

KIC 007045685

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})
007045685-01	OBS	No	1.653417	132.923690	120.1	10.128	8.7	10.5	1.38	6817	1.54	3964.79
007045685-02	OBS	No	114.573642	217.561224	3135.8	4.695	13.5	12.3	1.38	6817	14.07	13.93
007045685-03	OBS	No	82.752815	138.657120	2226.3	3.195	11.1	10.5	1.38	6817	11.12	21.50
007045685-04	OBS	No	91.982205	145.135948	1459.8	2.482	9.9	6.4	1.38	6817	5.62	18.67
007045685-05	OBS	No	75.690770	165.957500	2136.9	2.707	9.6	10.8	1.38	6817	9.50	24.21
007045685-06	OBS	No	156.566147	269.757548	2240.7	3.006	9.0	9.9	1.38	6817	7.97	9.19
007045685-08	OBS	No	52.127694	144.577139	1090.1	3.932	8.8	8.1	1.38	6817	4.99	39.81
007045685-09	OBS	No	25.396197	140.340251	853.5	2.804	8.3	8.8	1.38	6817	4.30	103.84
007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

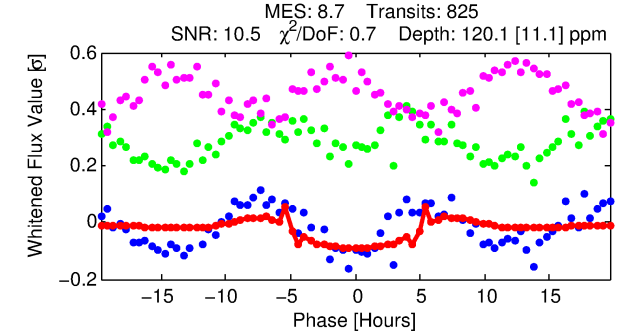
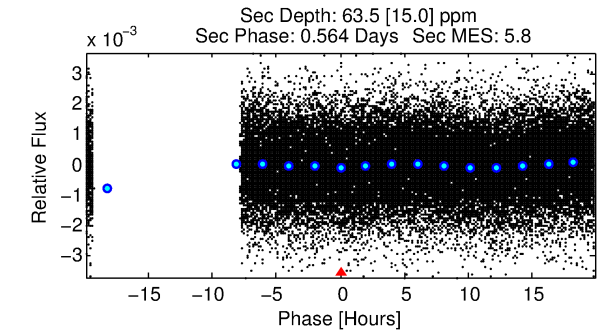
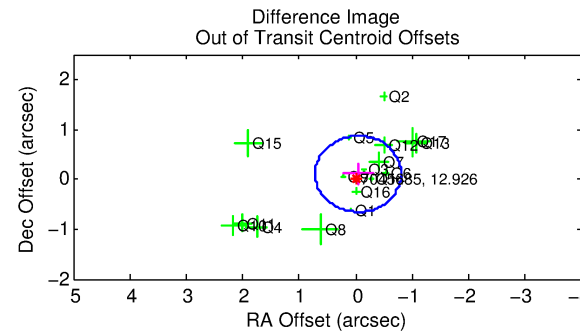
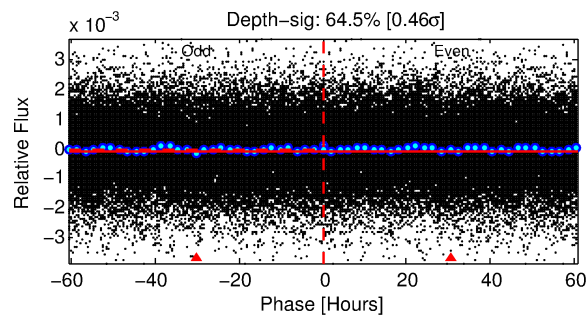
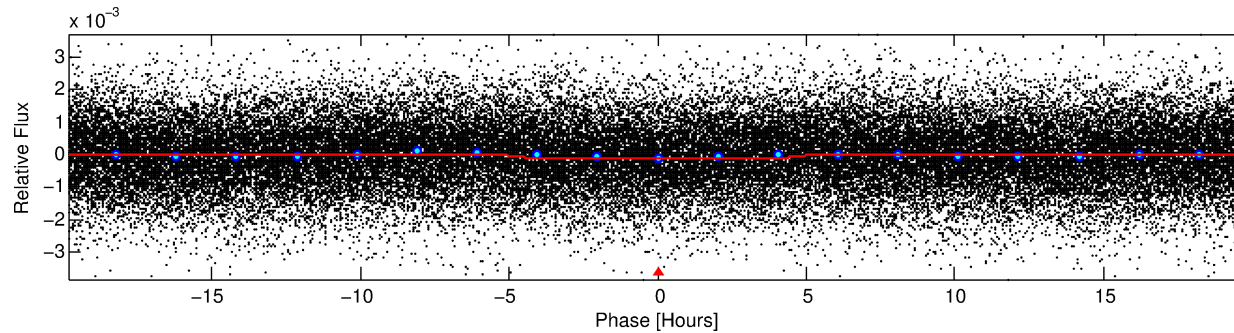
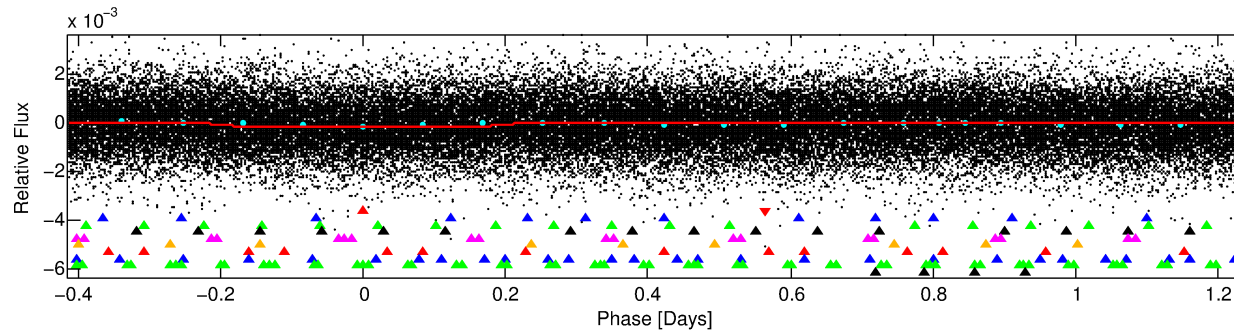
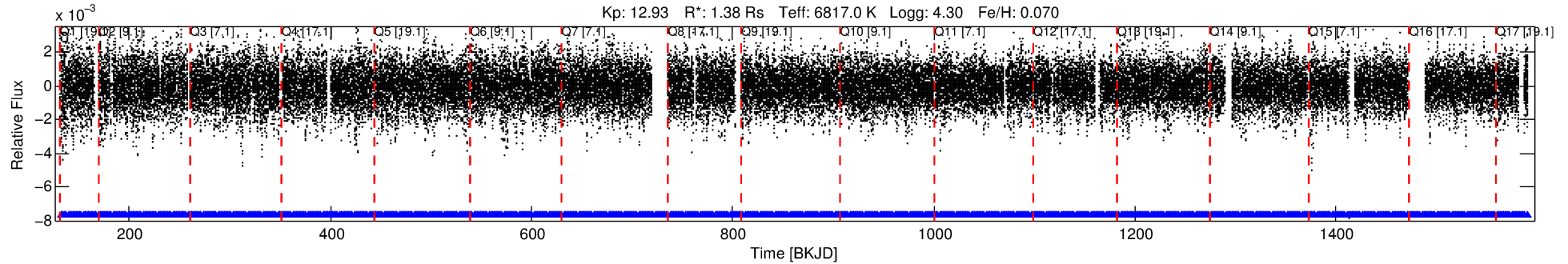
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-01

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 1 of 10 Period: 1.653 d



DV Fit Results:

Period = 1.65342 [0.00002] d
Epoch = 132.9237 [0.0025] BKJD
Rp/R* = 0.0102 [0.0045]
a/R* = 1.36 [1.52]
b = 0.36 [5.90]
Seff = 3964.79 [1744.07]
Teq = 2023 [223] K
Rp = 1.54 [0.88] Re
a = 0.0305 [0.0090] AU
Ag = 13.63 [13.56] [0.93 σ]
Teffp = 6011 [1381] K [2.85 σ]

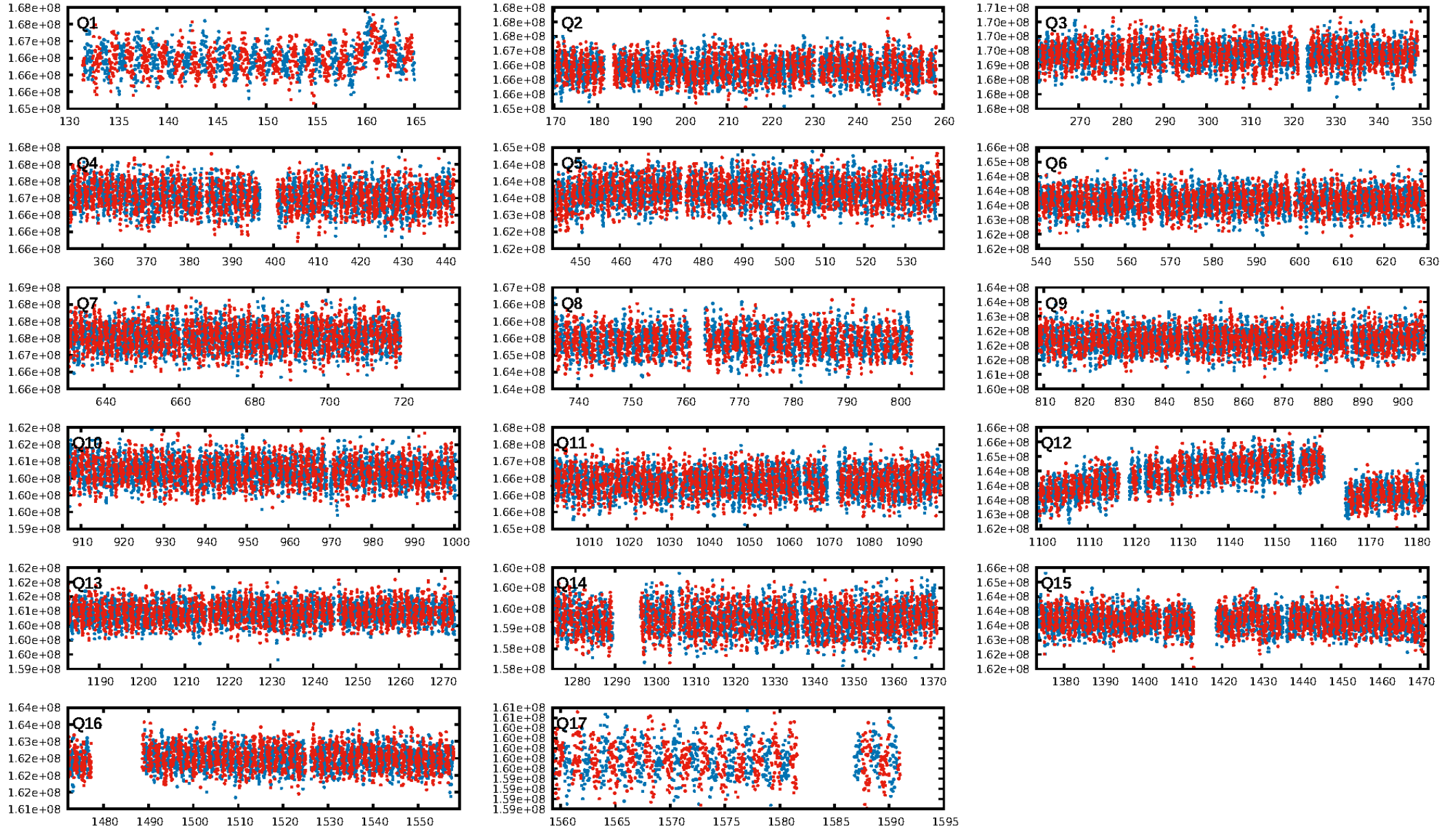
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [54.22 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [789/789]
GhostDiagnostic-chr: 1.855
Centroid-sig: 15.9%
Centroid-so: 0.222 arcsec [2.14 σ]
OotOffset-rm: 0.111 arcsec [0.44 σ]
KicOffset-rm: 0.106 arcsec [0.39 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 1.00 [17/17]

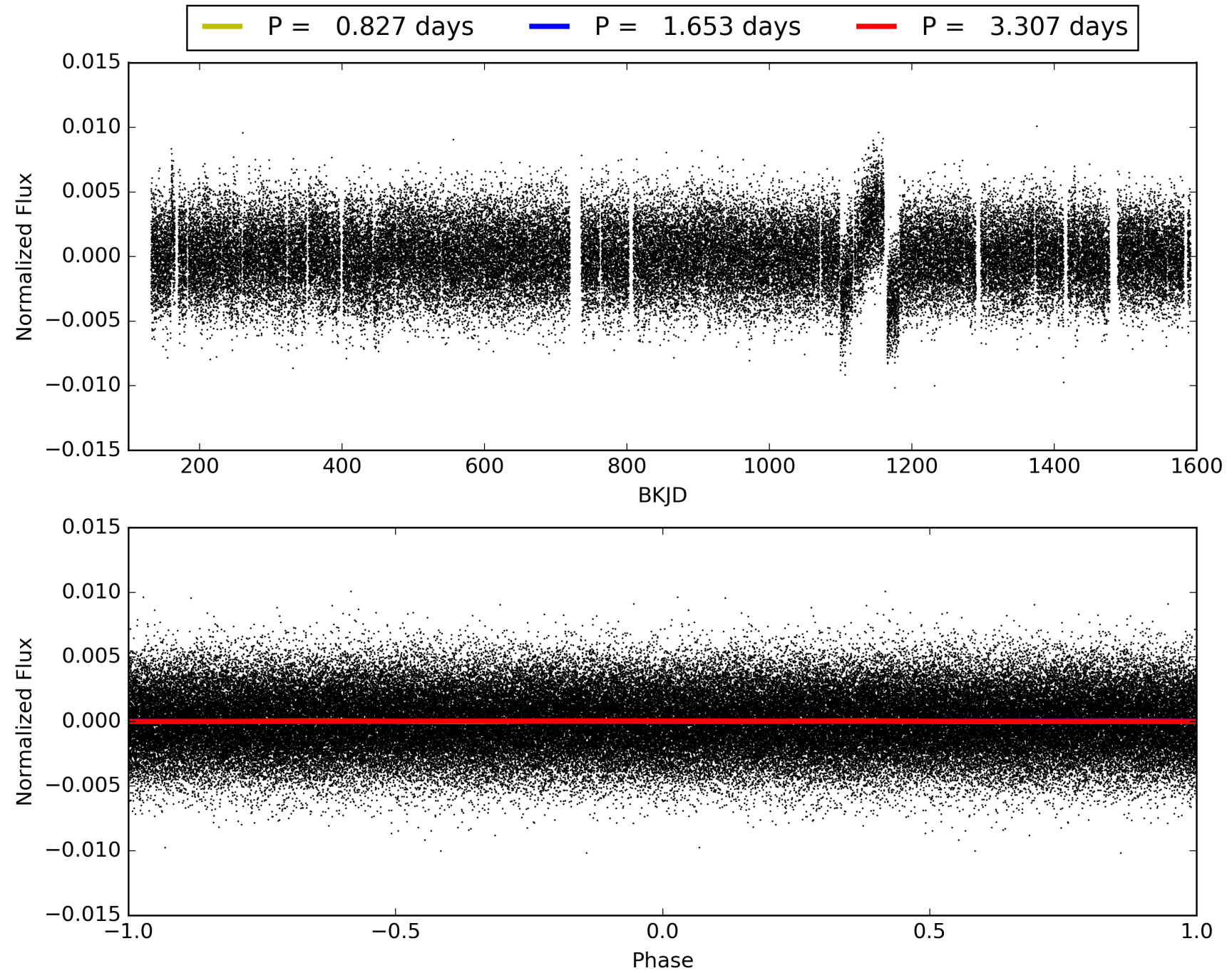
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:45:16 Z

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

TCE 007045685-01, PDC Light Curves

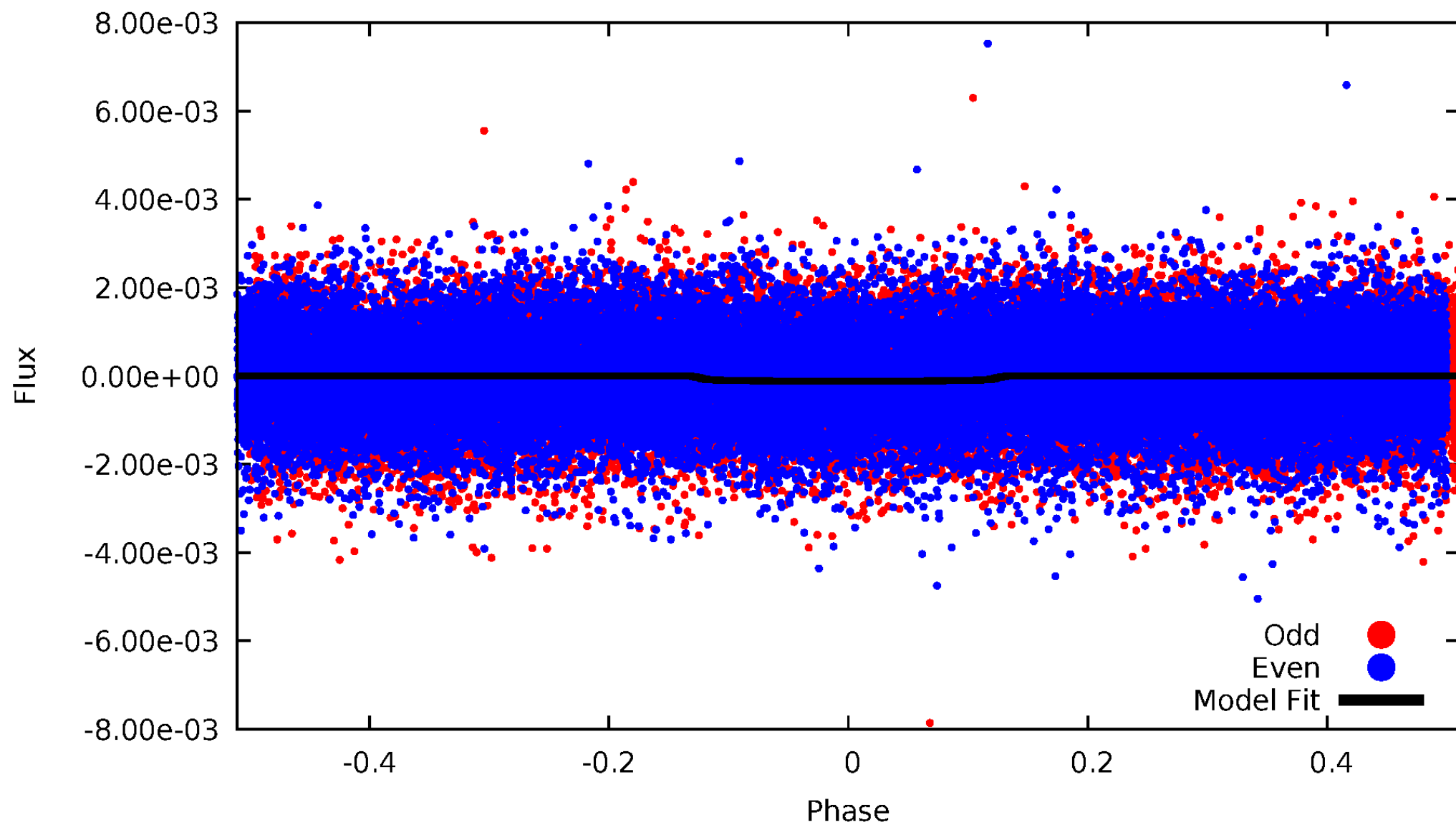


TCE 007045685-01



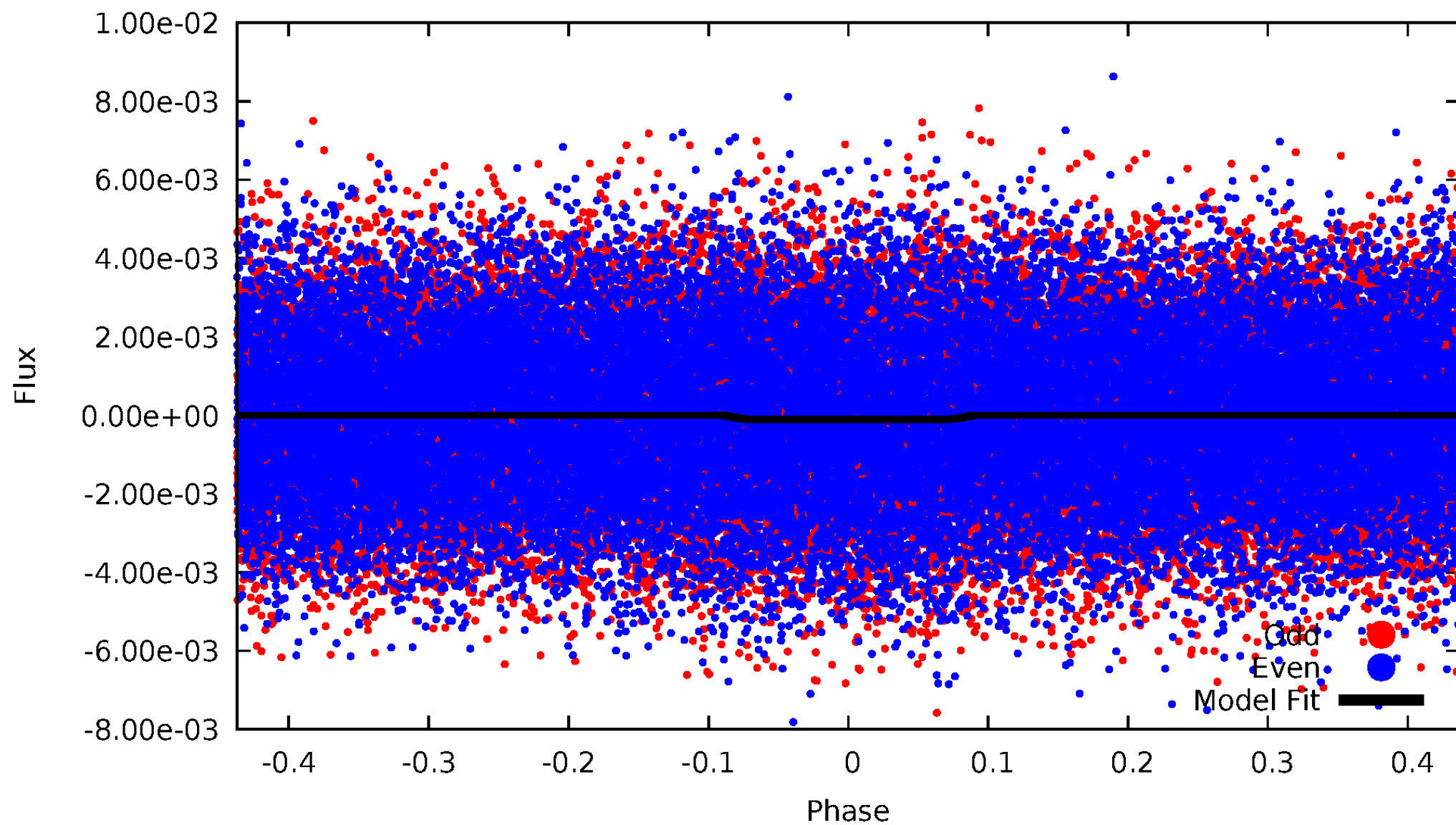
DV Odd/Even

TCE 007045685-01



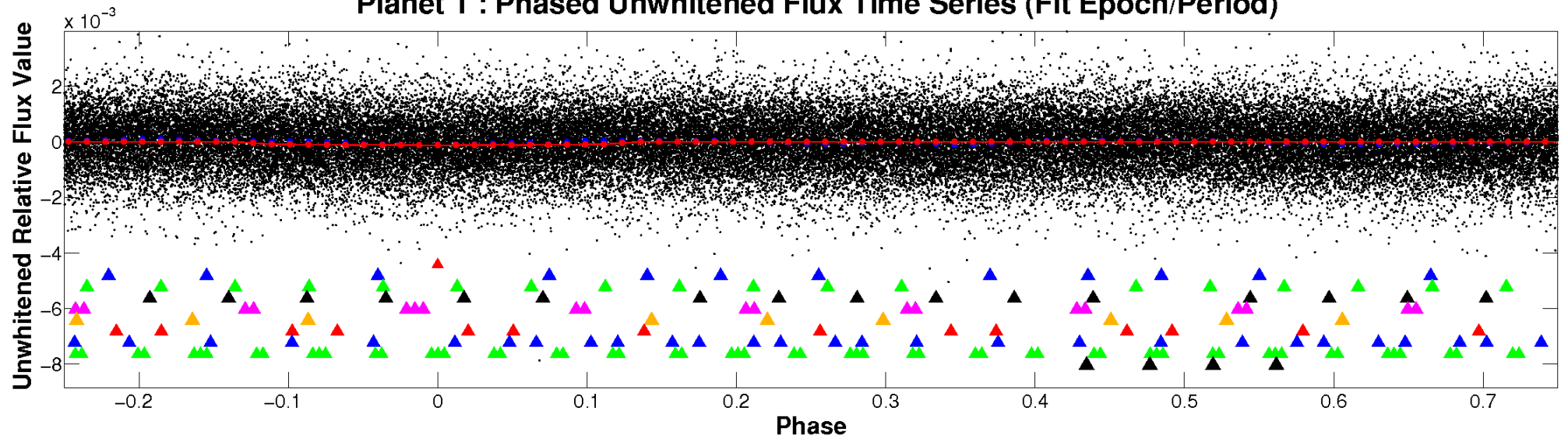
ALT Odd/Even

TCE 007045685-01

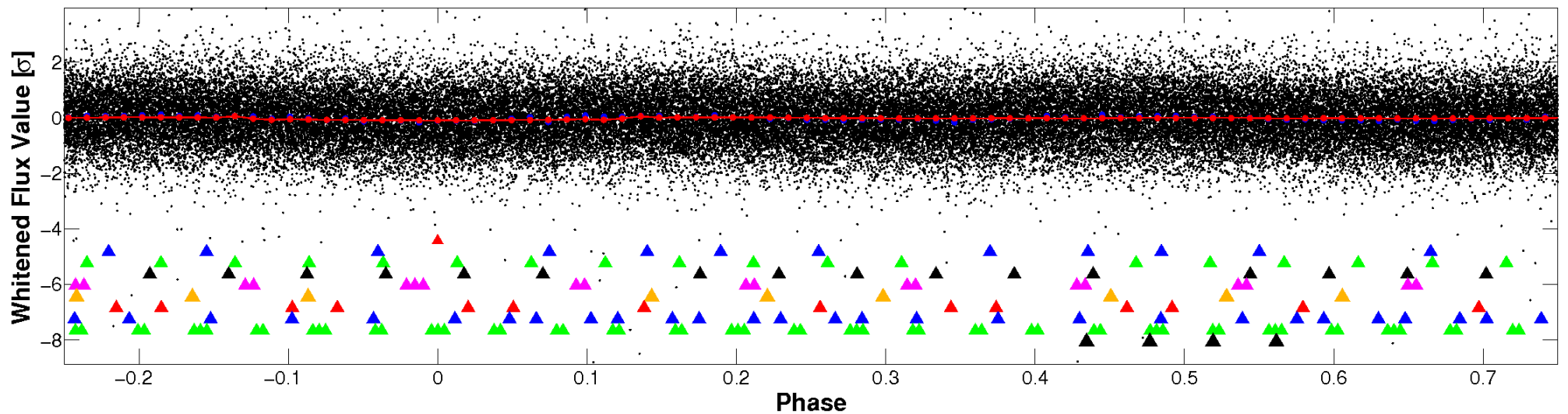


Non-Whitened Vs. Whitened Light Curve

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

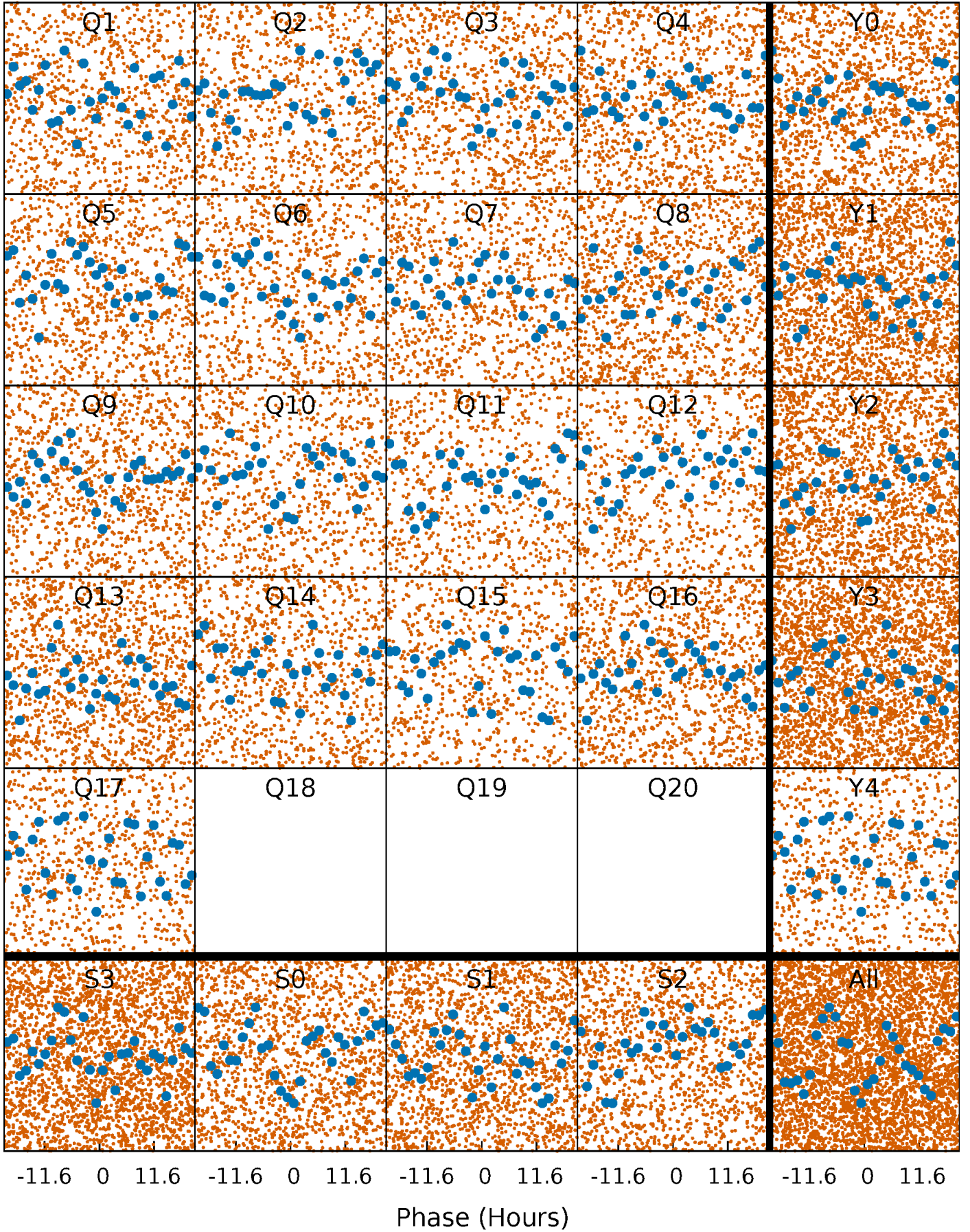


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



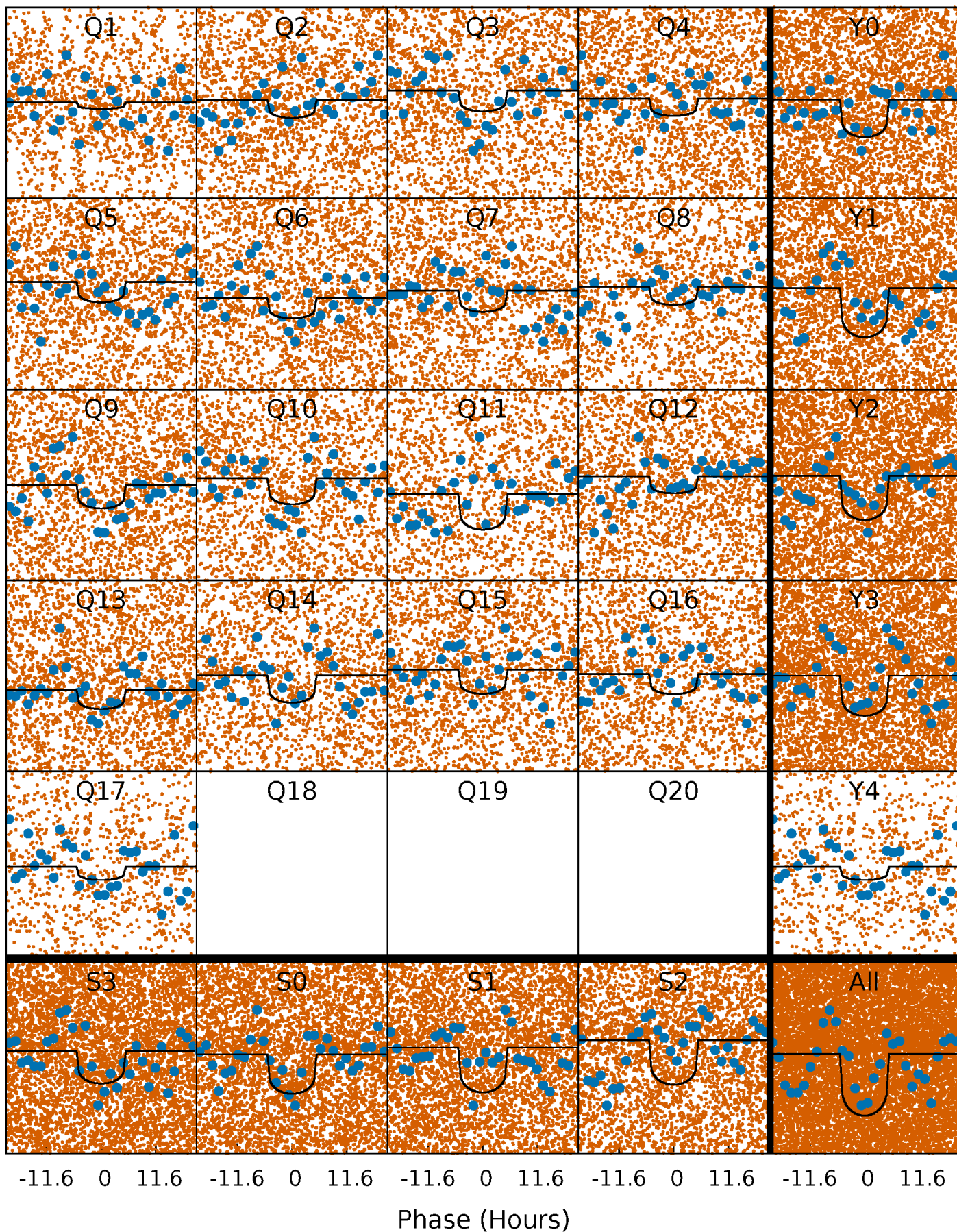
PDC Quarter-Phased Transit Curves

TCE 007045685-01 P= 1.653417 Days $T_0=132.923690$ (BKJD)



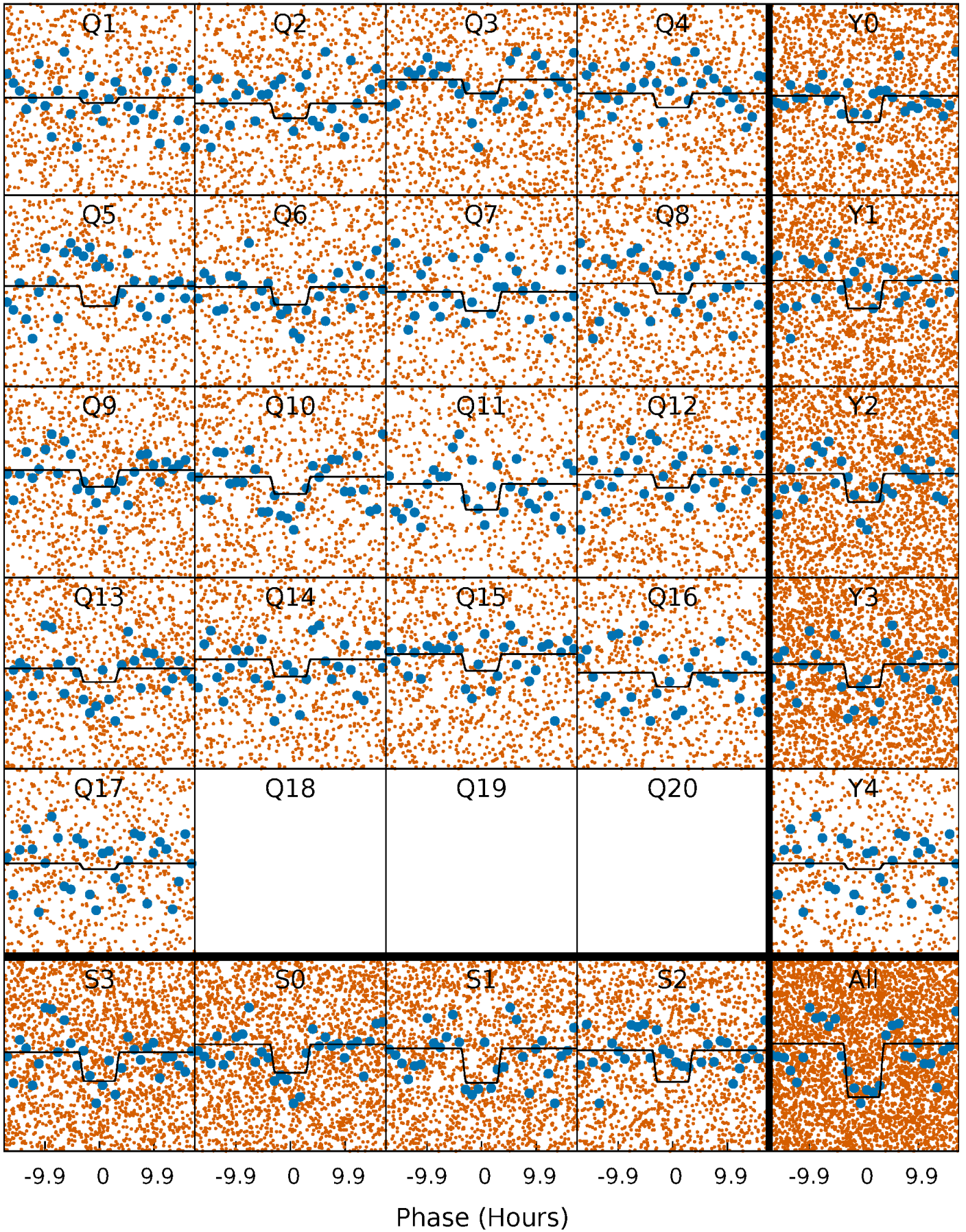
DV Quarter-Phased Transit Curves

TCE 007045685-01 P= 1.653417 Days $T_0=132.923690$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

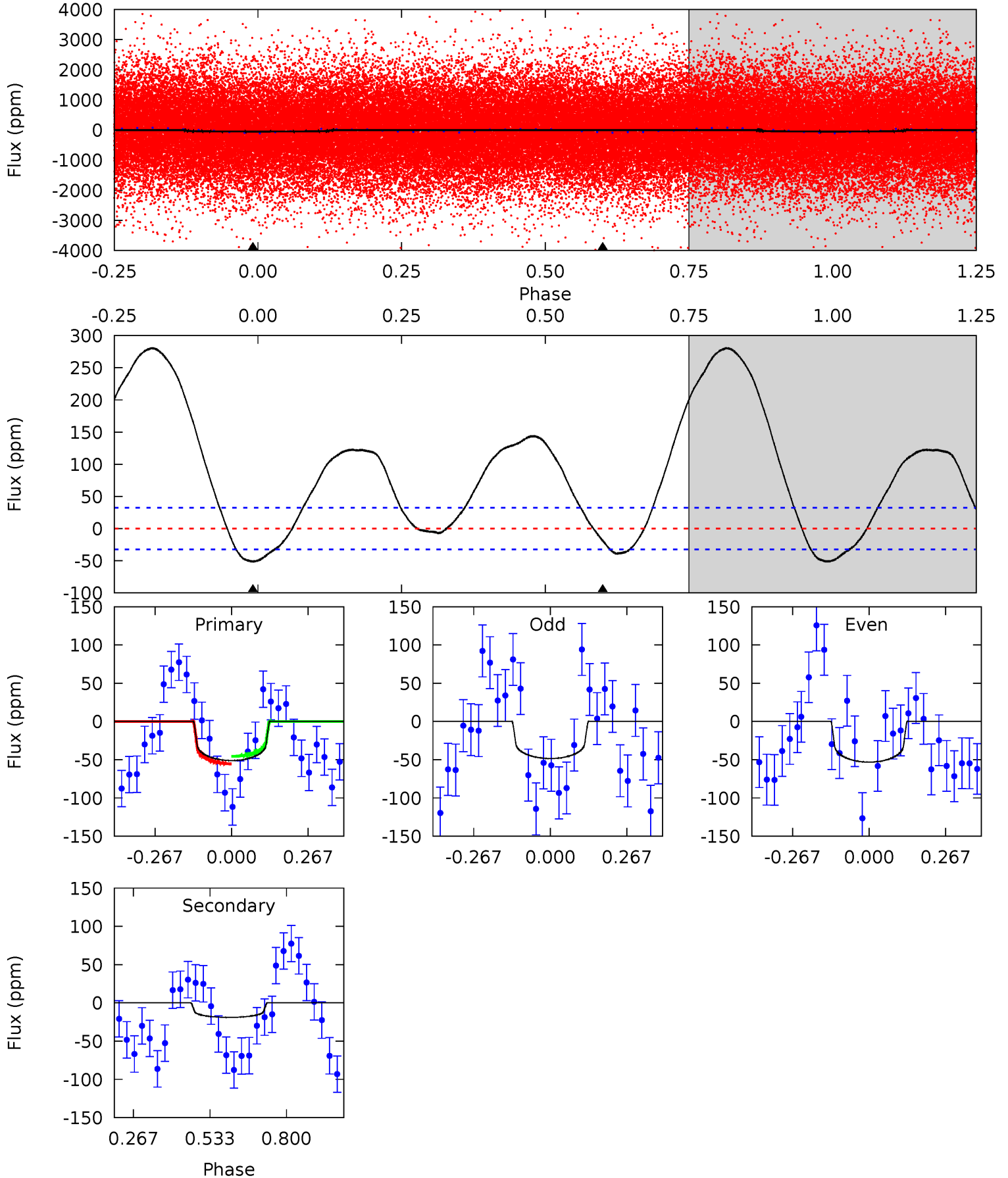
TCE 007045685-01 P= 1.653473 Days $T_0=132.888256$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-01, P = 1.653417 Days, E = 131.270273 Days

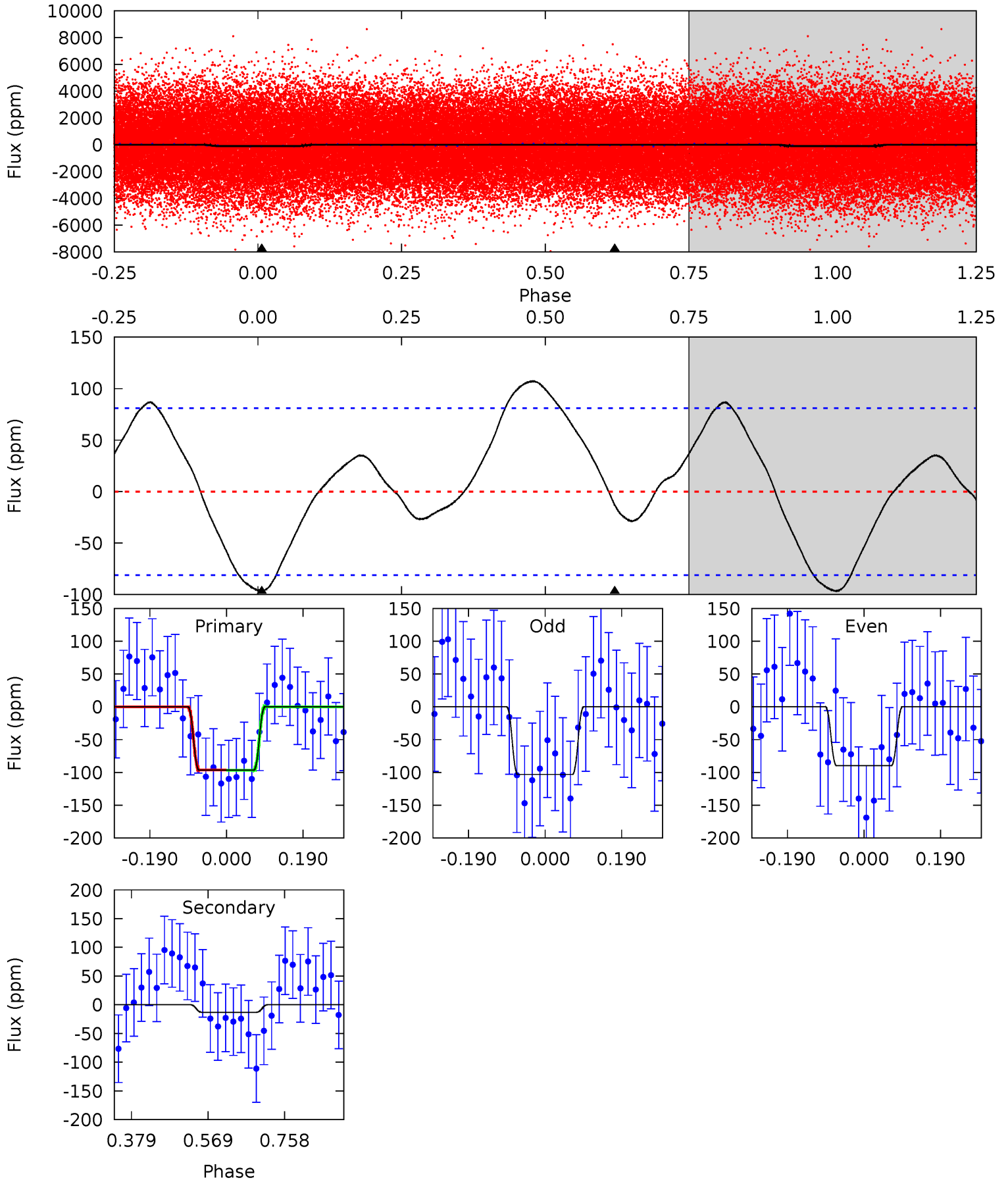
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.88	2.56	0	0	4.35	1.11	1.55	6.88	6.88	2.56	2.56	0.32	0.72	0.85	0.67



Alt Model-Shift Uniqueness Test

007045685-01, P = 1.653473 Days, E = 131.234783 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	0.71	0	0	4.43	1.31	1.68	5.27	5.27	0.71	0.71	0.36	0.93	0.53	0.01



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 7	$1.61^{+0.74}_{-0.71}$	2871^{+224}_{-162}	4397^{+1276}_{-671}	$3.439^{+6.984}_{-2.011}$
Alt.	-13 ± 18	$1.64^{+0.70}_{-0.71}$	2862^{+240}_{-149}	4005^{+1535}_{-7679}	$2.170^{+7.192}_{-3.002}$

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 $A_{obs} \gg 1.0$

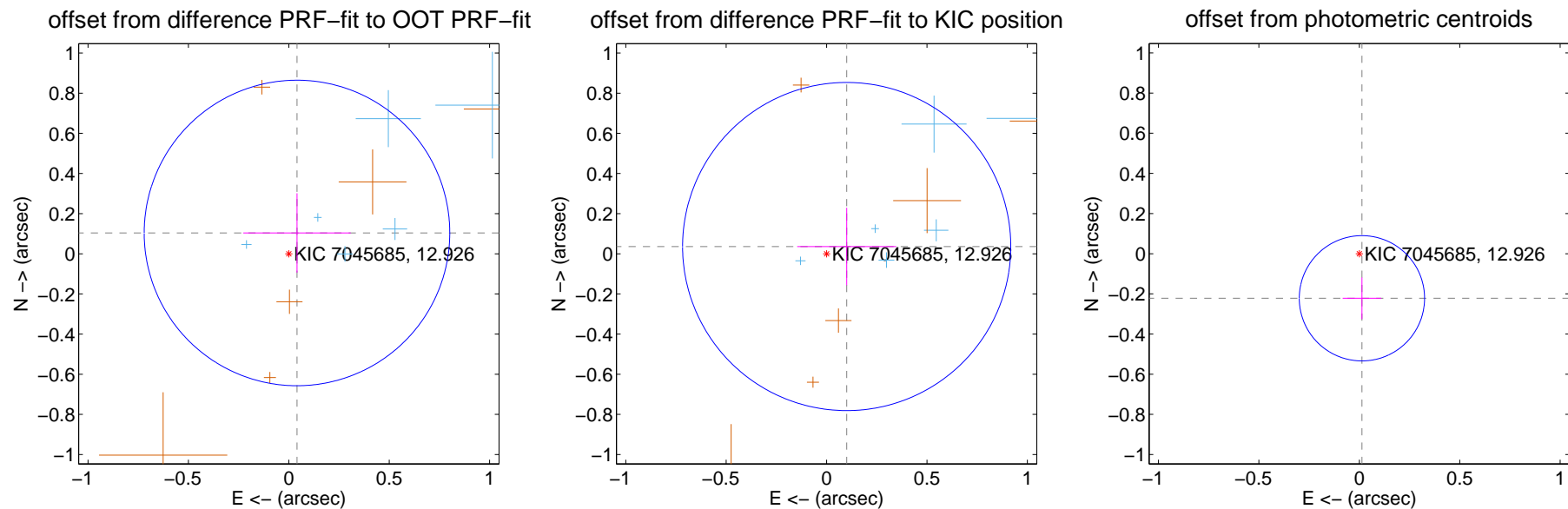
DV Centroid Data

Supplemental centroid analysis for 007045685-01. Kepler magnitude: 12.93. Transit SNR 10.49

There are 9 quarters with good PRF difference image offsets

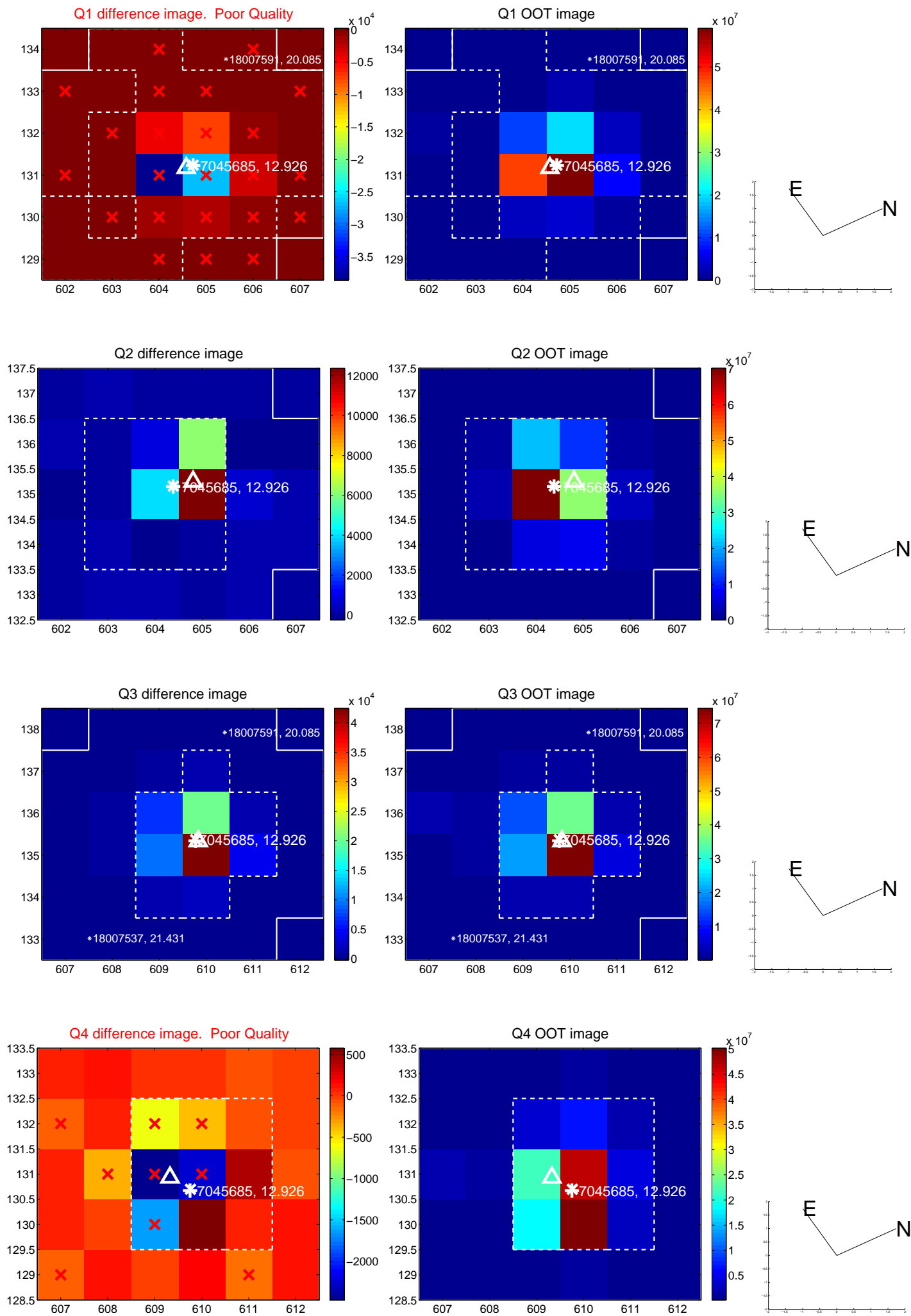
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.111 ± 0.254	0.44	-0.041 ± 0.267	0.104 ± 0.198
PRF-fit source offset from KIC position	0.106 ± 0.272	0.39	-0.100 ± 0.246	0.036 ± 0.193
photometric centroid source offset	0.22 ± 0.10	2.14	-0.01 ± 0.10	-0.22 ± 0.10

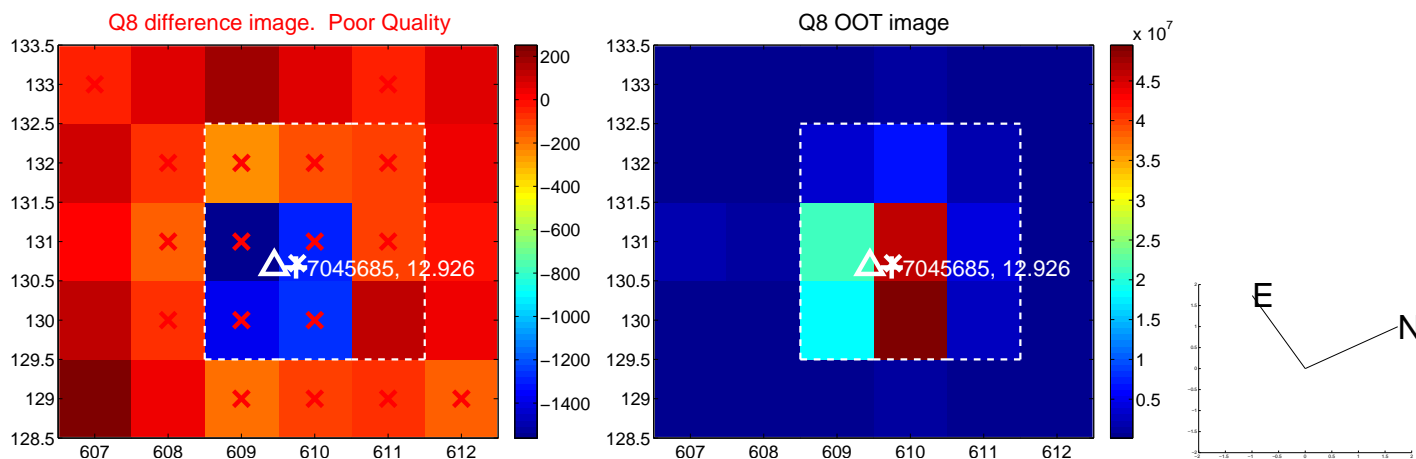
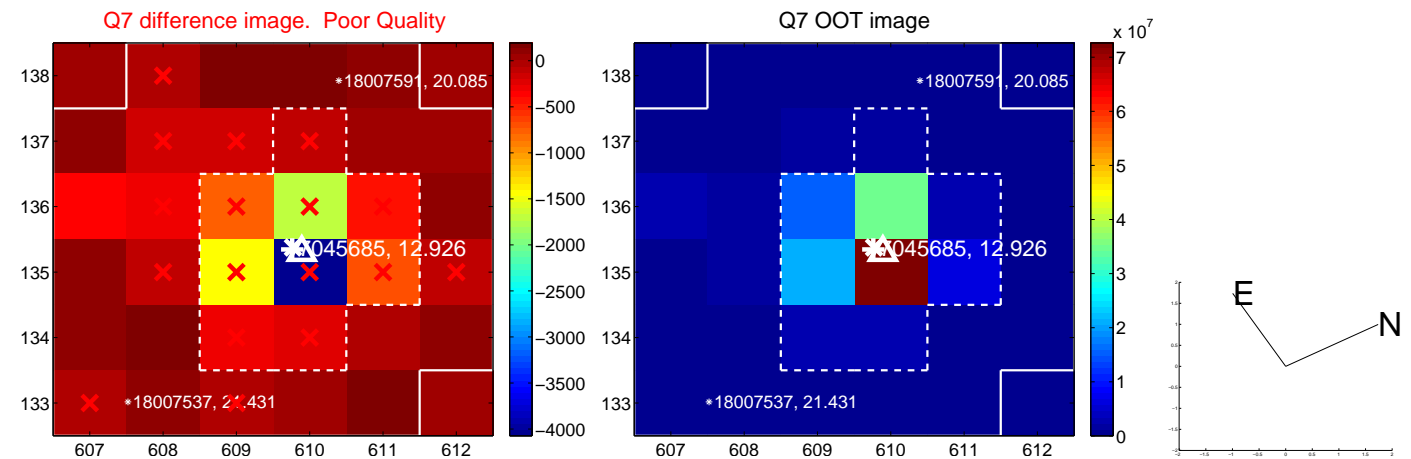
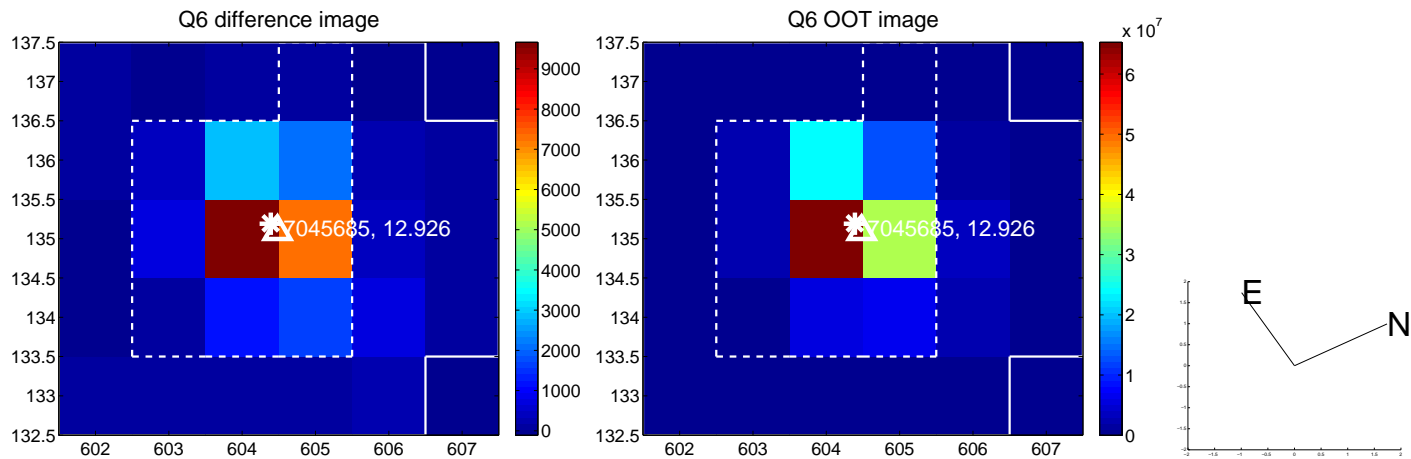
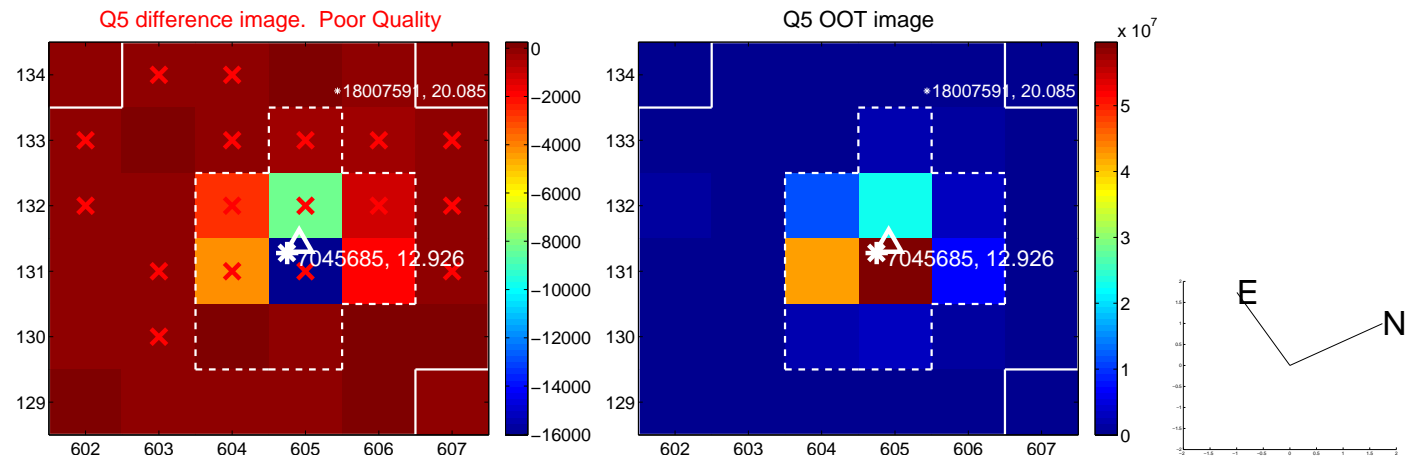


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

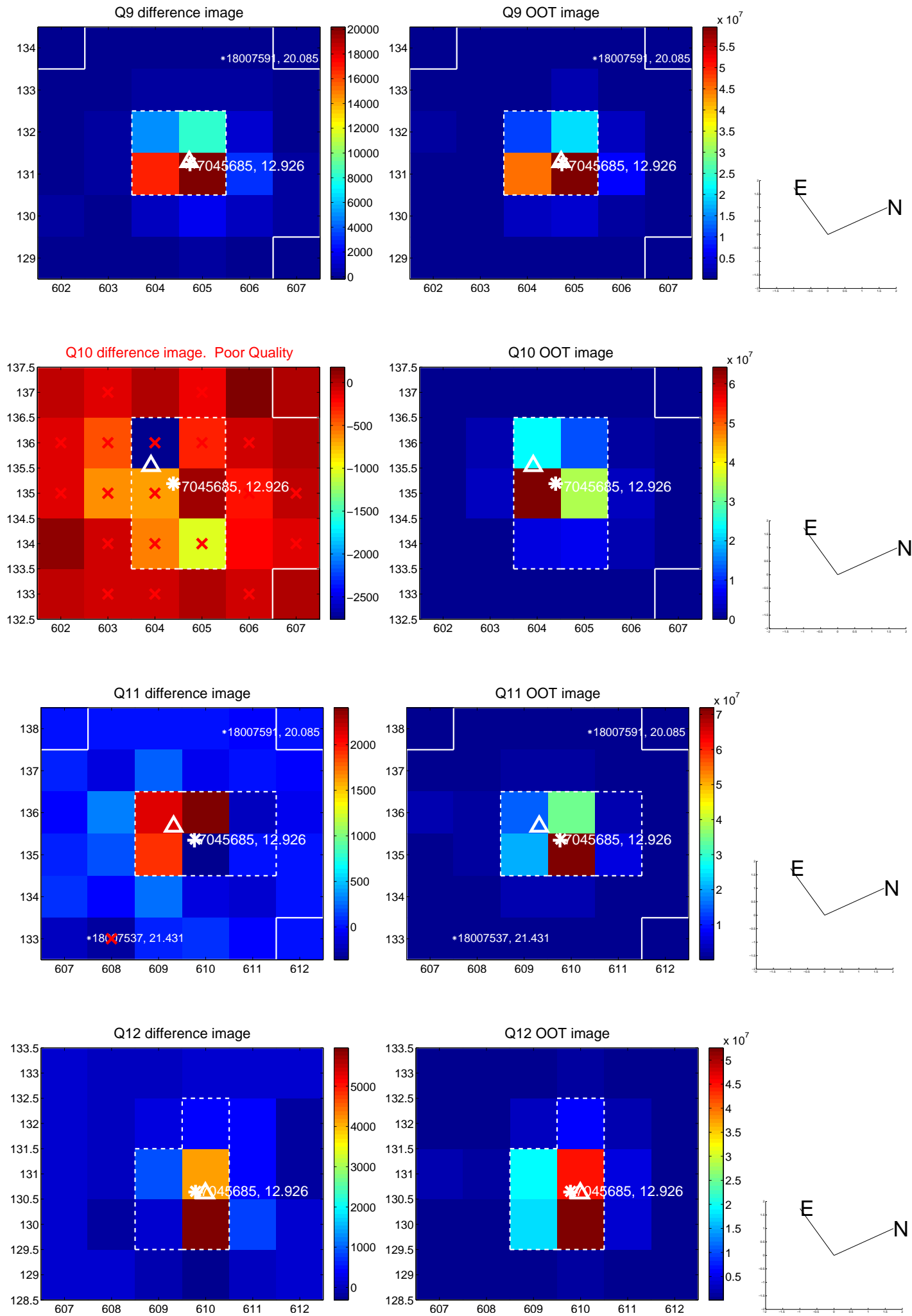
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



