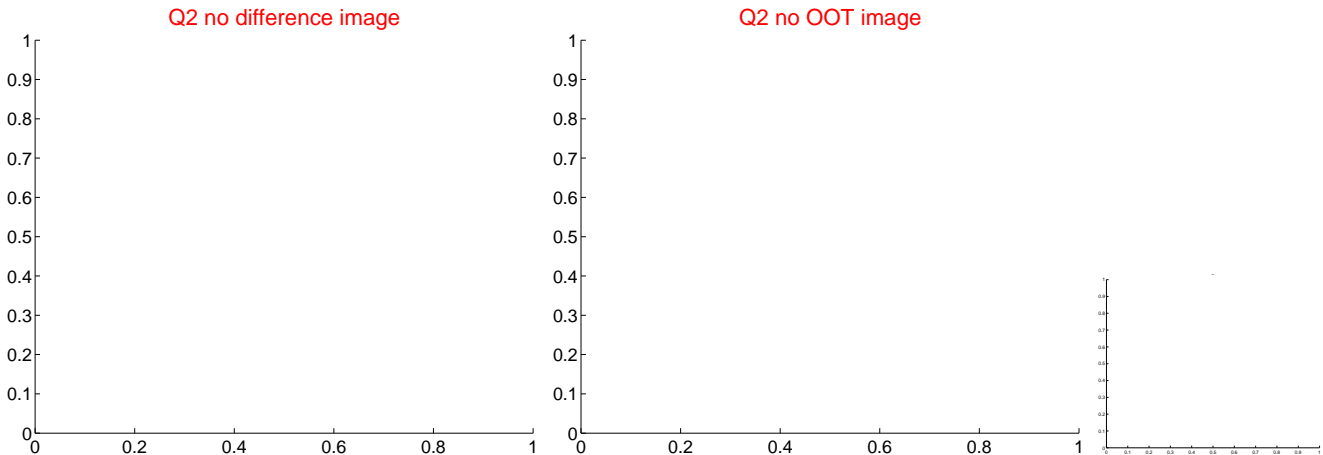
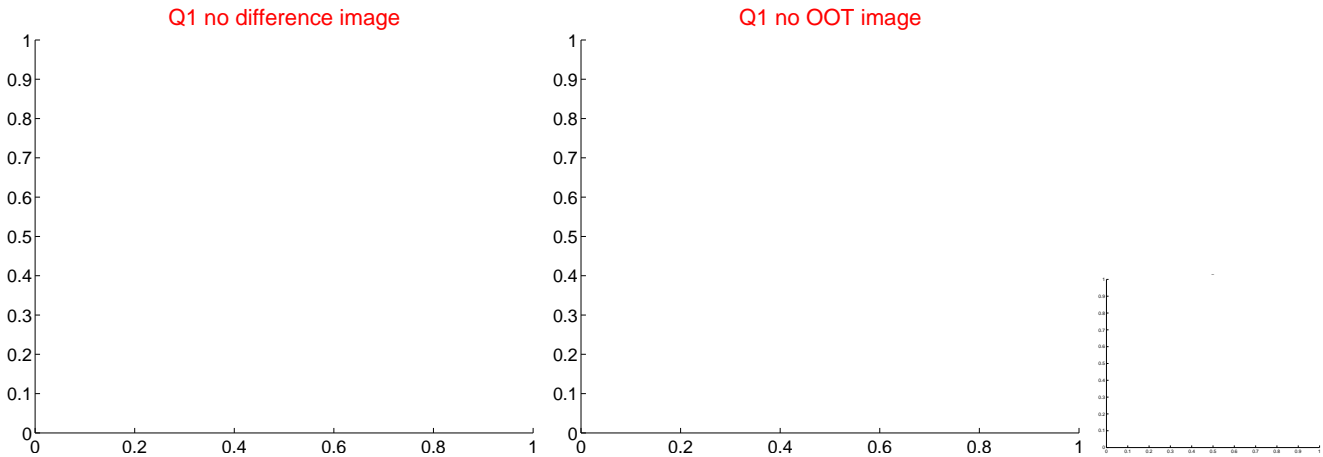
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.302 ± 0.310	0.97	0.188 ± 0.198	-0.236 ± 0.320
PRF-fit source offset from KIC position	0.296 ± 0.381	0.78	0.120 ± 0.255	-0.270 ± 0.367
photometric centroid source offset	0.37 ± 0.15	2.46	-0.31 ± 0.14	0.19 ± 0.17

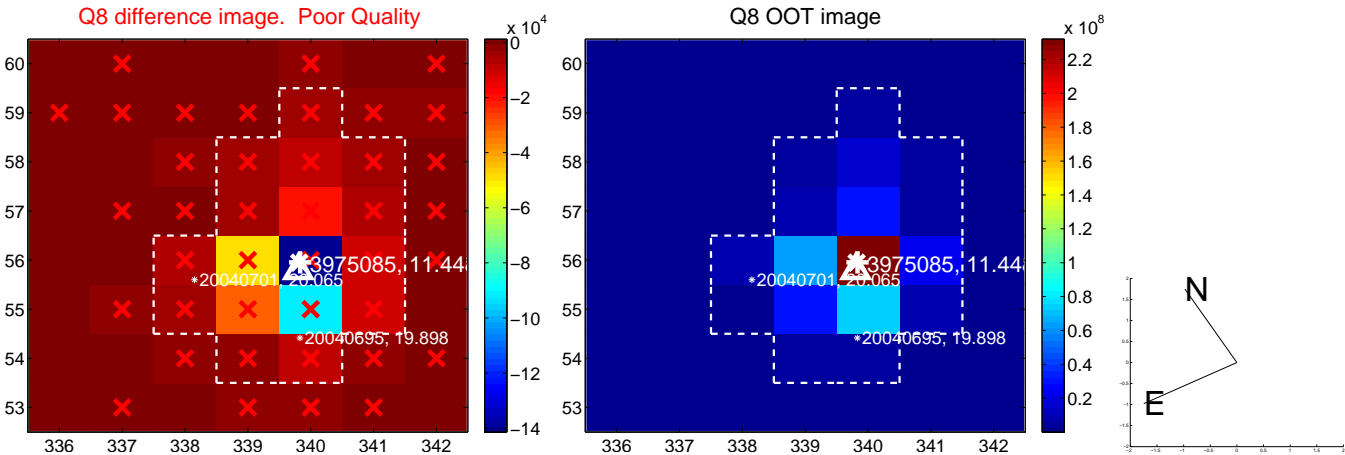
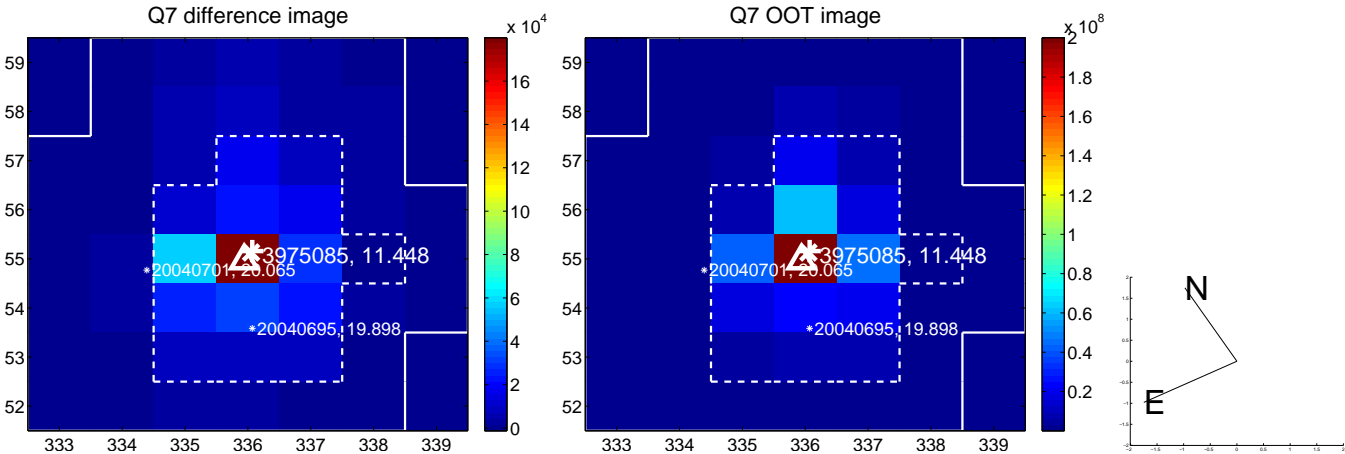
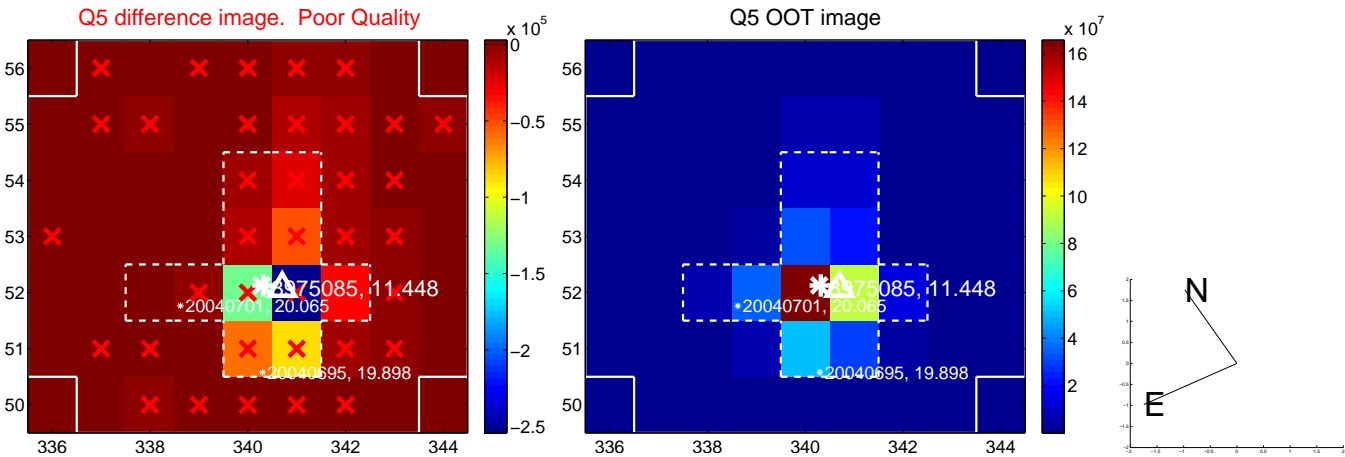


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

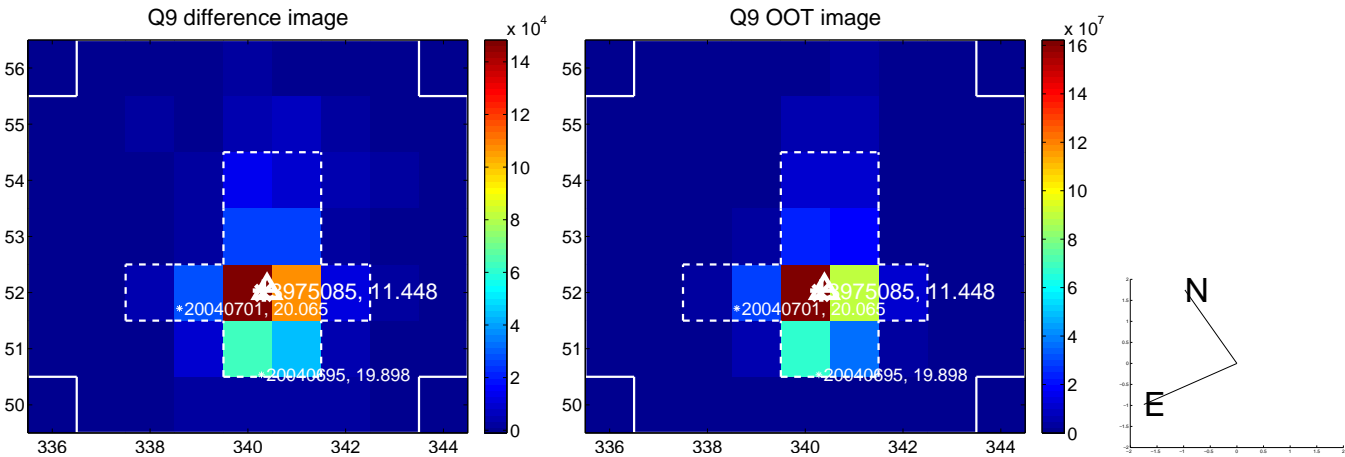
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



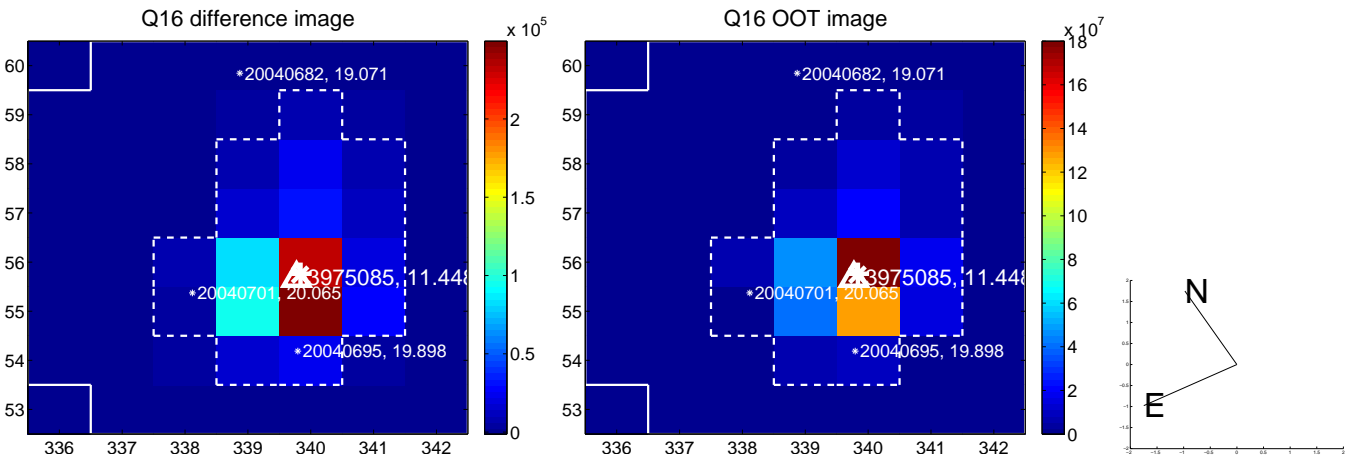
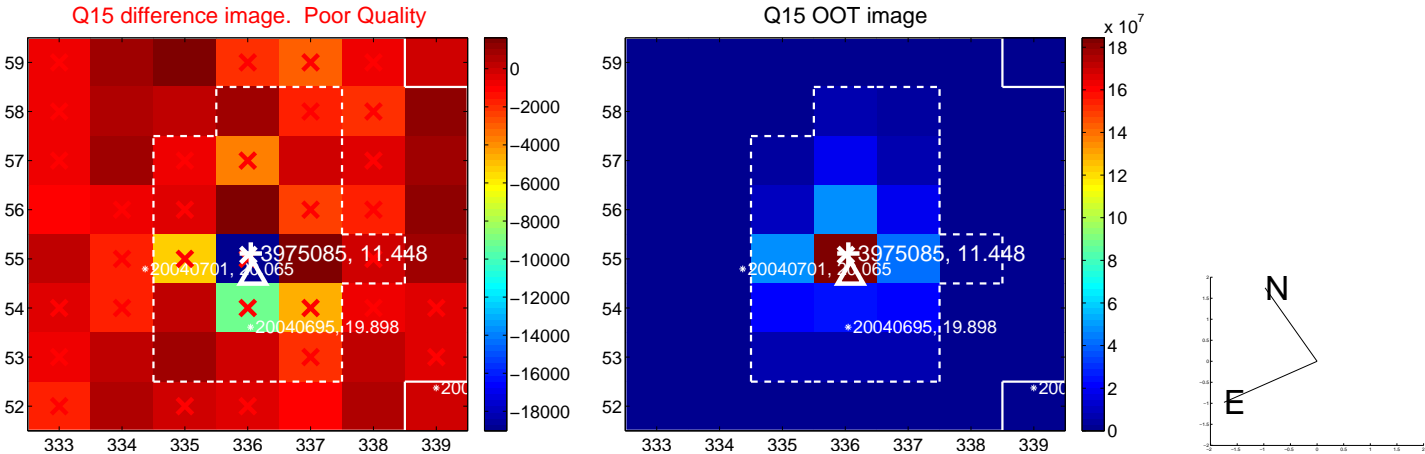
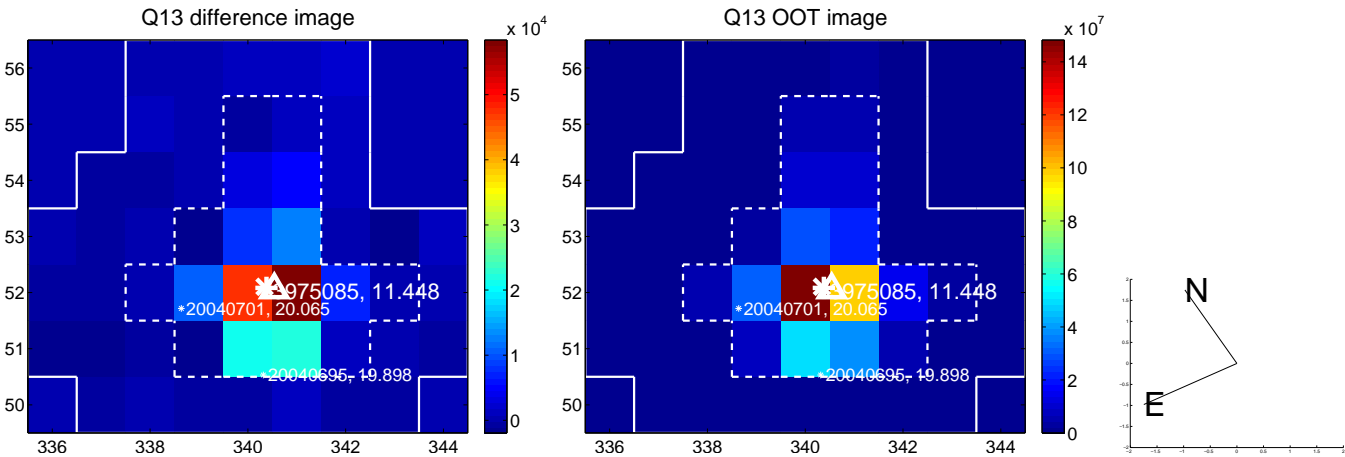
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



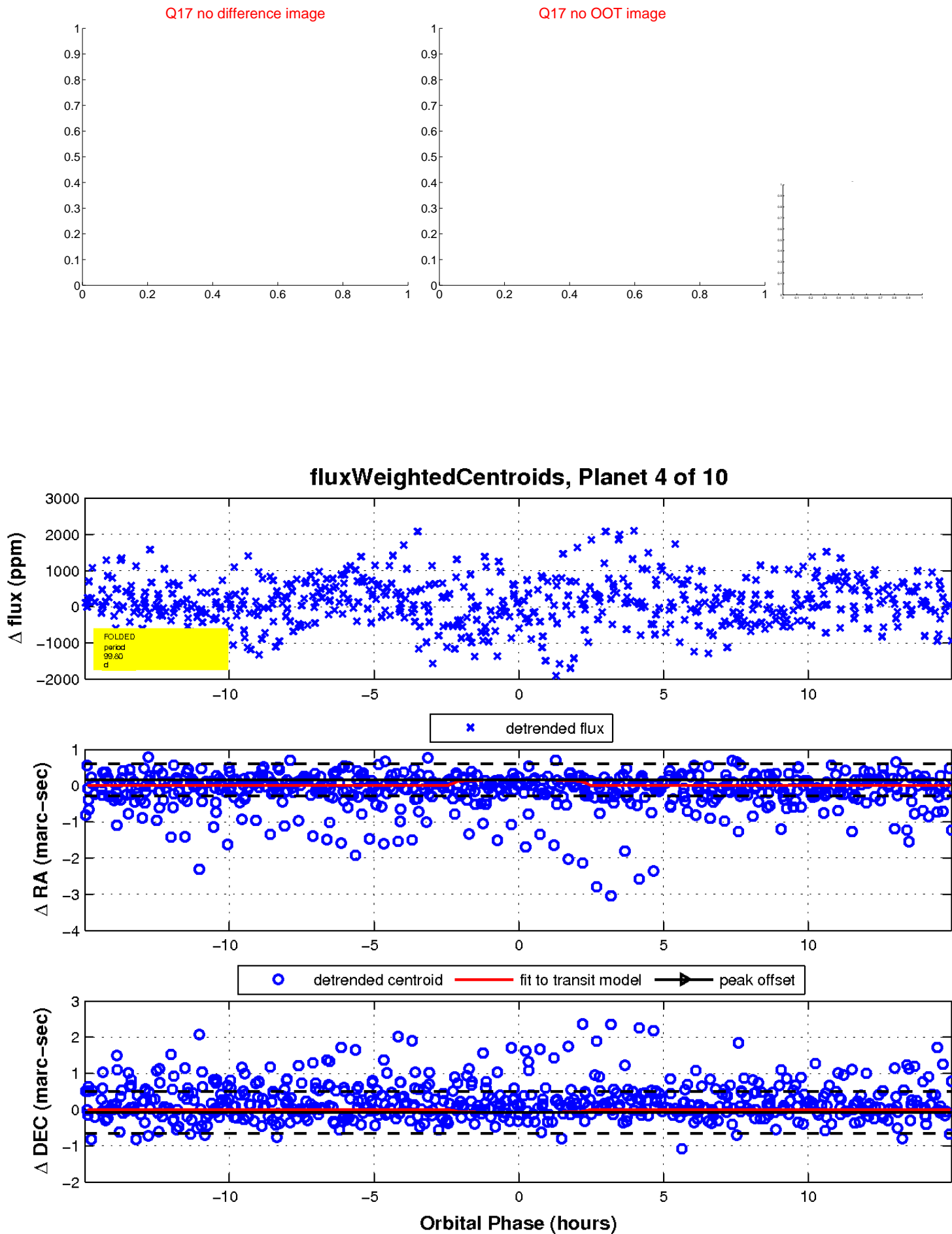
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

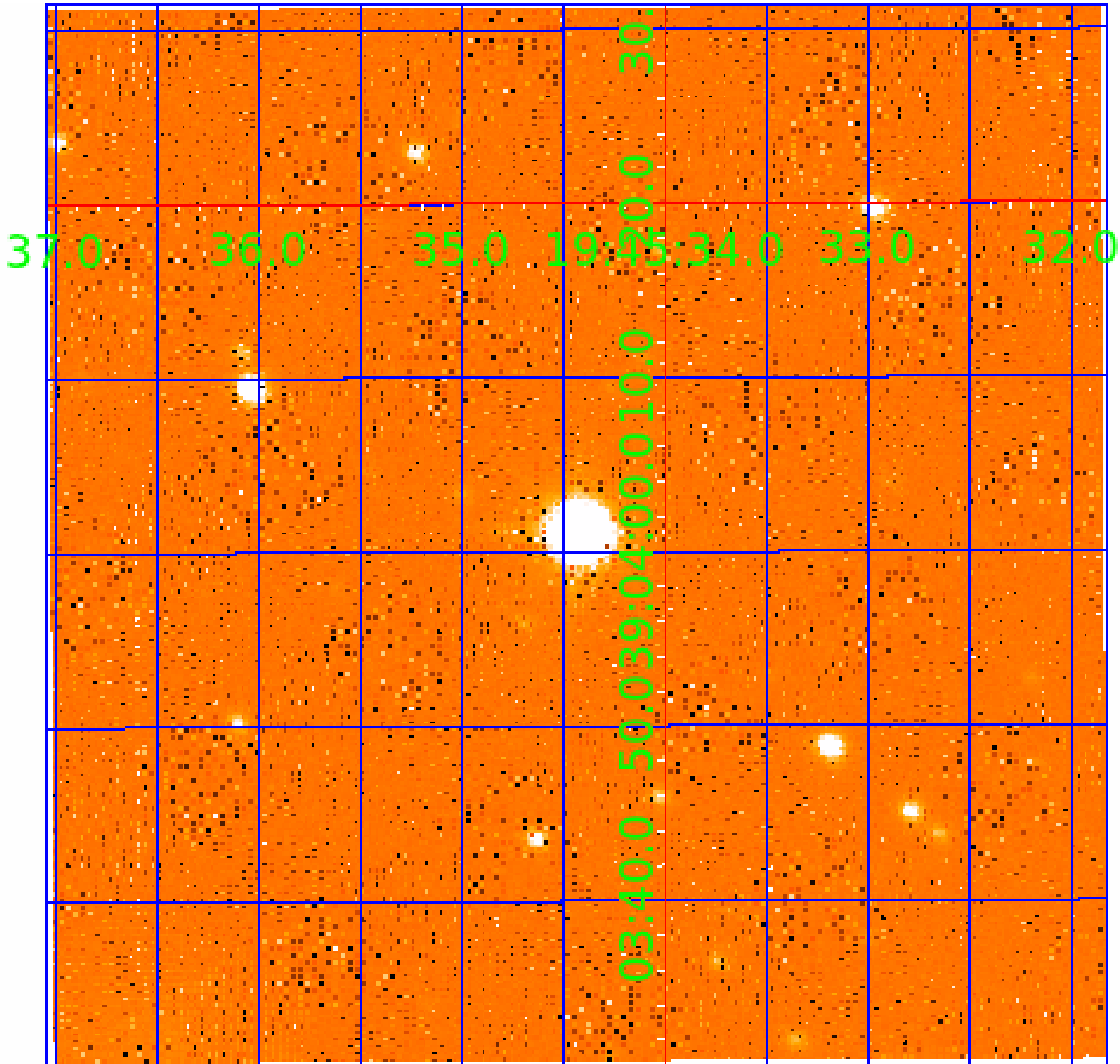


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003975085

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})
003975085-01	OBS	No	2.009828	131.961572	80.5	12.652	9.8	9.5	2.03	7757	2.11	9470.18
003975085-02	OBS	No	78.528369	142.985487	1568.0	4.926	12.0	11.4	2.03	7757	10.18	71.43
003975085-03	OBS	No	58.828151	136.843263	478.0	9.473	10.1	7.2	2.03	7757	4.85	104.98
003975085-04	OBS	No	99.802914	200.101690	760.0	4.995	8.7	5.6	2.03	7757	6.18	51.88
003975085-06	OBS	No	12.581793	132.266373	218.4	25.656	8.5	8.0	2.03	7757	3.26	820.82
003975085-07	OBS	No	150.726597	191.249685	243.4	7.705	9.6	4.0	2.03	7757	3.46	29.94
003975085-08	OBS	No	66.693977	192.425115	1047.8	3.546	8.0	7.2	2.03	7757	7.62	88.81
003975085-09	OBS	No	82.265583	150.962779	1145.8	2.558	7.8	8.3	2.03	7757	8.23	67.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003975085-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003975085-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

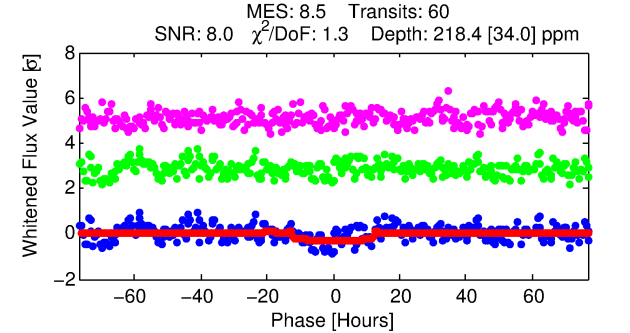
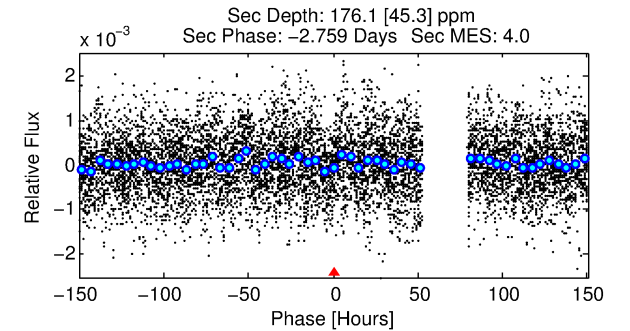
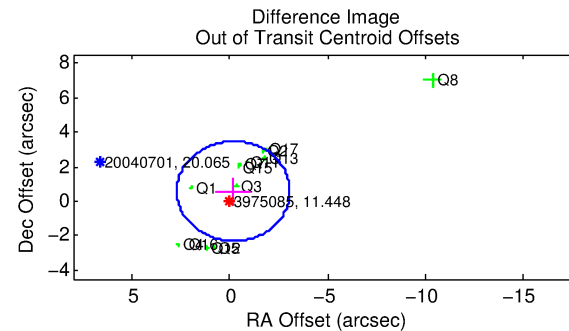
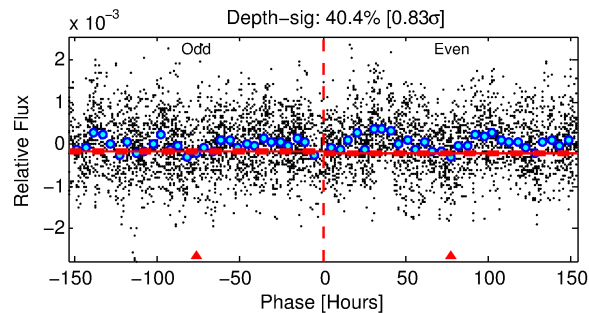
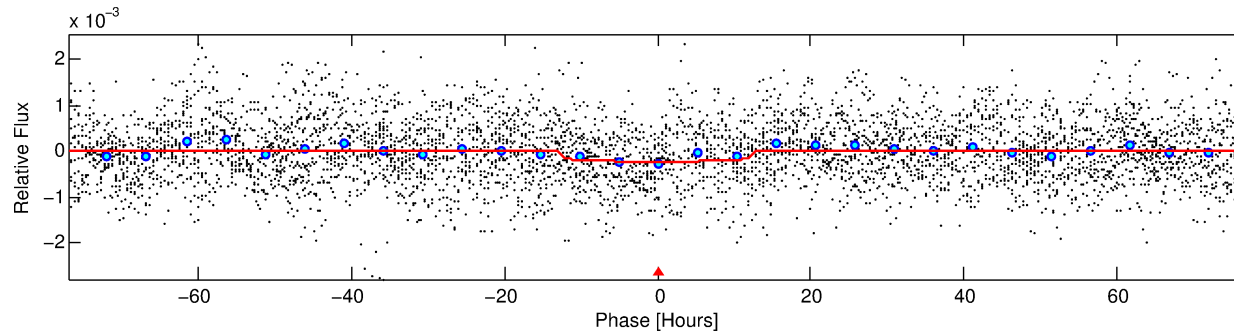
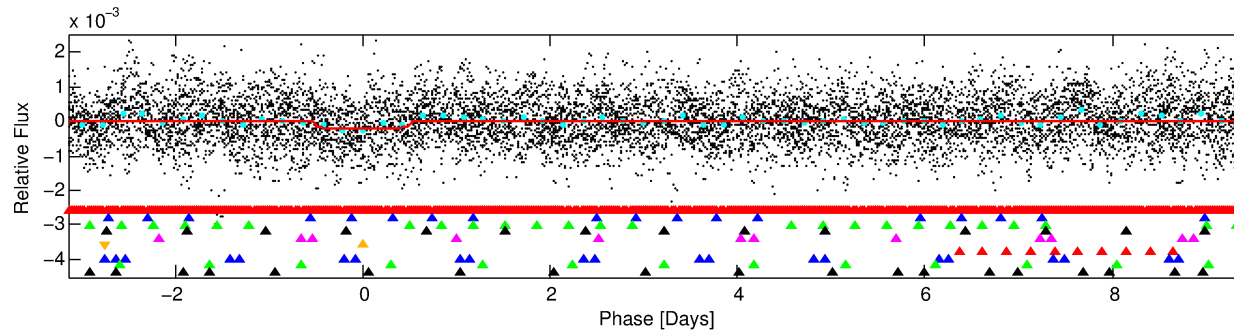
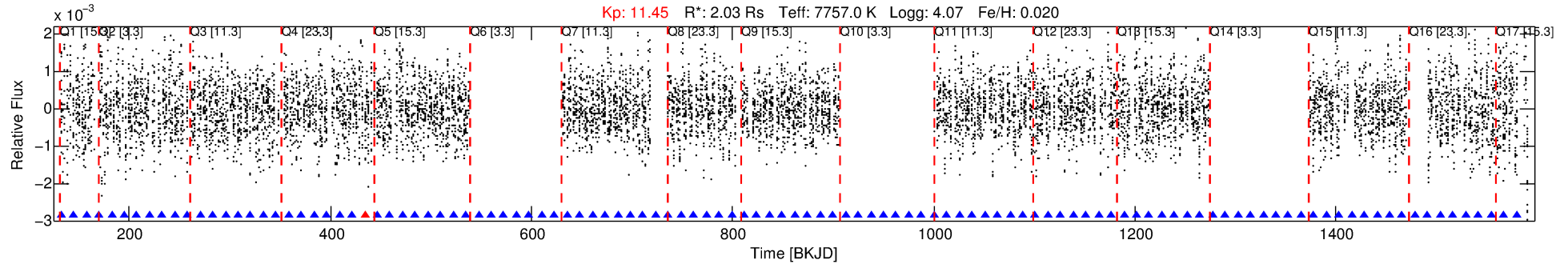
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003975085-06

No Significant Match Found

DV One-Page Summary

KIC: 3975085 Candidate: 6 of 10 Period: 12.582 d



DV Fit Results:

Period = 12.58179 [0.00045] d
Epoch = 132.2664 [0.0274] BKJD
Rp/R* = 0.0147 [0.0023]
a/R* = 2.71 [1.95]
b = 0.75 [0.50]
Seff = 820.82 [186.05]
Teq = 1365 [77] K
Rp = 3.26 [0.78] Re
a = 0.1279 [0.0195] AU
Ag = 149.31 [69.14] [2.14 σ]
Teffp = 7376 [755] K [7.92 σ]

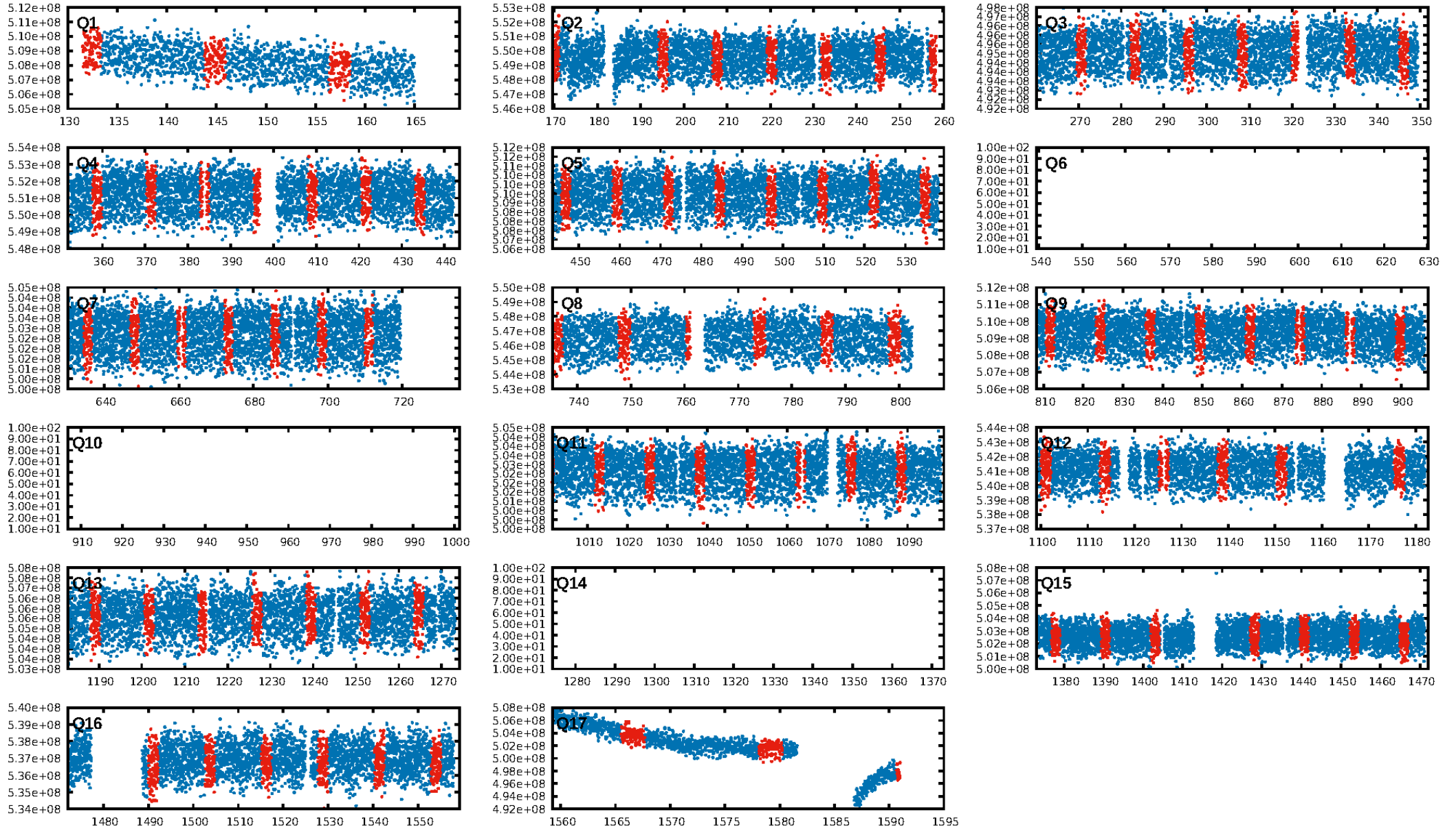
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.87 σ]
LongPeriod-sig: 100.0% [40.58 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.52e-14
RollingBand-fgt: 0.98 [55/56]
GhostDiagnostic-chr: -1.949
Centroid-sig: 2.5%
Centroid-so: 0.171 arcsec [1.36 σ]
OotOffset-rm: 0.609 arcsec [0.63 σ]
KicOffset-rm: 0.706 arcsec [0.69 σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 0.00 [0/14]

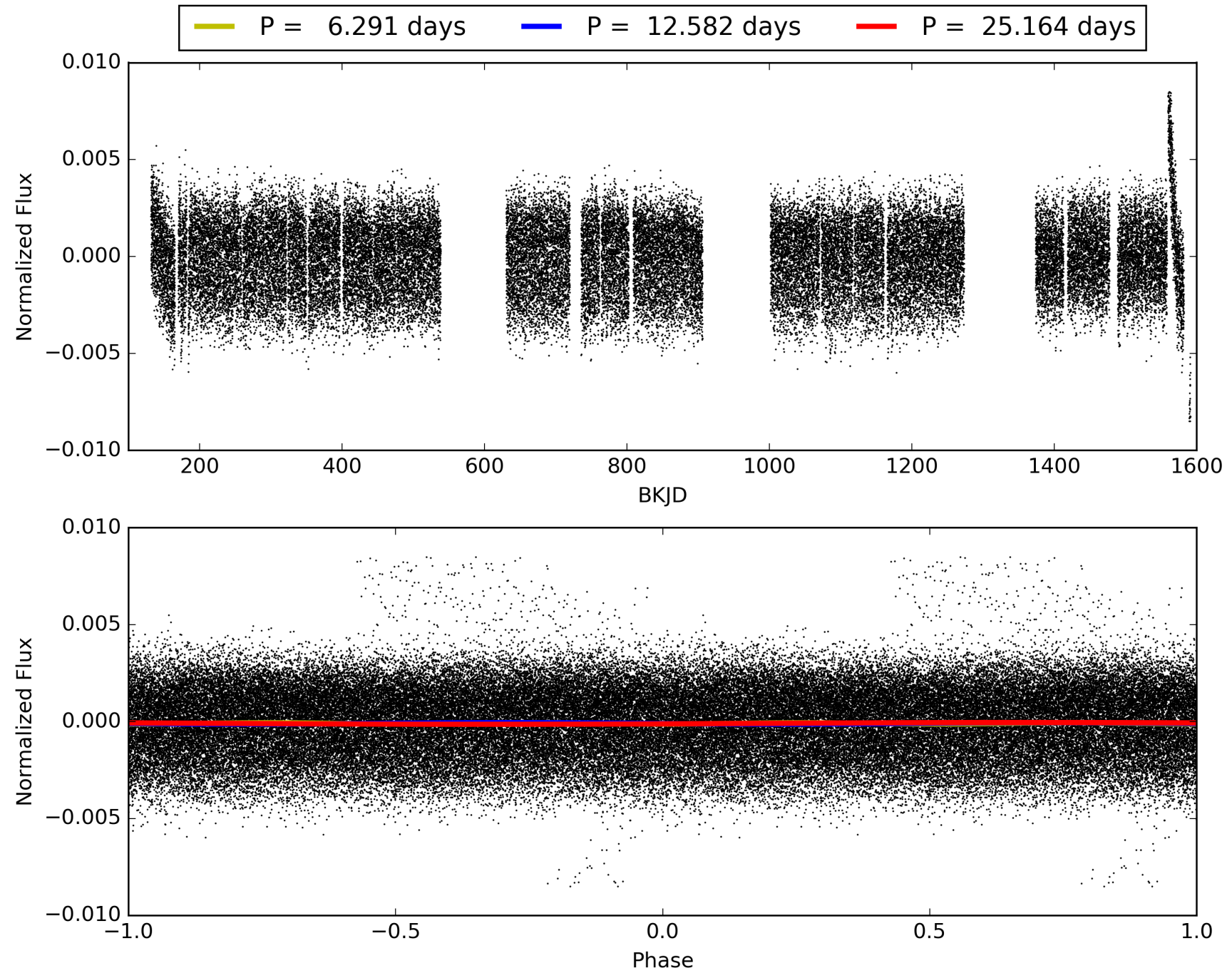
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:22:45 Z