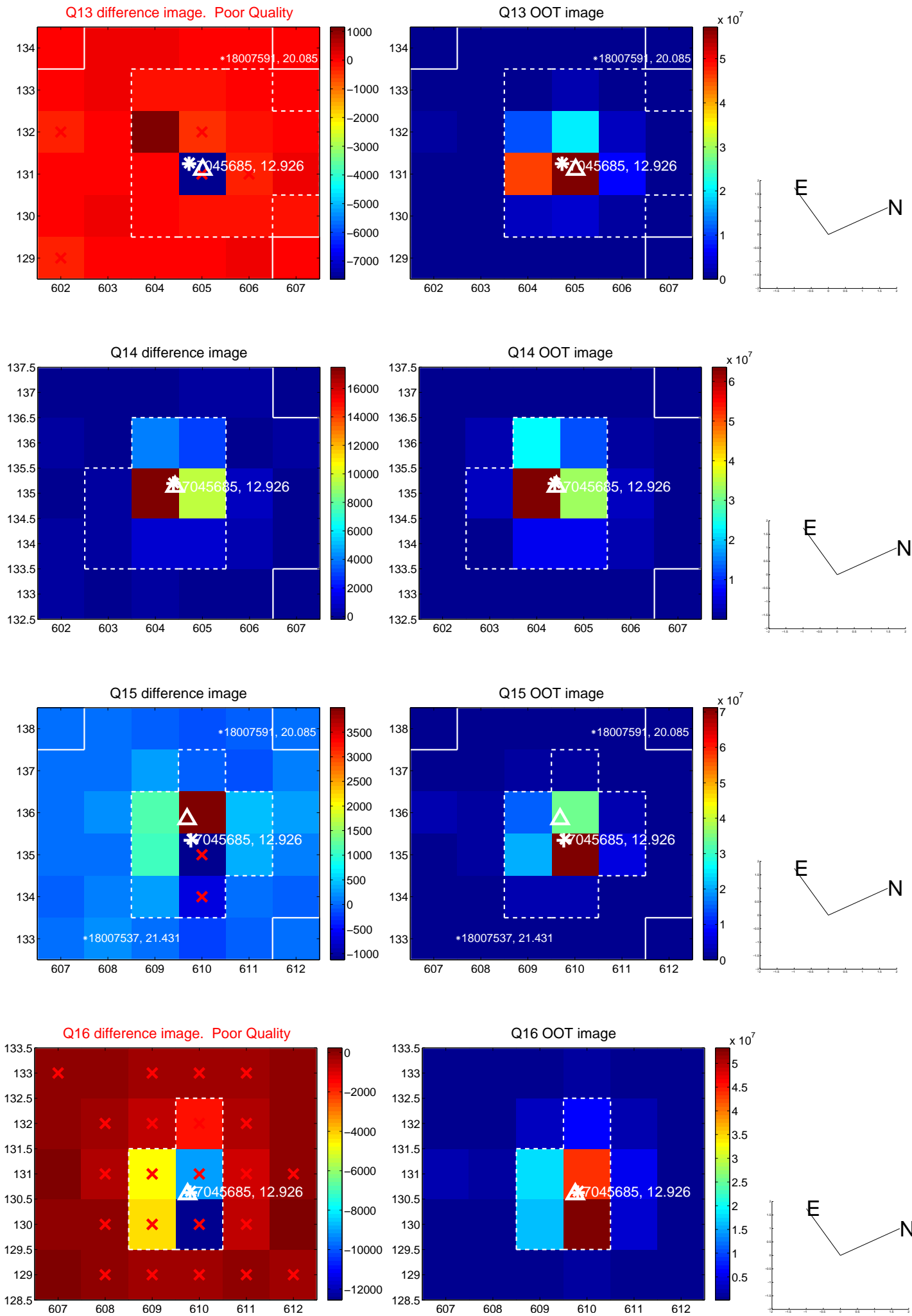
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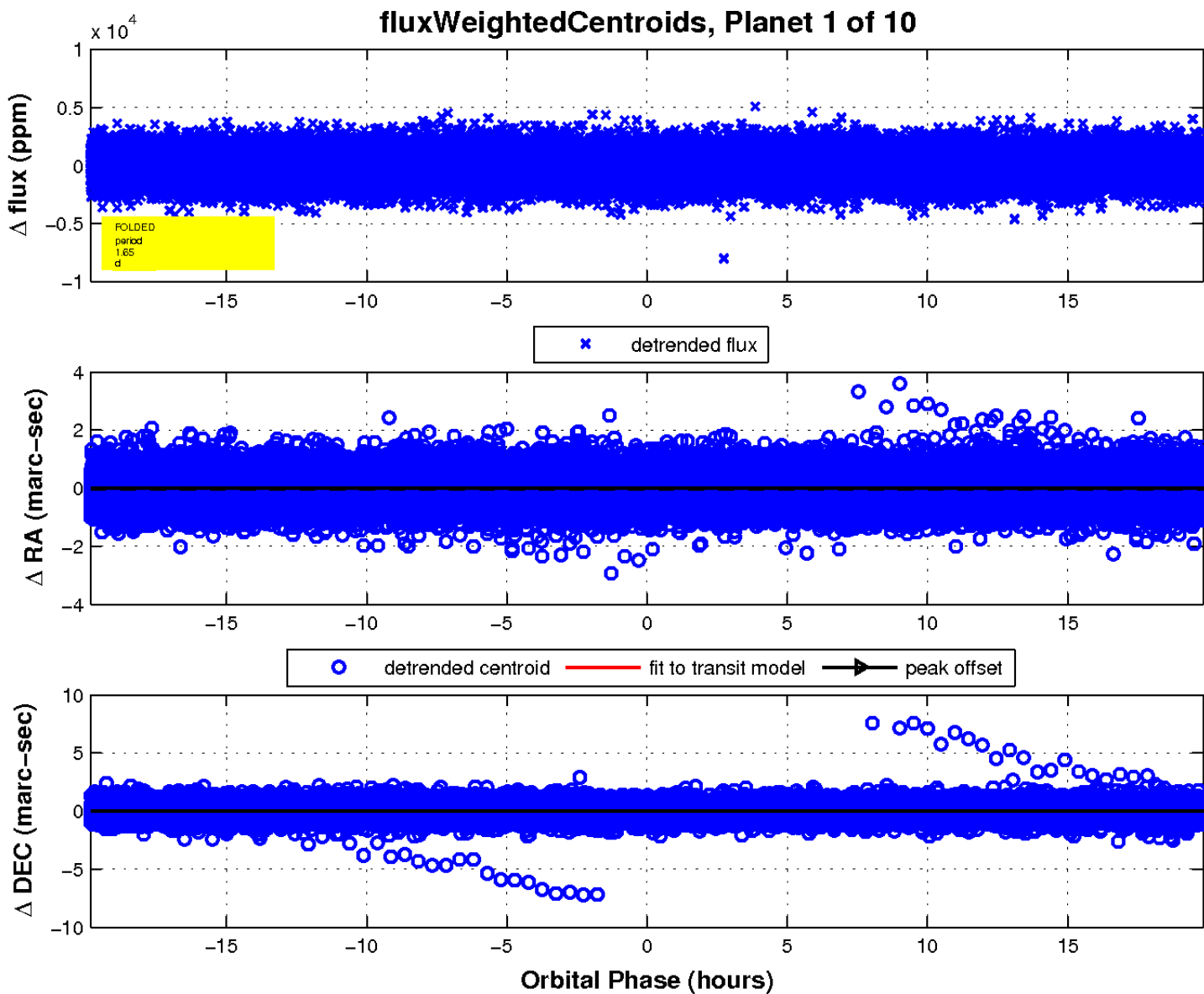
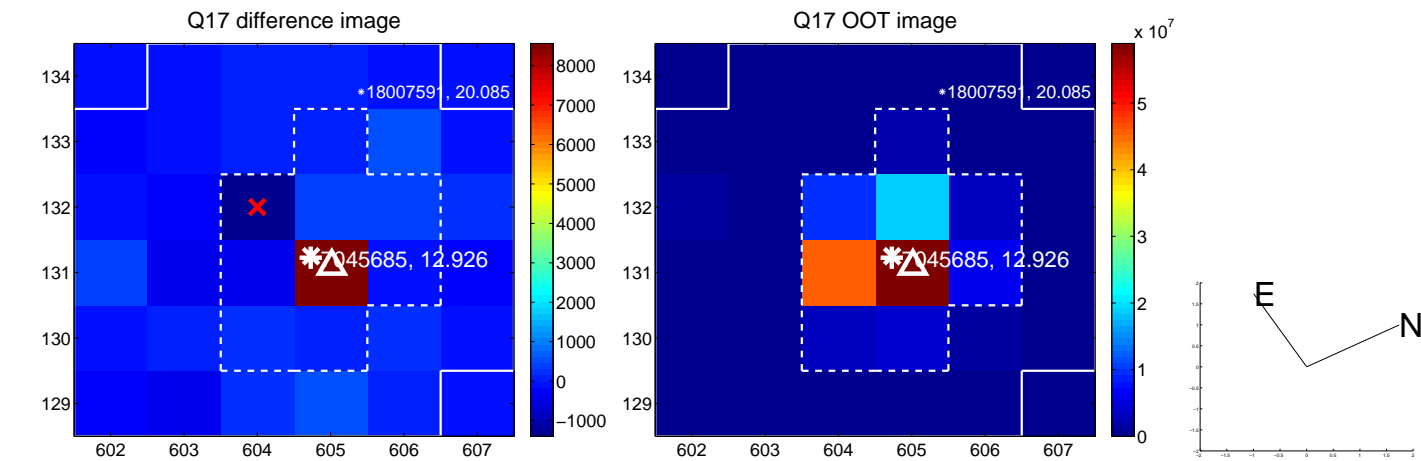
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

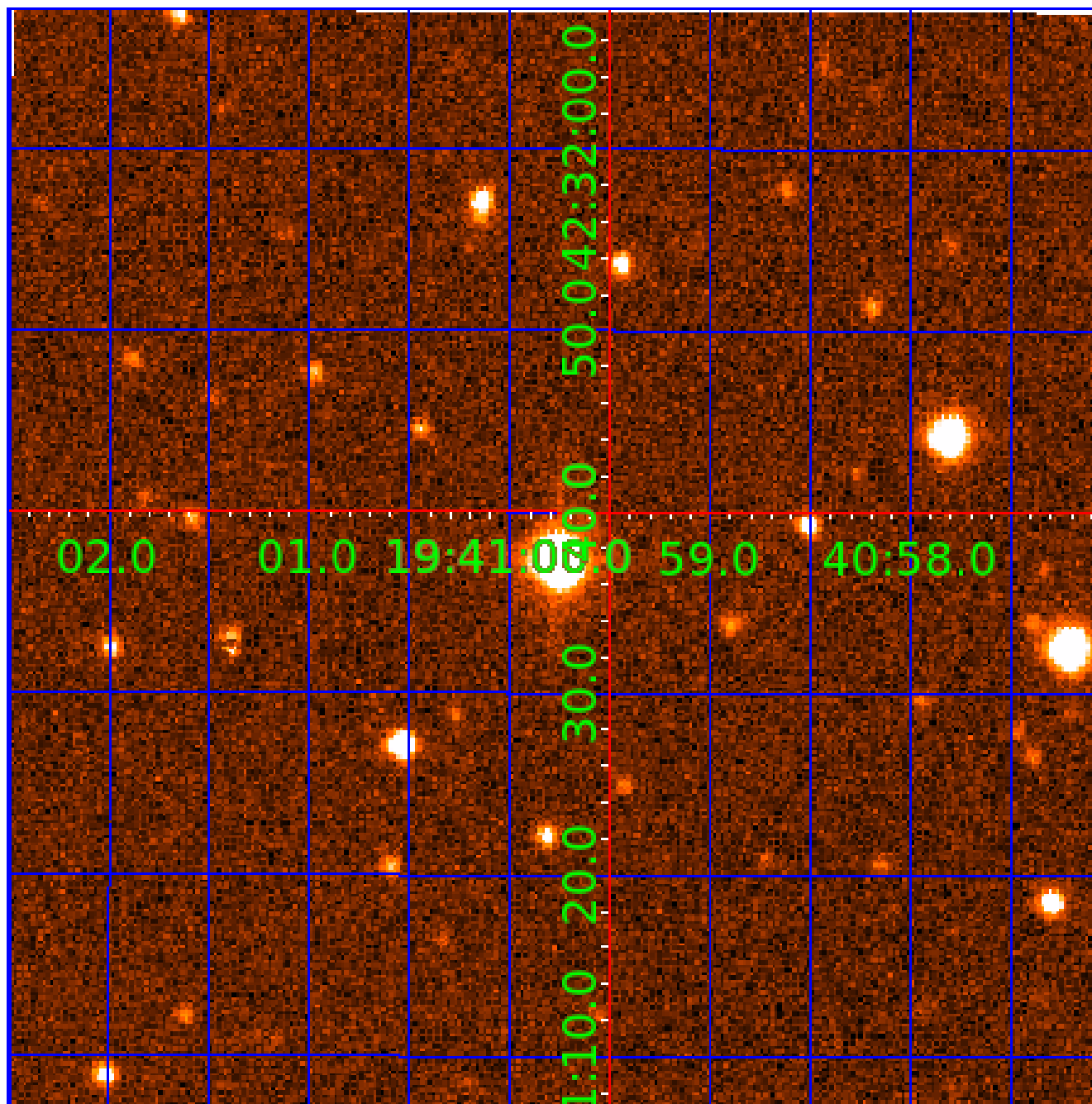


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007045685

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})
007045685-01	OBS	No	1.653417	132.923690	120.1	10.128	8.7	10.5	1.38	6817	1.54	3964.79
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007045685-09	OBS	No	25.396197	140.340251	853.5	2.804	8.3	8.8	1.38	6817	4.30	103.84
007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

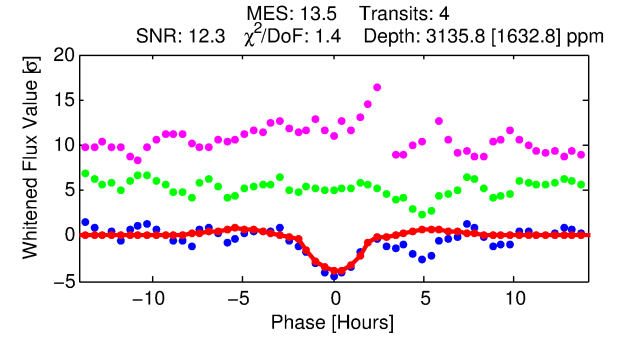
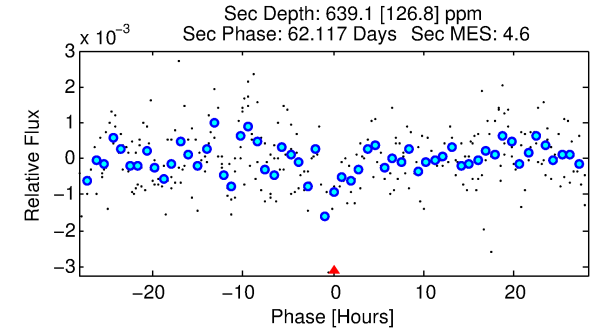
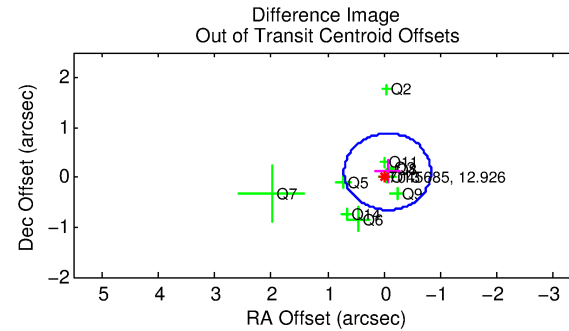
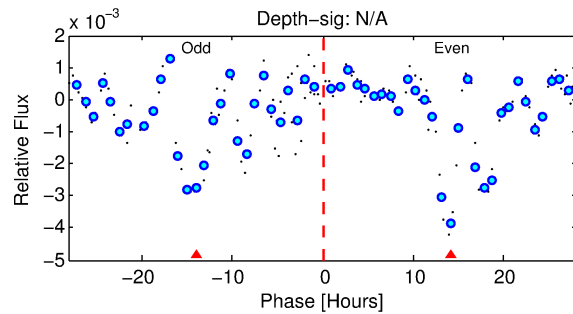
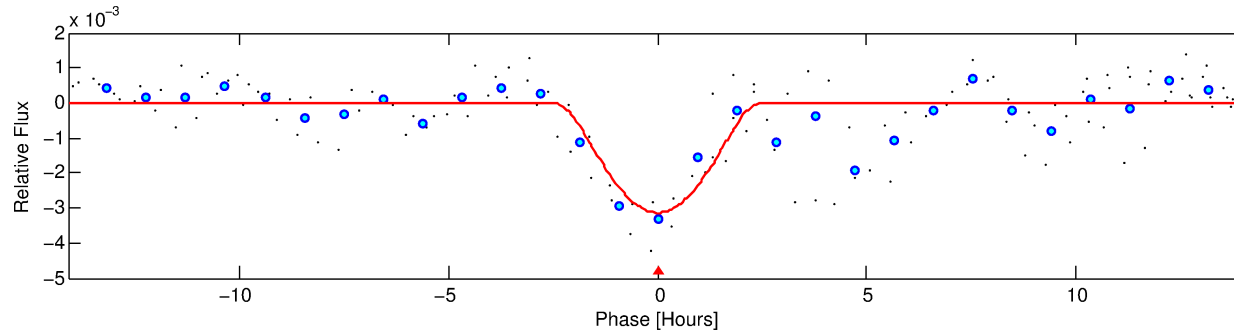
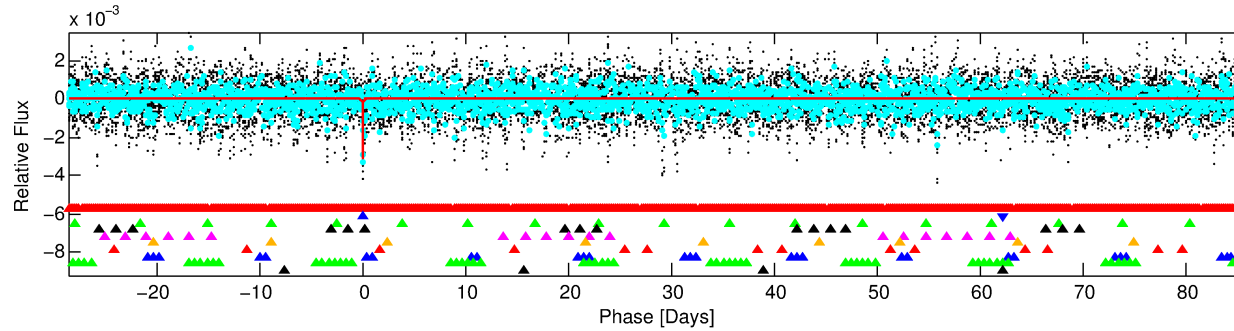
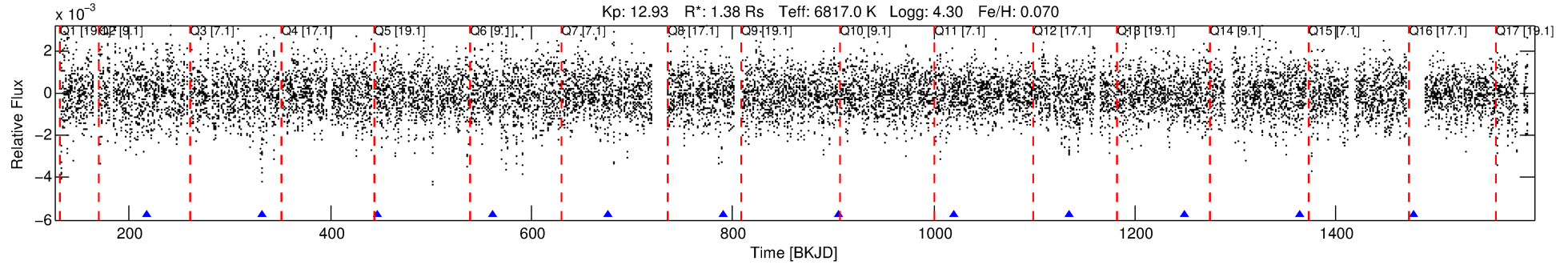
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-02

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 2 of 10 Period: 114.574 d



DV Fit Results:

Period = 114.57364 [0.00202] d
Epoch = 217.5612 [0.0110] BKJD
Rp/R* = 0.0934 [0.3261]
a/R* = 82.47 [59.09]
b = 1.00 [0.50]
Seff = 13.93 [6.13]
Teq = 493 [54] K
Rp = 14.07 [49.41] Re
a = 0.5147 [0.1513] AU
Ag = 470.38 [3292.43] [0.14σ]
Teffp = 3547 [6198] K [0.49σ]

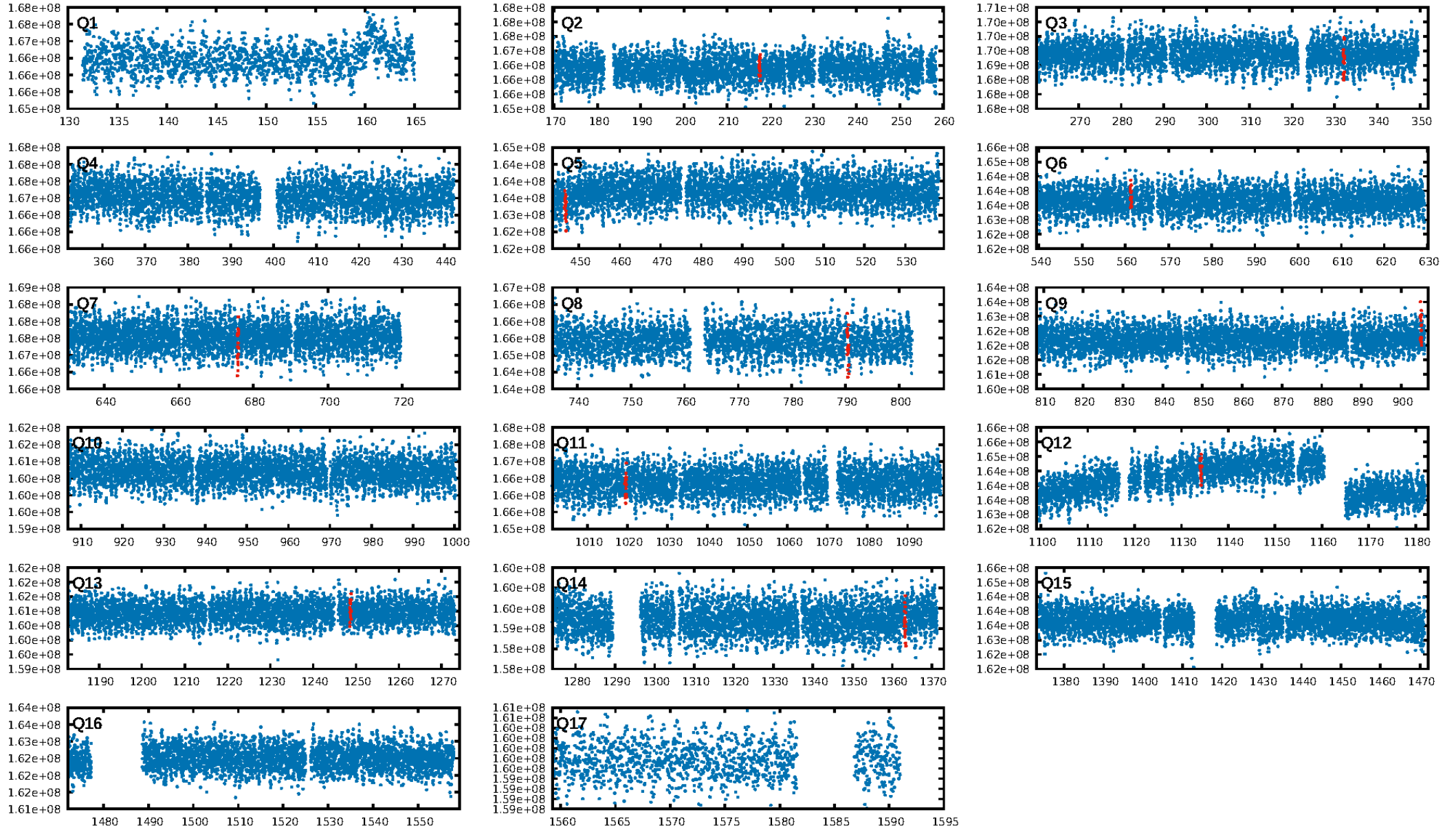
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.31σ]
LongPeriod-sig: 100.0% [180.78σ]
ModelChiSquare2-sig: 59.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.787
Centroid-sig: 64.4%
Centroid-so: 0.205 arcsec [3.43σ]
OotOffset-rm: 0.123 arcsec [0.48σ]
KicOffset-rm: 0.151 arcsec [0.78σ]
OotOffset-st: 3/3/1/3 [10]
KicOffset-st: 3/3/1/3 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.10 [1/10]

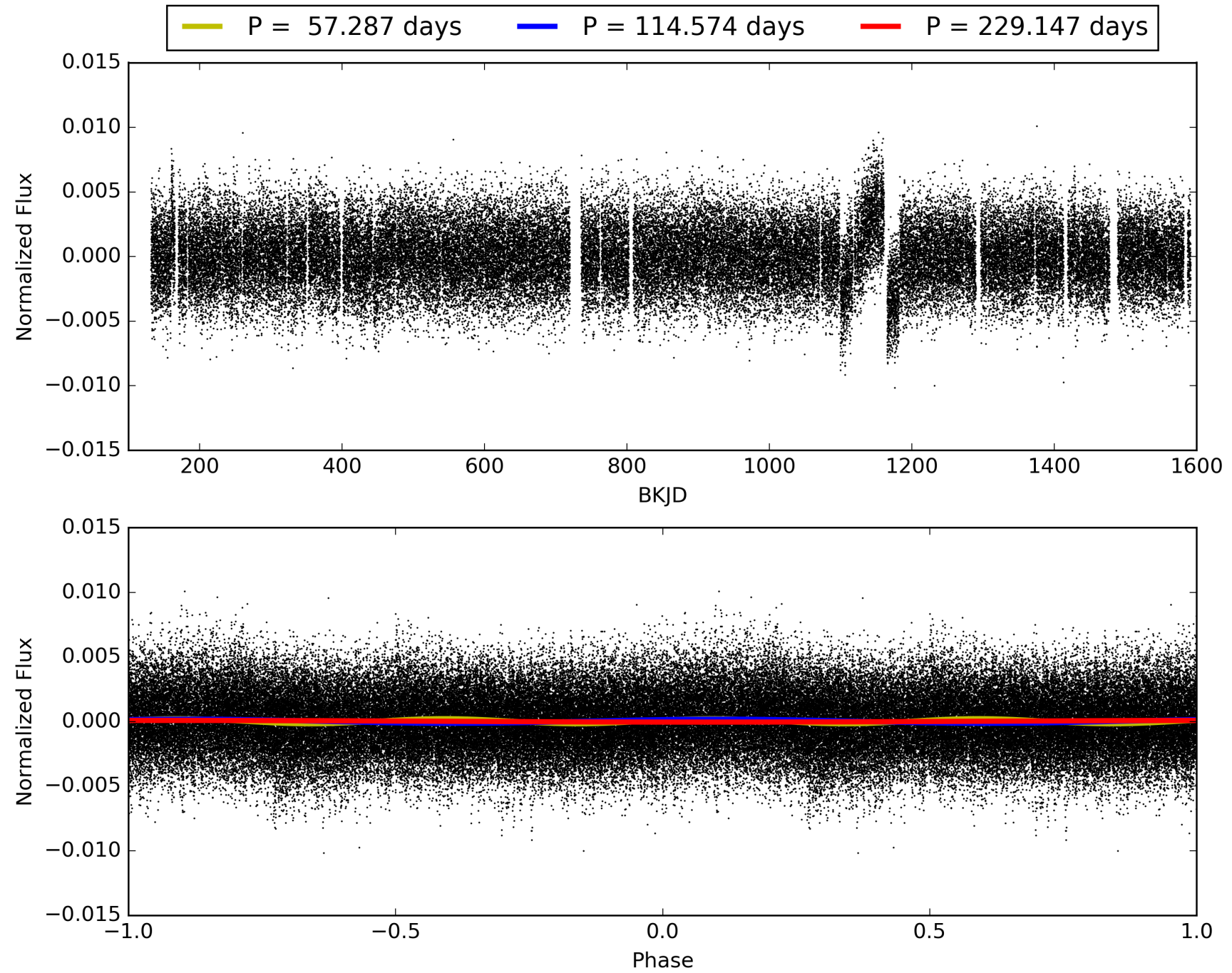
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:45:27 Z

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

TCE 007045685-02, PDC Light Curves

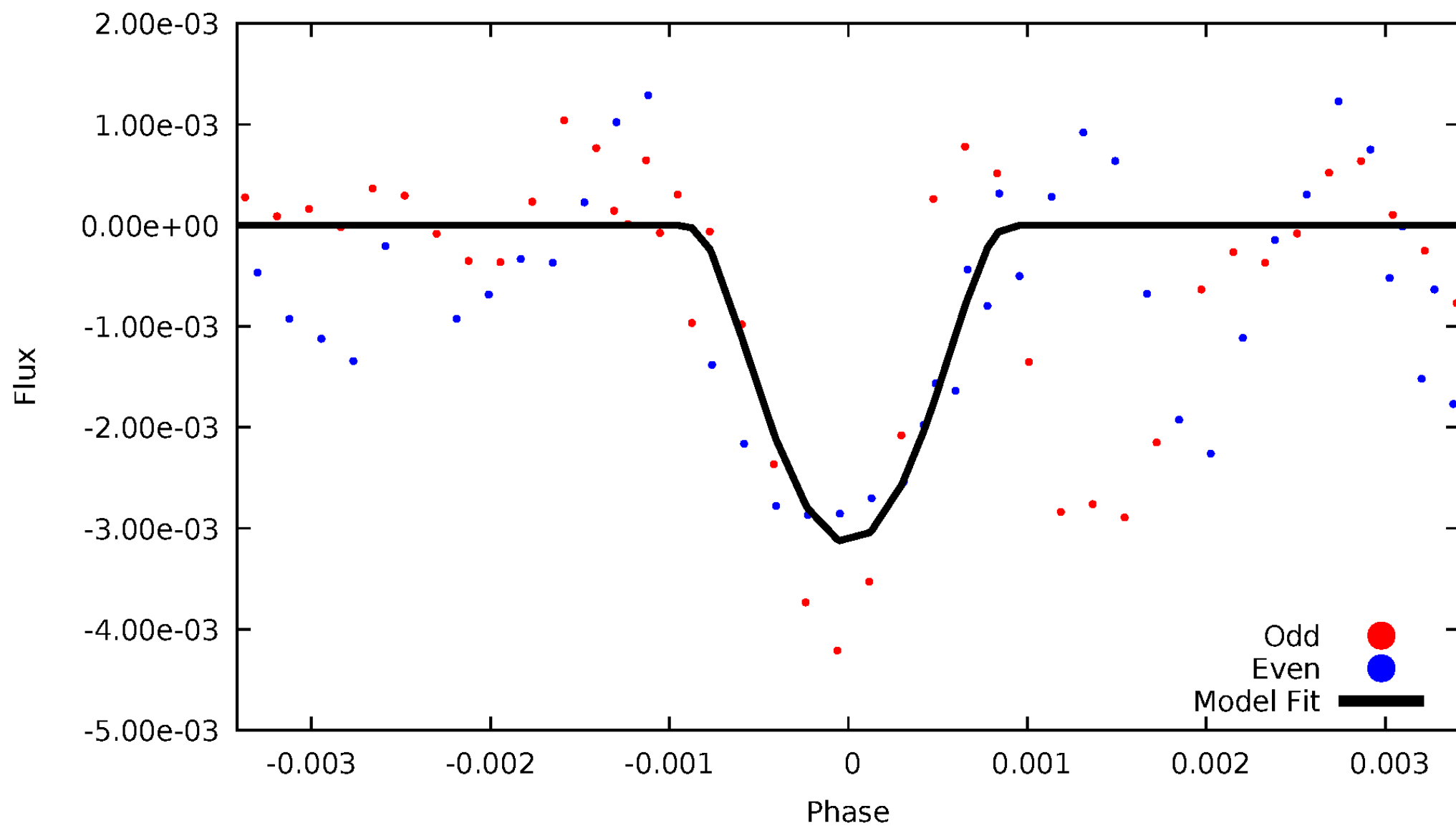


TCE 007045685-02



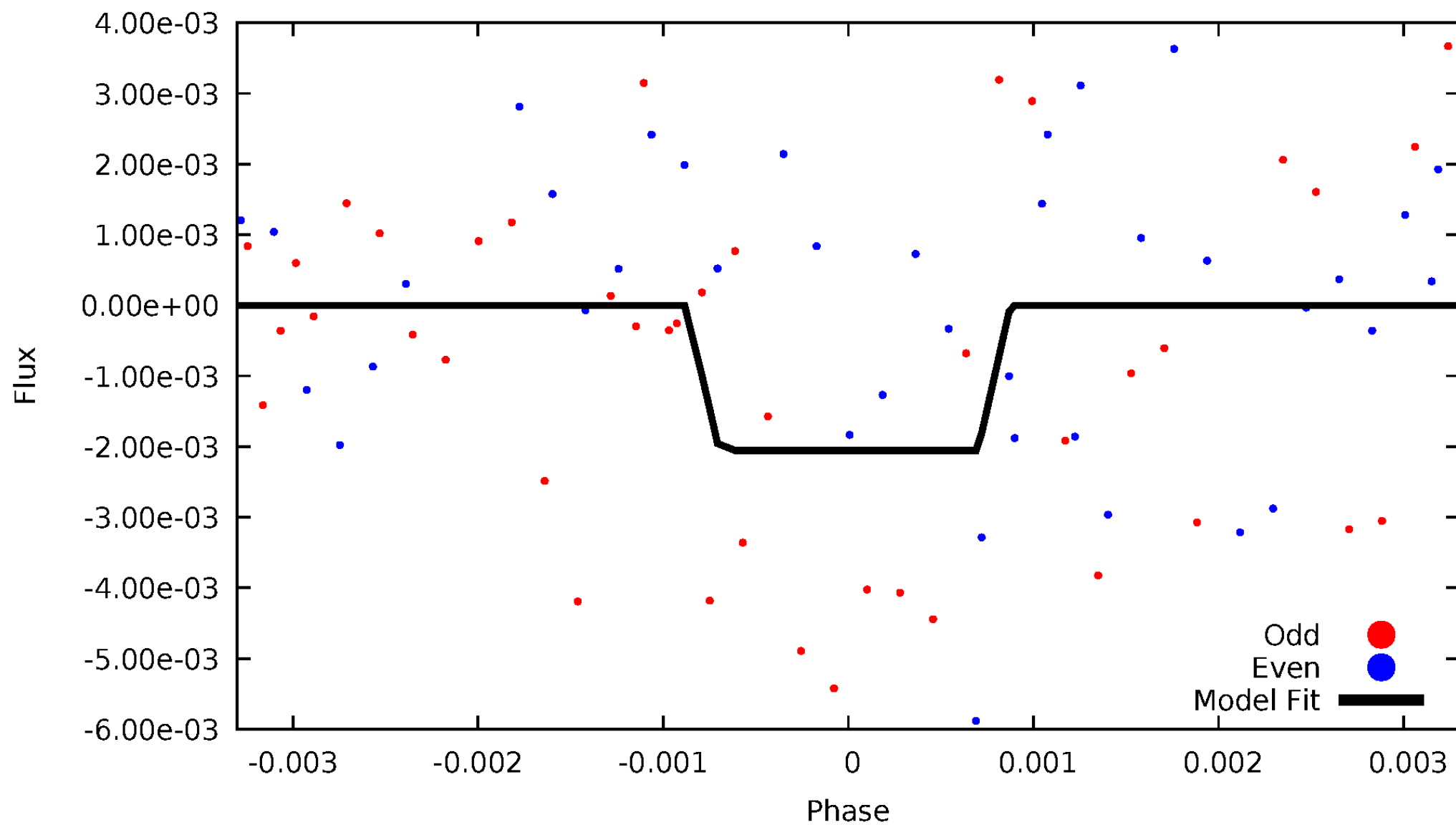
DV Odd/Even

TCE 007045685-02



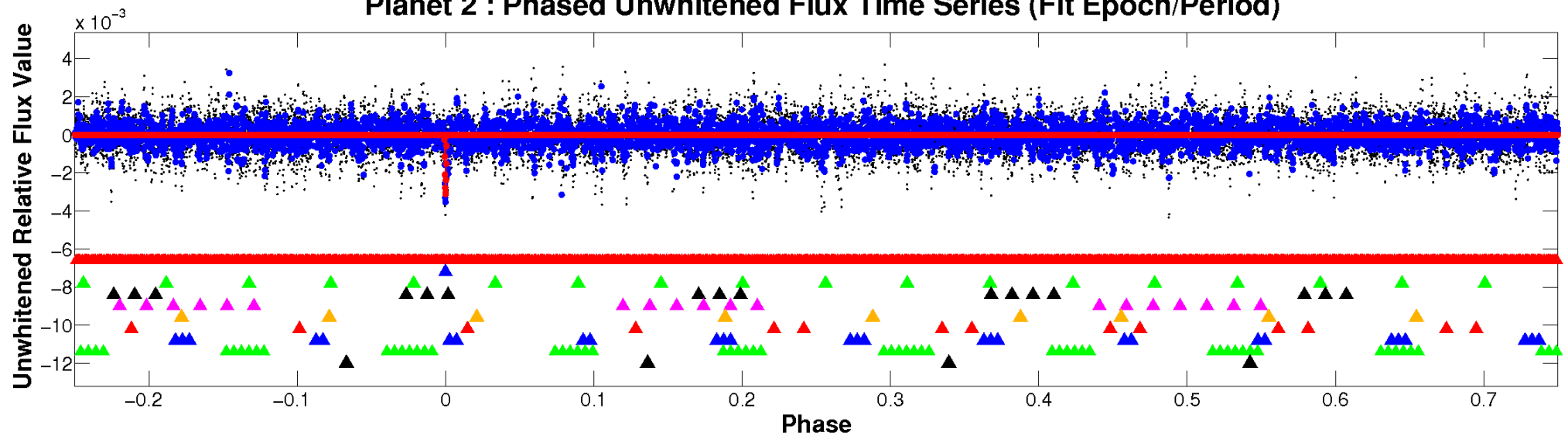
ALT Odd/Even

TCE 007045685-02

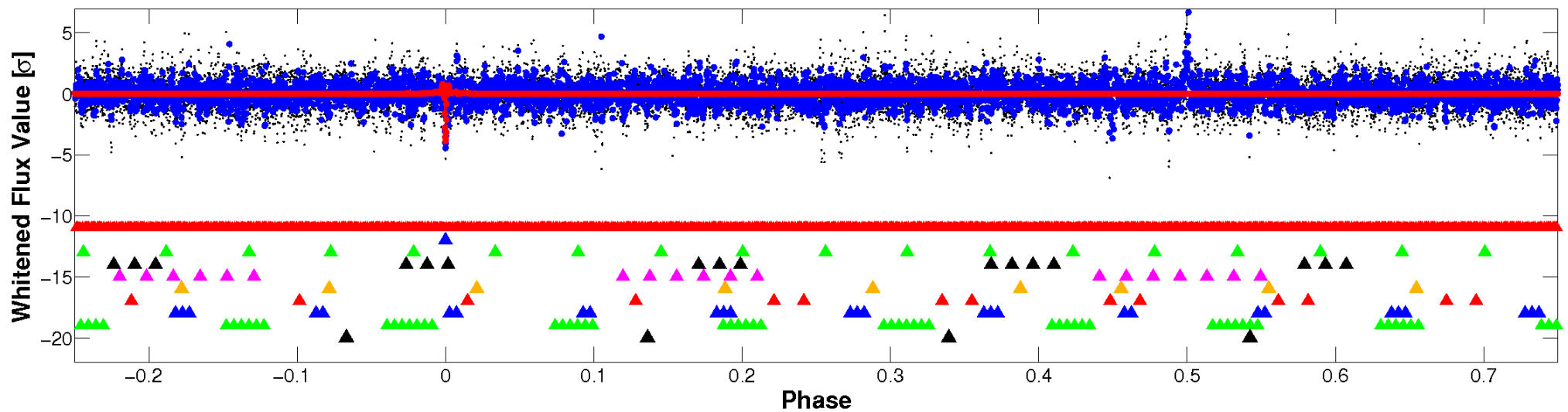


Non-Whitened Vs. Whitened Light Curve

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

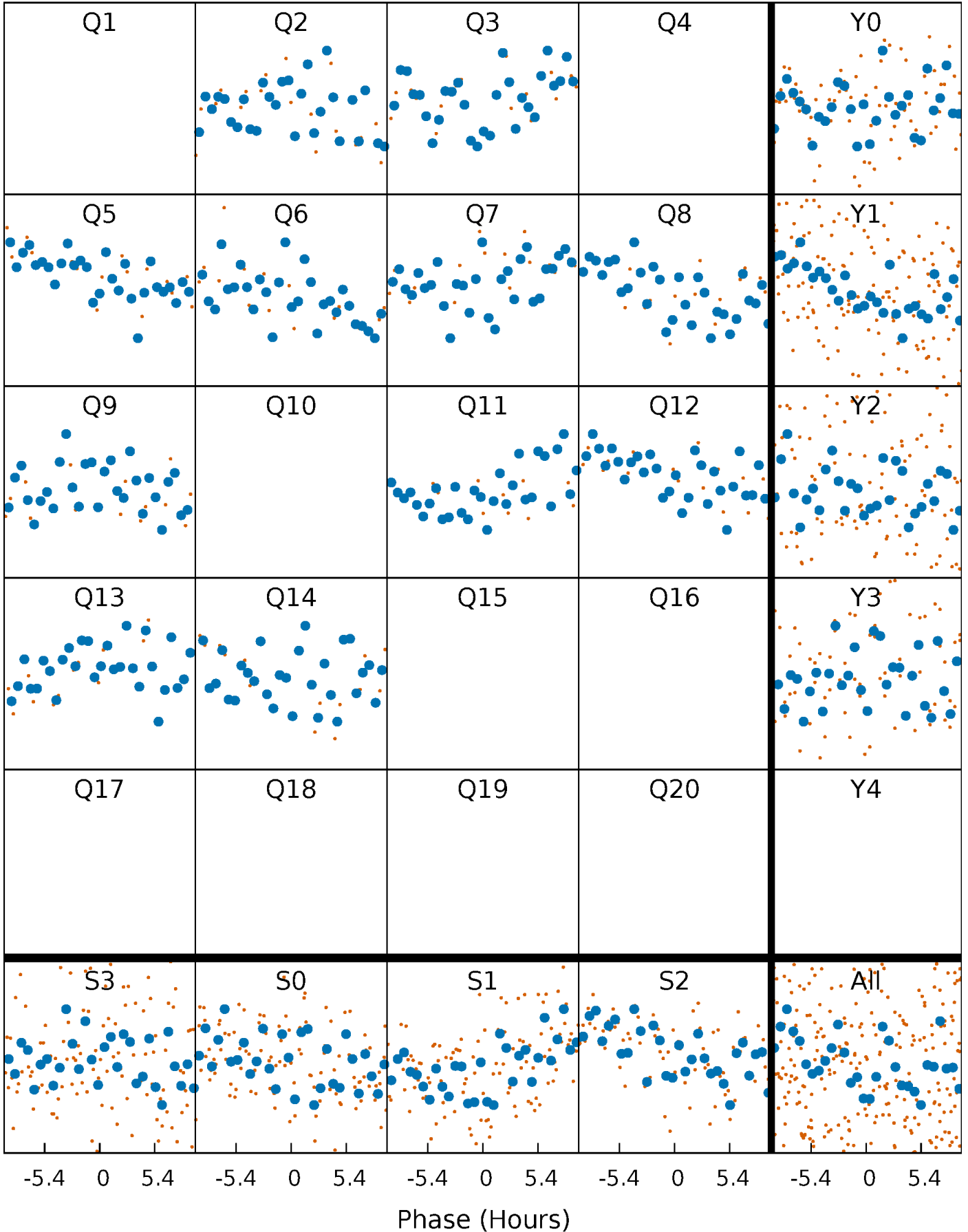


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



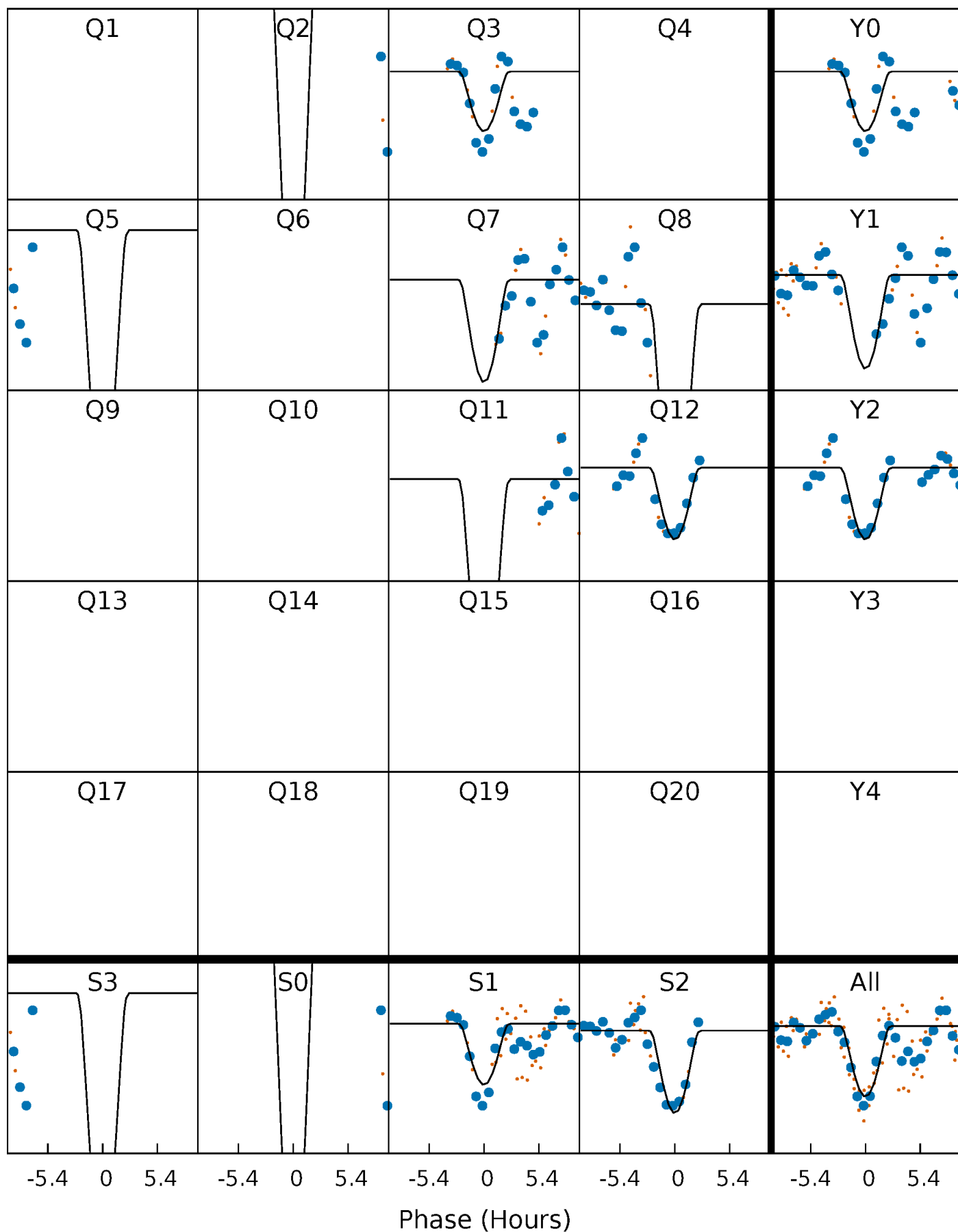
PDC Quarter-Phased Transit Curves

TCE 007045685-02 P=114.573642 Days $T_0=217.561224$ (BKJD)



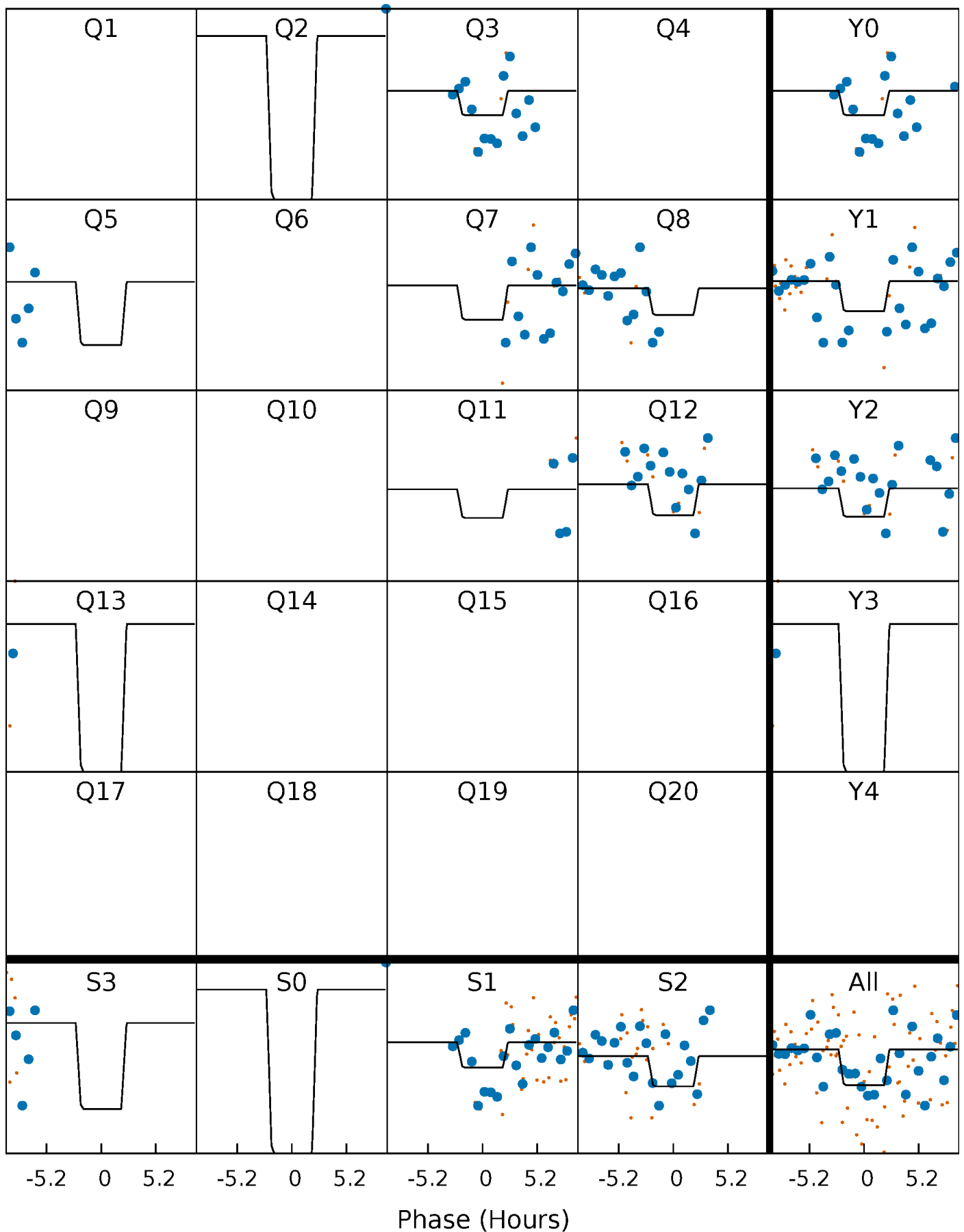
DV Quarter-Phased Transit Curves

TCE 007045685-02 P=114.573642 Days $T_0=217.561224$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

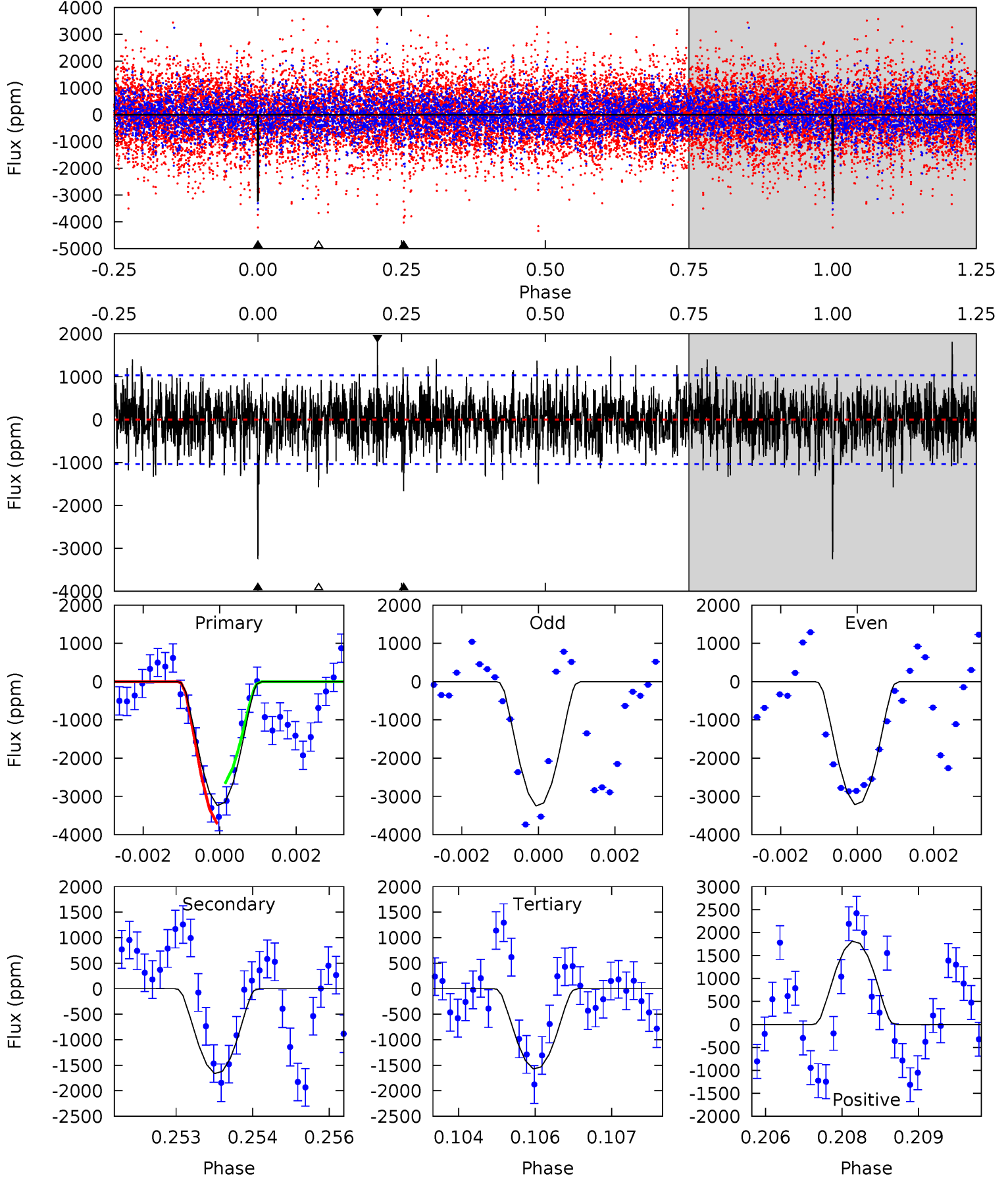
TCE 007045685-02 P=114.569576 Days $T_0=217.546716$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-02, $P = 114.573642$ Days, $E = 102.987582$ Days

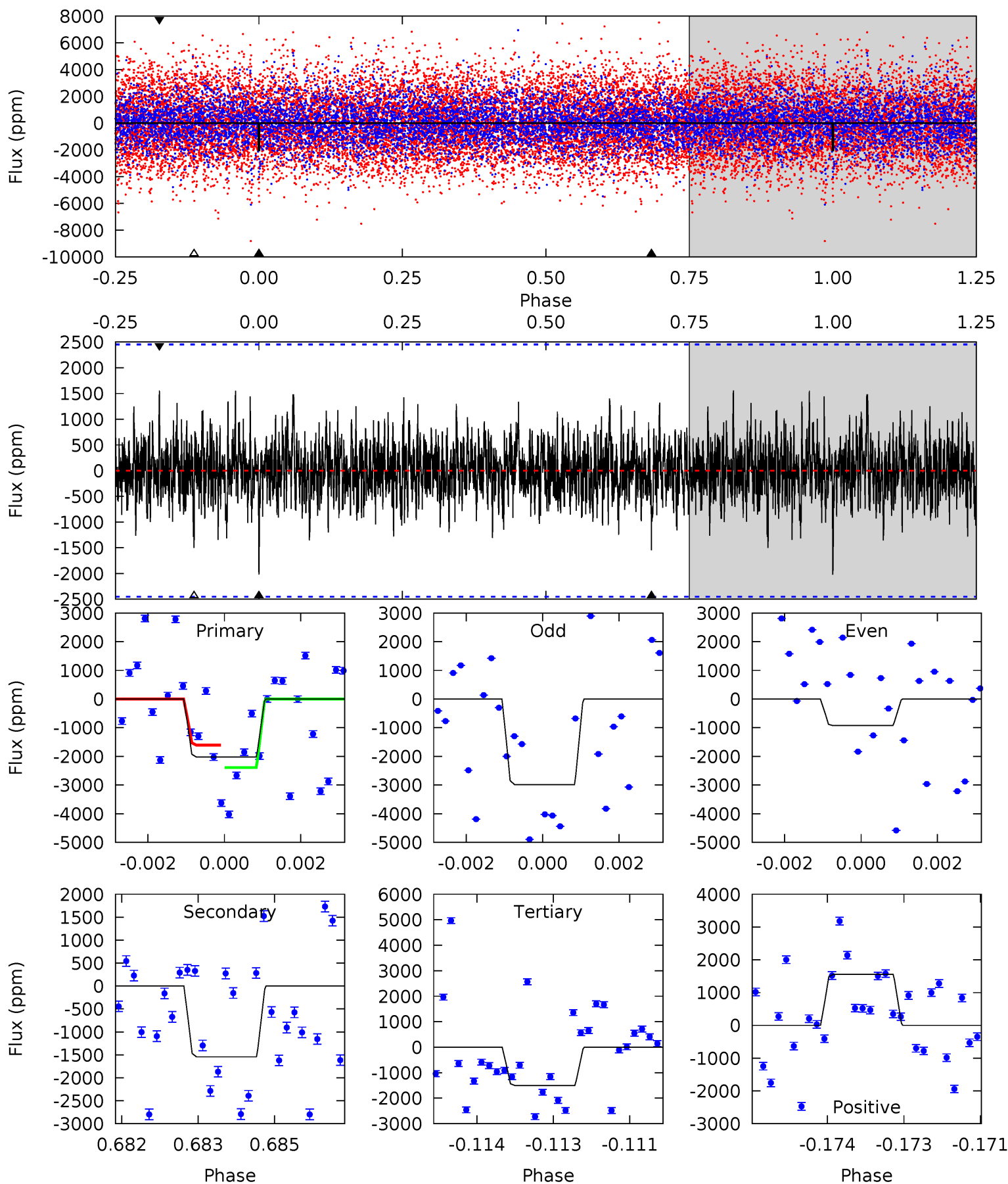
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	8.58	8.12	9.36	5.35	3.13	2.20	8.60	7.36	0.46	-0.78	0.09	1.01	0.36	2.66



Alt Model-Shift Uniqueness Test

007045685-02, P = 114.569576 Days, E = 102.977140 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.42	3.38	3.29	3.40	5.36	3.15	0.94	1.14	1.02	0.09	-0.03	2.24	0.94	0.43	0.85



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1660 ± 193	$39.23^{+41.48}_{-27.80}$	697^{+53}_{-34}	3280^{+1808}_{-594}	153^{+1697}_{-117}
Alt.	-1544 ± 457	$38.35^{+39.52}_{-26.33}$	698^{+53}_{-35}	3256^{+1672}_{-612}	142^{+1361}_{-110}

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 $A_{obs} \gg 1.0$

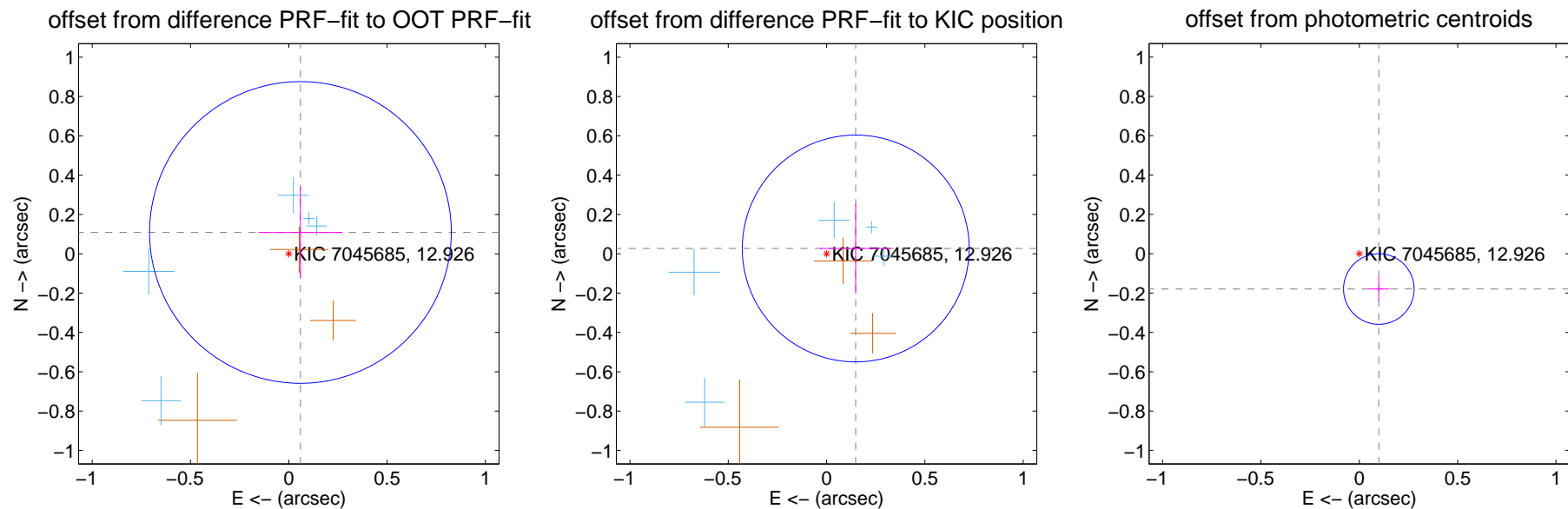
DV Centroid Data

Supplemental centroid analysis for 007045685-02. Kepler magnitude: 12.93. Transit SNR 12.30

There are 5 quarters with good PRF difference image offsets

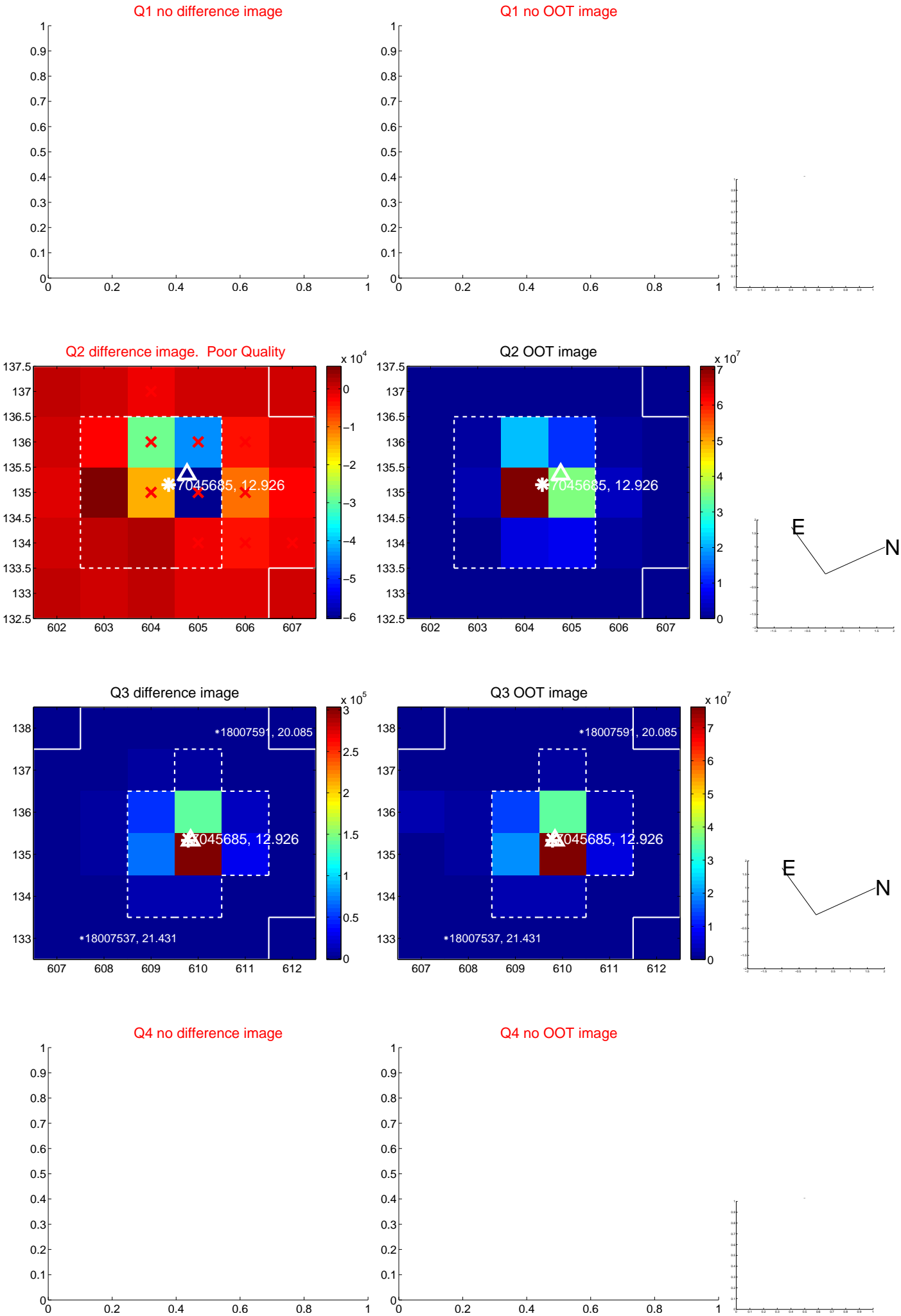
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.123 ± 0.256	0.48	-0.059 ± 0.215	0.108 ± 0.233
PRF-fit source offset from KIC position	0.151 ± 0.192	0.78	-0.148 ± 0.182	0.027 ± 0.228
photometric centroid source offset	0.21 ± 0.06	3.43	-0.10 ± 0.06	-0.18 ± 0.06

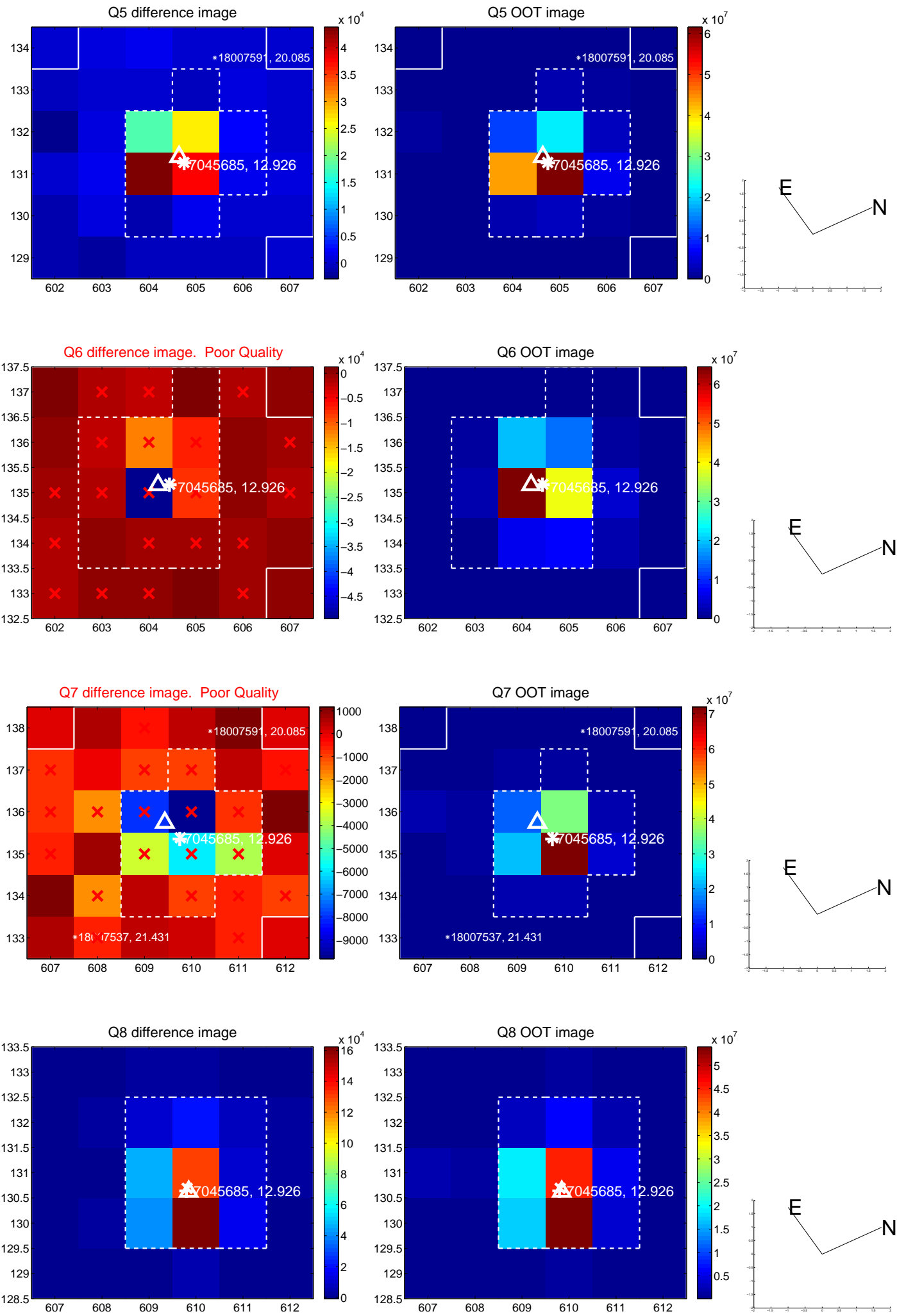


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

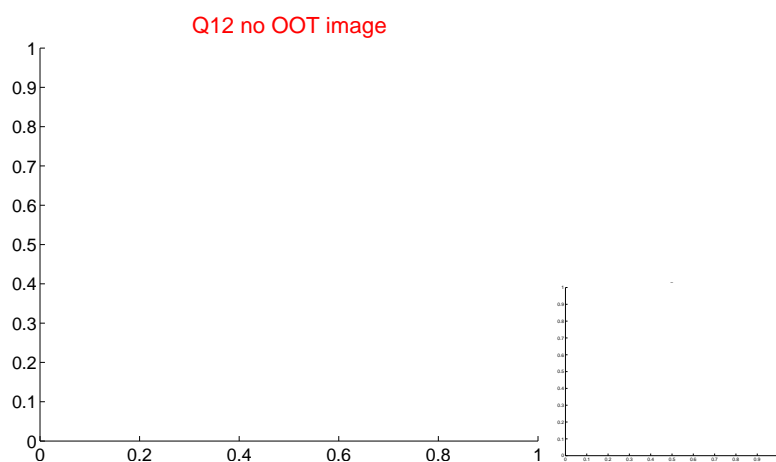
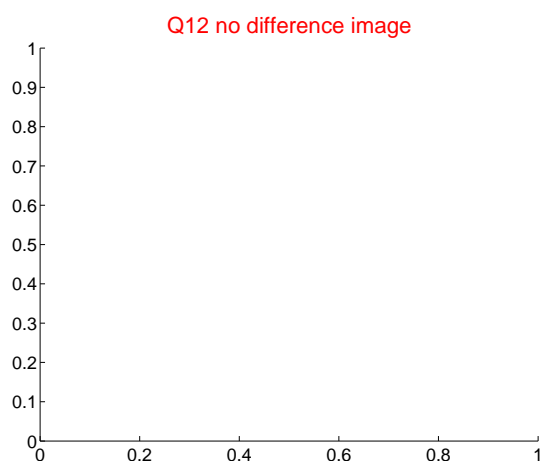
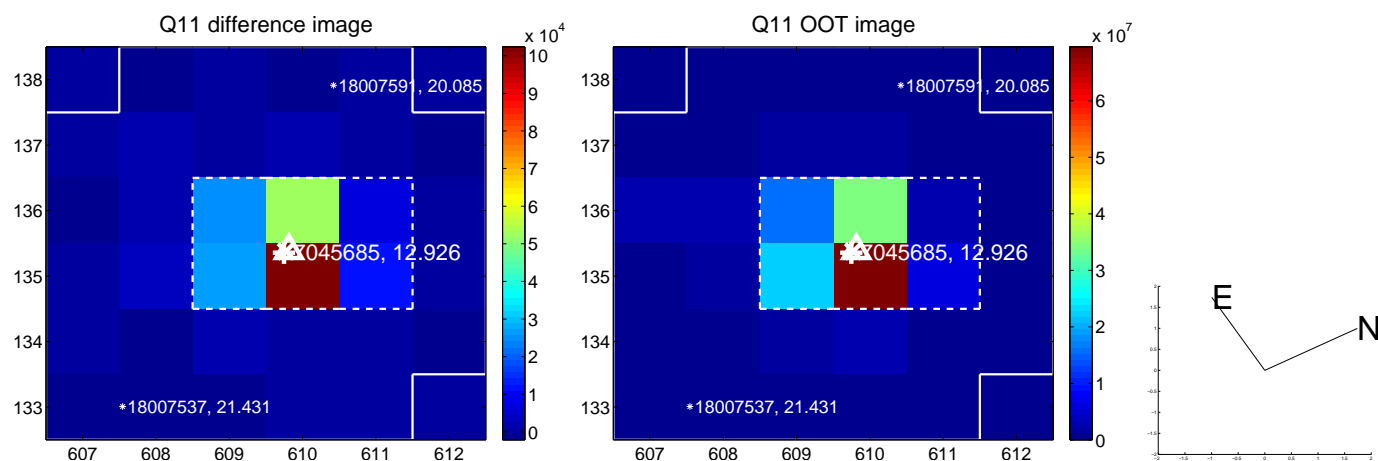
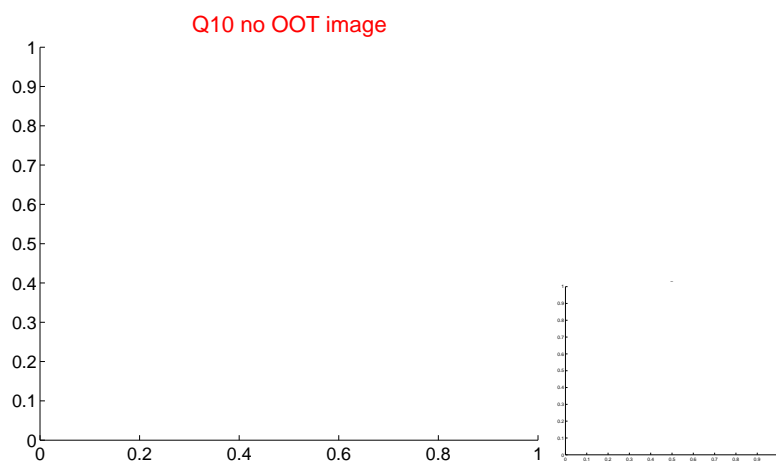
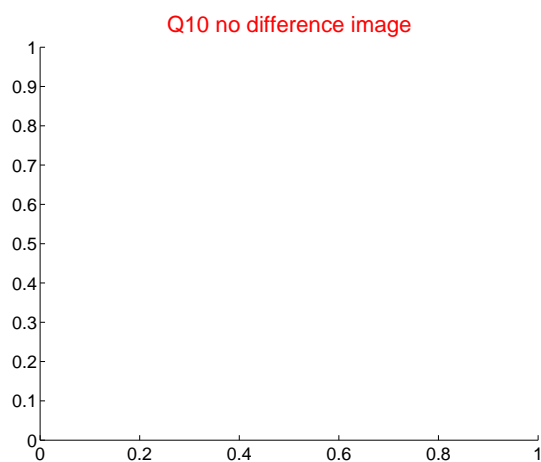
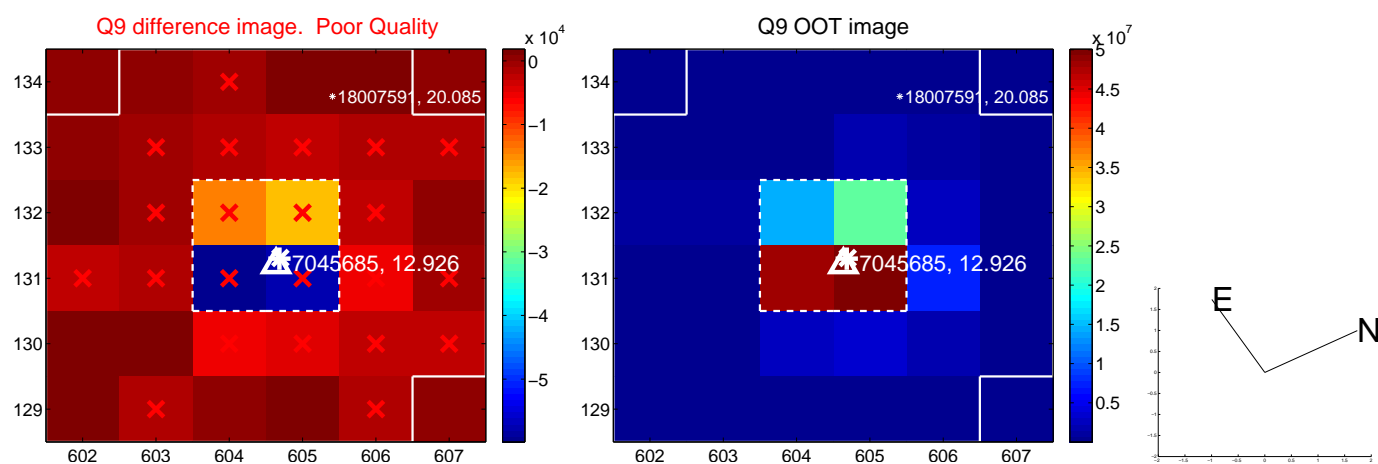
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



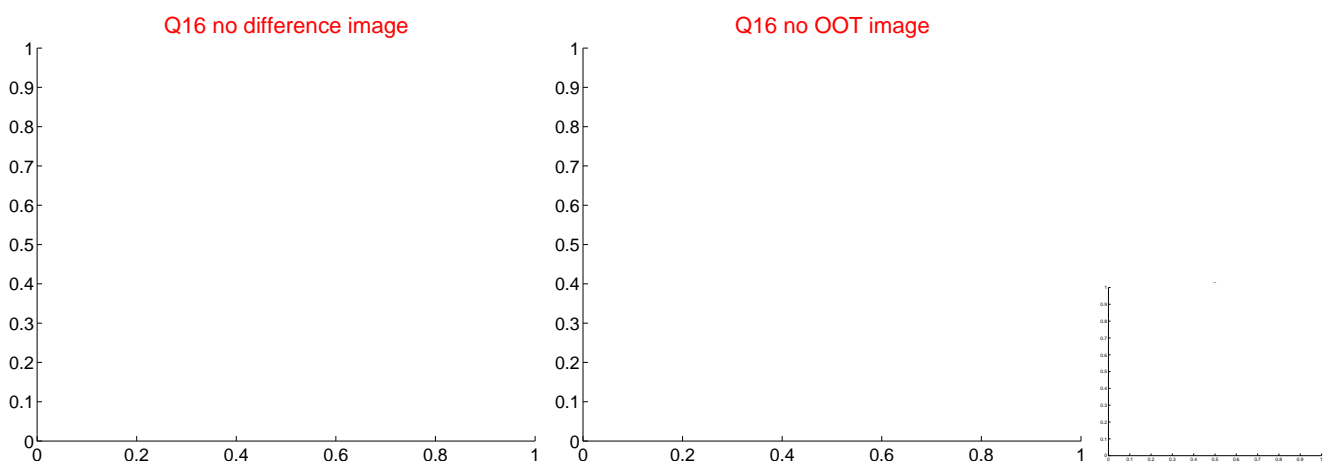
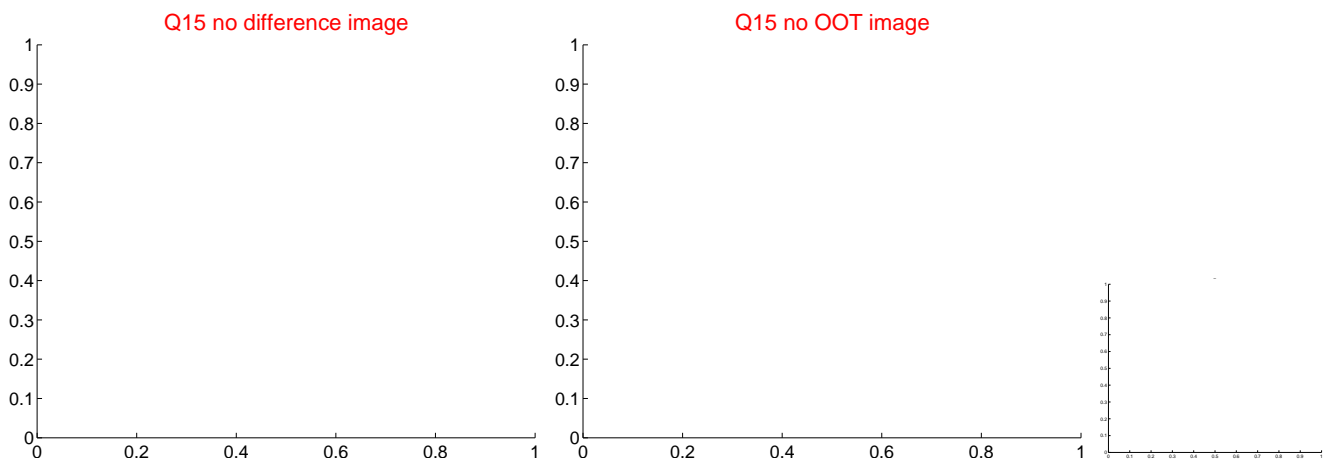
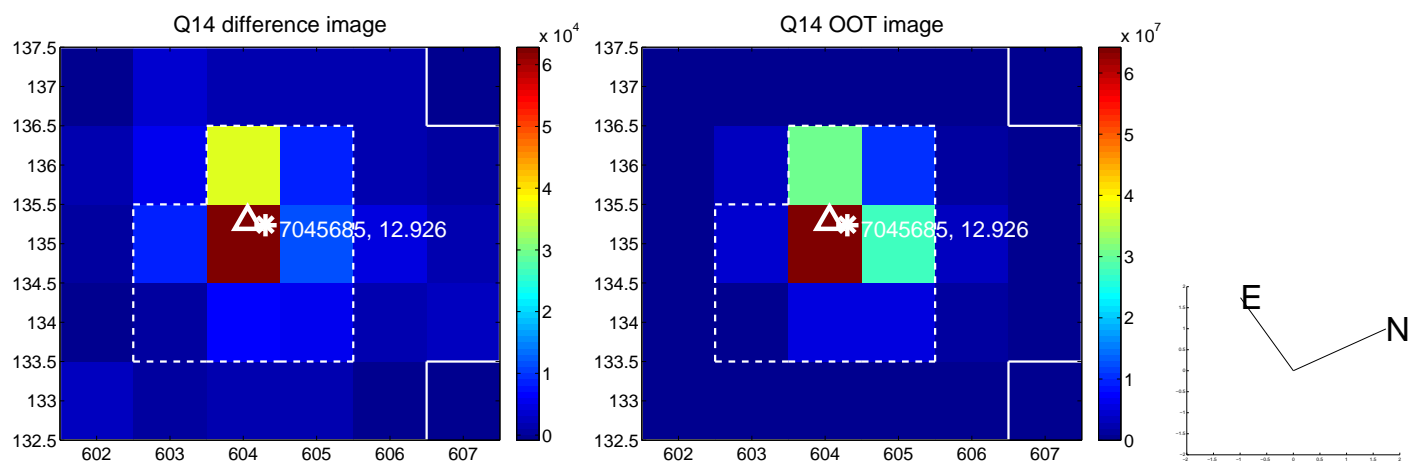
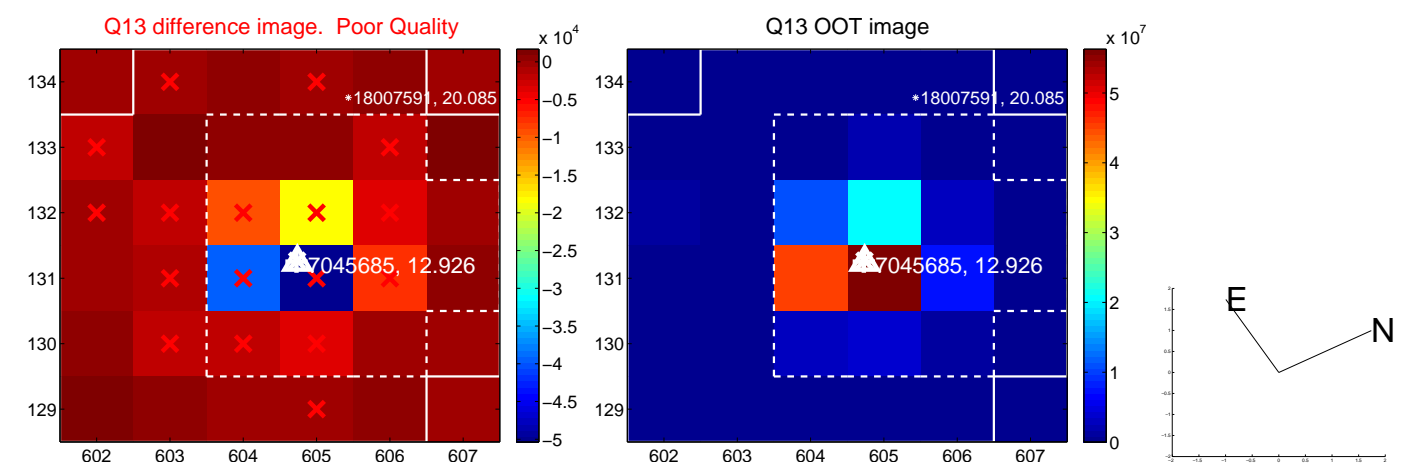
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



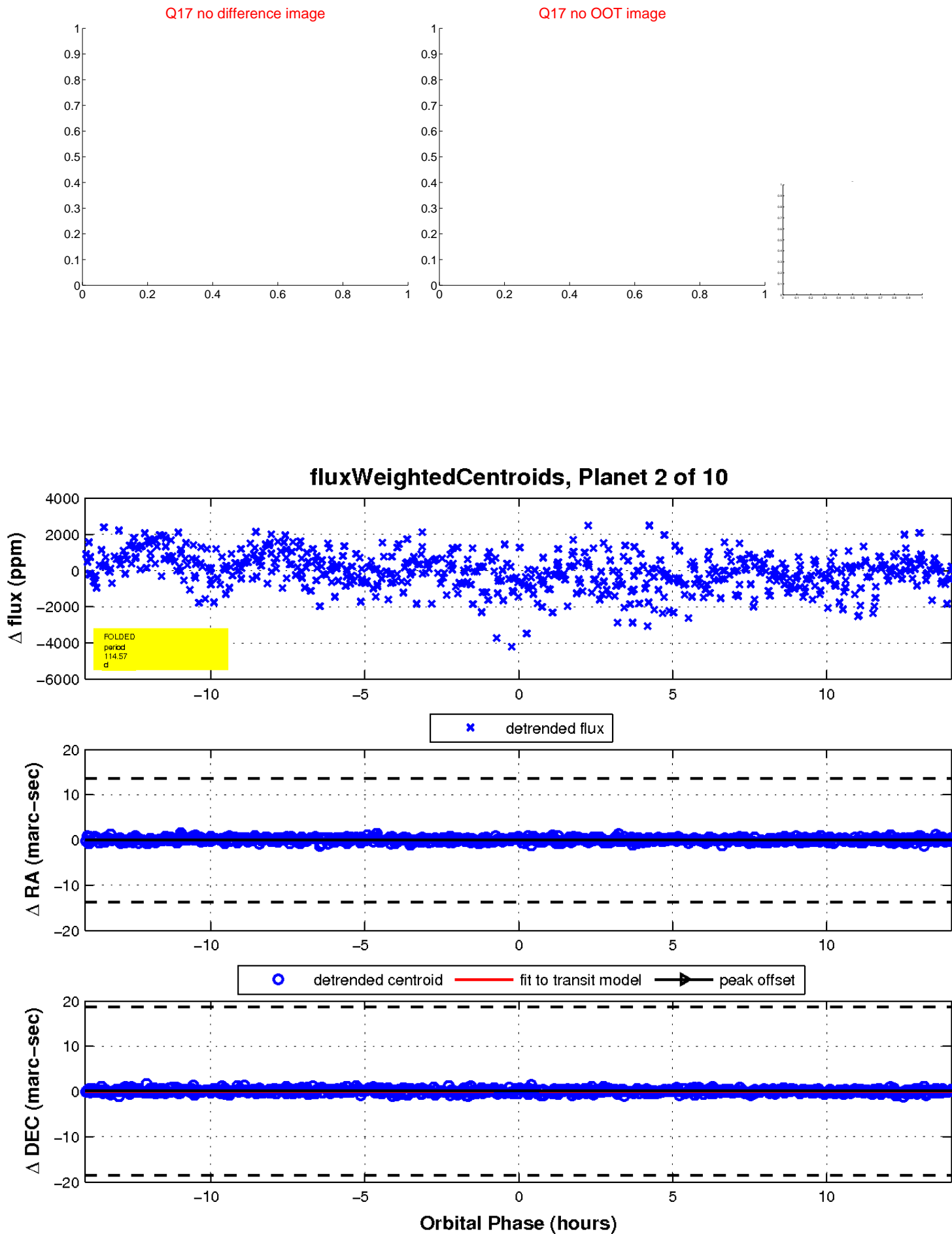
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

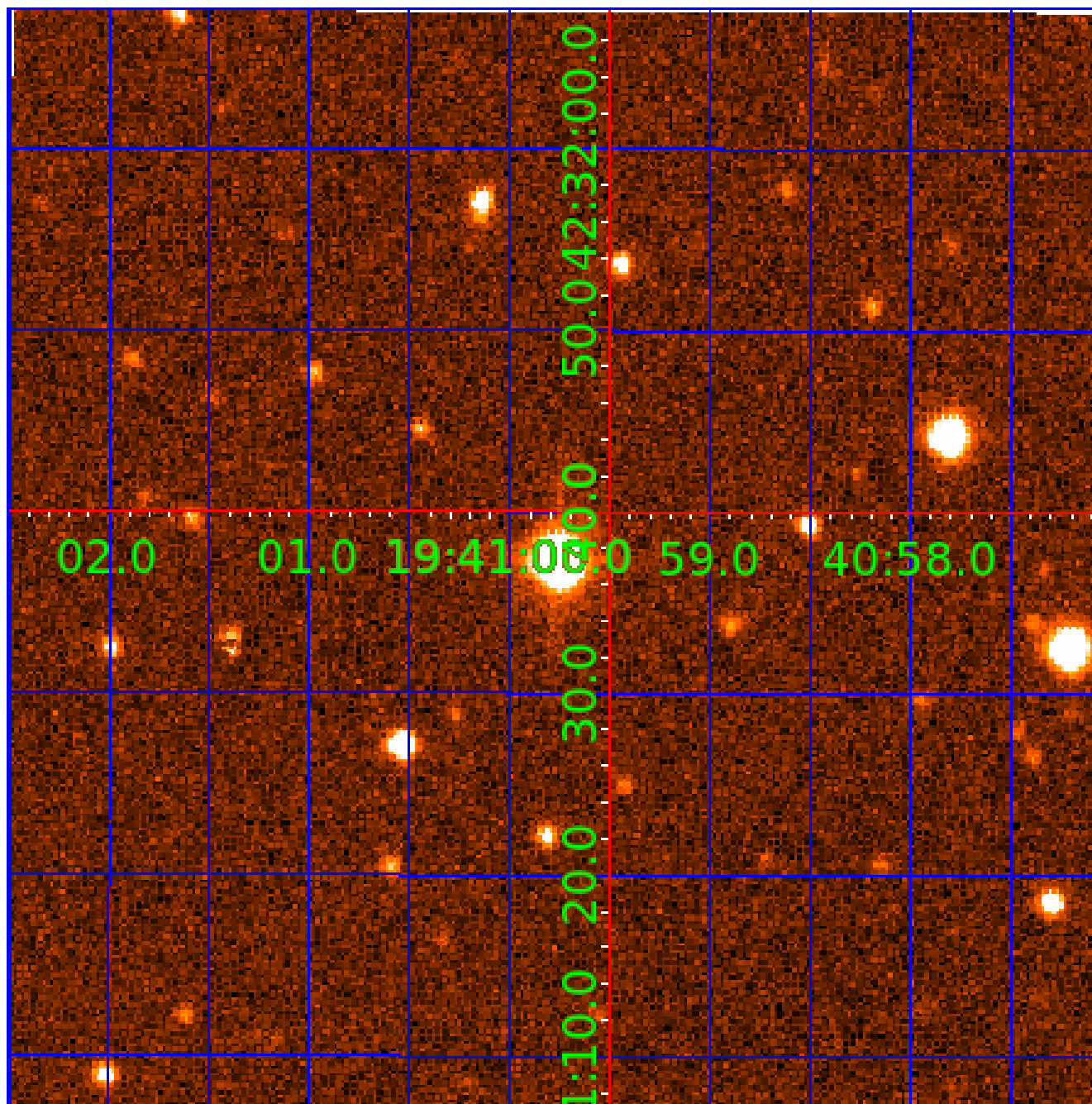


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007045685

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})
007045685-01	OBS	No	1.653417	132.923690	120.1	10.128	8.7	10.5	1.38	6817	1.54	3964.79
007045685-02	OBS	No	114.573642	217.561224	3135.8	4.695	13.5	12.3	1.38	6817	14.07	13.93
007045685-03	OBS	No	82.752815	138.657120	2226.3	3.195	11.1	10.5	1.38	6817	11.12	21.50
007045685-04	OBS	No	91.982205	145.135948	1459.8	2.482	9.9	6.4	1.38	6817	5.62	18.67
007045685-05	OBS	No	75.690770	165.957500	2136.9	2.707	9.6	10.8	1.38	6817	9.50	24.21
007045685-06	OBS	No	156.566147	269.757548	2240.7	3.006	9.0	9.9	1.38	6817	7.97	9.19
007045685-08	OBS	No	52.127694	144.577139	1090.1	3.932	8.8	8.1	1.38	6817	4.99	39.81
007045685-09	OBS	No	25.396197	140.340251	853.5	2.804	8.3	8.8	1.38	6817	4.30	103.84
007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

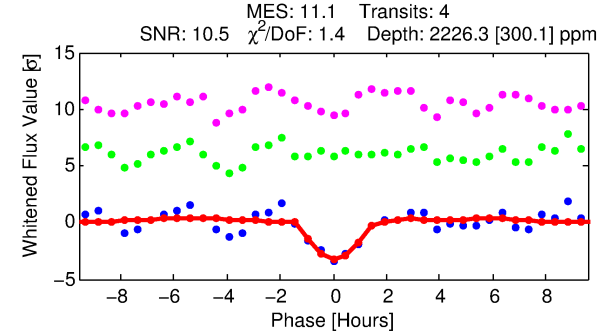
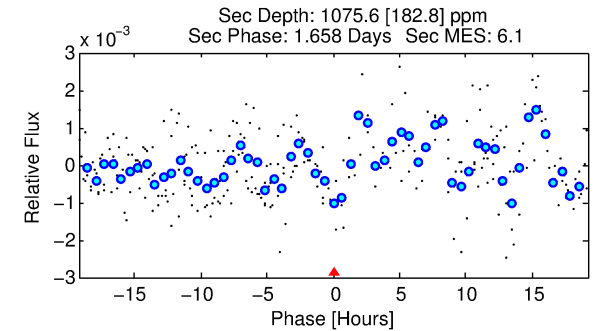
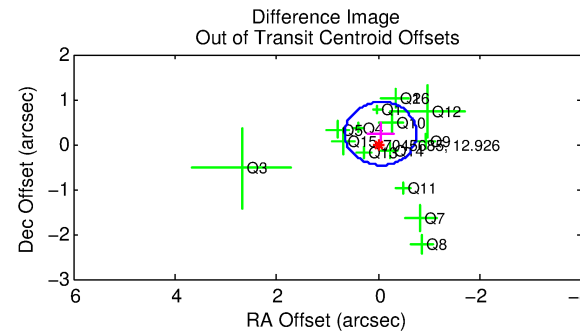
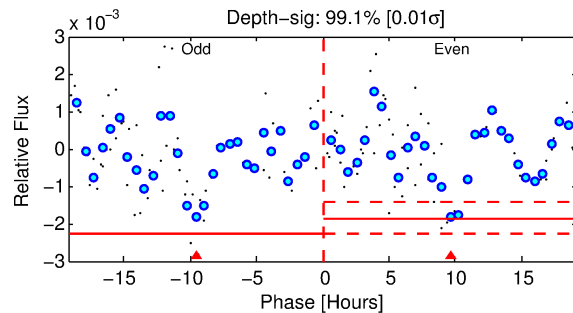
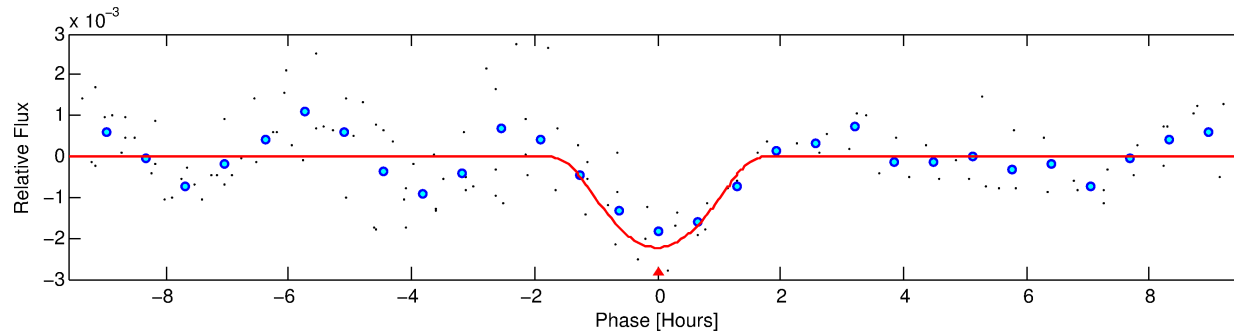
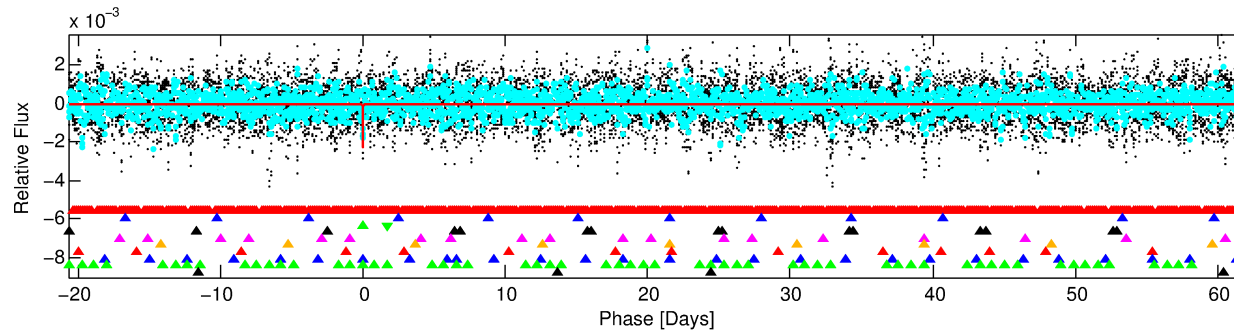
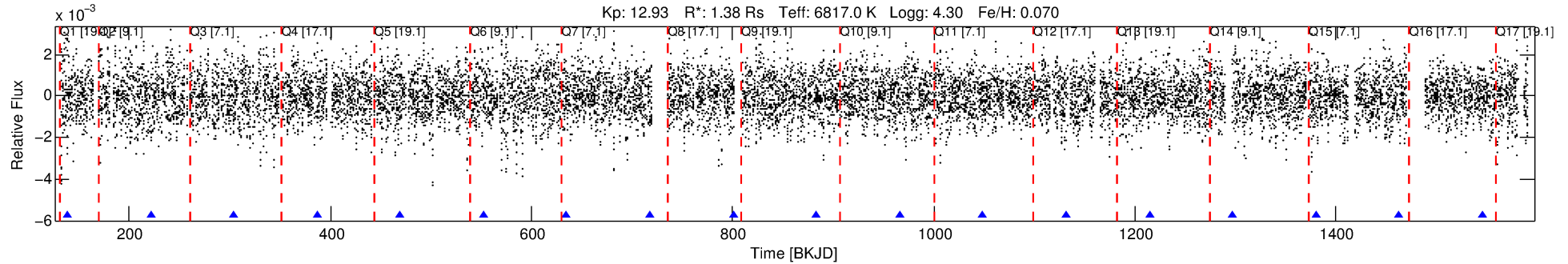
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-03

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 3 of 10 Period: 82.753 d



DV Fit Results:

Period = 82.75282 [0.00350] d
Epoch = 138.6571 [0.0059] BKJD
Rp/R* = 0.0738 [0.1690]
a/R* = 81.83 [46.28]
b = 0.99 [0.26]
Seff = 21.50 [9.46]
Teq = 549 [60] K
Rp = 11.12 [25.79] Re
a = 0.4143 [0.1218] AU
Ag = 821.23 [3779.73] [0.22 σ]
Teffp = 4544 [5211] K [0.77 σ]

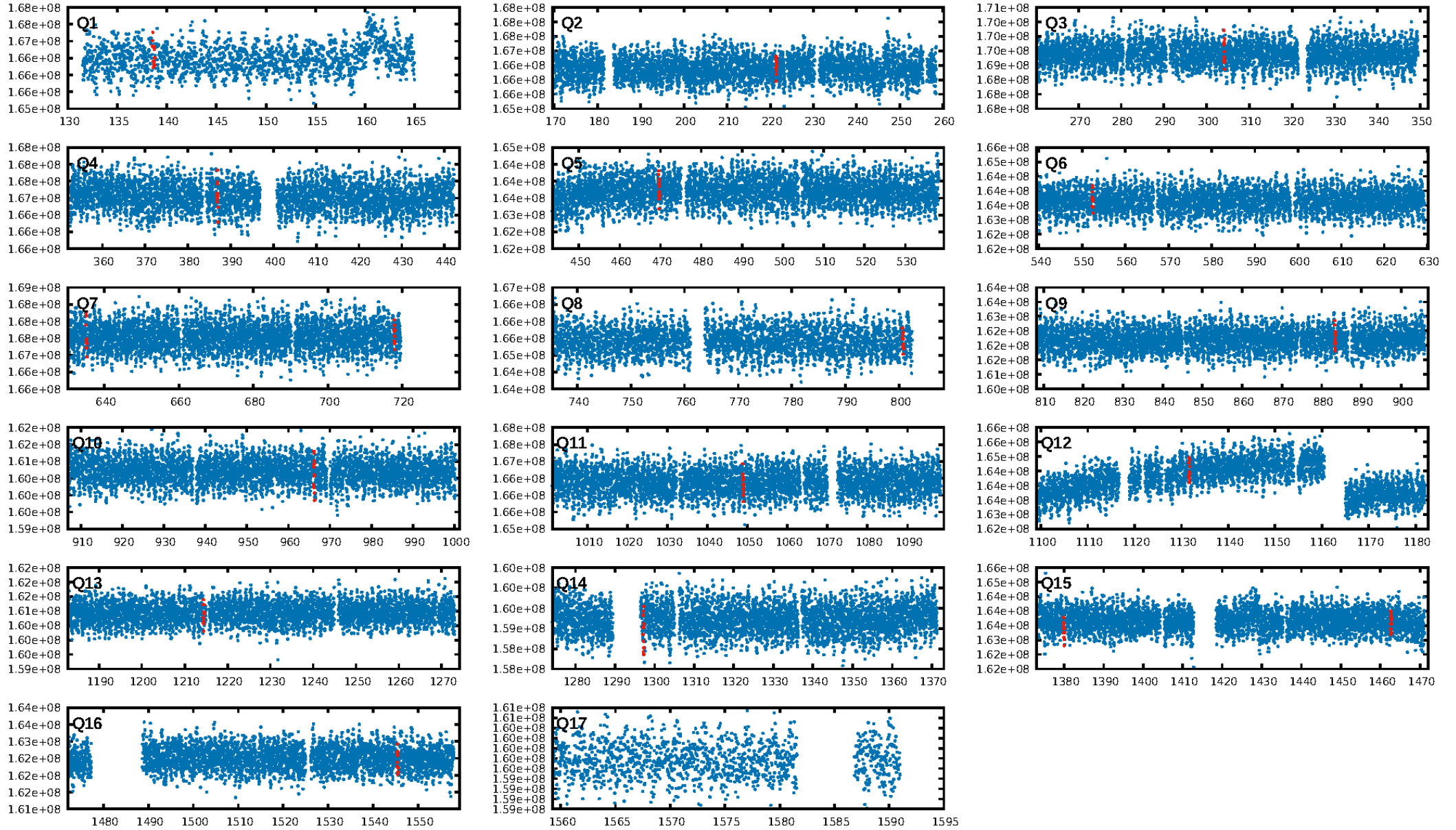
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.48 σ]
LongPeriod-sig: 100.0% [54.75 σ]
ModelChiSquare2-sig: 2.2%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.577
Centroid-sig: 8.6%
Centroid-so: 0.128 arcsec [1.73 σ]
OotOffset-rm: 0.239 arcsec [1.02 σ]
KicOffset-rm: 0.190 arcsec [0.79 σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.47 [7/15]
DiffImageOverlap-fno: 0.31 [5/16]

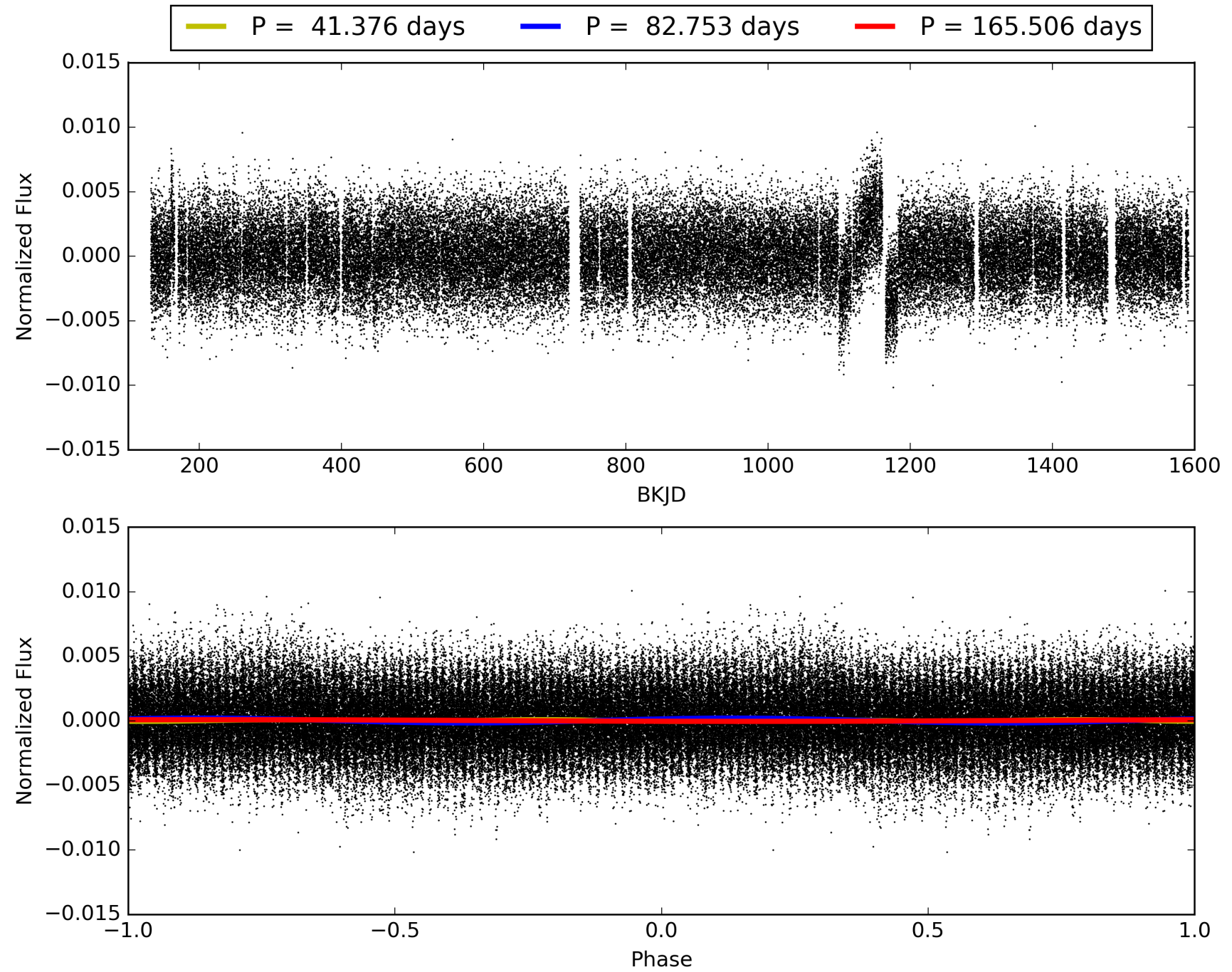
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:45:32 Z

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

TCE 007045685-03, PDC Light Curves

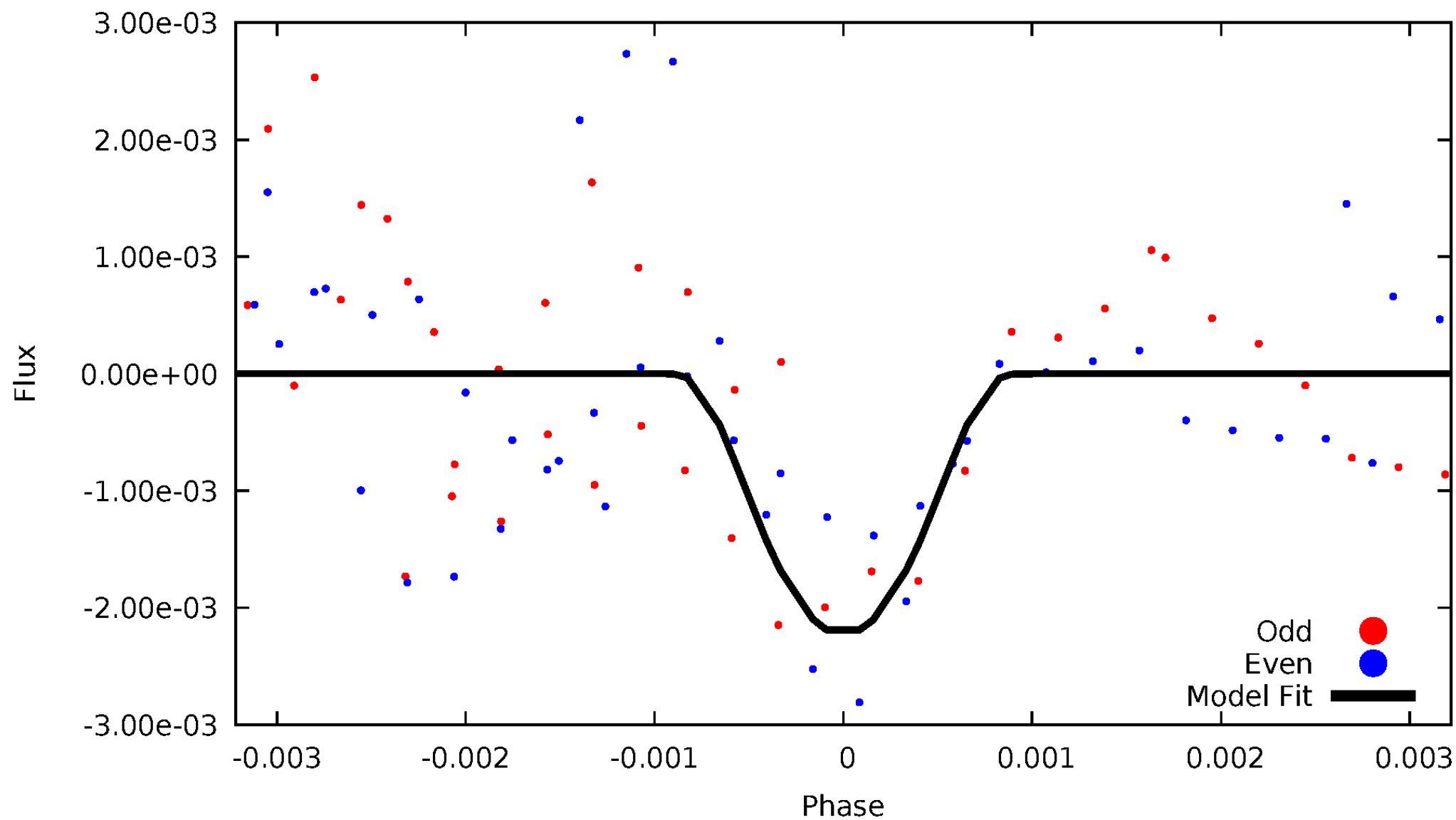


TCE 007045685-03



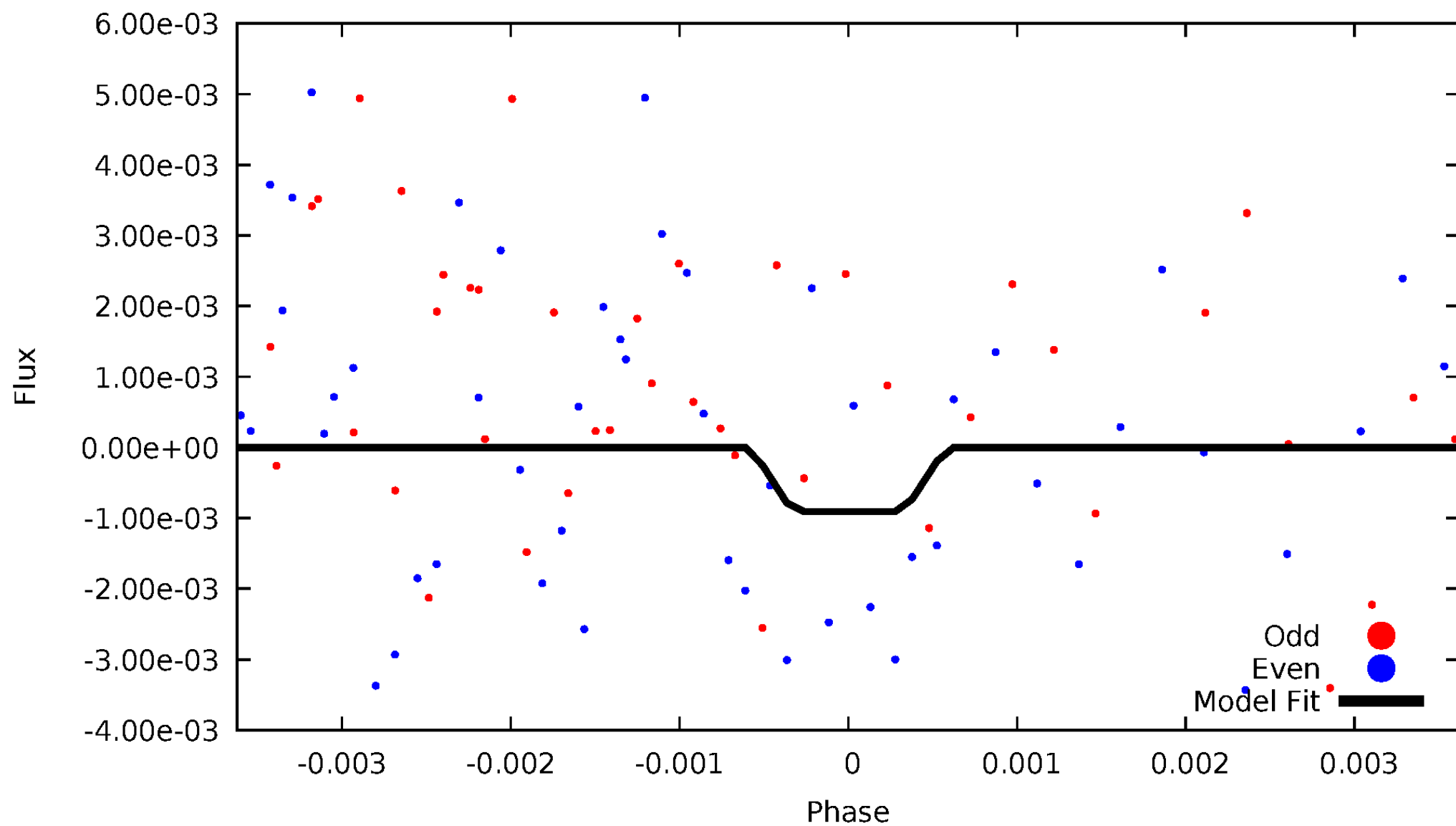
DV Odd/Even

TCE 007045685-03



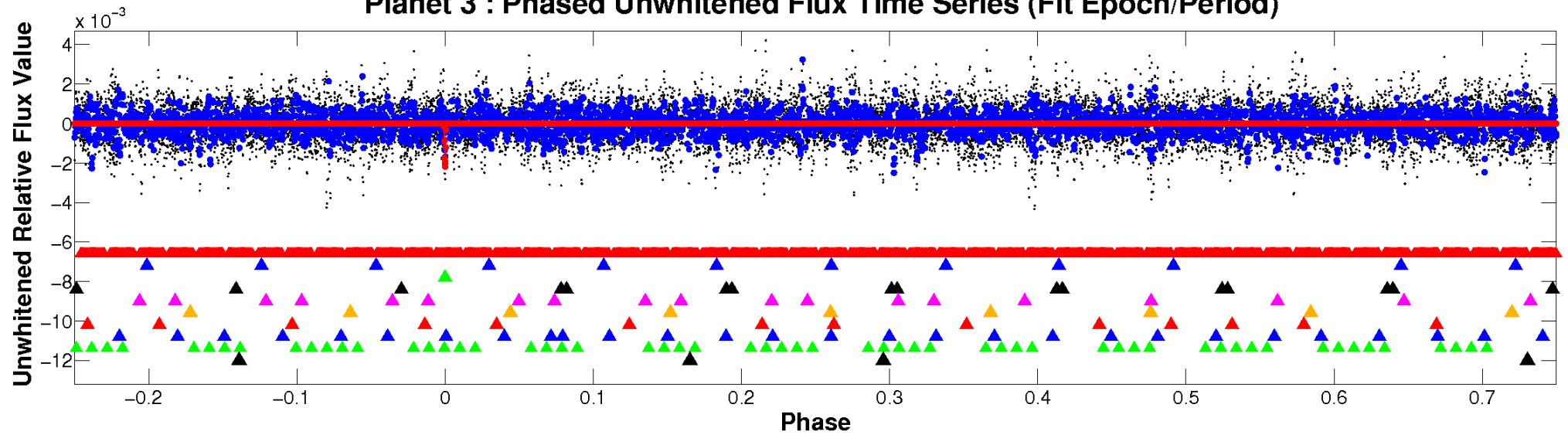
ALT Odd/Even

TCE 007045685-03

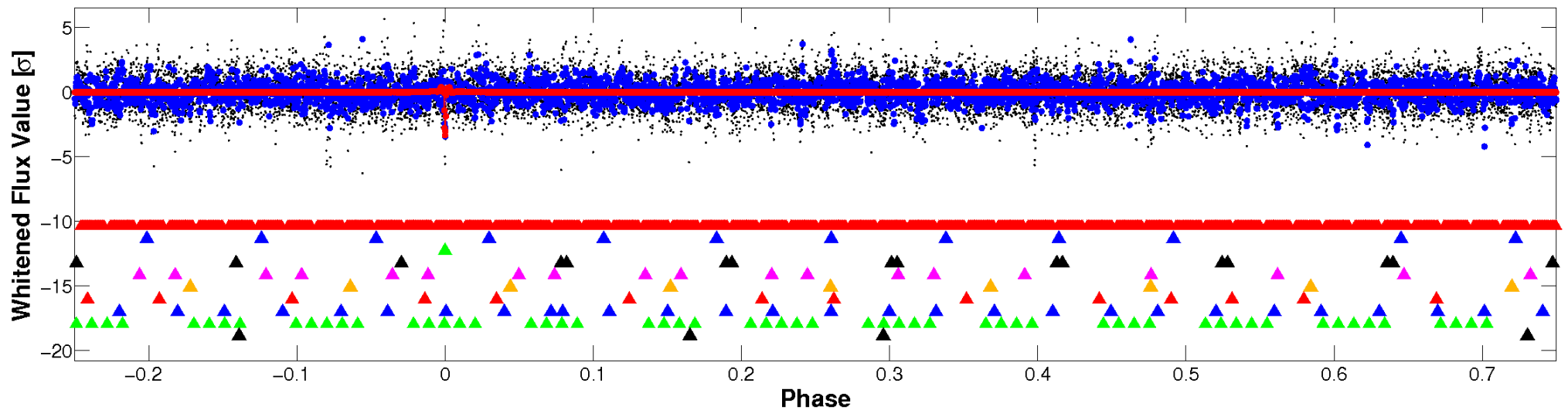


Non-Whitened Vs. Whitened Light Curve

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

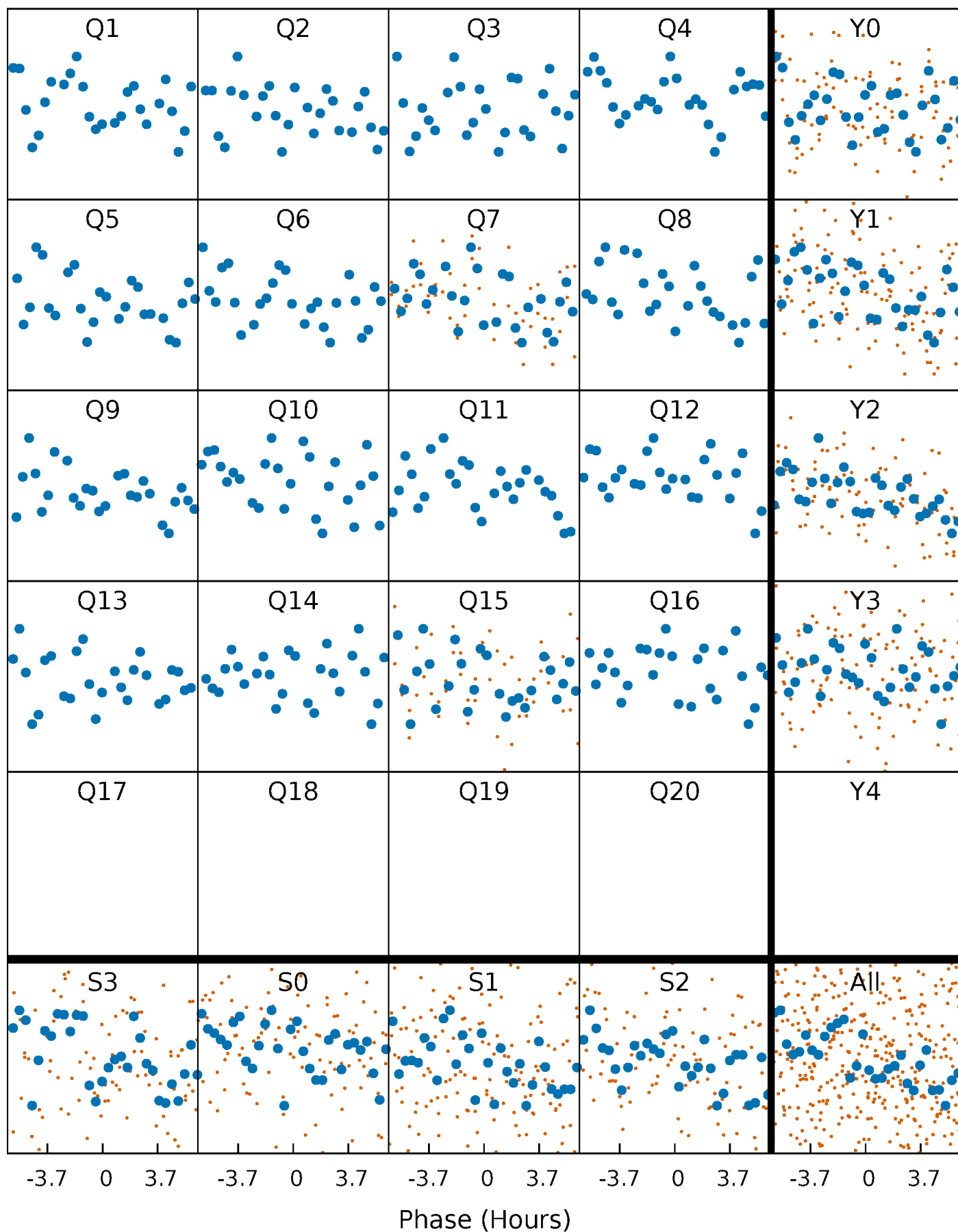


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



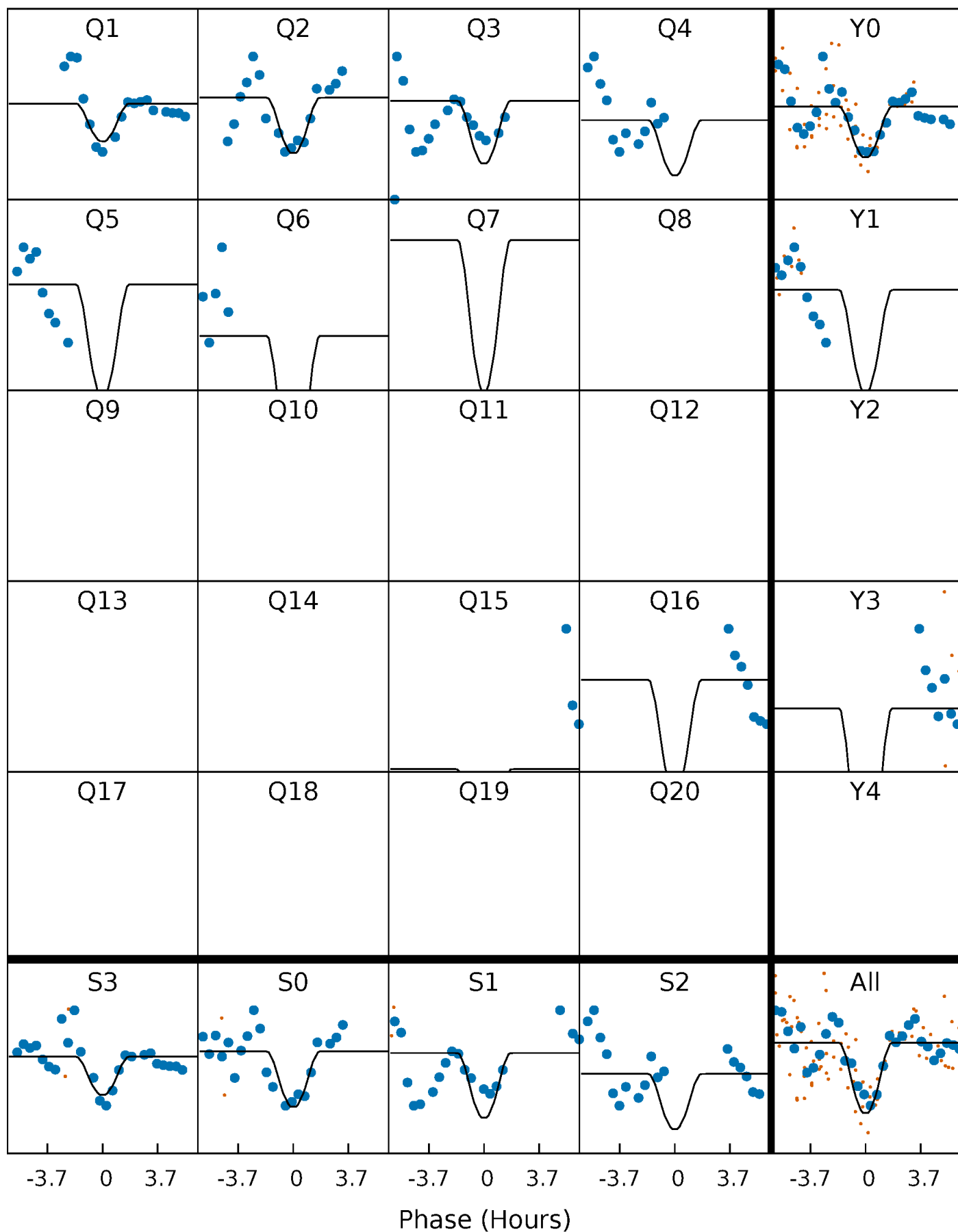
PDC Quarter-Phased Transit Curves

TCE 007045685-03 P= 82.752815 Days $T_0=138.657120$ (BKJD)



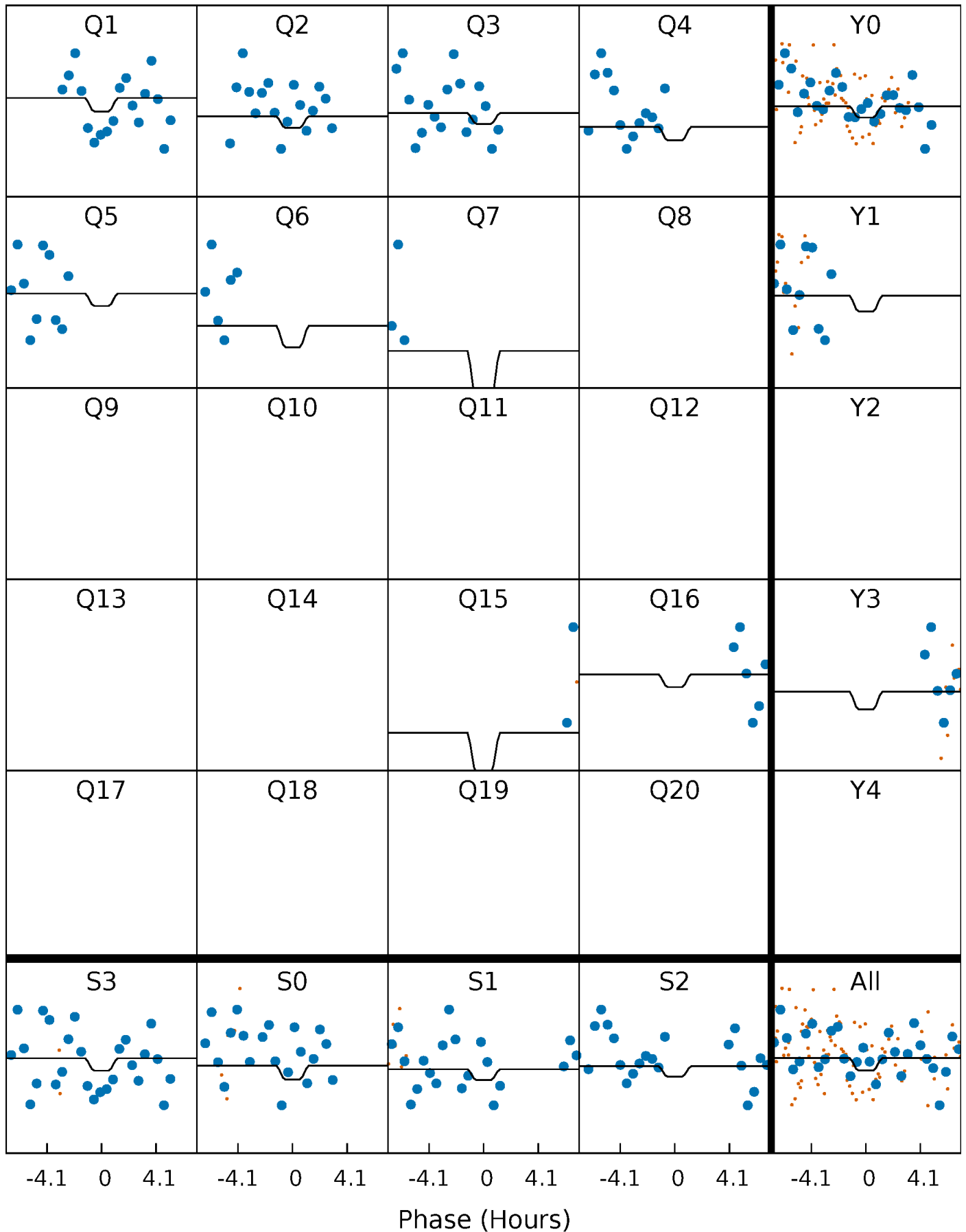
DV Quarter-Phased Transit Curves

TCE 007045685-03 P= 82.752815 Days $T_0=138.657120$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

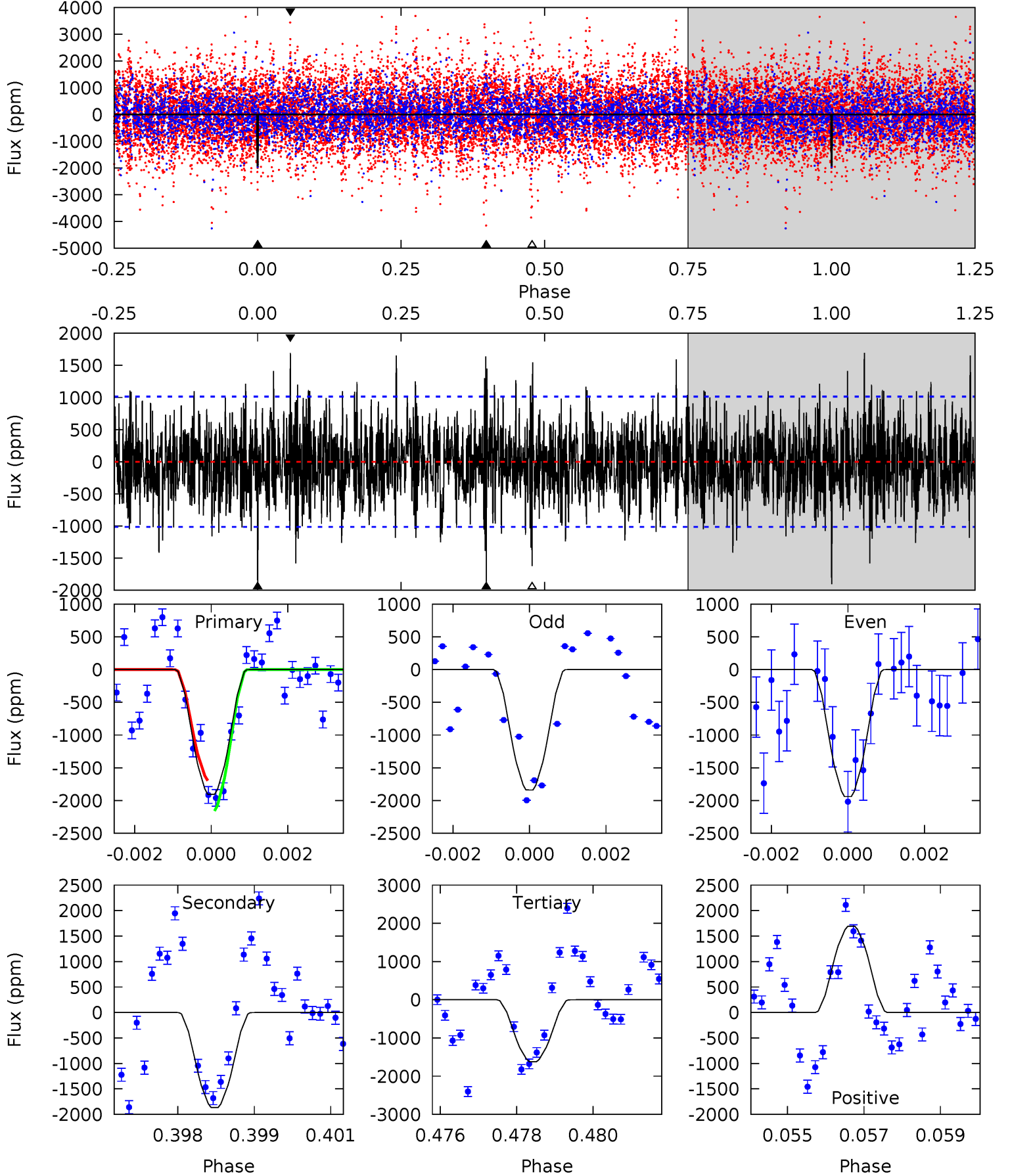
TCE 007045685-03 P= 82.749846 Days $T_0=138.673828$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-03, P = 82.752815 Days, E = 55.904305 Days

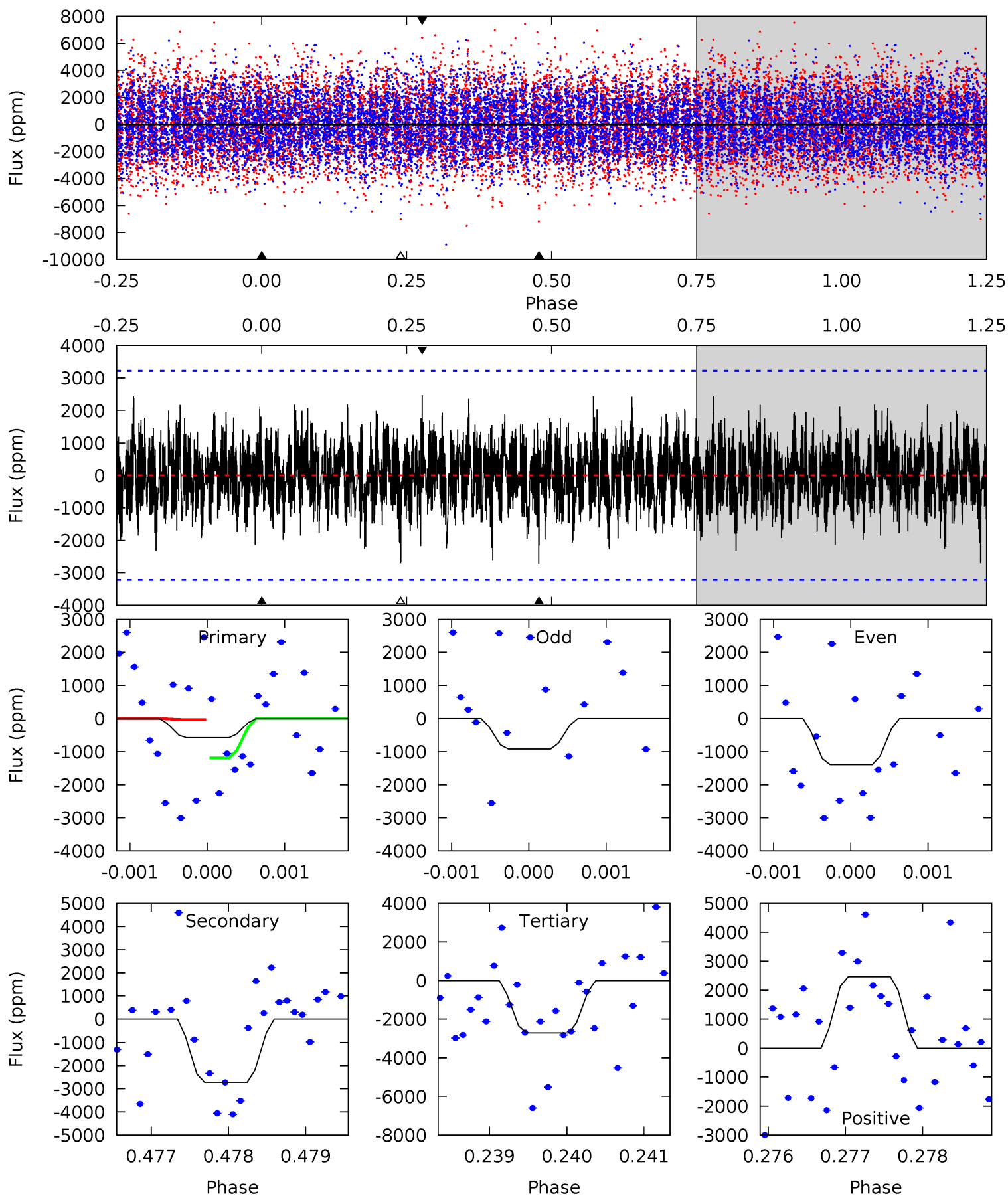
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	9.83	8.55	8.92	5.33	3.10	2.28	1.48	1.11	1.28	0.91	0.26	0.83	0.47	1.22



Alt Model-Shift Uniqueness Test

007045685-03, P = 82.749846 Days, E = 55.923982 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.98	4.63	4.58	4.17	5.45	3.29	1.31	-3.60	-3.19	0.05	0.46	0.39	3.42	0.47	0.98



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1866 ± 190	$23.29^{+21.70}_{-15.54}$	775^{+61}_{-41}	3976^{+2285}_{-763}	322^{+2568}_{-236}
Alt.	-2734 ± 591	$19.27^{+20.56}_{-14.03}$	775^{+61}_{-39}	4499^{+4268}_{-996}	643^{+8900}_{-490}

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 $A_{obs} \gg 1.0$

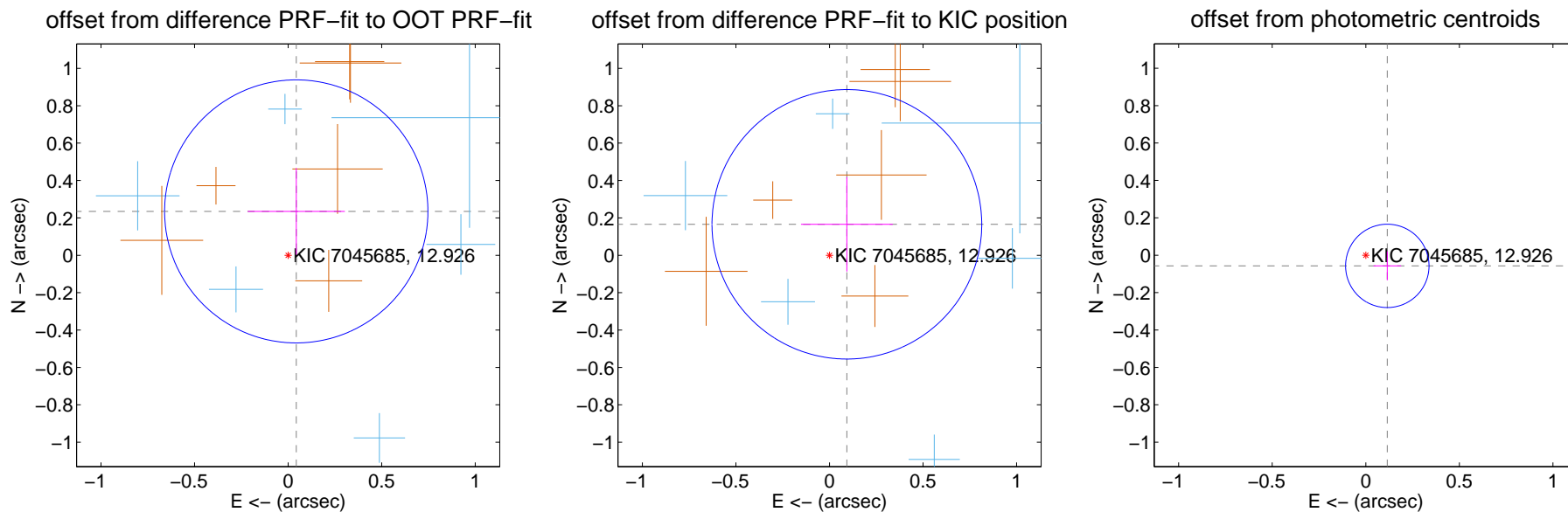
DV Centroid Data

Supplemental centroid analysis for 007045685-03. Kepler magnitude: 12.93. Transit SNR 10.47