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

TCE 003975085-06, PDC Light Curves

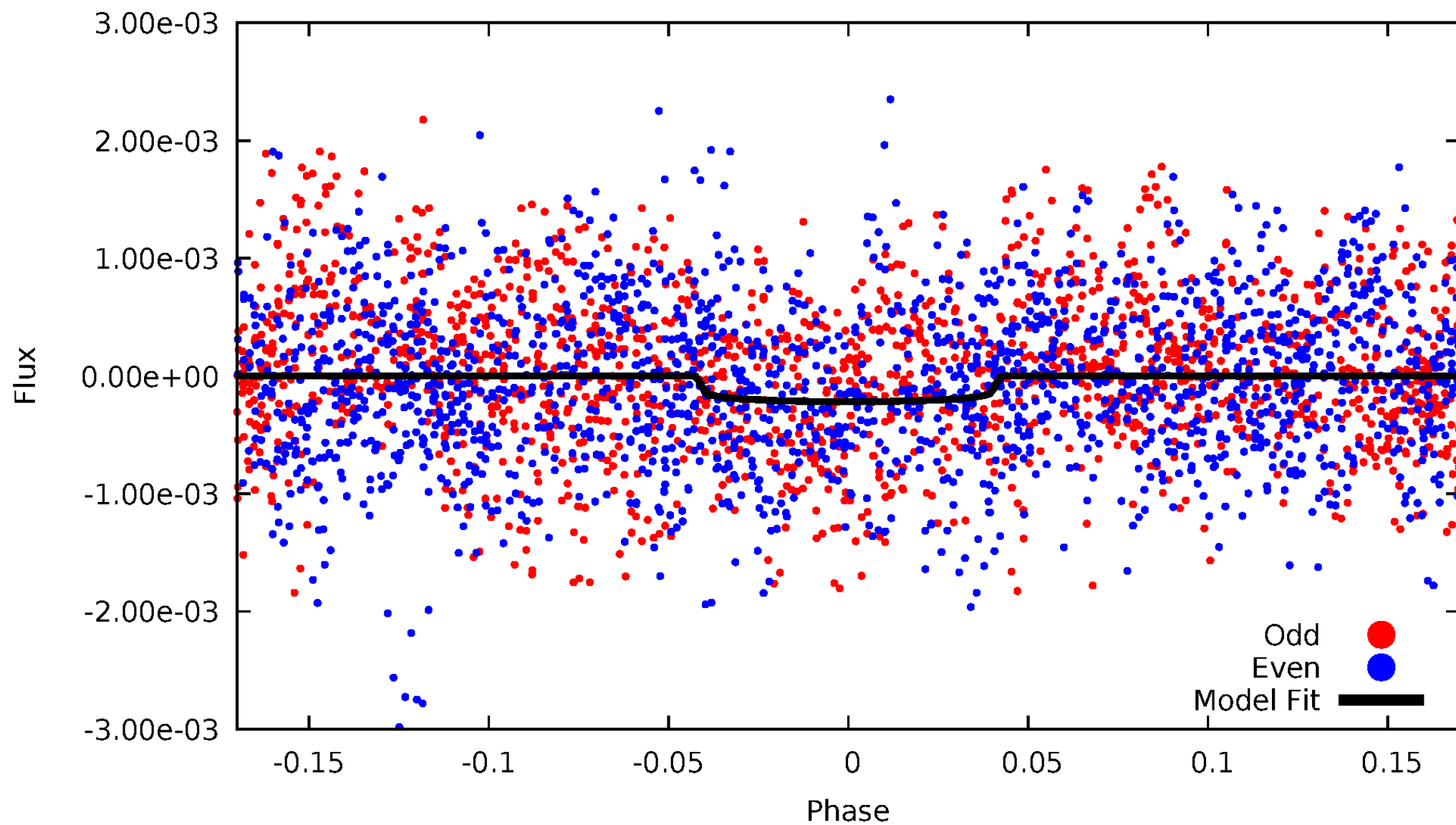


TCE 003975085-06



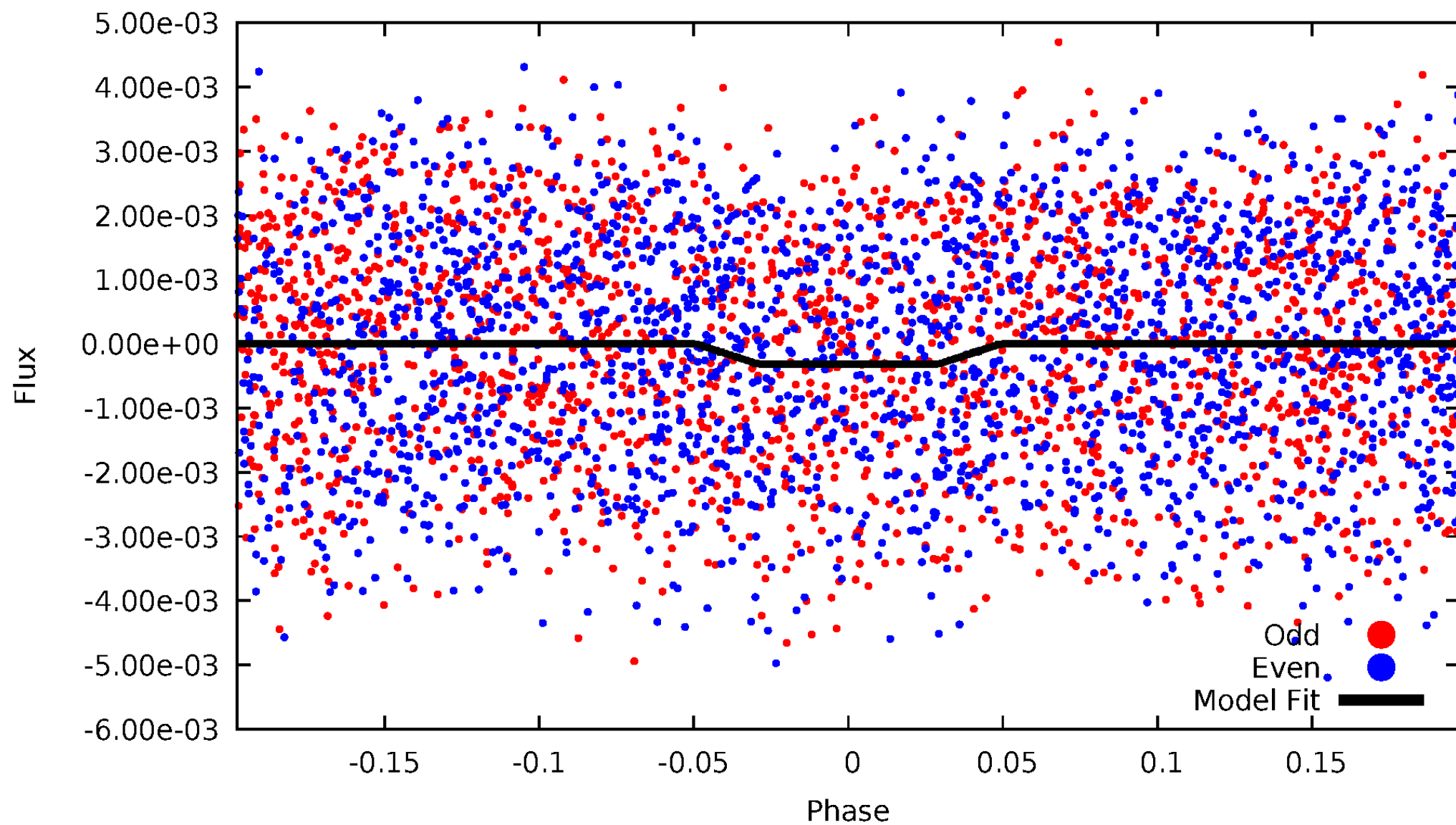
DV Odd/Even

TCE 003975085-06



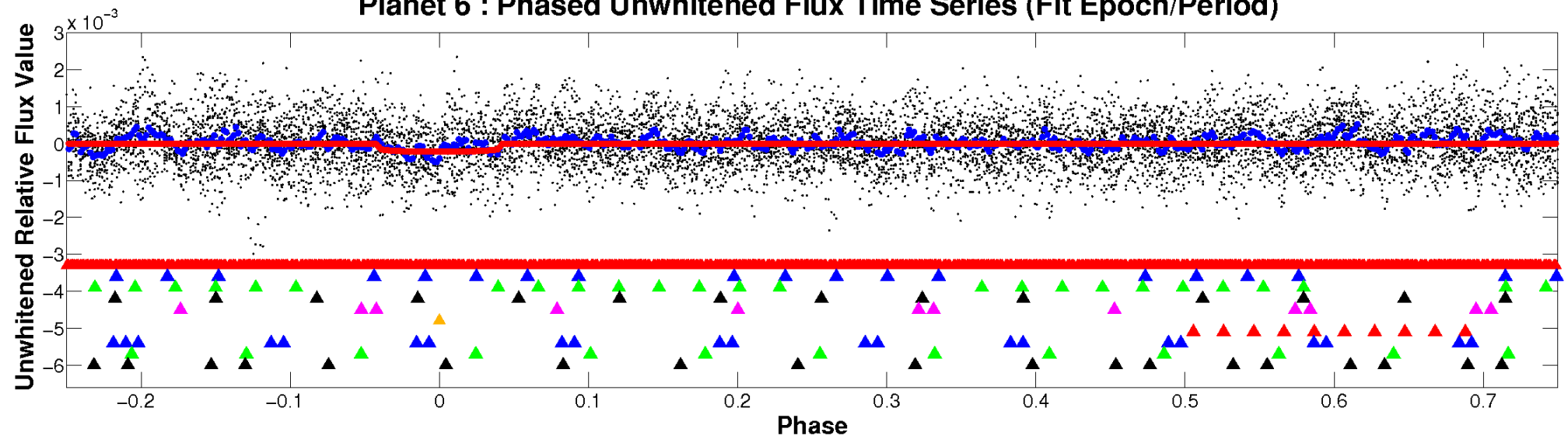
ALT Odd/Even

TCE 003975085-06

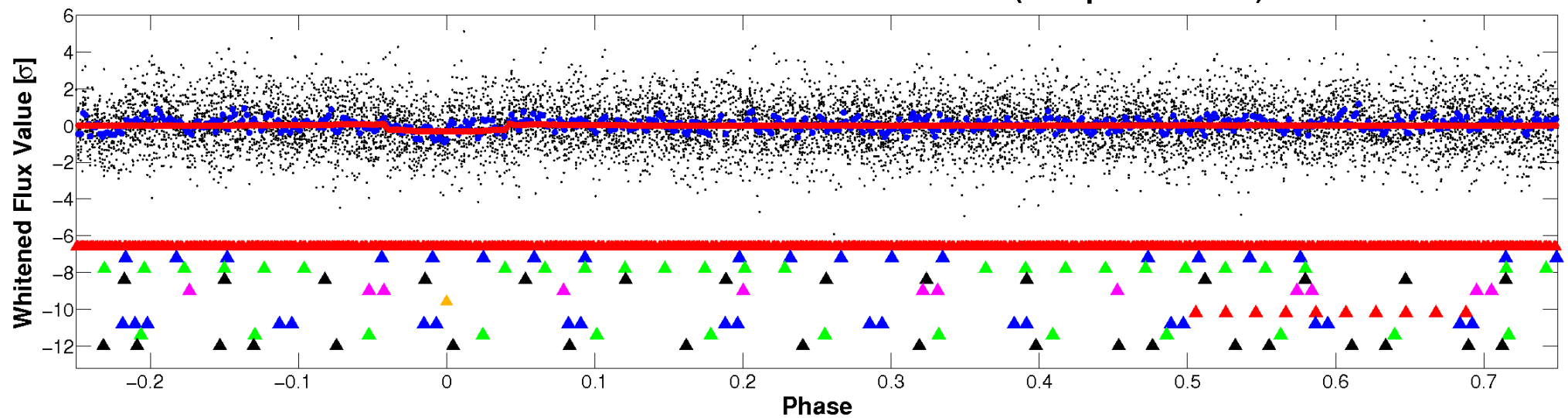


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

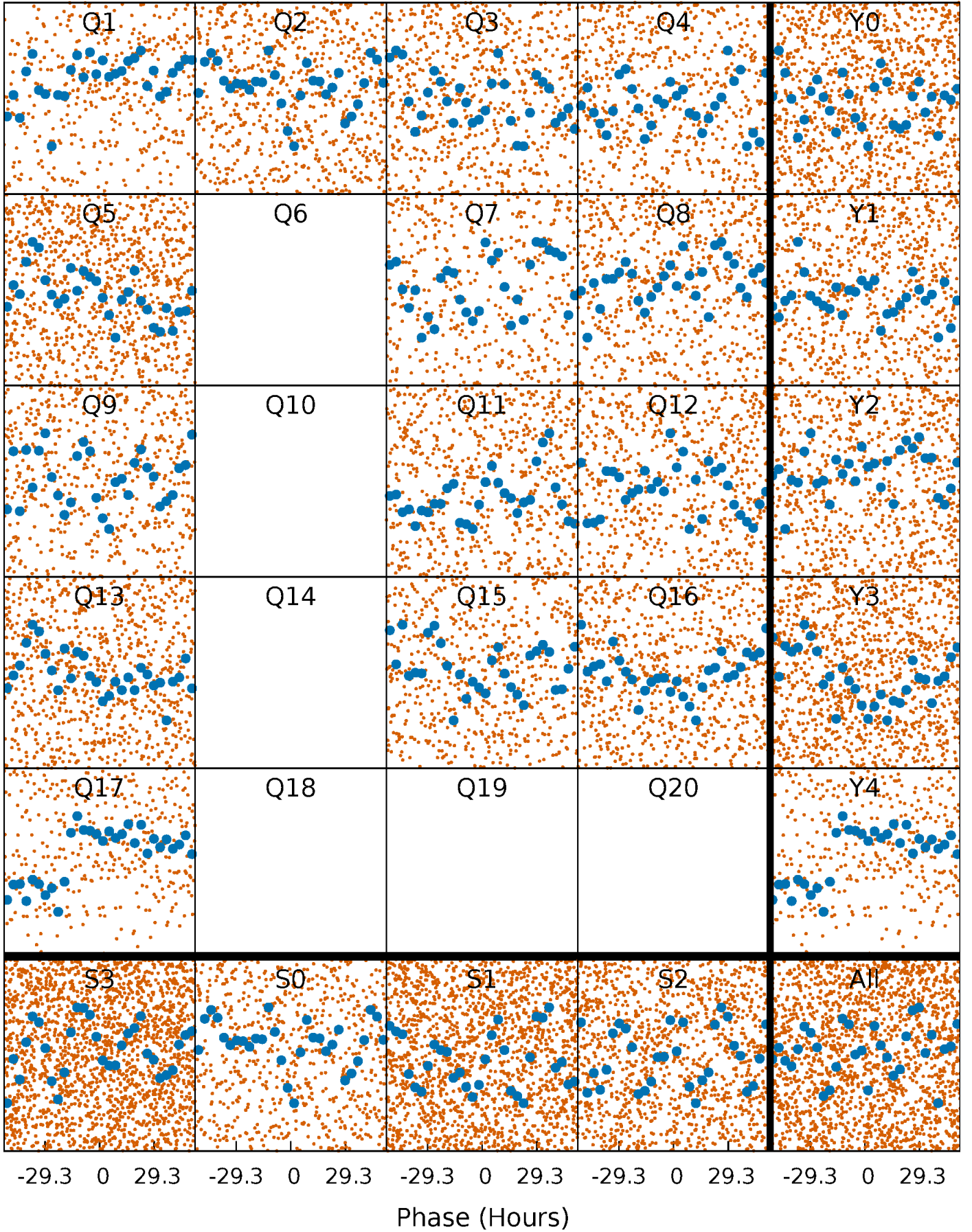


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



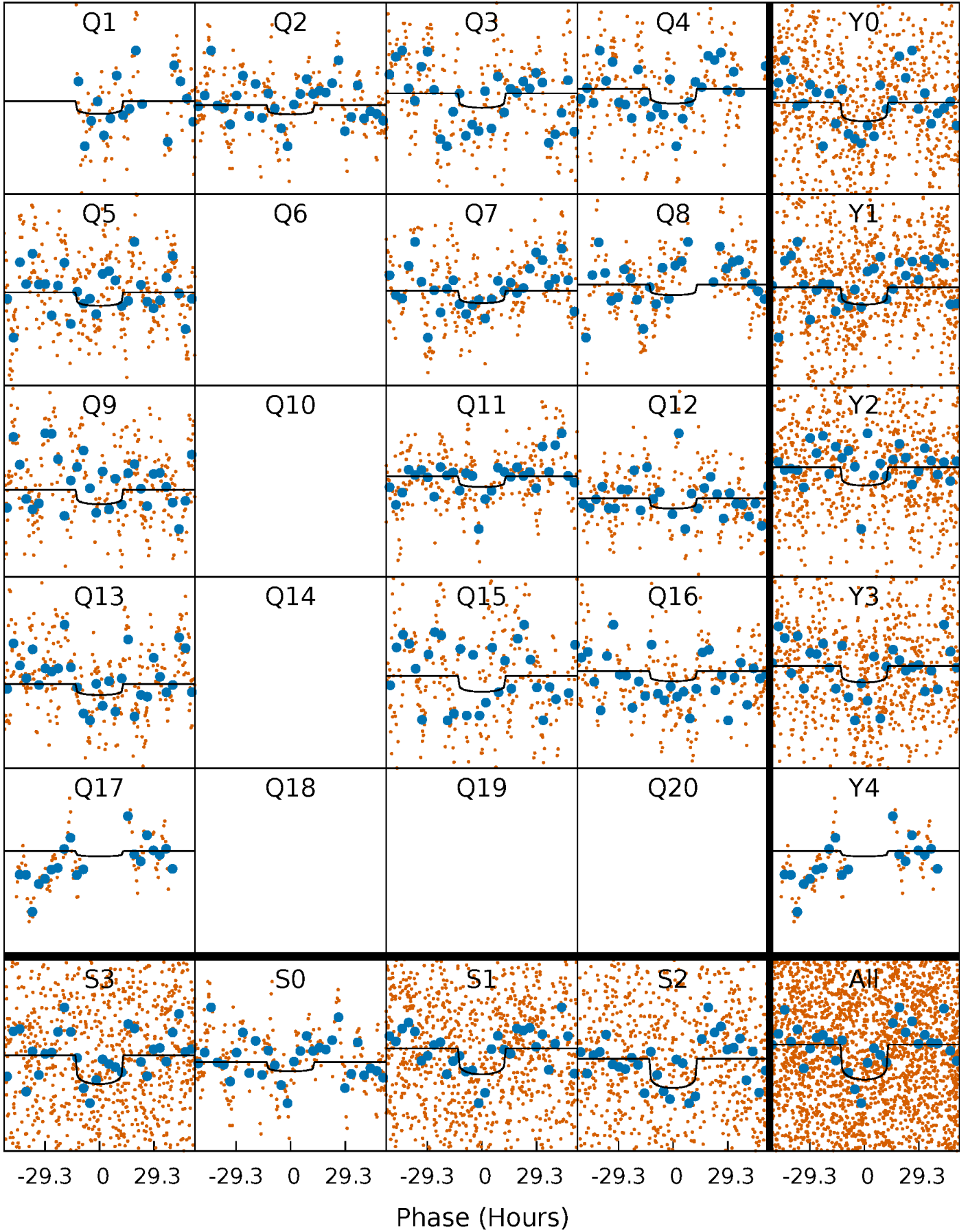
PDC Quarter-Phased Transit Curves

TCE 003975085-06 P= 12.581793 Days $T_0=132.266373$ (BKJD)



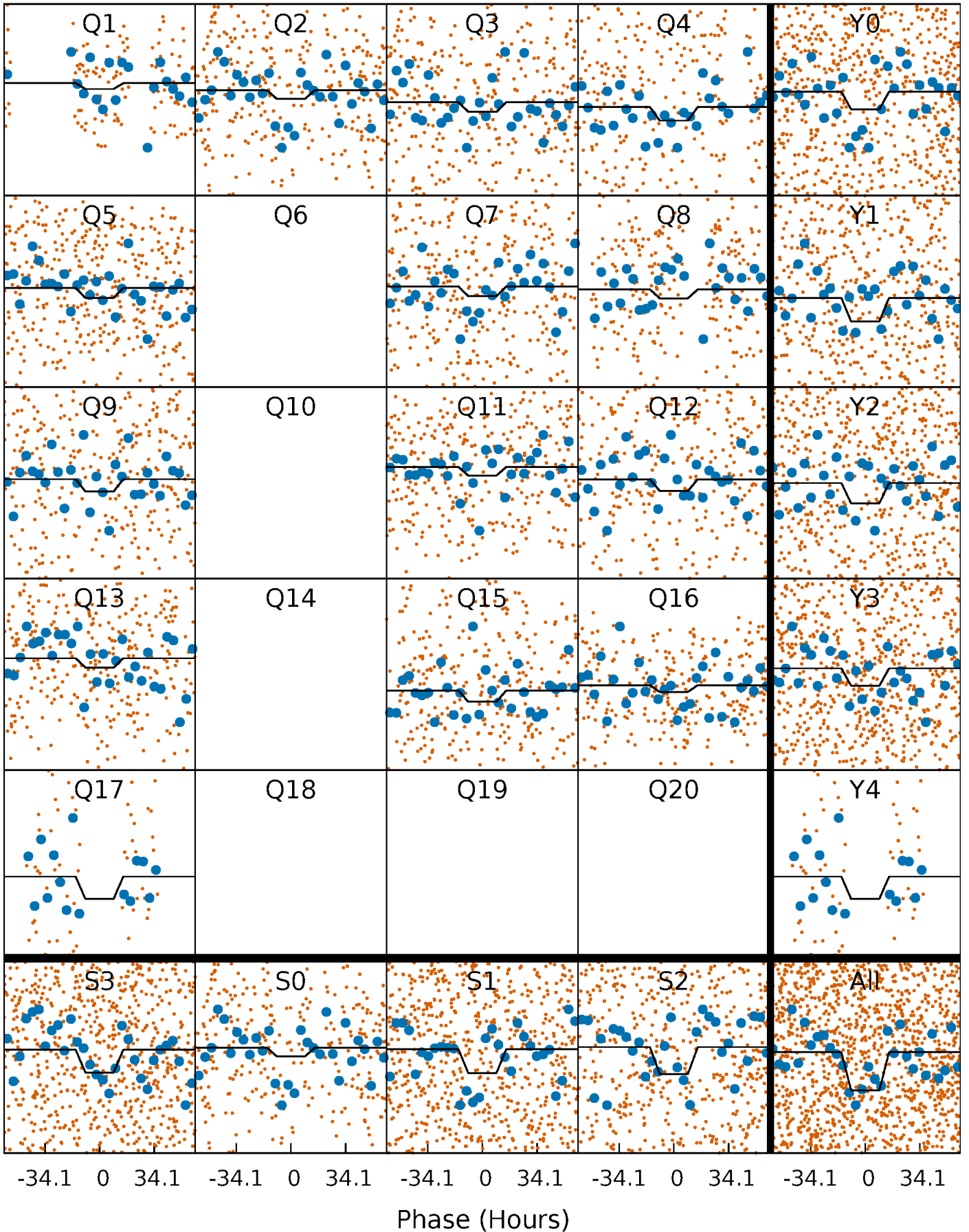
DV Quarter-Phased Transit Curves

TCE 003975085-06 P= 12.581793 Days $T_0=132.266373$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

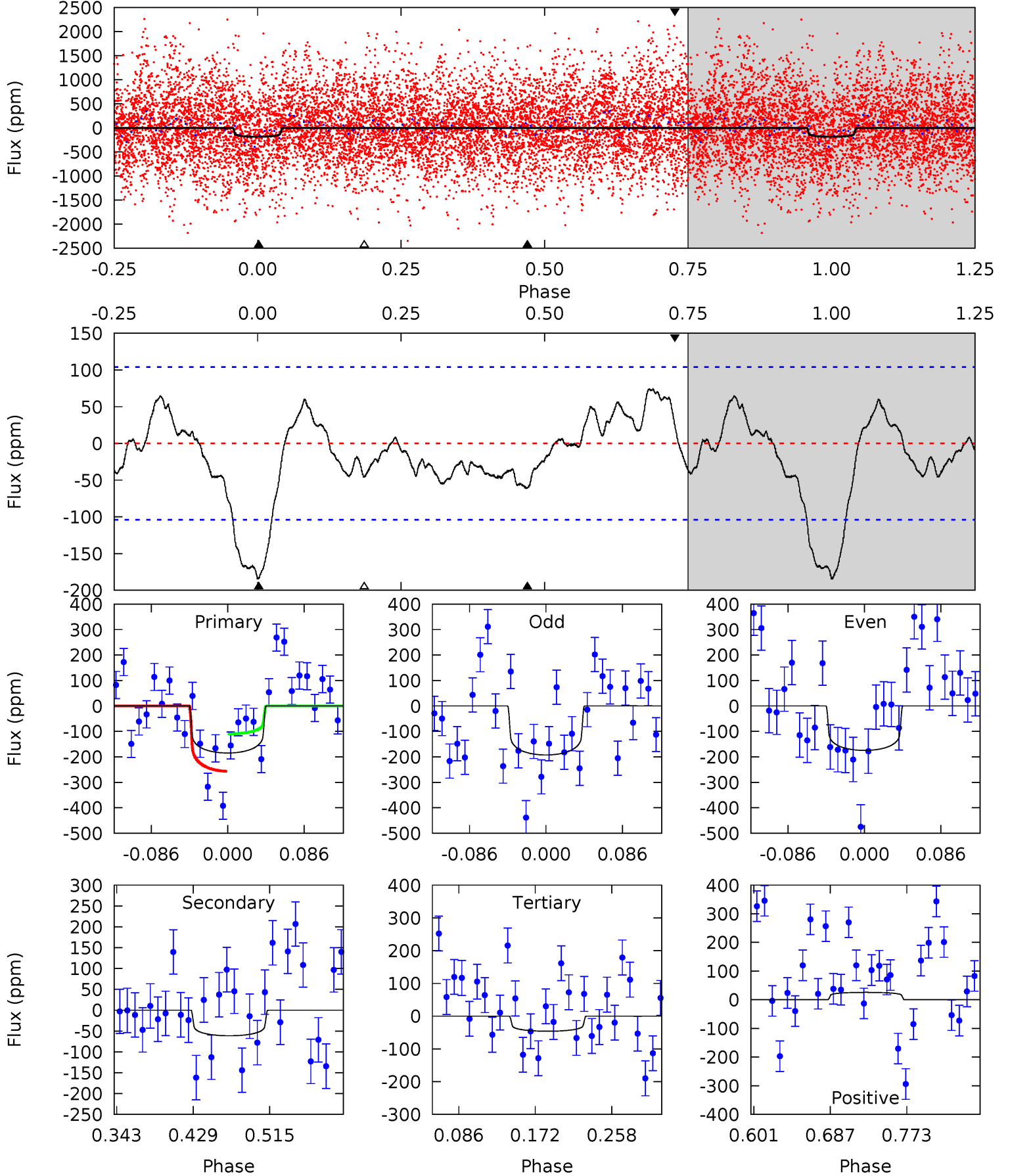
TCE 003975085-06 P= 12.581192 Days $T_0=132.412378$ (BKJD)



DV Model-Shift Uniqueness Test

003975085-06, P = 12.581793 Days, E = 132.266373 Days

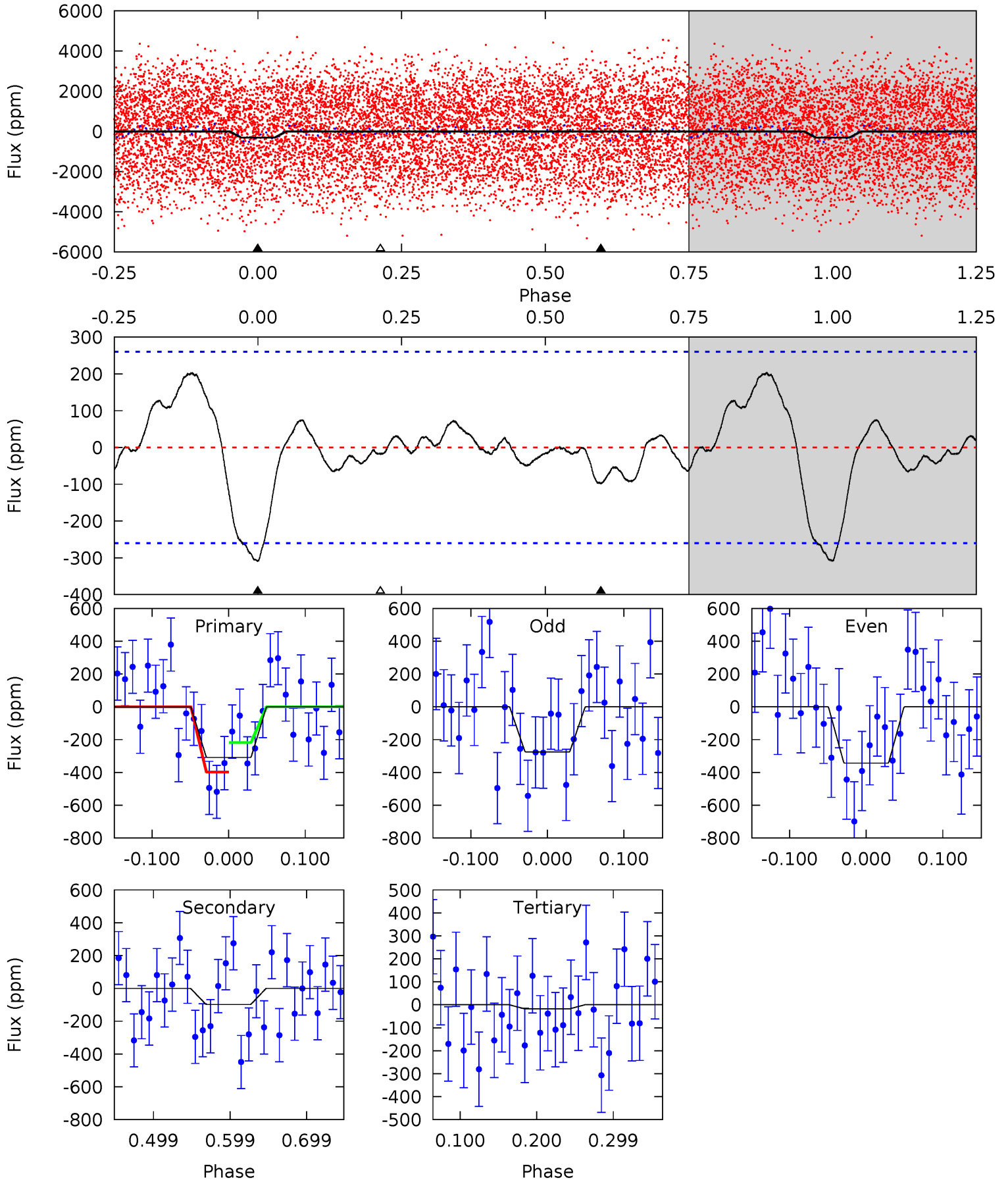
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.16	2.71	2.03	1.14	4.60	1.72	1.54	6.13	7.02	0.68	1.57	0.40	0.96	0.29	3.23



Alt Model-Shift Uniqueness Test

003975085-06, P = 12.581192 Days, E = 132.412378 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.42	1.72	0.31	0	4.57	1.65	1.14	5.10	5.42	1.41	1.72	0.60	1.42	0.40	1.57



Stellar Parameters For KIC 003975085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7757^{+69}_{-92}	$4.067^{+0.099}_{-0.121}$	$0.020^{+0.050}_{-0.200}$	$2.034^{+0.369}_{-0.302}$	$1.760^{+0.149}_{-0.164}$	$0.295^{+0.135}_{-0.109}$
	+1%/-1%	+2%/-3%	+250%/-1000%	+18%/-15%	+8%/-9%	+46%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003975085-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-61 ± 23	$3.31^{+0.64}_{-0.58}$	1915^{+91}_{-74}	5502^{+729}_{-585}	48^{+36}_{-21}
Alt.	-98 ± 57	$3.97^{+0.66}_{-0.62}$	1911^{+89}_{-76}	5669^{+791}_{-965}	55^{+42}_{-32}

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

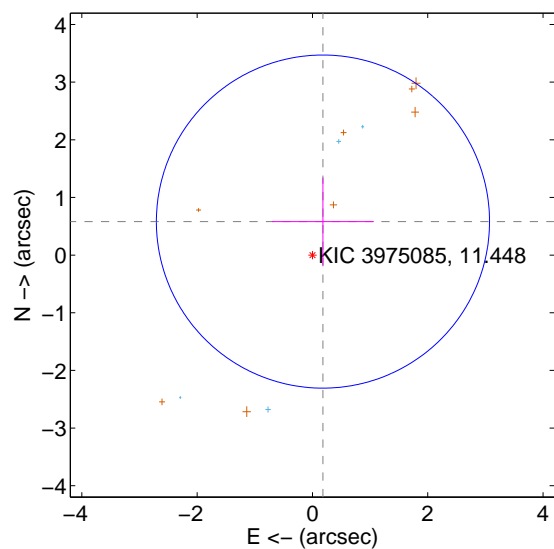
Supplemental centroid analysis for 003975085-06. **Kepler magnitude: 11.45.** Transit SNR 8.03

There are 4 quarters with good PRF difference image offsets

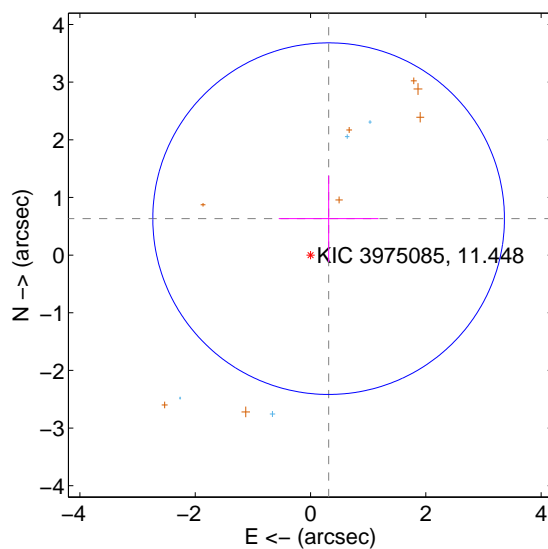
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.609 ± 0.963	0.63	-0.182 ± 0.881	0.581 ± 0.760
PRF-fit source offset from KIC position	0.706 ± 1.016	0.69	-0.314 ± 0.866	0.632 ± 0.748
photometric centroid source offset	0.17 ± 0.13	1.36	0.11 ± 0.11	0.13 ± 0.13

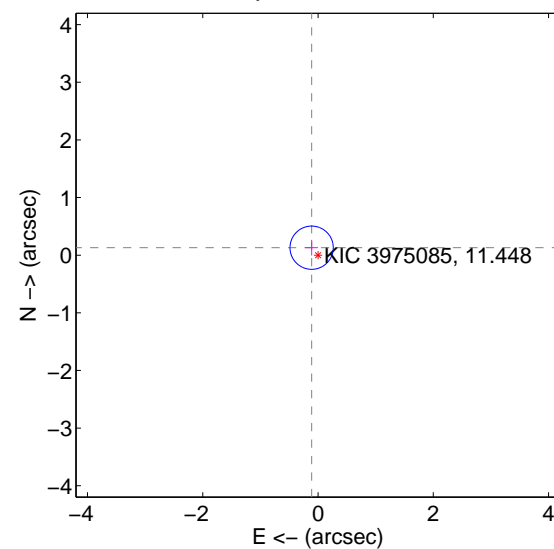
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

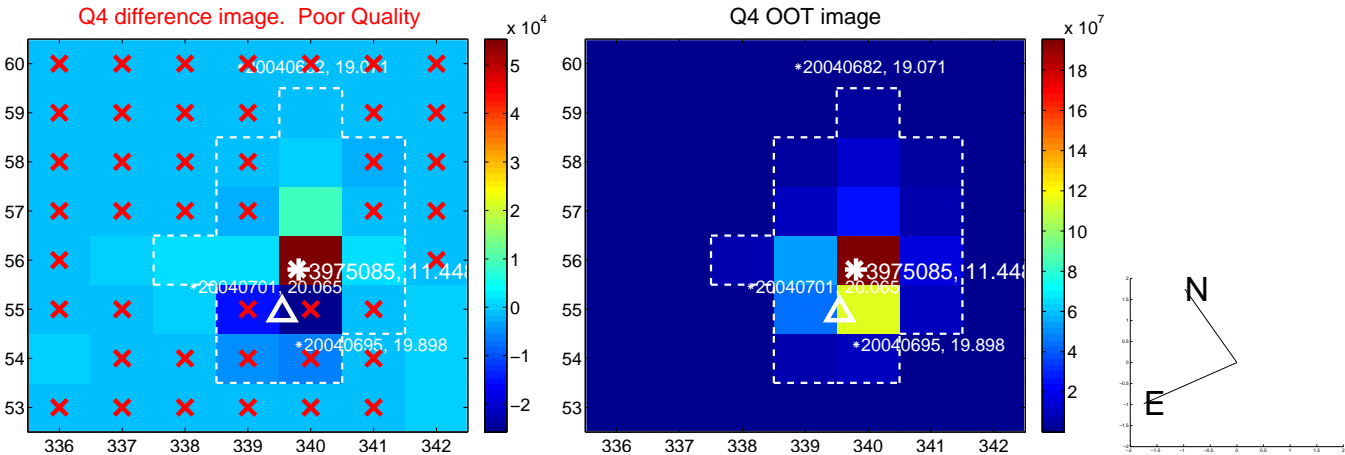
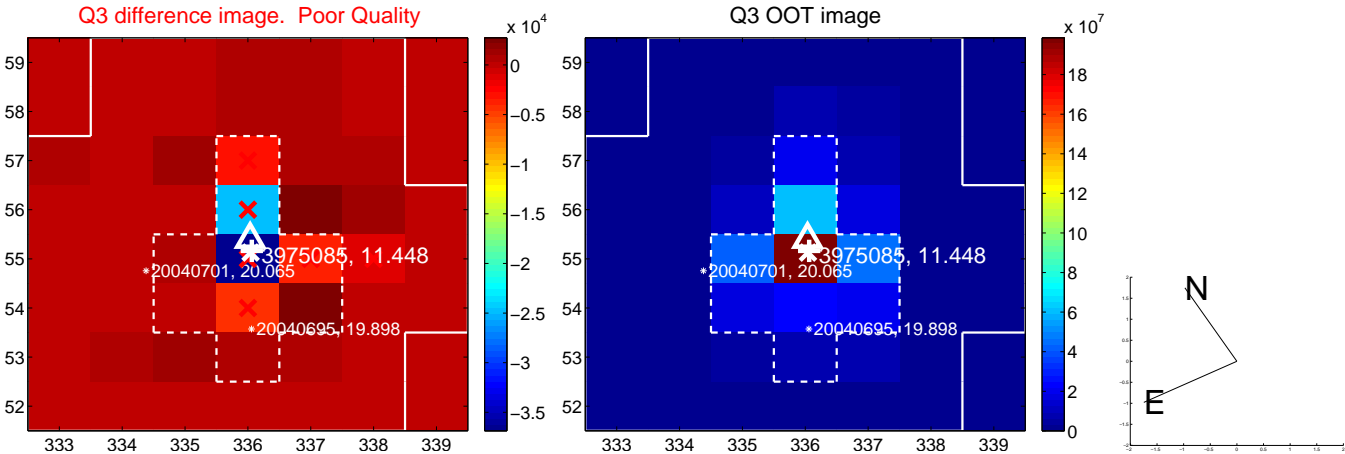
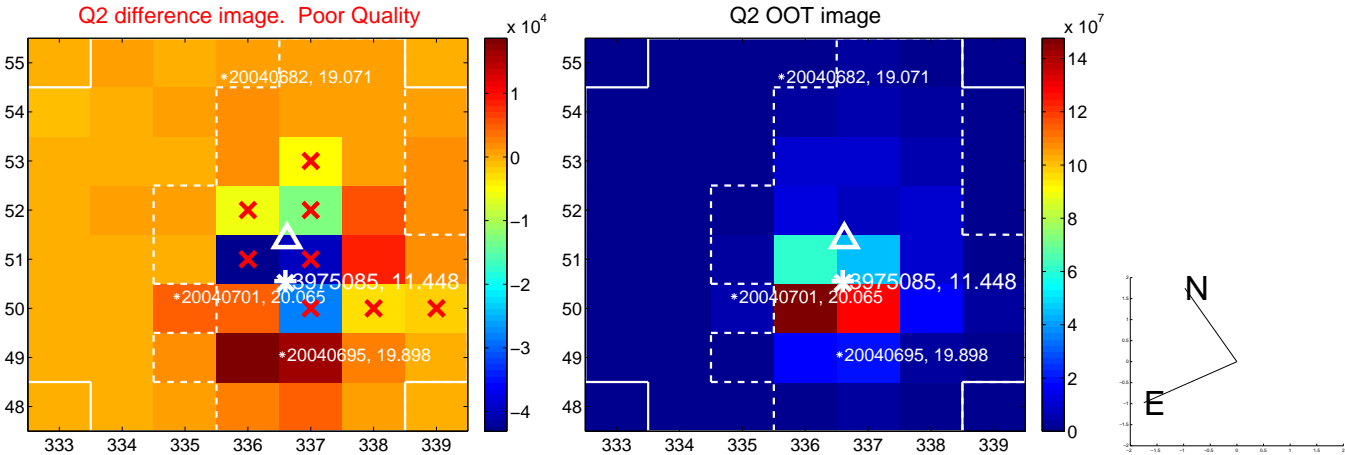
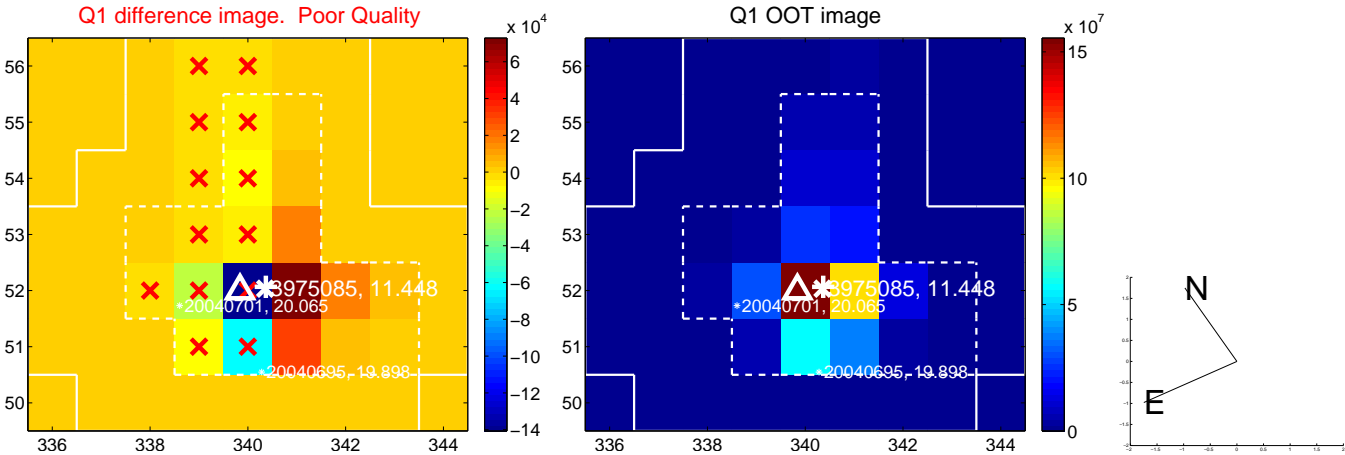


offset from photometric centroids

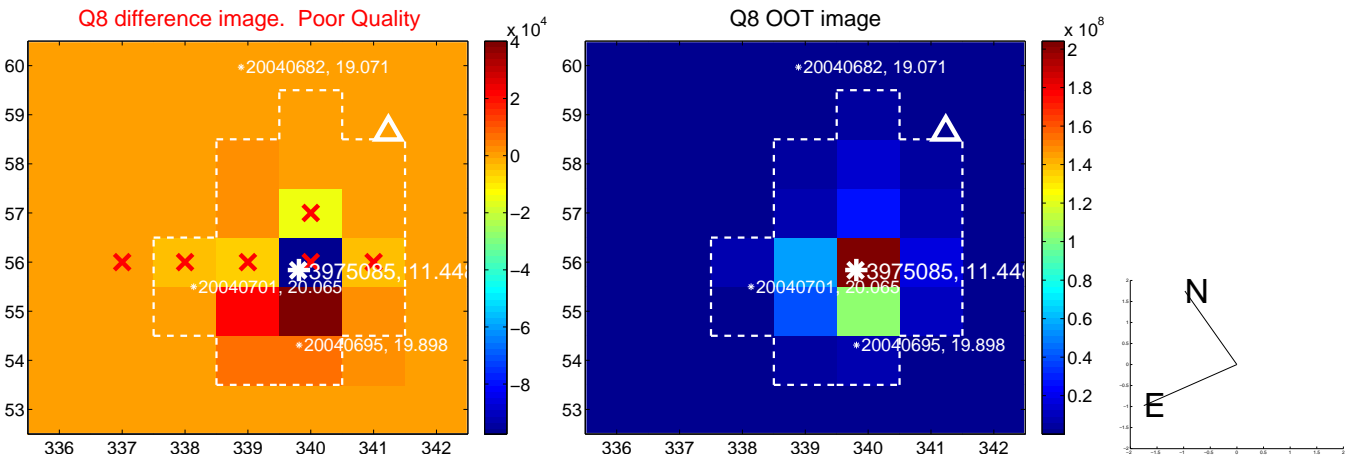
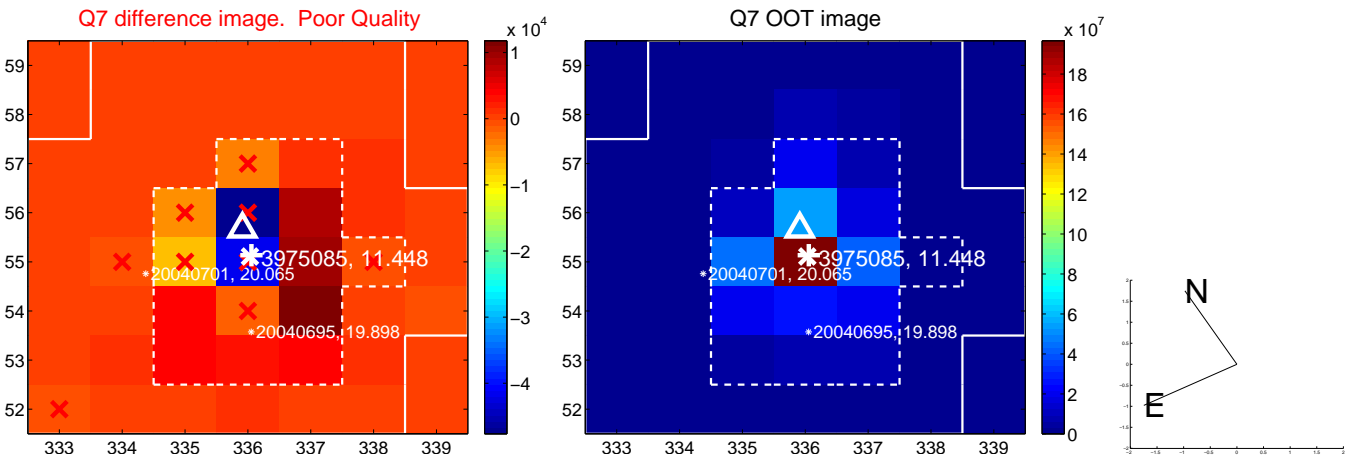
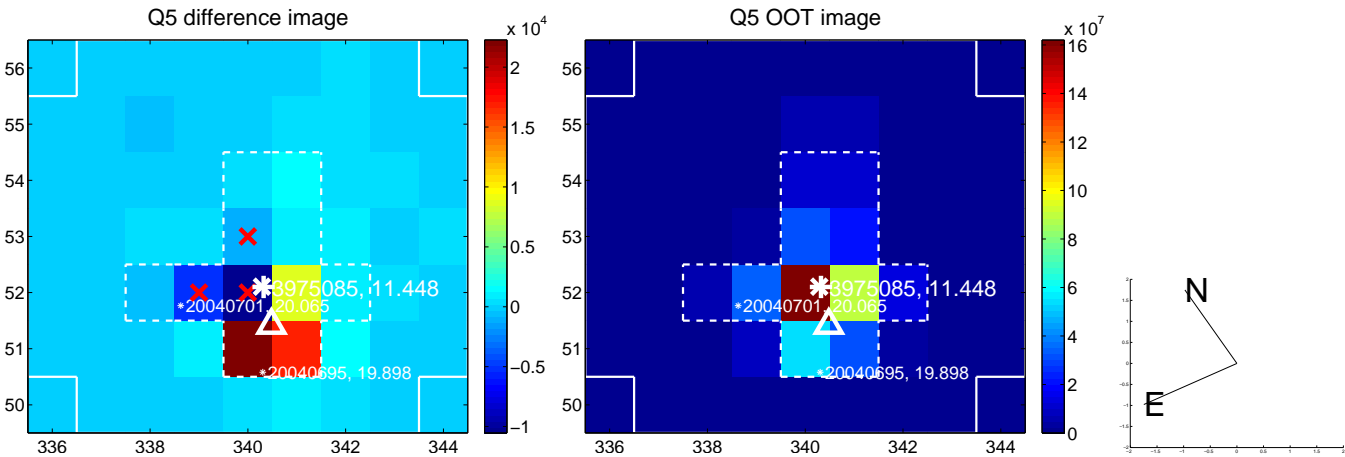