There are 7 quarters with good PRF difference image offsets

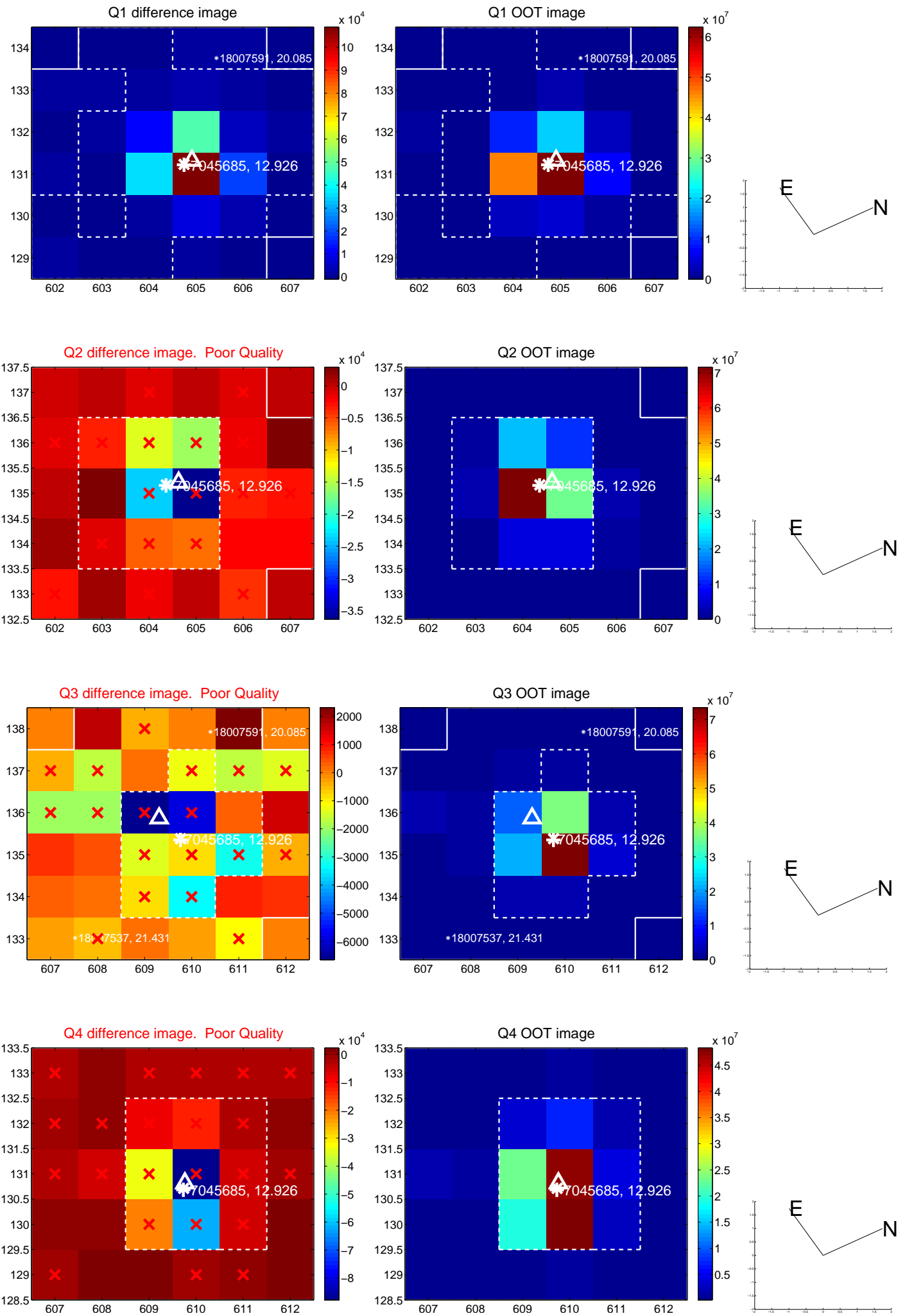
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.239 ± 0.235	1.02	-0.044 ± 0.259	0.235 ± 0.232
PRF-fit source offset from KIC position	0.190 ± 0.240	0.79	-0.093 ± 0.245	0.166 ± 0.253
photometric centroid source offset	0.13 ± 0.07	1.73	-0.11 ± 0.07	-0.06 ± 0.08

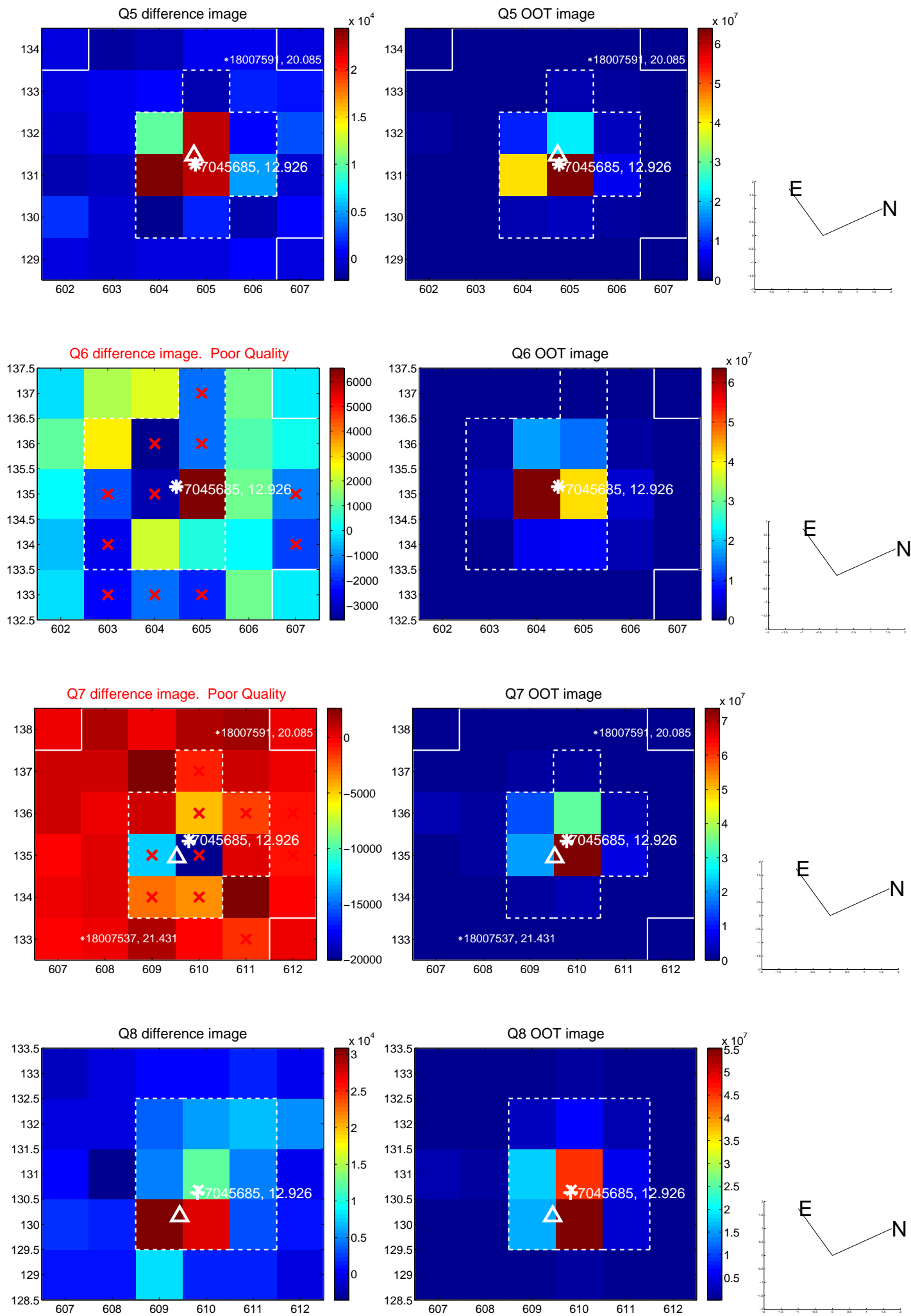


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

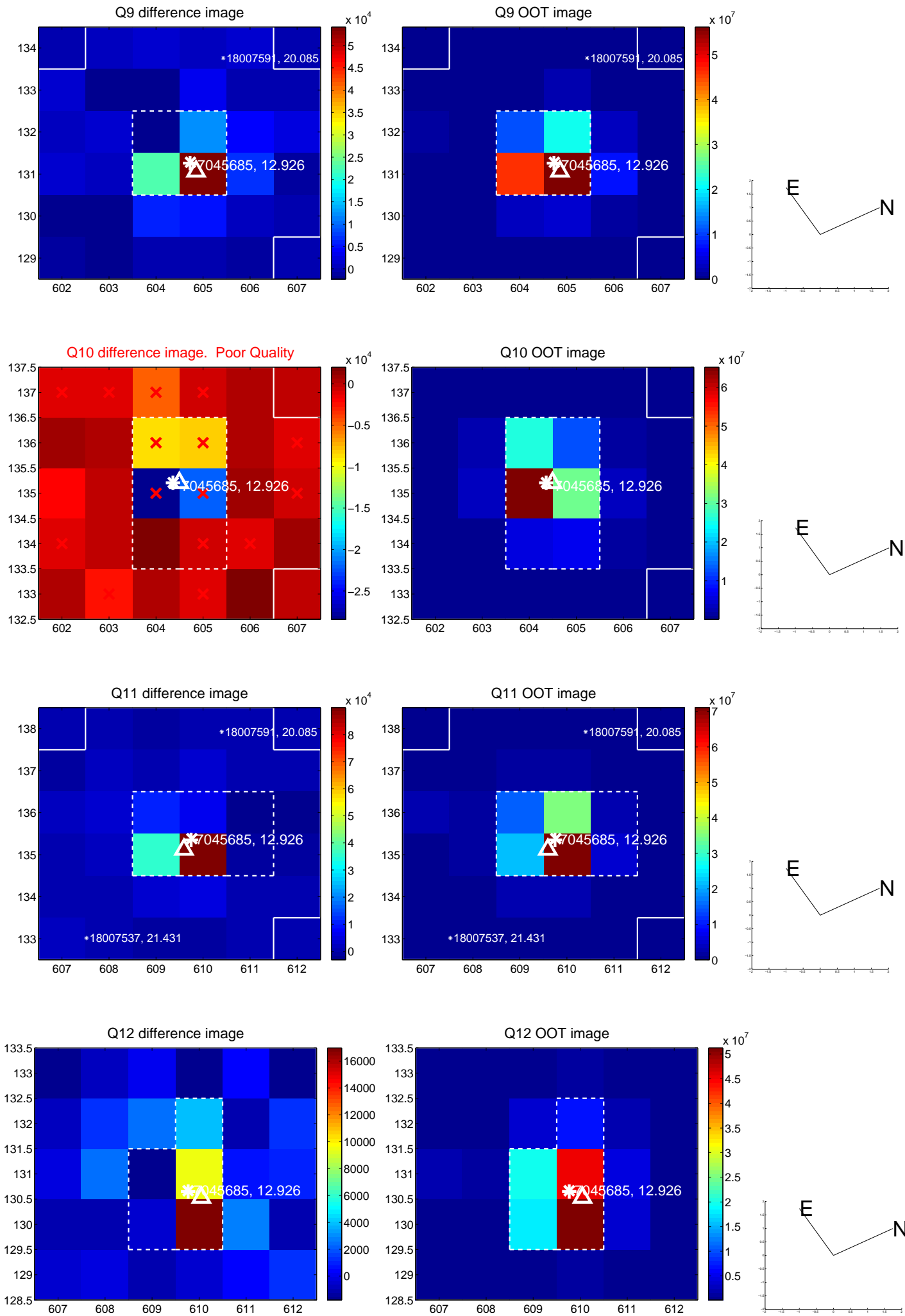
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



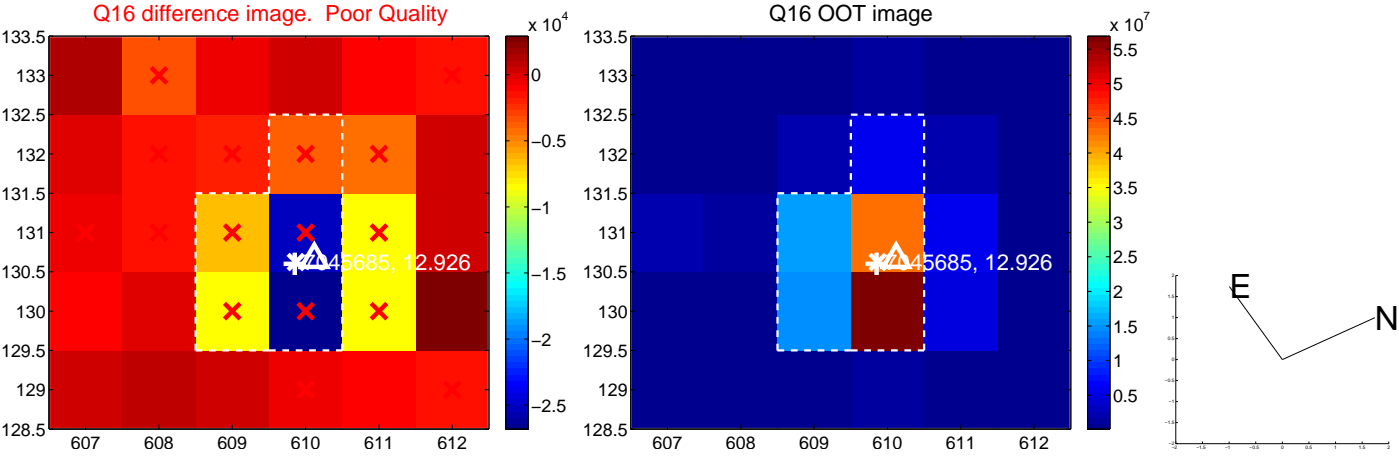
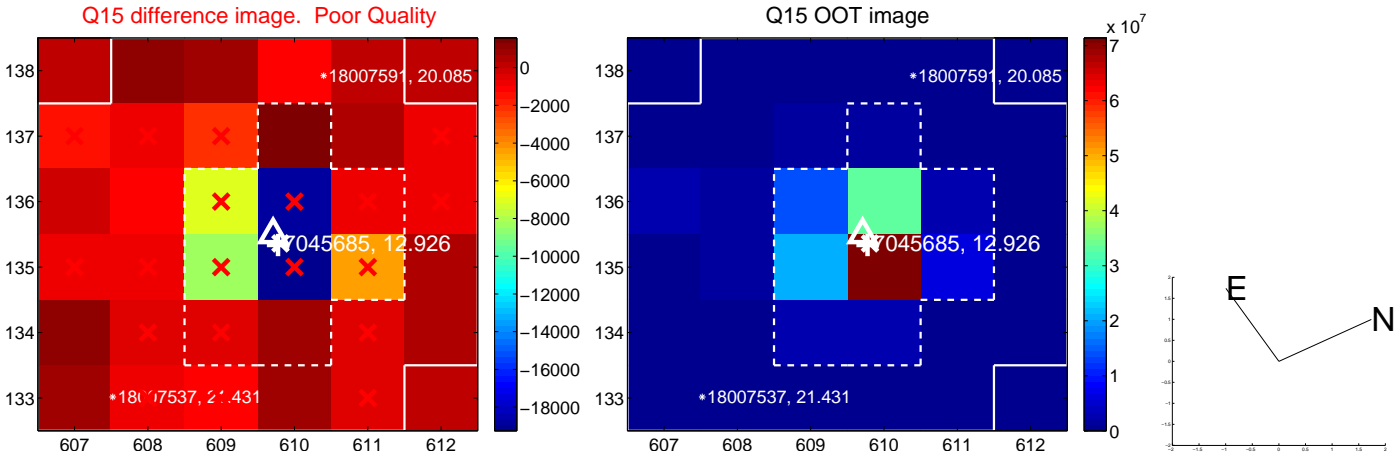
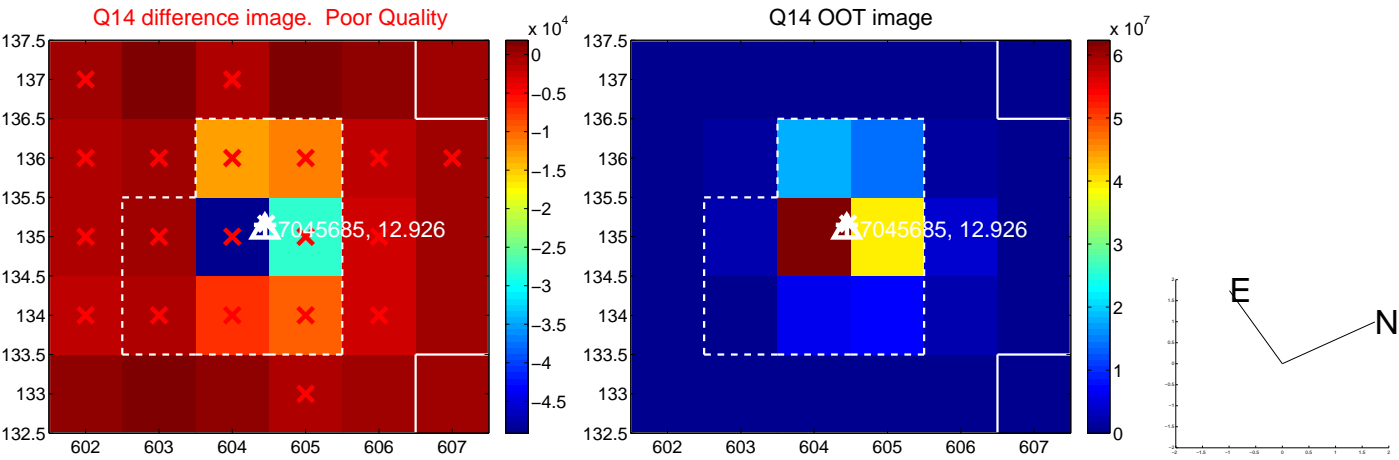
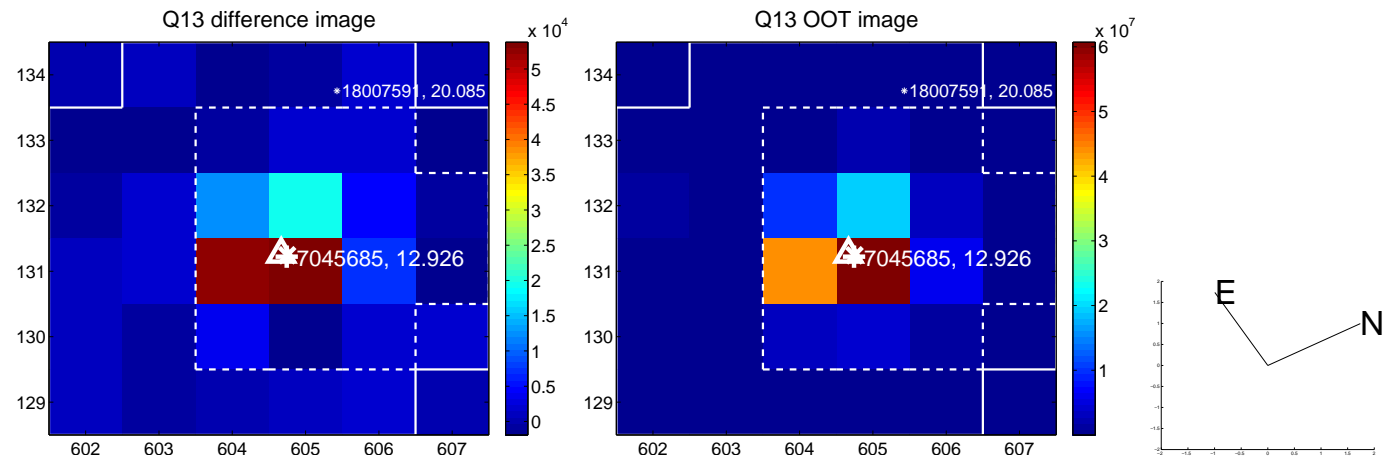
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



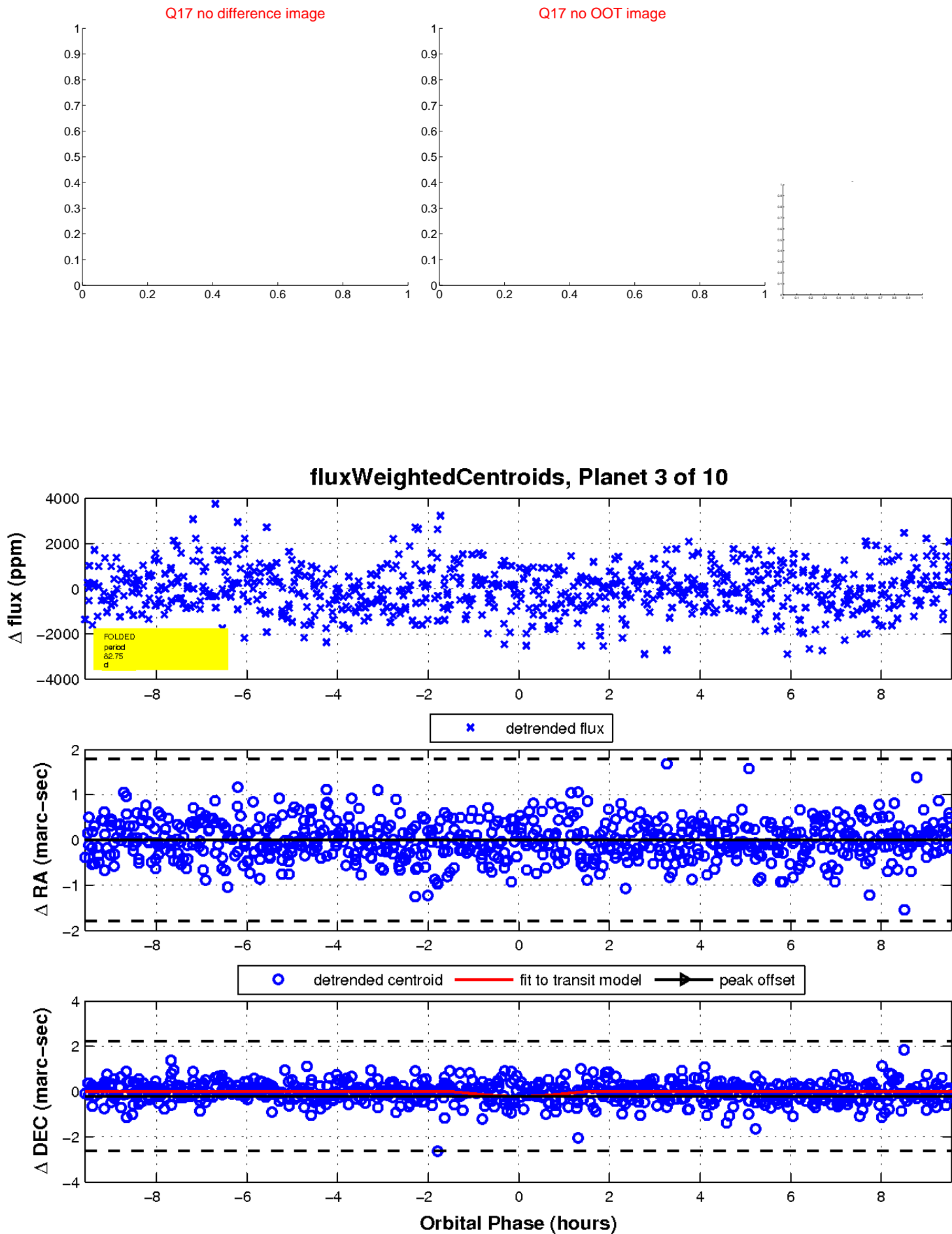
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



KIC 007045685

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})
007045685-01	OBS	No	1.653417	132.923690	120.1	10.128	8.7	10.5	1.38	6817	1.54	3964.79
007045685-02	OBS	No	114.573642	217.561224	3135.8	4.695	13.5	12.3	1.38	6817	14.07	13.93
007045685-03	OBS	No	82.752815	138.657120	2226.3	3.195	11.1	10.5	1.38	6817	11.12	21.50
007045685-04	OBS	No	91.982205	145.135948	1459.8	2.482	9.9	6.4	1.38	6817	5.62	18.67
007045685-05	OBS	No	75.690770	165.957500	2136.9	2.707	9.6	10.8	1.38	6817	9.50	24.21
007045685-06	OBS	No	156.566147	269.757548	2240.7	3.006	9.0	9.9	1.38	6817	7.97	9.19
007045685-08	OBS	No	52.127694	144.577139	1090.1	3.932	8.8	8.1	1.38	6817	4.99	39.81
007045685-09	OBS	No	25.396197	140.340251	853.5	2.804	8.3	8.8	1.38	6817	4.30	103.84
007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

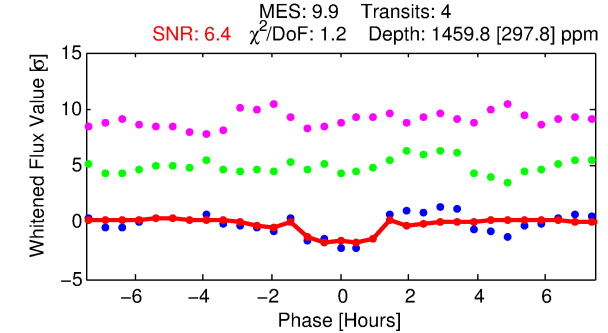
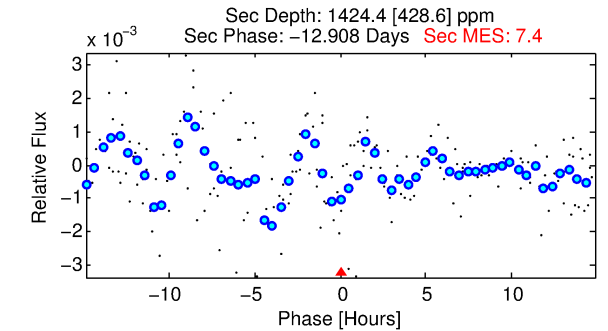
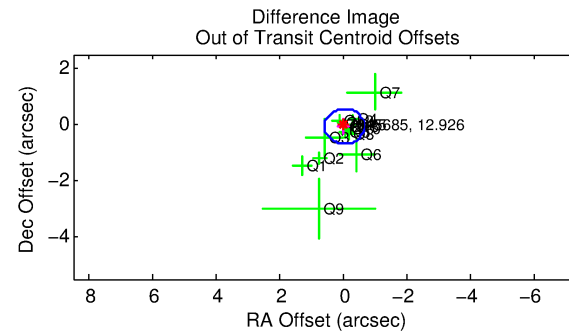
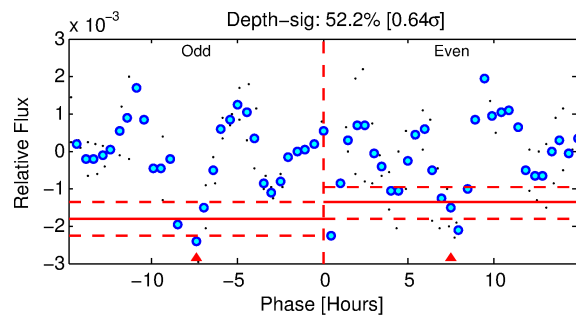
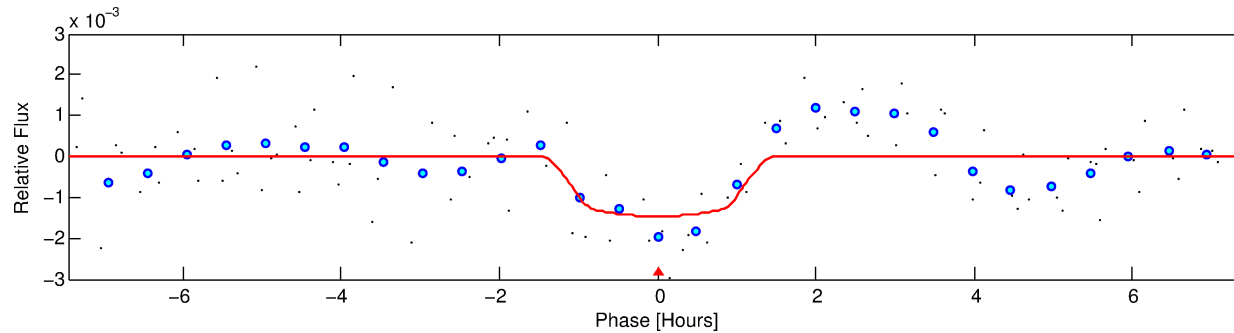
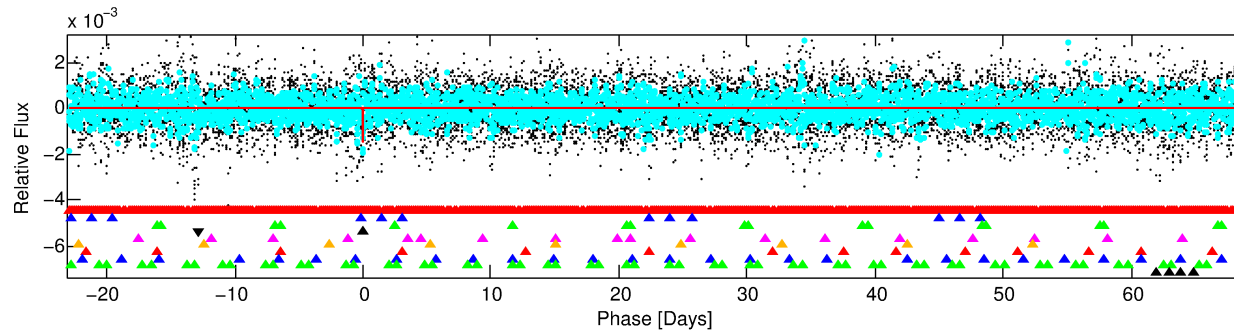
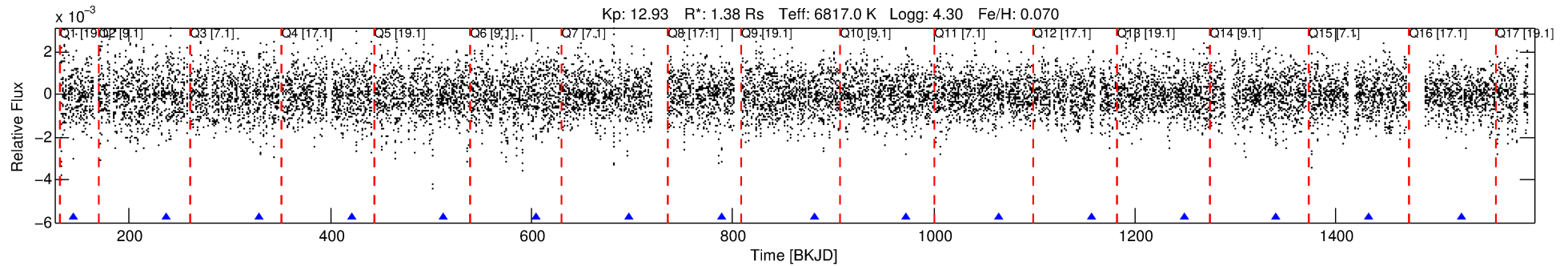
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-04

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 4 of 10 Period: 91.982 d



DV Fit Results:

Period = 91.98221 [0.00108] d
Epoch = 145.1359 [0.0078] BKJD
Rp/R* = 0.0373 [0.0223]
a/R* = 222.96 [710.87]
b = 0.67 [2.58]
Seff = 18.67 [8.21]
Teq = 530 [58] K
Rp = 5.62 [3.94] Re
a = 0.4446 [0.1307] AU
Ag = 4898.26 [6370.63] [0.77 σ]
Teffp = 6856 [2131] K [2.97 σ]

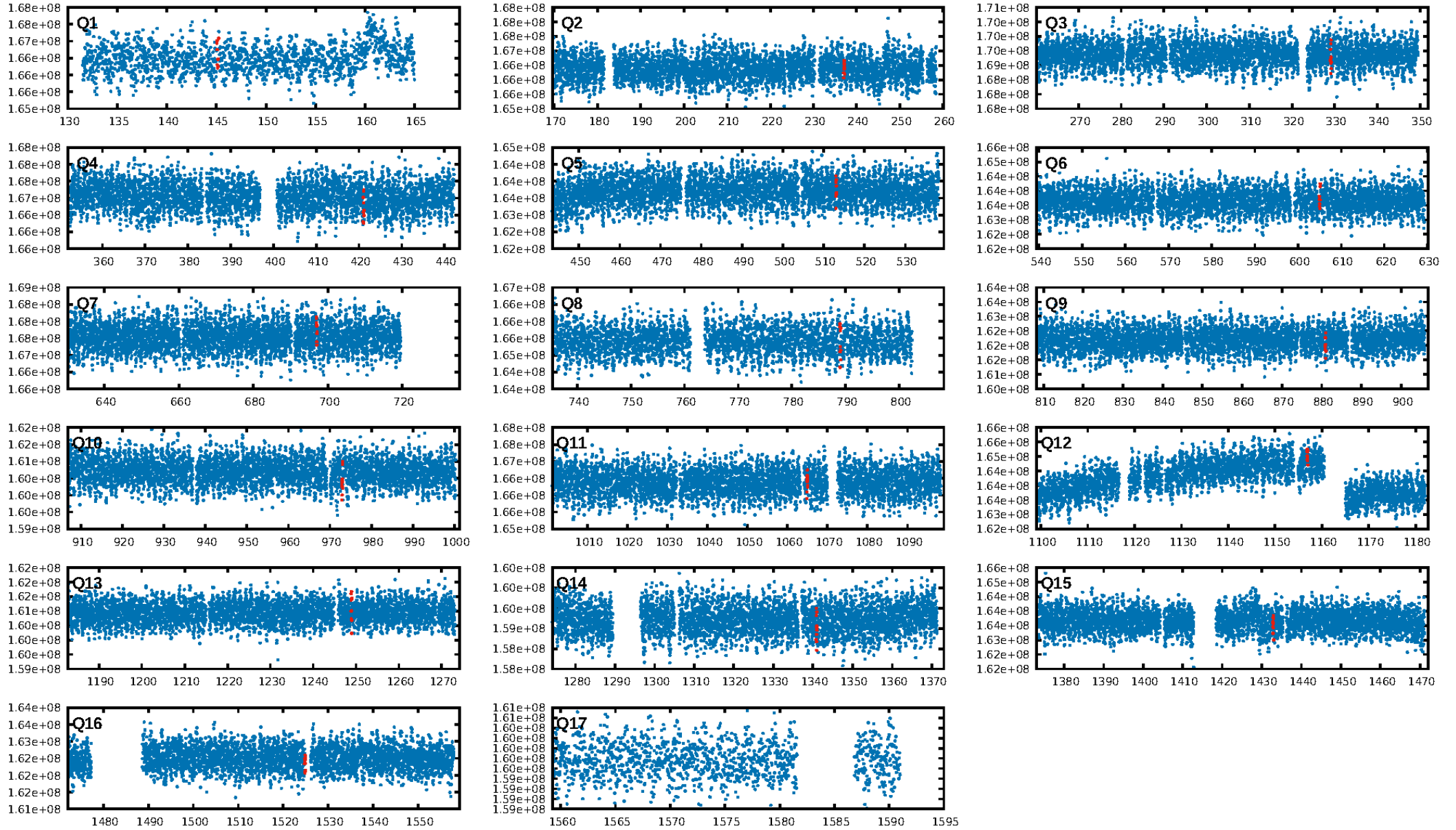
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [54.75 σ]
LongPeriod-sig: 100.0% [25.27 σ]
ModelChiSquare2-sig: 26.2%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5668
Centroid-sig: 0.3%
Centroid-so: 0.376 arcsec [3.32 σ]
OotOffset-rm: 0.072 arcsec [0.35 σ]
KicOffset-rm: 0.129 arcsec [0.63 σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.43 [6/14]

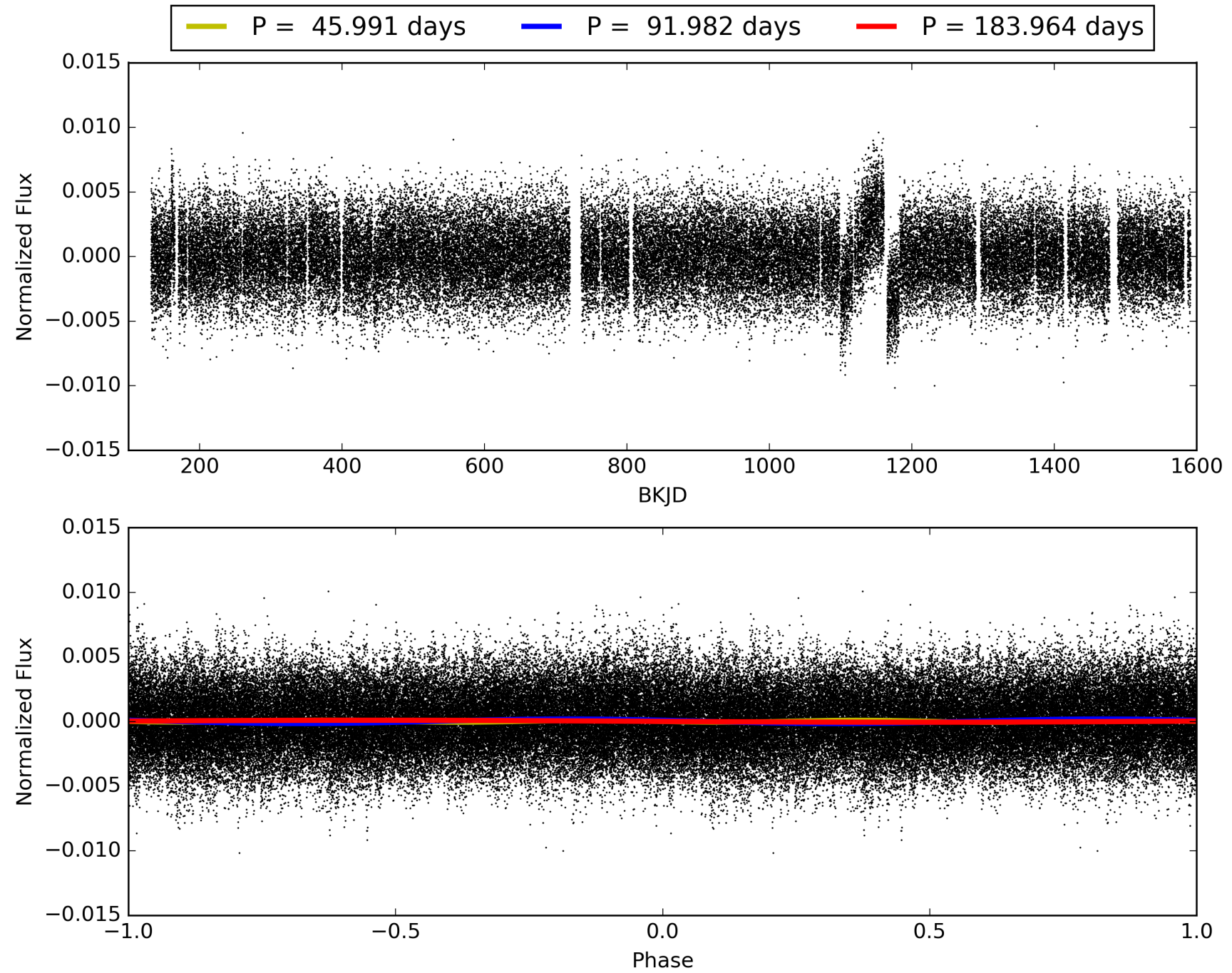
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:45:36 Z

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

TCE 007045685-04, PDC Light Curves

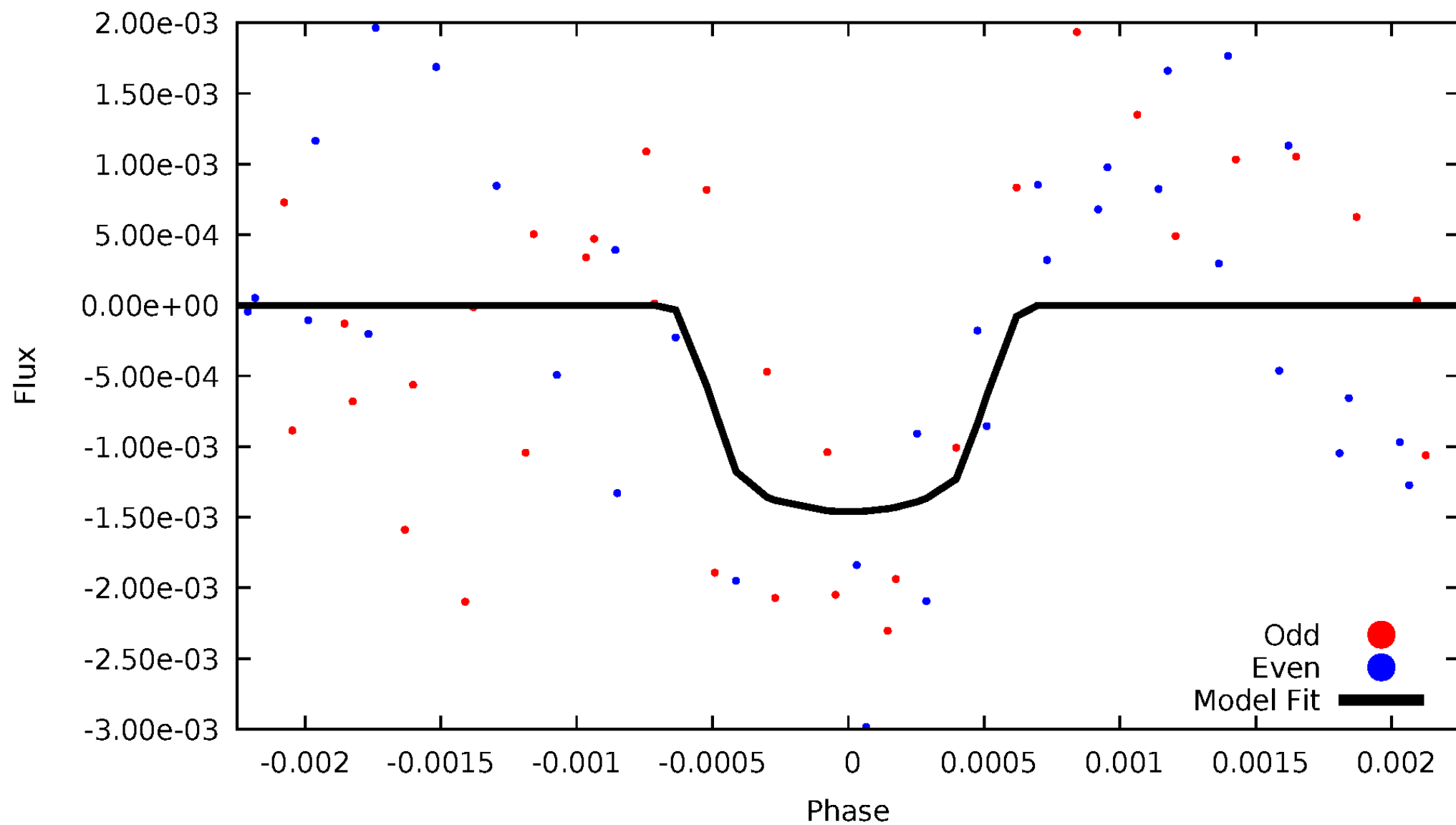


TCE 007045685-04



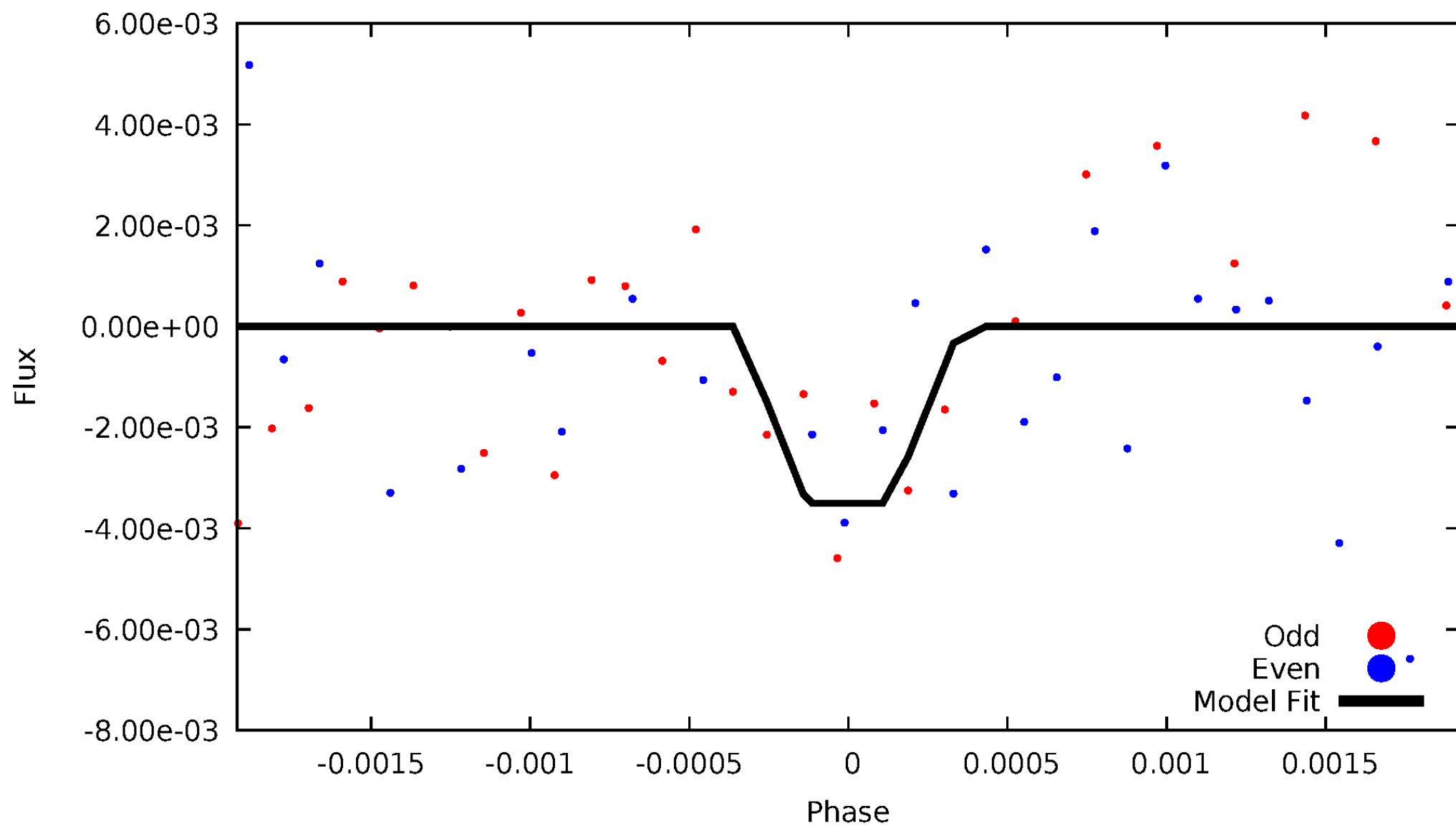
DV Odd/Even

TCE 007045685-04



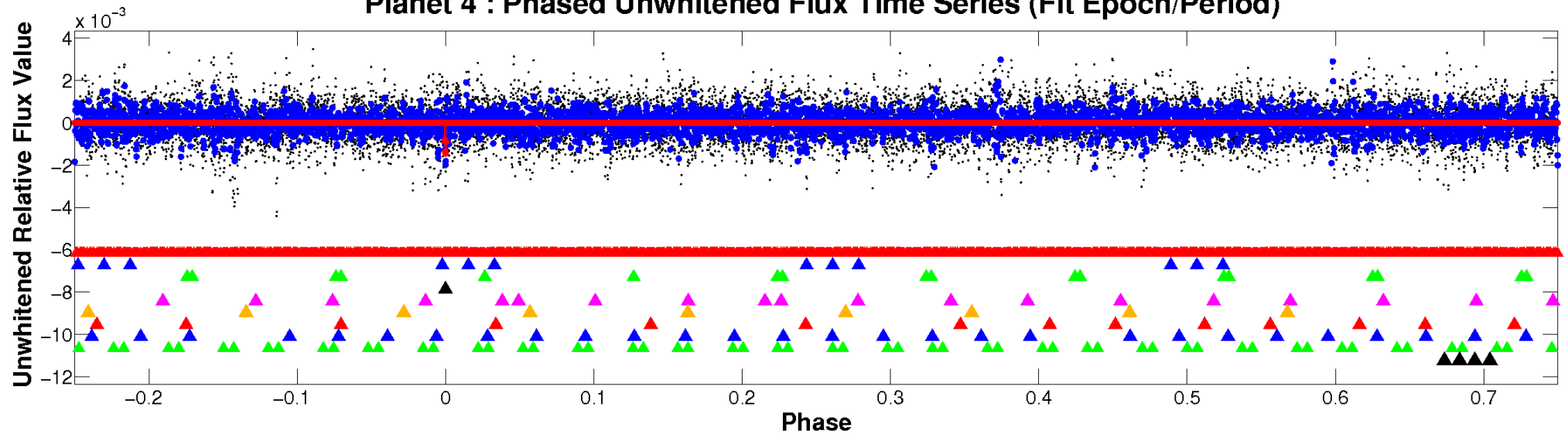
ALT Odd/Even

TCE 007045685-04

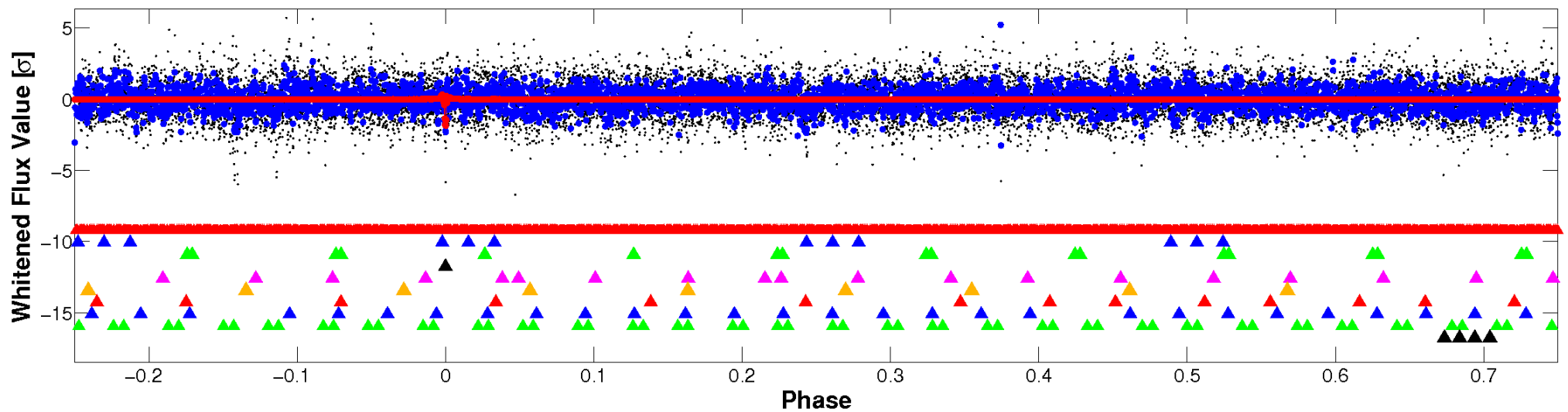


Non-Whitened Vs. Whitened Light Curve

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

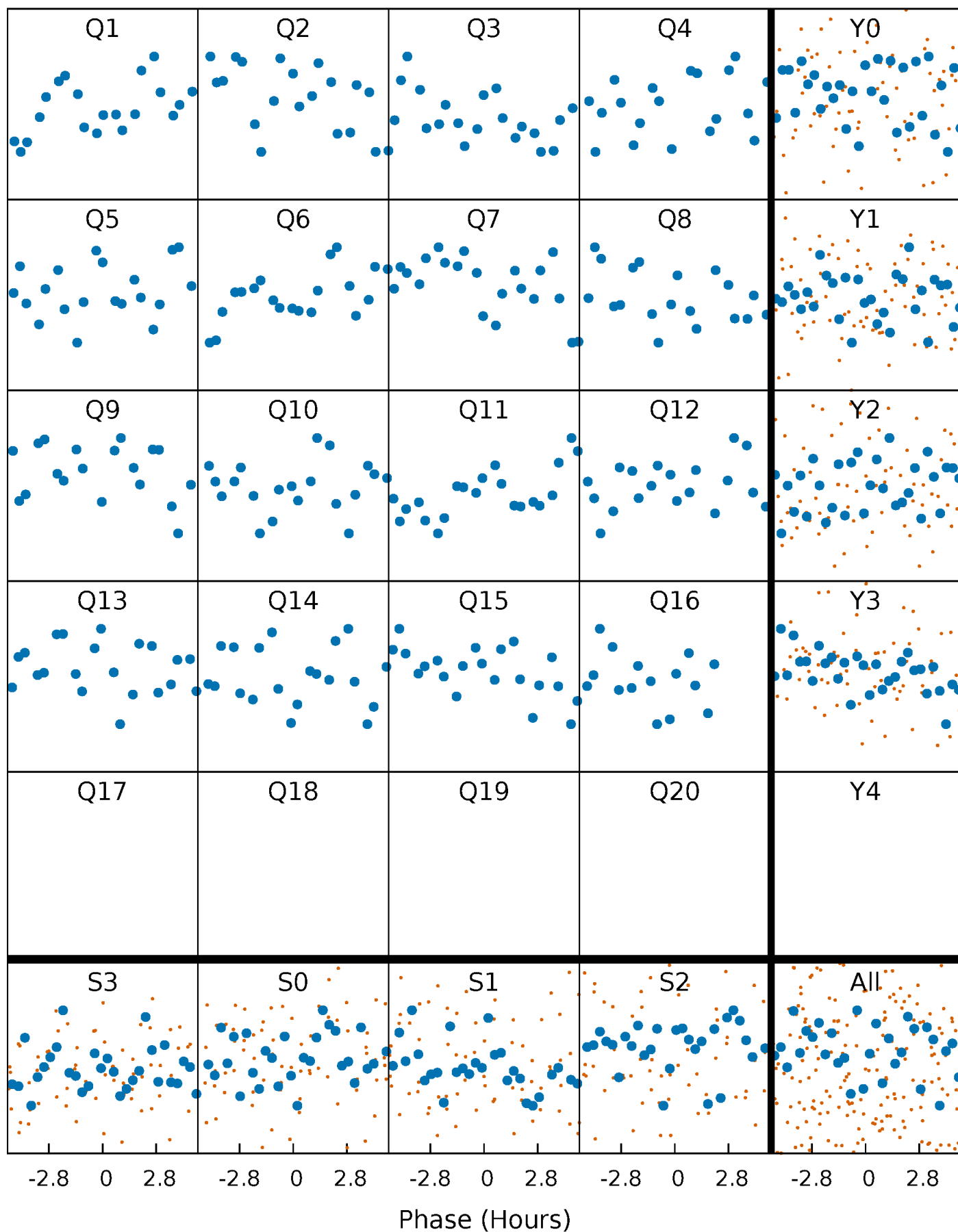


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



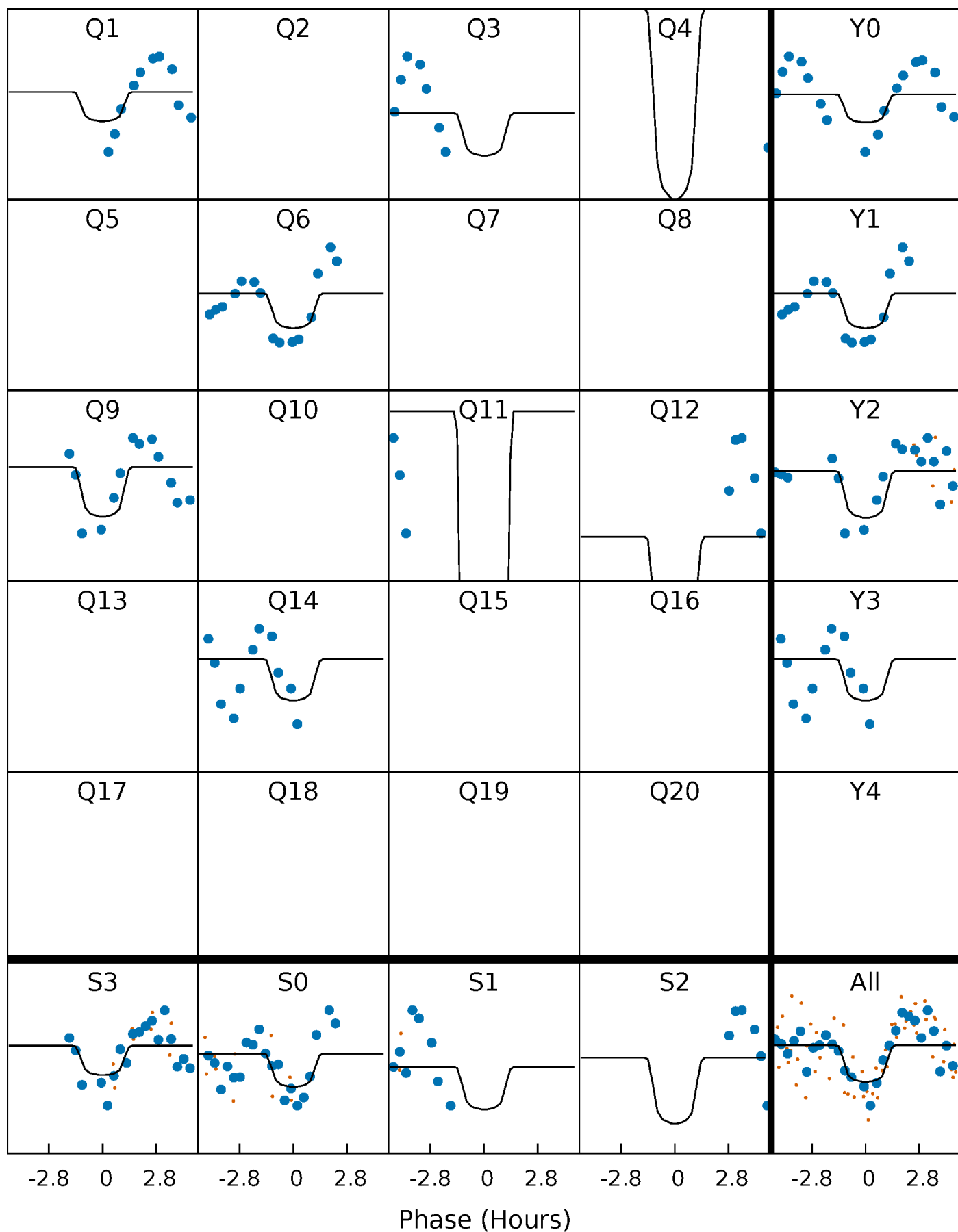
PDC Quarter-Phased Transit Curves

TCE 007045685-04 P= 91.982205 Days $T_0=145.135948$ (BKJD)



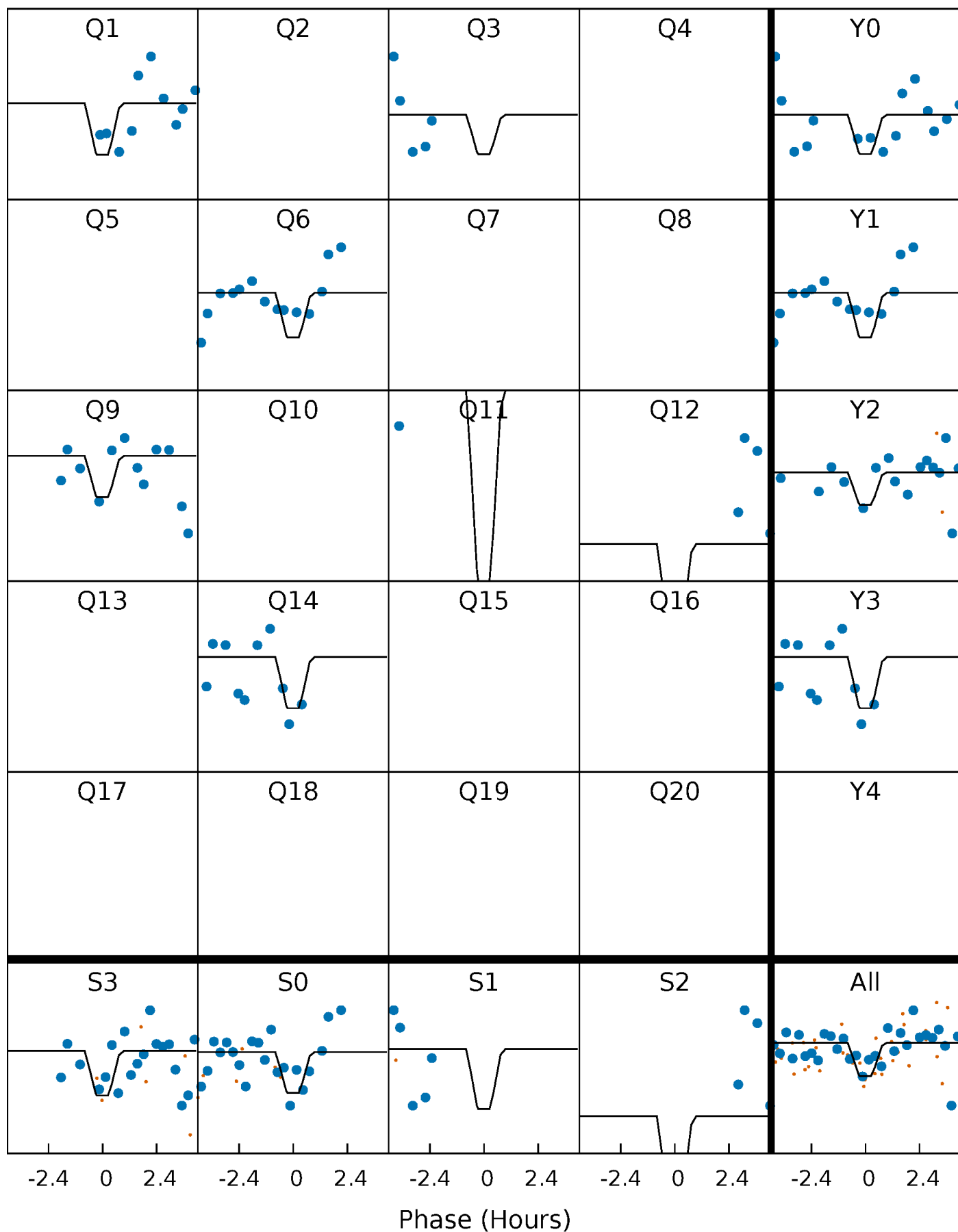
DV Quarter-Phased Transit Curves

TCE 007045685-04 P= 91.982205 Days $T_0=145.135948$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

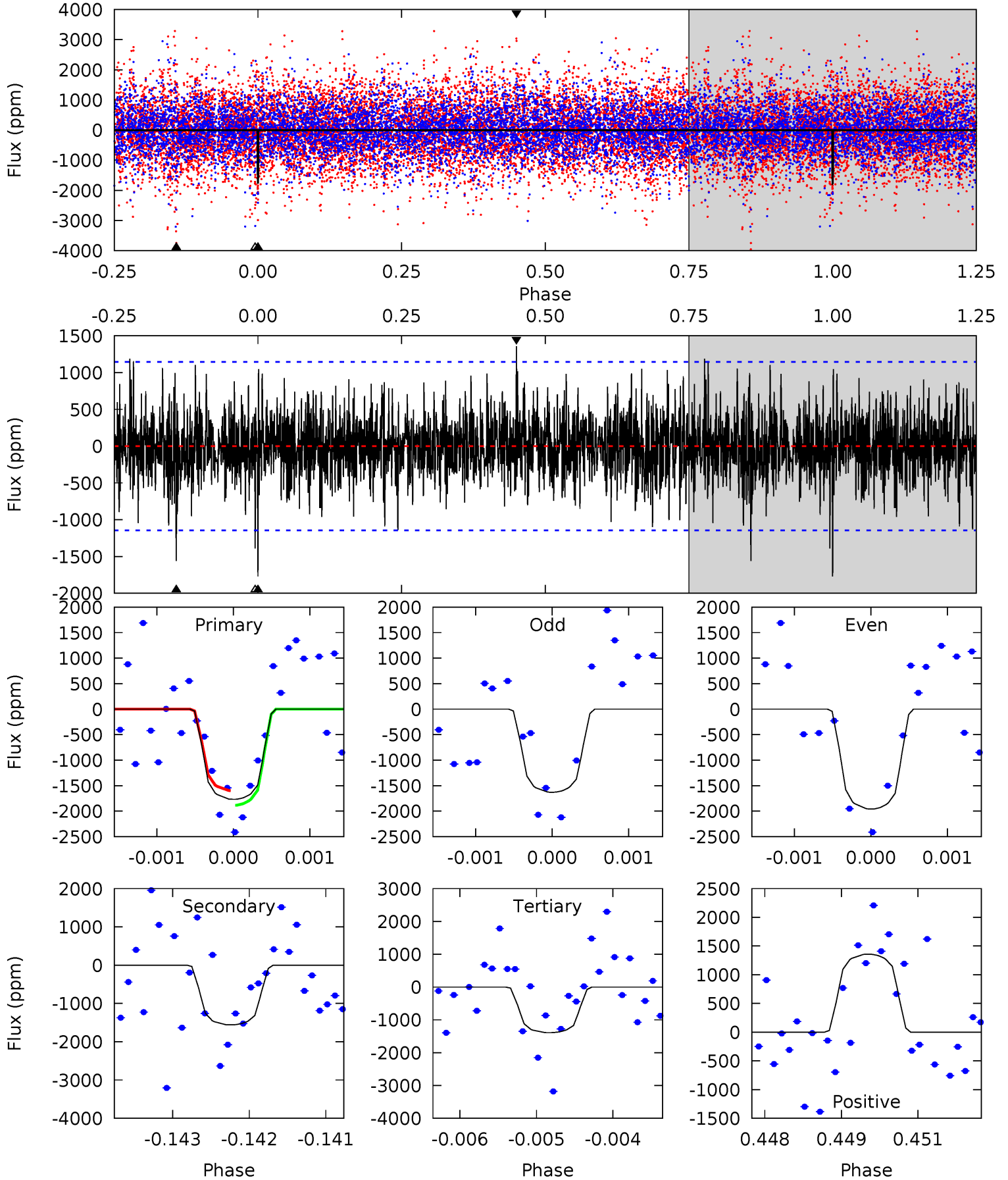
TCE 007045685-04 P= 91.980635 Days $T_0=145.152409$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-04, P = 91.982205 Days, E = 53.153743 Days

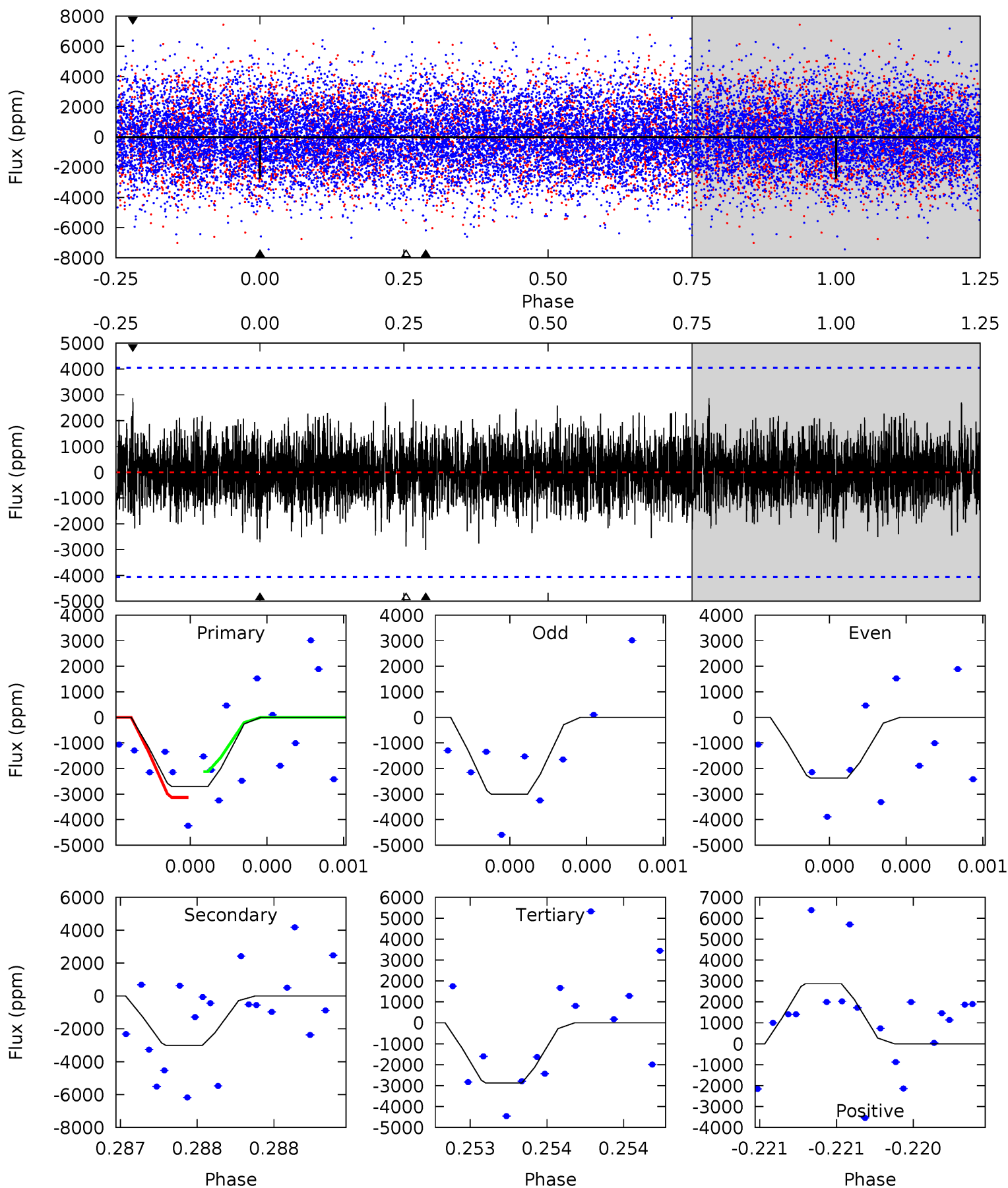
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.35	7.37	6.57	6.42	5.41	3.23	1.63	1.79	1.94	0.80	0.95	0.77	1.03	0.43	0.67



Alt Model-Shift Uniqueness Test

007045685-04, P = 91.980635 Days, E = 53.171774 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.73	4.15	3.96	3.95	5.58	3.50	1.09	-0.23	-0.22	0.19	0.20	0.43	1.14	0.49	0.67



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1560 ± 212	$6.24^{+3.78}_{-3.43}$	750^{+61}_{-41}	6719^{+4780}_{-1336}	4274^{+16516}_{-2600}
Alt.	-3011 ± 726	$9.14^{+3.81}_{-3.66}$	749^{+58}_{-38}	6536^{+2172}_{-1036}	3756^{+6769}_{-1928}

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 $A_{obs} \gg 1.0$

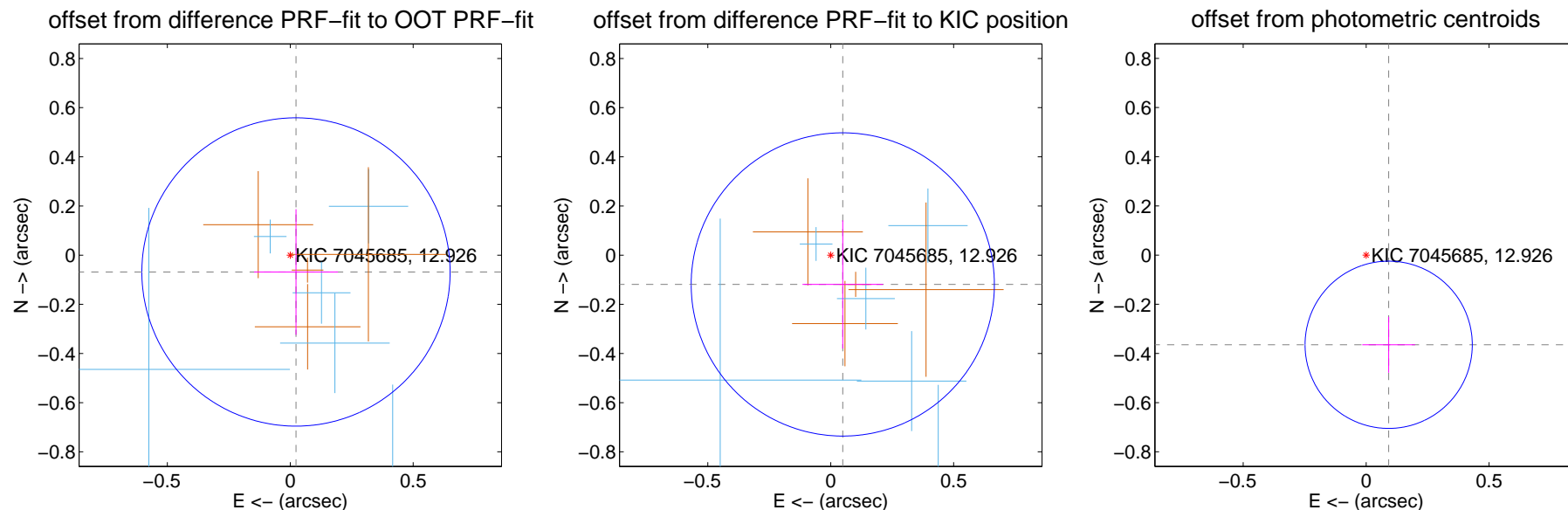
DV Centroid Data

Supplemental centroid analysis for 007045685-04. Kepler magnitude: 12.93. Transit SNR 6.42

There are 7 quarters with good PRF difference image offsets

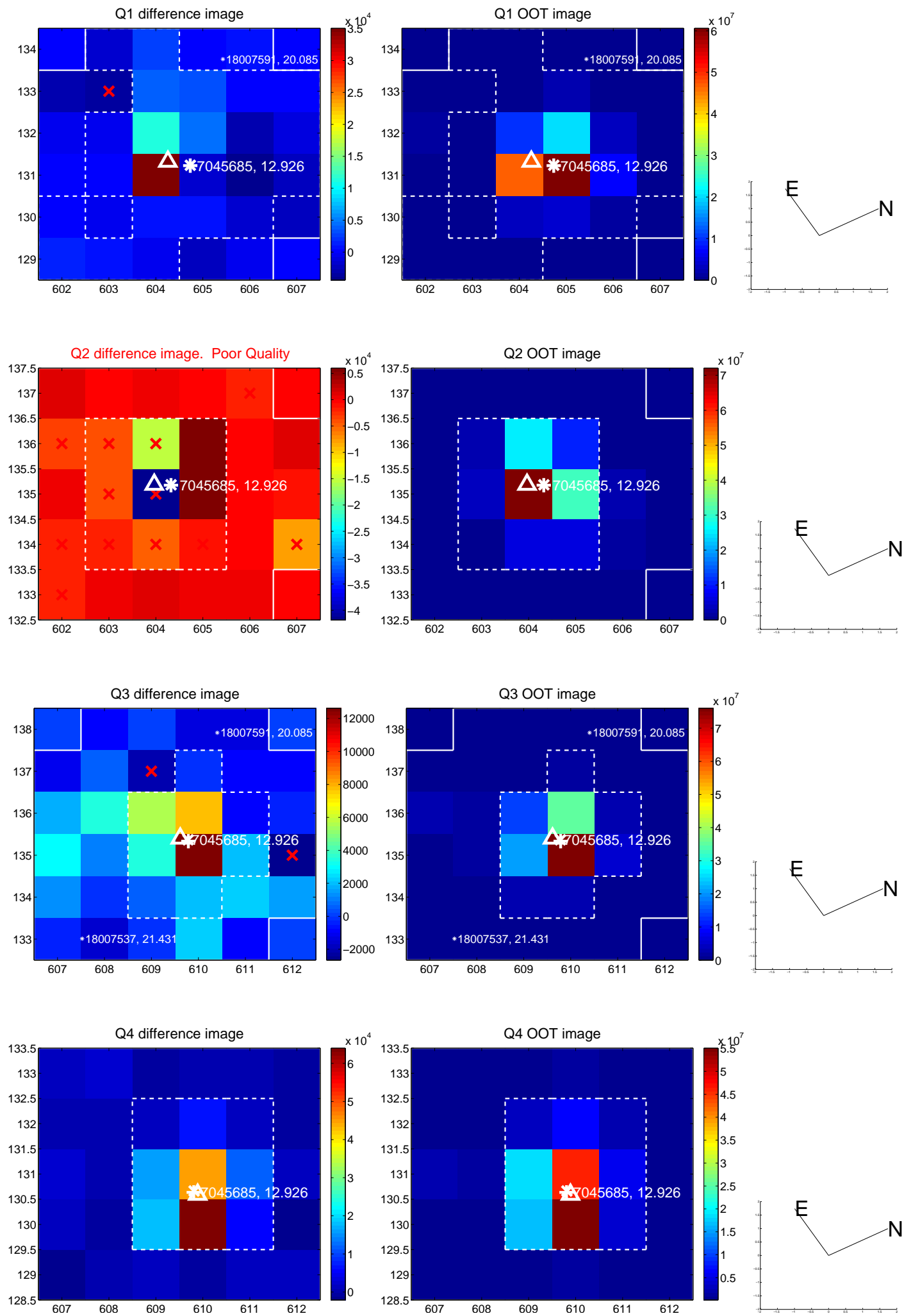
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.072 ± 0.209	0.35	-0.023 ± 0.171	-0.068 ± 0.255
PRF-fit source offset from KIC position	0.129 ± 0.206	0.63	-0.049 ± 0.164	-0.119 ± 0.261
photometric centroid source offset	0.38 ± 0.11	3.32	-0.09 ± 0.11	-0.36 ± 0.11

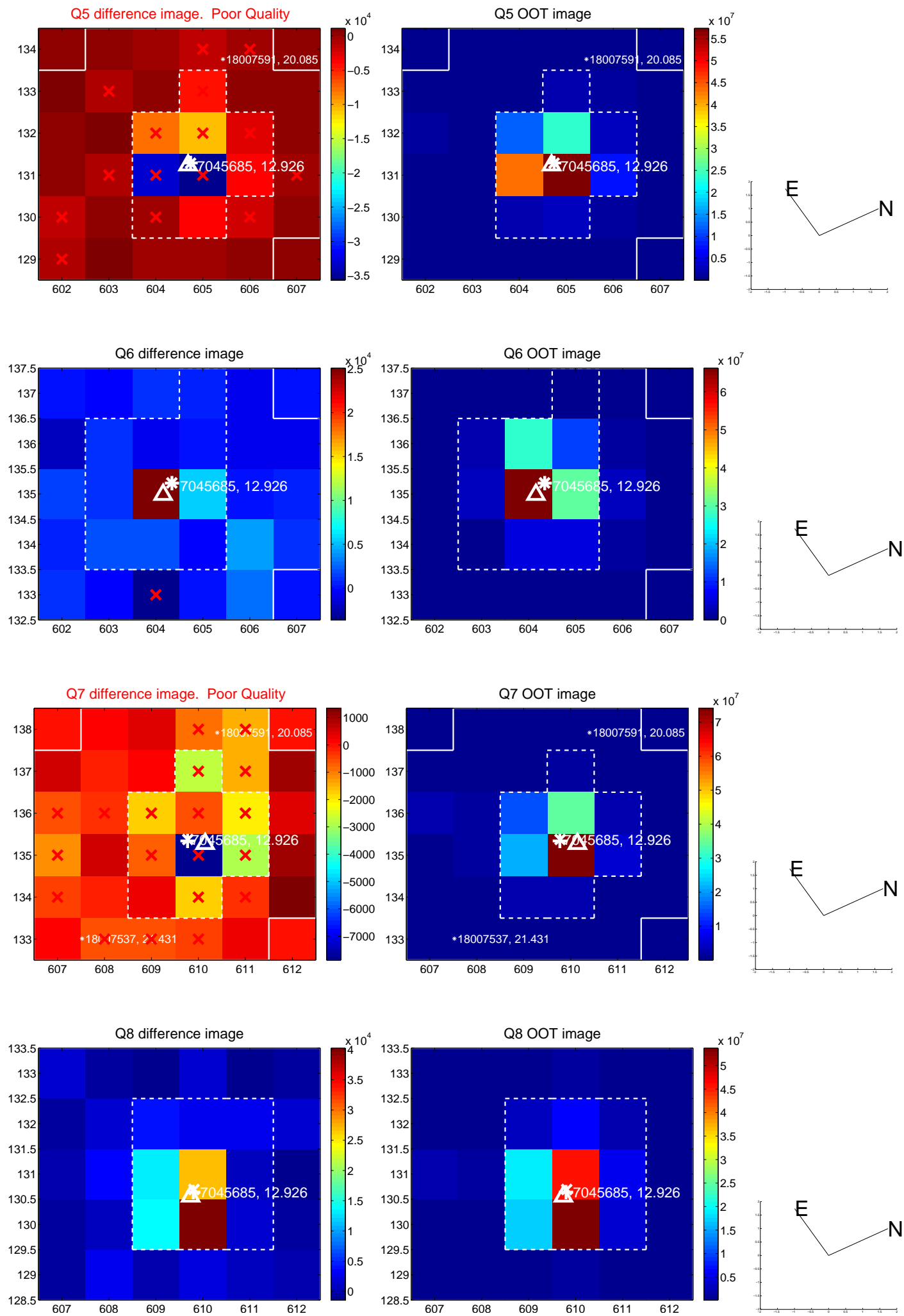


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

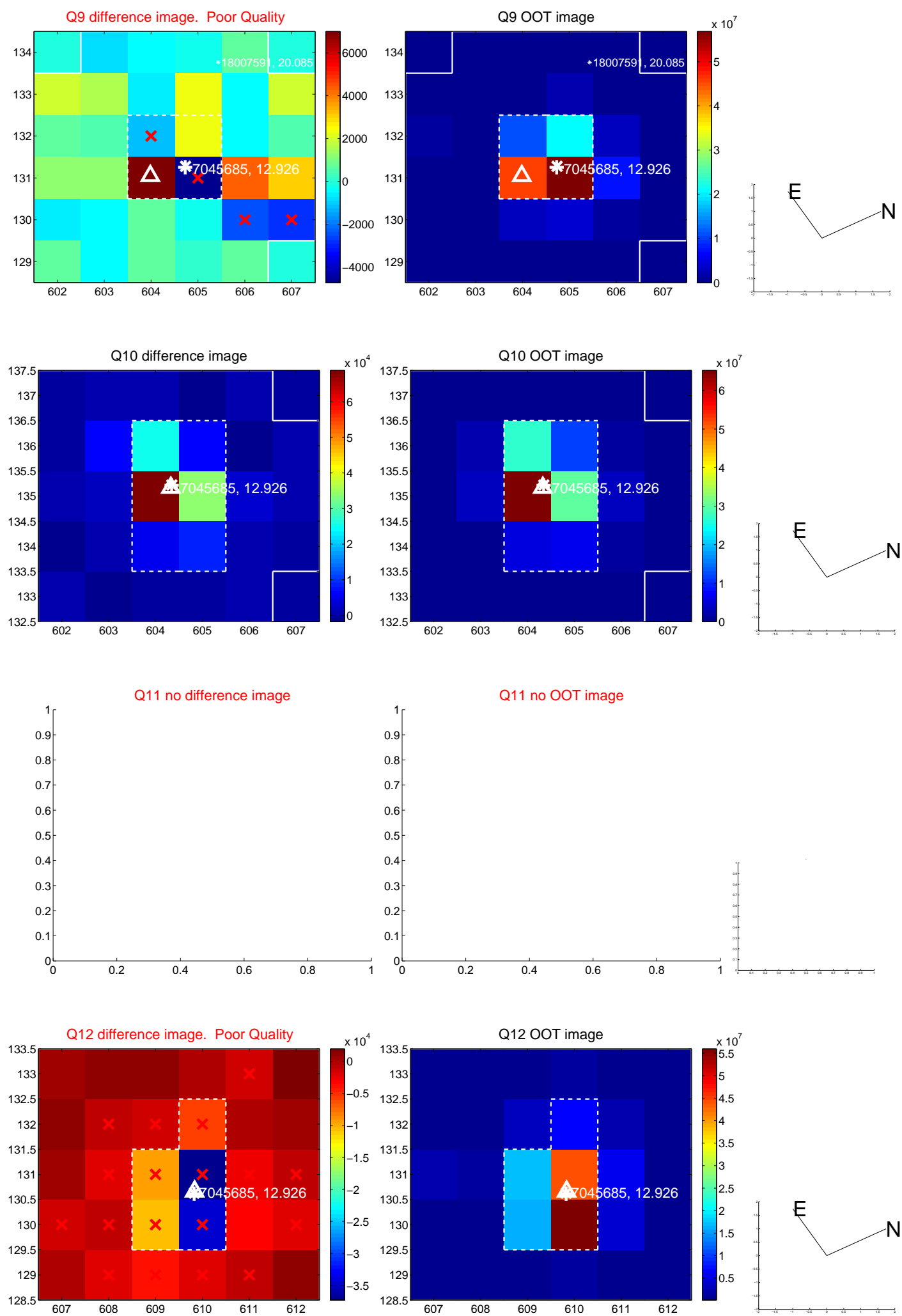
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



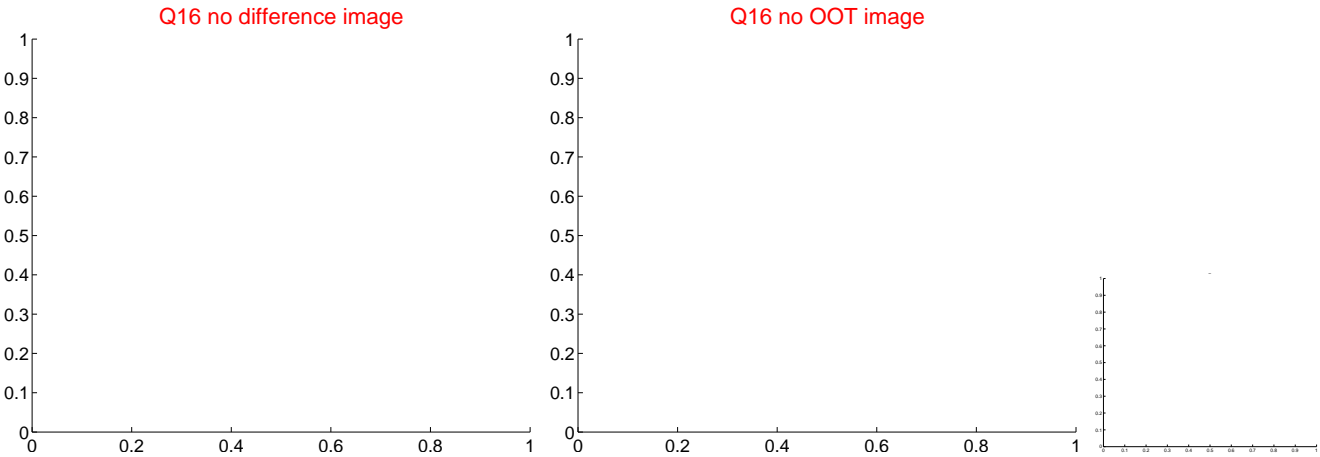
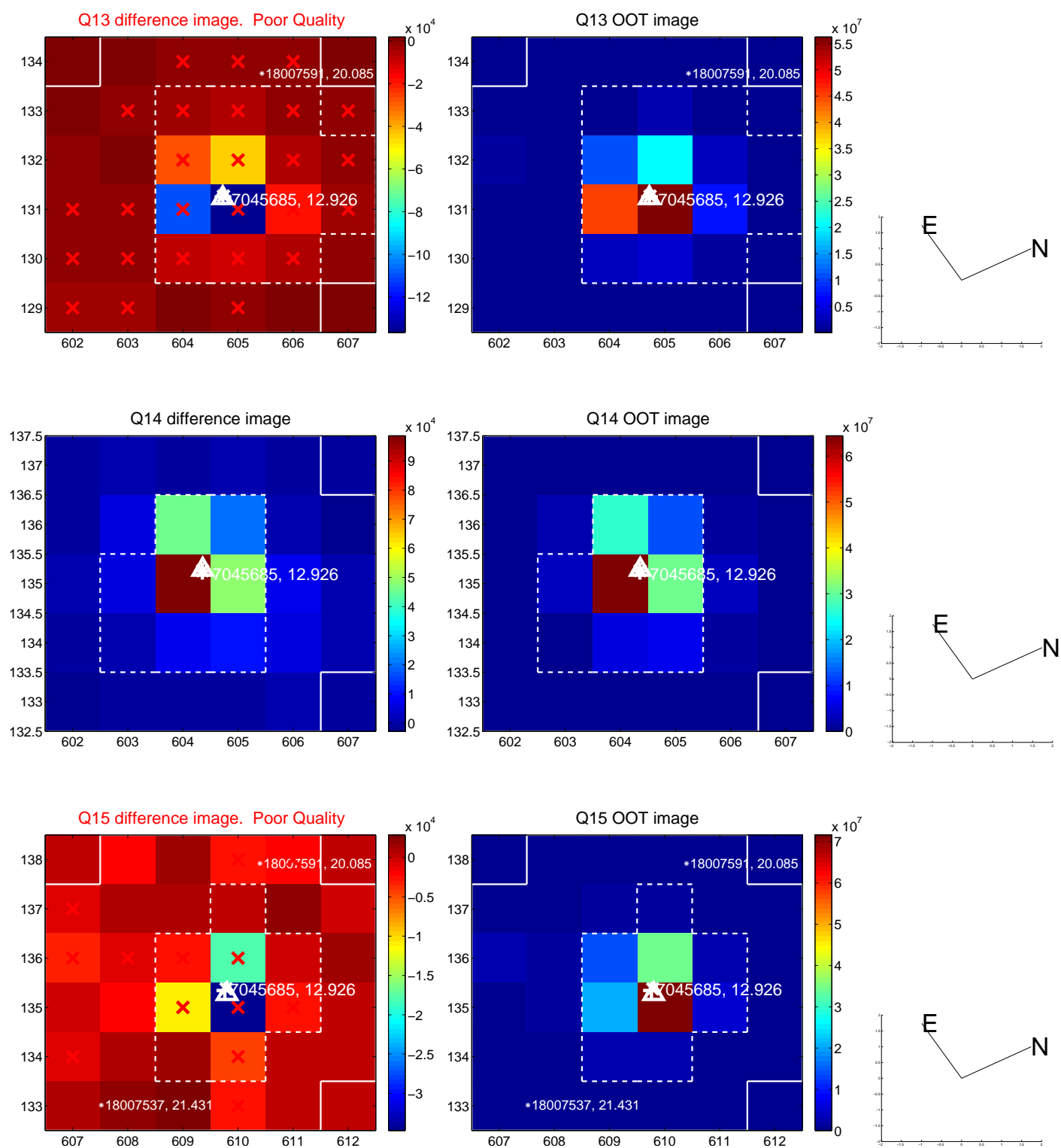
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



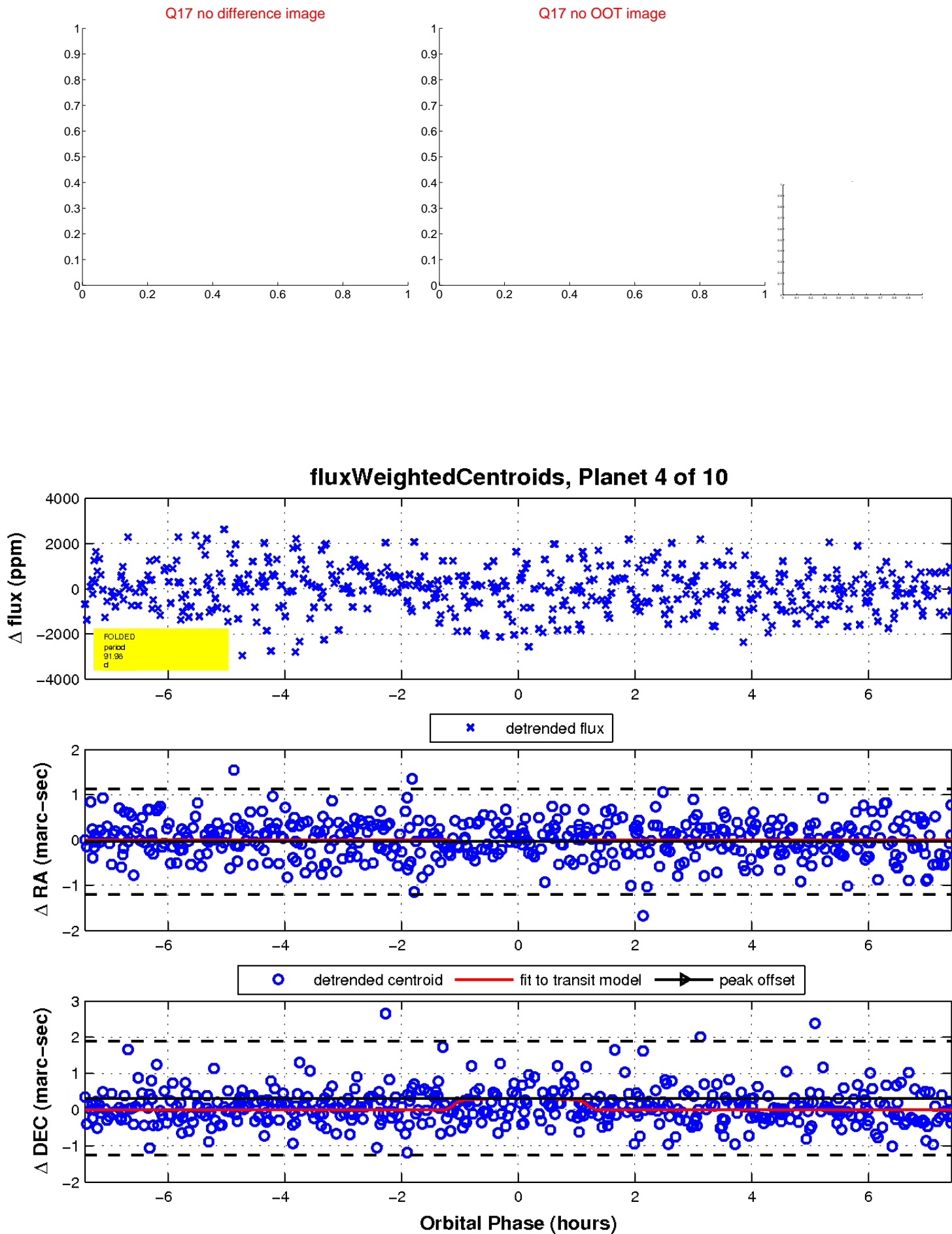
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

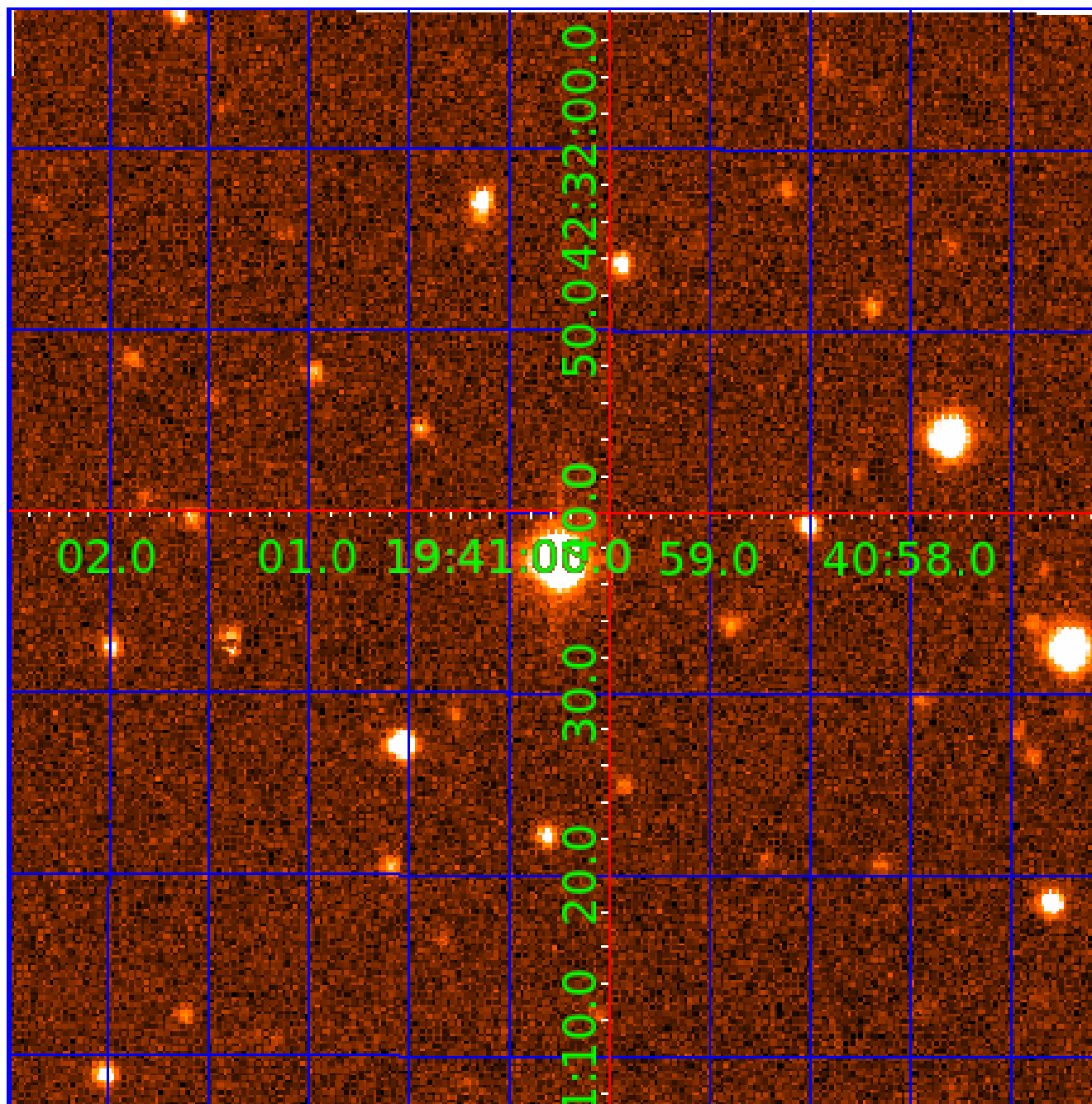


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007045685

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})
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007045685-02	OBS	No	114.573642	217.561224	3135.8	4.695	13.5	12.3	1.38	6817	14.07	13.93
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007045685-04	OBS	No	91.982205	145.135948	1459.8	2.482	9.9	6.4	1.38	6817	5.62	18.67
007045685-05	OBS	No	75.690770	165.957500	2136.9	2.707	9.6	10.8	1.38	6817	9.50	24.21
007045685-06	OBS	No	156.566147	269.757548	2240.7	3.006	9.0	9.9	1.38	6817	7.97	9.19
007045685-08	OBS	No	52.127694	144.577139	1090.1	3.932	8.8	8.1	1.38	6817	4.99	39.81
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007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

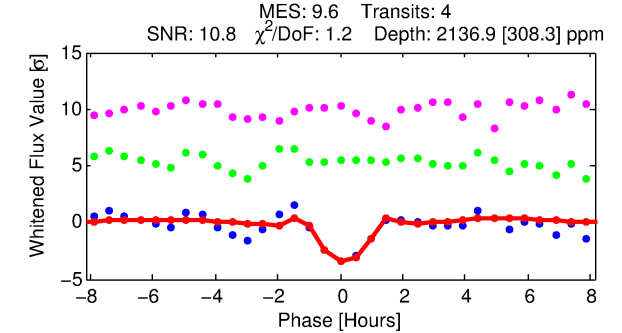
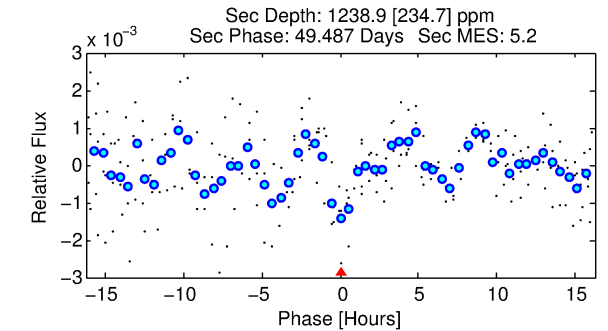
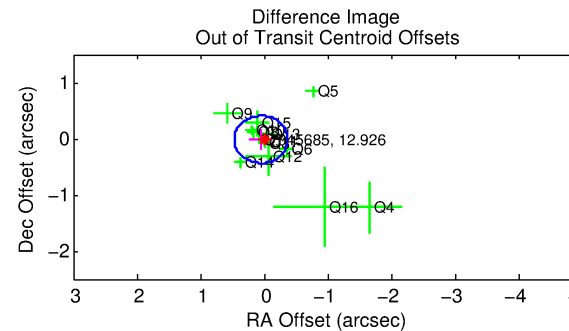
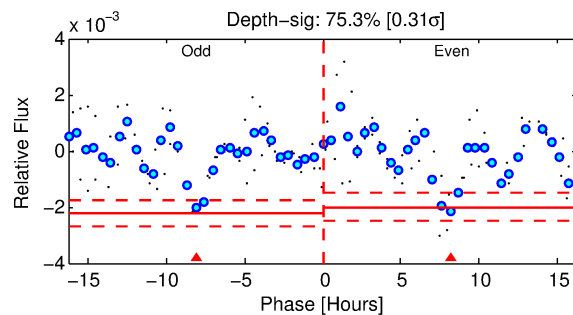
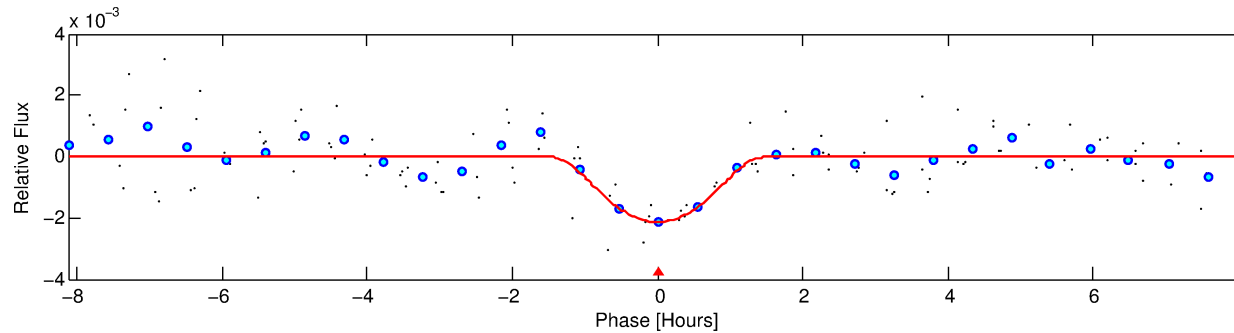
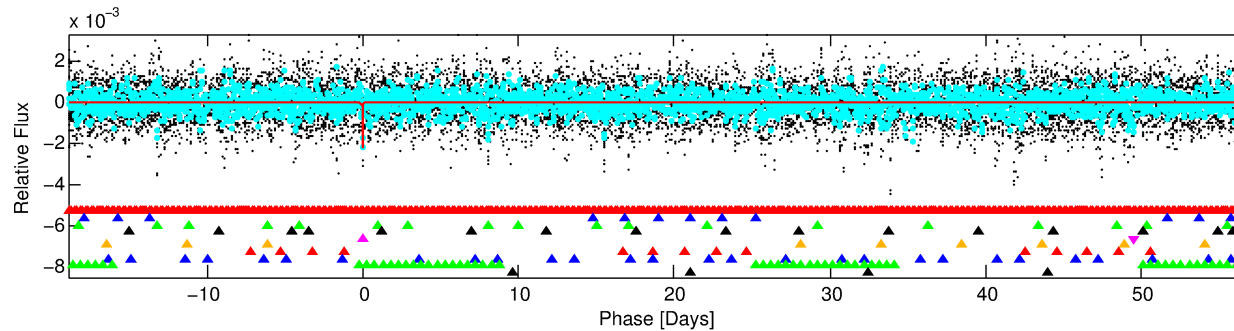
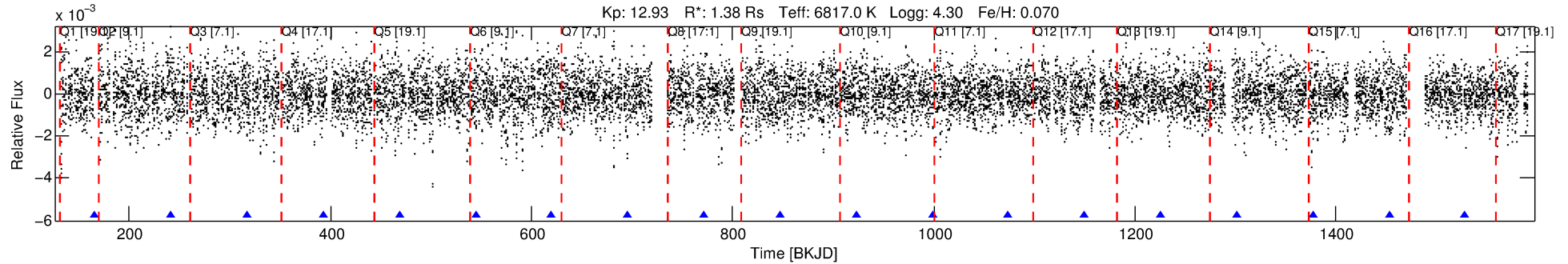
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-05

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 5 of 10 Period: 75.691 d



DV Fit Results:

Period = 75.69077 [0.00065] d
Epoch = 165.9575 [0.0075] BKJD
Rp/R* = 0.0631 [0.0869]
a/R* = 90.51 [44.88]
b = 0.98 [0.16]
Seff = 24.21 [10.65]
Teq = 566 [62] K
Rp = 9.50 [13.54] Re
a = 0.3904 [0.1148] AU
Ag = 1150.18 [3211.65] [0.36 σ]
Teffp = 5093 [3522] K [1.29 σ]

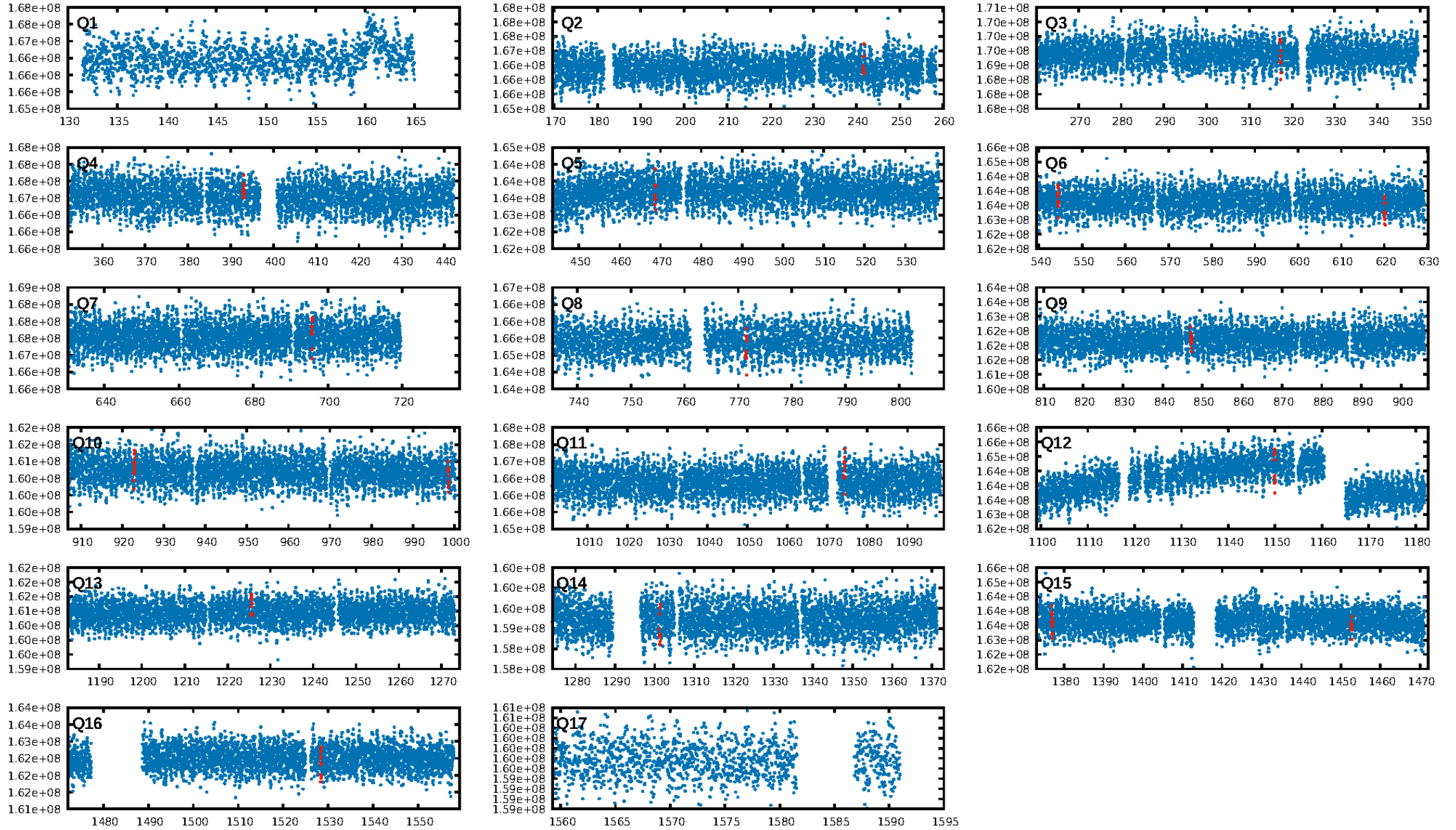
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [118.46 σ]
LongPeriod-sig: 100.0% [40.48 σ]
ModelChiSquare2-sig: 39.4%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.3965
Centroid-sig: 8.9%
Centroid-so: 0.245 arcsec [2.83 σ]
OotOffset-rm: 0.052 arcsec [0.37 σ]
KicOffset-rm: 0.106 arcsec [0.54 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 0.53 [8/15]

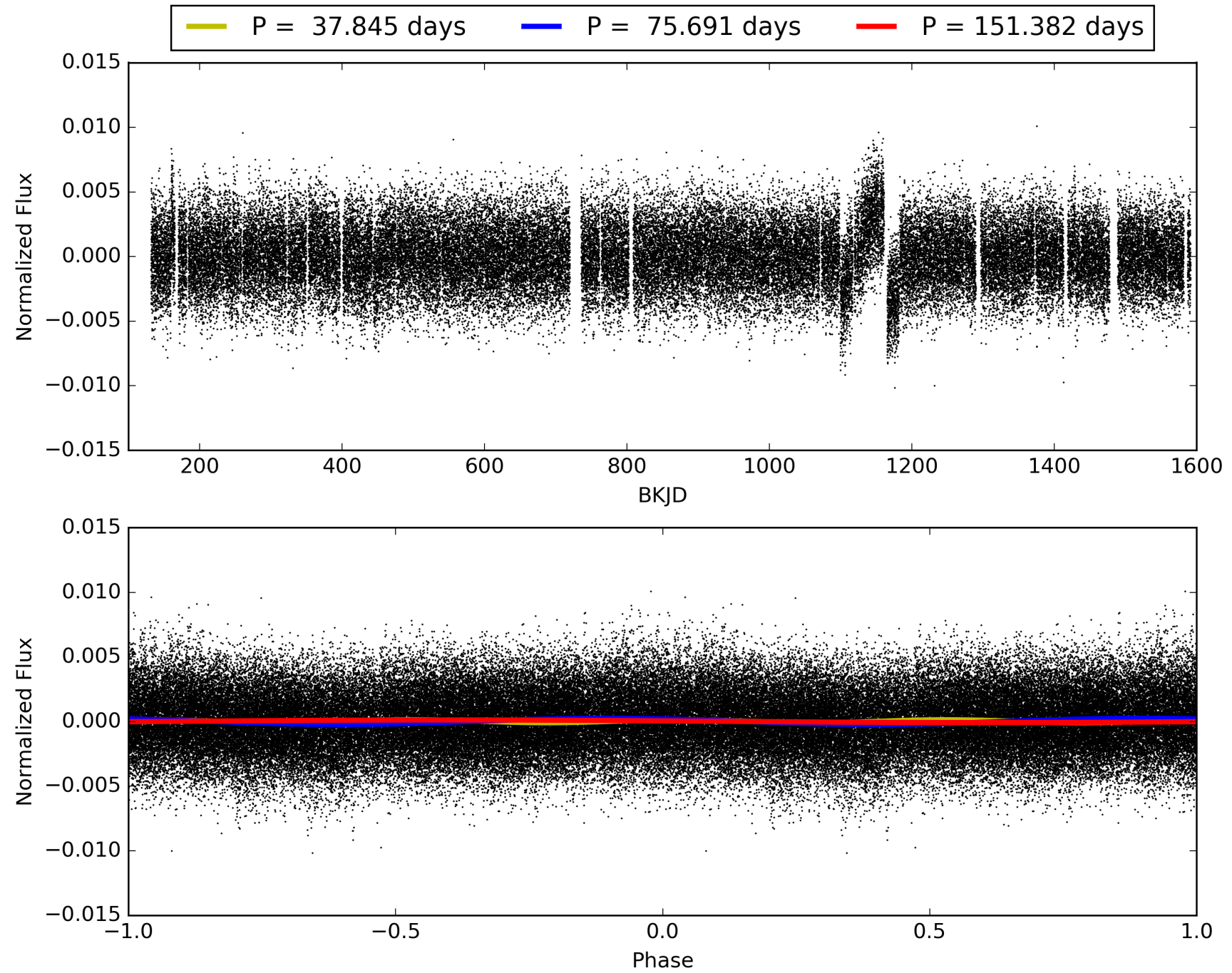
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:45:40 Z

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

TCE 007045685-05, PDC Light Curves

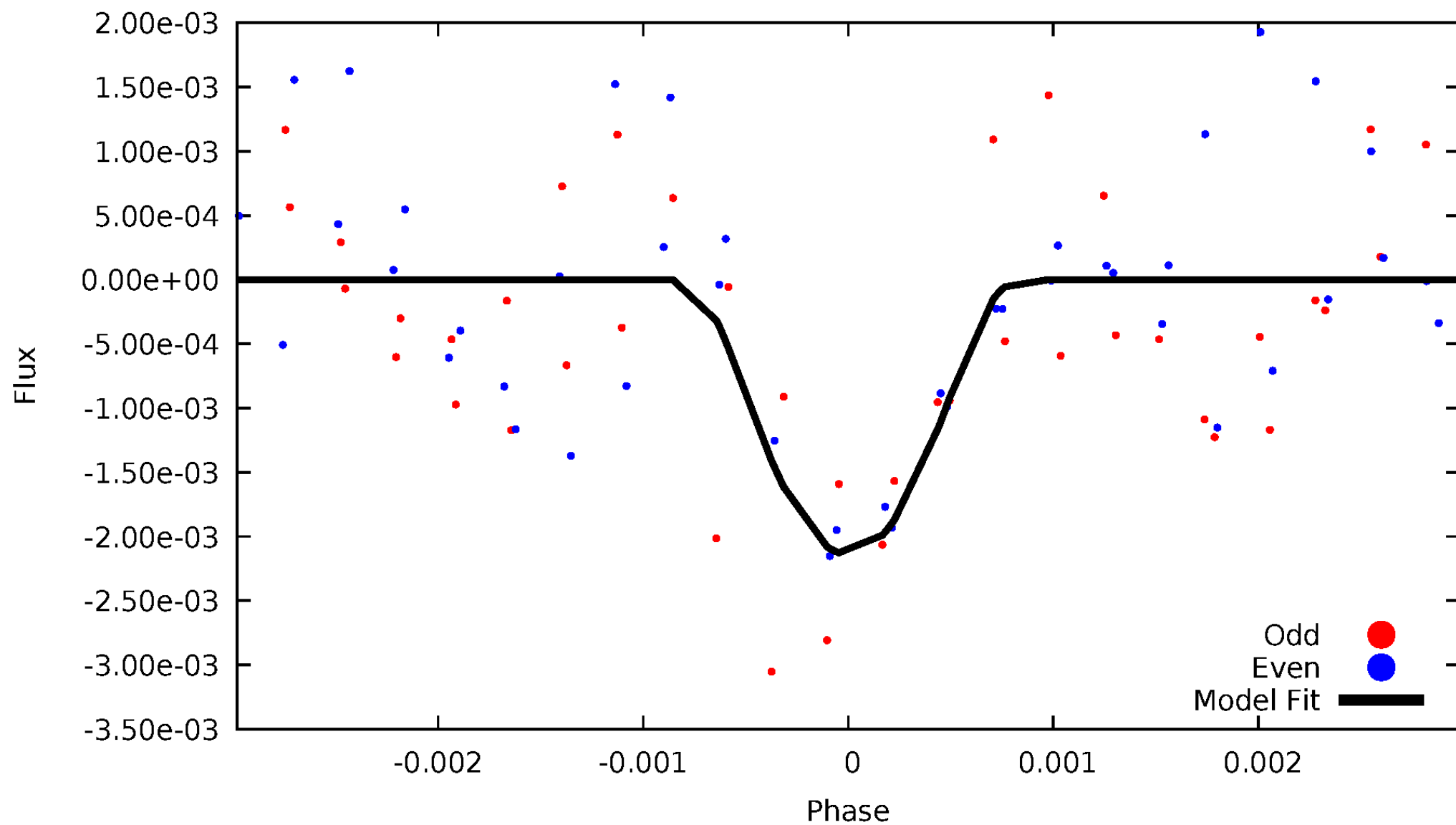


TCE 007045685-05



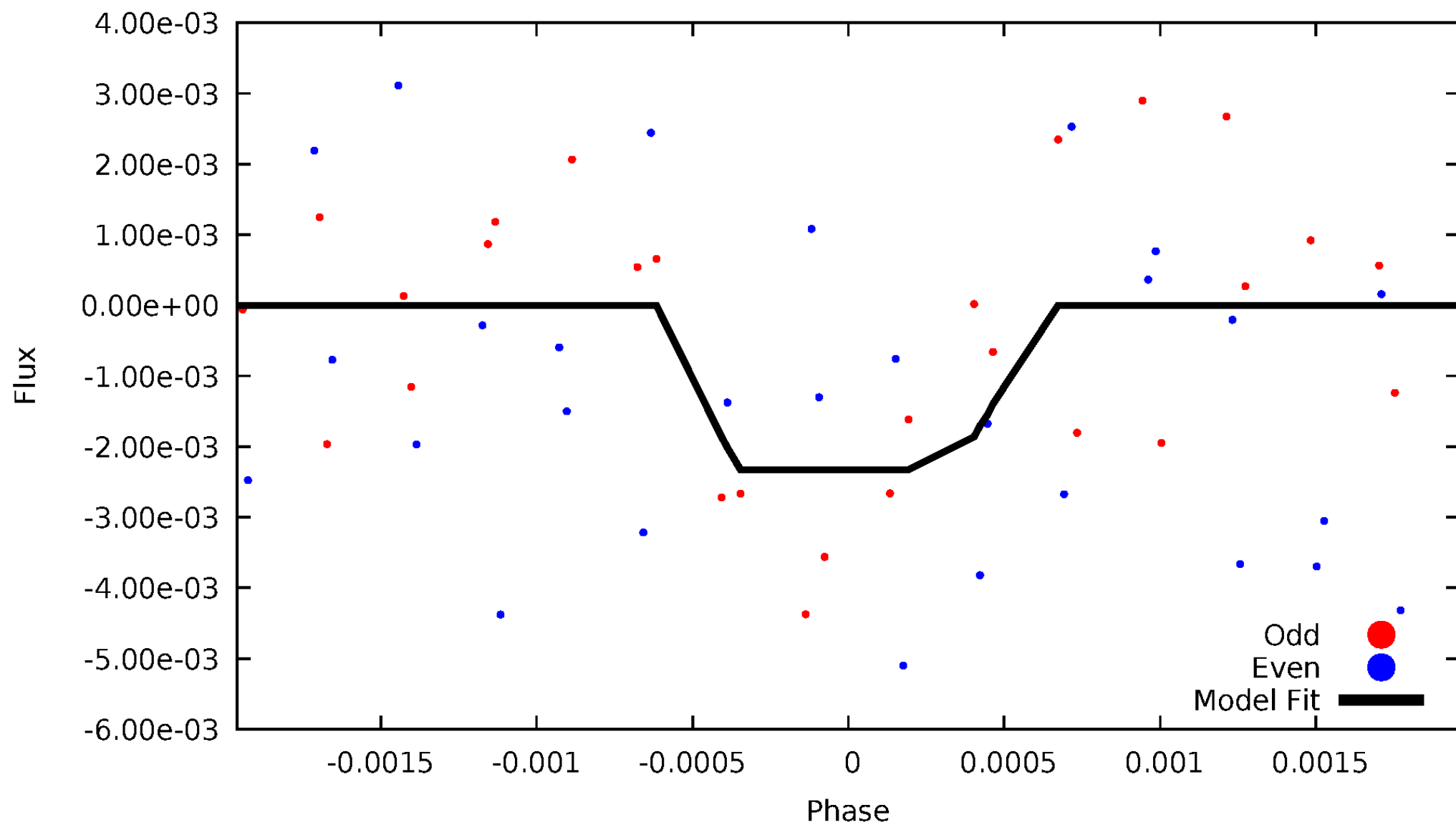
DV Odd/Even

TCE 007045685-05



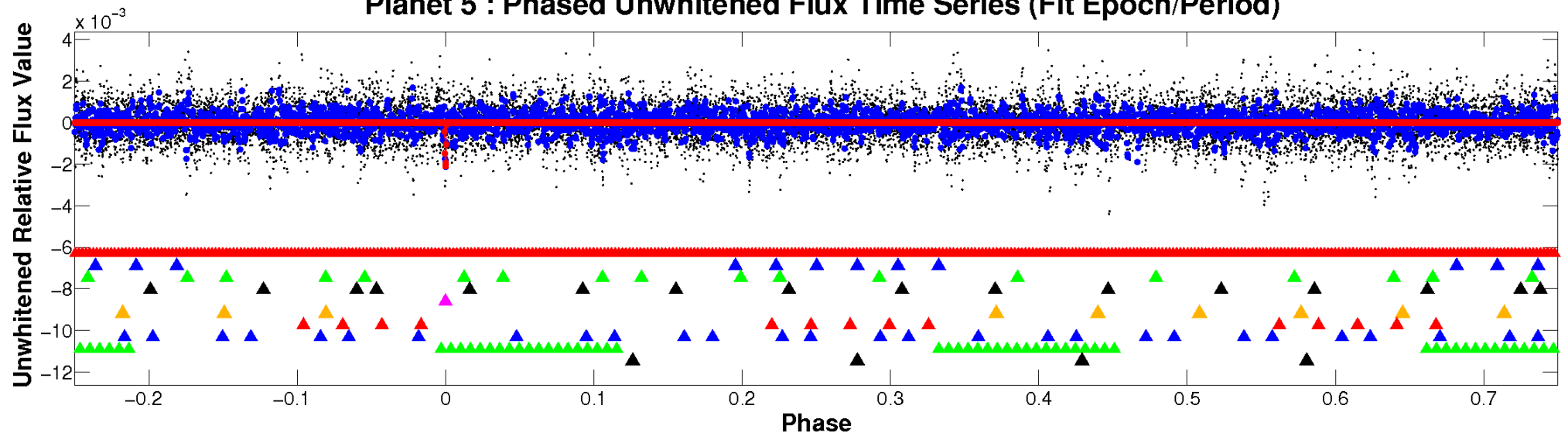
ALT Odd/Even

TCE 007045685-05

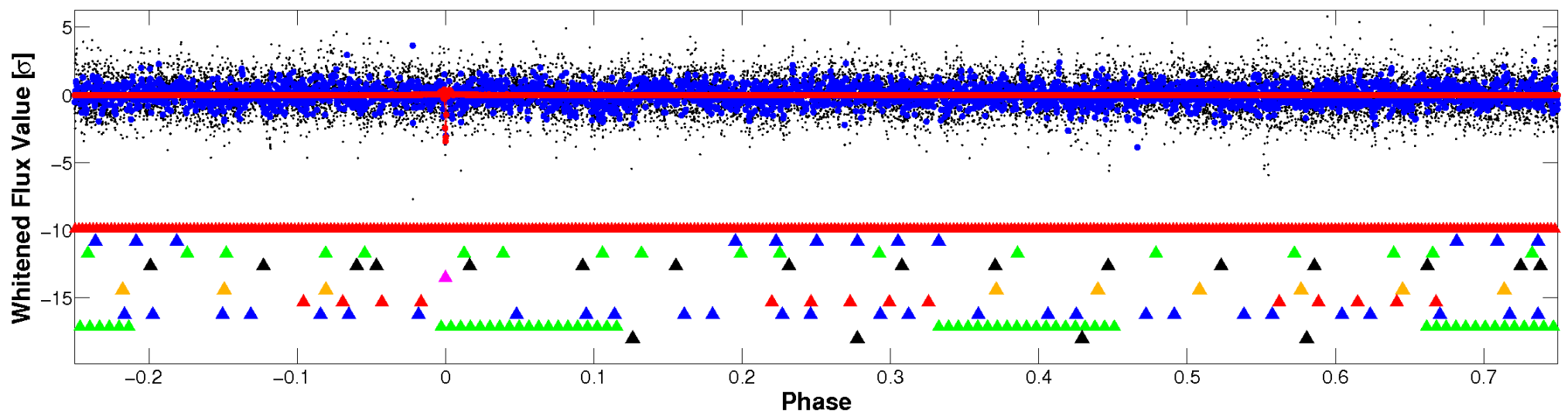


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

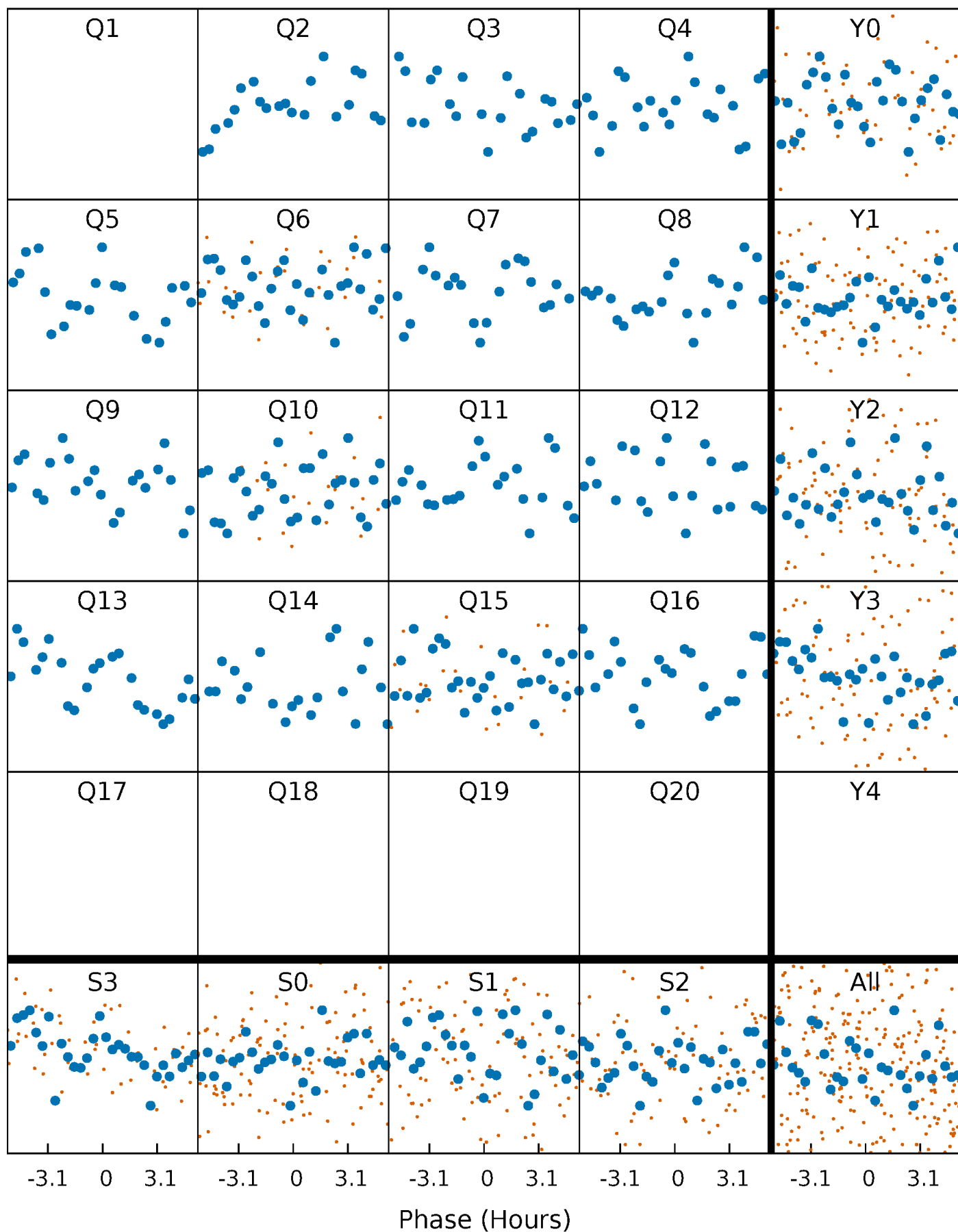


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



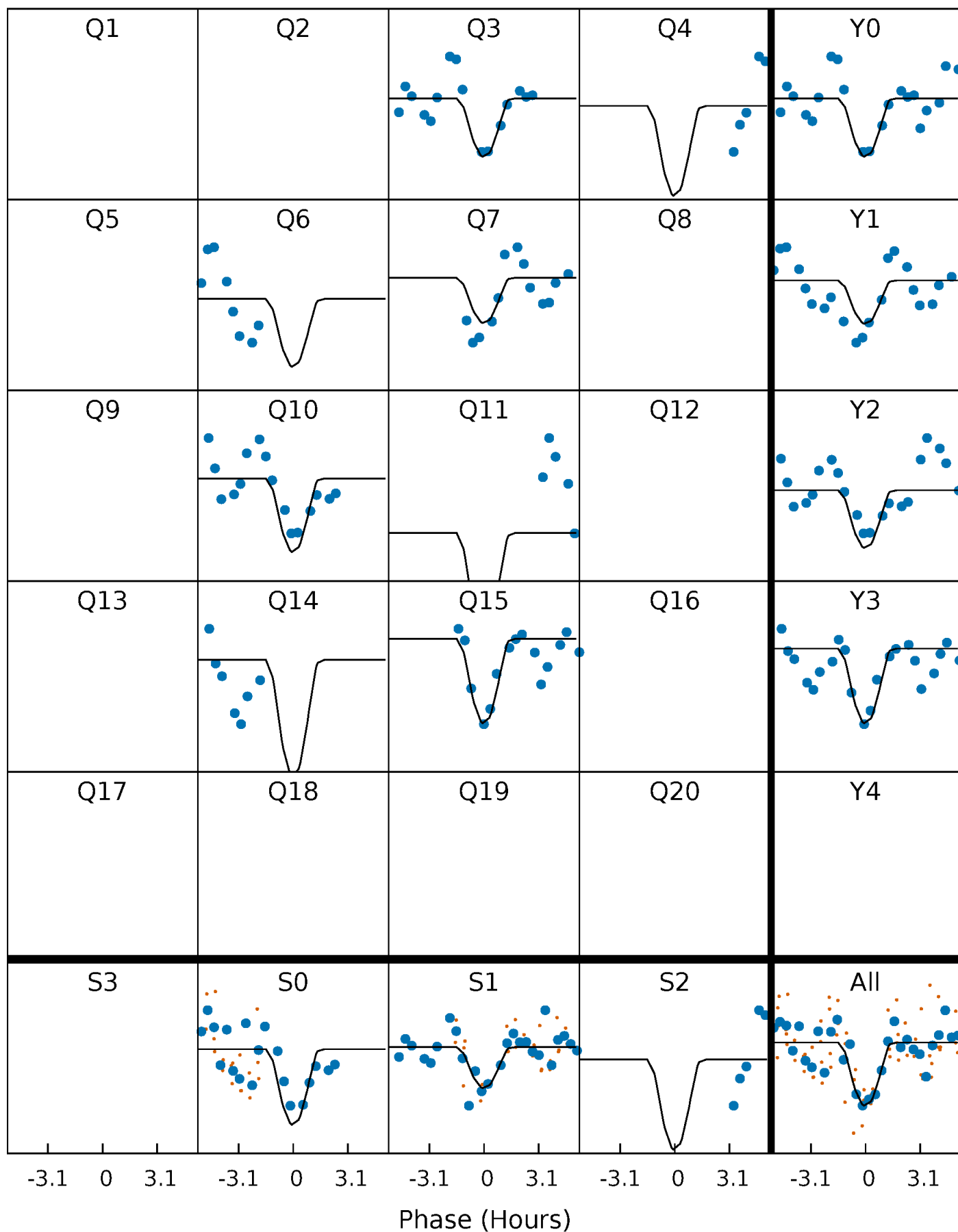
PDC Quarter-Phased Transit Curves

TCE 007045685-05 P= 75.690770 Days $T_0=165.957500$ (BKJD)



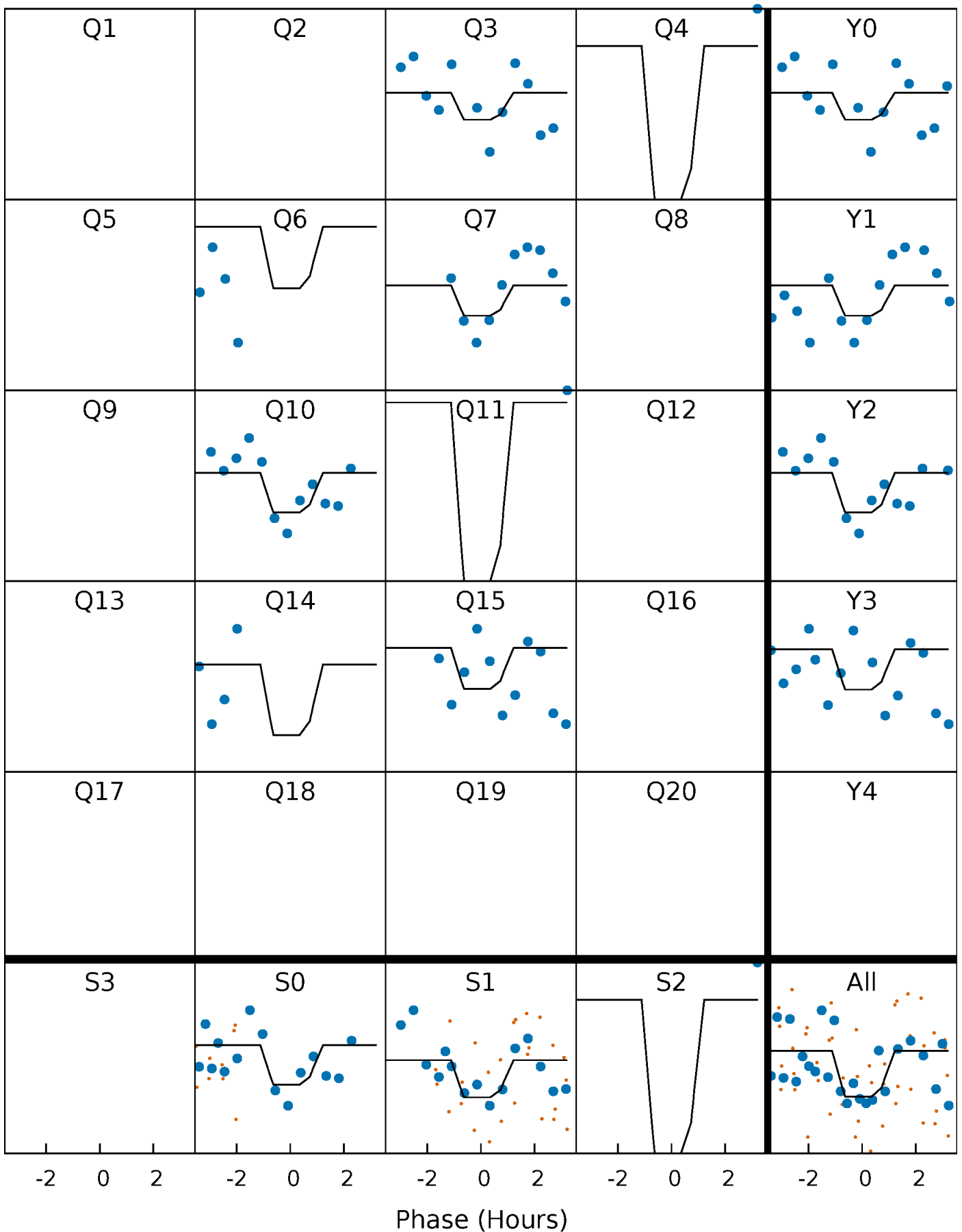
DV Quarter-Phased Transit Curves

TCE 007045685-05 P= 75.690770 Days $T_0=165.957500$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

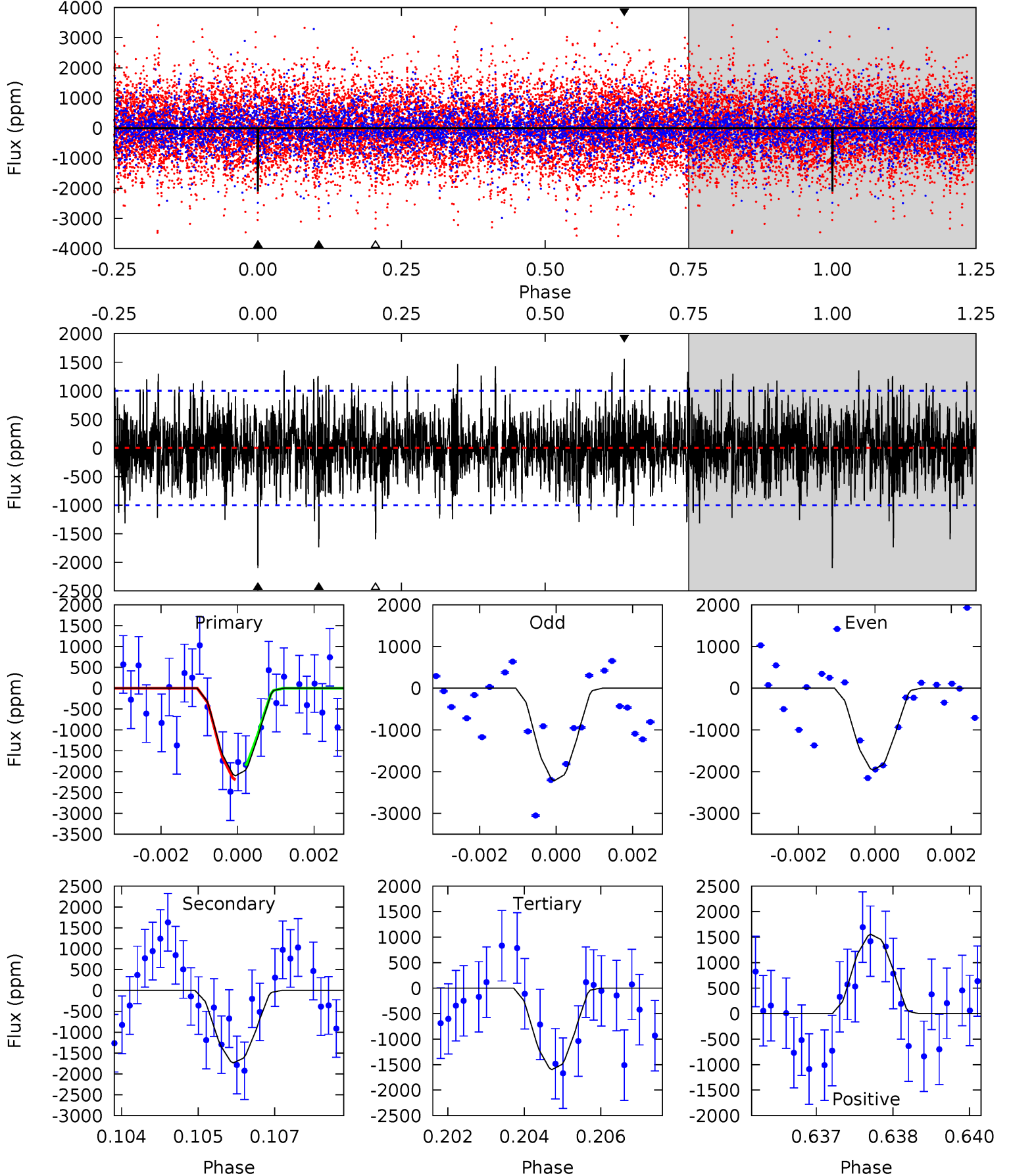
TCE 007045685-05 $P = 75.690726$ Days $T_0 = 165.960288$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-05, P = 75.690770 Days, E = 90.266730 Days