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

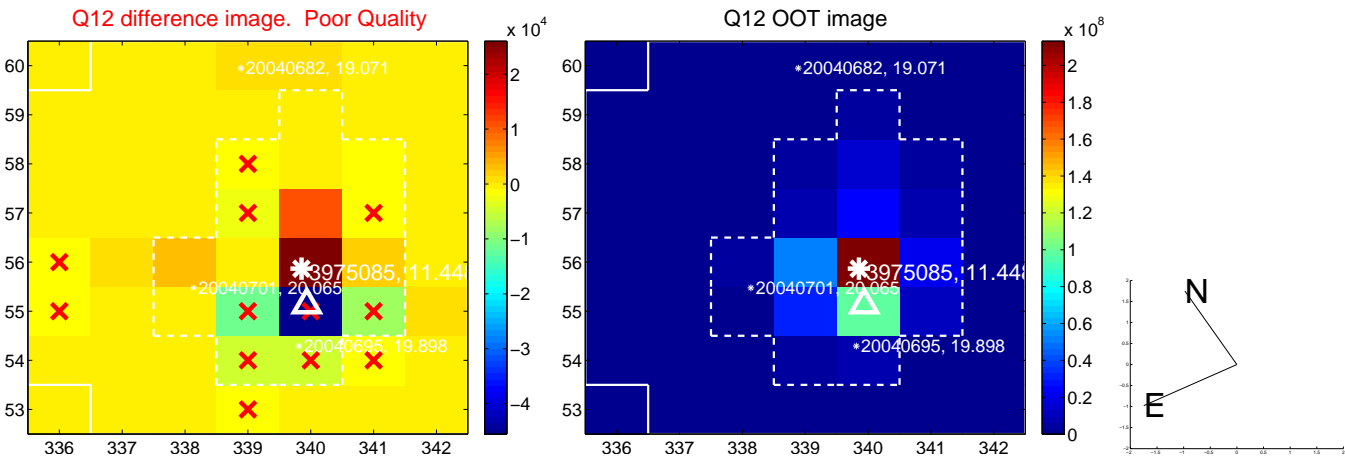
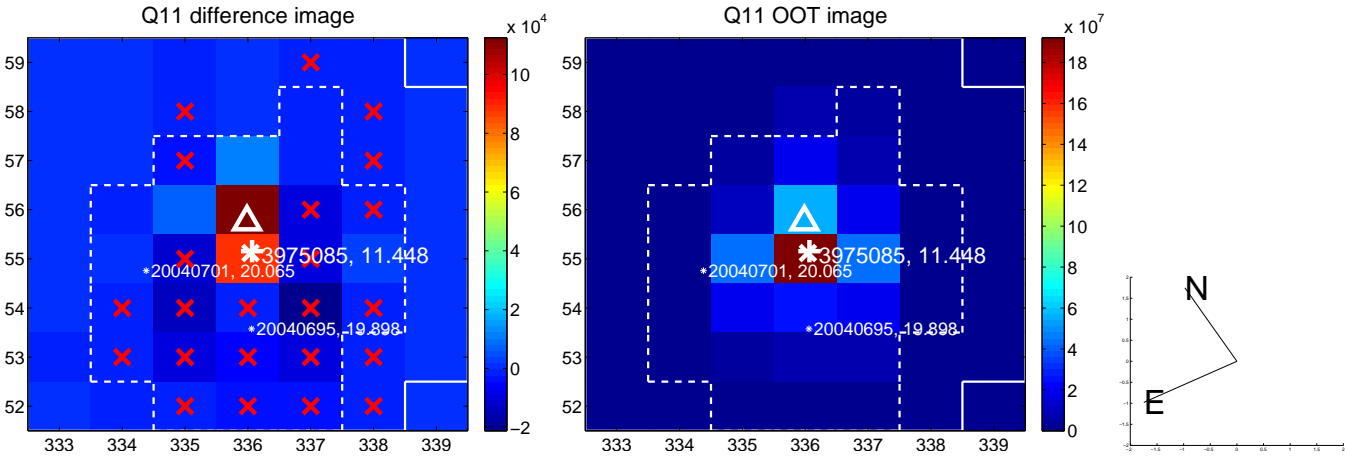
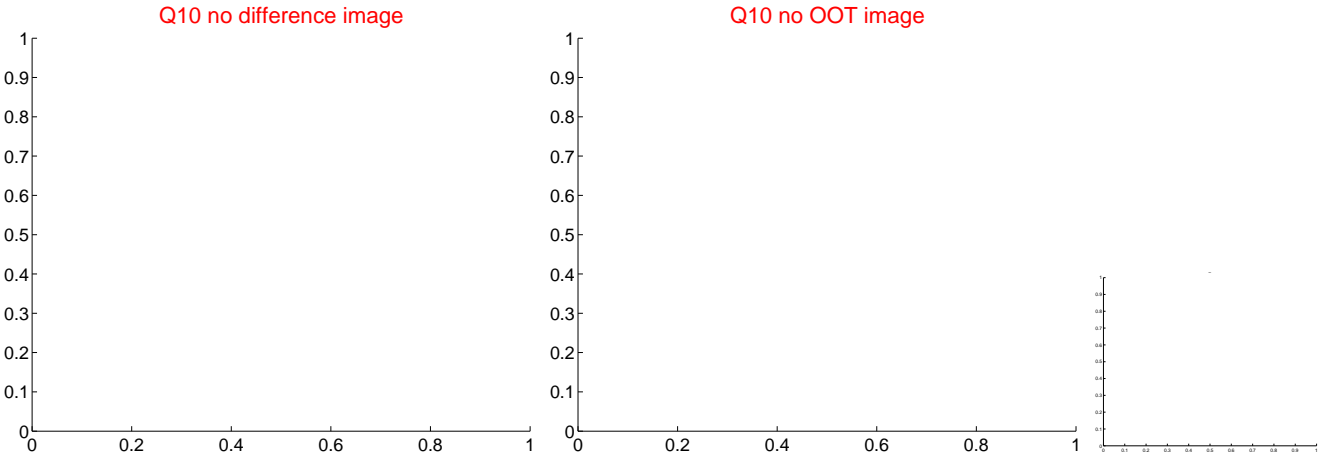
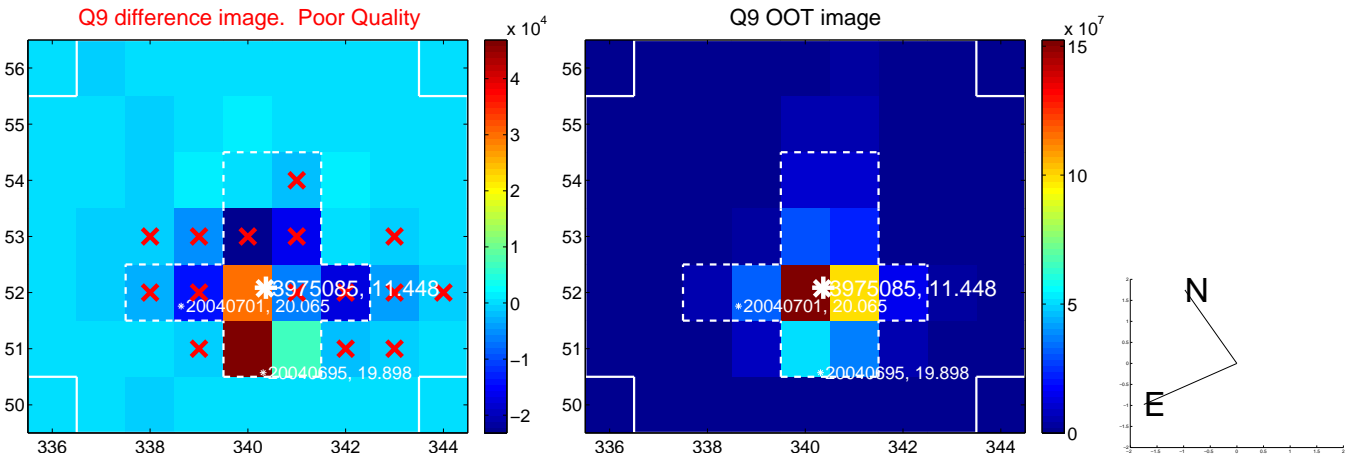
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



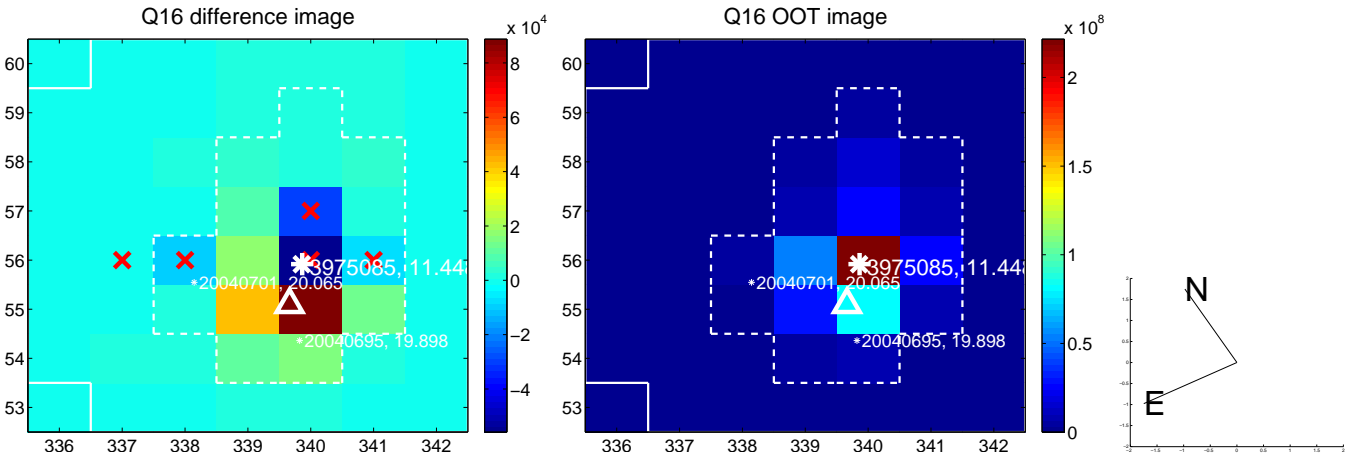
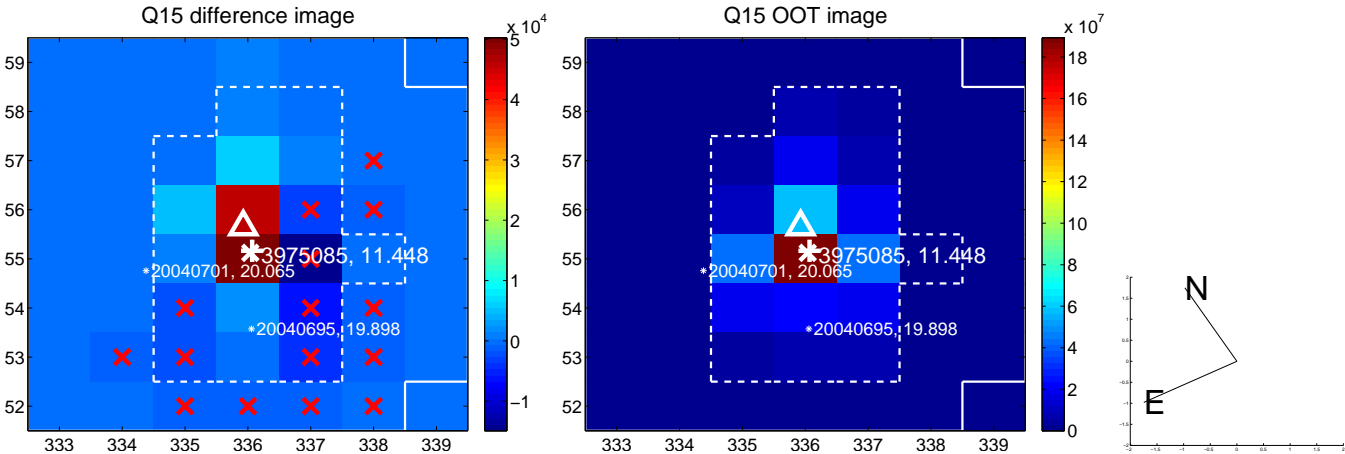
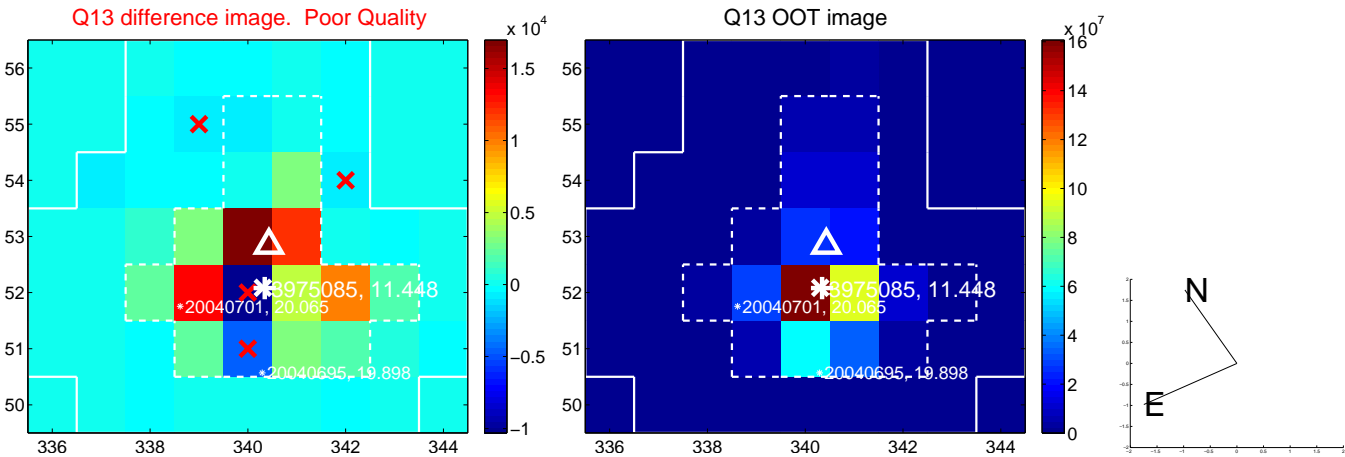
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



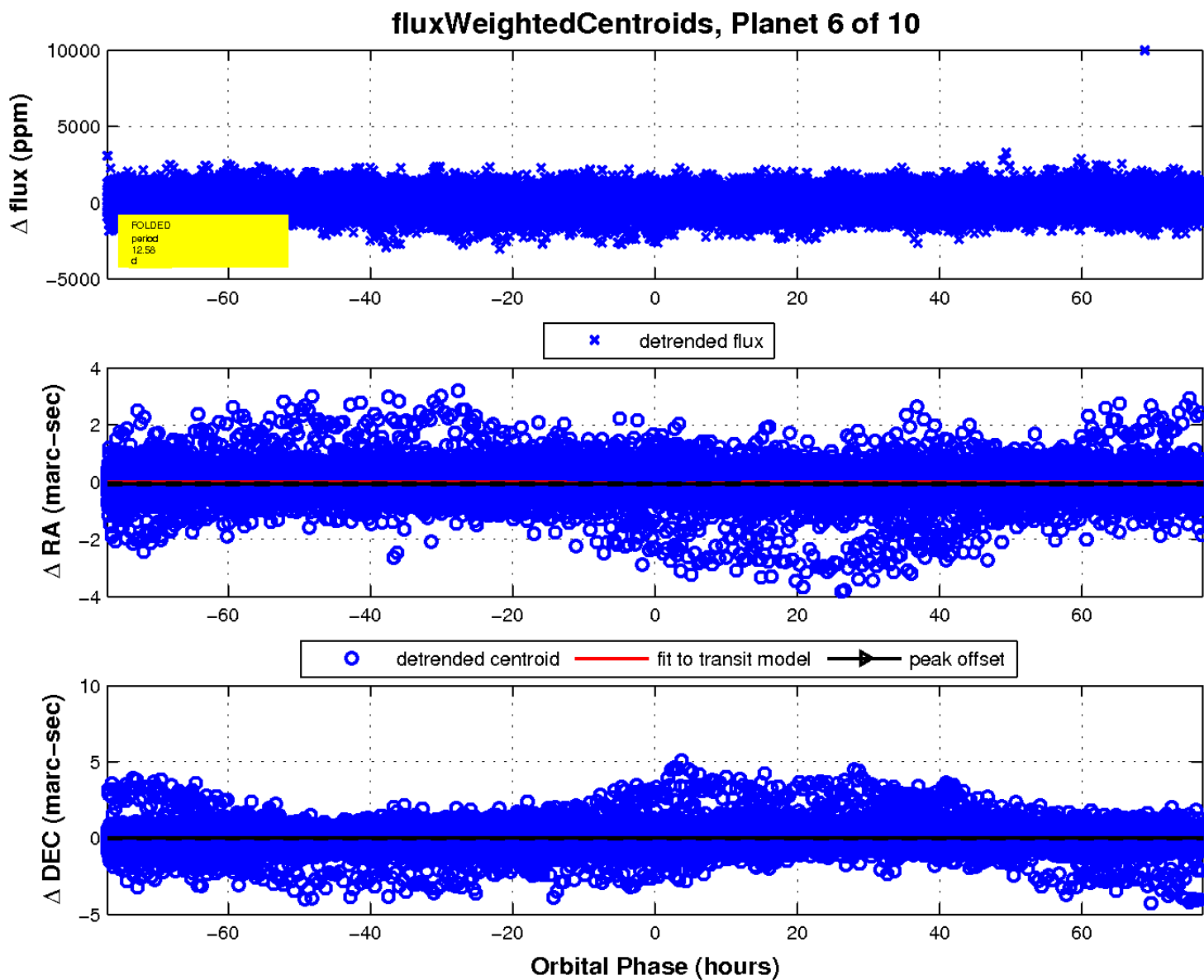
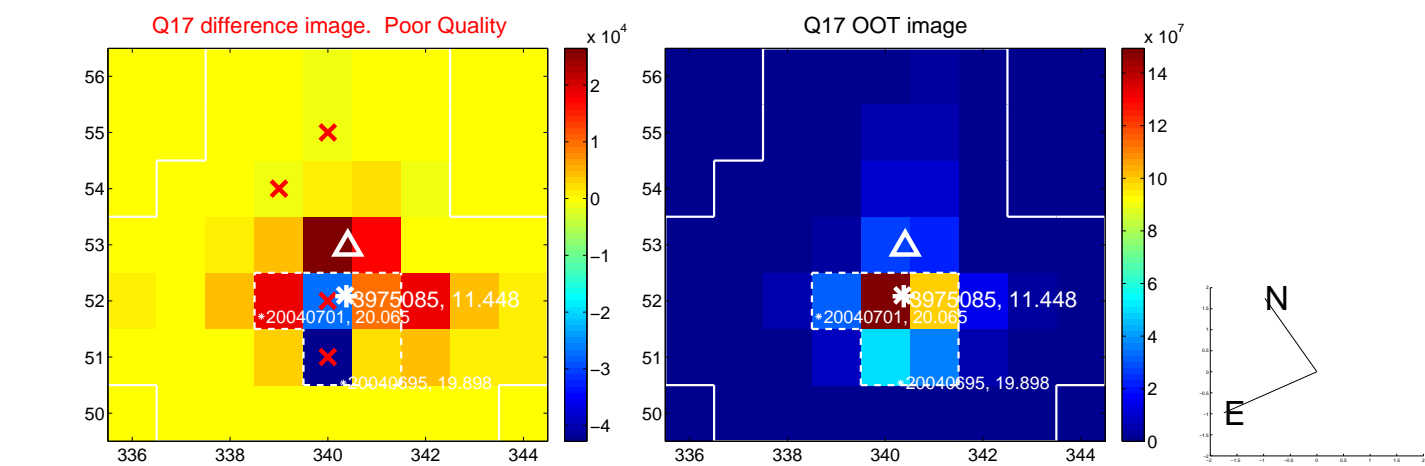
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

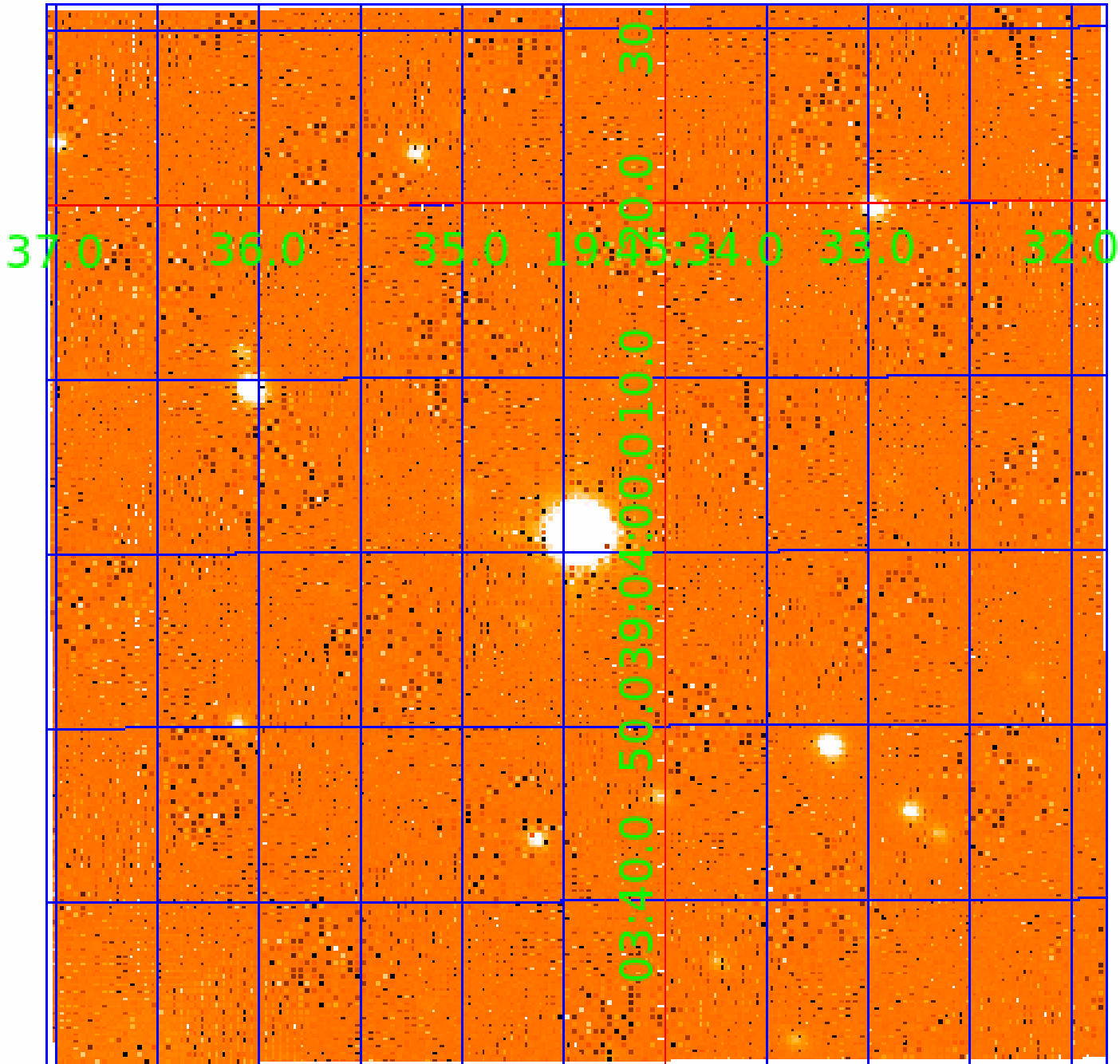


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003975085

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})
003975085-01	OBS	No	2.009828	131.961572	80.5	12.652	9.8	9.5	2.03	7757	2.11	9470.18
003975085-02	OBS	No	78.528369	142.985487	1568.0	4.926	12.0	11.4	2.03	7757	10.18	71.43
003975085-03	OBS	No	58.828151	136.843263	478.0	9.473	10.1	7.2	2.03	7757	4.85	104.98
003975085-04	OBS	No	99.802914	200.101690	760.0	4.995	8.7	5.6	2.03	7757	6.18	51.88
003975085-06	OBS	No	12.581793	132.266373	218.4	25.656	8.5	8.0	2.03	7757	3.26	820.82
003975085-07	OBS	No	150.726597	191.249685	243.4	7.705	9.6	4.0	2.03	7757	3.46	29.94
003975085-08	OBS	No	66.693977	192.425115	1047.8	3.546	8.0	7.2	2.03	7757	7.62	88.81
003975085-09	OBS	No	82.265583	150.962779	1145.8	2.558	7.8	8.3	2.03	7757	8.23	67.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003975085-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003975085-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

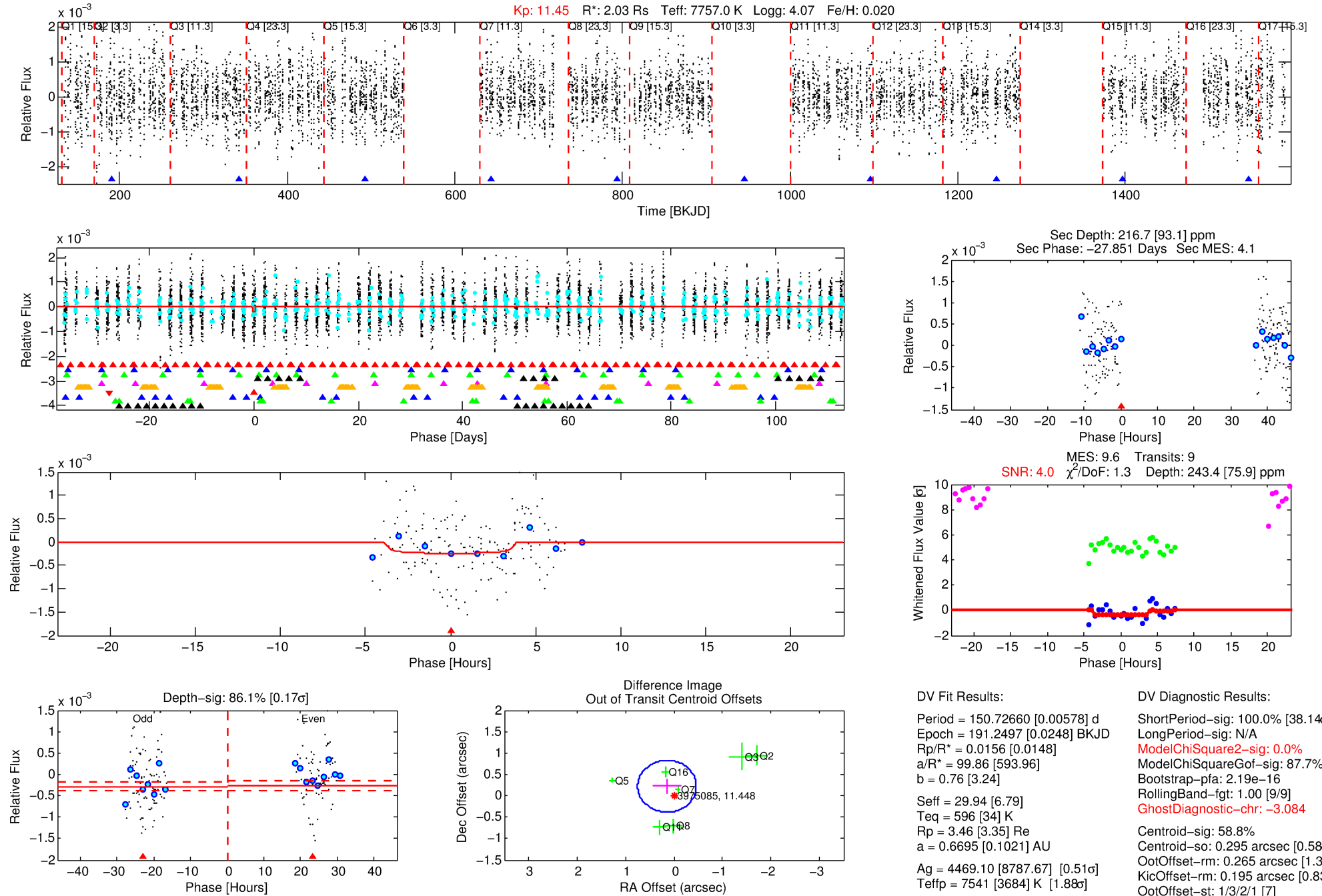
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003975085-07

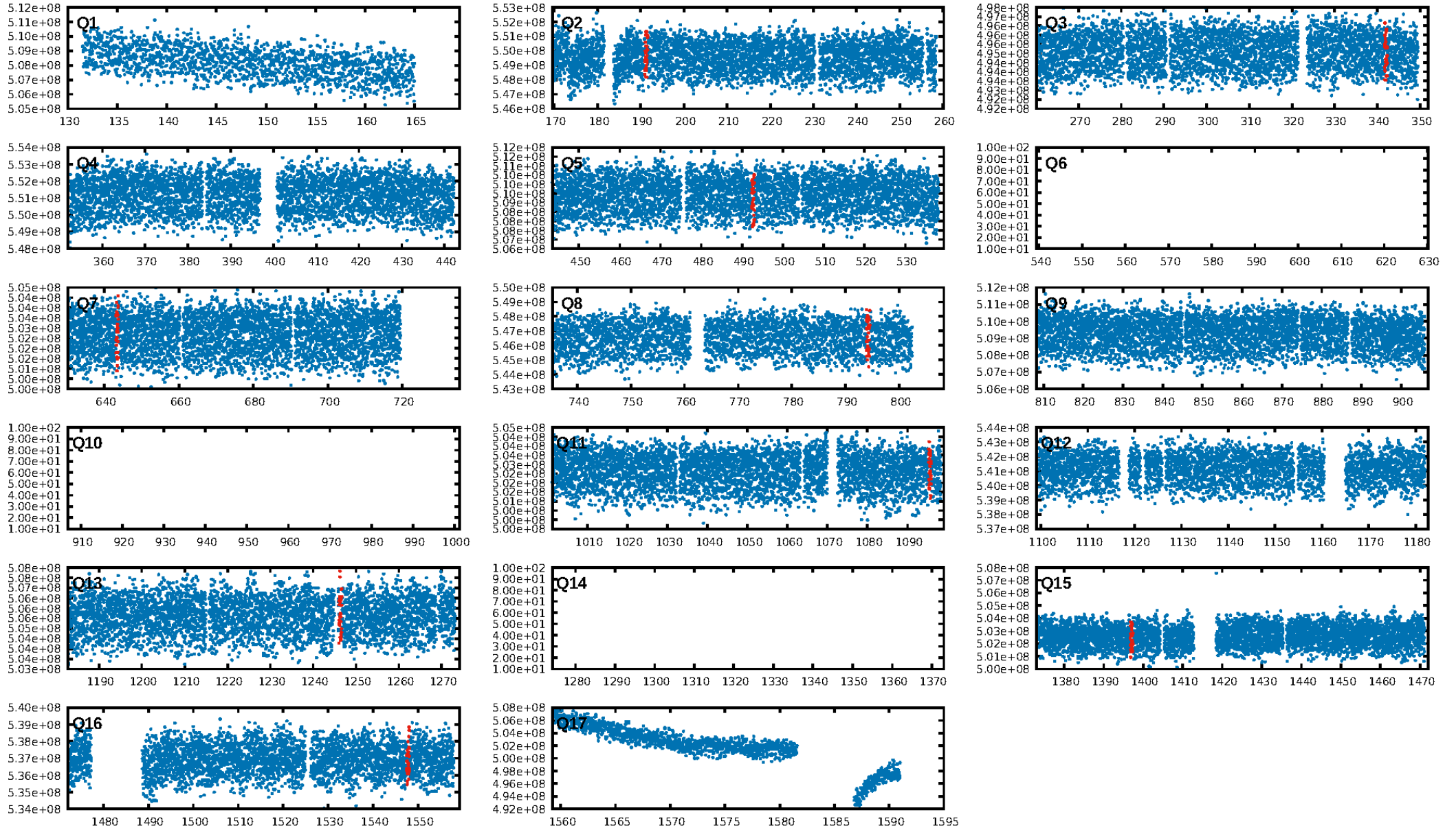
No Significant Match Found

DV One-Page Summary

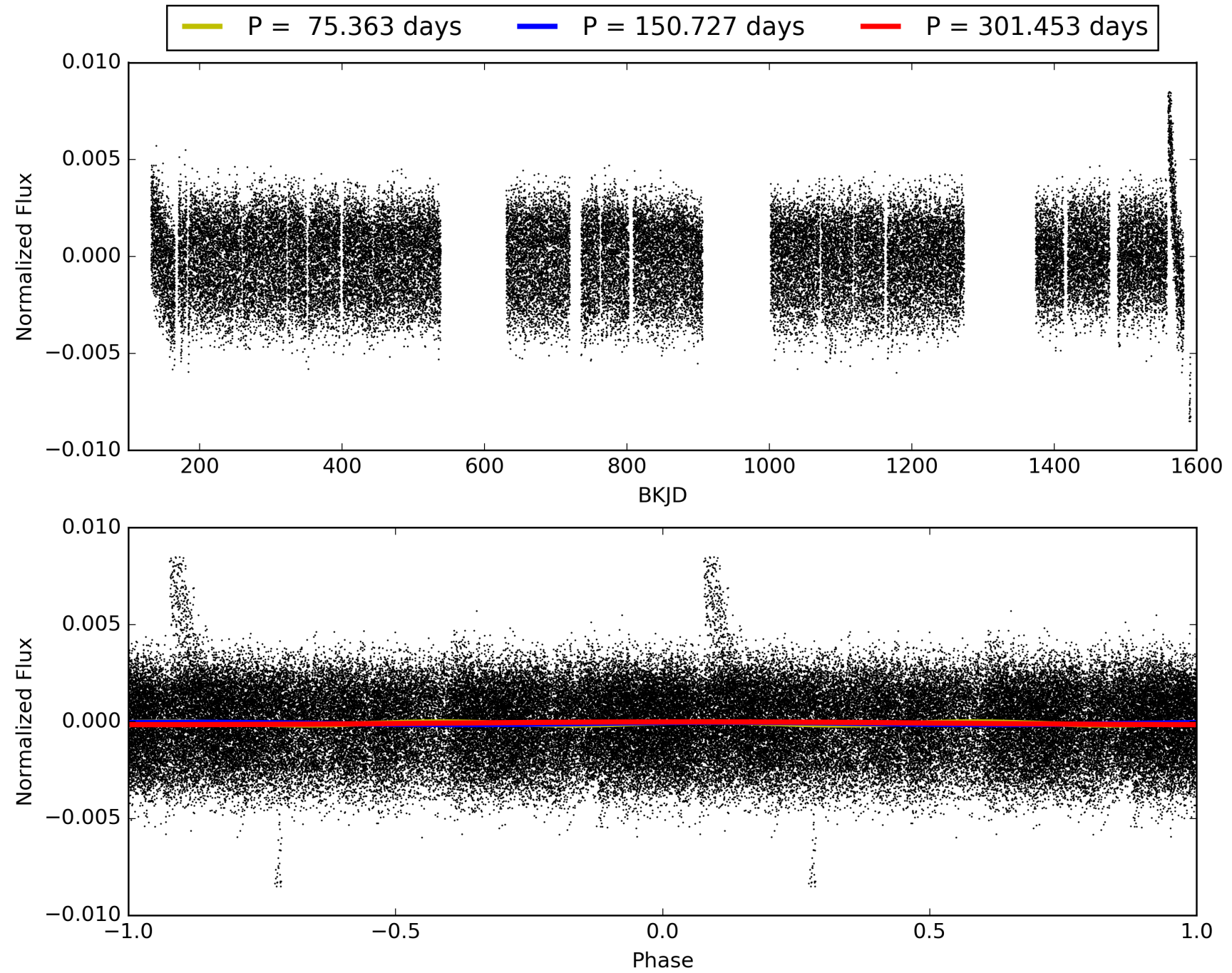
KIC: 3975085 Candidate: 7 of 10 Period: 150.727 d