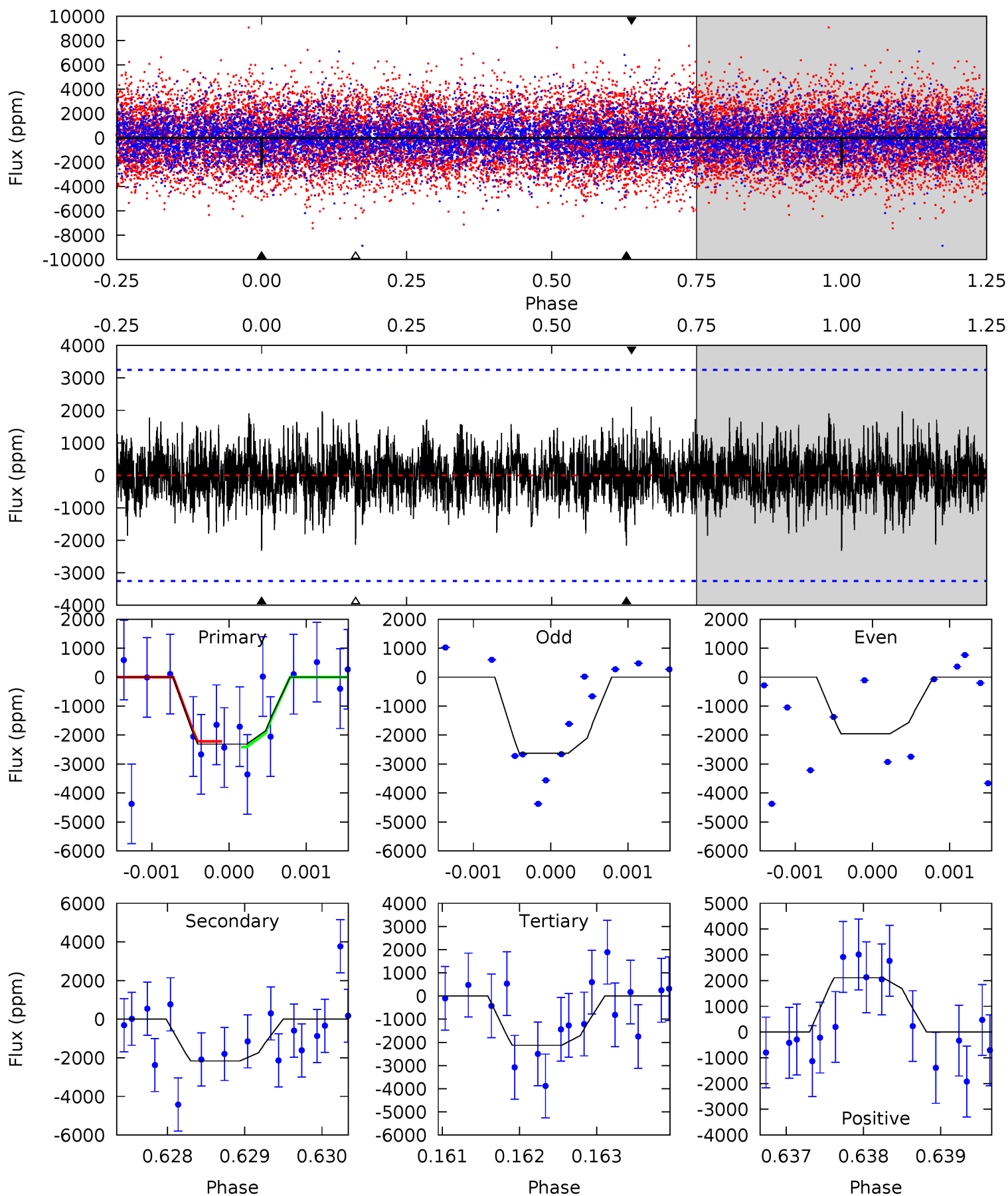
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	9.31	8.57	8.35	5.36	3.15	2.24	2.70	2.92	0.74	0.96	0.70	1.06	0.43	0.92



Alt Model-Shift Uniqueness Test

007045685-05, P = 75.690726 Days, E = 90.269562 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.90	3.65	3.60	3.55	5.48	3.34	0.95	0.31	0.35	0.05	0.09	0.57	0.90	0.48	0.16



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1735 ± 186	$14.05^{+12.20}_{-9.03}$	802^{+69}_{-43}	4748^{+2954}_{-966}	746^{+4509}_{-538}
Alt.	-2163 ± 593	$12.71^{+12.86}_{-8.42}$	803^{+62}_{-43}	5173^{+4261}_{-1239}	1059^{+8529}_{-802}

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 $A_{obs} \gg 1.0$

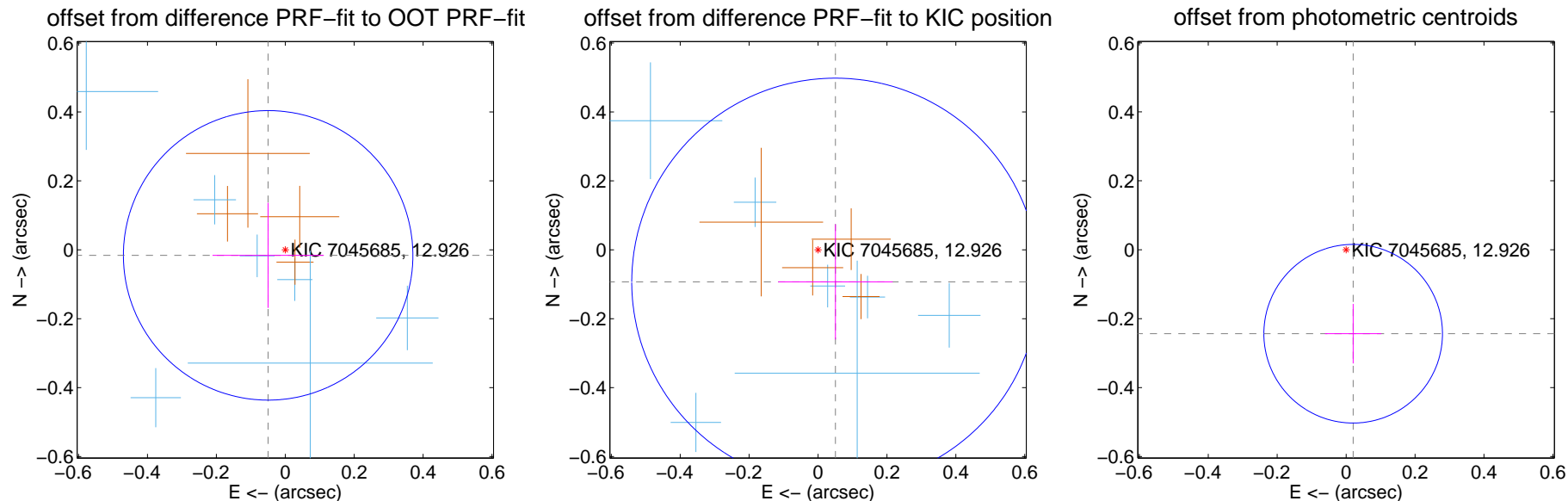
DV Centroid Data

Supplemental centroid analysis for 007045685-05. Kepler magnitude: 12.93. Transit SNR 10.76

There are 8 quarters with good PRF difference image offsets

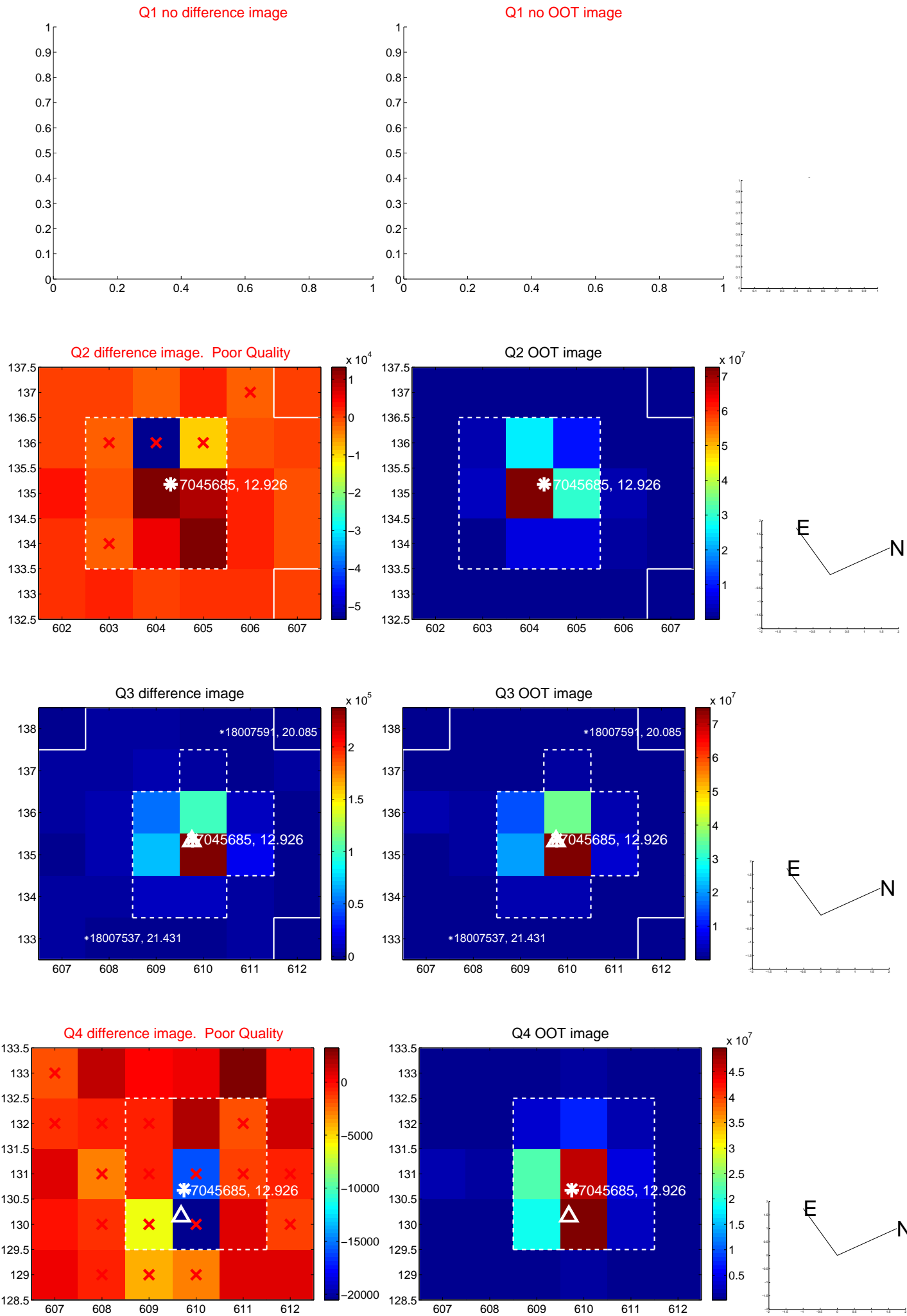
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.052 ± 0.140	0.37	0.050 ± 0.162	-0.016 ± 0.152
PRF-fit source offset from KIC position	0.106 ± 0.197	0.54	-0.051 ± 0.166	-0.093 ± 0.167
photometric centroid source offset	0.24 ± 0.09	2.83	-0.02 ± 0.08	-0.24 ± 0.09

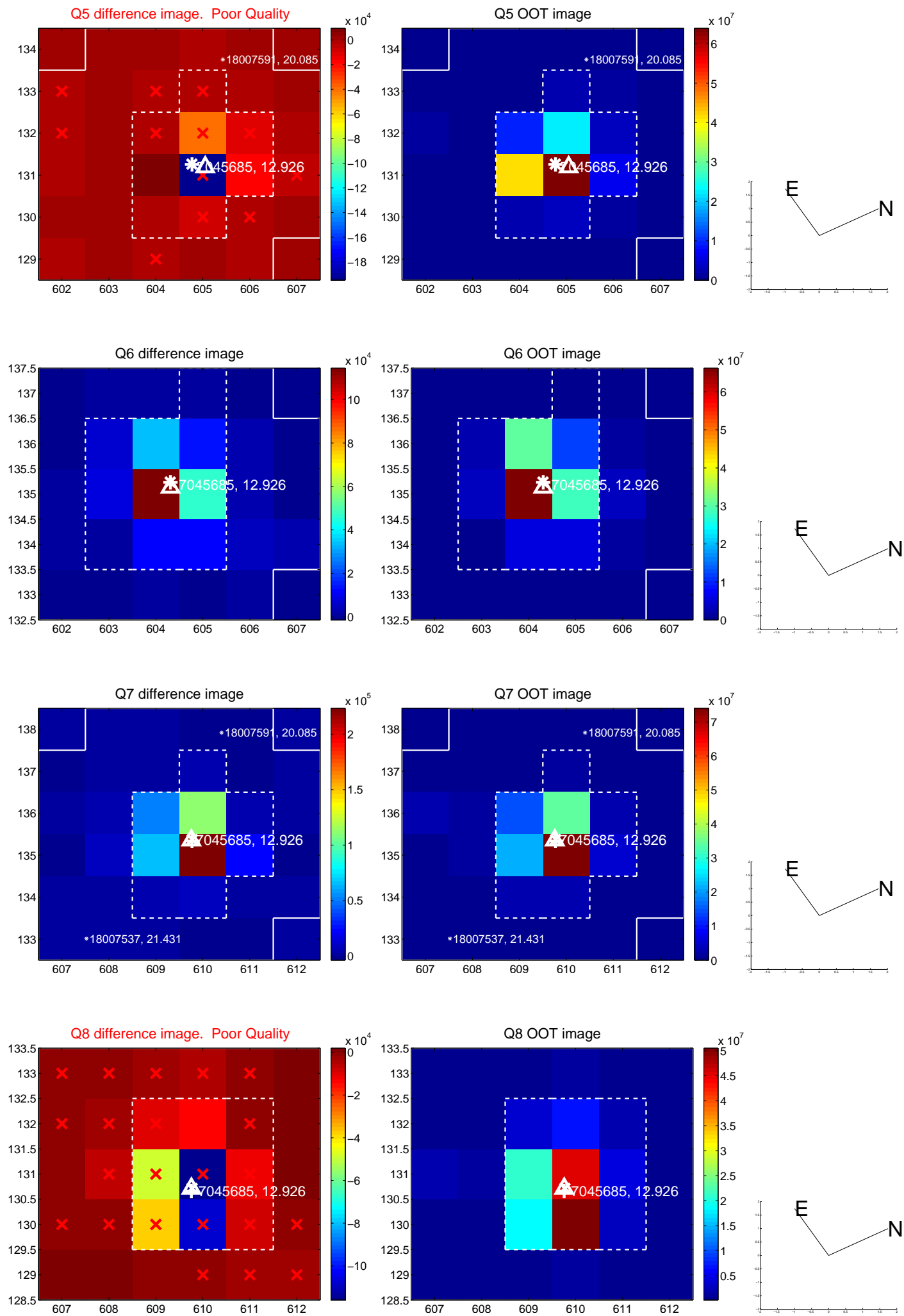


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

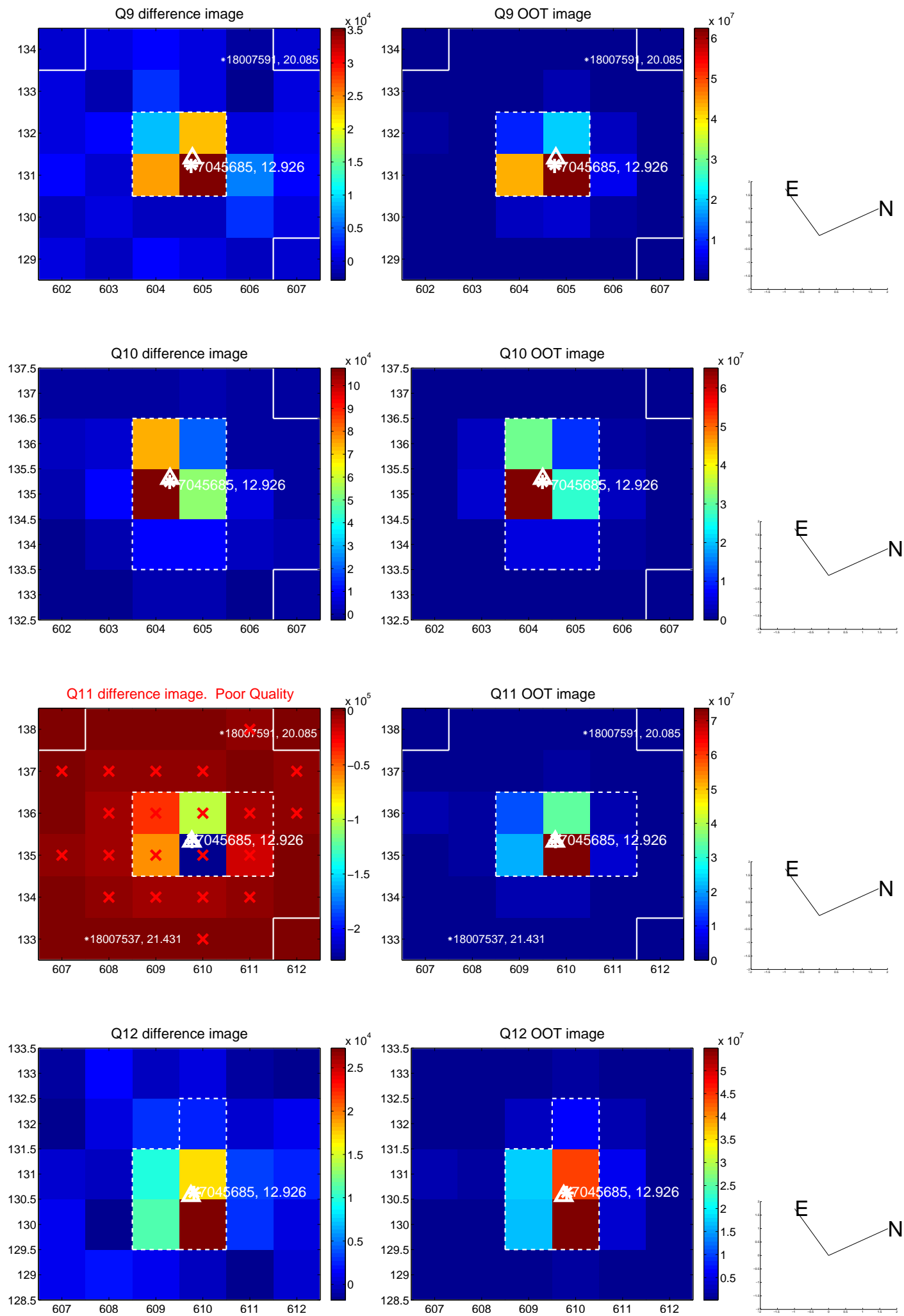
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



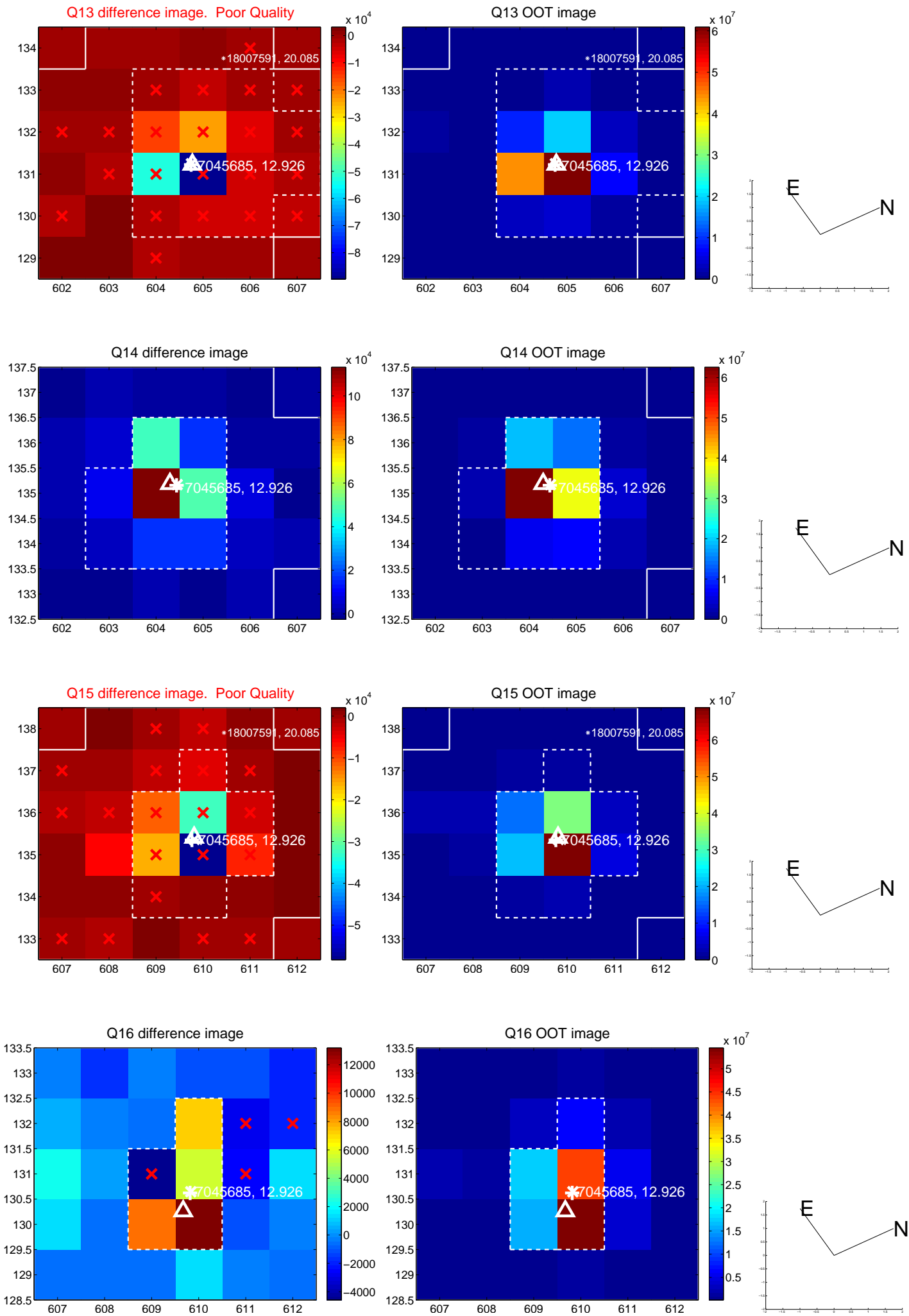
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



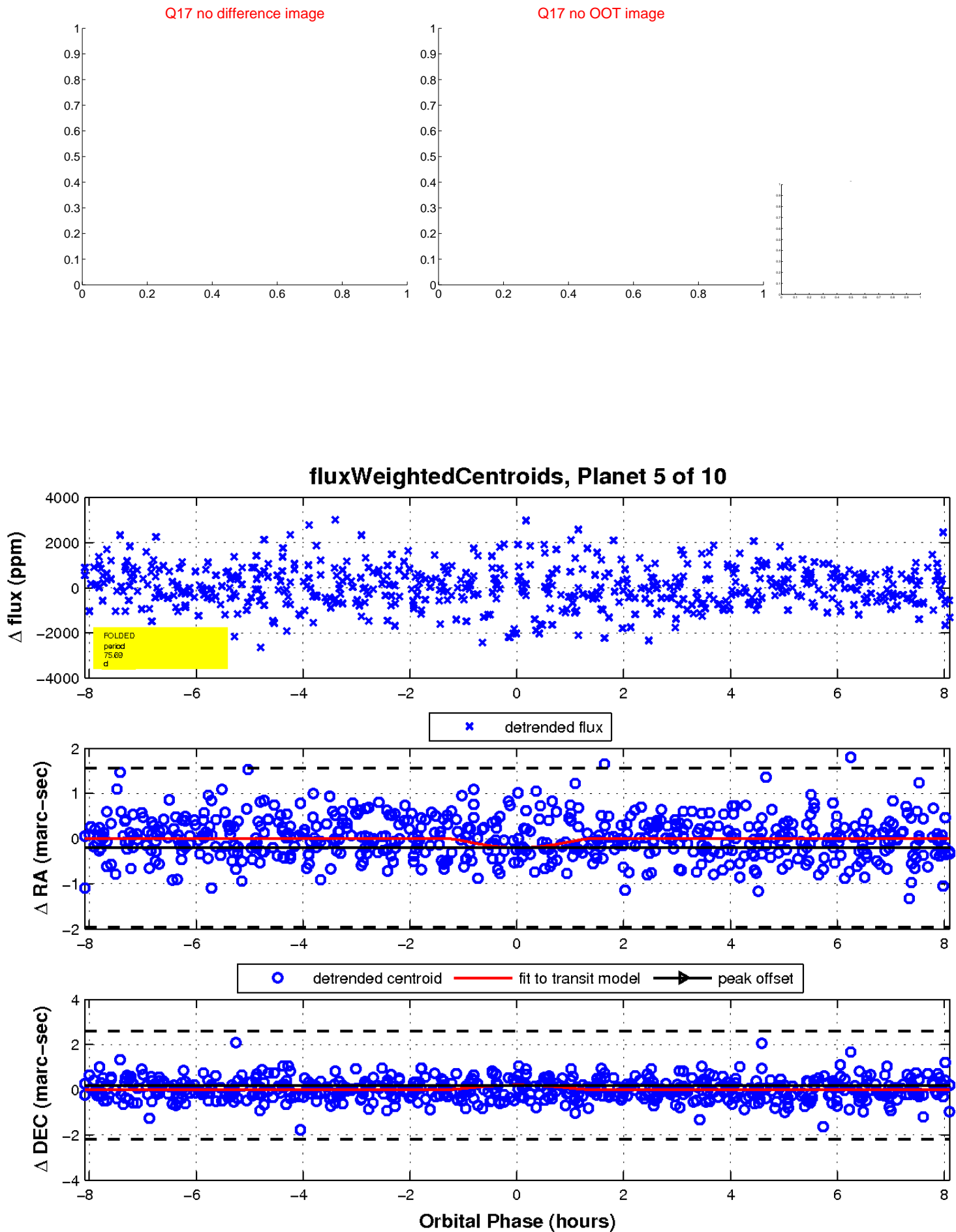
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



02.0 01.0 19:41:00.0 59.0 40:58.0

1:10.0 50.042:32:00.0

Declination

KIC 007045685

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})
007045685-01	OBS	No	1.653417	132.923690	120.1	10.128	8.7	10.5	1.38	6817	1.54	3964.79
007045685-02	OBS	No	114.573642	217.561224	3135.8	4.695	13.5	12.3	1.38	6817	14.07	13.93
007045685-03	OBS	No	82.752815	138.657120	2226.3	3.195	11.1	10.5	1.38	6817	11.12	21.50
007045685-04	OBS	No	91.982205	145.135948	1459.8	2.482	9.9	6.4	1.38	6817	5.62	18.67
007045685-05	OBS	No	75.690770	165.957500	2136.9	2.707	9.6	10.8	1.38	6817	9.50	24.21
007045685-06	OBS	No	156.566147	269.757548	2240.7	3.006	9.0	9.9	1.38	6817	7.97	9.19
007045685-08	OBS	No	52.127694	144.577139	1090.1	3.932	8.8	8.1	1.38	6817	4.99	39.81
007045685-09	OBS	No	25.396197	140.340251	853.5	2.804	8.3	8.8	1.38	6817	4.30	103.84
007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

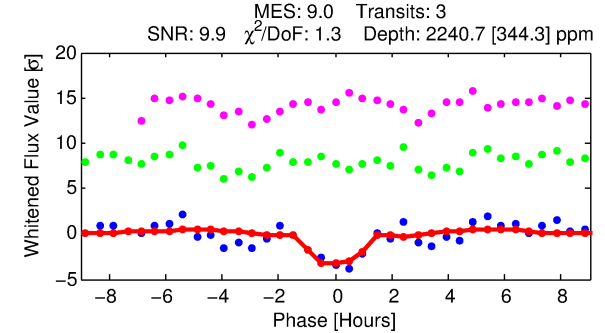
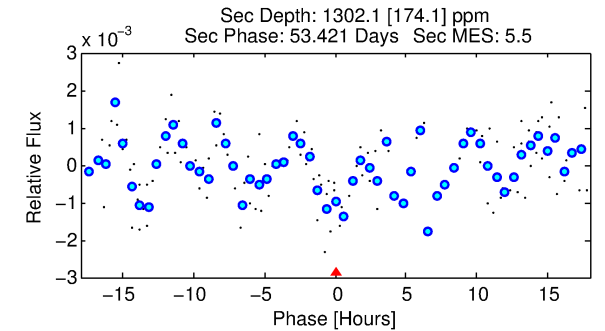
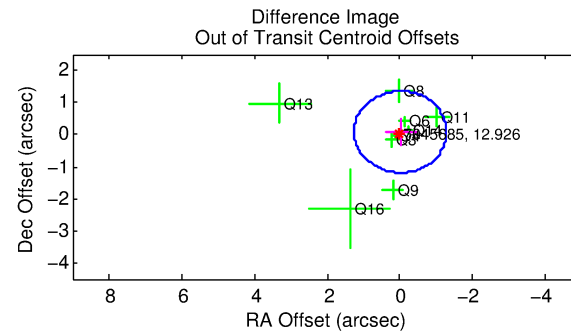
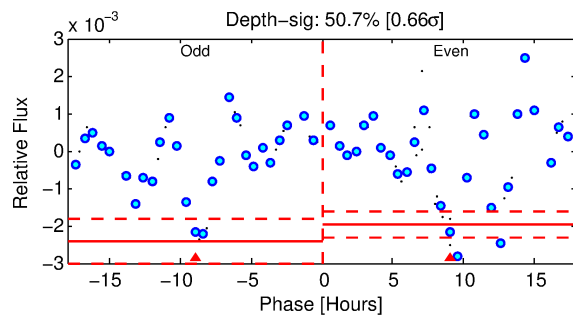
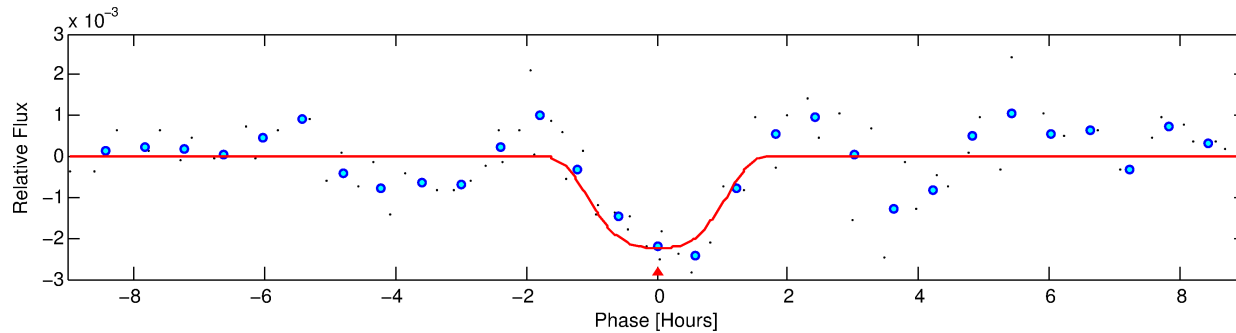
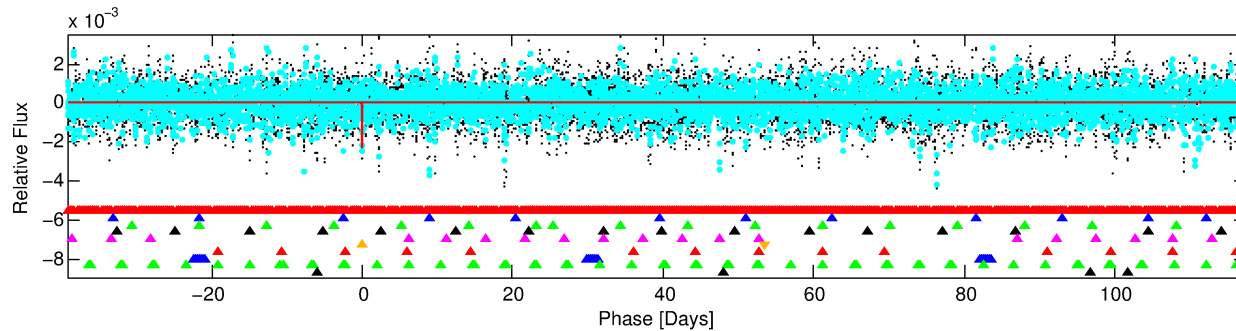
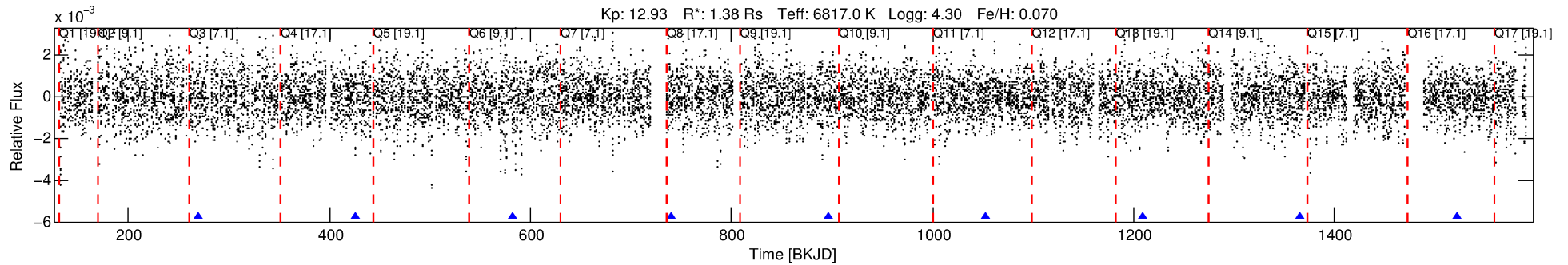
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-06

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 6 of 10 Period: 156.566 d



DV Fit Results:

Period = 156.56615 [0.00226] d
Epoch = 269.7575 [0.0098] BKJD
Rp/R* = 0.0529 [0.0056]
a/R* = 190.24 [43.42]
b = 0.94 [0.03]
Seff = 9.19 [4.04]
Teq = 444 [49] K
Rp = 7.97 [3.02] Re
a = 0.6338 [0.1864] AU
Ag = 4528.10 [2179.20] [2.08σ]
Teffp = 5630 [412] K [12.50σ]

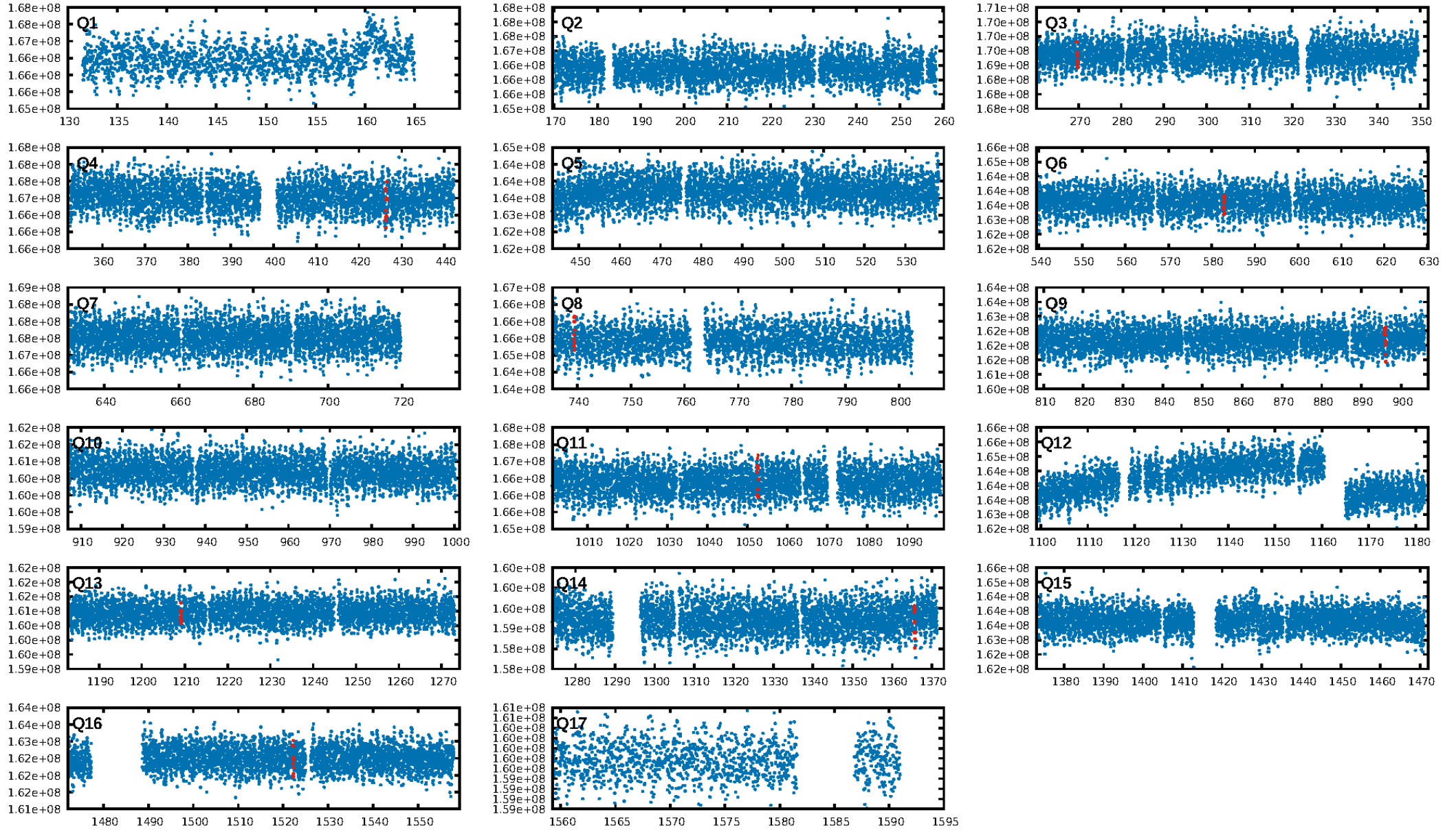
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [180.78σ]
LongPeriod-sig: 100.0% [1085.45σ]
ModelChiSquare2-sig: 49.5%
ModelChiSquareGof-sig: 99.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.48
Centroid-sig: 8.1%
Centroid-so: 0.280 arcsec [2.76σ]
OotOffset-rm: 0.083 arcsec [0.20σ]
KicOffset-rm: 0.070 arcsec [0.20σ]
OotOffset-st: 2/2/3/2 [9]
KicOffset-st: 2/2/3/2 [9]
DiffImageQuality-fgm: 0.78 [7/9]
DiffImageOverlap-fno: 0.33 [3/9]

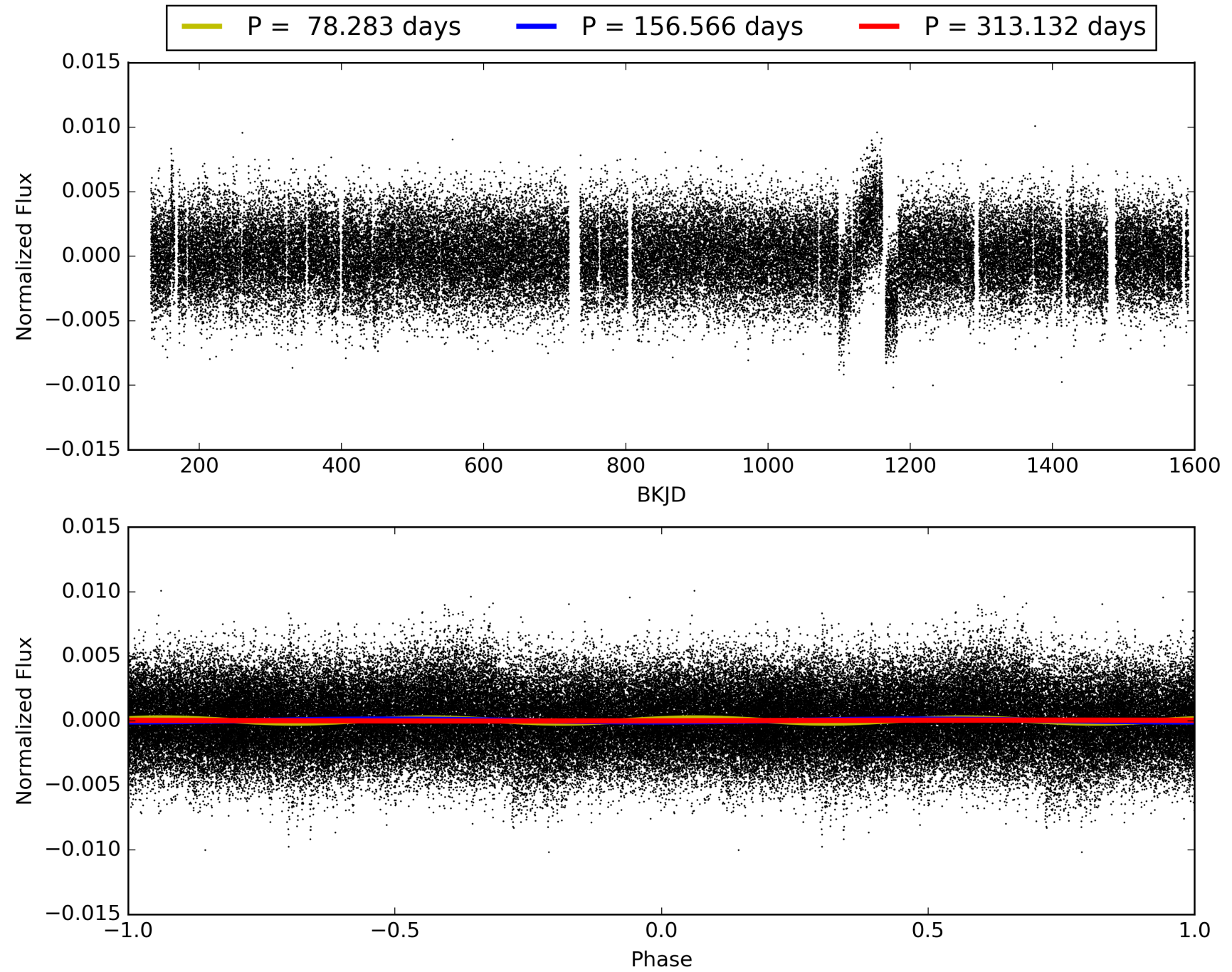
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:45:45 Z

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

TCE 007045685-06, PDC Light Curves

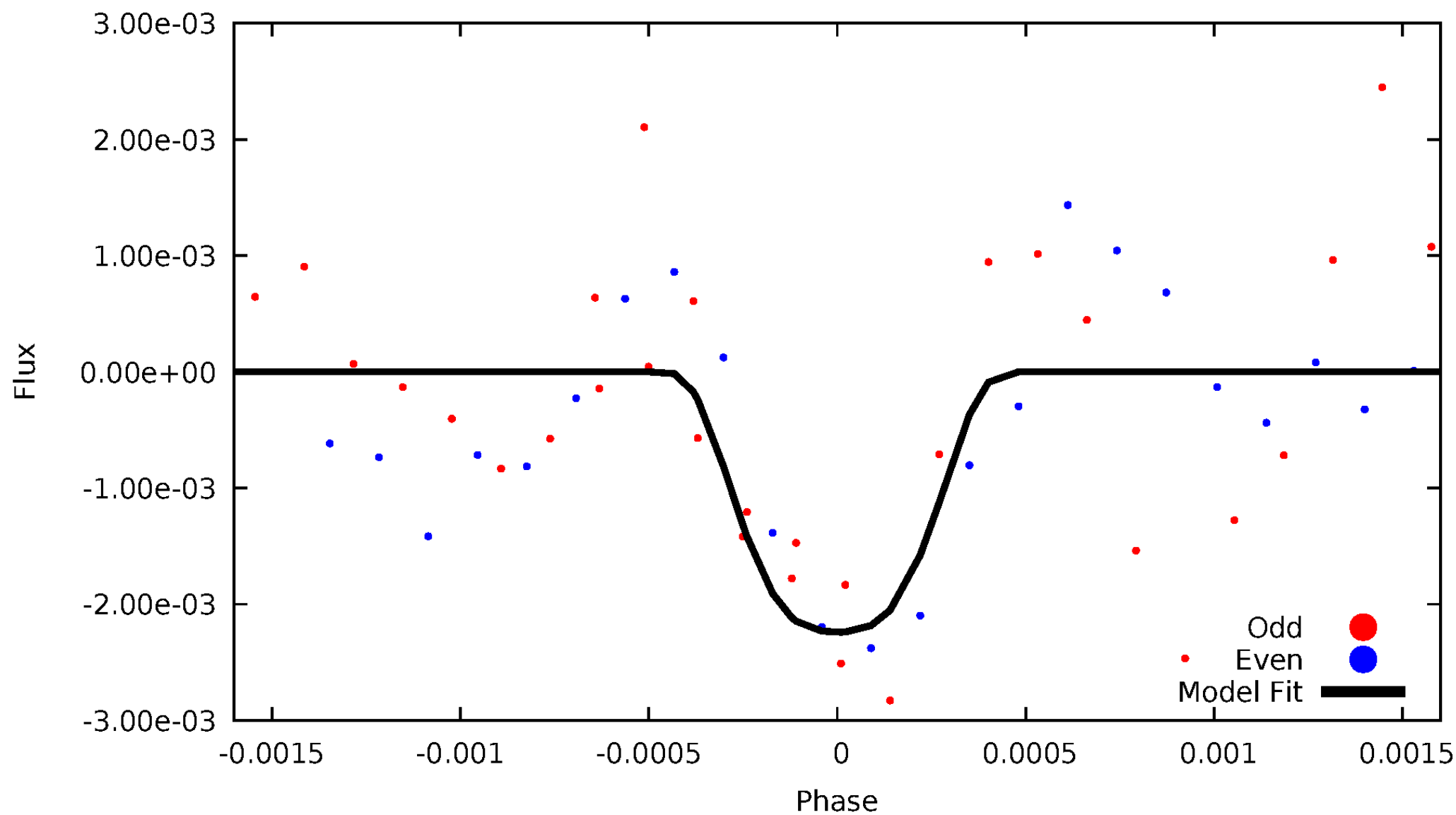


TCE 007045685-06



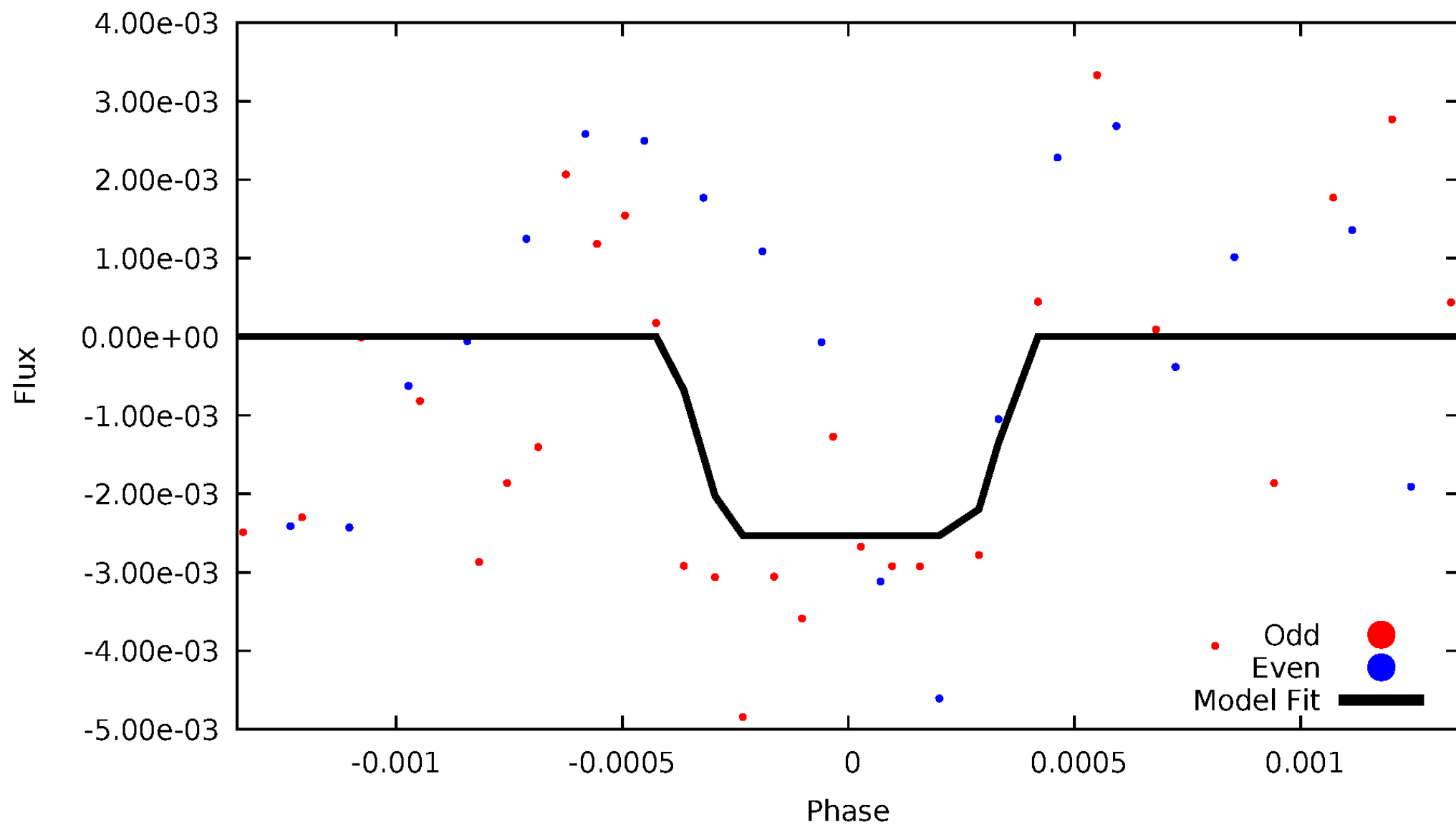
DV Odd/Even

TCE 007045685-06



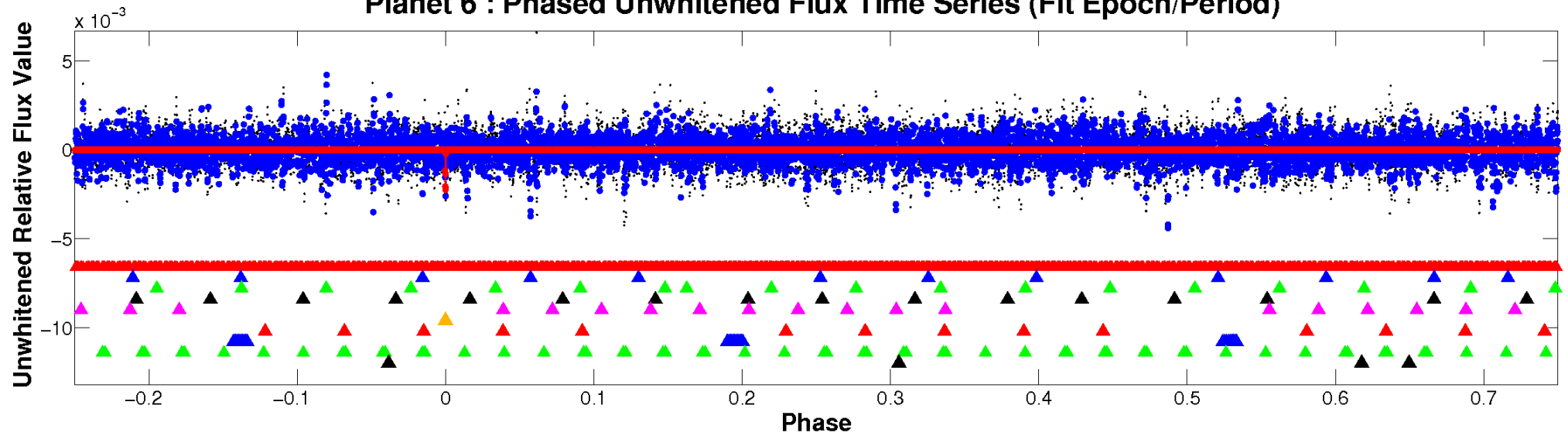
ALT Odd/Even

TCE 007045685-06

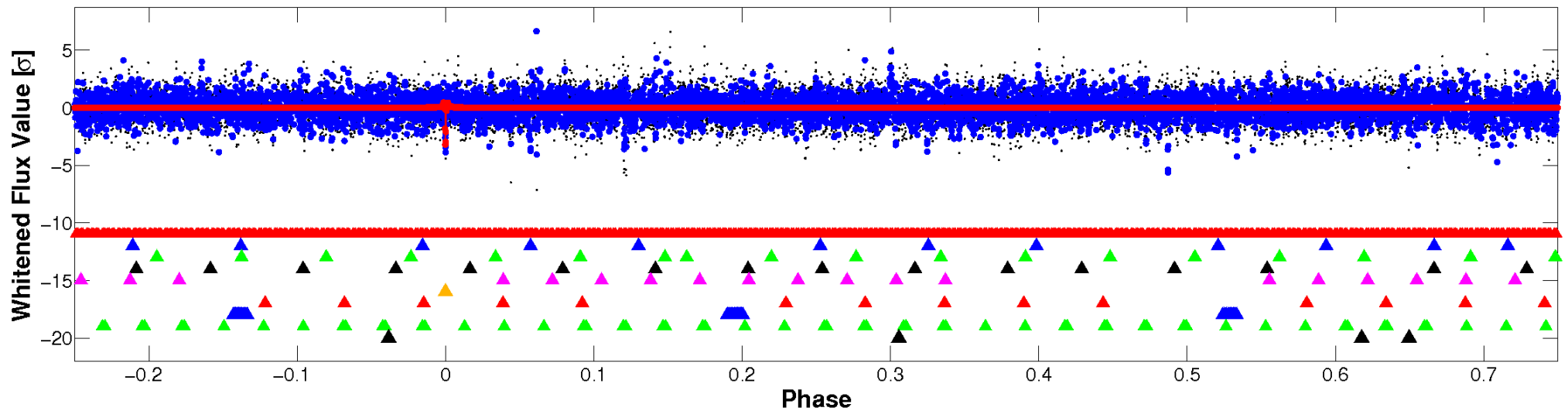


Non-Whitened Vs. Whitened Light Curve

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

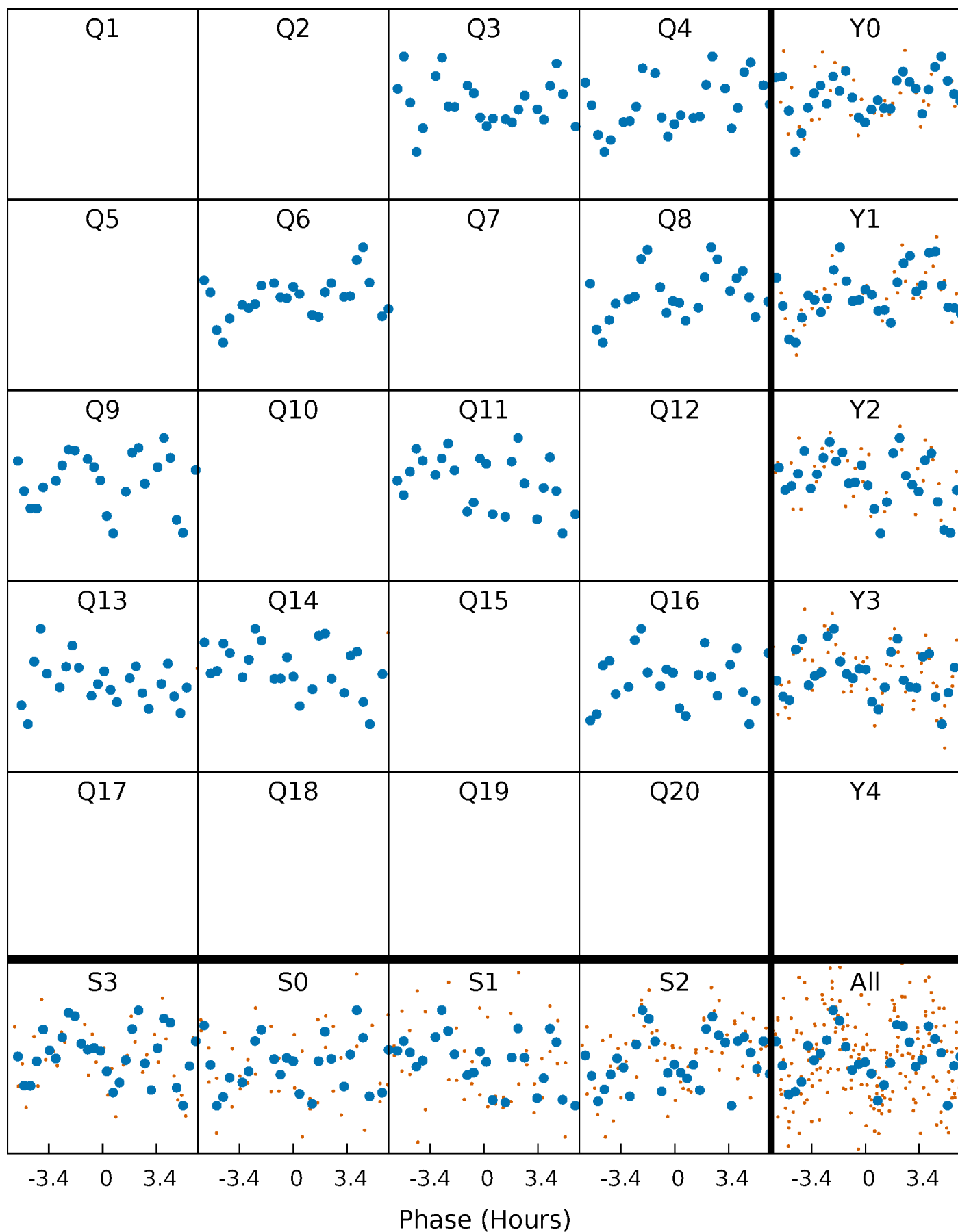


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



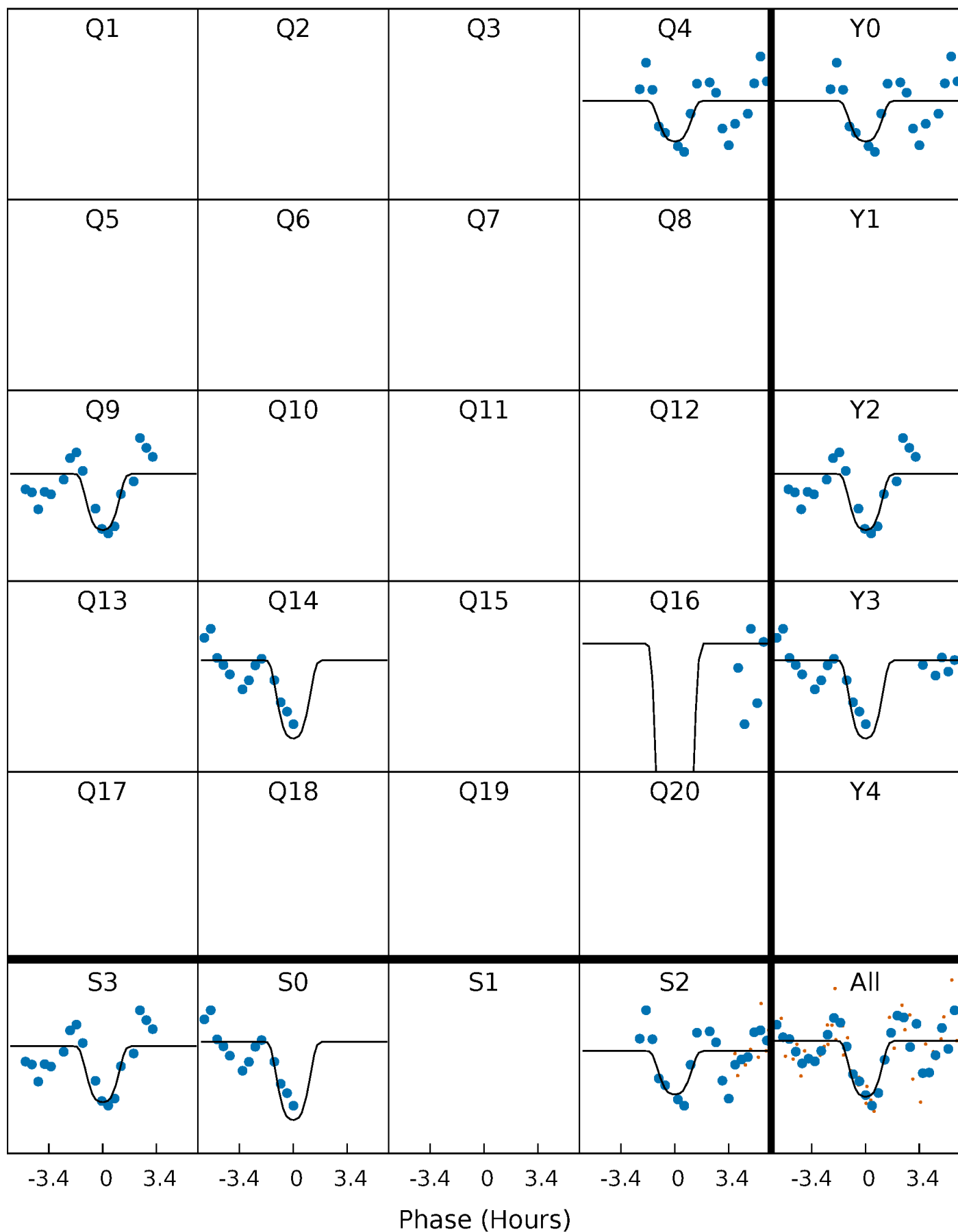
PDC Quarter-Phased Transit Curves

TCE 007045685-06 P=156.566147 Days $T_0=269.757548$ (BKJD)



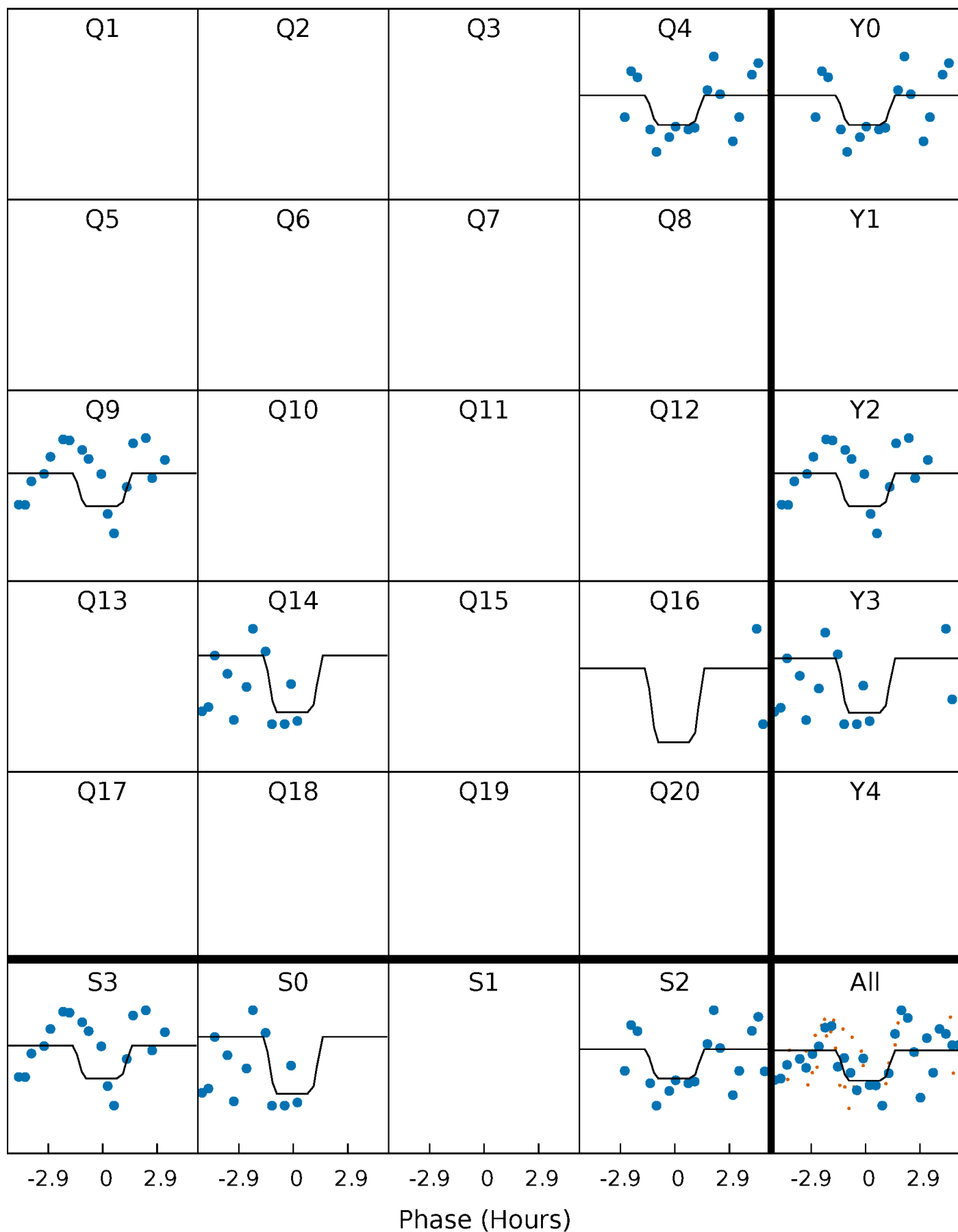
DV Quarter-Phased Transit Curves

TCE 007045685-06 P=156.566147 Days $T_0=269.757548$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

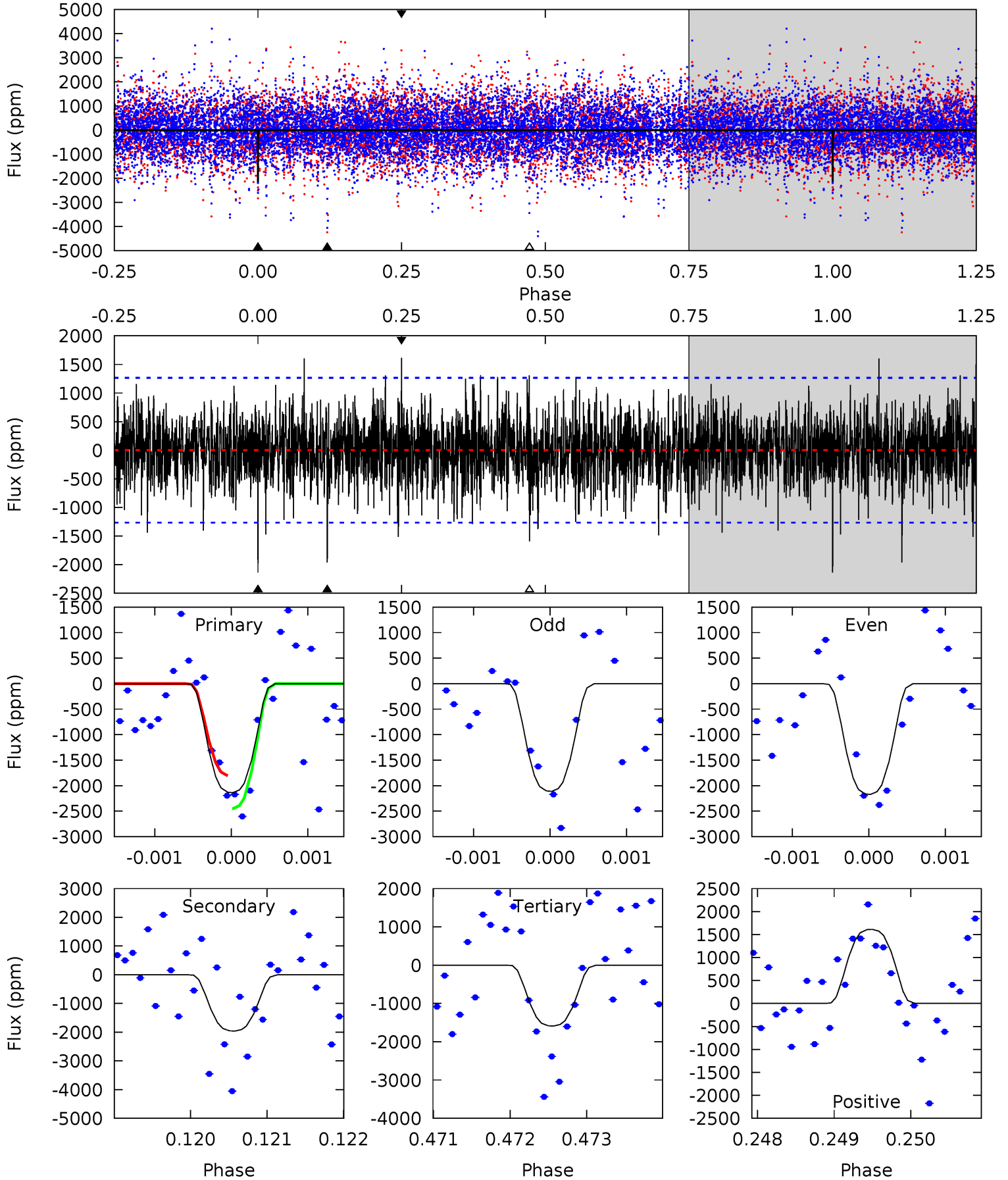
TCE 007045685-06 P=156.561252 Days $T_0=269.780052$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-06, P = 156.566147 Days, E = 113.191401 Days

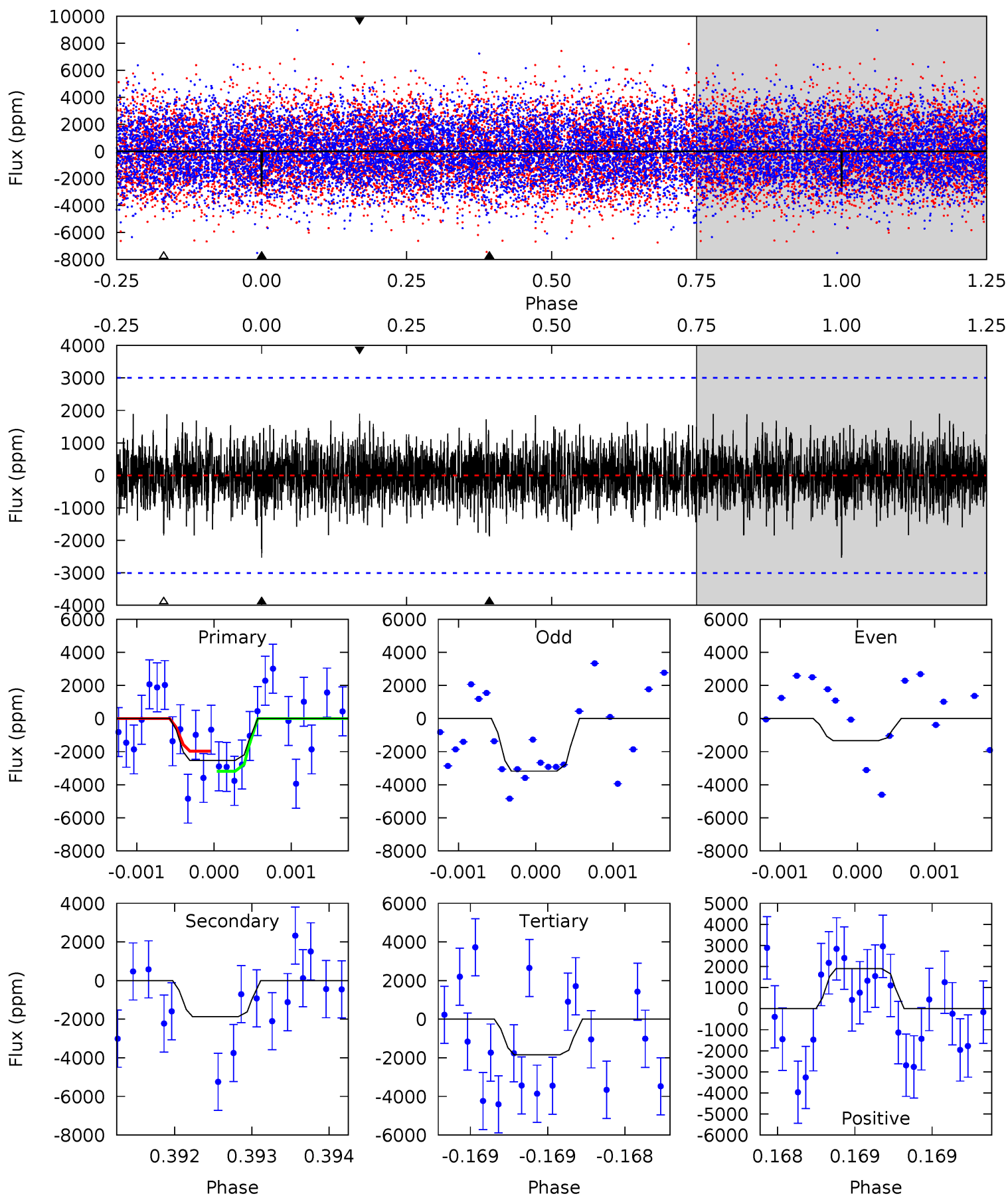
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.27	8.50	6.89	7.00	5.48	3.34	1.80	2.37	2.27	1.61	1.50	0.13	0.96	0.43	1.39



Alt Model-Shift Uniqueness Test

007045685-06, P = 156.561252 Days, E = 113.218800 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.63	3.43	3.38	3.48	5.50	3.37	1.01	1.25	1.15	0.05	-0.05	1.62	0.95	0.43	1.11



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1960 ± 231	$8.26^{+1.67}_{-1.20}$	630^{+52}_{-33}	6192^{+426}_{-413}	6131^{+2320}_{-1785}
Alt.	-1875 ± 546	$7.86^{+1.64}_{-1.21}$	631^{+48}_{-38}	6255^{+631}_{-634}	6418^{+3134}_{-2563}

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 $A_{obs} \gg 1.0$

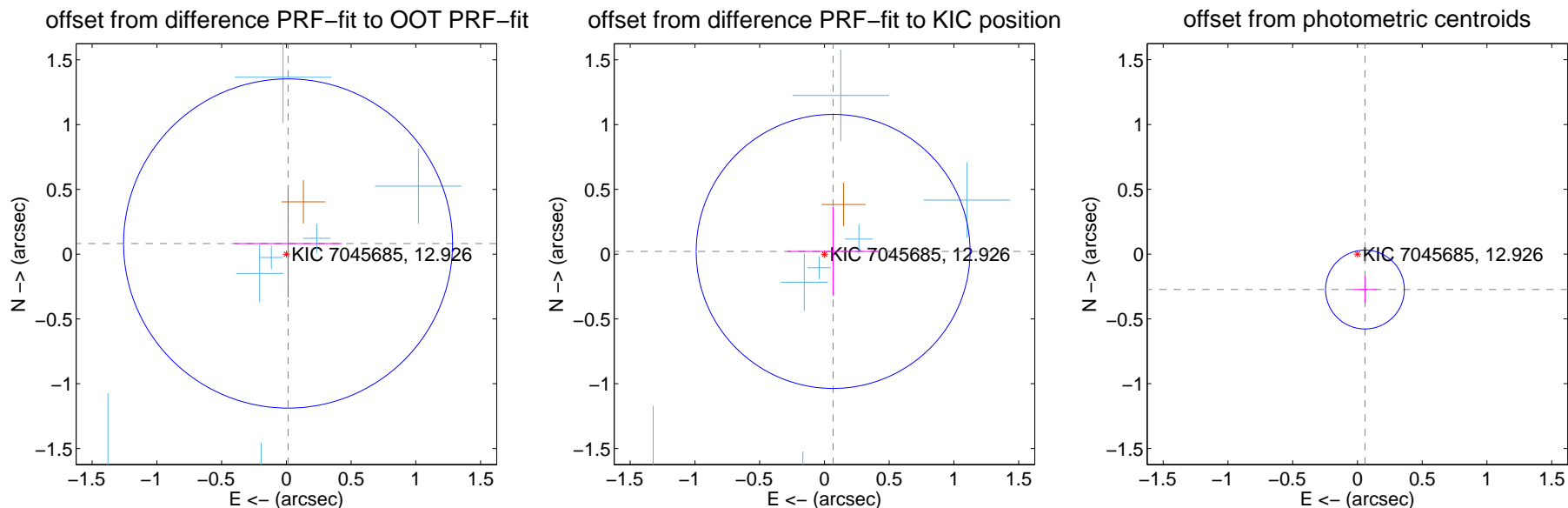
DV Centroid Data

Supplemental centroid analysis for 007045685-06. Kepler magnitude: 12.93. Transit SNR 9.91

There are 7 quarters with good PRF difference image offsets

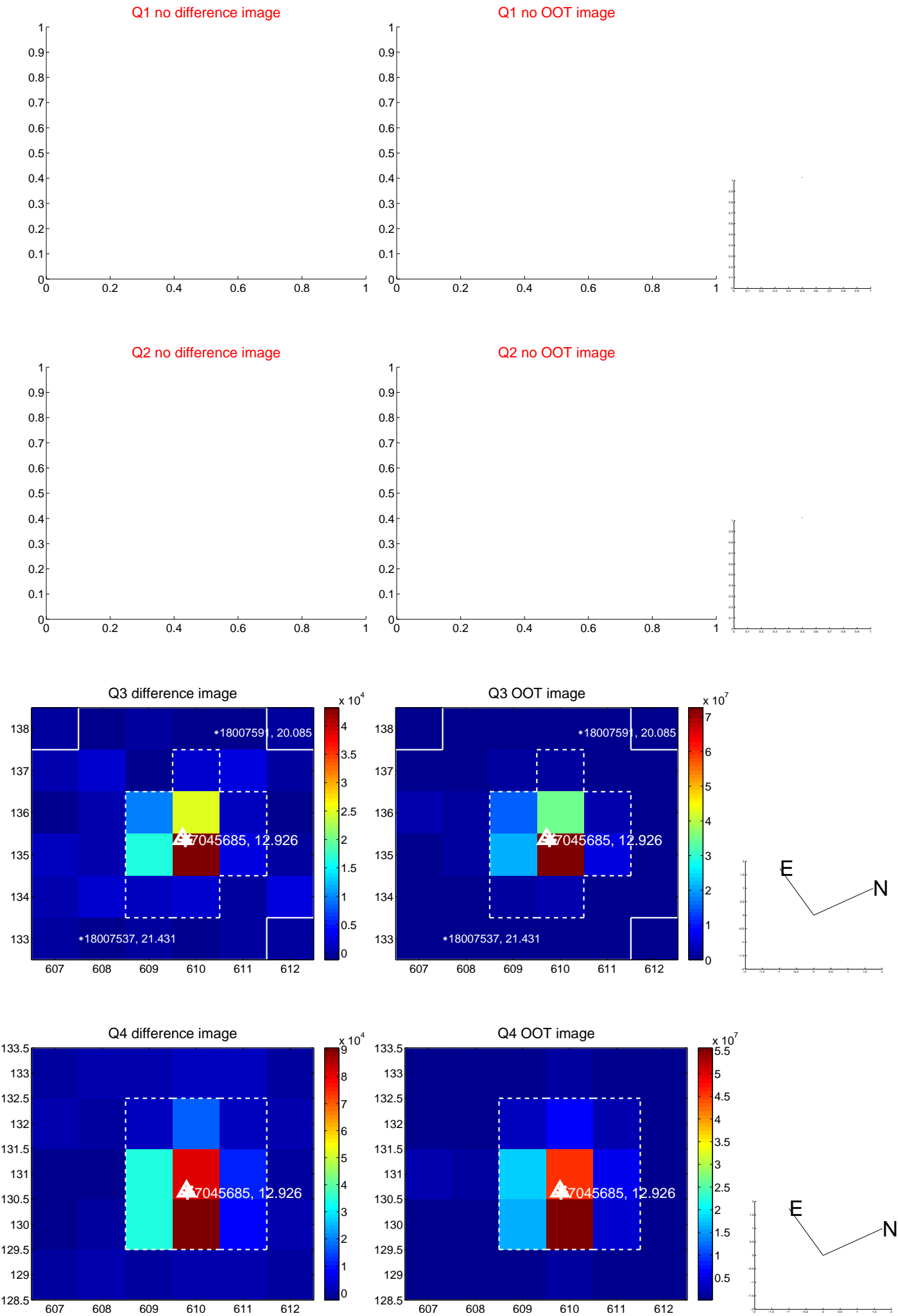
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.083 ± 0.423	0.20	-0.013 ± 0.414	0.082 ± 0.418
PRF-fit source offset from KIC position	0.070 ± 0.352	0.20	-0.067 ± 0.356	0.021 ± 0.342
photometric centroid source offset	0.28 ± 0.10	2.76	-0.06 ± 0.09	-0.27 ± 0.10

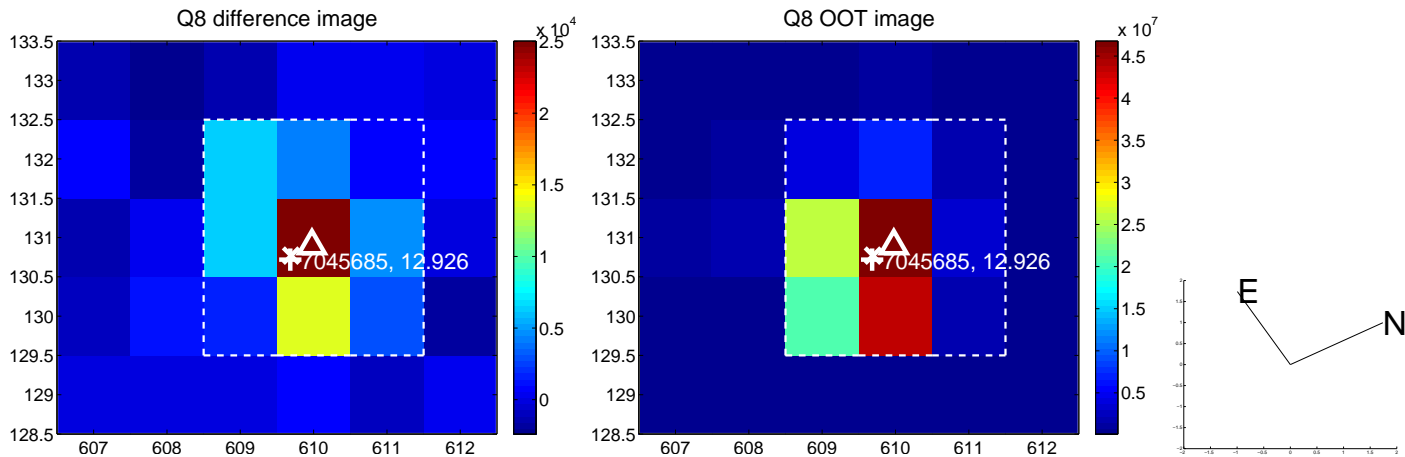
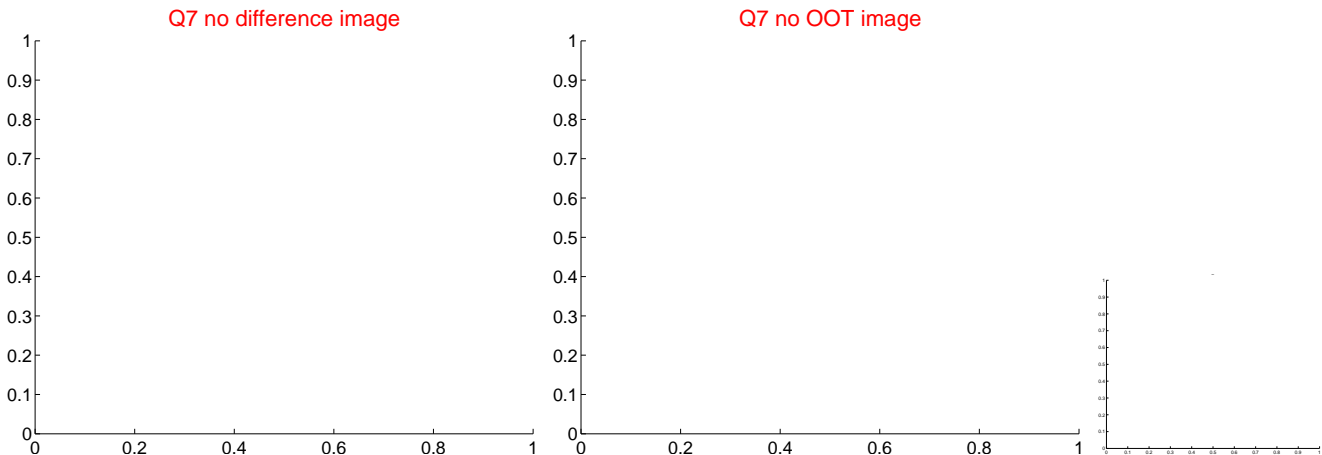
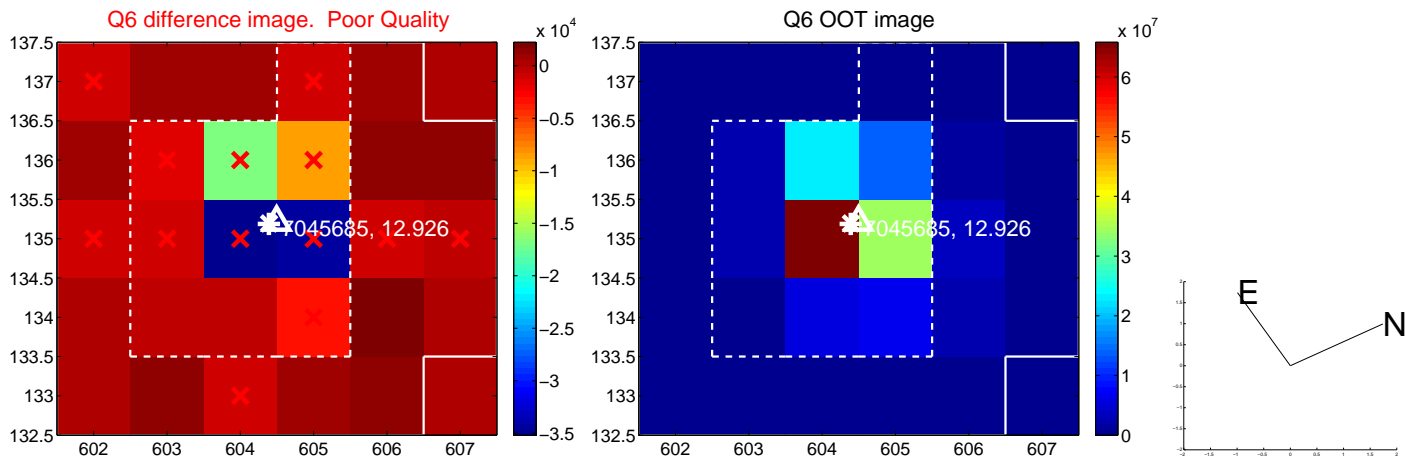
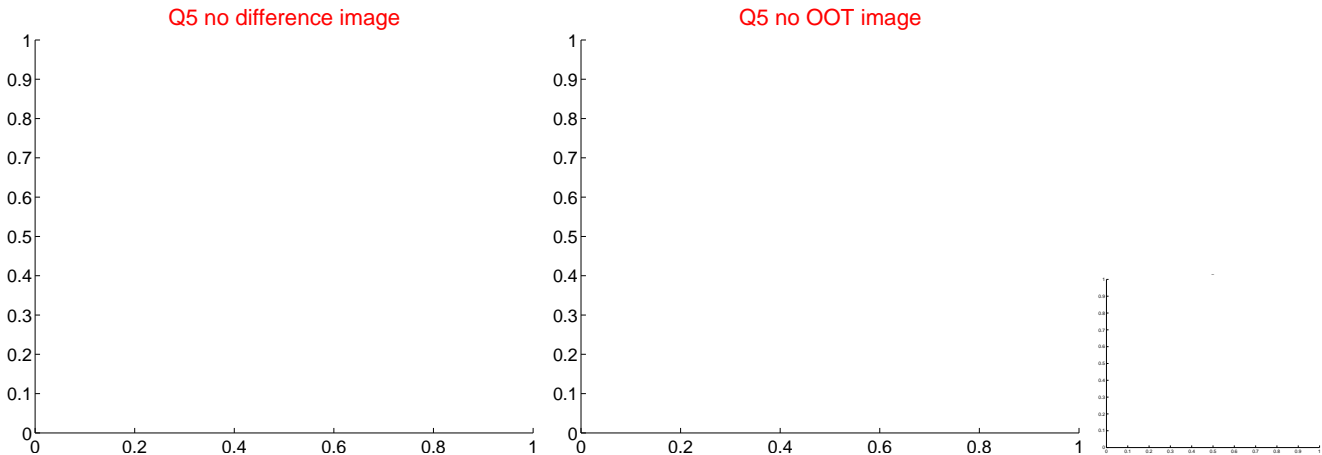


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

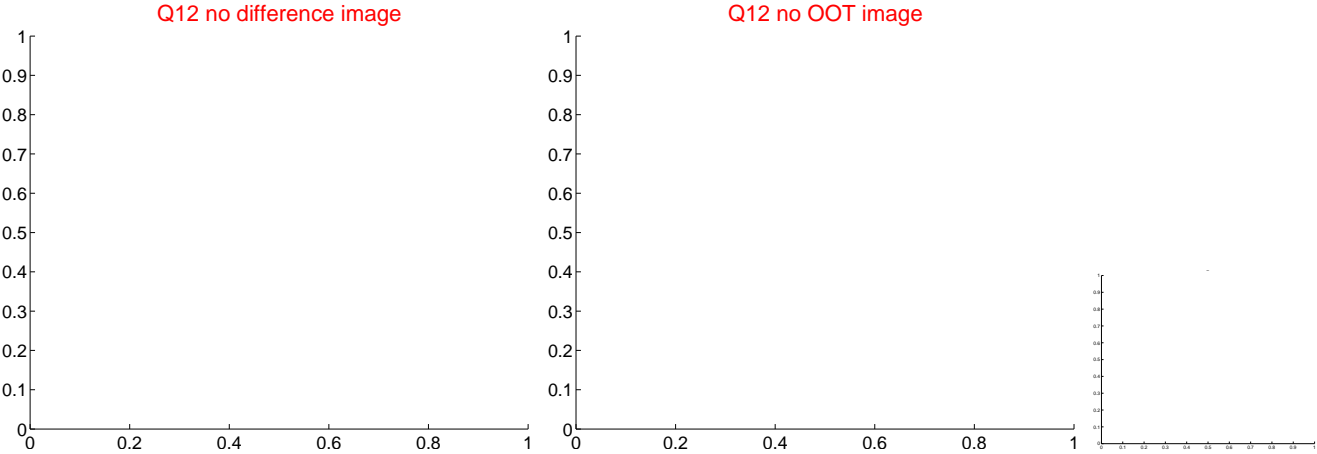
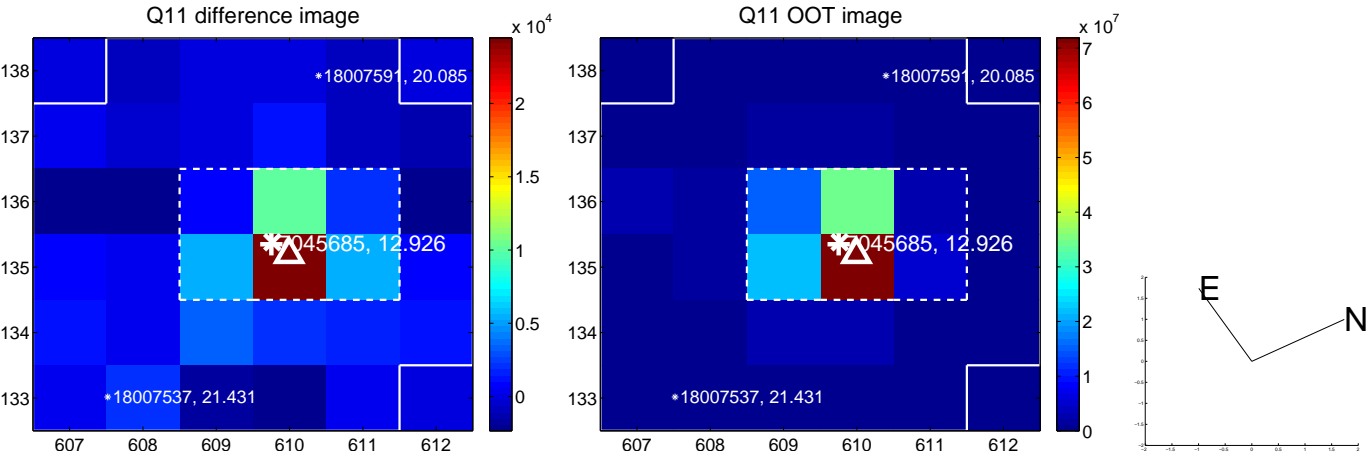
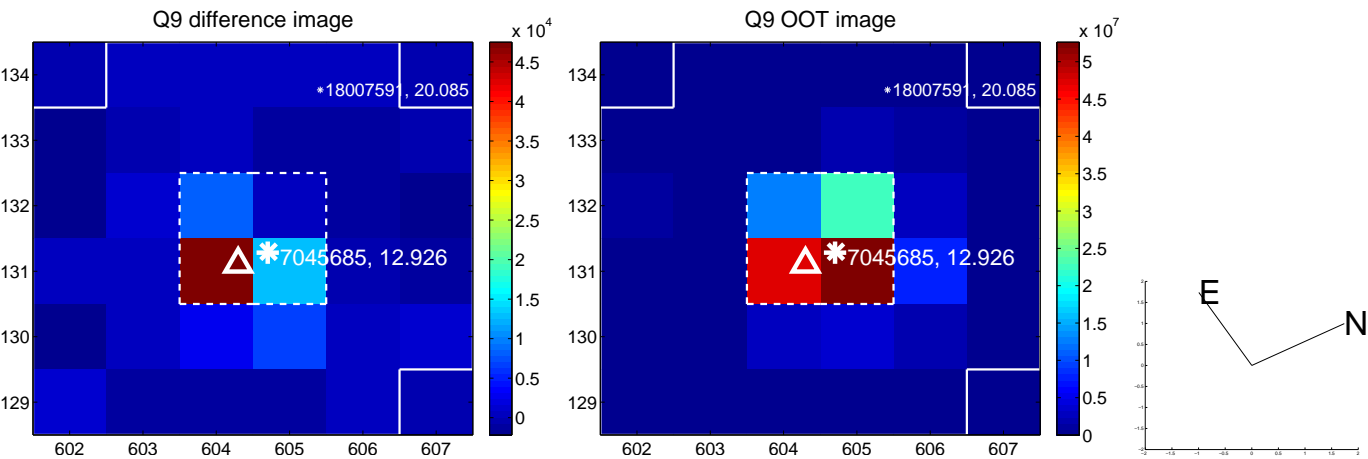
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



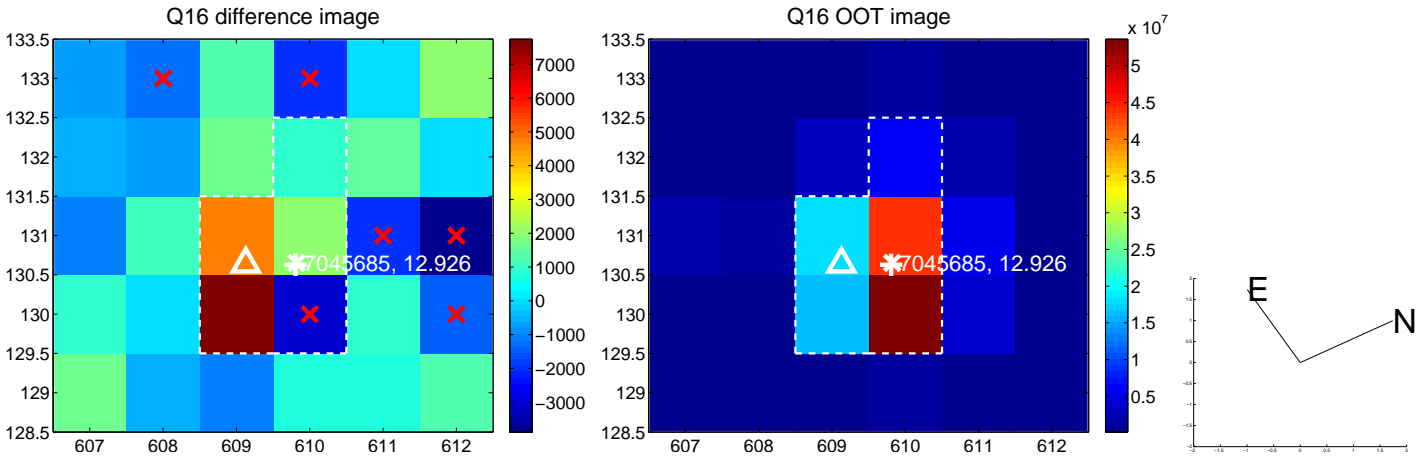
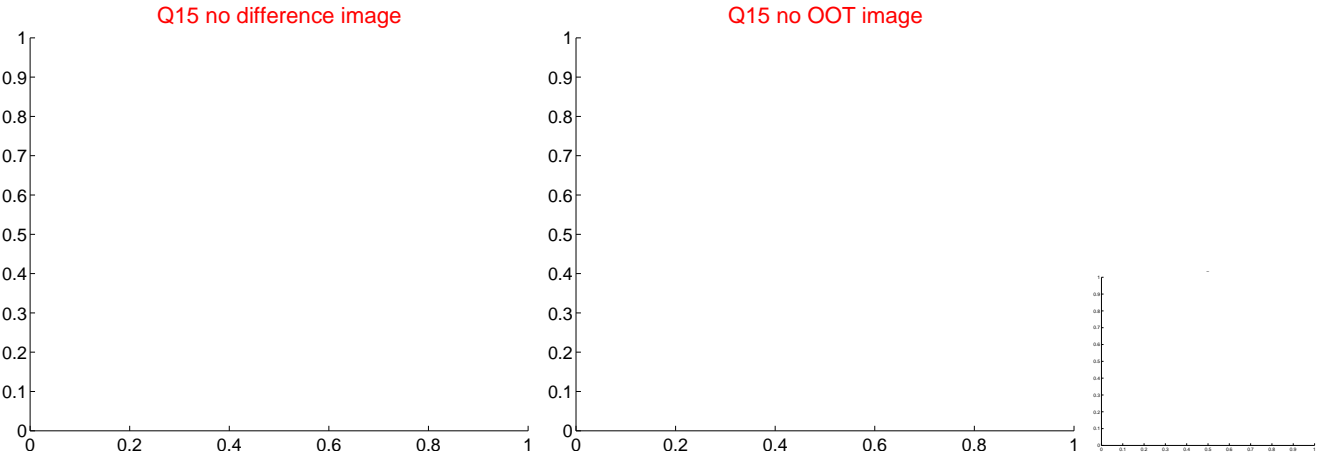
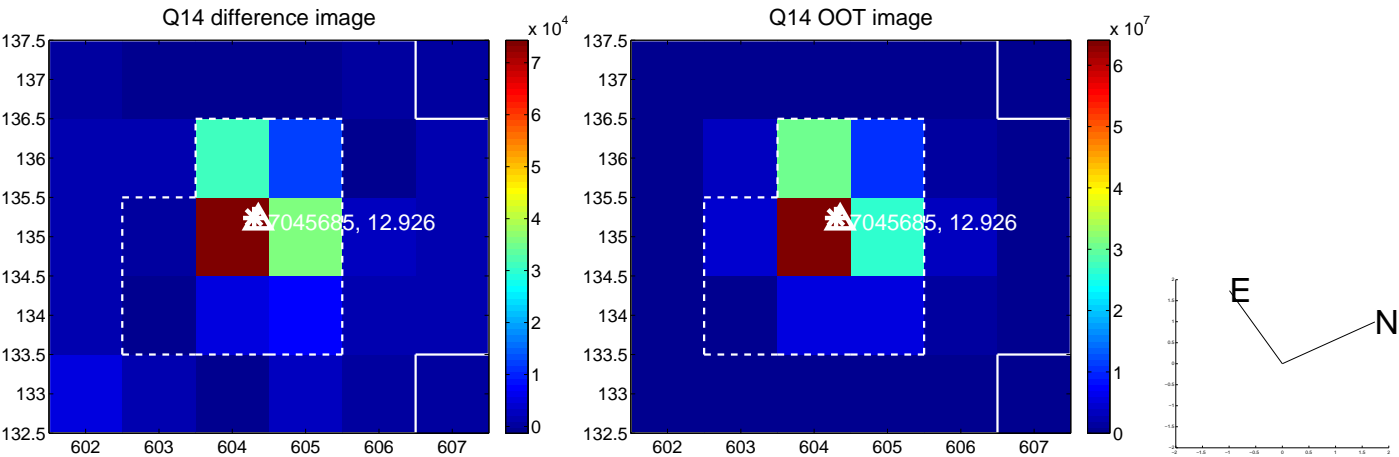
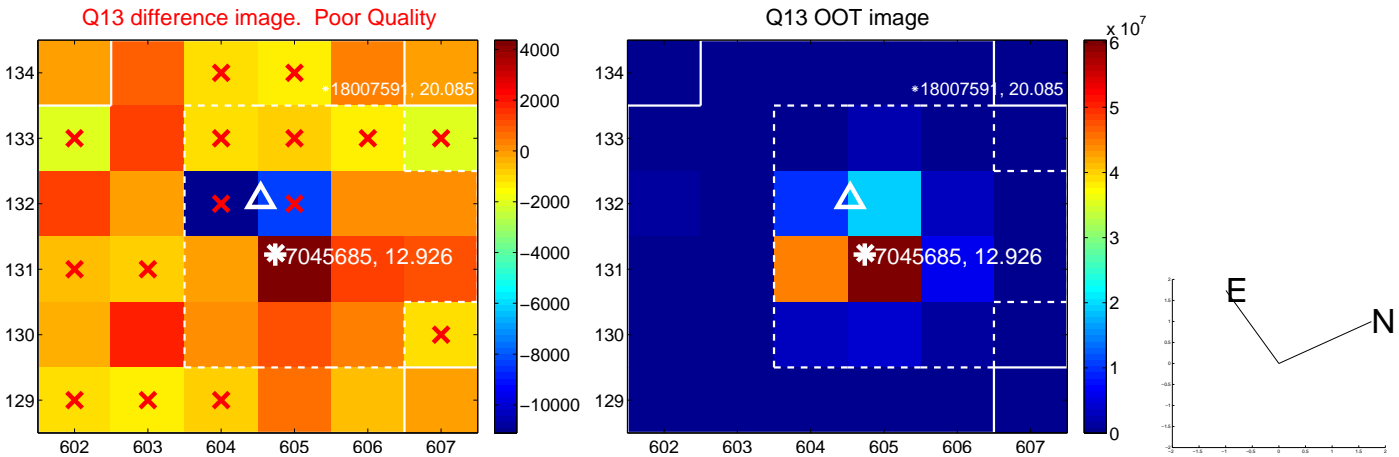
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



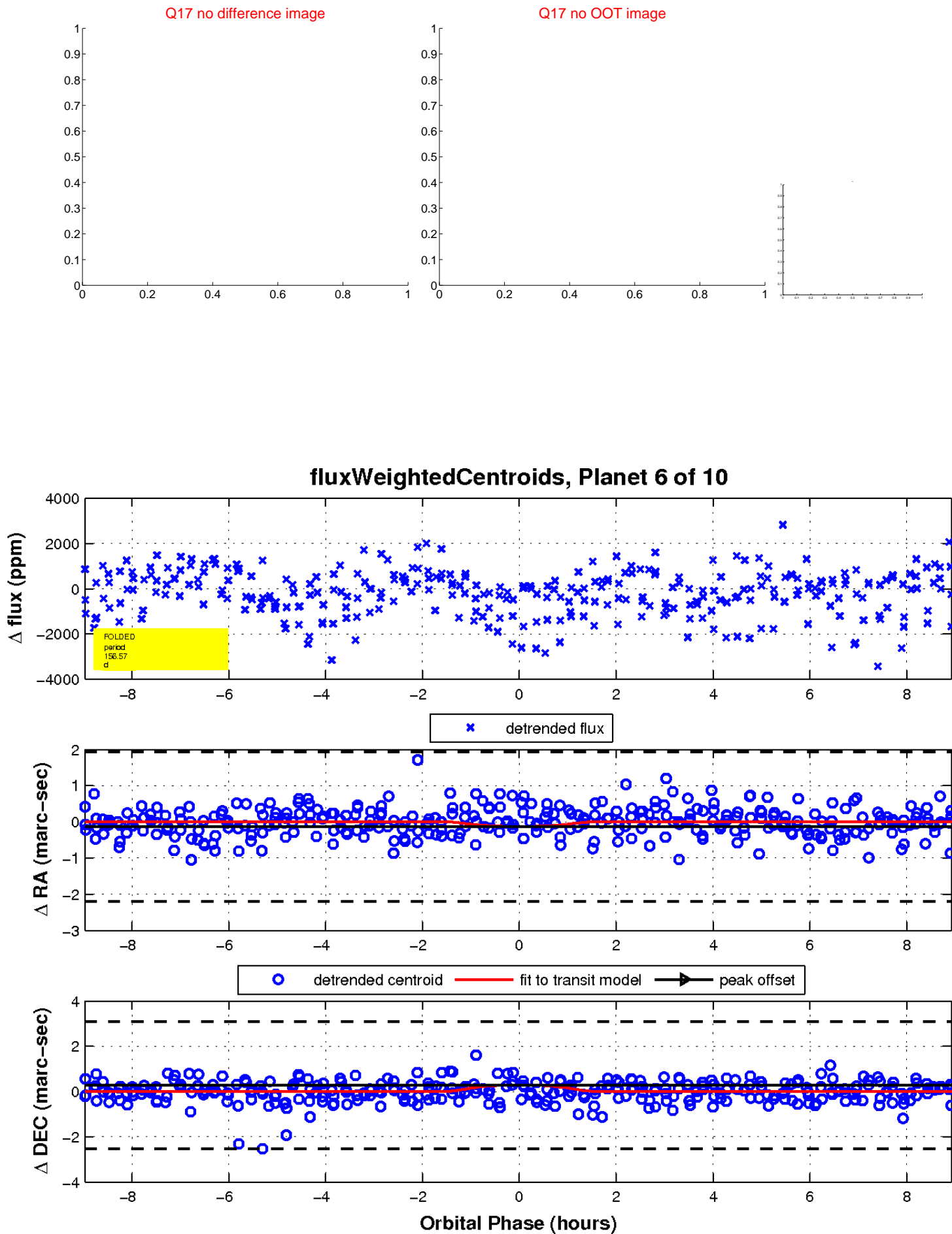
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

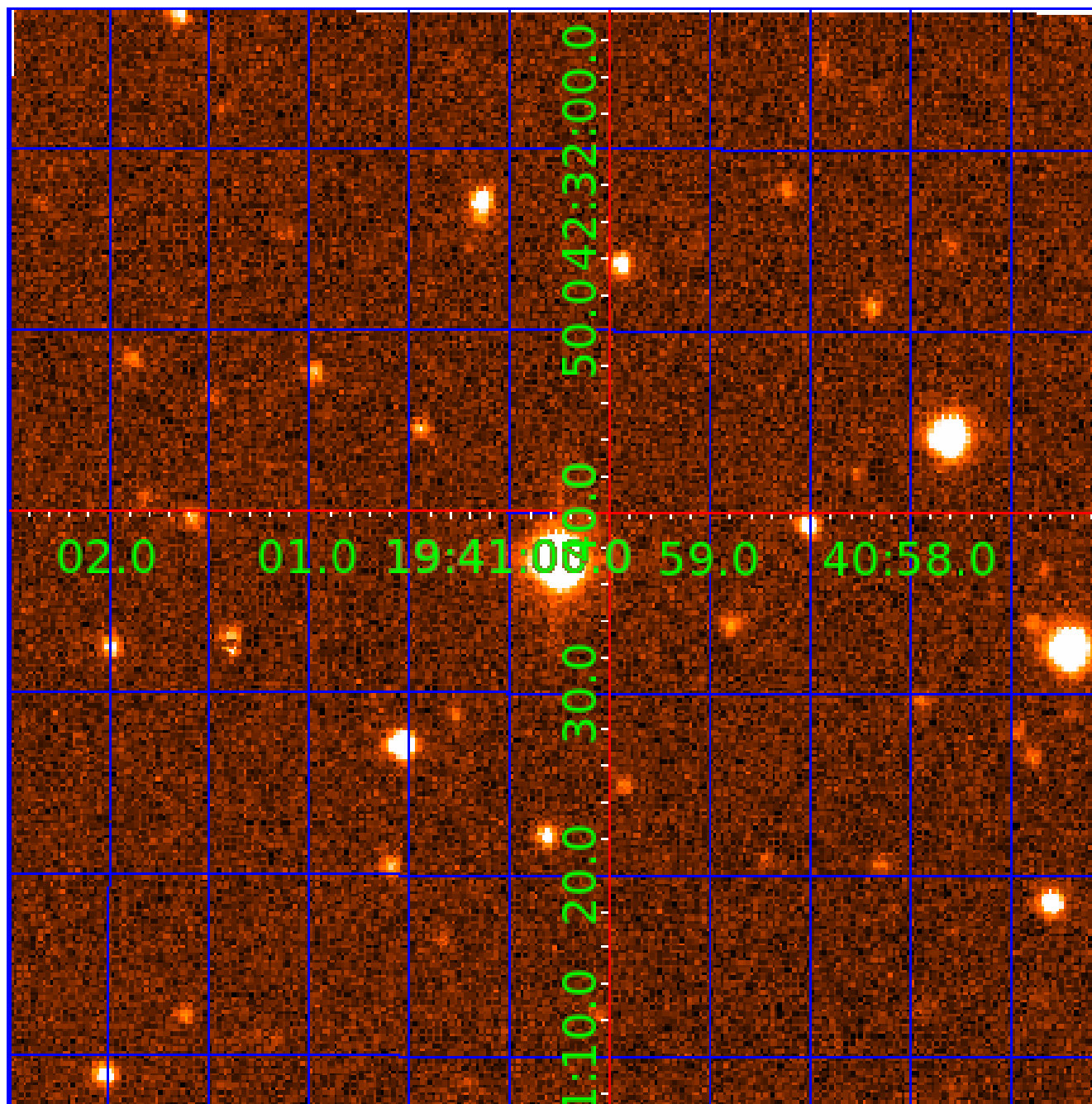


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007045685

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})
007045685-01	OBS	No	1.653417	132.923690	120.1	10.128	8.7	10.5	1.38	6817	1.54	3964.79
007045685-02	OBS	No	114.573642	217.561224	3135.8	4.695	13.5	12.3	1.38	6817	14.07	13.93
007045685-03	OBS	No	82.752815	138.657120	2226.3	3.195	11.1	10.5	1.38	6817	11.12	21.50
007045685-04	OBS	No	91.982205	145.135948	1459.8	2.482	9.9	6.4	1.38	6817	5.62	18.67
007045685-05	OBS	No	75.690770	165.957500	2136.9	2.707	9.6	10.8	1.38	6817	9.50	24.21
007045685-06	OBS	No	156.566147	269.757548	2240.7	3.006	9.0	9.9	1.38	6817	7.97	9.19
007045685-08	OBS	No	52.127694	144.577139	1090.1	3.932	8.8	8.1	1.38	6817	4.99	39.81
007045685-09	OBS	No	25.396197	140.340251	853.5	2.804	8.3	8.8	1.38	6817	4.30	103.84
007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

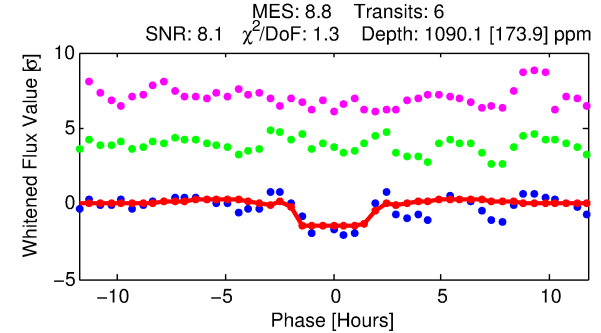
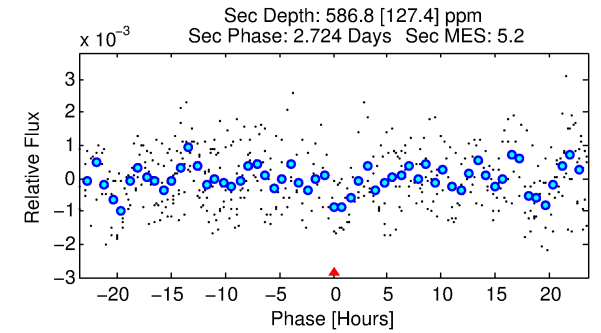
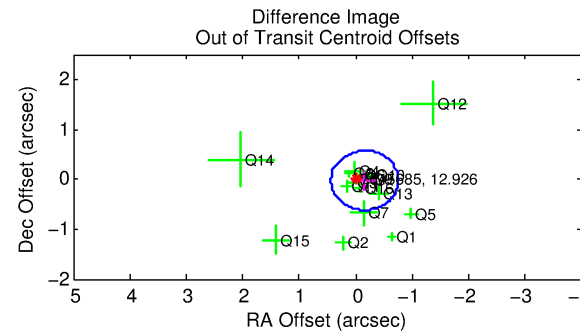
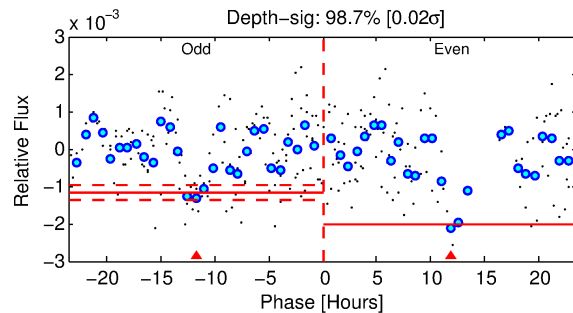
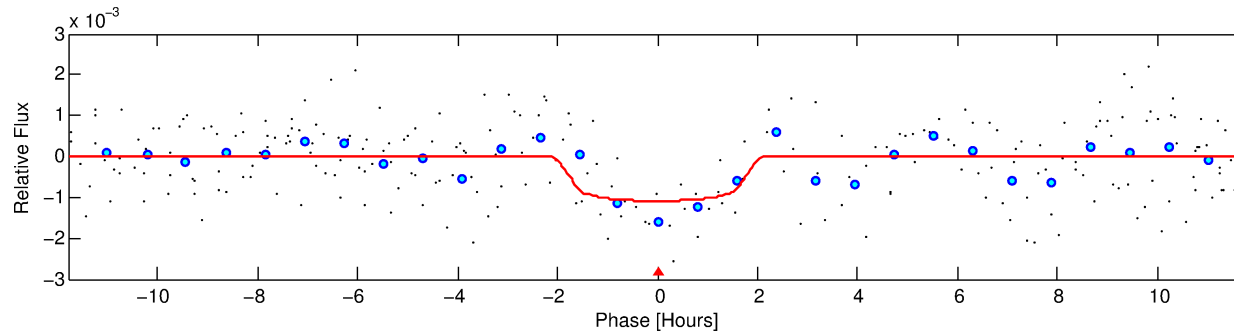
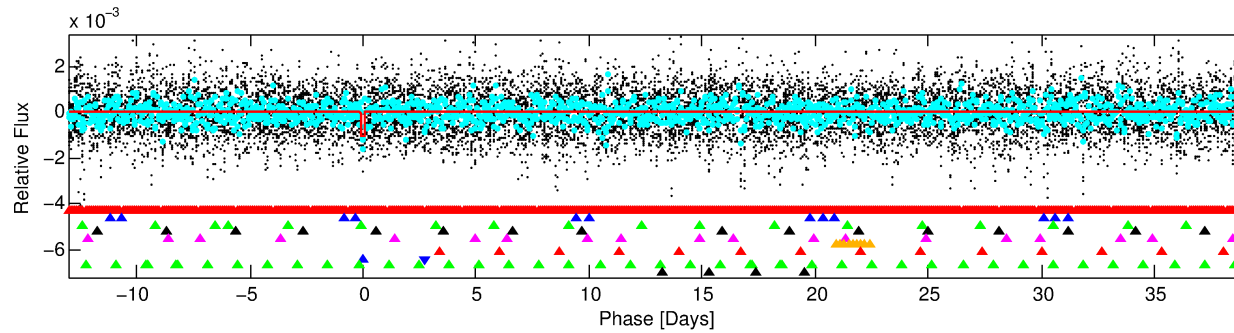
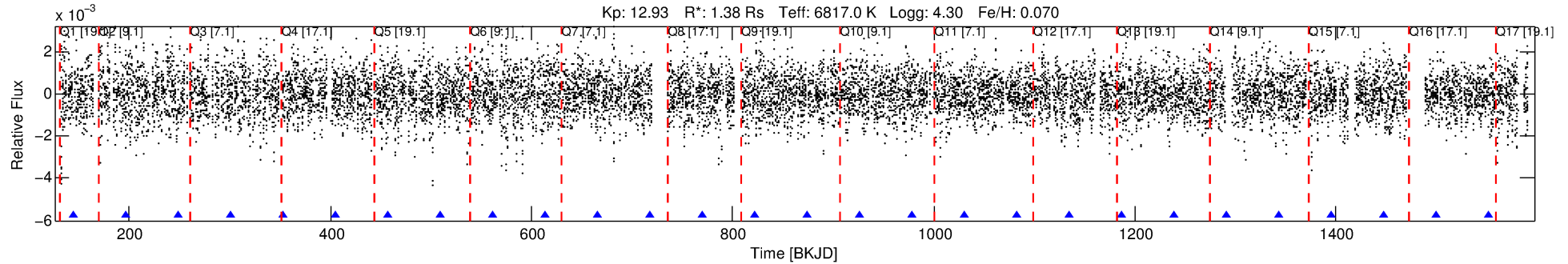
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-08

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 8 of 10 Period: 52.128 d



DV Fit Results:

Period = 52.12769 [0.00078] d
Epoch = 144.5771 [0.0118] BKJD
Rp/R* = 0.0331 [0.0161]
a/R* = 68.87 [184.50]
b = 0.78 [1.37]
Seff = 39.81 [17.51]
Teq = 641 [70] K
Rp = 4.99 [3.03] Re
a = 0.3045 [0.0895] AU
Ag = 1199.79 [1293.59] [0.93σ]
Teffp = 5828 [1469] K [3.53σ]

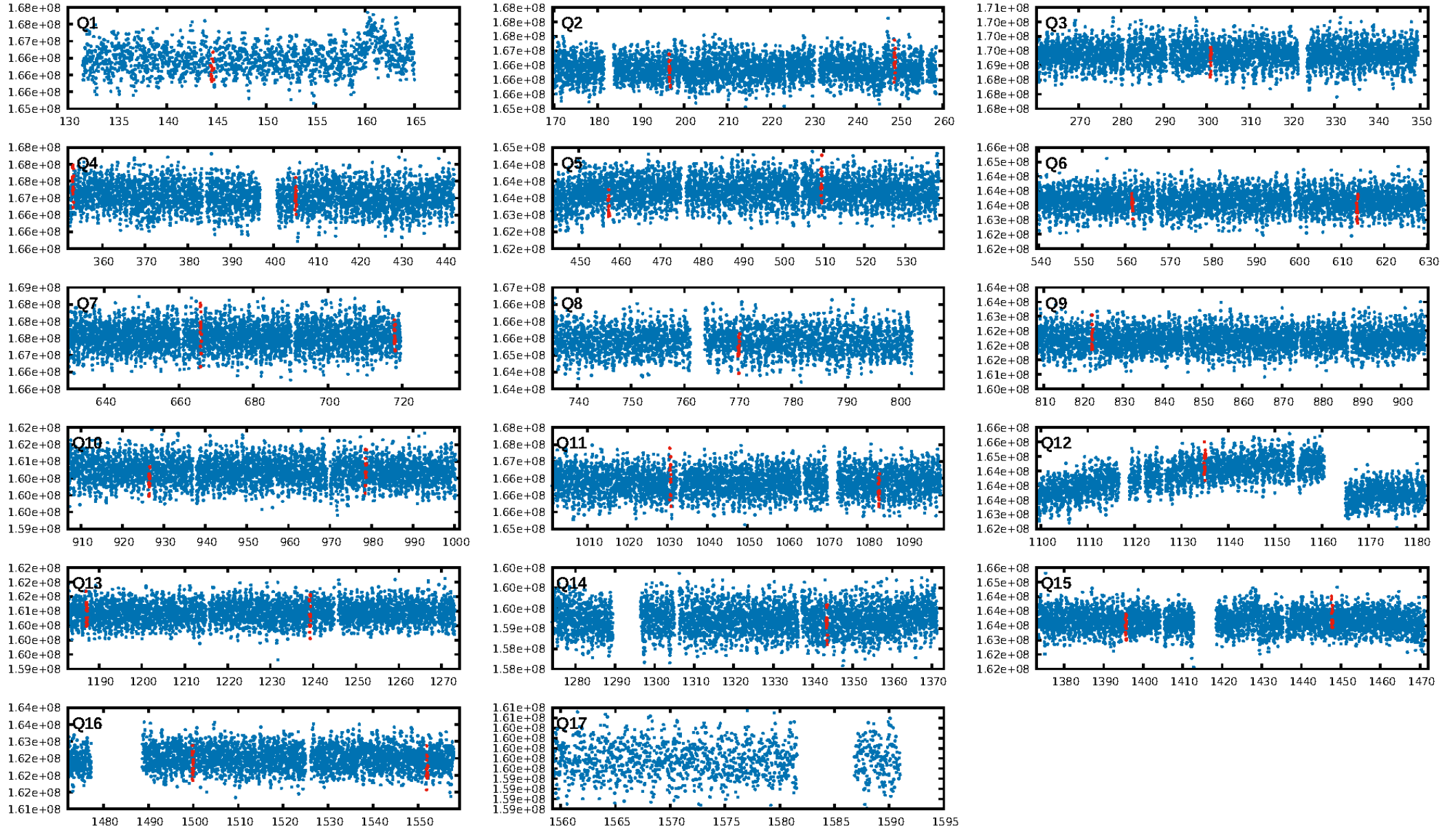
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [132.84σ]
LongPeriod-sig: 100.0% [118.46σ]
ModelChiSquare2-sig: 2.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 2.269
Centroid-sig: 7.3%
Centroid-so: 0.263 arcsec [2.88σ]
OotOffset-rm: 0.158 arcsec [0.80σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.231 arcsec [1.17σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 0.19 [3/16]

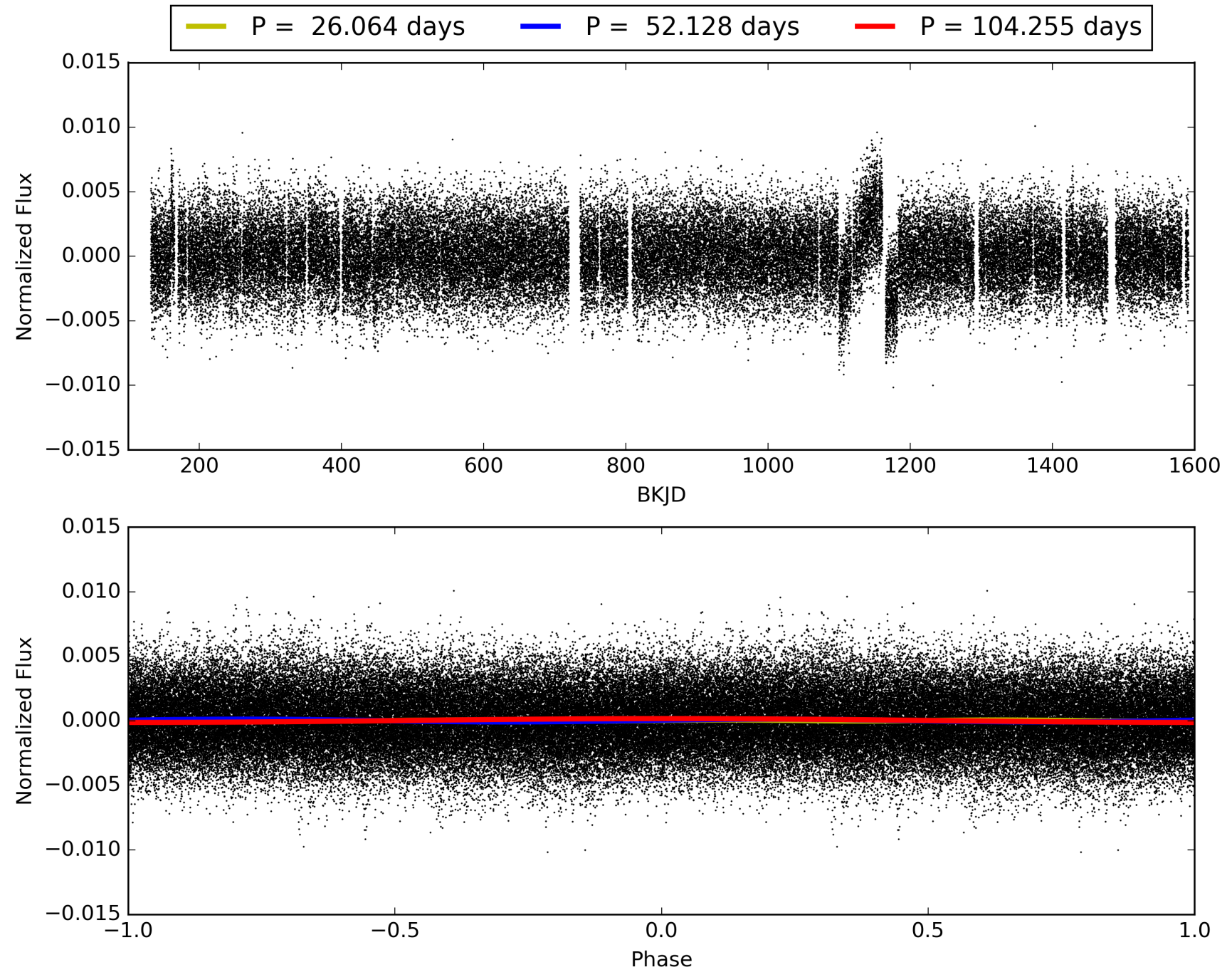
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:45:54 Z

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

TCE 007045685-08, PDC Light Curves

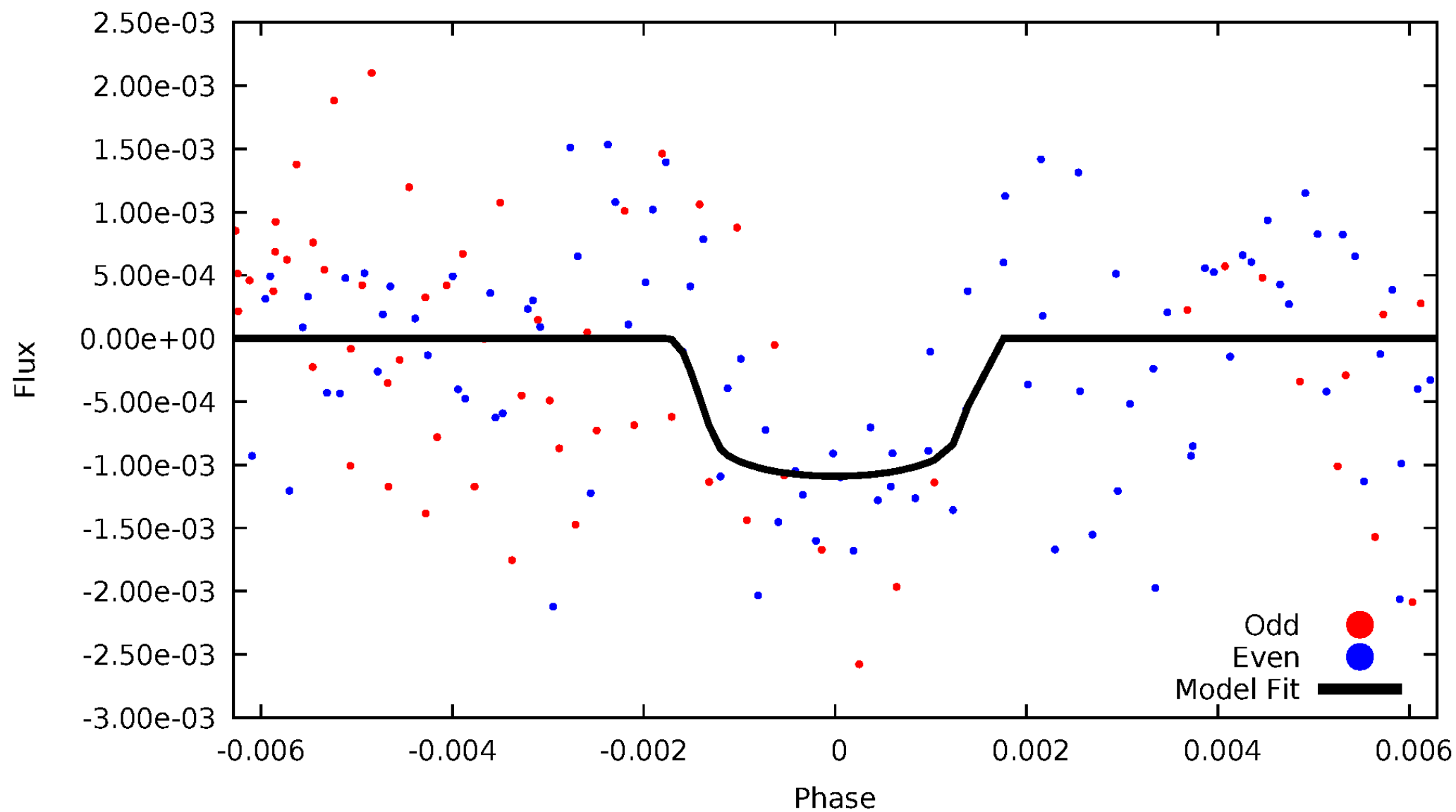


TCE 007045685-08



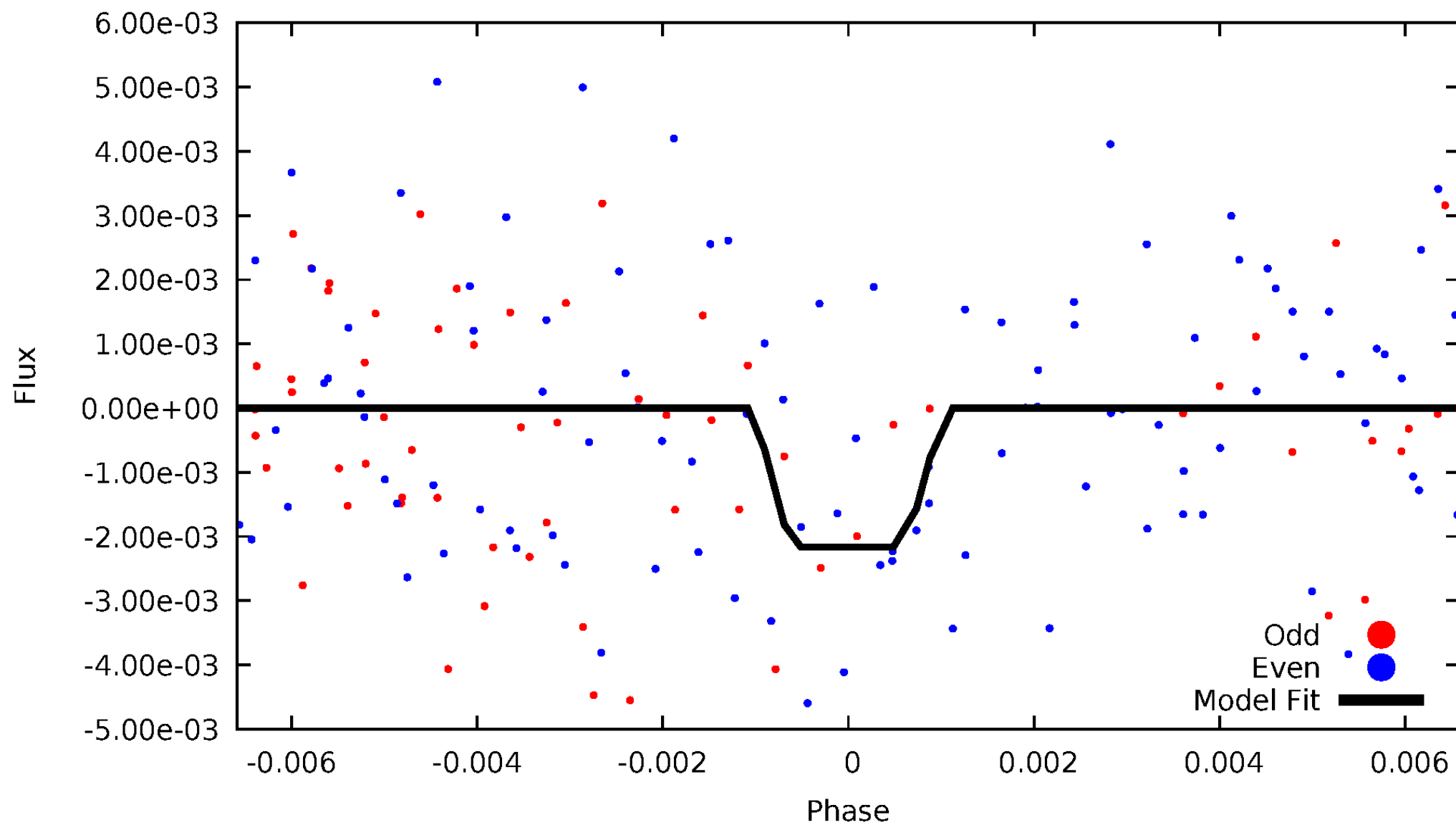
DV Odd/Even

TCE 007045685-08



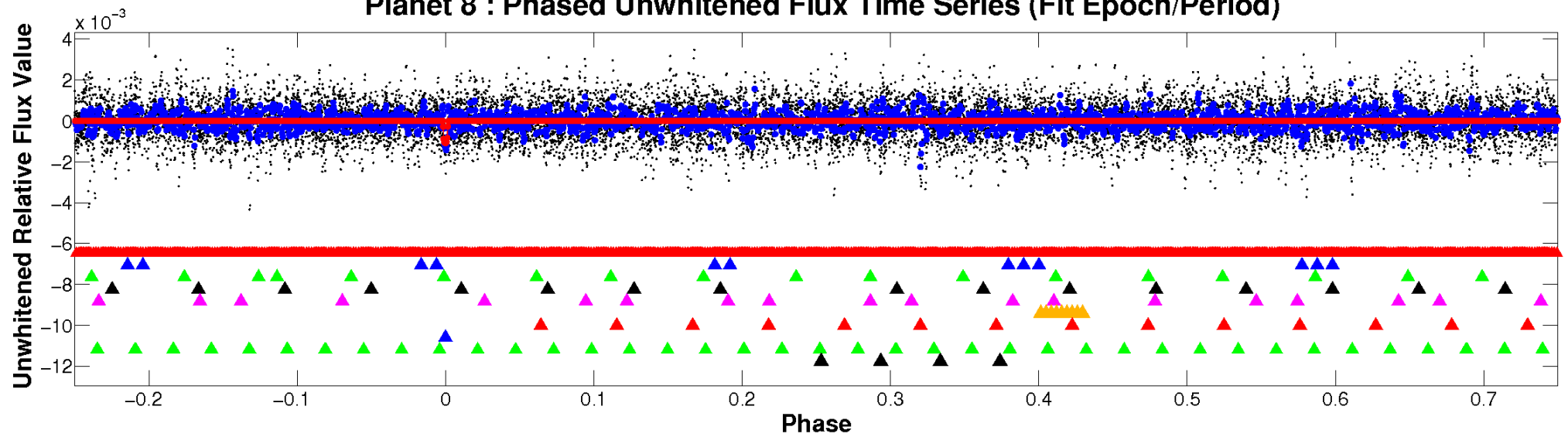
ALT Odd/Even

TCE 007045685-08

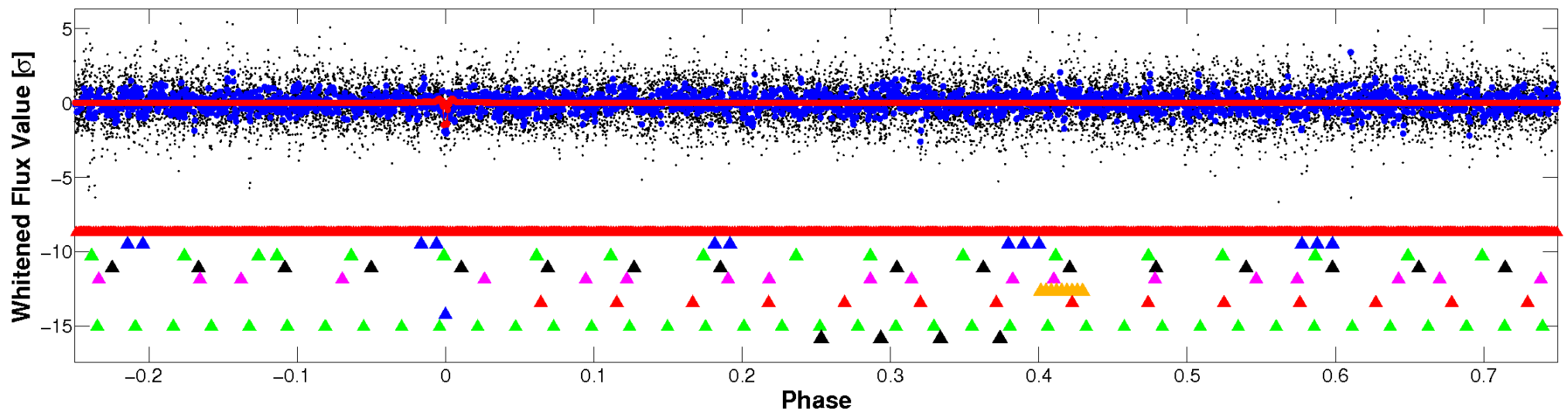


Non-Whitened Vs. Whitened Light Curve

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

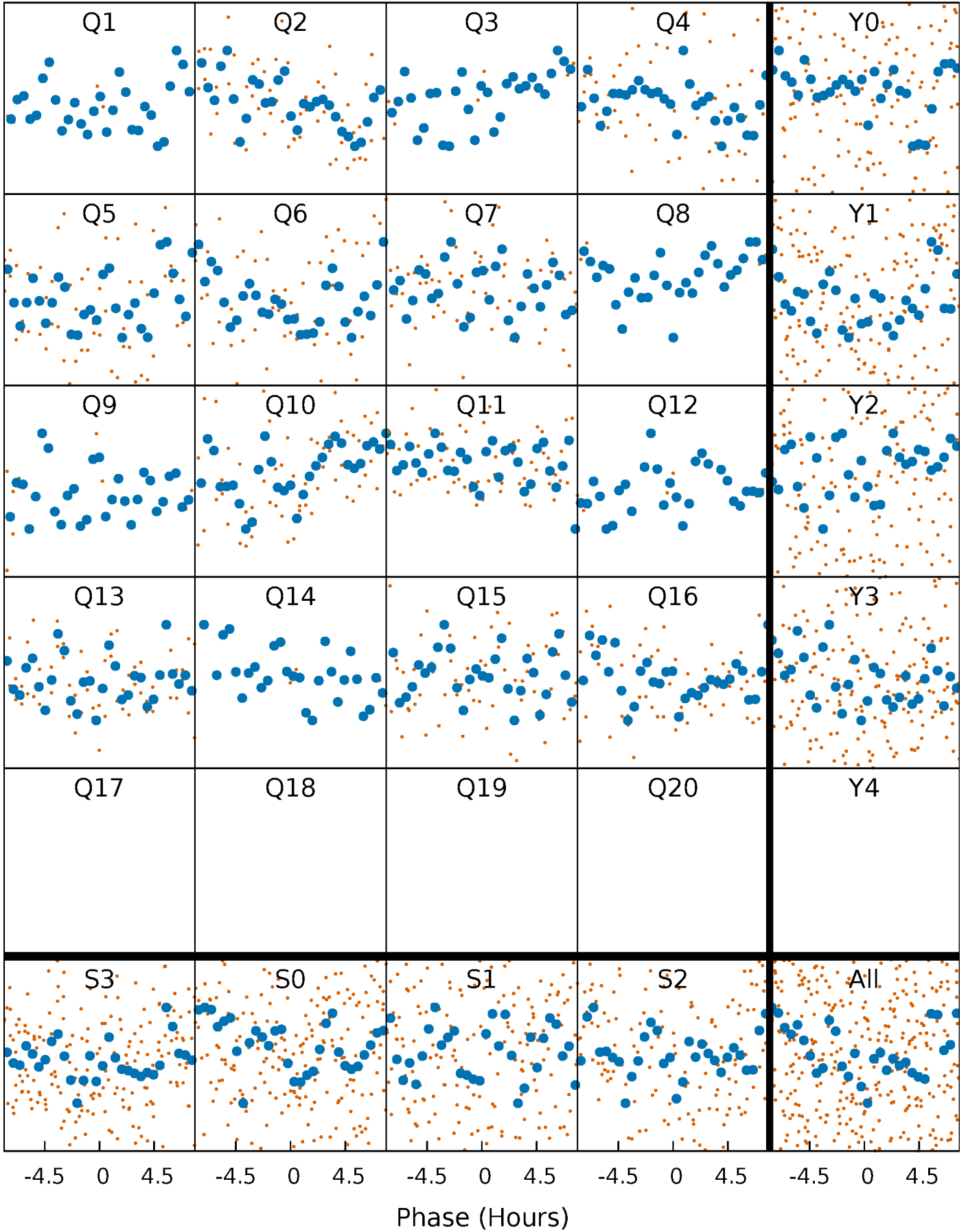


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



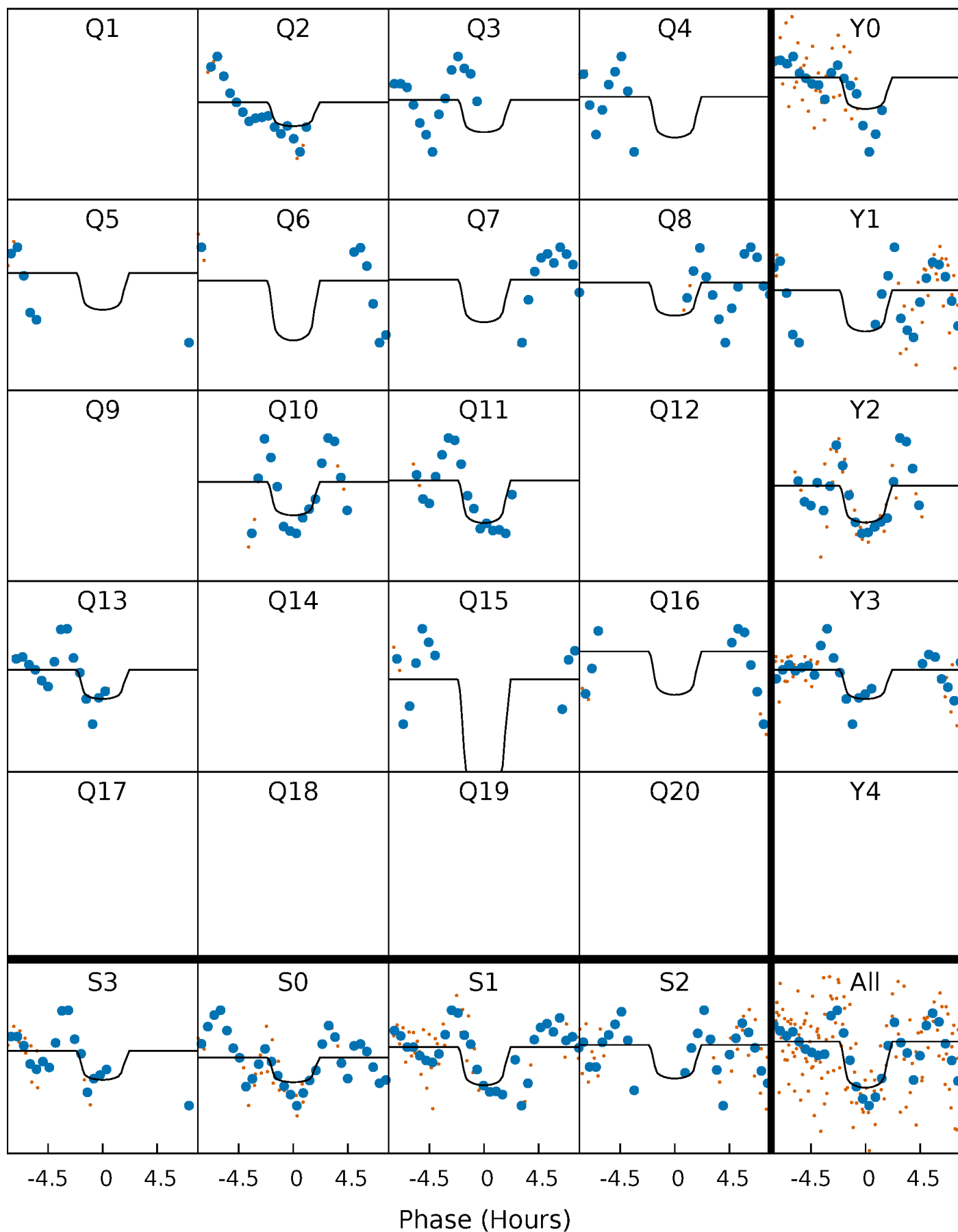
PDC Quarter-Phased Transit Curves

TCE 007045685-08 P= 52.127694 Days $T_0=144.577139$ (BKJD)