TCE 003975085-07, PDC Light Curves

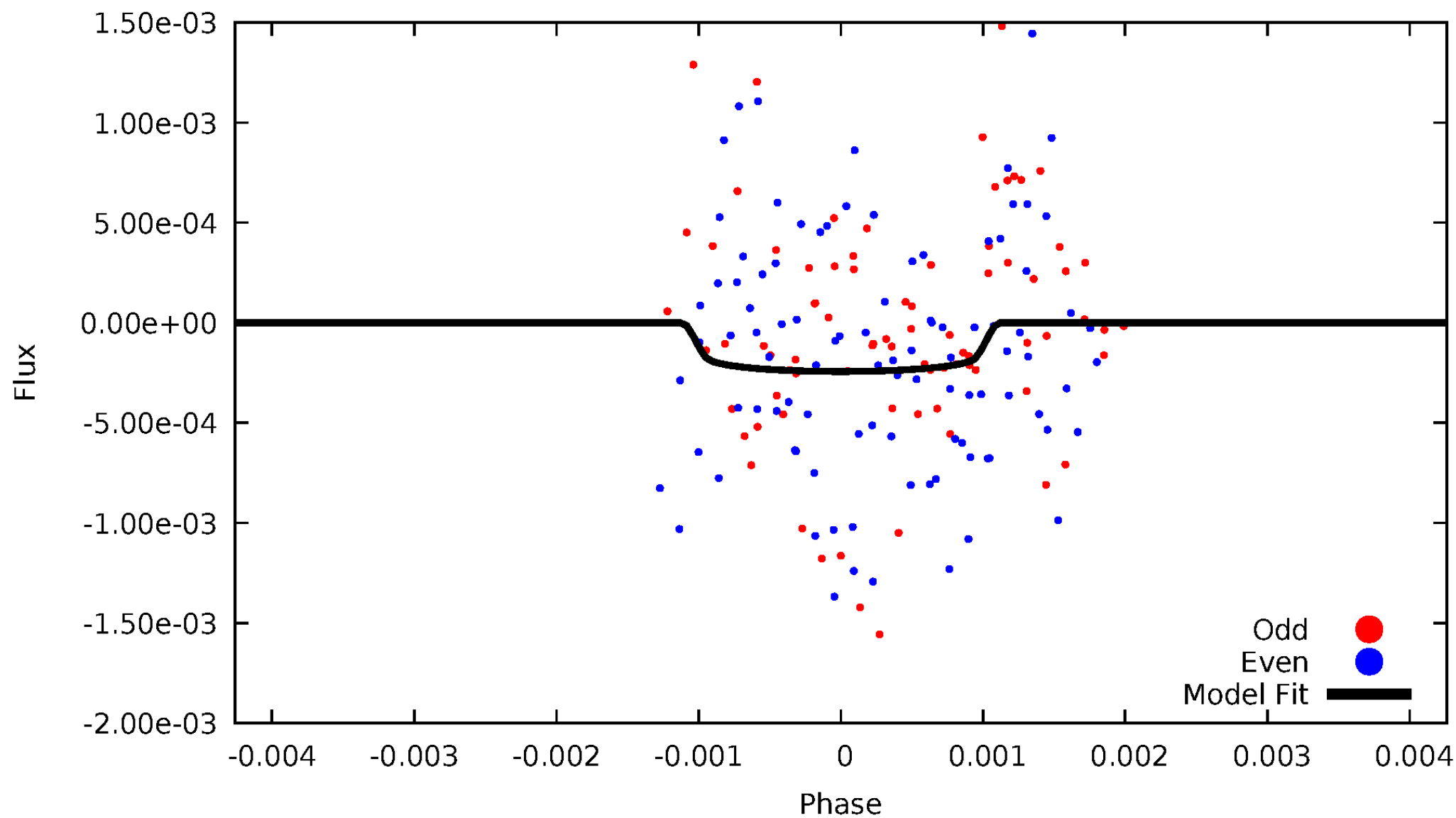


TCE 003975085-07



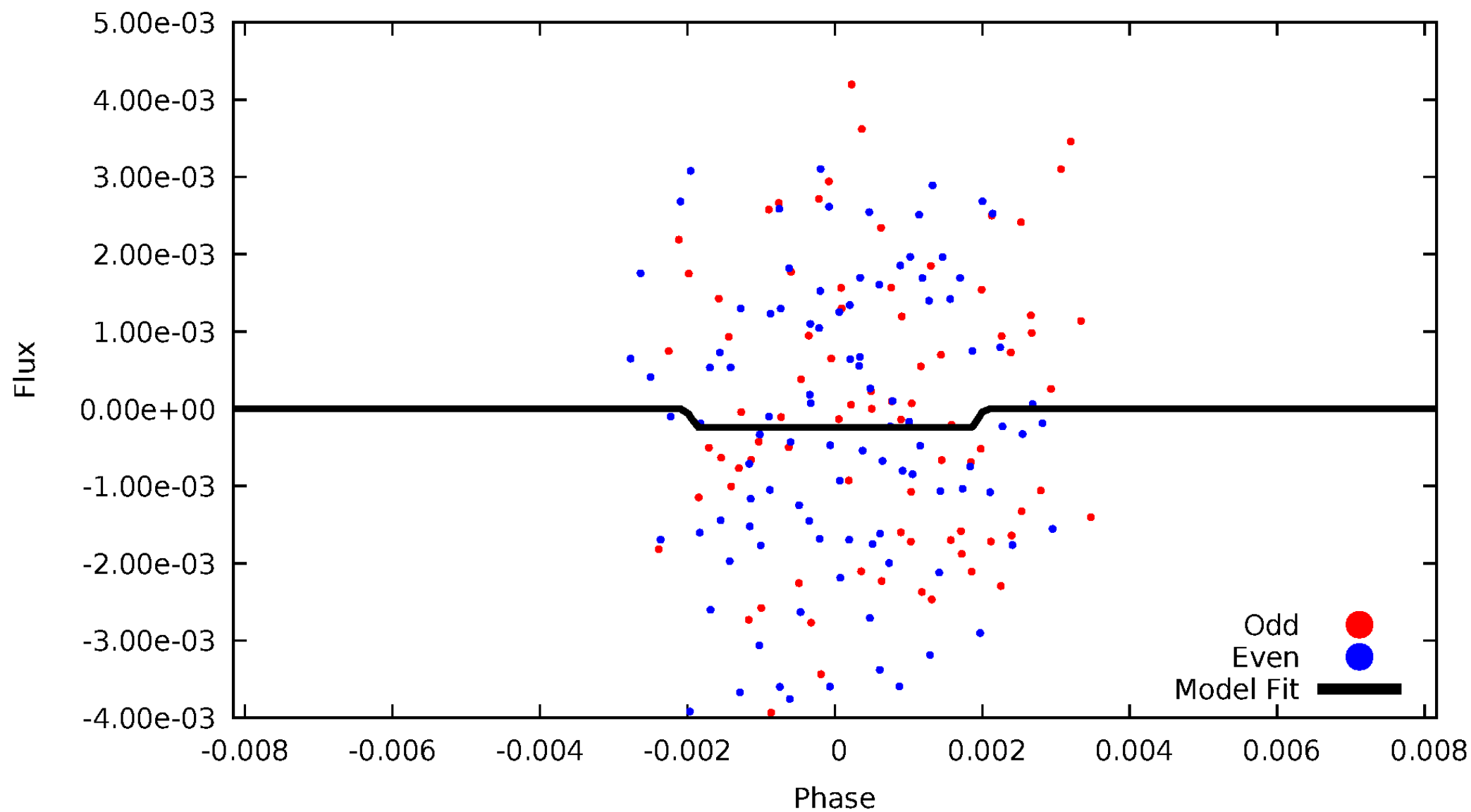
DV Odd/Even

TCE 003975085-07



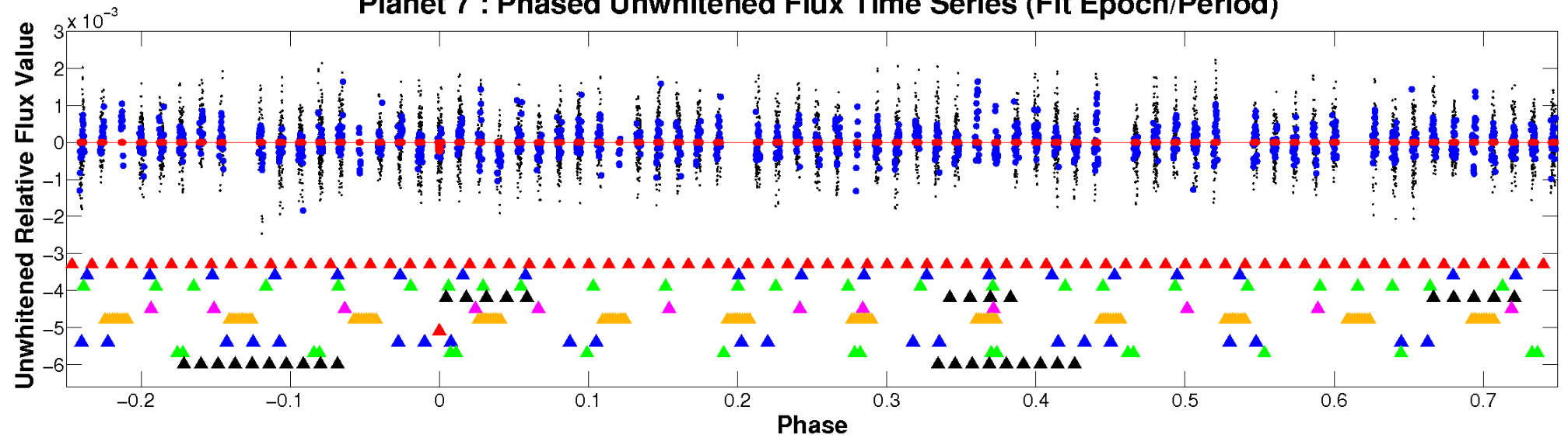
ALT Odd/Even

TCE 003975085-07

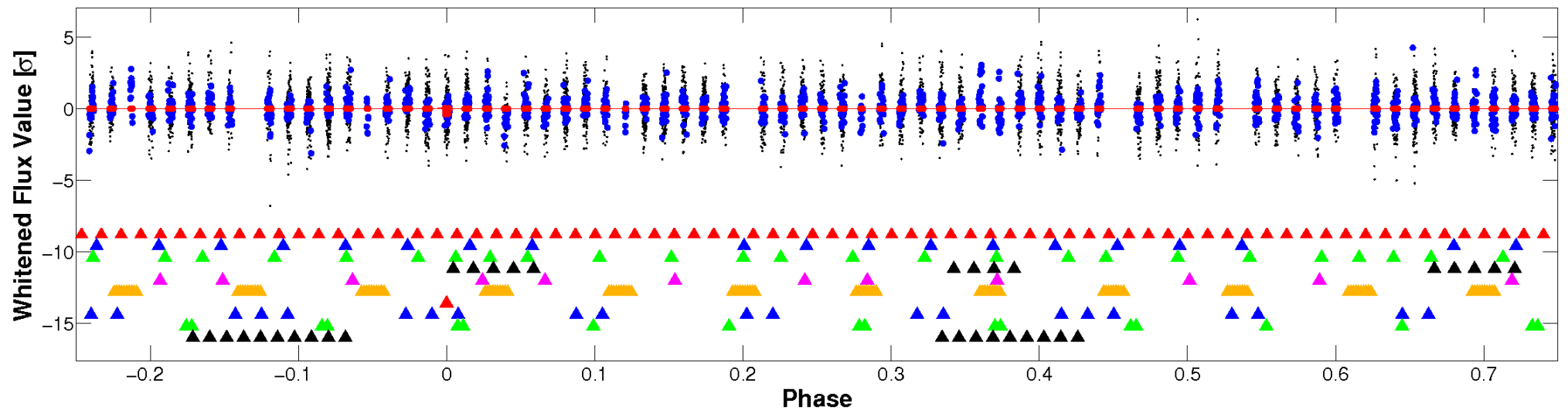


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

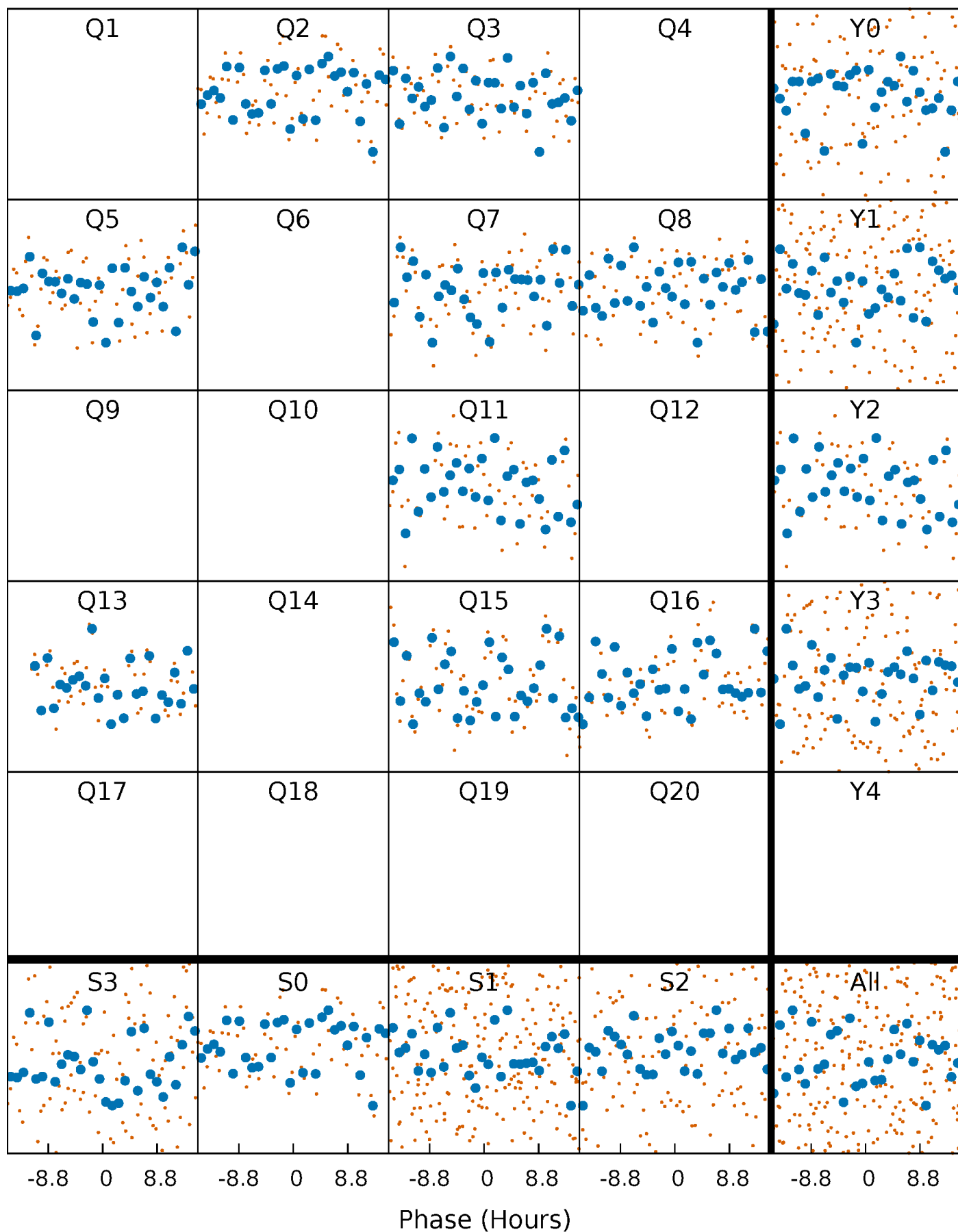


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



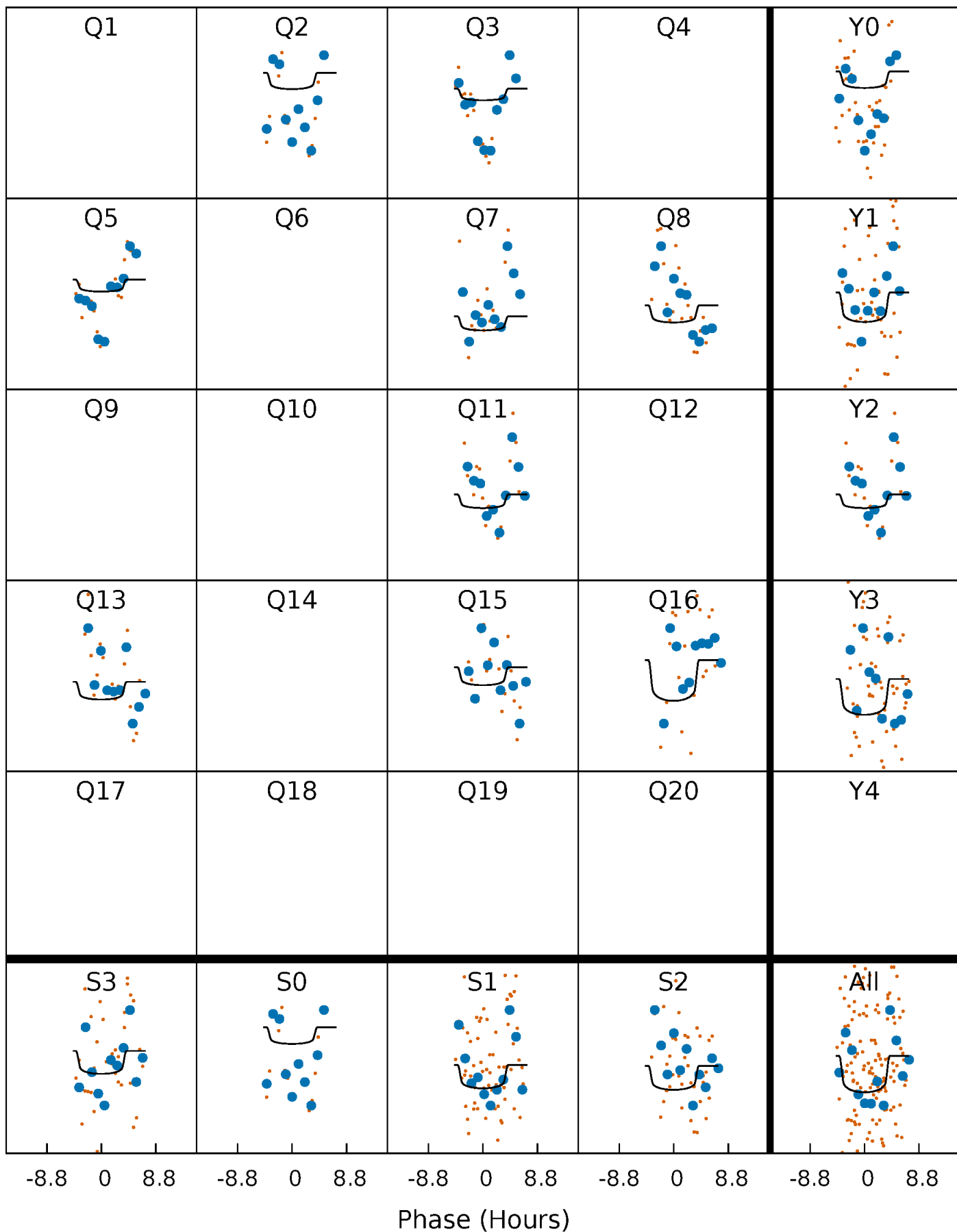
PDC Quarter-Phased Transit Curves

TCE 003975085-07 P=150.726597 Days $T_0=191.249685$ (BKJD)



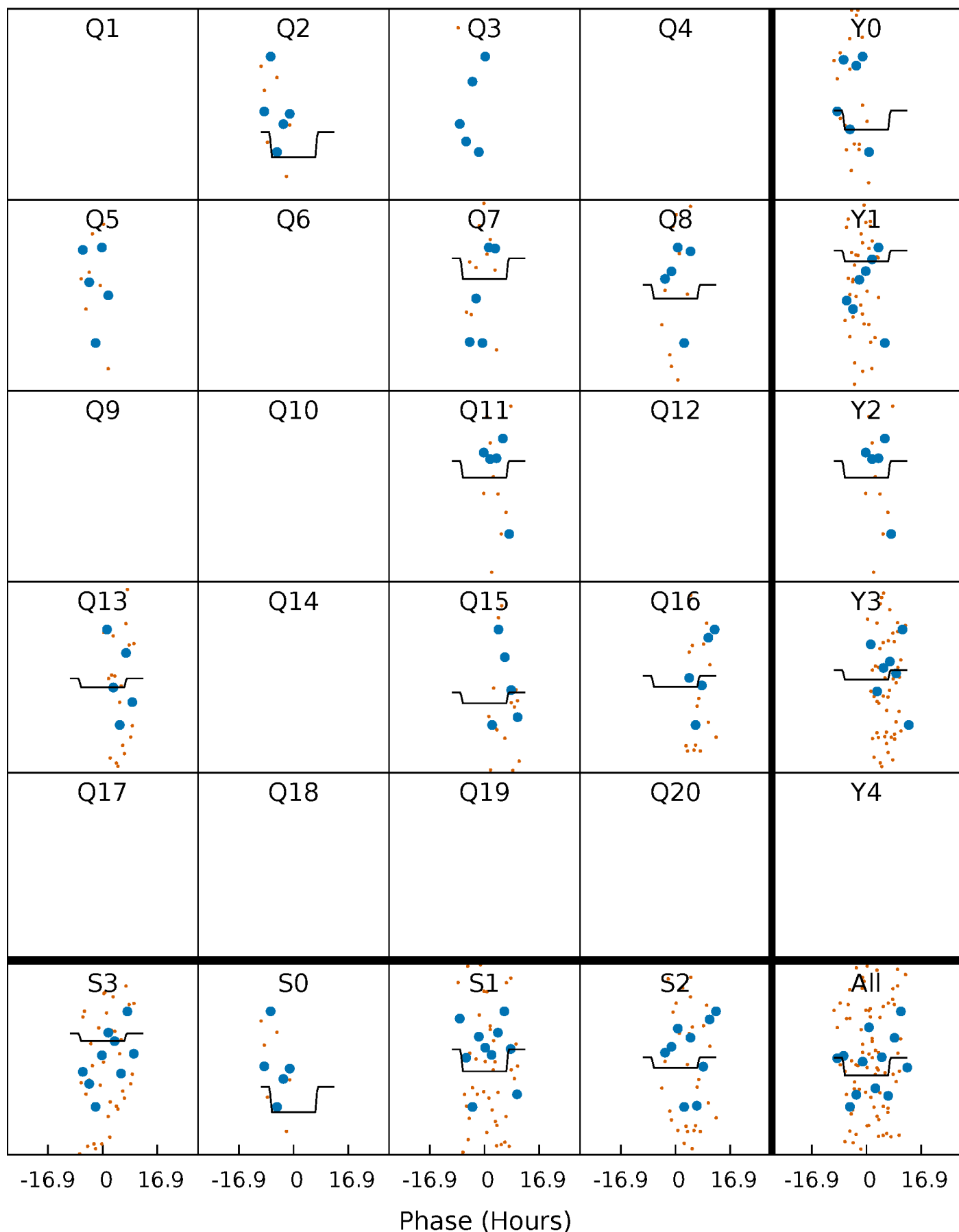
DV Quarter-Phased Transit Curves

TCE 003975085-07 P=150.726597 Days $T_0=191.249685$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

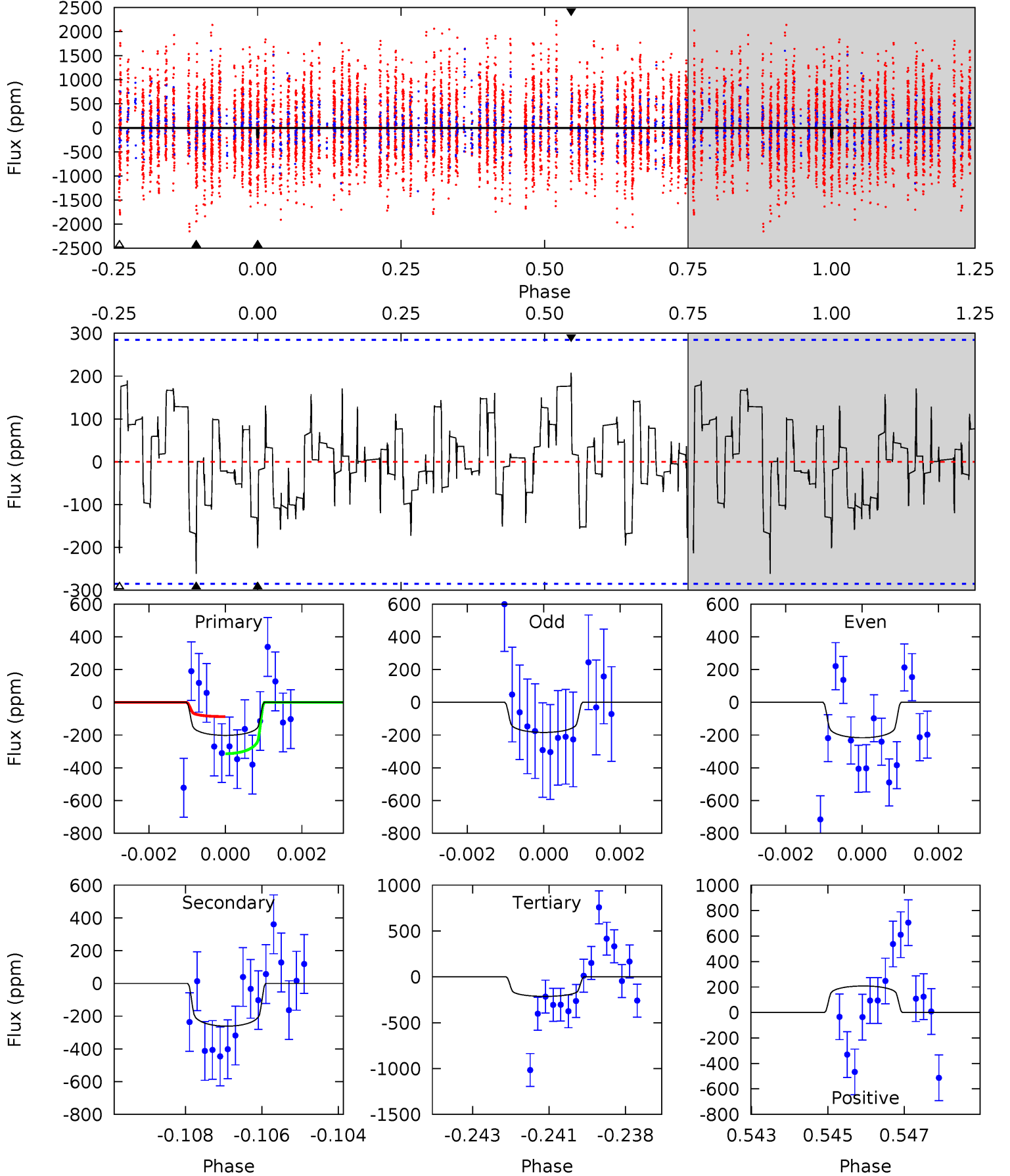
TCE 003975085-07 P=150.676705 Days $T_0=191.475505$ (BKJD)



DV Model-Shift Uniqueness Test

003975085-07, P = 150.726597 Days, E = 40.523088 Days

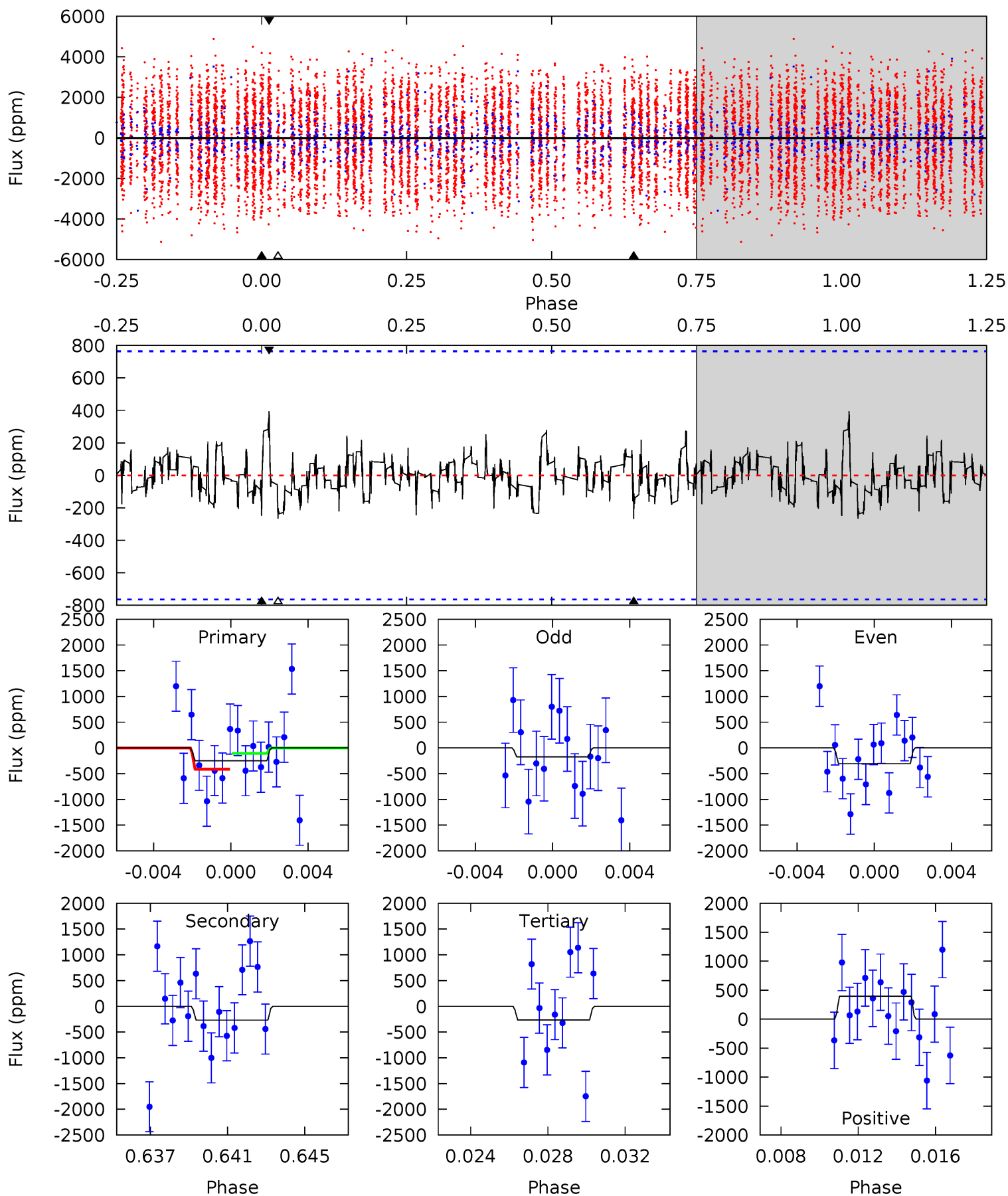
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.76	4.87	3.97	3.88	5.31	3.06	1.51	-0.21	-0.11	0.90	0.99	0.30	6.99	0.44	2.11



Alt Model-Shift Uniqueness Test

003975085-07, P = 150.676705 Days, E = 40.798800 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.69	1.82	1.80	2.68	5.20	2.88	0.66	-0.11	-0.99	0.02	-0.86	0.44	3.00	0.60	1.04



Stellar Parameters For KIC 003975085

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7757^{+69}_{-92}	$4.067^{+0.099}_{-0.121}$	$0.020^{+0.050}_{-0.200}$	$2.034^{+0.369}_{-0.302}$	$1.760^{+0.149}_{-0.164}$	$0.295^{+0.135}_{-0.109}$
	+1%/-1%	+2%/-3%	+250%/-1000%	+18%/-15%	+8%/-9%	+46%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003975085-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-261 ± 54	$3.95^{+3.39}_{-2.42}$	837^{+35}_{-34}	7237^{+7220}_{-1896}	4018^{+22561}_{-2910}
Alt.	-268 ± 147	$3.90^{+3.25}_{-2.46}$	836^{+40}_{-32}	7369^{+7951}_{-2228}	3974^{+25216}_{-3003}

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 $A_{obs} \gg 1.0$

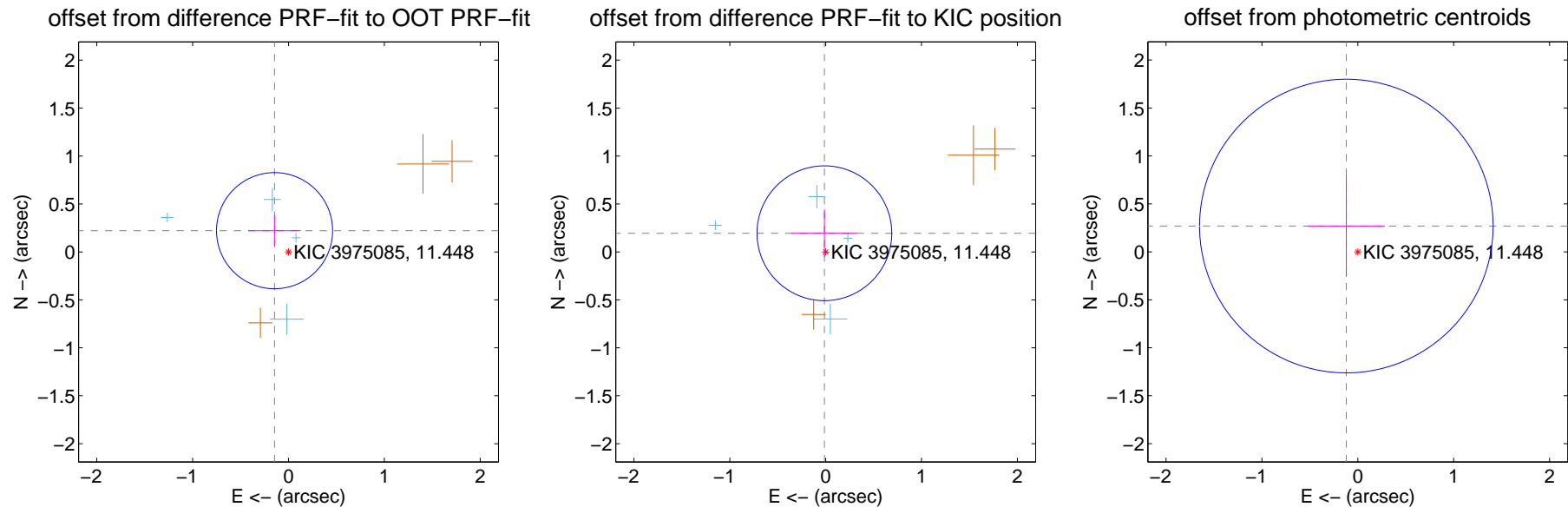
DV Centroid Data

Supplemental centroid analysis for 003975085-07. **Kepler magnitude: 11.45.** Transit SNR 4.01

There are 4 quarters with good PRF difference image offsets

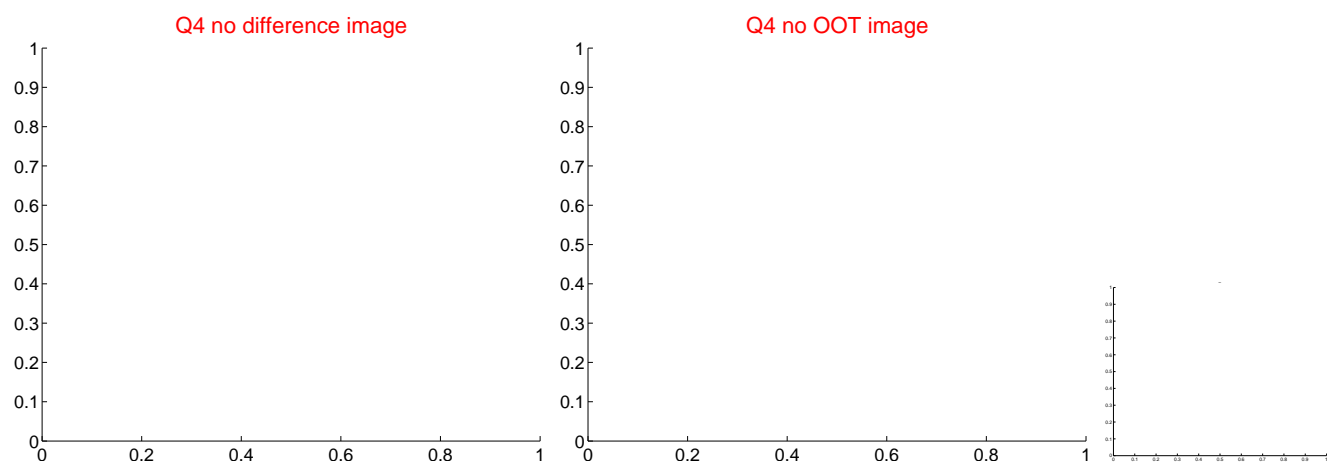
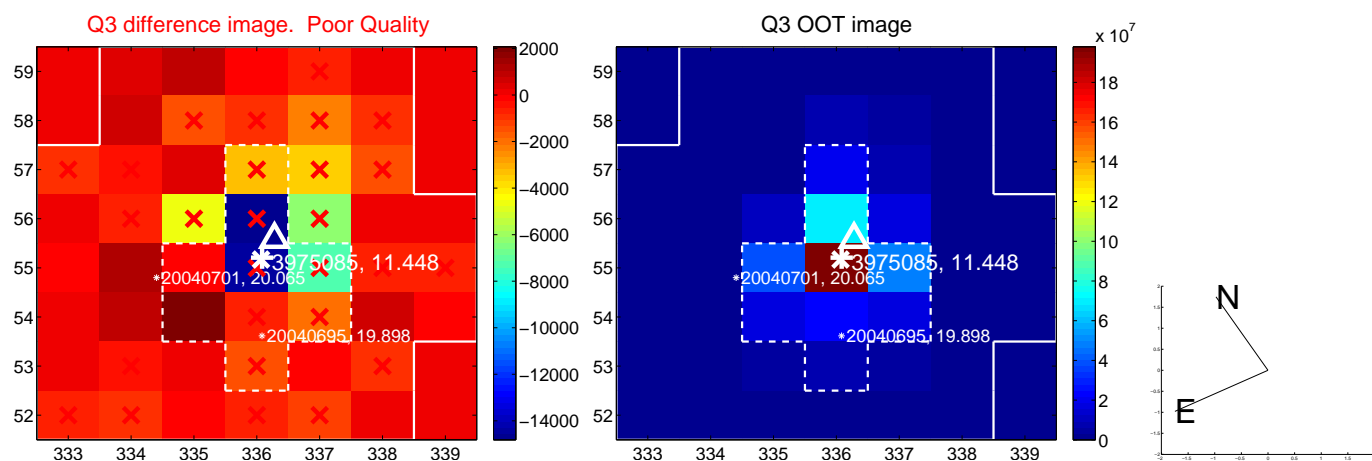
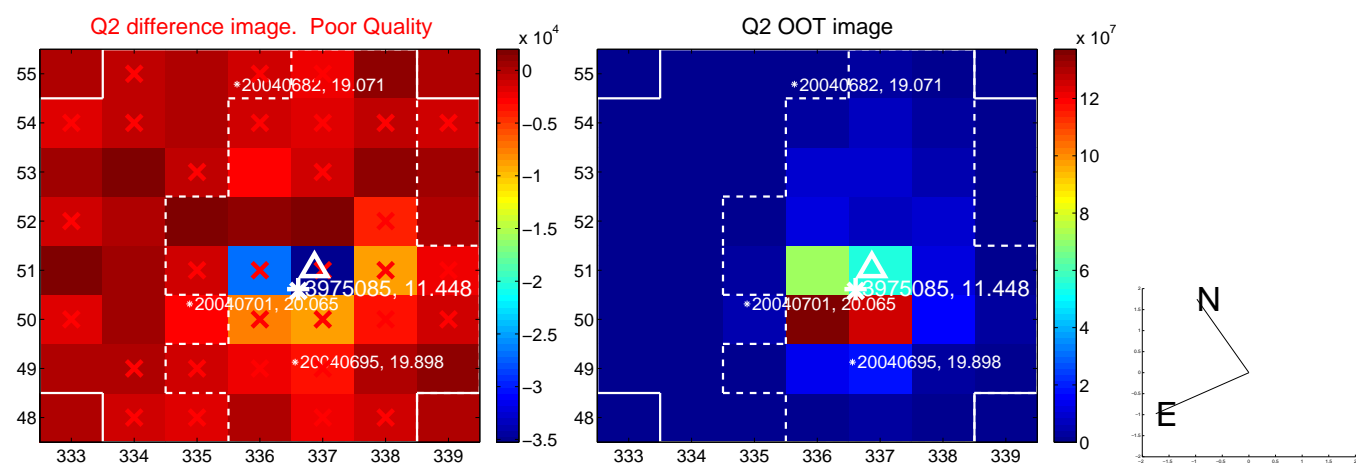
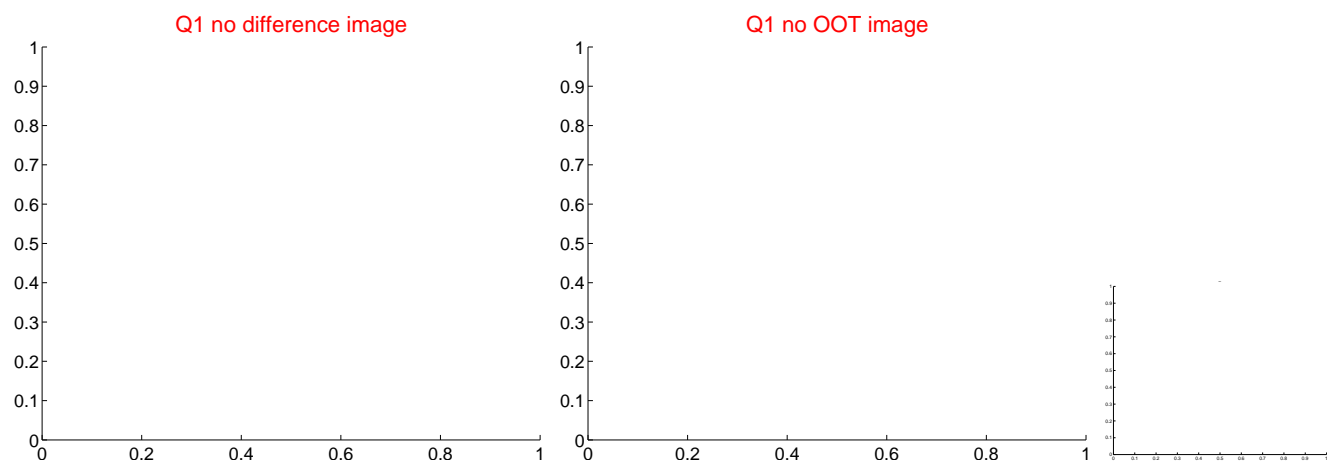
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.265 ± 0.202	1.31	0.145 ± 0.275	0.222 ± 0.161
PRF-fit source offset from KIC position	0.195 ± 0.234	0.83	0.013 ± 0.343	0.195 ± 0.249
photometric centroid source offset	0.29 ± 0.51	0.58	0.12 ± 0.40	0.27 ± 0.53

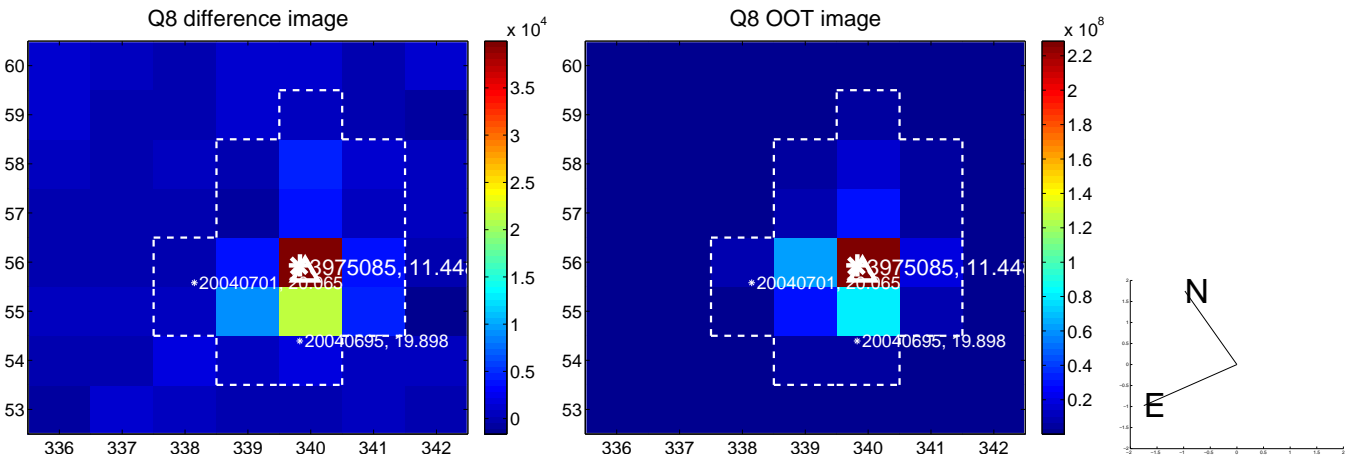
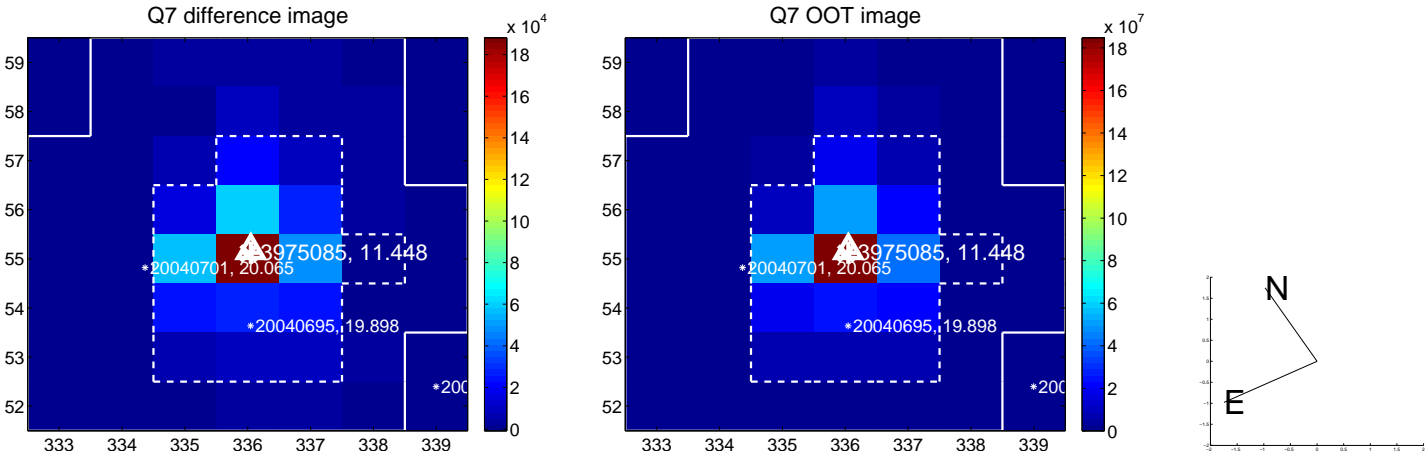
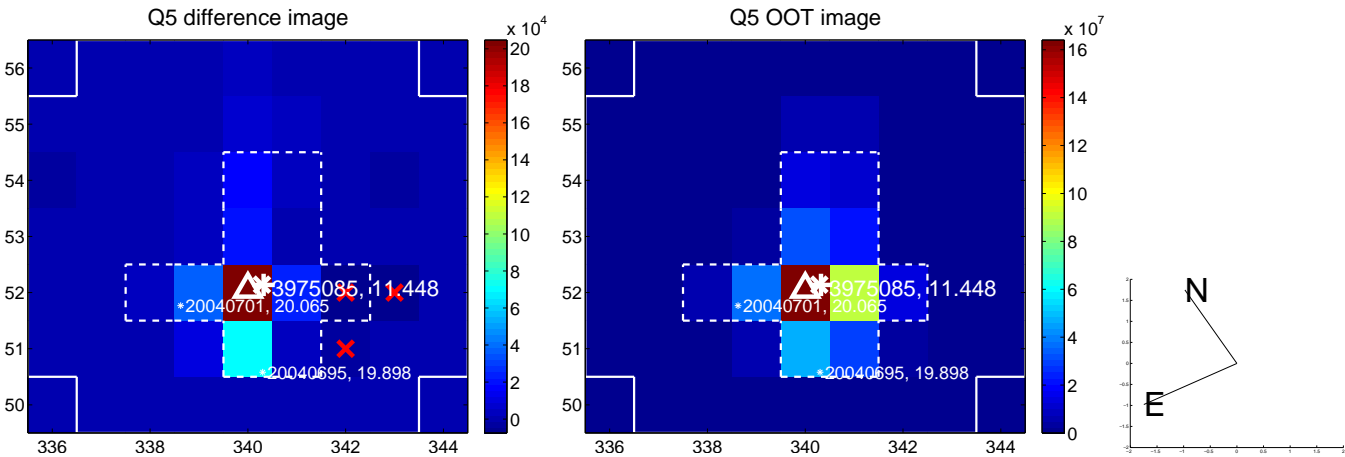


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

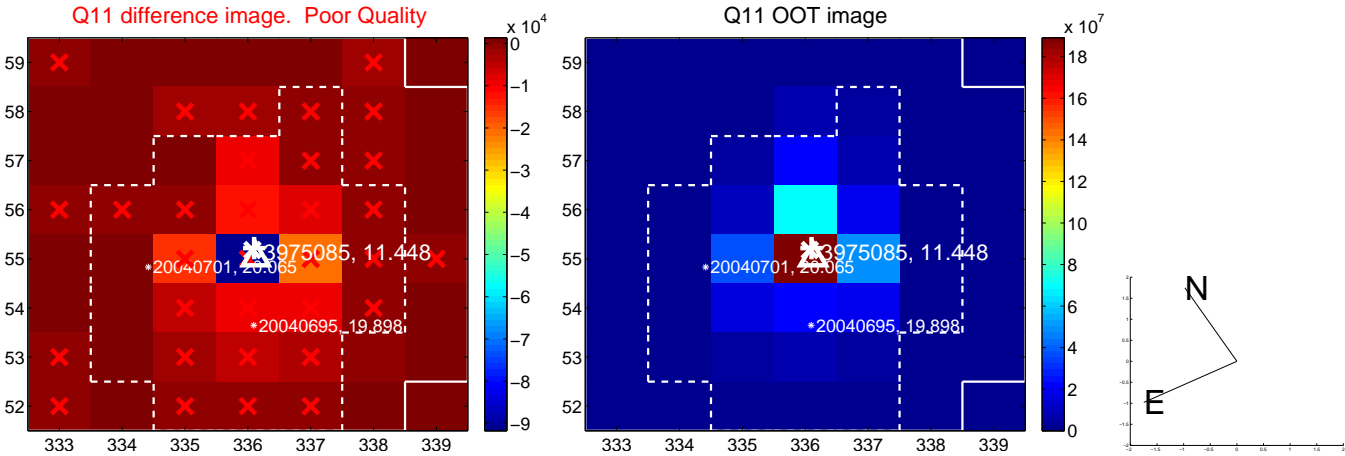
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



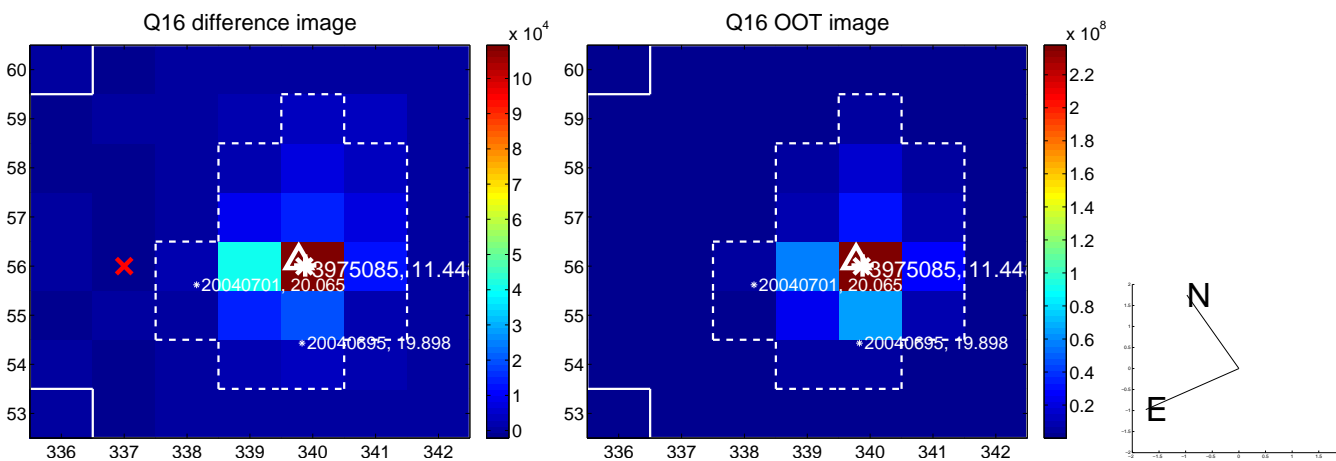
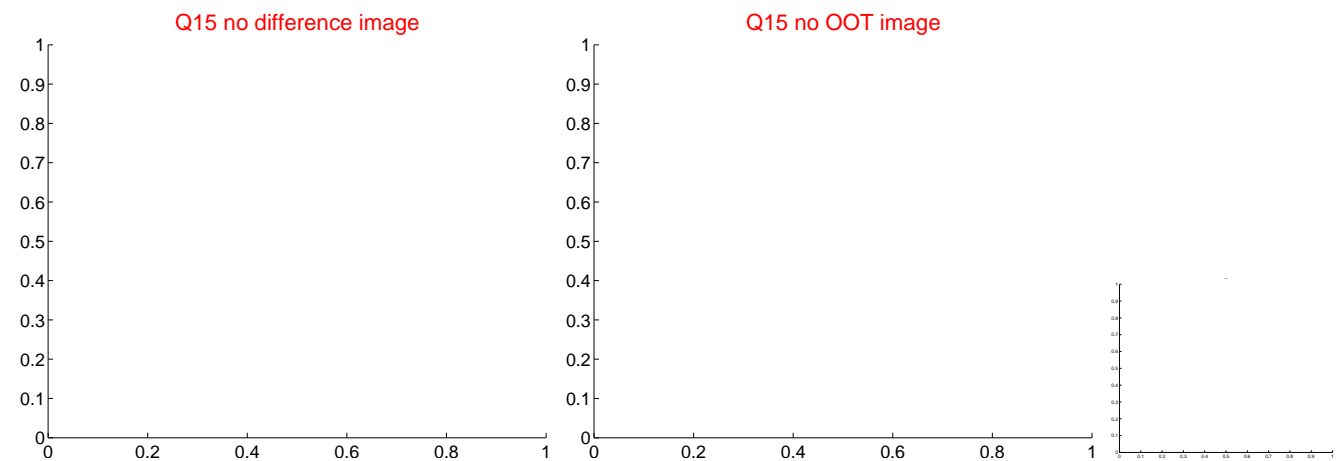
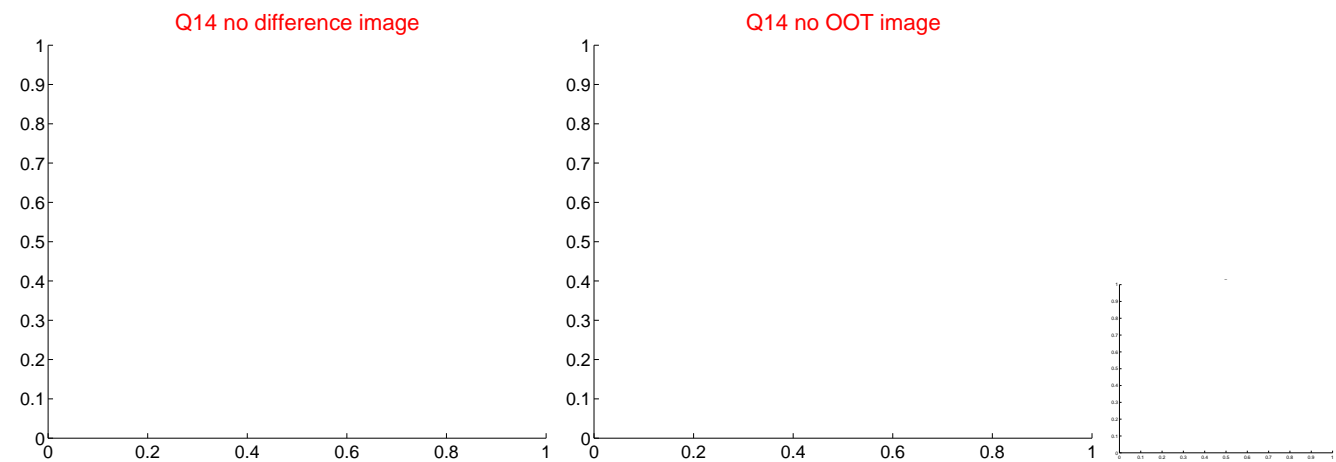
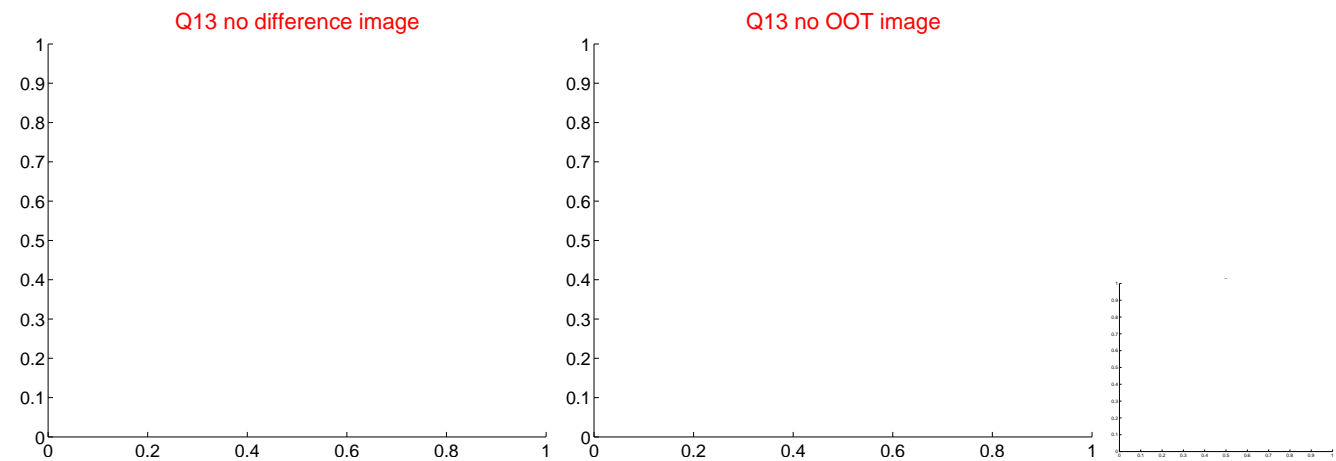
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



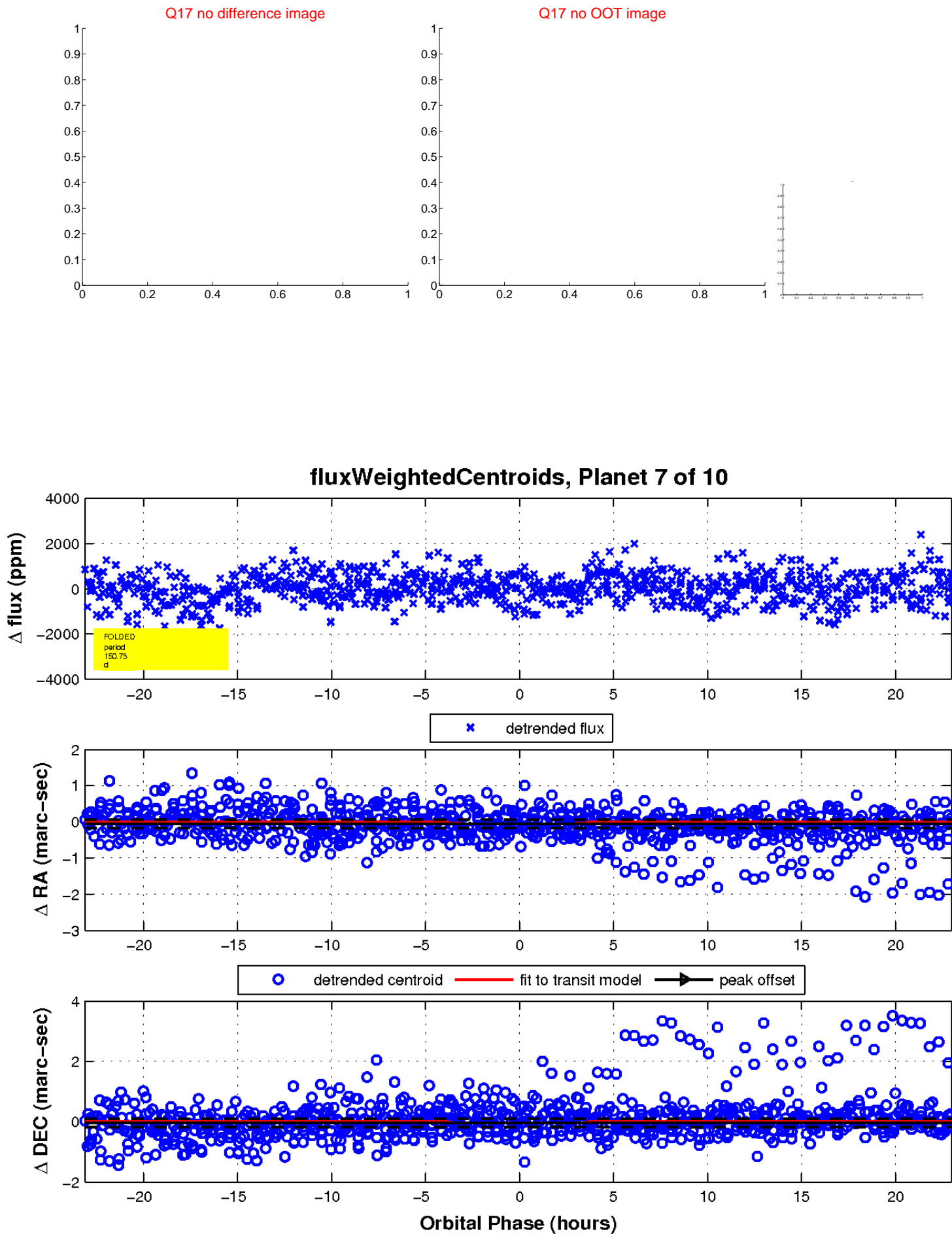
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

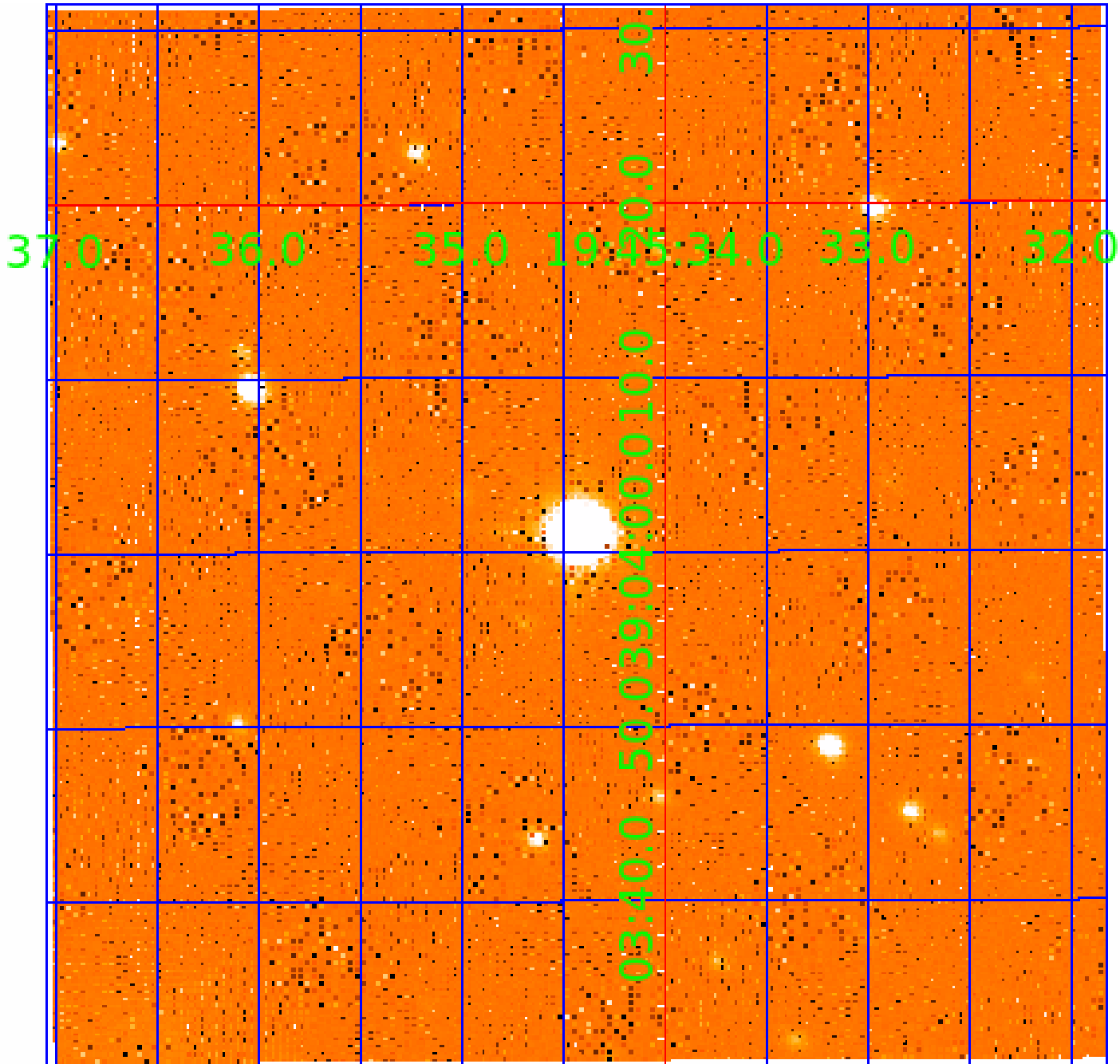


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003975085

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})
003975085-01	OBS	No	2.009828	131.961572	80.5	12.652	9.8	9.5	2.03	7757	2.11	9470.18
003975085-02	OBS	No	78.528369	142.985487	1568.0	4.926	12.0	11.4	2.03	7757	10.18	71.43
003975085-03	OBS	No	58.828151	136.843263	478.0	9.473	10.1	7.2	2.03	7757	4.85	104.98
003975085-04	OBS	No	99.802914	200.101690	760.0	4.995	8.7	5.6	2.03	7757	6.18	51.88
003975085-06	OBS	No	12.581793	132.266373	218.4	25.656	8.5	8.0	2.03	7757	3.26	820.82
003975085-07	OBS	No	150.726597	191.249685	243.4	7.705	9.6	4.0	2.03	7757	3.46	29.94
003975085-08	OBS	No	66.693977	192.425115	1047.8	3.546	8.0	7.2	2.03	7757	7.62	88.81
003975085-09	OBS	No	82.265583	150.962779	1145.8	2.558	7.8	8.3	2.03	7757	8.23	67.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003975085-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003975085-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

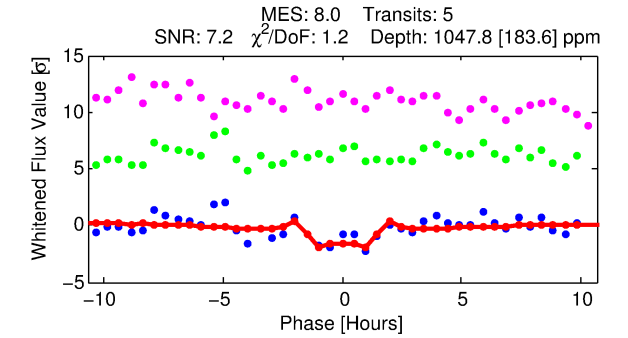
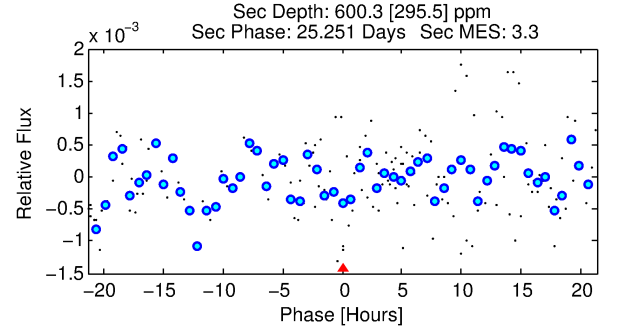
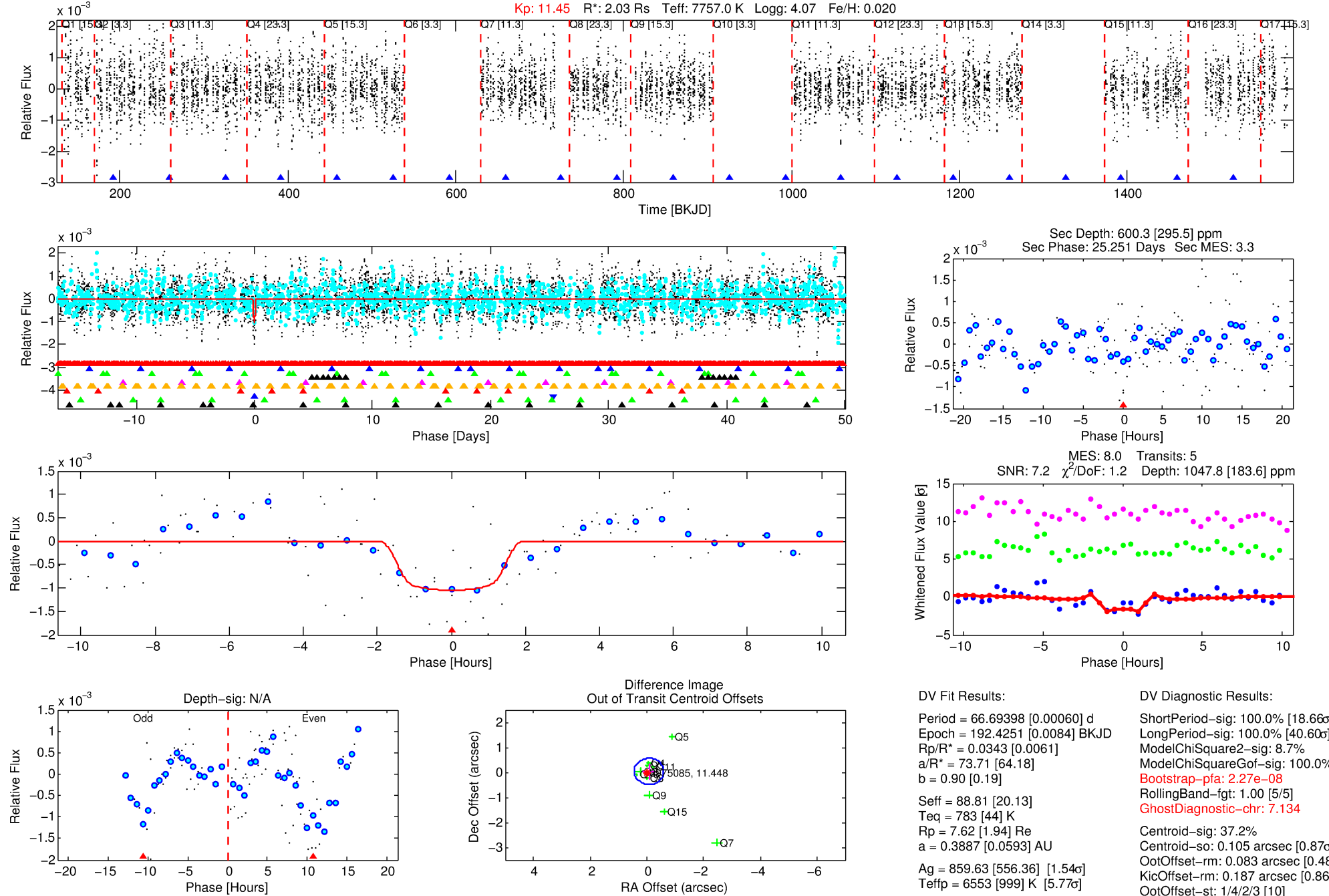
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003975085-08

No Significant Match Found

DV One-Page Summary

KIC: 3975085 Candidate: 8 of 10 Period: 66.694 d



DV Fit Results:

Period = 66.69398 [0.00060] d
Epoch = 192.4251 [0.0084] BKJD
Rp/R* = 0.0343 [0.0061]
a/R* = 73.71 [64.18]
b = 0.90 [0.19]
Seff = 88.81 [20.13]
Teff = 783 [44] K
Rp = 7.62 [1.94] Re
a = 0.3887 [0.0593] AU
Ag = 859.63 [556.36] [1.54] σ
Teffp = 6553 [999] K [5.77] σ

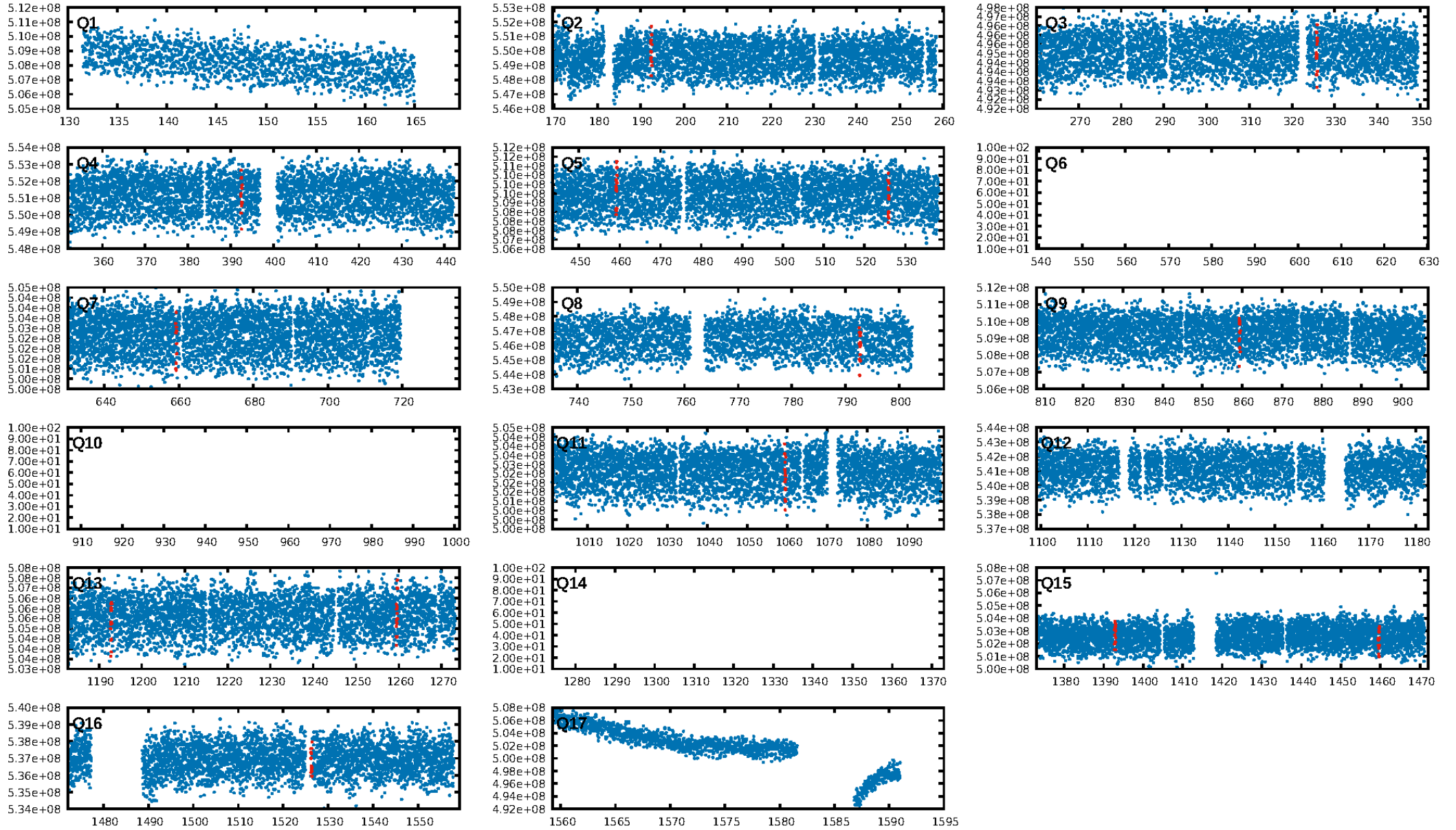
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.66] σ
LongPeriod-sig: 100.0% [40.60] σ
ModelChiSquare2-sig: 8.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.27e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 7.134
Centroid-sig: 37.2%
Centroid-so: 0.105 arcsec [0.87] σ
OotOffset-rm: 0.083 arcsec [0.48] σ
OotOffset-st: 1/4/2/3 [10]
KicOffset-rm: 0.187 arcsec [0.86] σ
KicOffset-st: 1/4/2/3 [10]
DiffImageQuality-fgm: 0.60 [6/10]
DiffImageOverlap-fno: 0.50 [5/10]

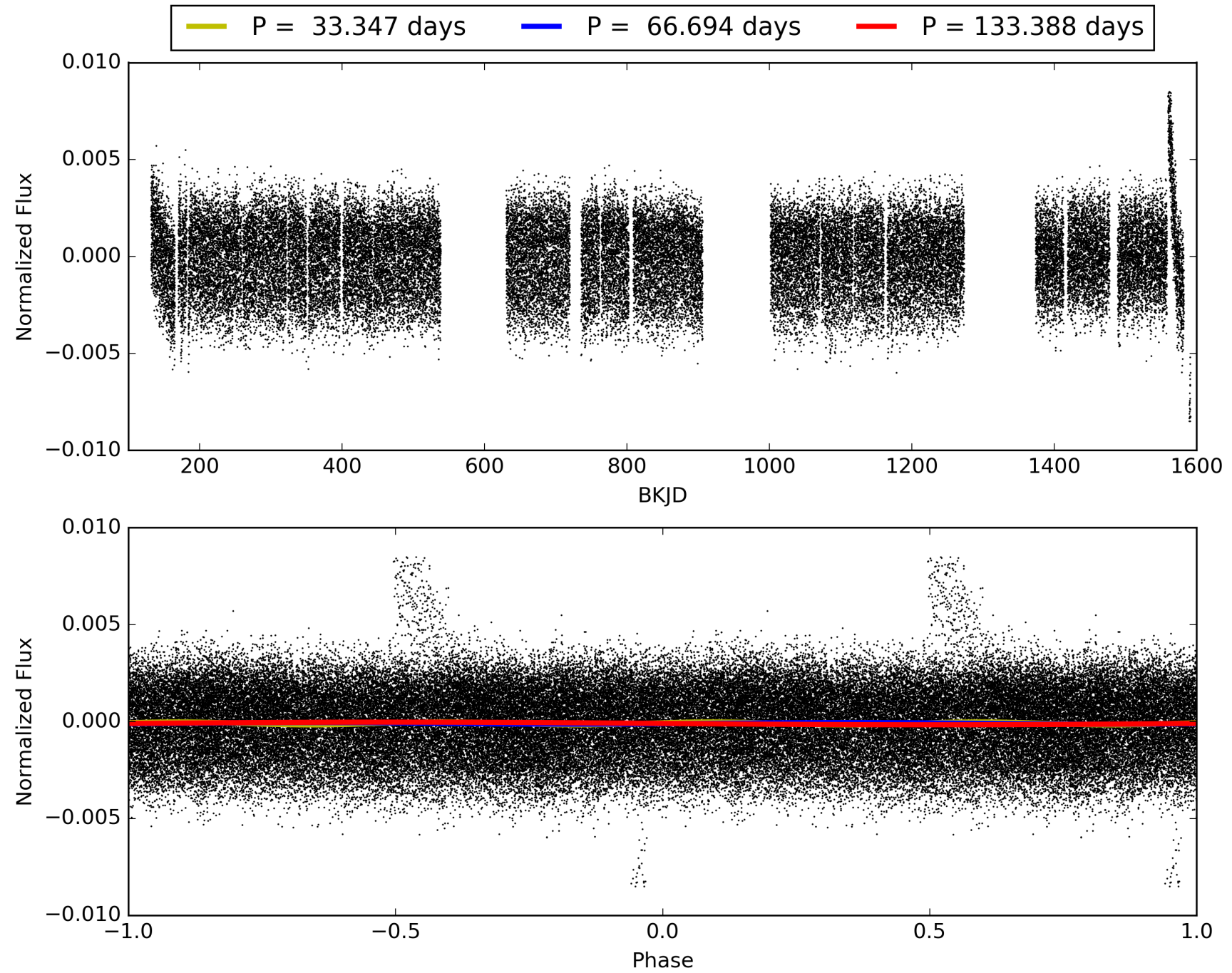
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:22:52 Z

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

TCE 003975085-08, PDC Light Curves

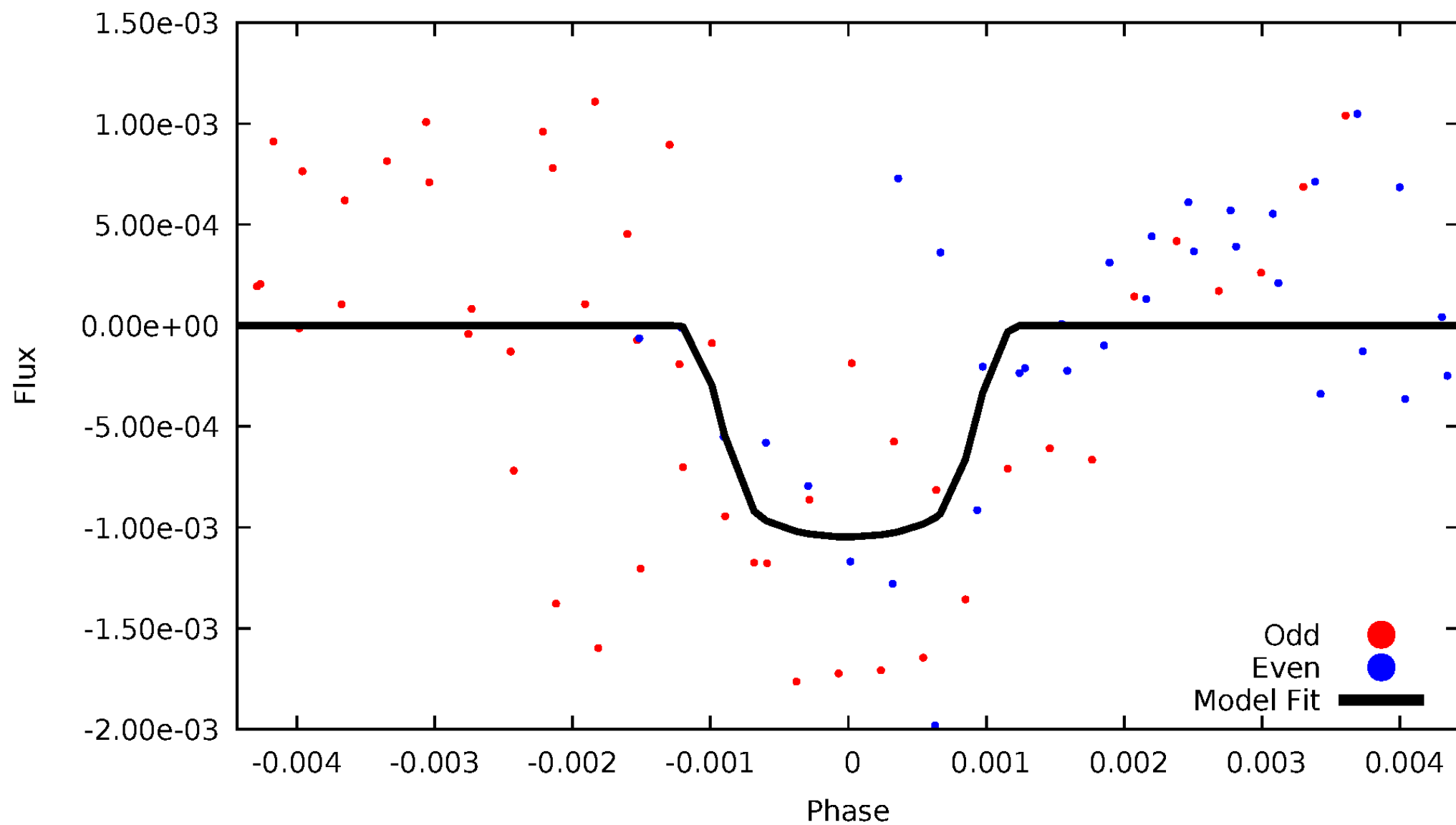


TCE 003975085-08



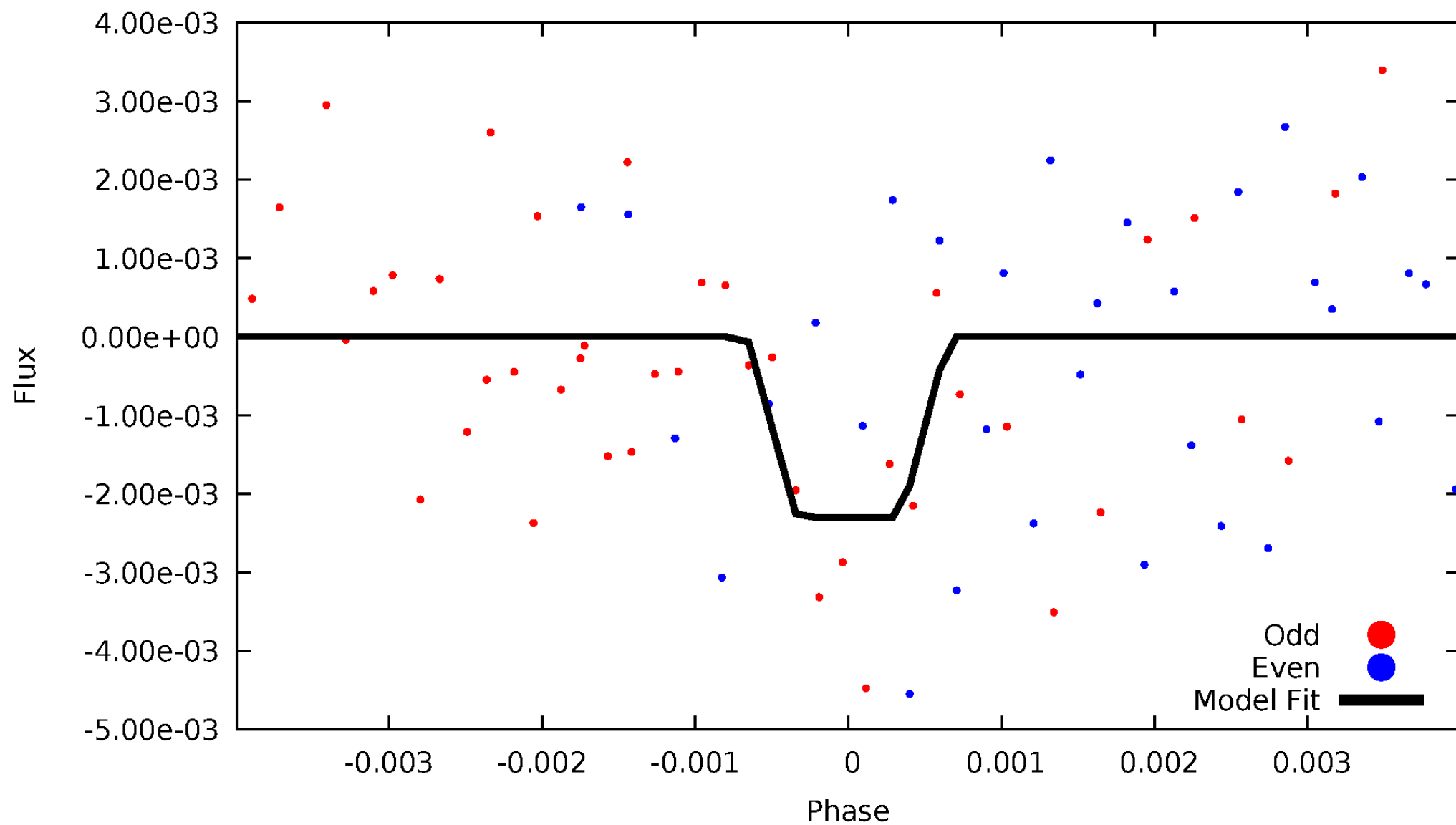
DV Odd/Even

TCE 003975085-08



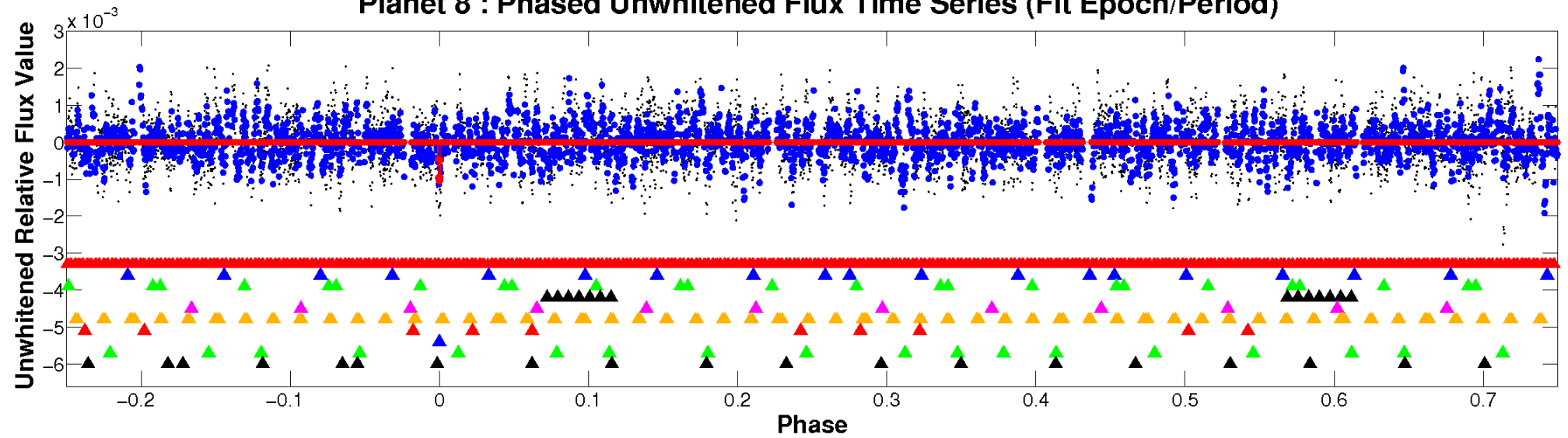
ALT Odd/Even

TCE 003975085-08

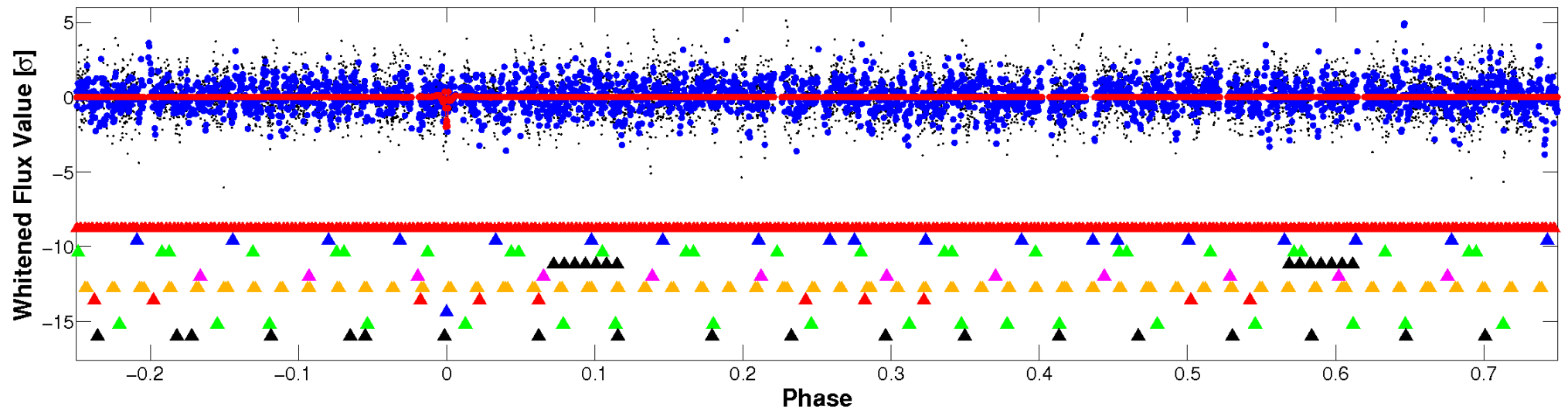


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

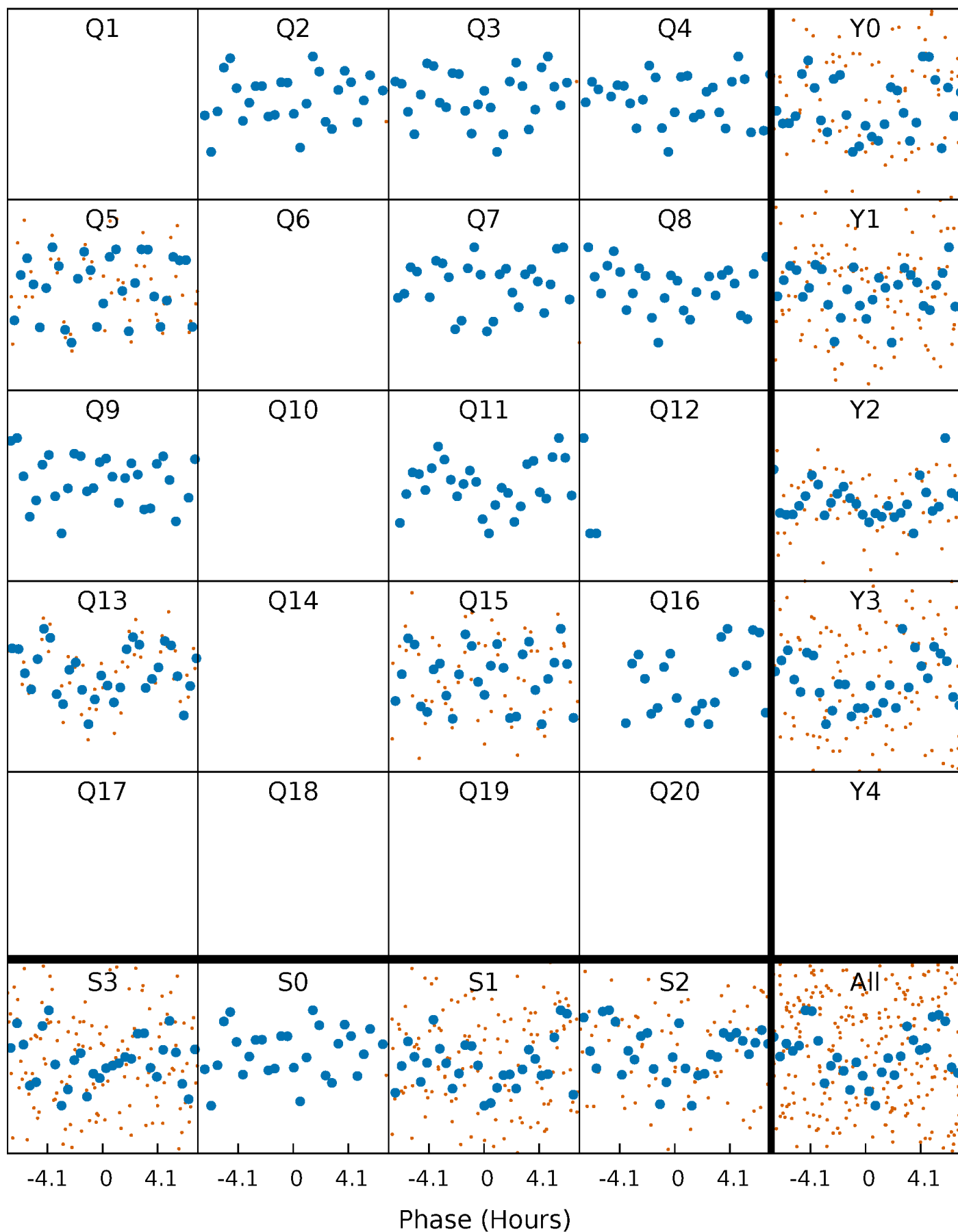


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



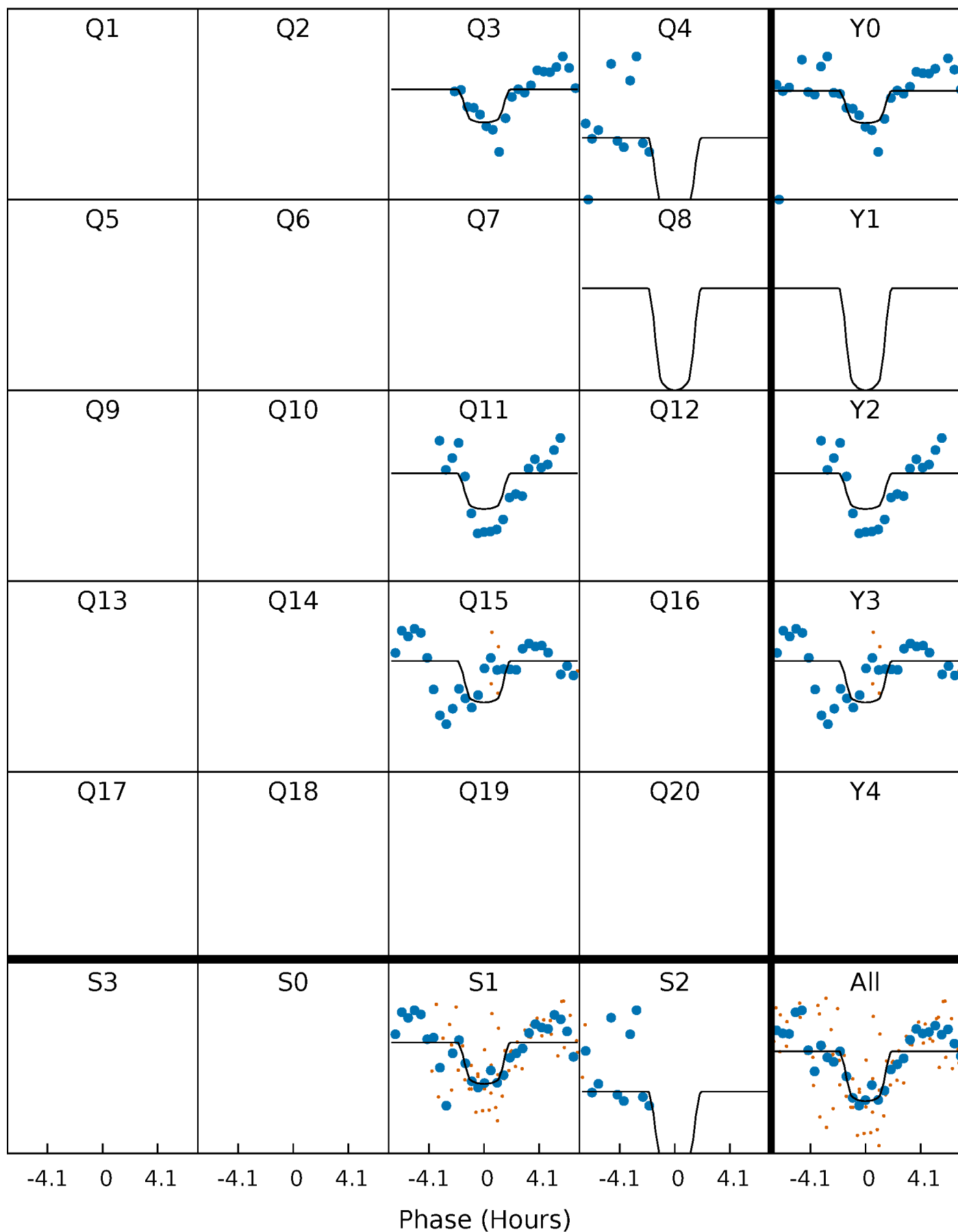
PDC Quarter-Phased Transit Curves

TCE 003975085-08 P= 66.693977 Days $T_0=192.425115$ (BKJD)



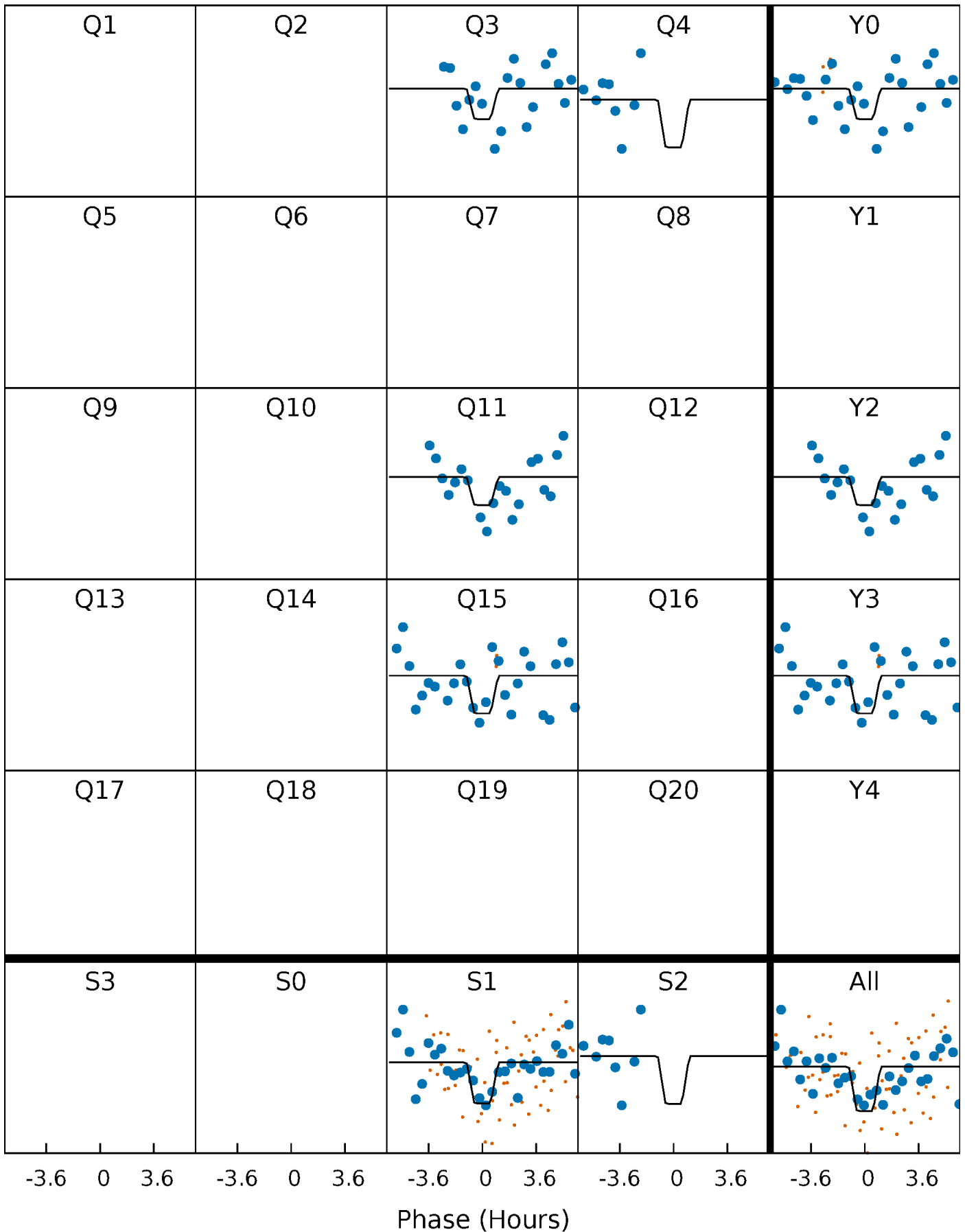
DV Quarter-Phased Transit Curves

TCE 003975085-08 P= 66.693977 Days $T_0=192.425115$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

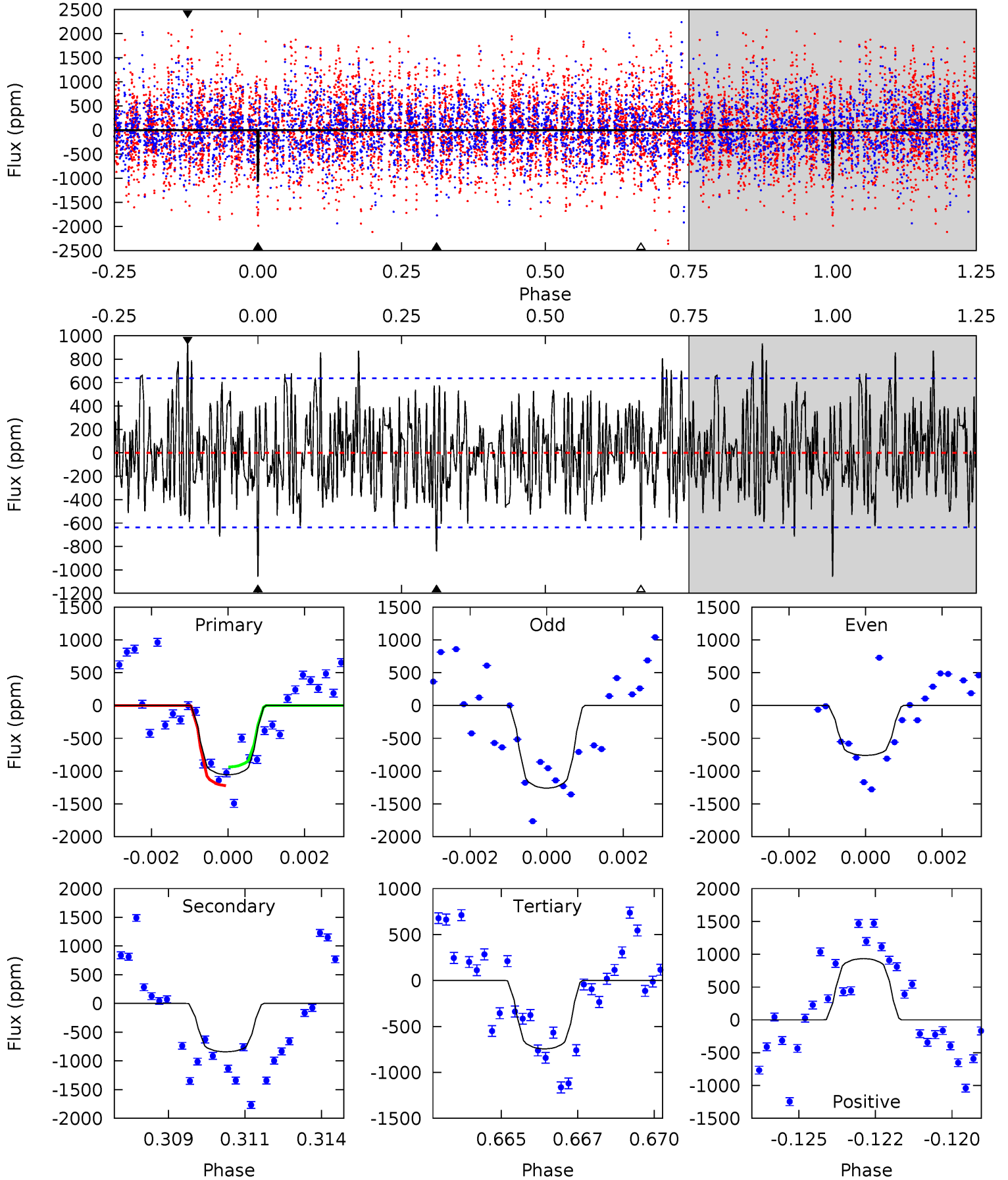
TCE 003975085-08 P= 66.693327 Days $T_0=192.441610$ (BKJD)



DV Model-Shift Uniqueness Test

003975085-08, P = 66.693977 Days, E = 125.731138 Days

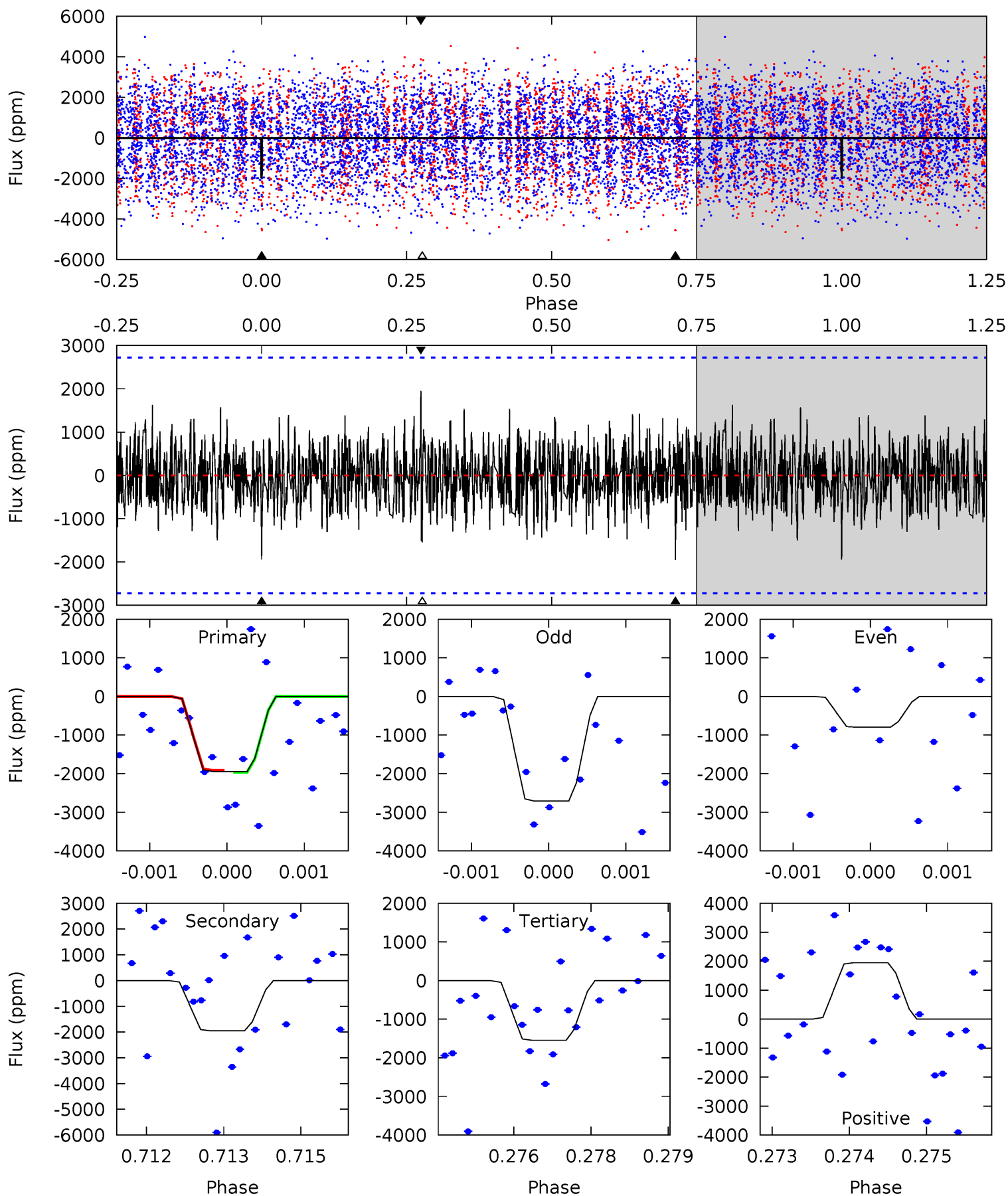
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.77	6.99	6.18	7.75	5.29	3.02	2.29	2.59	1.02	0.81	-0.76	2.05	0.79	0.47	1.17



Alt Model-Shift Uniqueness Test

003975085-08, P = 66.693327 Days, E = 125.748283 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.88	3.88	3.08	3.89	5.43	3.26	1.04	0.80	-0.01	0.80	-0.00	1.94	0.69	0.50	0.05



Stellar Parameters For KIC 003975085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7757^{+69}_{-92}	$4.067^{+0.099}_{-0.121}$	$0.020^{+0.050}_{-0.200}$	$2.034^{+0.369}_{-0.302}$	$1.760^{+0.149}_{-0.164}$	$0.295^{+0.135}_{-0.109}$
	+1%/-1%	+2%/-3%	+250%/-1000%	+18%/-15%	+8%/-9%	+46%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003975085-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-842 ± 120	$7.59^{+1.68}_{-1.40}$	1099^{+51}_{-44}	7007^{+993}_{-572}	1190^{+653}_{-386}
Alt.	-1947 ± 501	$10.69^{+1.84}_{-1.55}$	1096^{+51}_{-41}	7337^{+788}_{-681}	1379^{+630}_{-460}

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 $A_{obs} \gg 1.0$

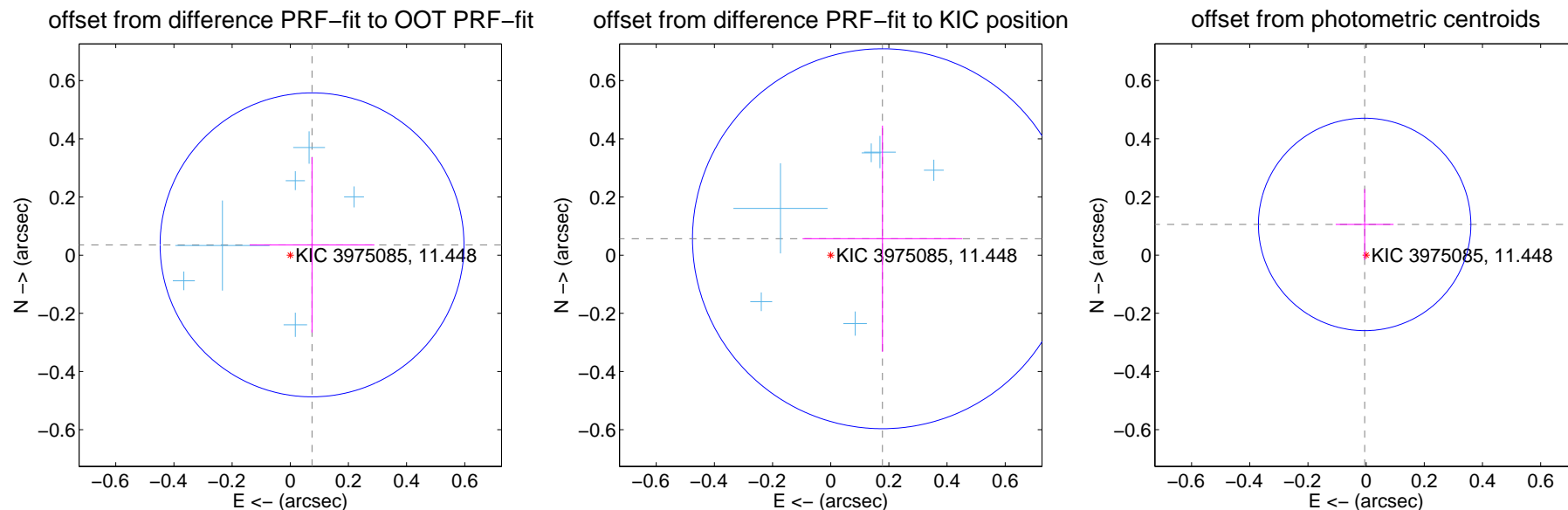
DV Centroid Data

Supplemental centroid analysis for 003975085-08. **Kepler magnitude: 11.45.** Transit SNR 7.21

There are 6 quarters with good PRF difference image offsets

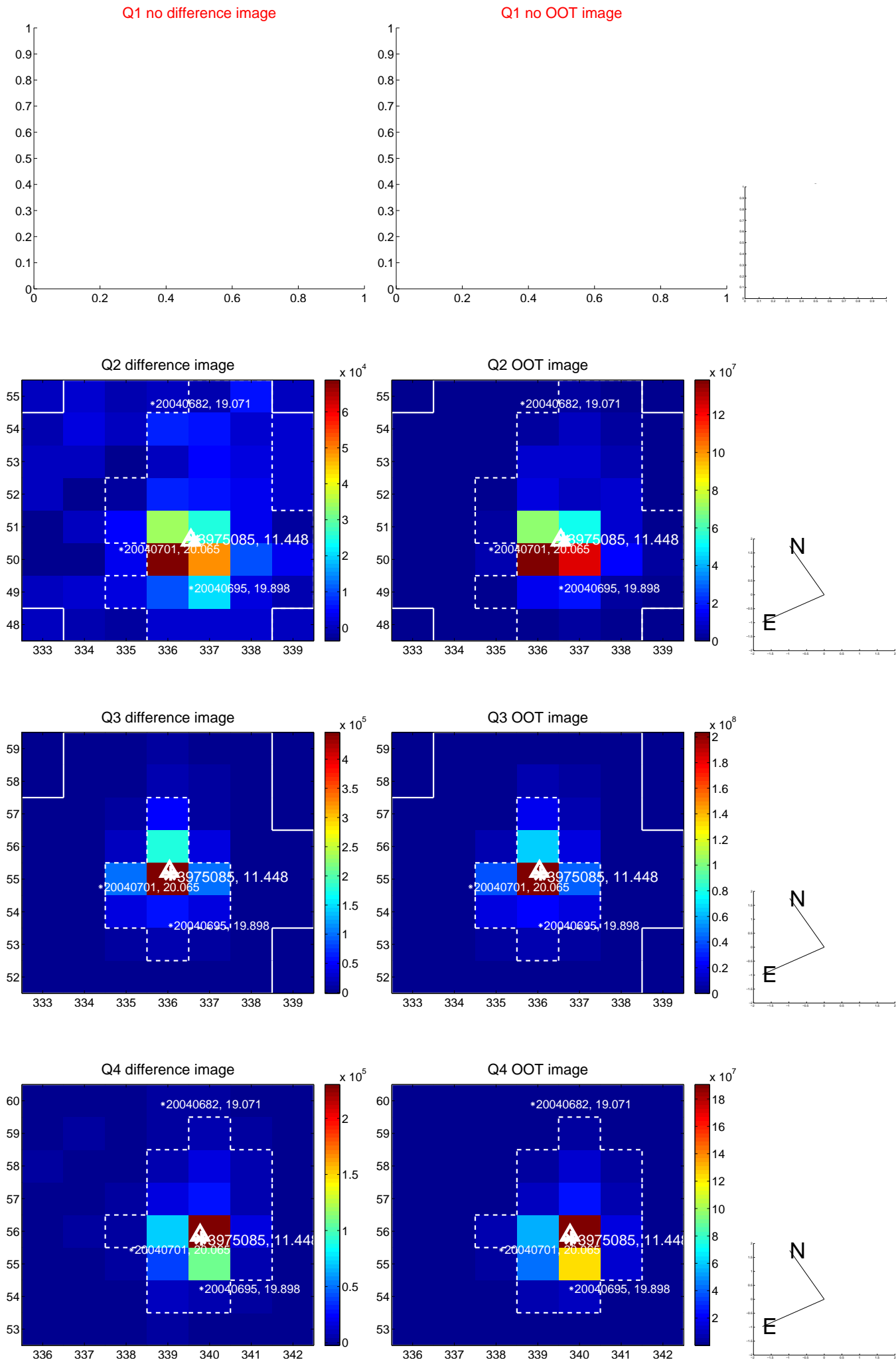
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.083 ± 0.174	0.48	-0.075 ± 0.214	0.035 ± 0.301
PRF-fit source offset from KIC position	0.187 ± 0.218	0.86	-0.178 ± 0.275	0.056 ± 0.389
photometric centroid source offset	0.11 ± 0.12	0.87	0.01 ± 0.10	0.11 ± 0.12

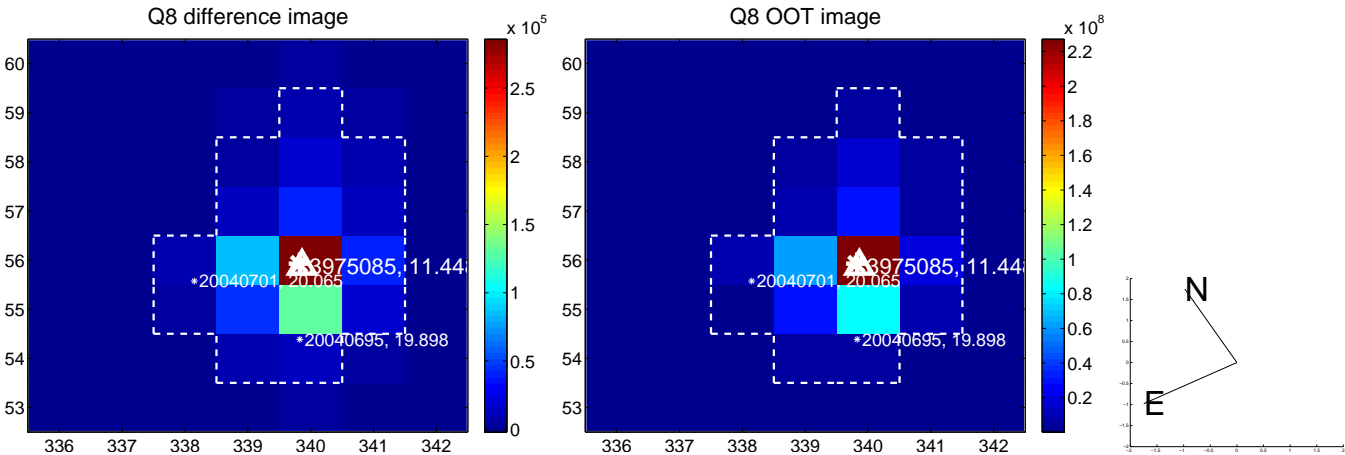
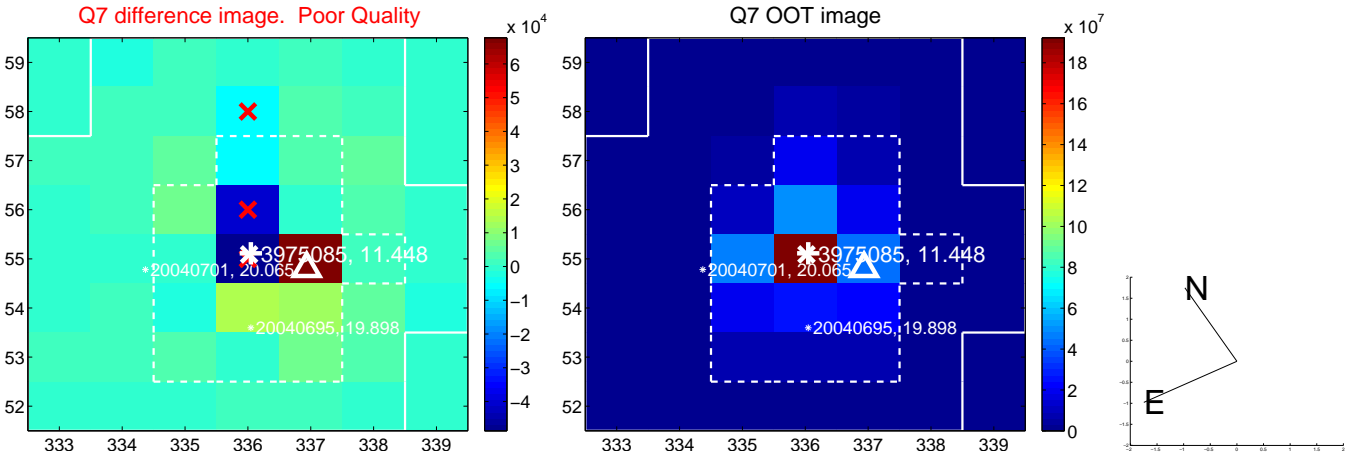
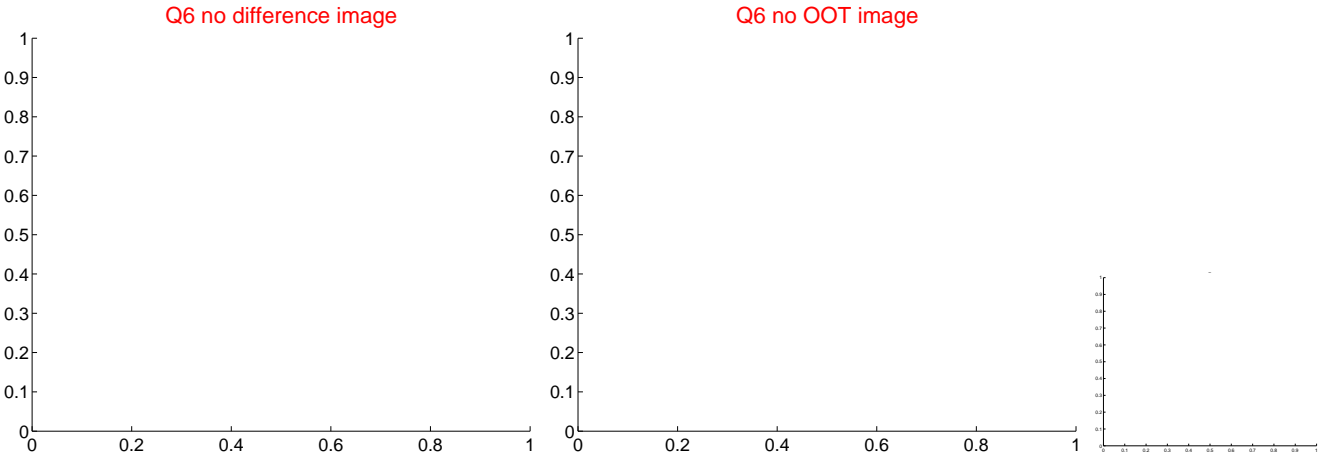
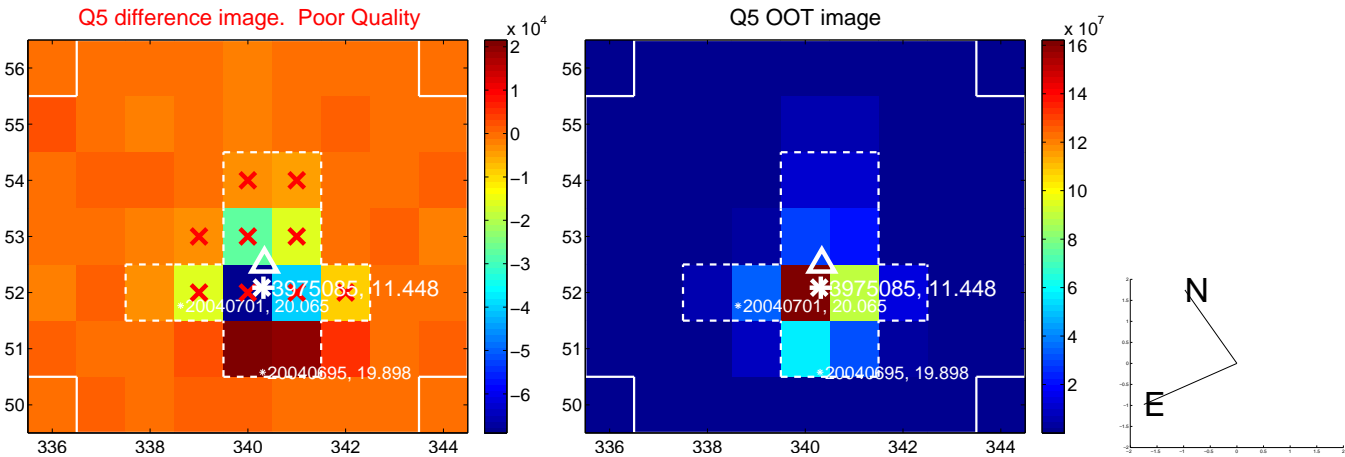


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

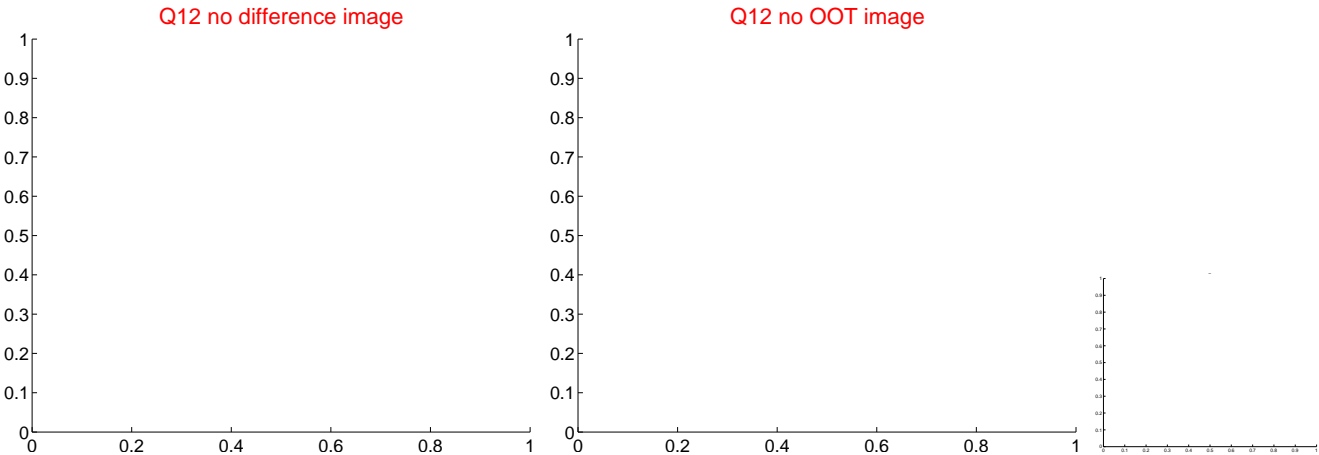
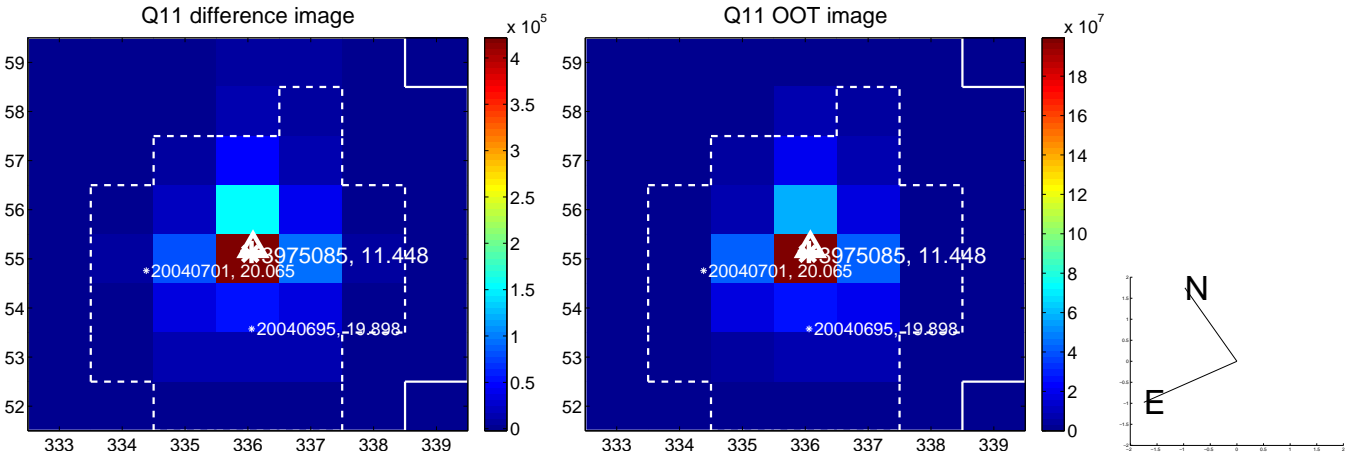
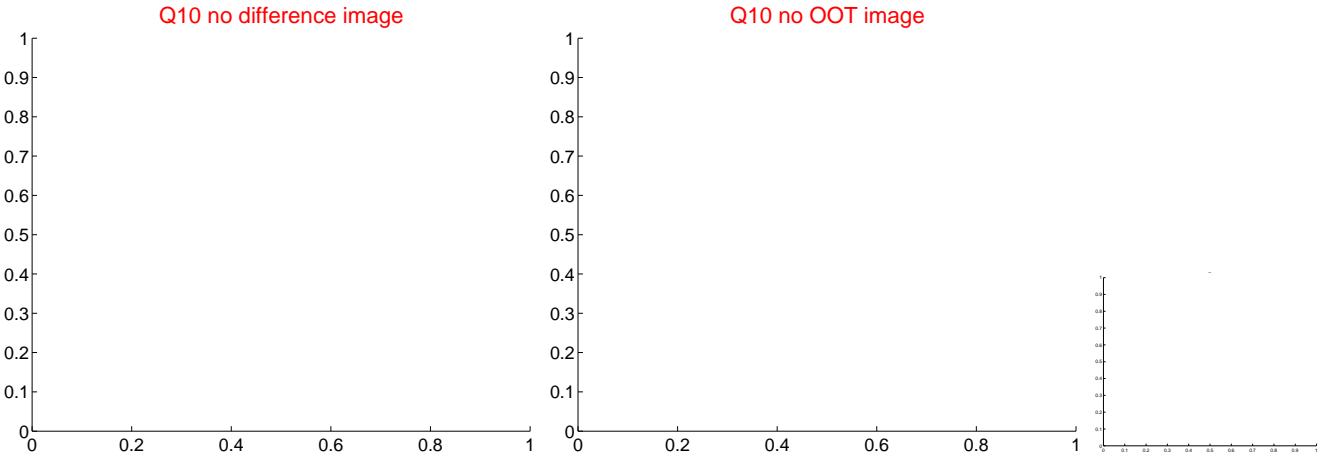
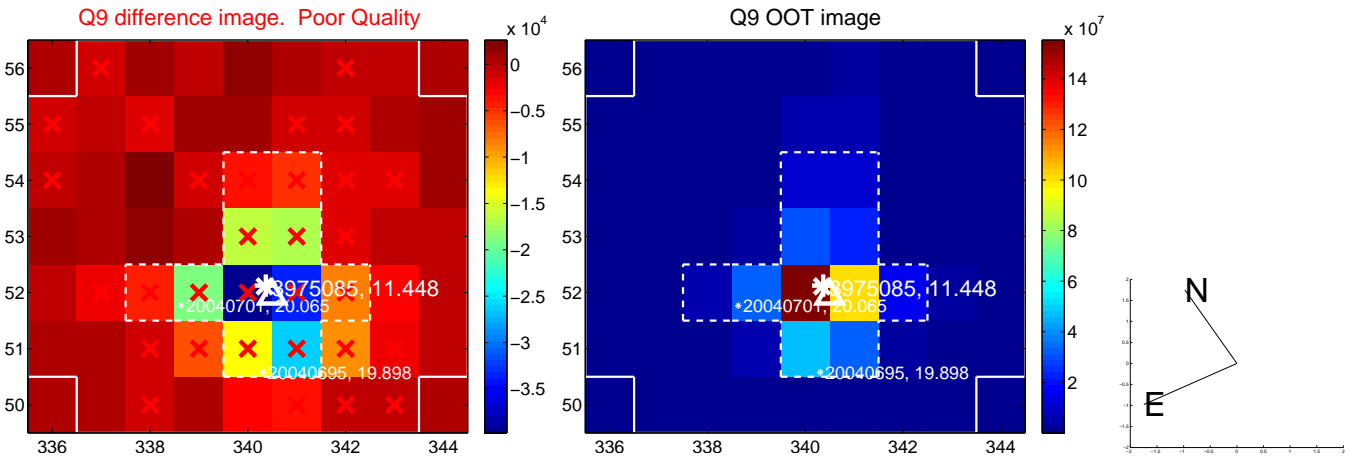
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



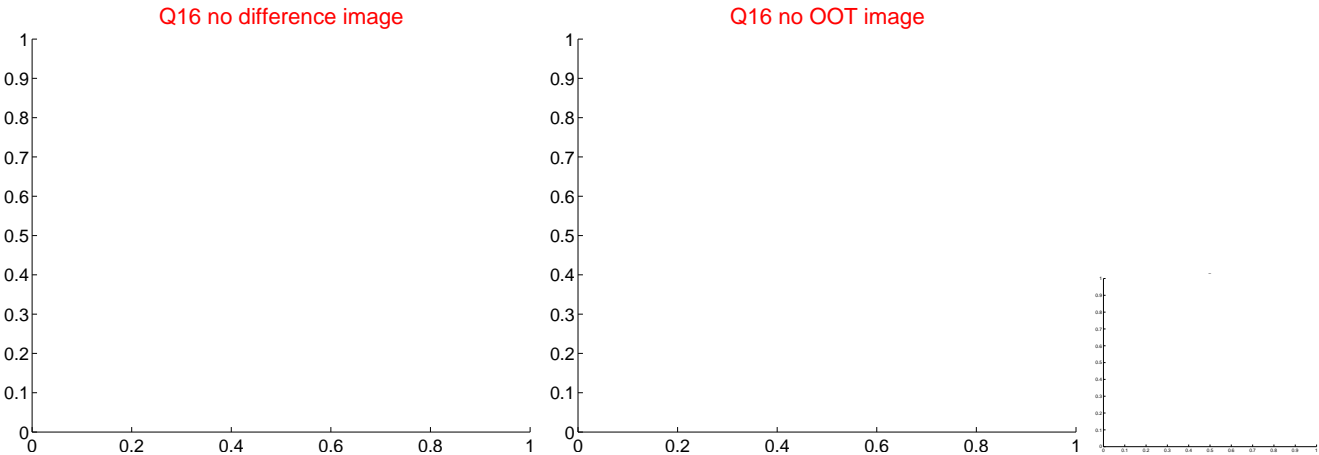
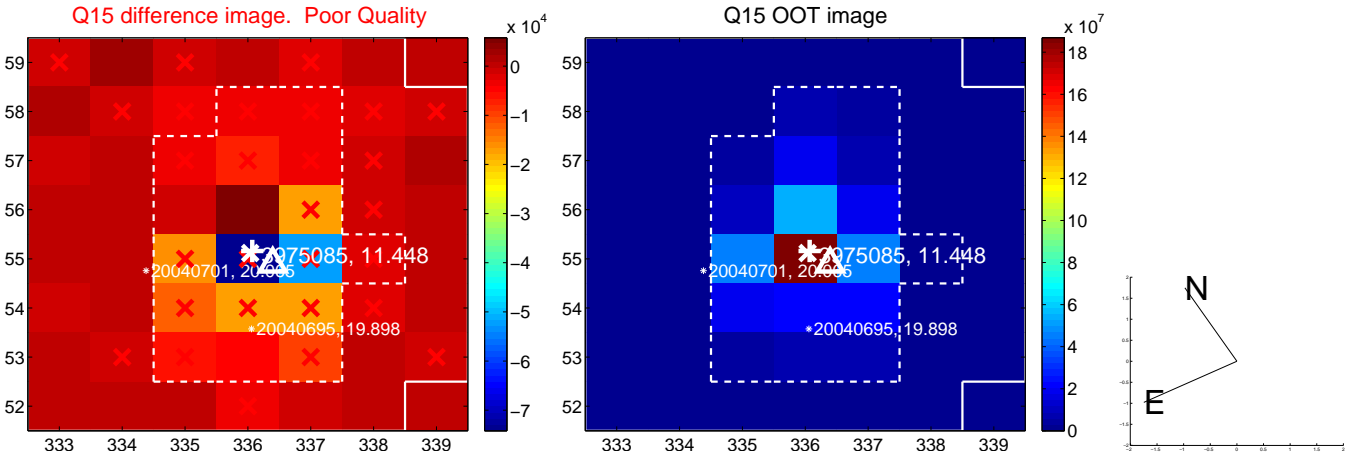
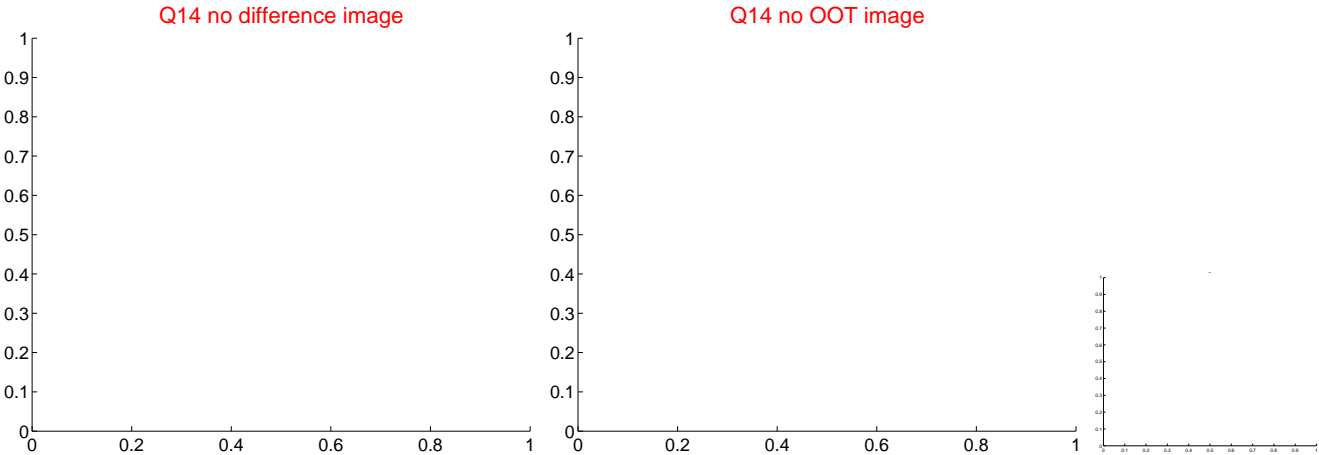
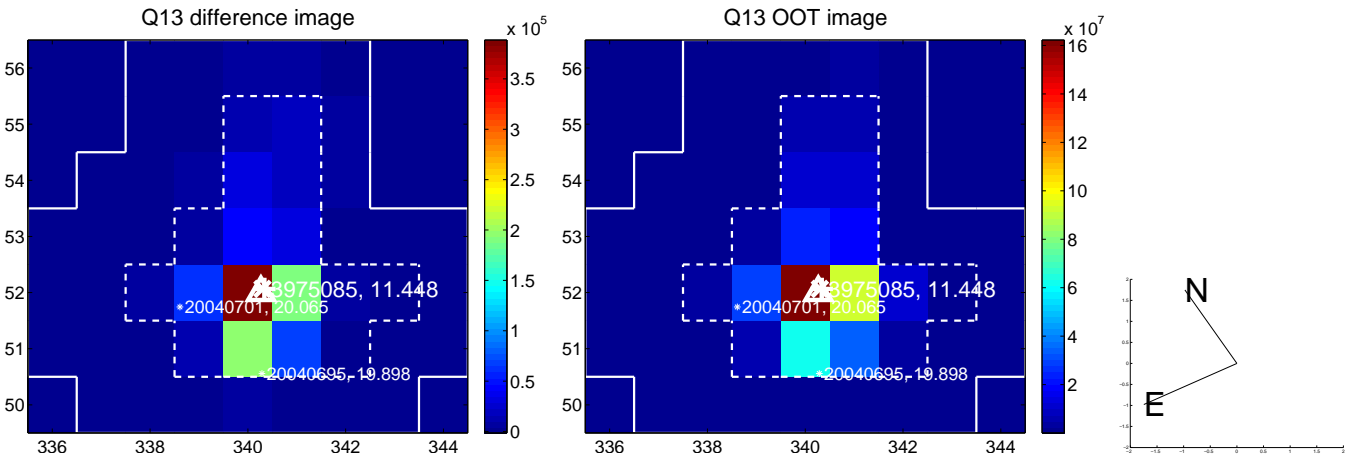
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



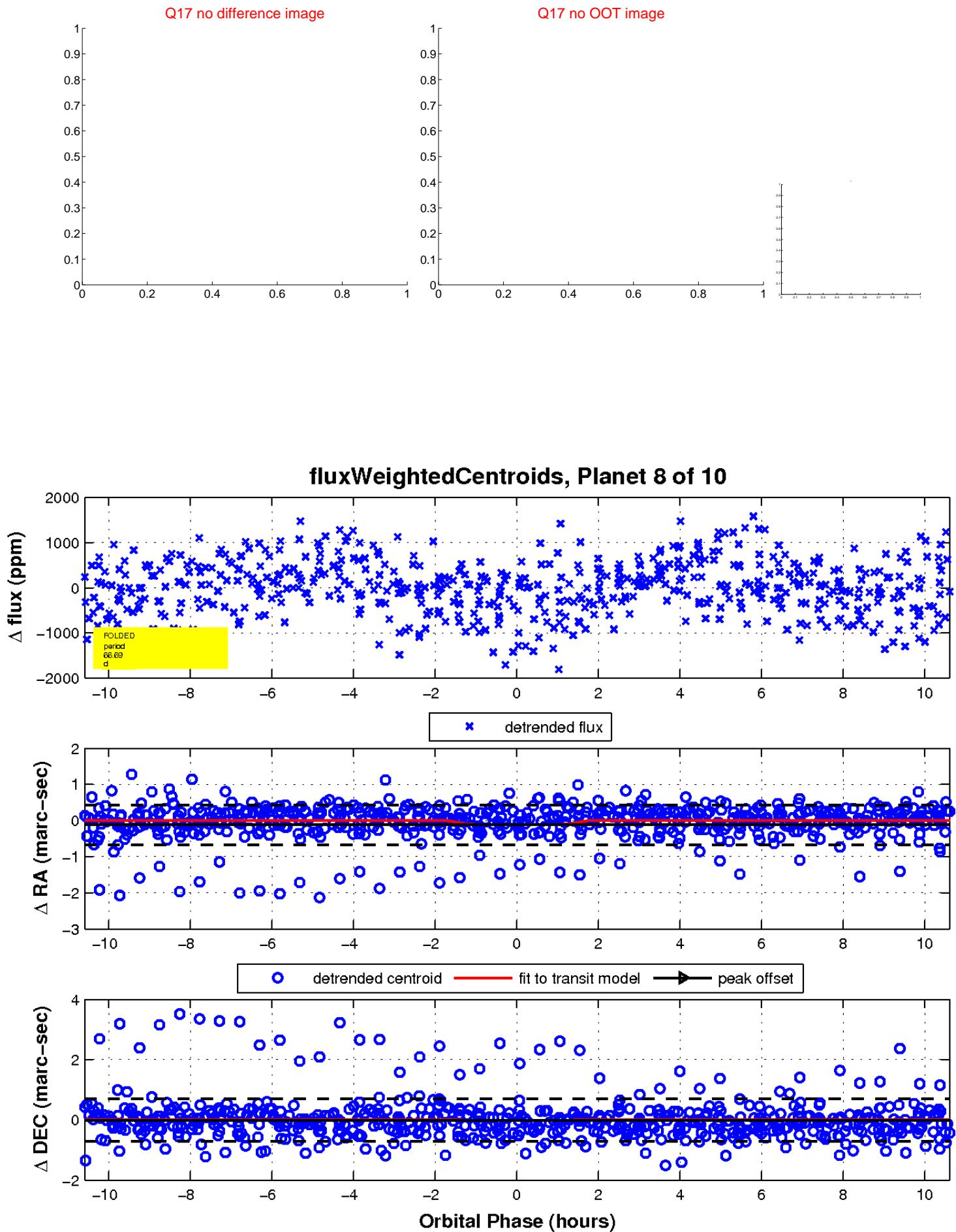
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

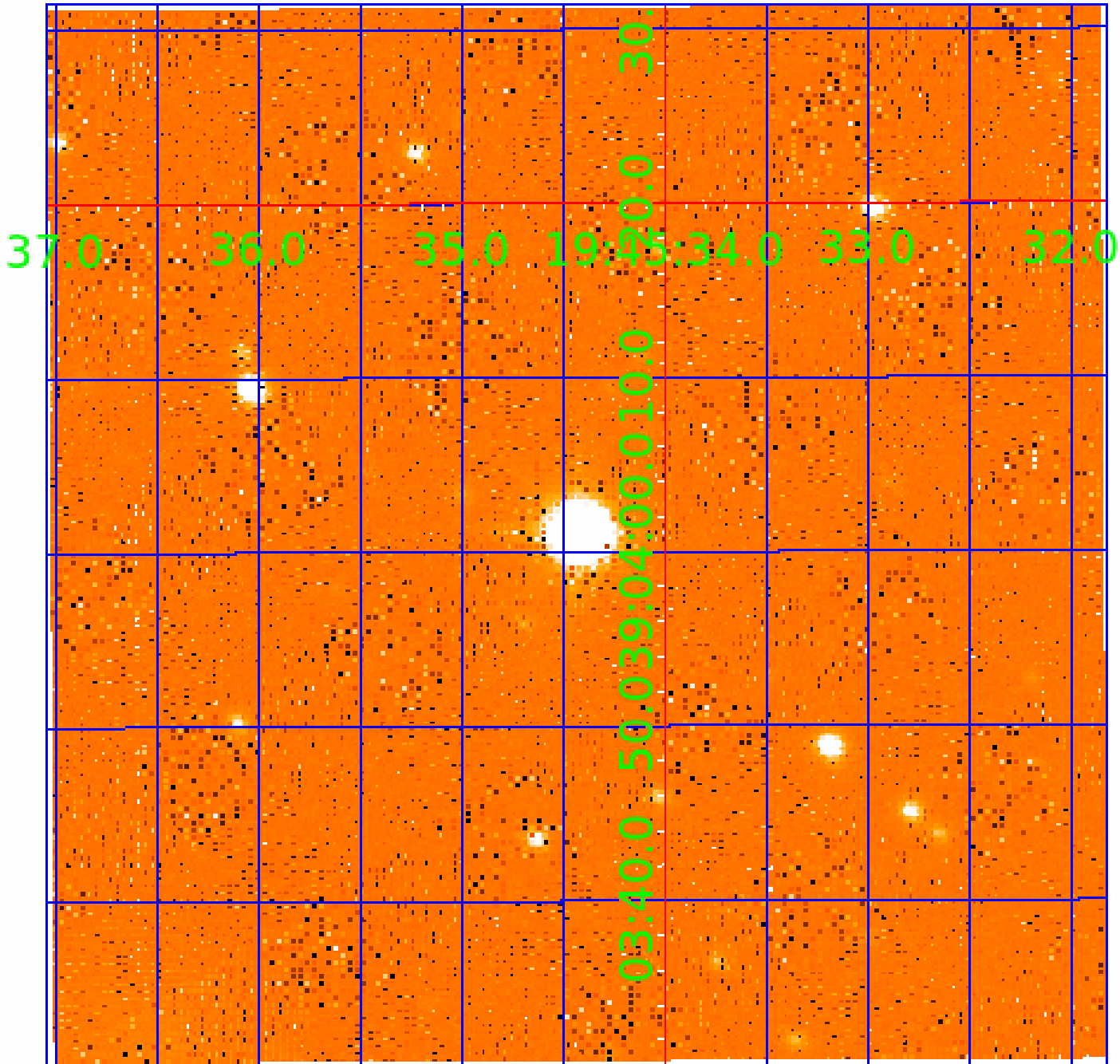


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003975085

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})
003975085-01	OBS	No	2.009828	131.961572	80.5	12.652	9.8	9.5	2.03	7757	2.11	9470.18
003975085-02	OBS	No	78.528369	142.985487	1568.0	4.926	12.0	11.4	2.03	7757	10.18	71.43
003975085-03	OBS	No	58.828151	136.843263	478.0	9.473	10.1	7.2	2.03	7757	4.85	104.98
003975085-04	OBS	No	99.802914	200.101690	760.0	4.995	8.7	5.6	2.03	7757	6.18	51.88
003975085-06	OBS	No	12.581793	132.266373	218.4	25.656	8.5	8.0	2.03	7757	3.26	820.82
003975085-07	OBS	No	150.726597	191.249685	243.4	7.705	9.6	4.0	2.03	7757	3.46	29.94
003975085-08	OBS	No	66.693977	192.425115	1047.8	3.546	8.0	7.2	2.03	7757	7.62	88.81
003975085-09	OBS	No	82.265583	150.962779	1145.8	2.558	7.8	8.3	2.03	7757	8.23	67.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003975085-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003975085-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003975085-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003975085-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

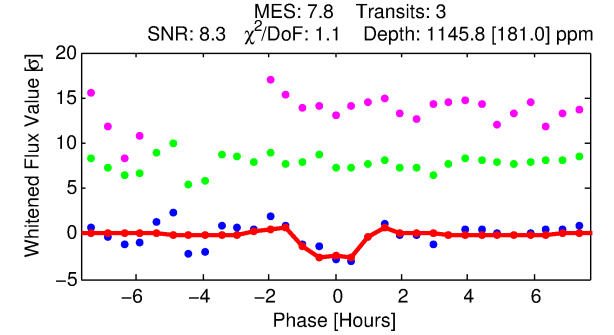
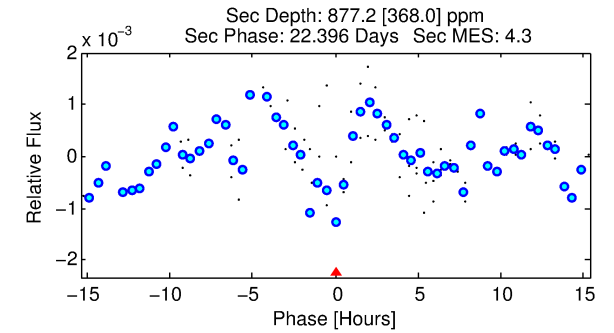
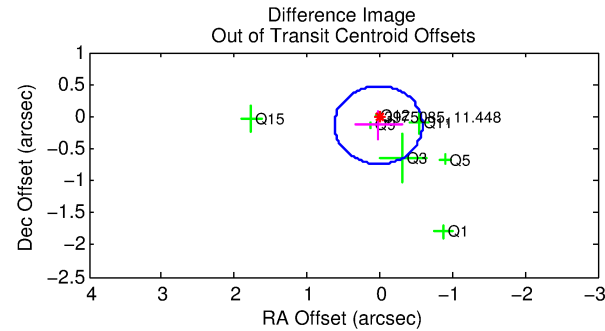
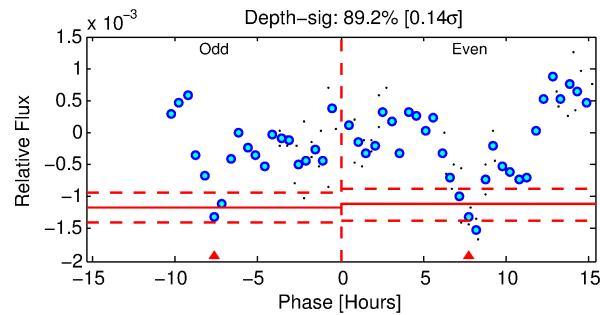
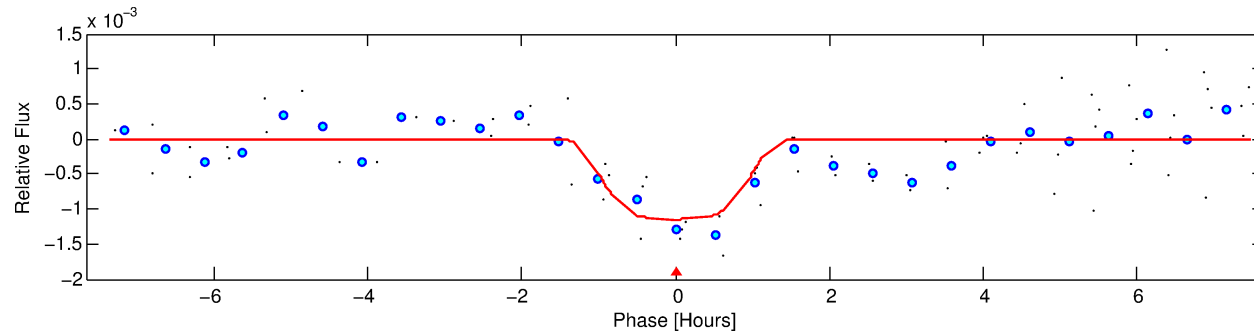
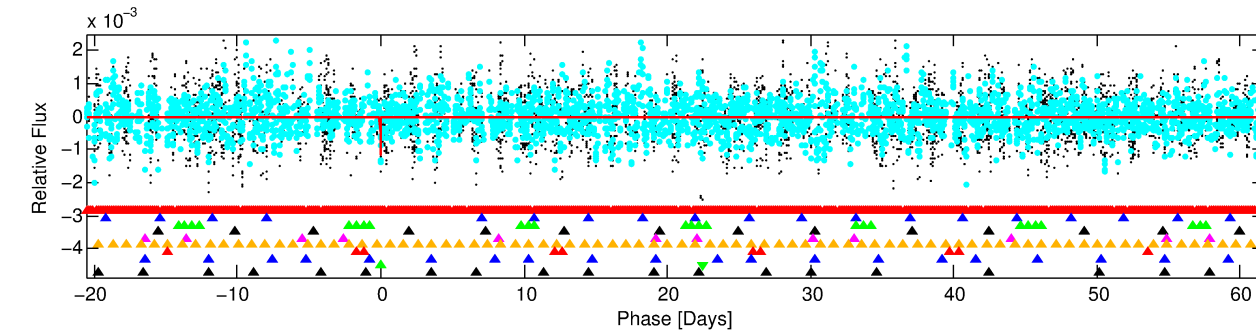
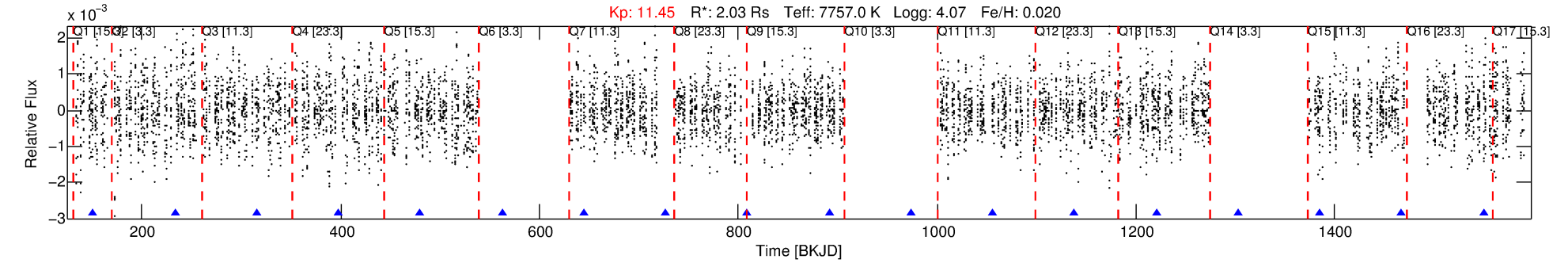
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003975085-09

No Significant Match Found

DV One-Page Summary

KIC: 3975085 Candidate: 9 of 10 Period: 82.266 d



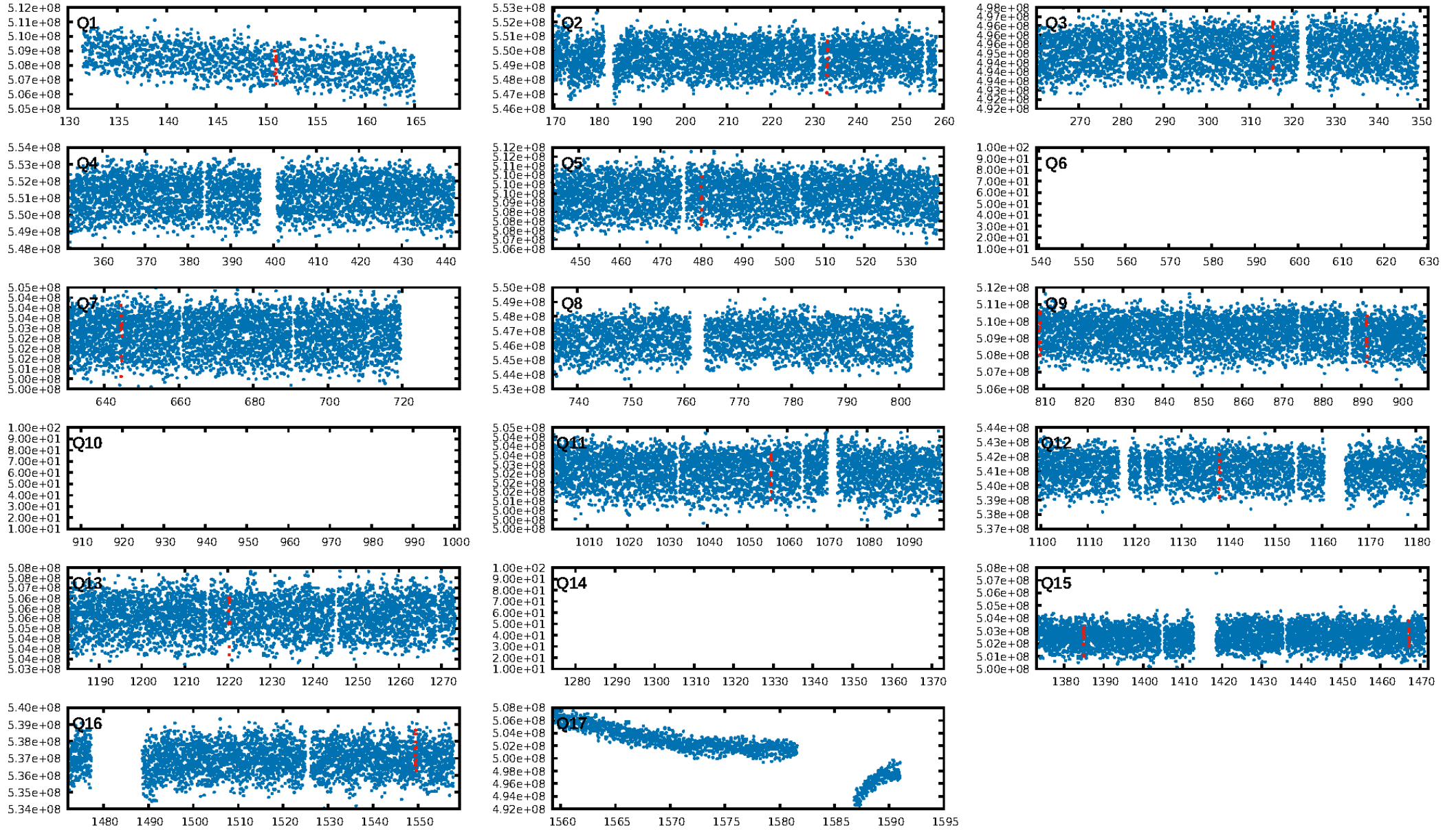
DV Fit Results:

Period = 82.26558 [0.00040] d
Epoch = 150.9628 [0.0046] BKJD
 $R_p/R^* = 0.0371$ [0.0056]
 $a/R^* = 111.05$ [73.38]
 $b = 0.93$ [0.09]
 $\text{Seff} = 67.13$ [15.22]
 $\text{Teq} = 730$ [41] K
 $R_p = 8.23$ [1.95] R_e
 $a = 0.4471$ [0.0682] AU
 $\text{Ag} = 1424.07$ [802.01] [1.77 σ]
 $\text{Teff} = 6932$ [901] K [6.88 σ]

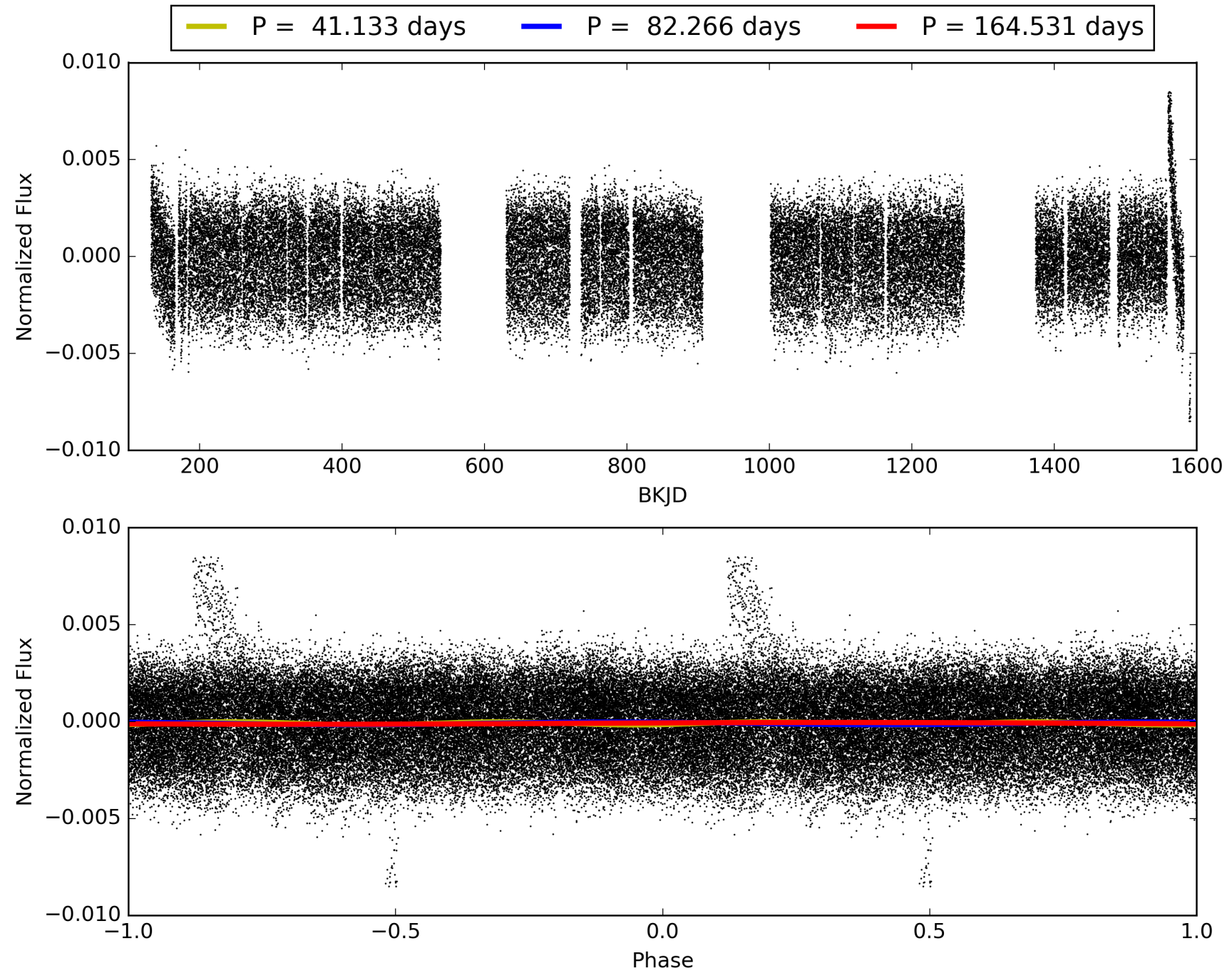
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.16 σ]
LongPeriod-sig: 100.0% [74.99 σ]
ModelChiSquare2-sig: 54.4%
ModelChiSquareGof-sig: 70.8%
Bootstrap-pfa: 4.42e-08
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -1.053
Centroid-sig: 23.2%
Centroid-so: 0.054 arcsec [0.48 σ]
OotOffset-rm: 0.135 arcsec [0.67 σ]
KicOffset-rm: 0.030 arcsec [0.10 σ]
OotOffset-st: 0/3/1/3 [7]
KicOffset-st: 0/3/1/3 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 0.50 [4/8]

TCE 003975085-09, PDC Light Curves

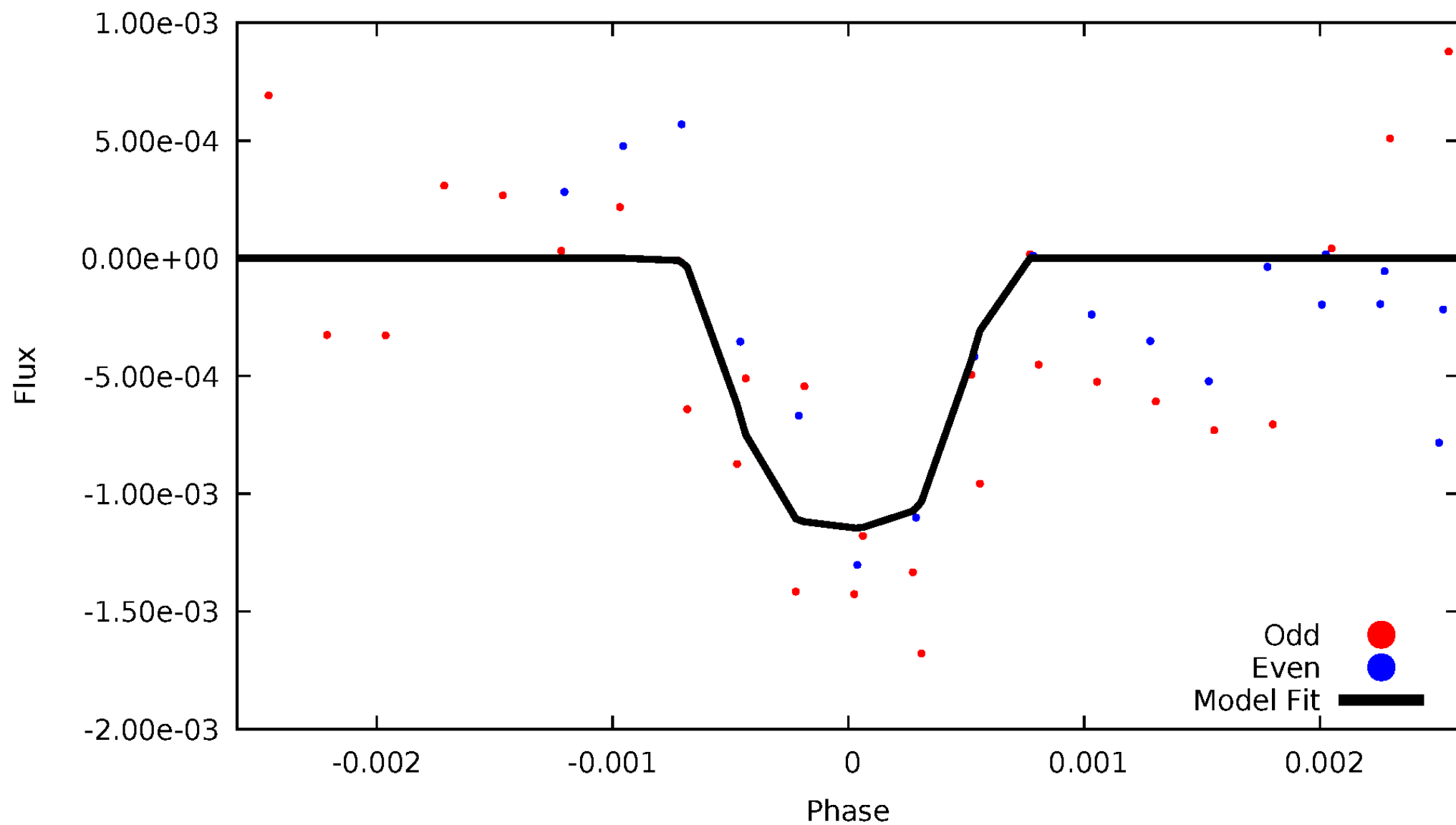


TCE 003975085-09



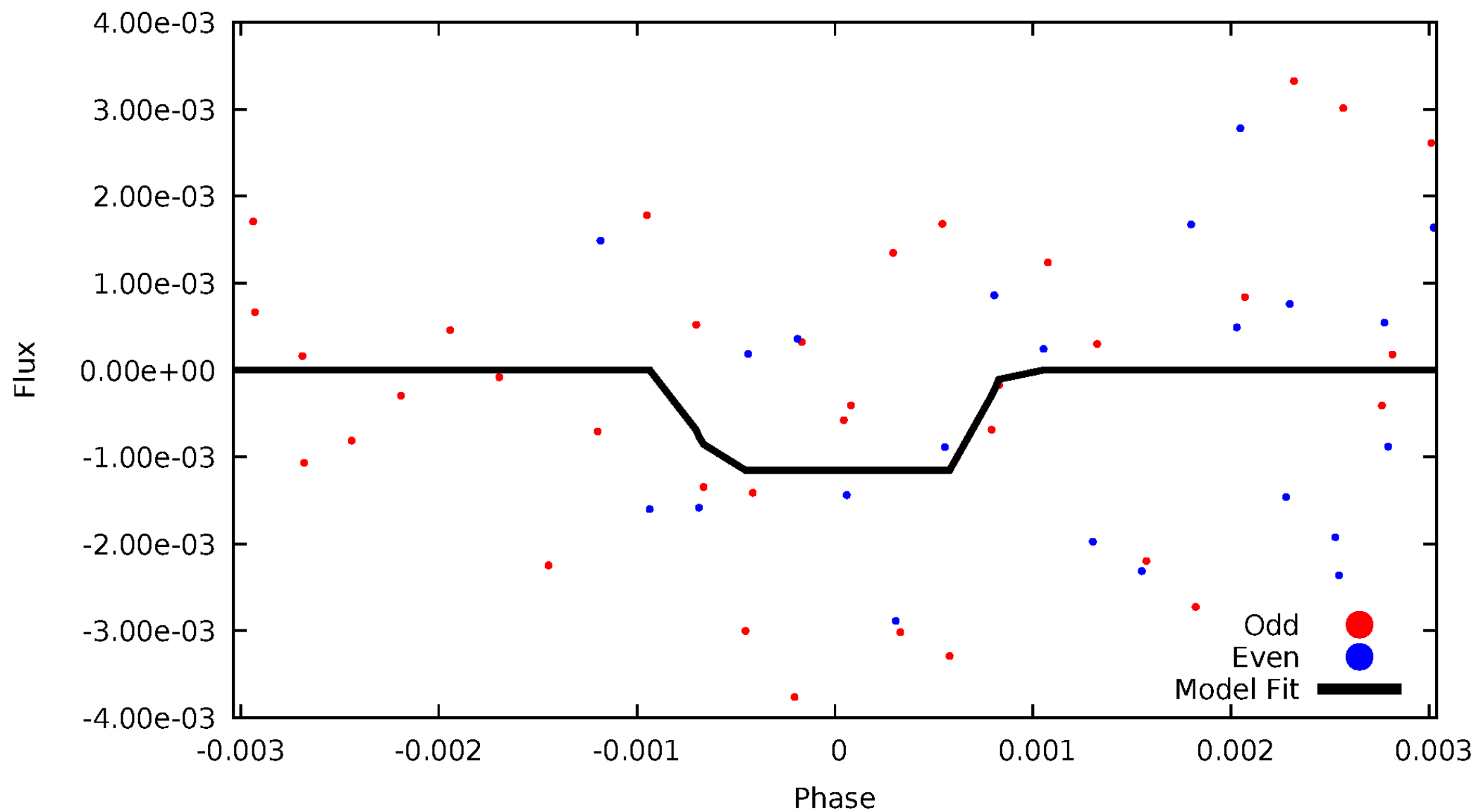
DV Odd/Even

TCE 003975085-09



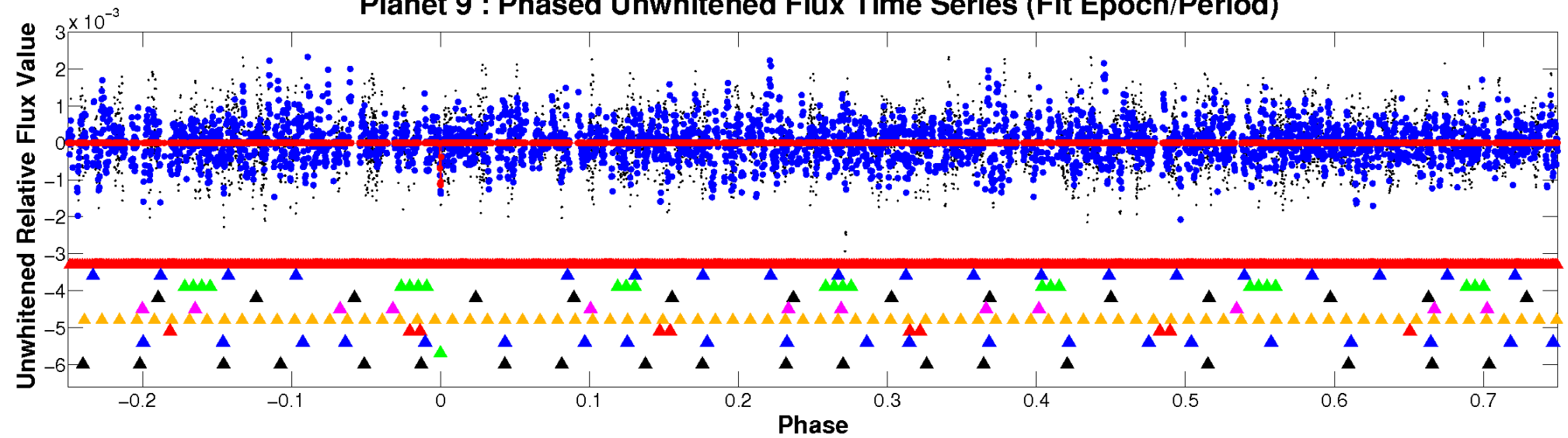
ALT Odd/Even

TCE 003975085-09

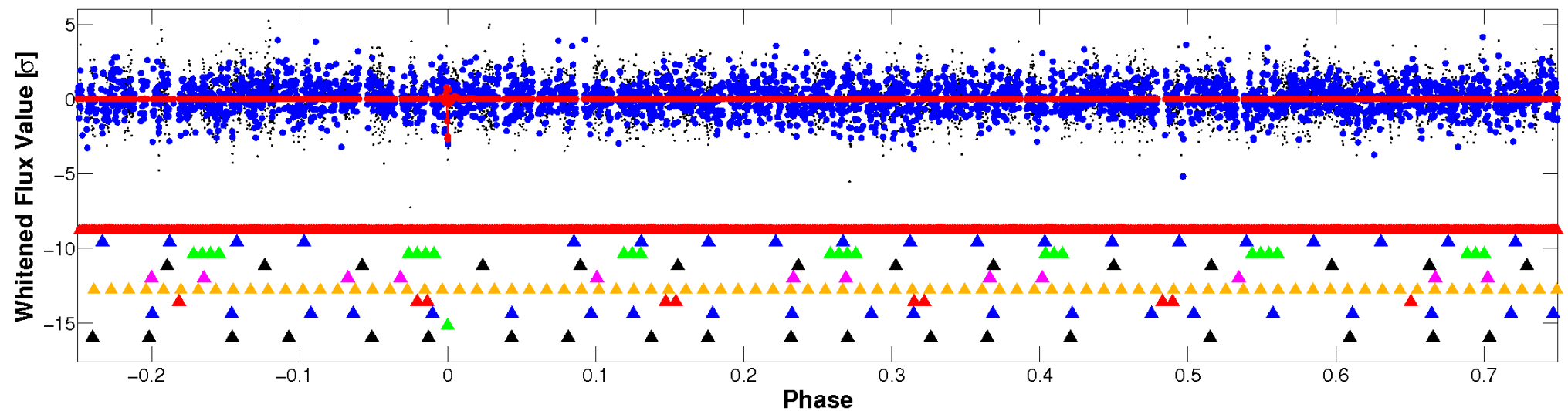


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

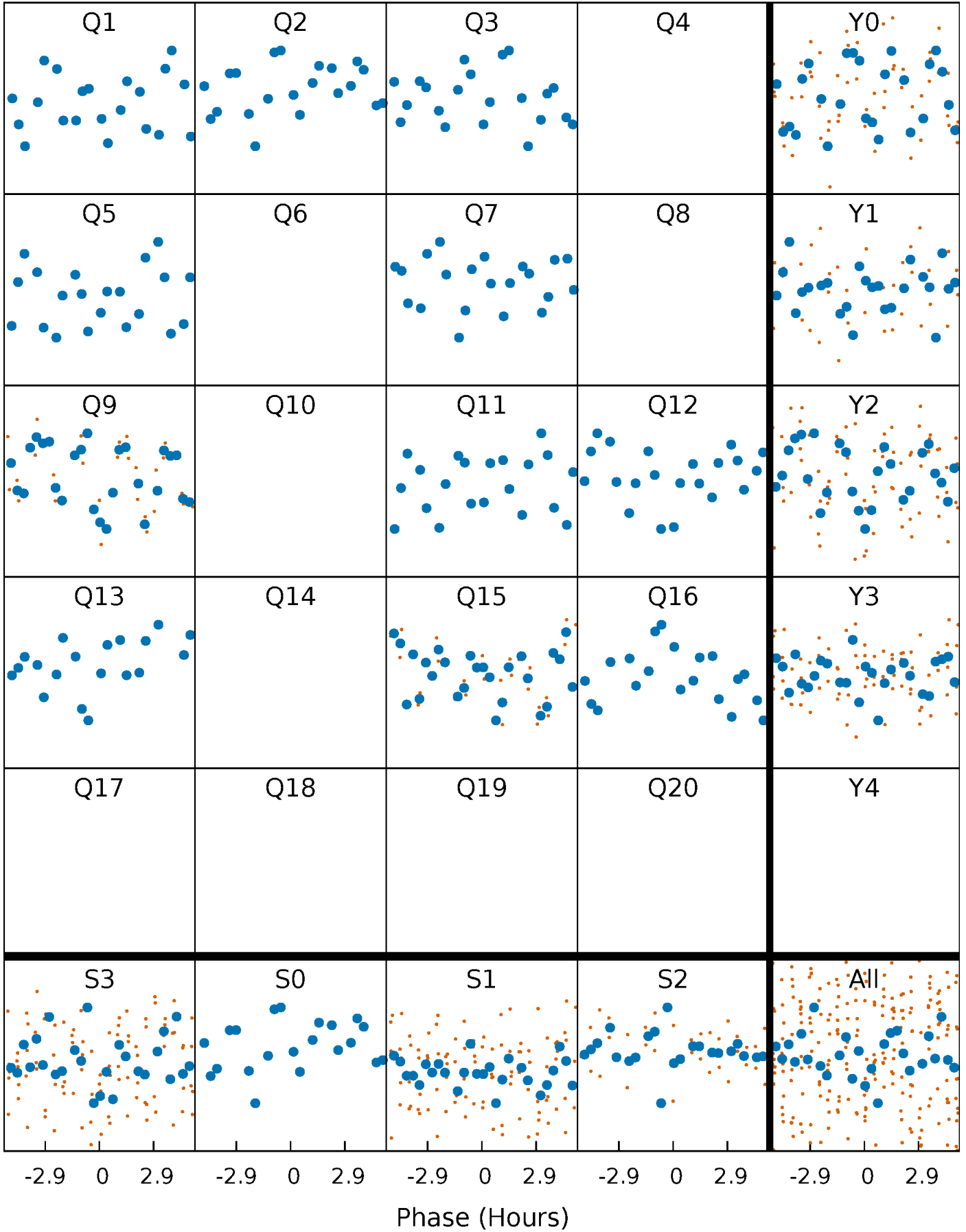


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



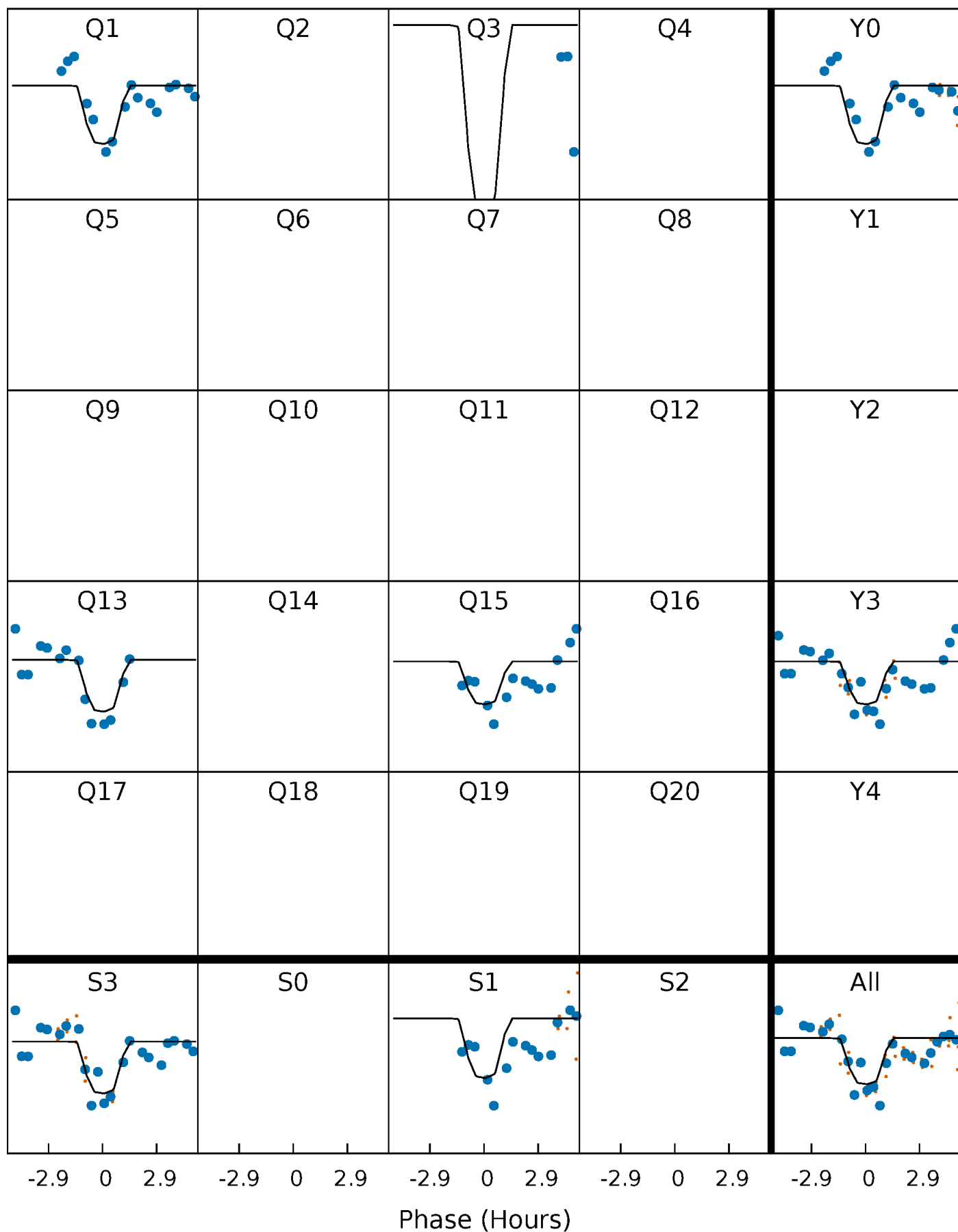
PDC Quarter-Phased Transit Curves

TCE 003975085-09 $P = 82.265583$ Days $T_0 = 150.962779$ (BKJD)



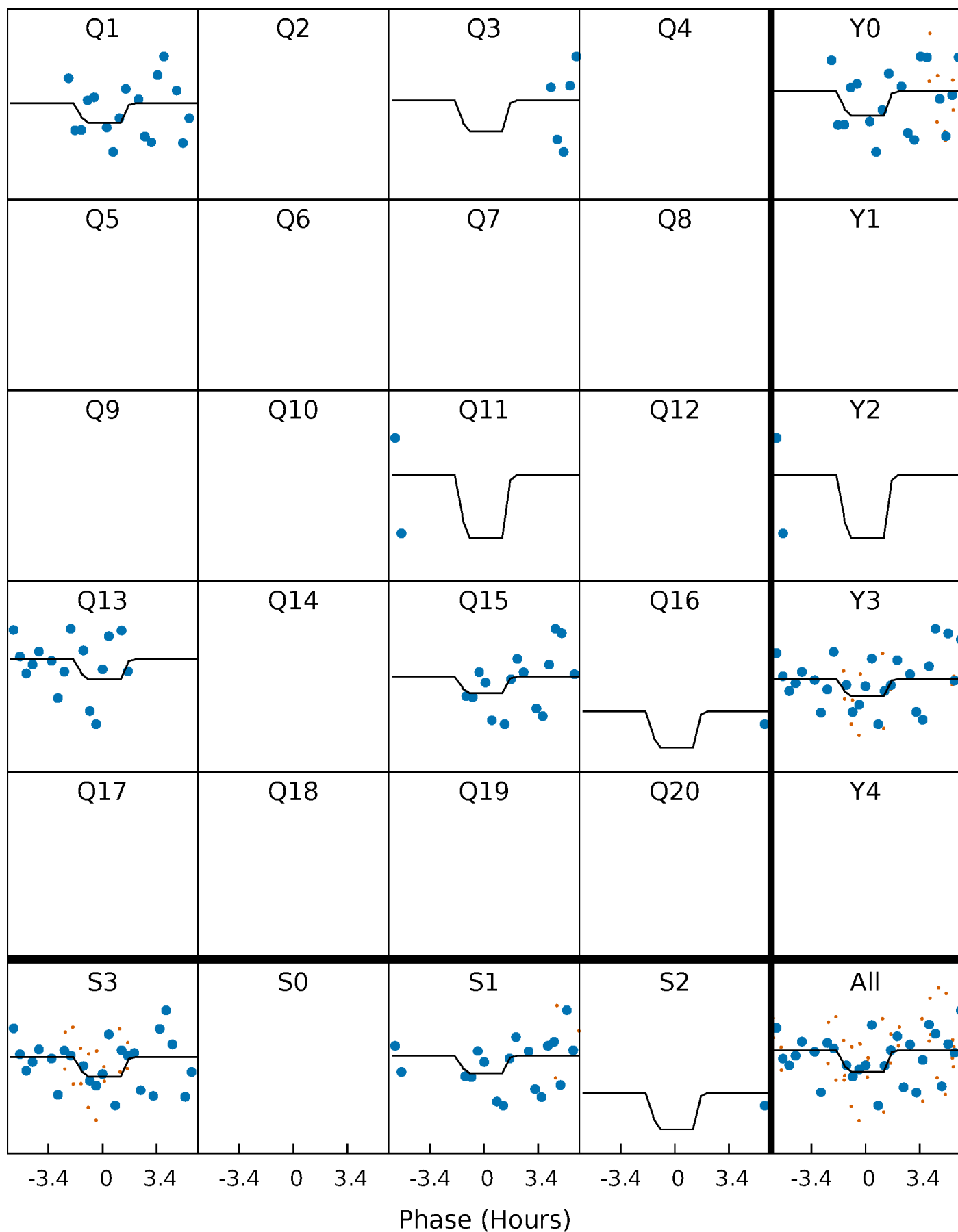
DV Quarter-Phased Transit Curves

TCE 003975085-09 P= 82.265583 Days $T_0=150.962779$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

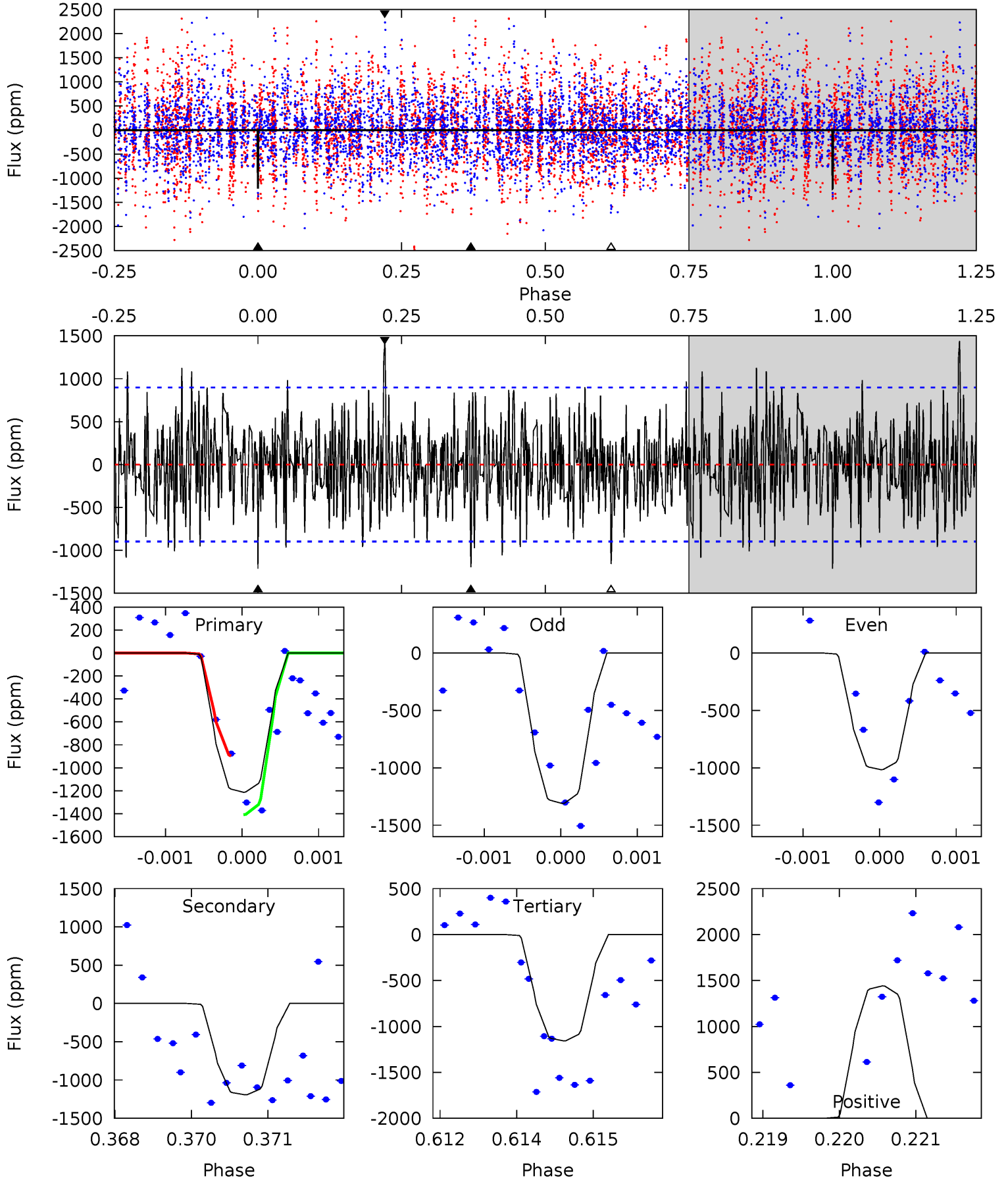
TCE 003975085-09 $P = 82.265587$ Days $T_0 = 150.961073$ (BKJD)



DV Model-Shift Uniqueness Test

003975085-09, P = 82.265583 Days, E = 68.697196 Days

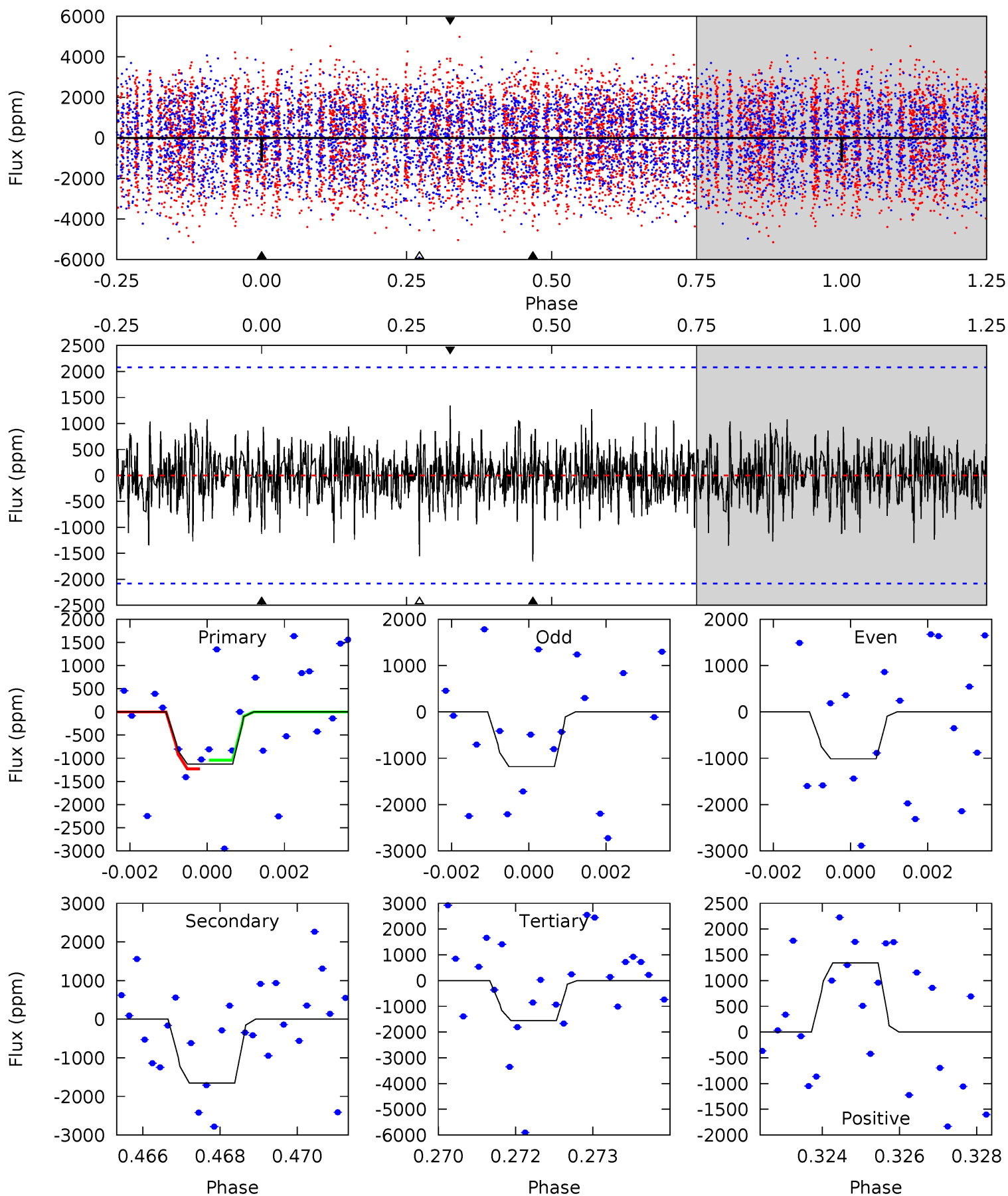
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.31	7.19	6.98	8.69	5.41	3.22	2.16	0.33	-1.38	0.21	-1.50	0.86	1.03	0.54	1.55



Alt Model-Shift Uniqueness Test

003975085-09, P = 82.265587 Days, E = 68.695486 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.89	4.25	4.00	3.45	5.35	3.13	0.95	-1.11	-0.56	0.25	0.80	0.21	1.11	0.45	0.24



Stellar Parameters For KIC 003975085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7757^{+69}_{-92}	$4.067^{+0.099}_{-0.121}$	$0.020^{+0.050}_{-0.200}$	$2.034^{+0.369}_{-0.302}$	$1.760^{+0.149}_{-0.164}$	$0.295^{+0.135}_{-0.109}$
	+1%/-1%	+2%/-3%	+250%/-1000%	+18%/-15%	+8%/-9%	+46%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003975085-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1193 ± 166	$8.36^{+1.35}_{-1.41}$	1022^{+45}_{-39}	7417^{+852}_{-624}	1909^{+869}_{-585}
Alt.	-1655 ± 389	$7.66^{+1.41}_{-1.52}$	1021^{+49}_{-38}	8669^{+1429}_{-1124}	3094^{+2075}_{-1138}

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 $A_{obs} \gg 1.0$

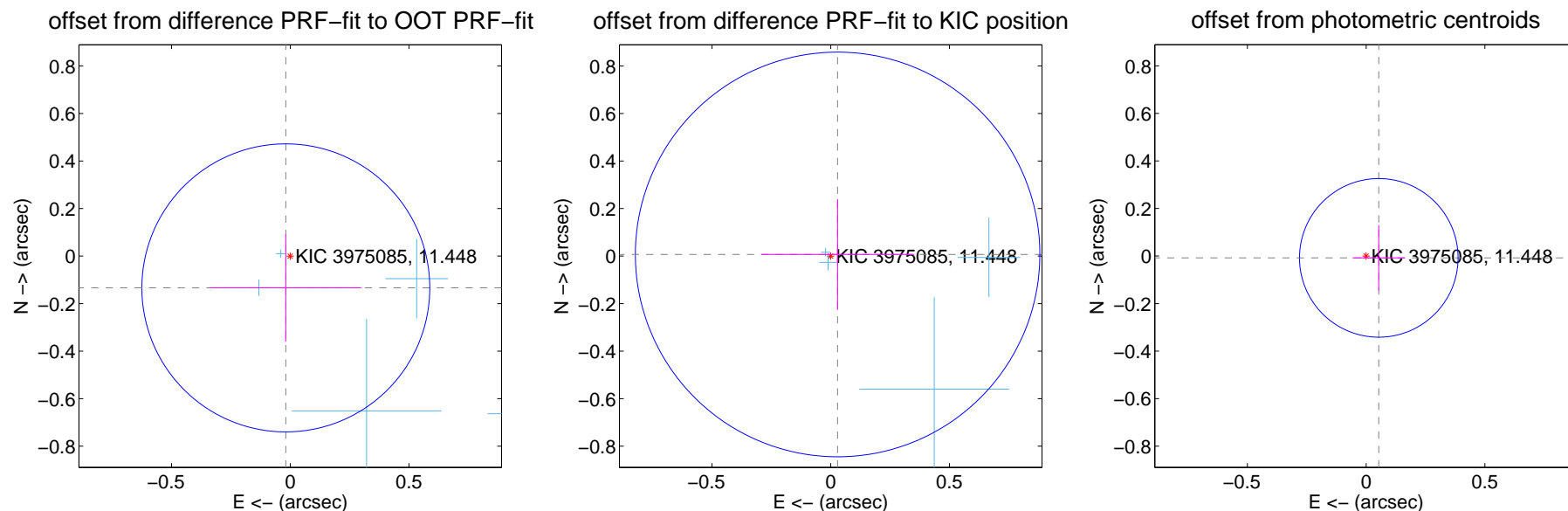
DV Centroid Data

Supplemental centroid analysis for 003975085-09. **Kepler magnitude: 11.45.** Transit SNR 8.35

There are 7 quarters with good PRF difference image offsets

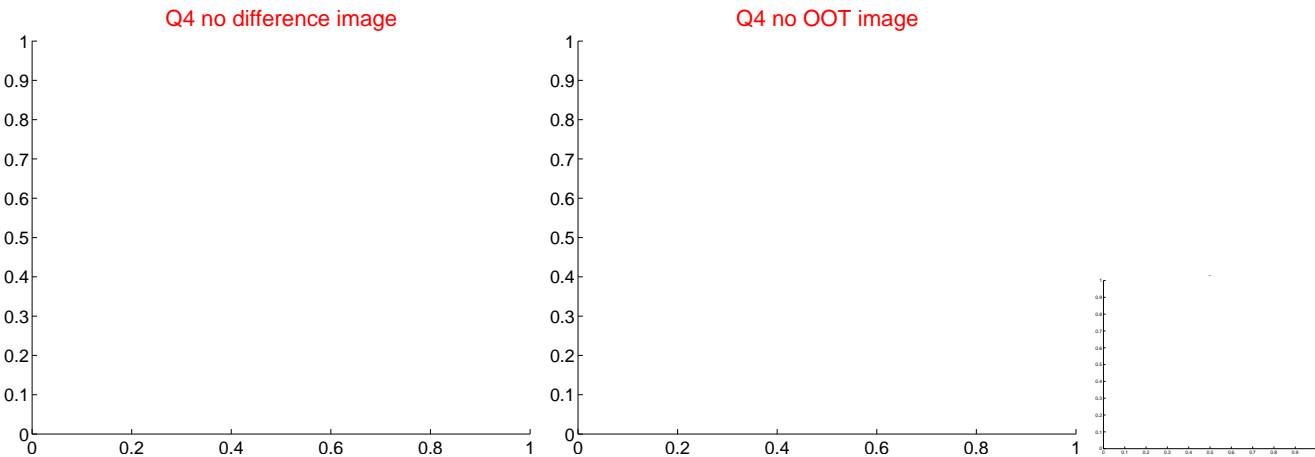
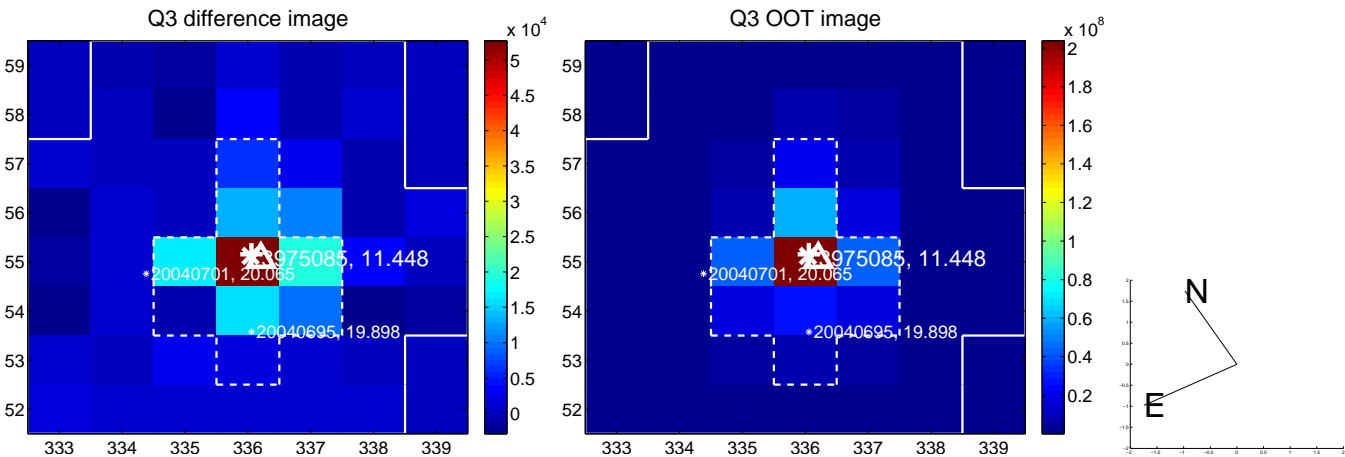
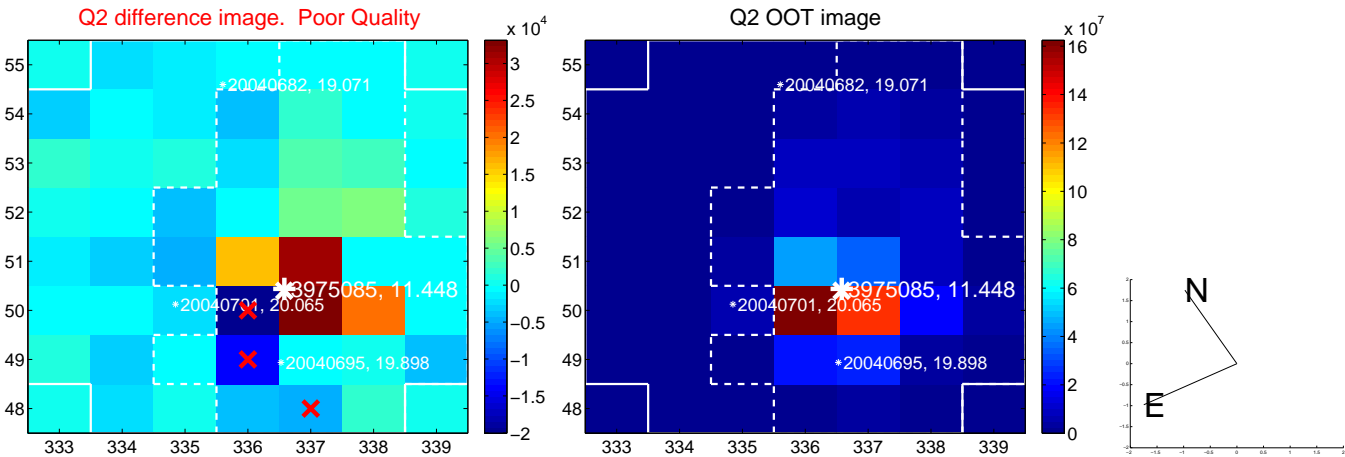
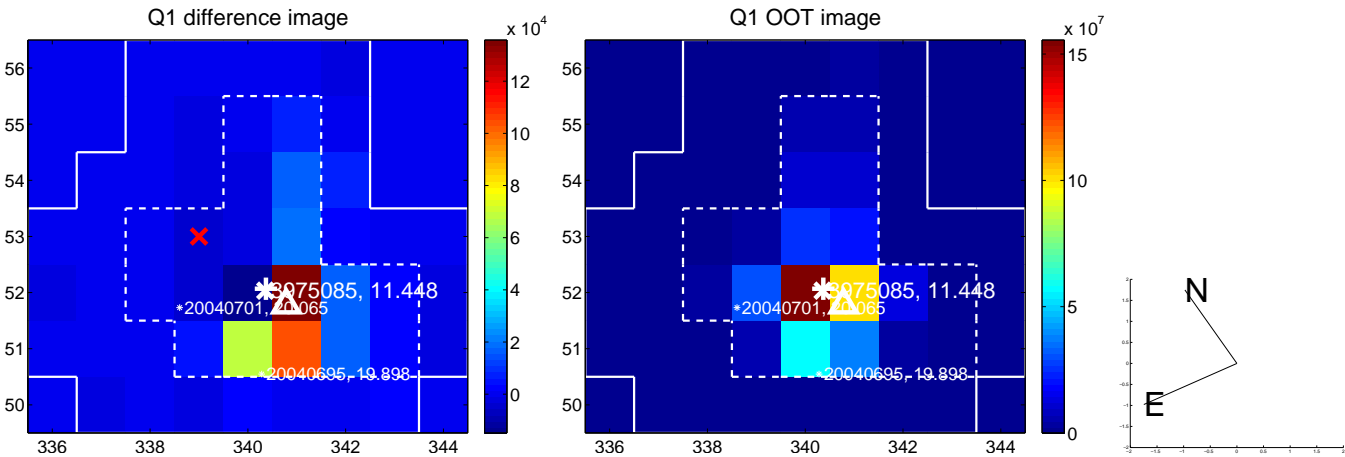
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.135 ± 0.202	0.67	0.019 ± 0.318	-0.134 ± 0.226
PRF-fit source offset from KIC position	0.030 ± 0.284	0.10	-0.029 ± 0.322	0.007 ± 0.233
photometric centroid source offset	0.05 ± 0.11	0.48	-0.05 ± 0.11	-0.01 ± 0.14

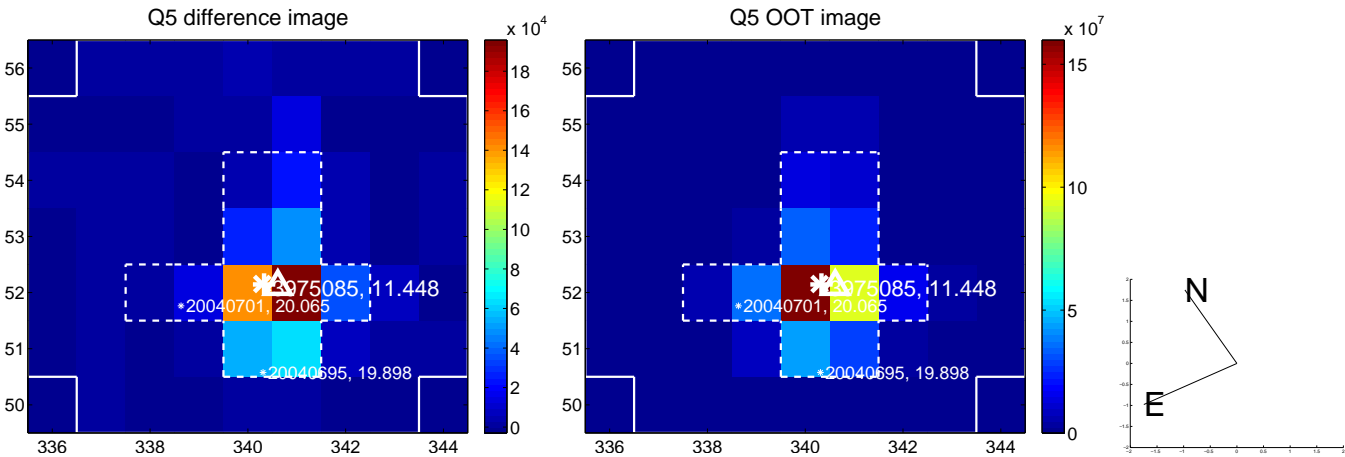


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

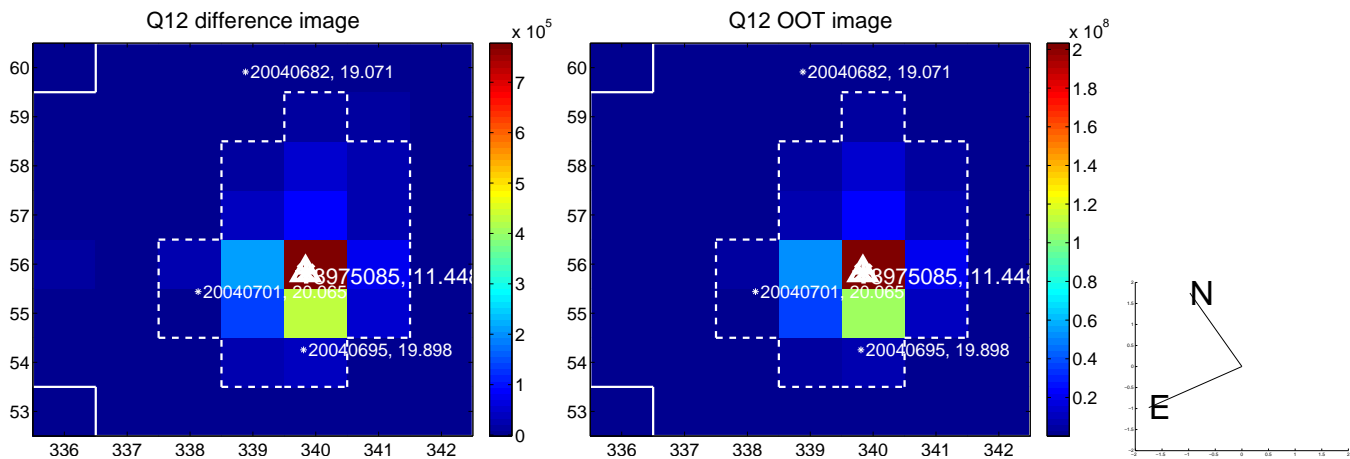
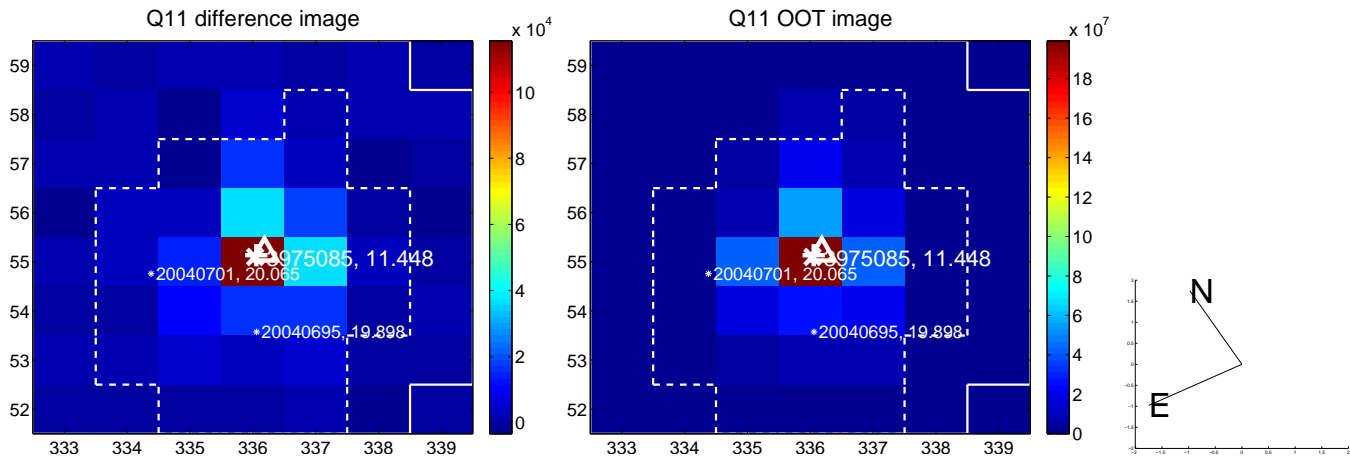
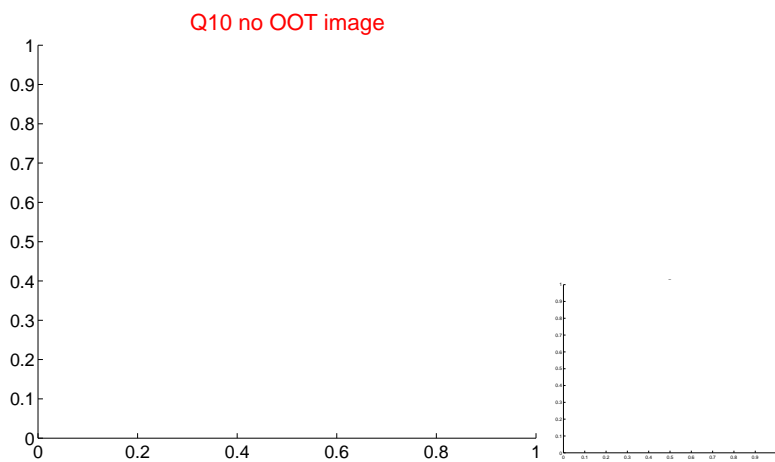
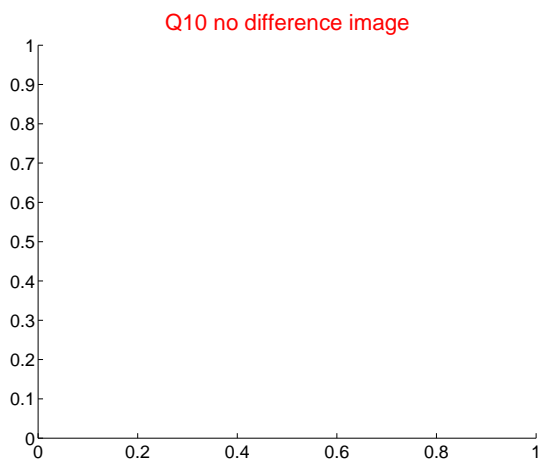
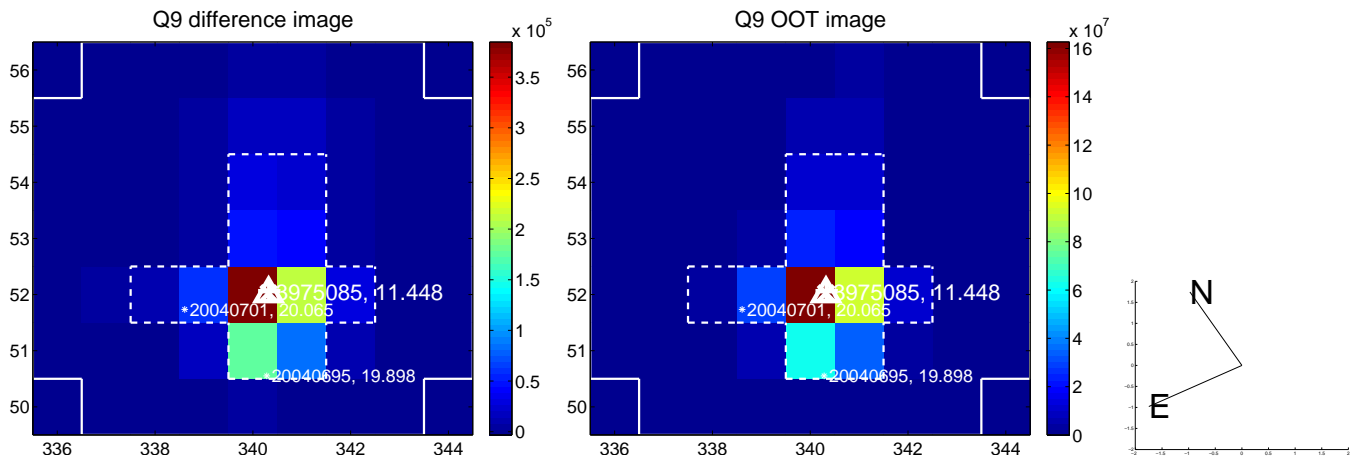
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



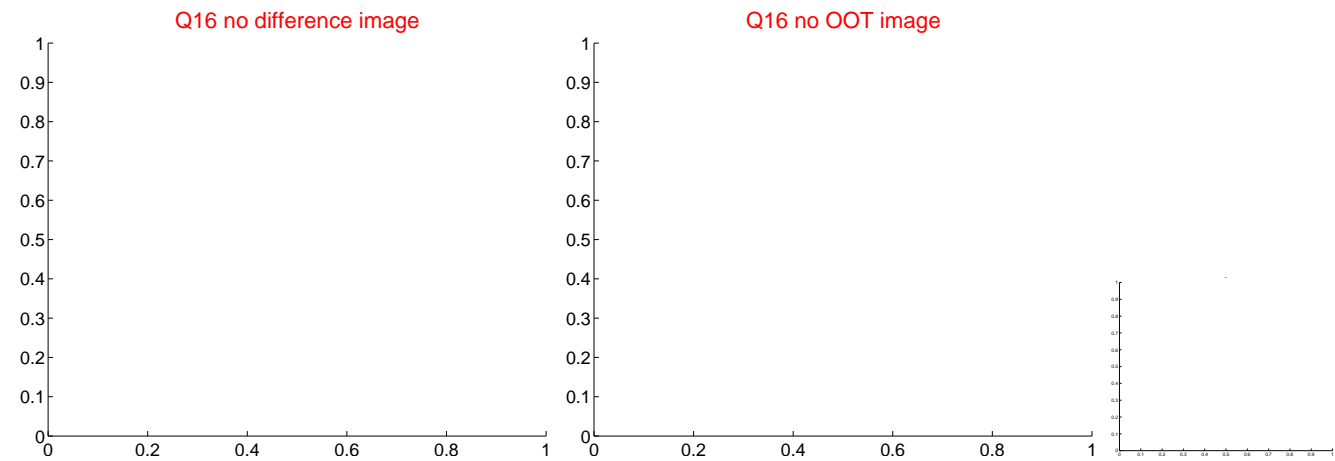
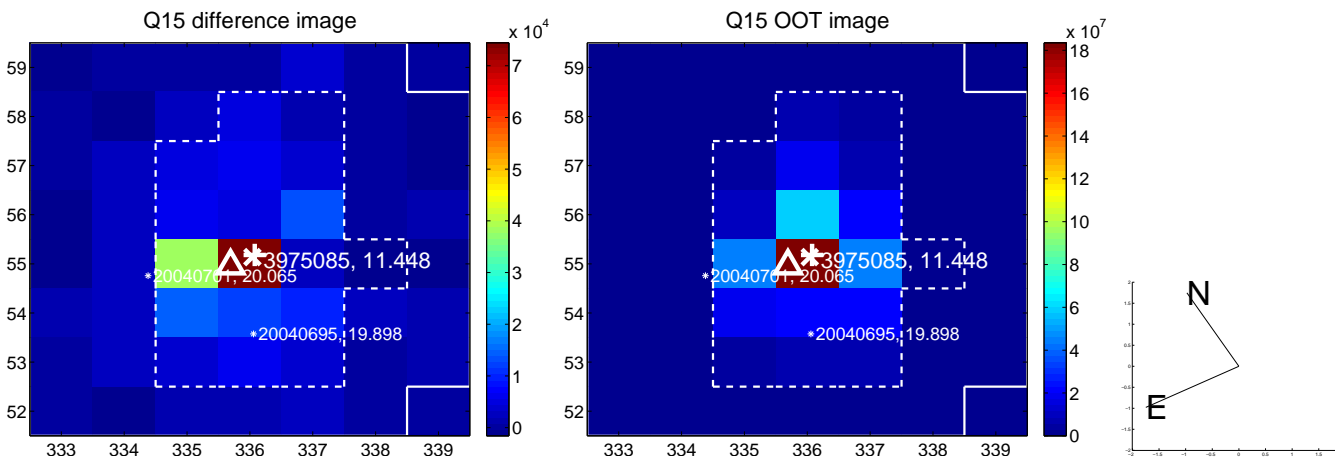
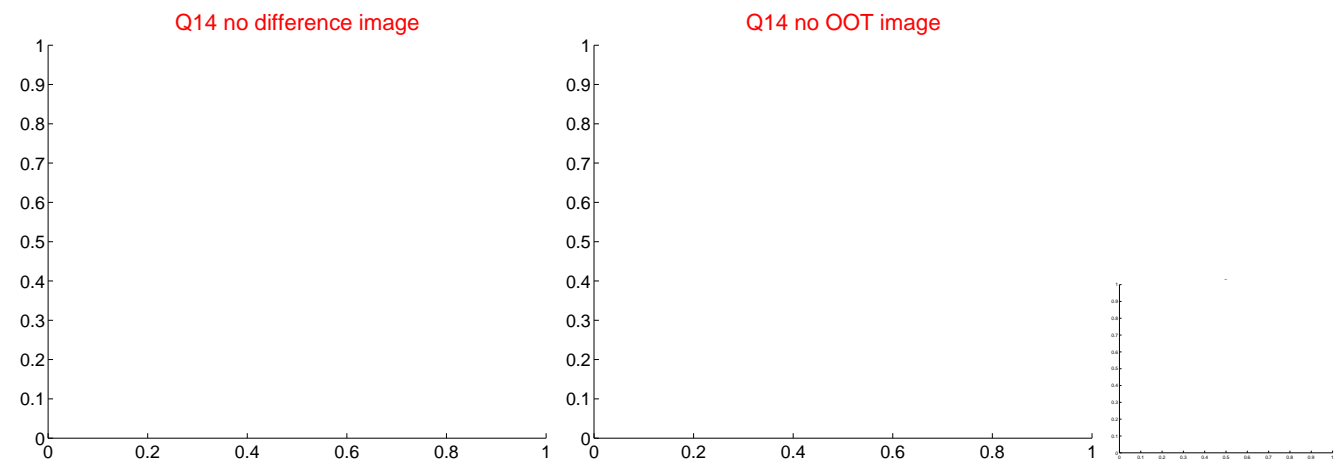
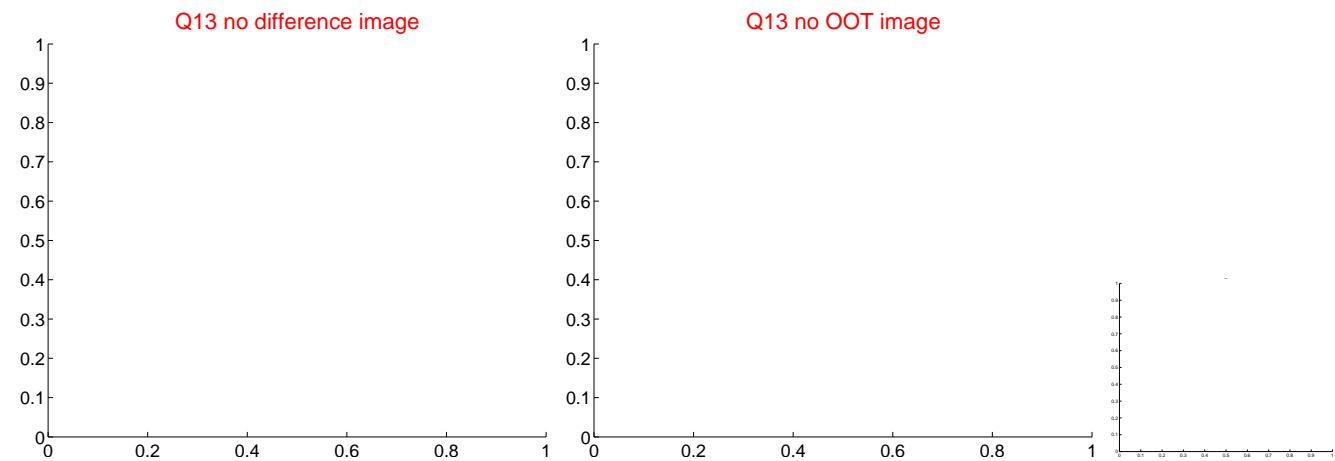
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



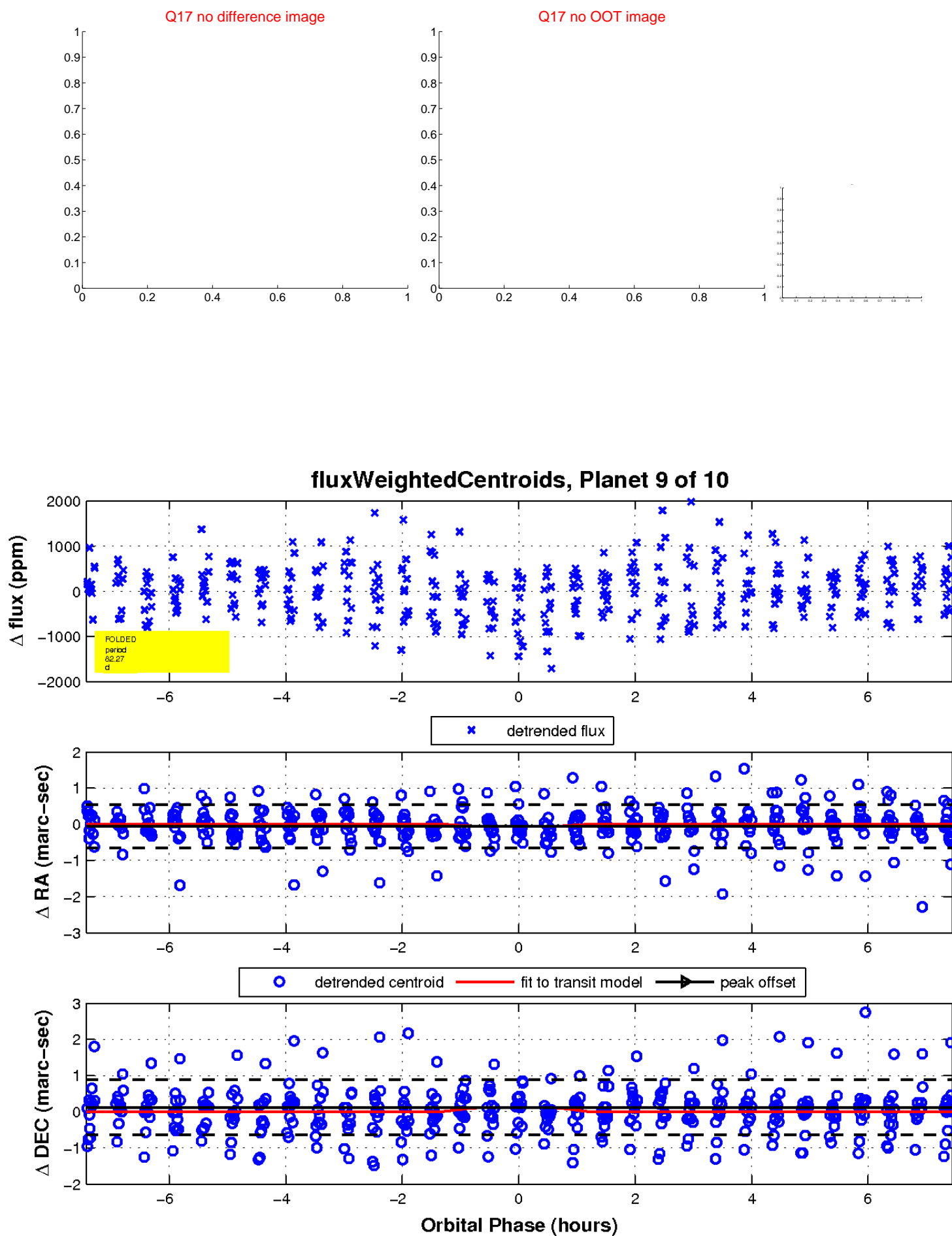
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