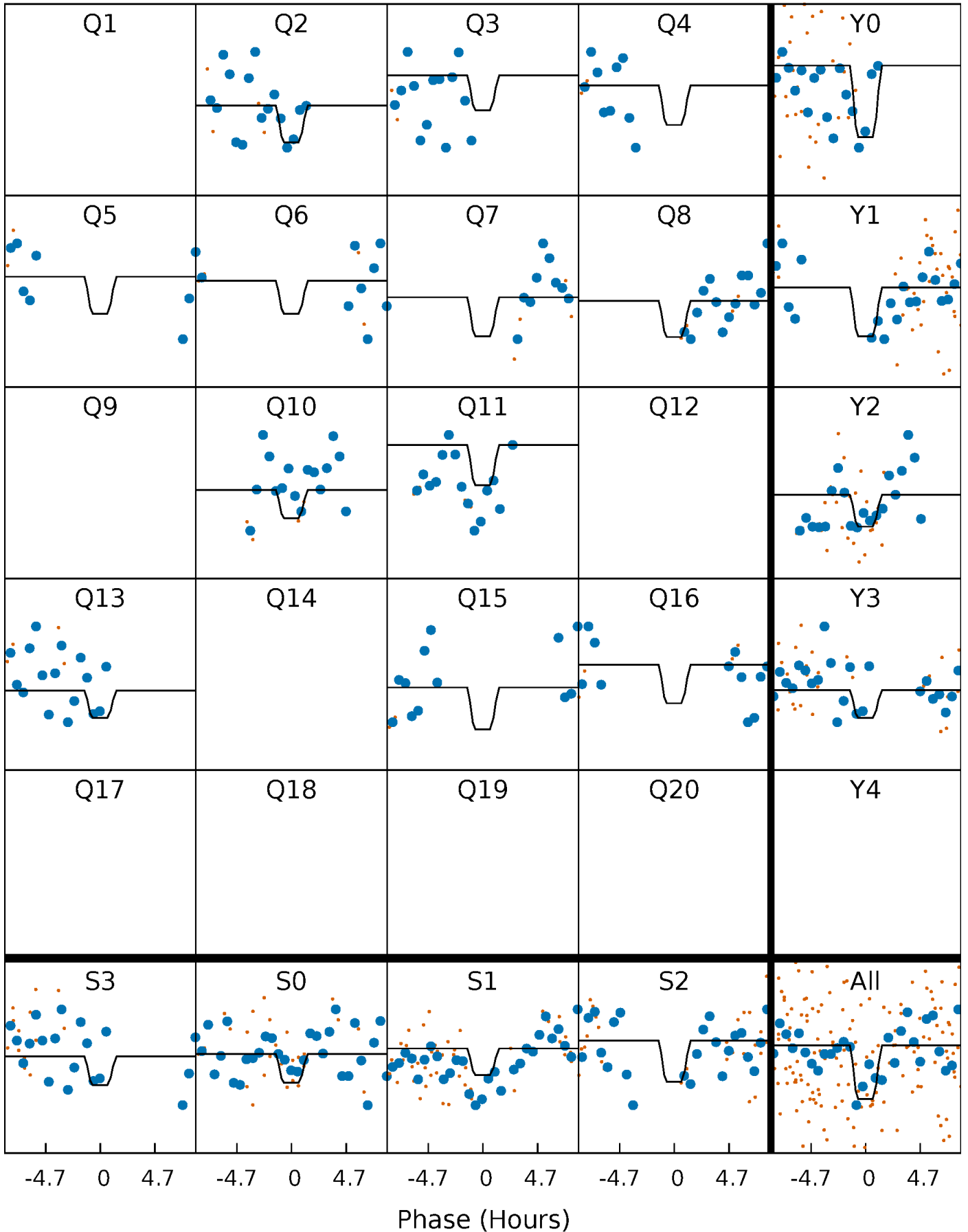
DV Quarter-Phased Transit Curves

TCE 007045685-08 P= 52.127694 Days $T_0=144.577139$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

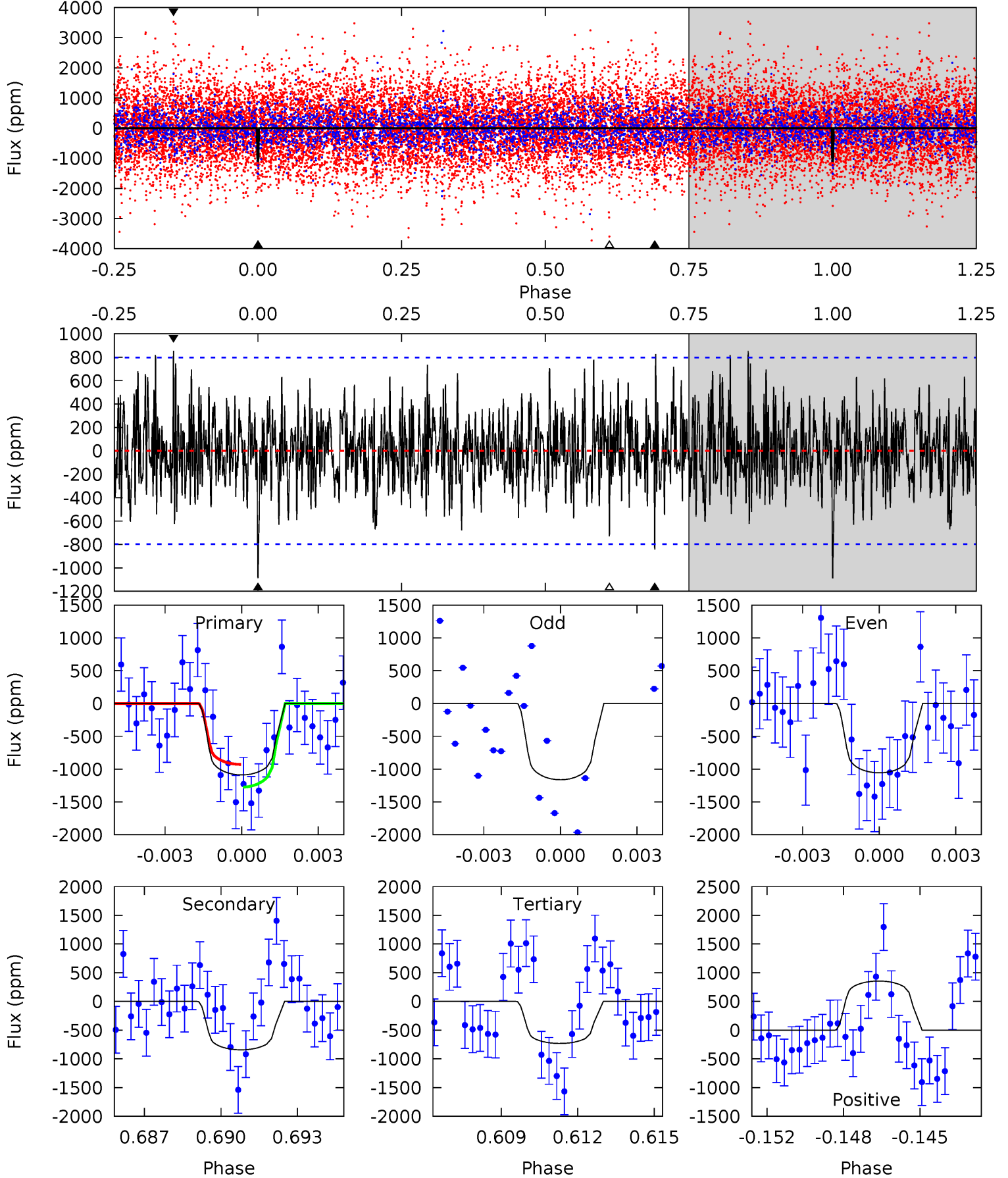
TCE 007045685-08 P= 52.127523 Days $T_0=144.585559$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-08, P = 52.127694 Days, E = 92.449445 Days

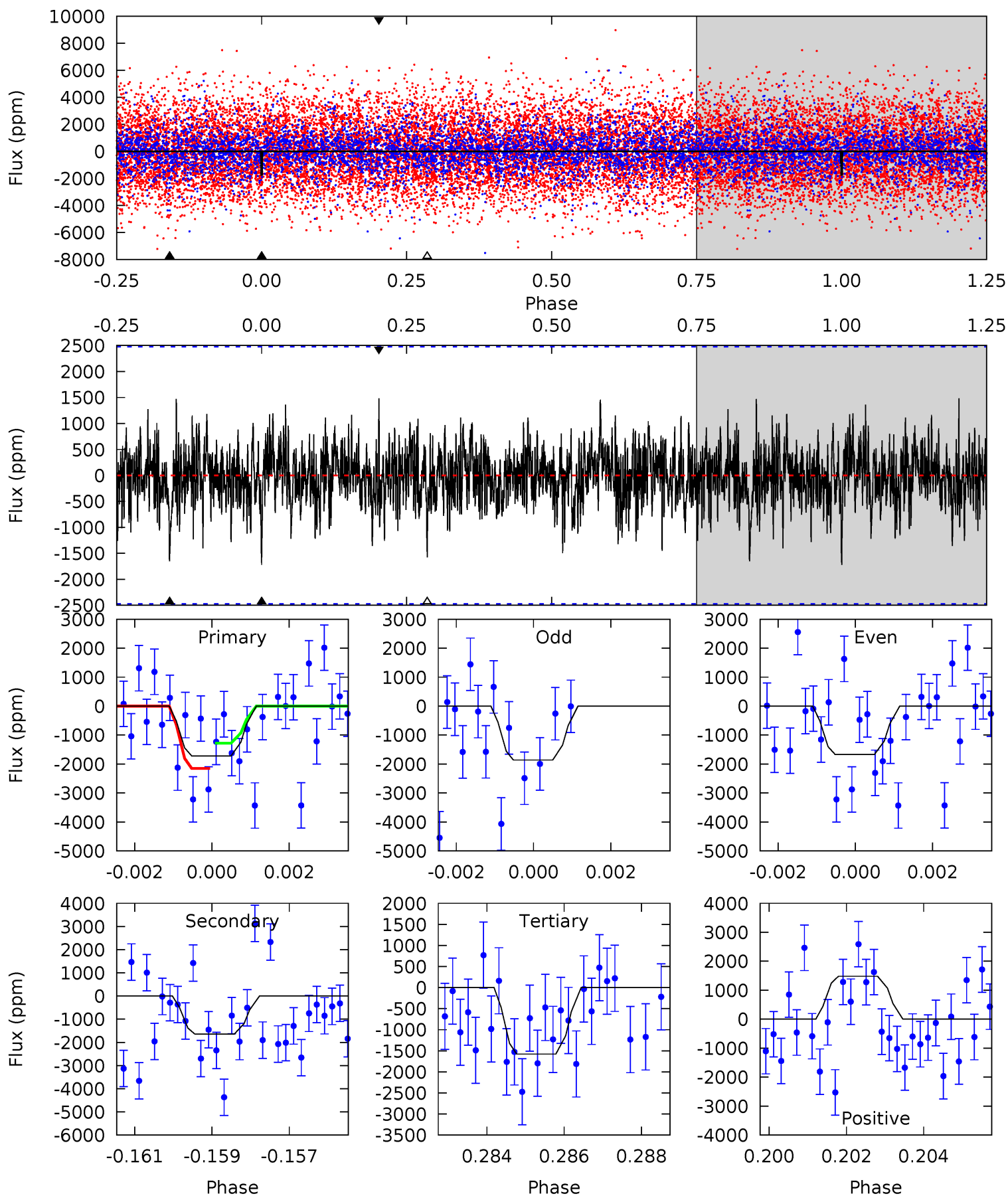
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.16	5.54	4.81	5.63	5.25	2.96	1.65	2.35	1.53	0.73	-0.09	0.32	0.74	0.44	1.12



Alt Model-Shift Uniqueness Test

007045685-08, P = 52.127523 Days, E = 92.458036 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.70	3.55	3.40	3.19	5.33	3.10	0.97	0.31	0.52	0.15	0.36	0.19	1.20	0.46	0.93



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-842 ± 152	$5.39^{+2.73}_{-2.51}$	911^{+73}_{-50}	6226^{+2796}_{-1091}	1435^{+3626}_{-817}
Alt.	-1649 ± 465	$7.07^{+2.81}_{-2.34}$	906^{+73}_{-50}	6276^{+1889}_{-894}	1584^{+2284}_{-814}

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 $A_{obs} \gg 1.0$

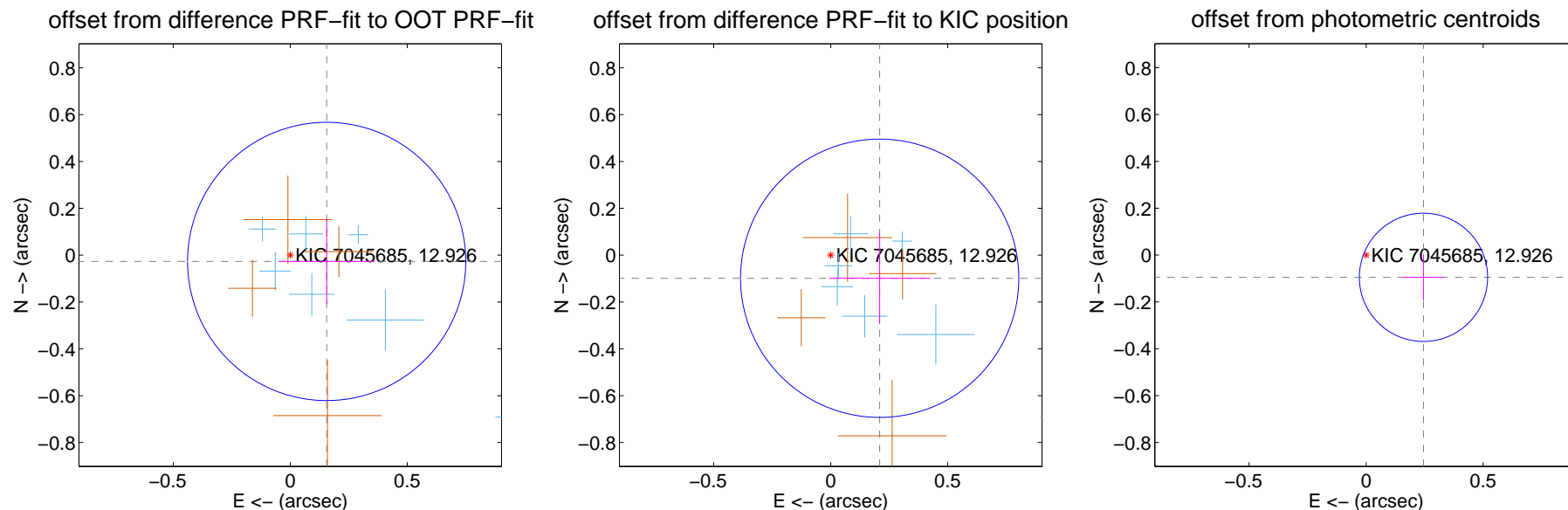
DV Centroid Data

Supplemental centroid analysis for 007045685-08. Kepler magnitude: 12.93. Transit SNR 8.11

There are 10 quarters with good PRF difference image offsets

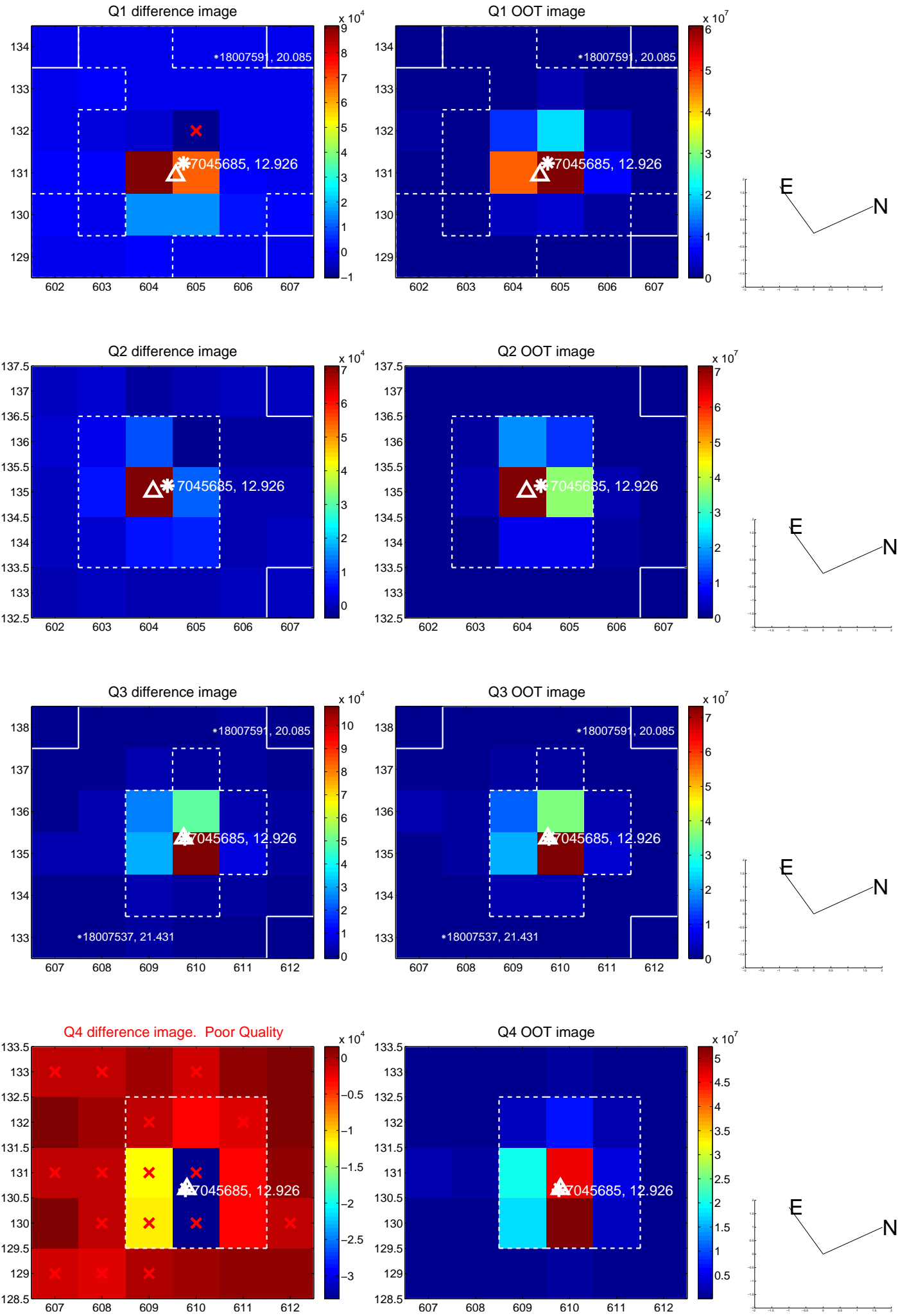
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.158 ± 0.198	0.80	-0.155 ± 0.204	-0.027 ± 0.182
PRF-fit source offset from KIC position	0.231 ± 0.198	1.17	-0.209 ± 0.216	-0.099 ± 0.195
photometric centroid source offset	0.26 ± 0.09	2.88	-0.24 ± 0.09	-0.09 ± 0.10

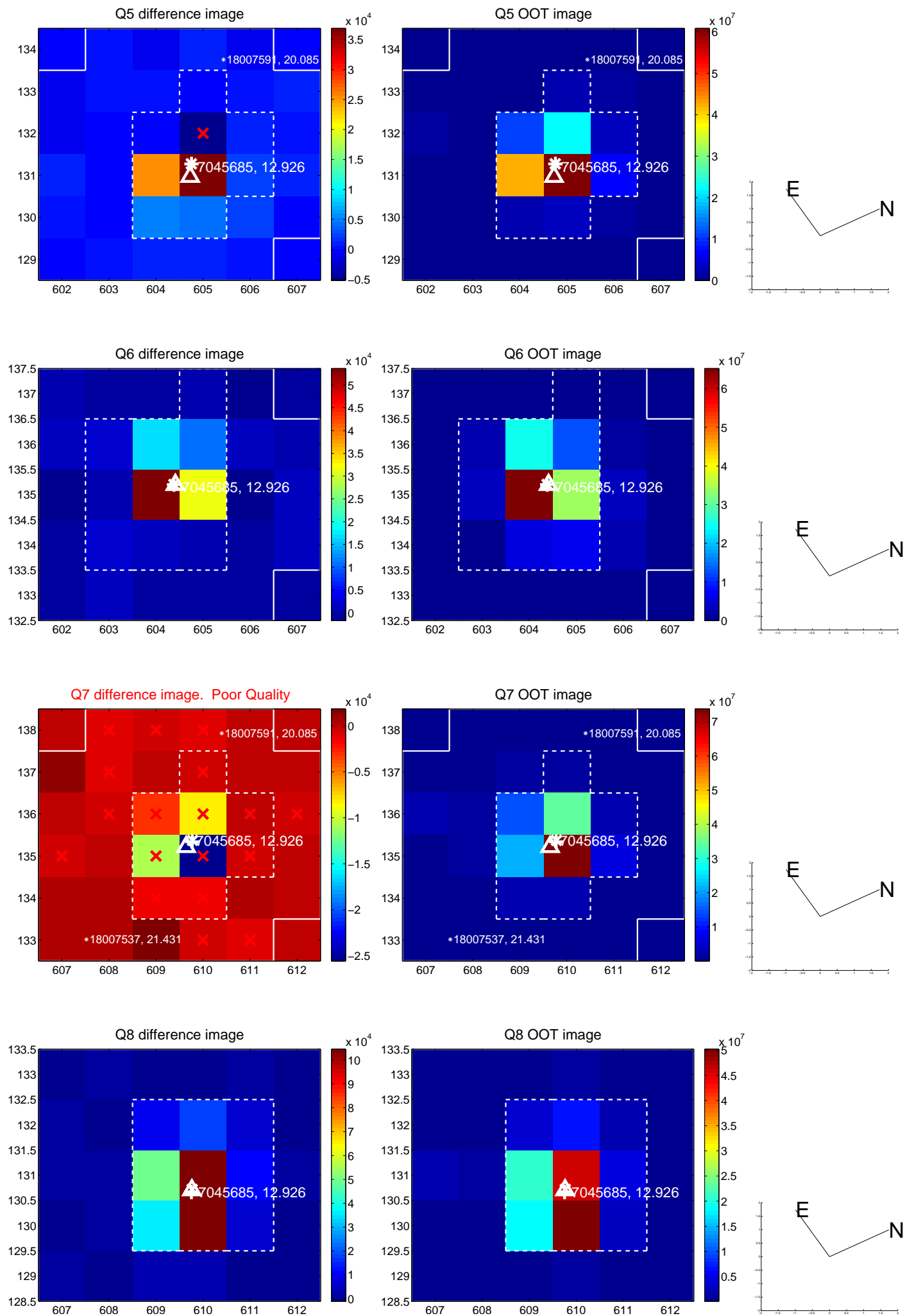


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

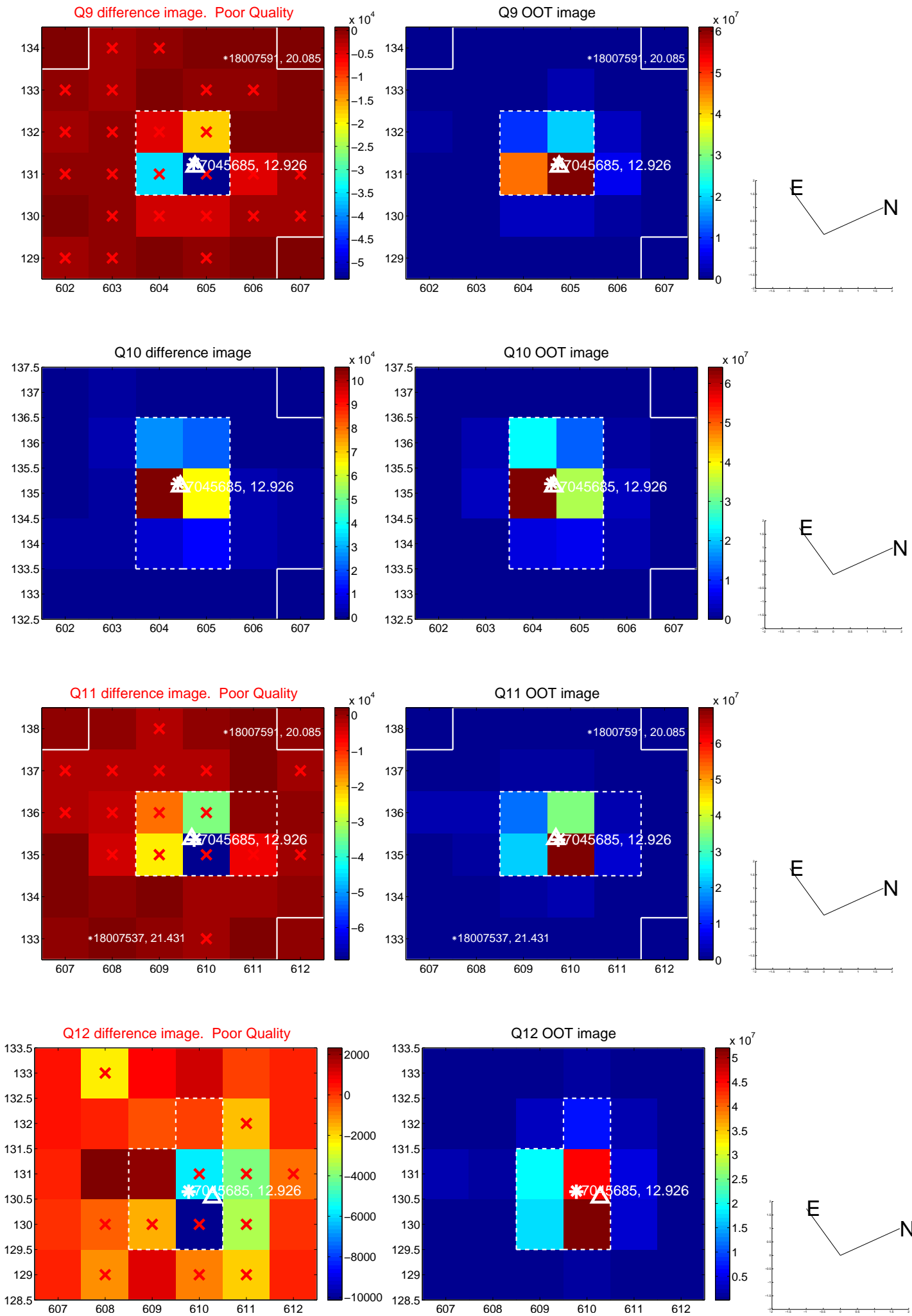
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



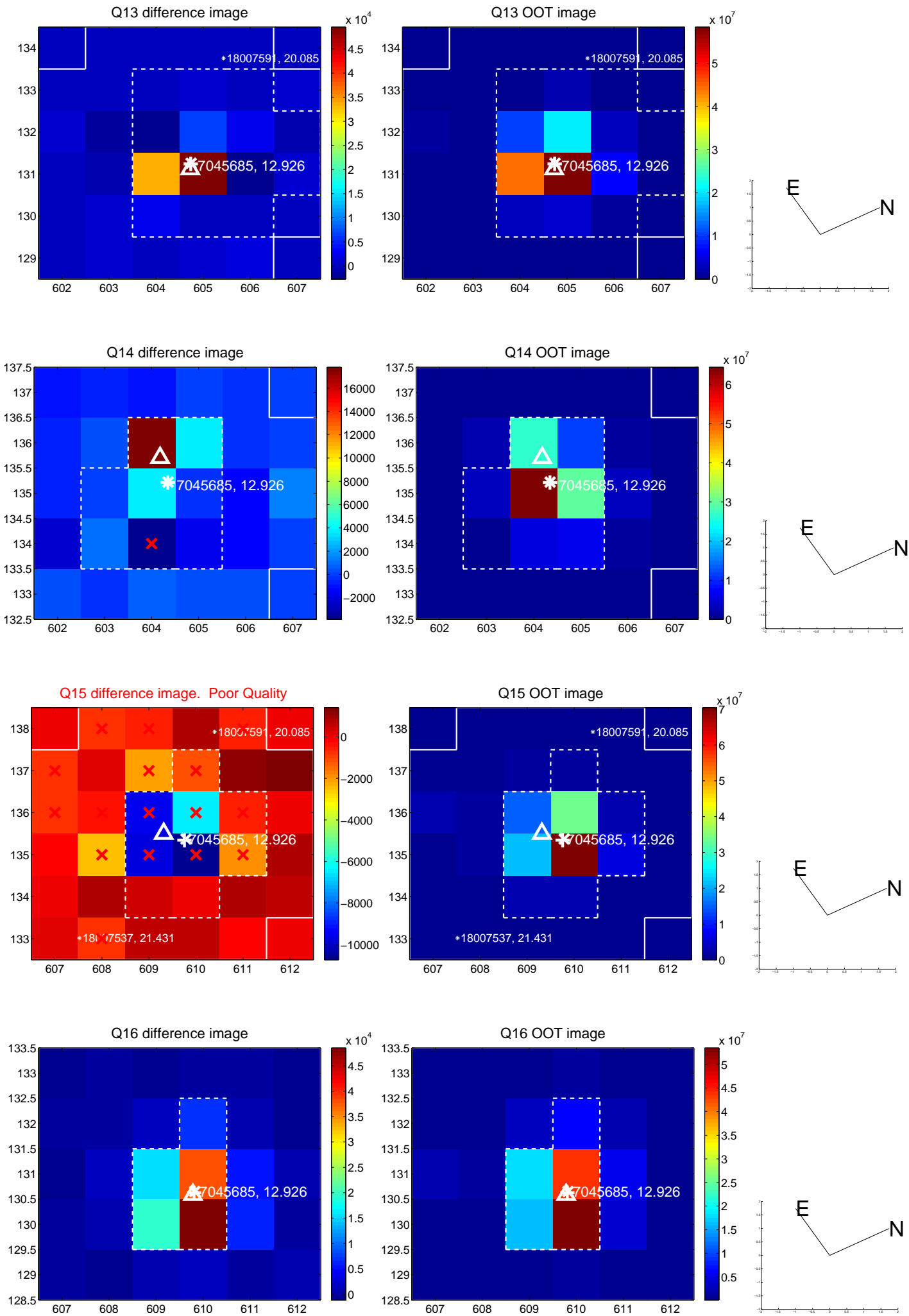
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



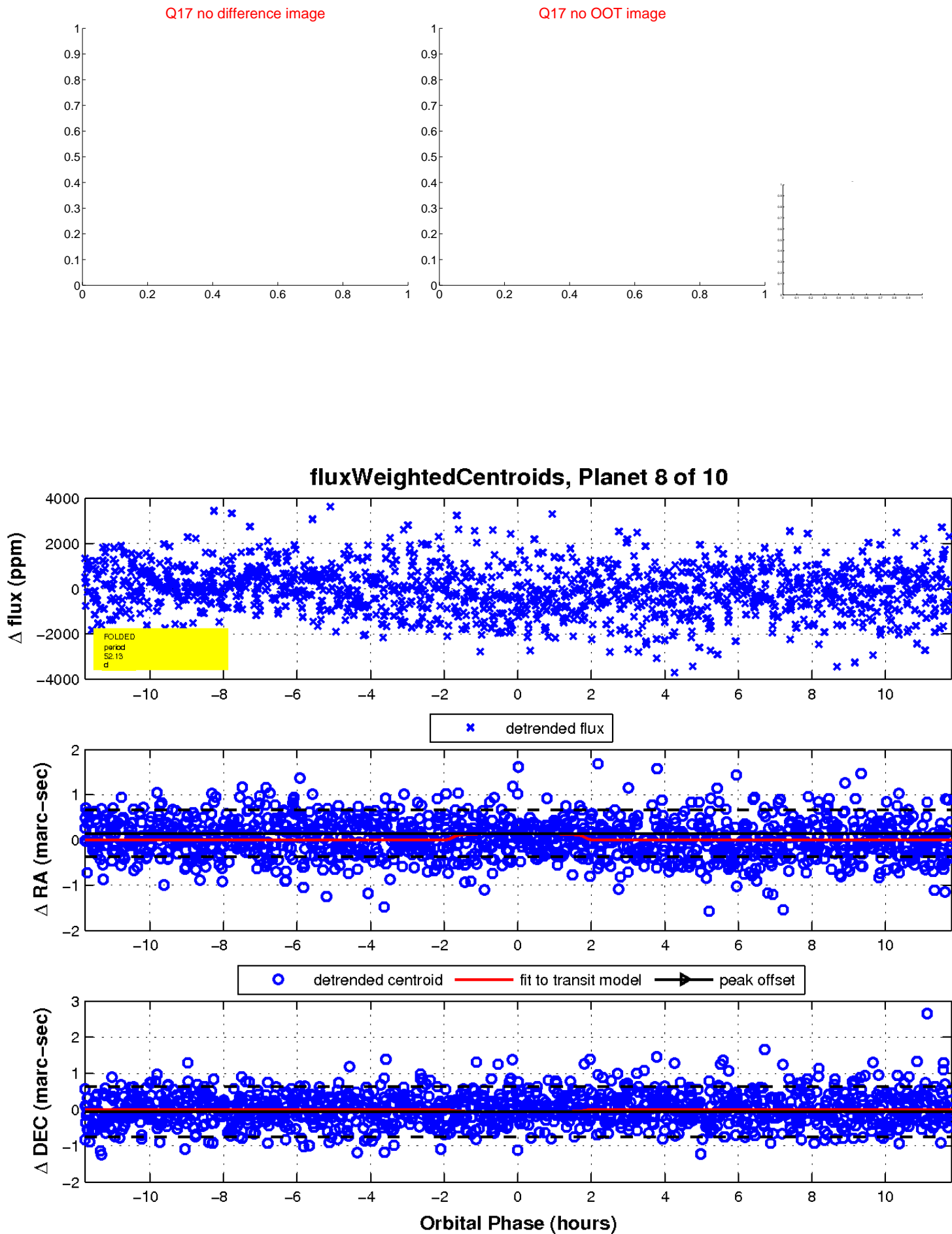
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

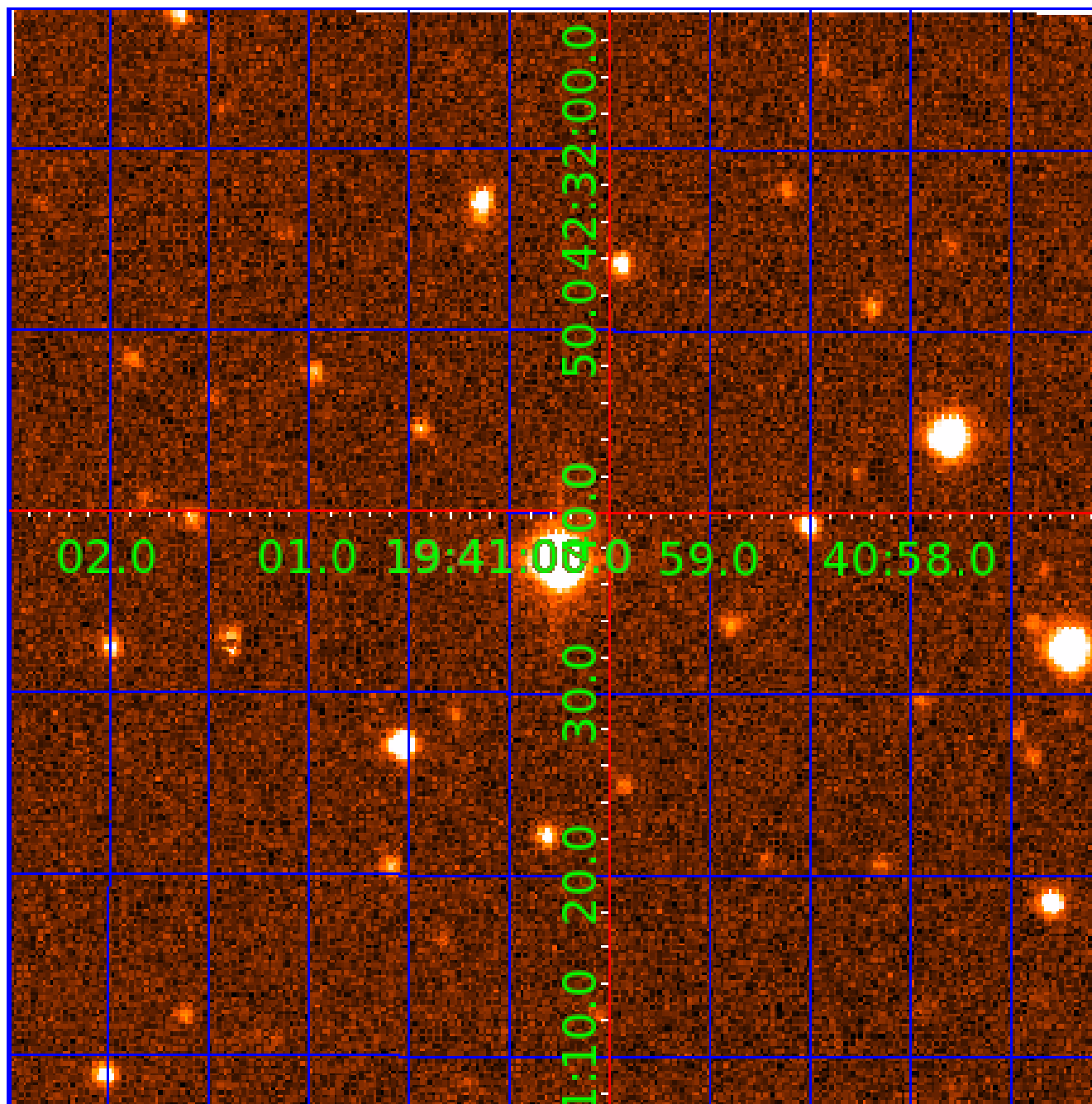


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007045685

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})
007045685-01	OBS	No	1.653417	132.923690	120.1	10.128	8.7	10.5	1.38	6817	1.54	3964.79
007045685-02	OBS	No	114.573642	217.561224	3135.8	4.695	13.5	12.3	1.38	6817	14.07	13.93
007045685-03	OBS	No	82.752815	138.657120	2226.3	3.195	11.1	10.5	1.38	6817	11.12	21.50
007045685-04	OBS	No	91.982205	145.135948	1459.8	2.482	9.9	6.4	1.38	6817	5.62	18.67
007045685-05	OBS	No	75.690770	165.957500	2136.9	2.707	9.6	10.8	1.38	6817	9.50	24.21
007045685-06	OBS	No	156.566147	269.757548	2240.7	3.006	9.0	9.9	1.38	6817	7.97	9.19
007045685-08	OBS	No	52.127694	144.577139	1090.1	3.932	8.8	8.1	1.38	6817	4.99	39.81
007045685-09	OBS	No	25.396197	140.340251	853.5	2.804	8.3	8.8	1.38	6817	4.30	103.84
007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

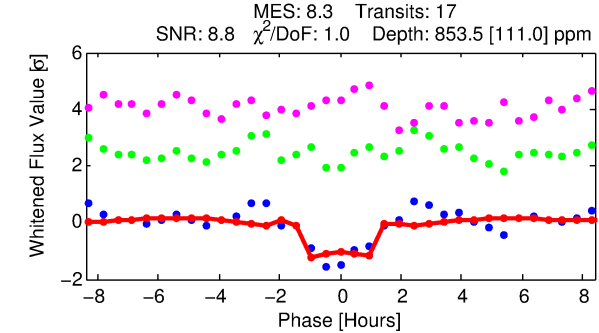
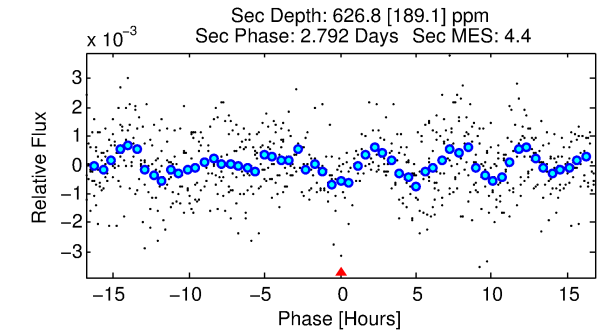
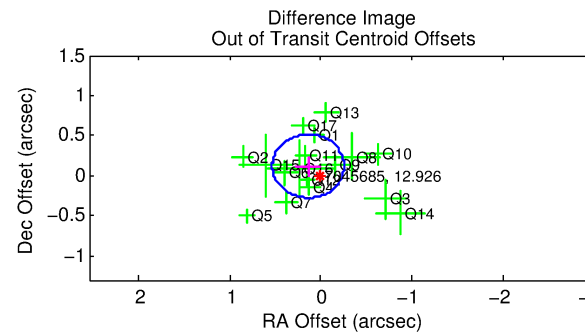
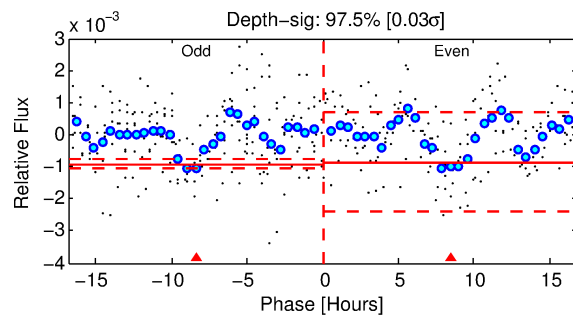
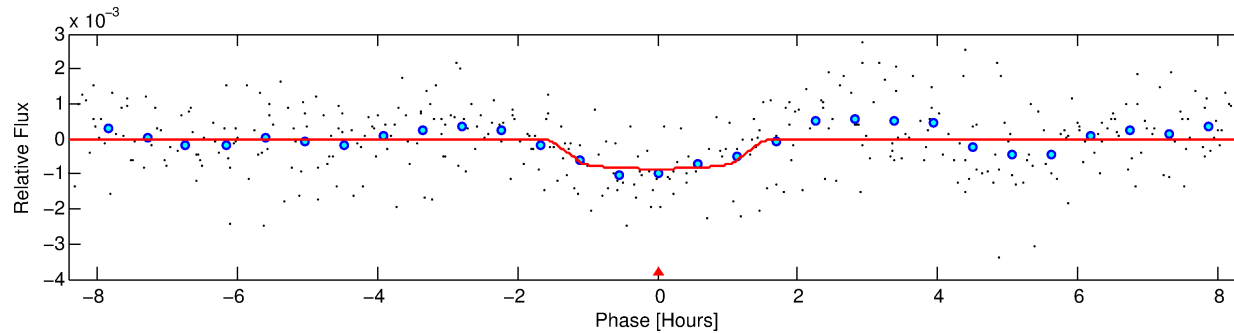
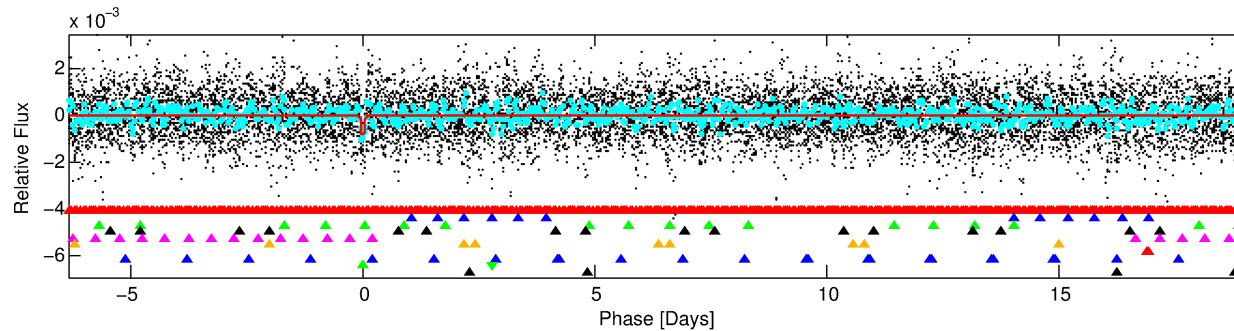
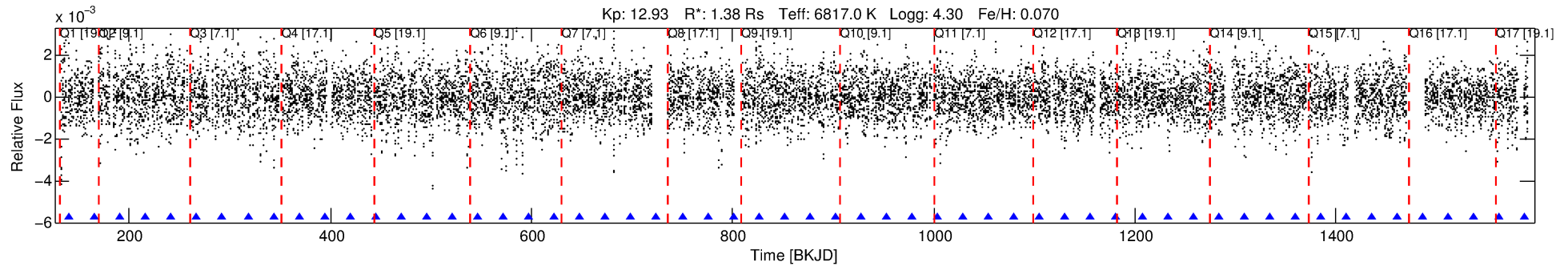
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-09

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 9 of 10 Period: 25.396 d



DV Fit Results:

Period = 25.39620 [0.00018] d
Epoch = 140.3403 [0.0055] BKJD
Rp/R* = 0.0285 [0.0174]
a/R* = 53.75 [181.35]
b = 0.67 [2.75]
Seff = 103.84 [45.68]
Teq = 814 [90] K
Rp = 4.30 [3.05] Re
a = 0.1885 [0.0554] AU
Ag = 663.57 [877.65] [0.75 σ]
Teffp = 6387 [2022] K [2.75 σ]

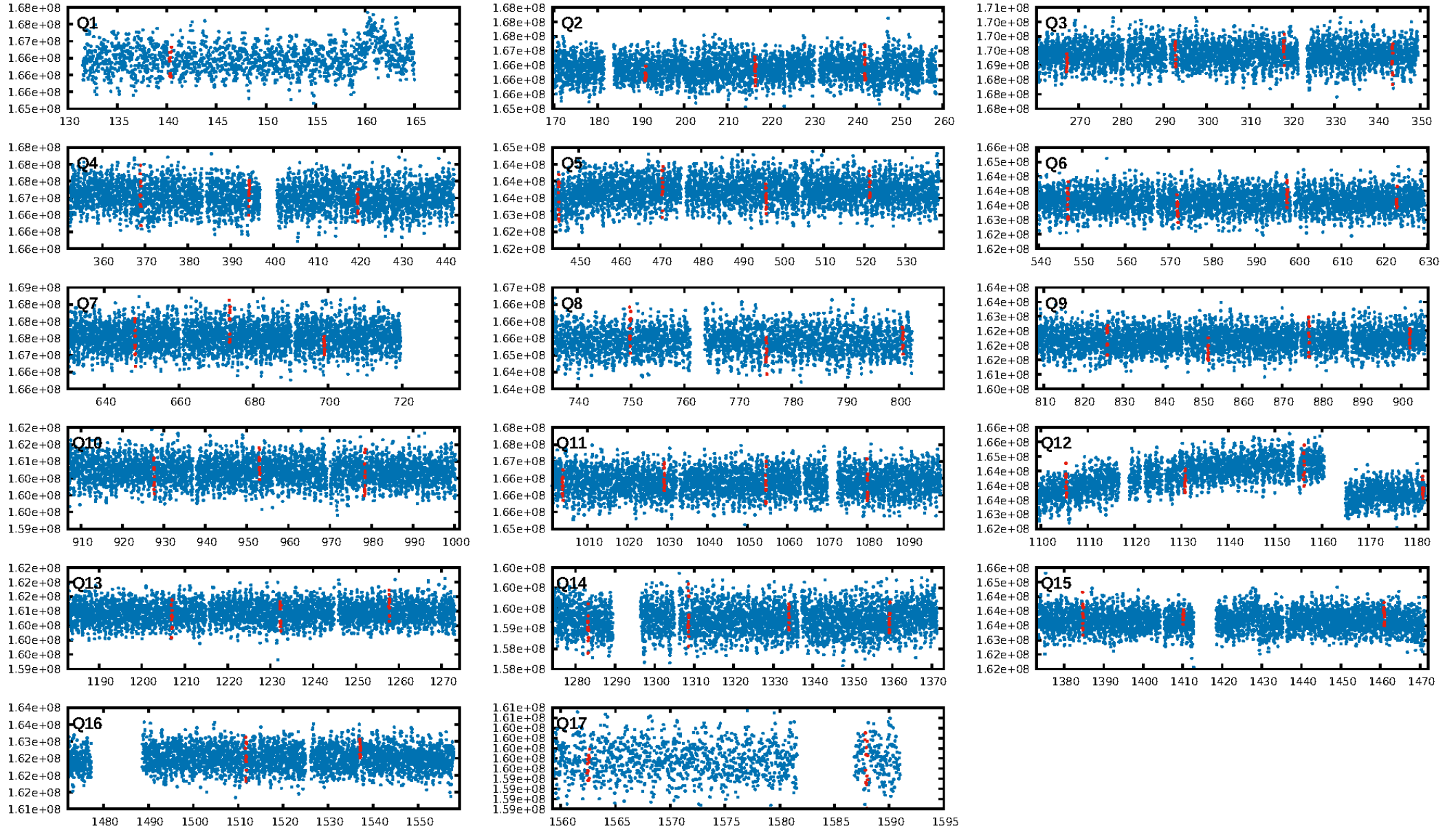
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [54.22 σ]
LongPeriod-sig: 100.0% [132.84 σ]
ModelChiSquare2-sig: 50.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: -11.77
Centroid-sig: 11.2%
Centroid-so: 0.293 arcsec [2.99 σ]
OotOffset-rm: 0.184 arcsec [1.40 σ]
KicOffset-rm: 0.098 arcsec [0.74 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.94 [16/17]

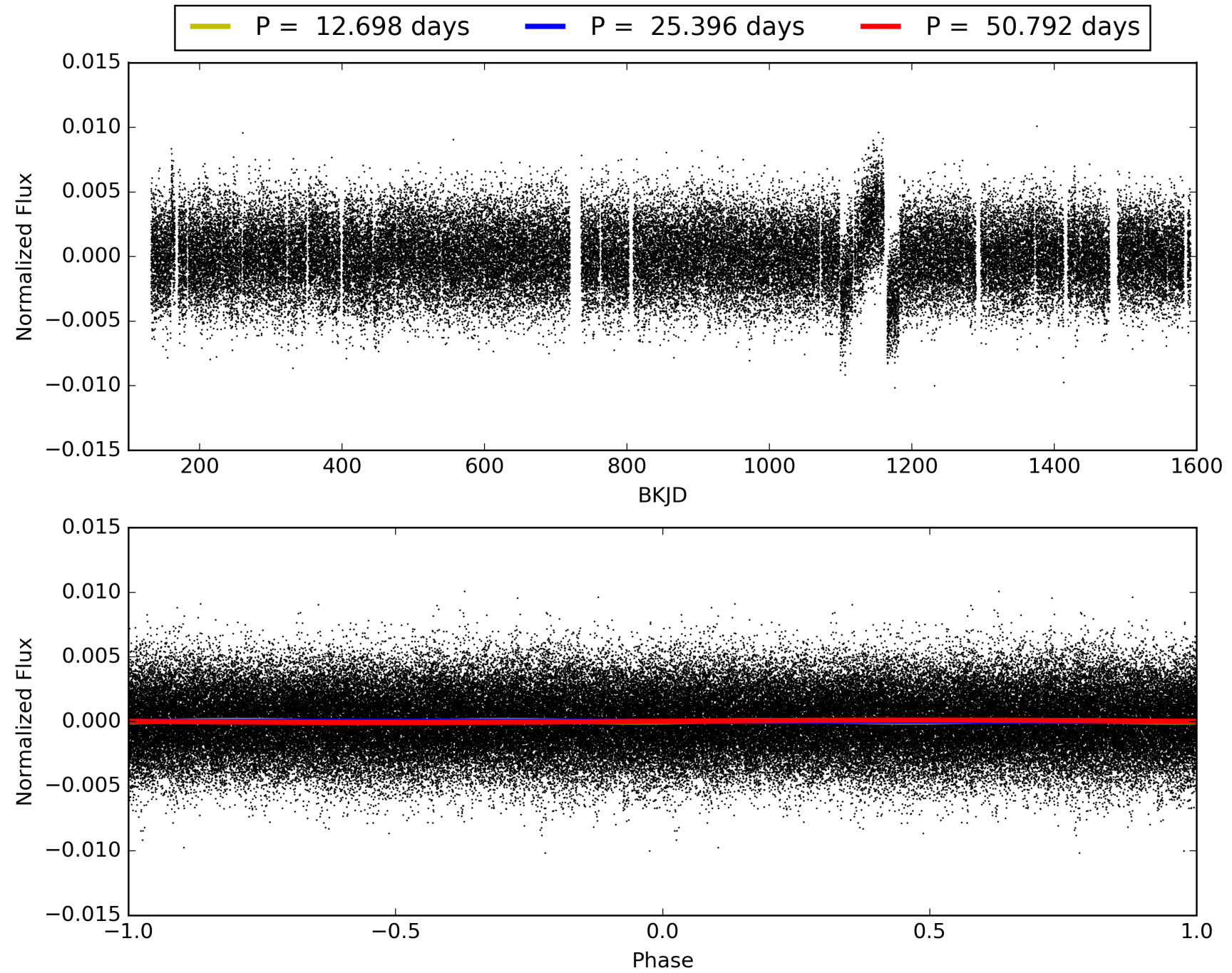
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007045685-09, PDC Light Curves

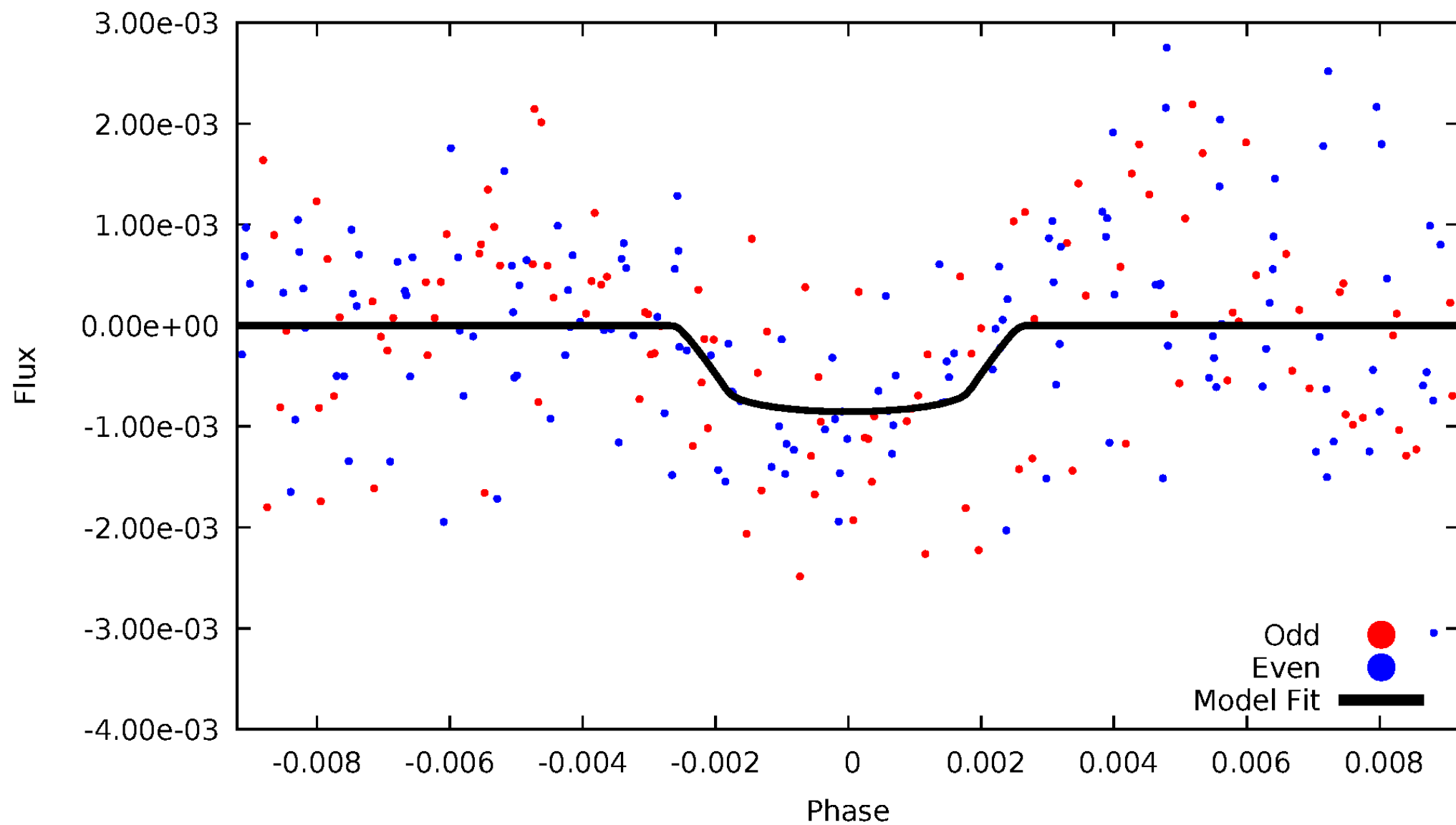


TCE 007045685-09



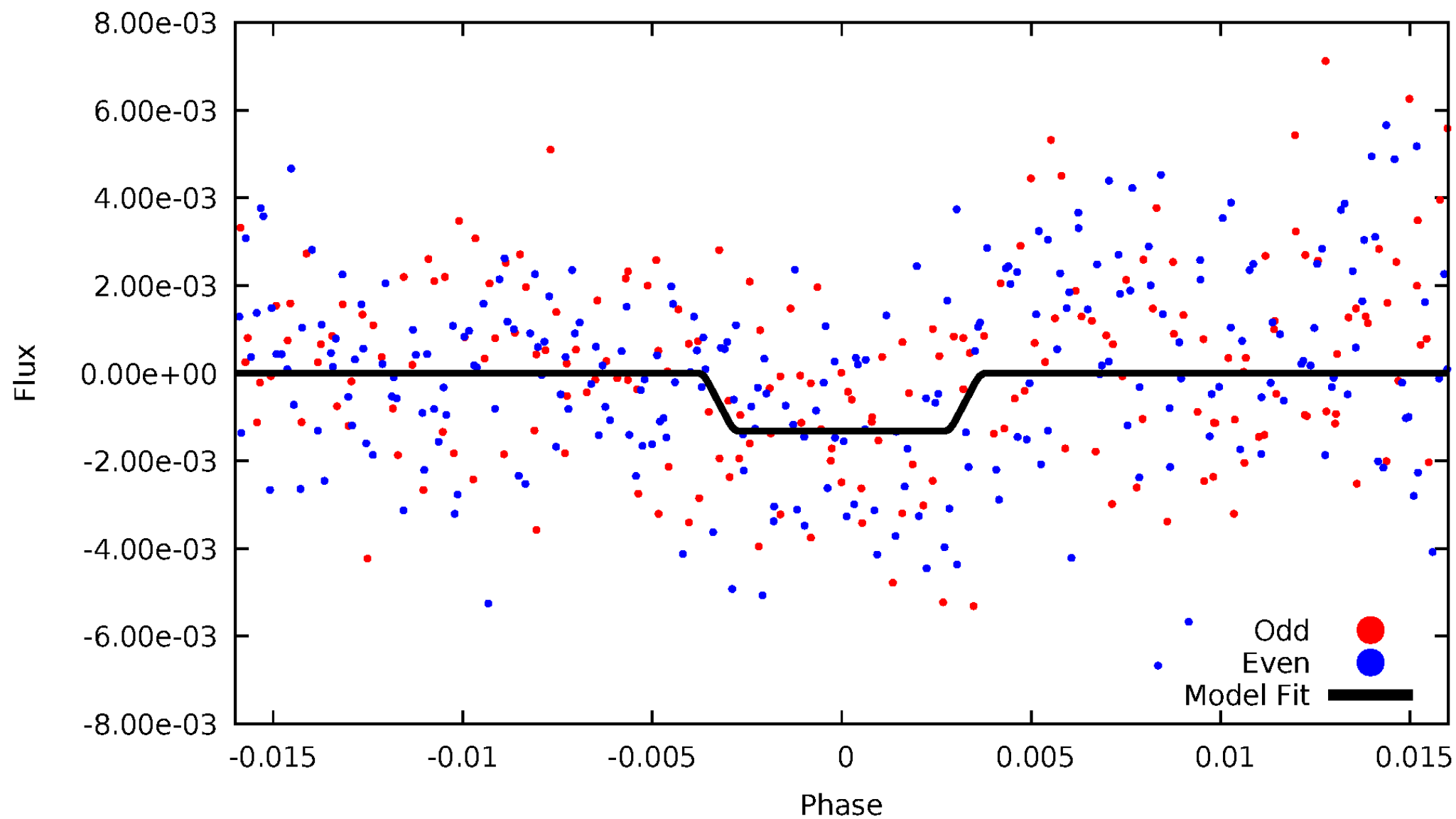
DV Odd/Even

TCE 007045685-09



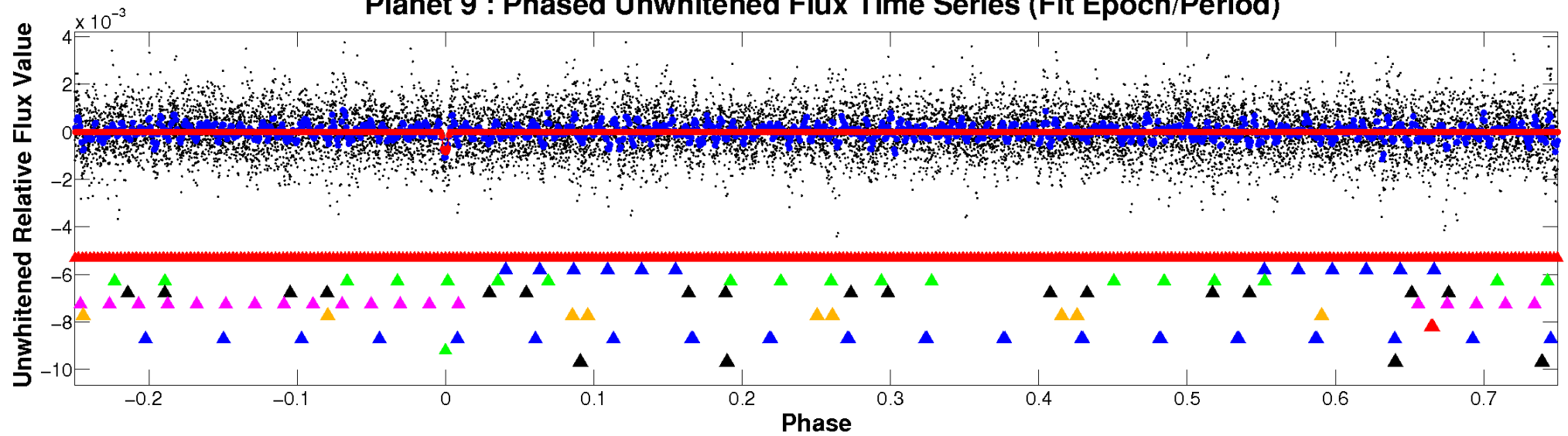
ALT Odd/Even

TCE 007045685-09

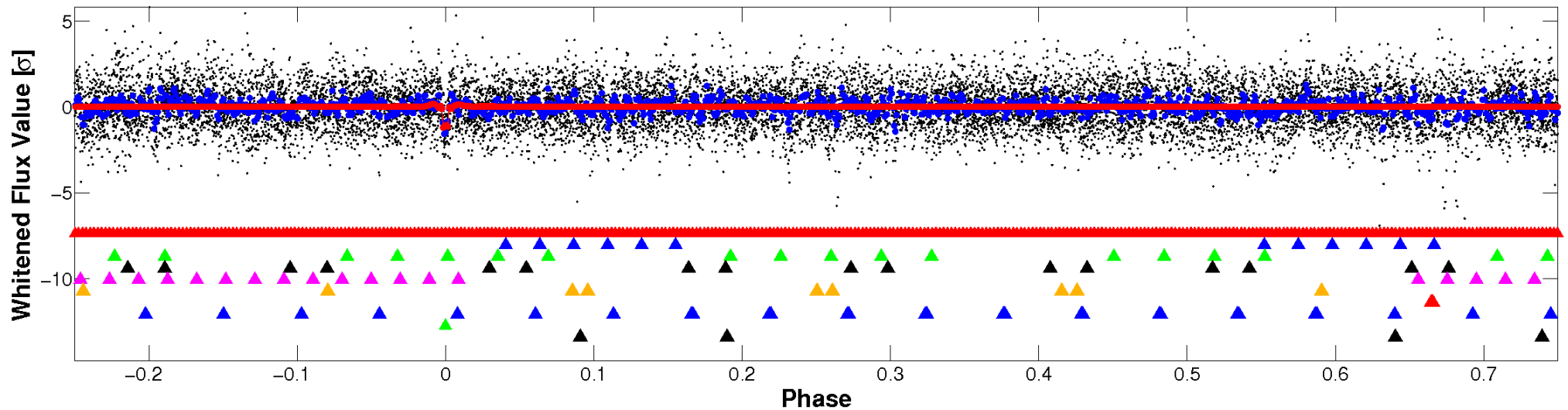


Non-Whitened Vs. Whitened Light Curve

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

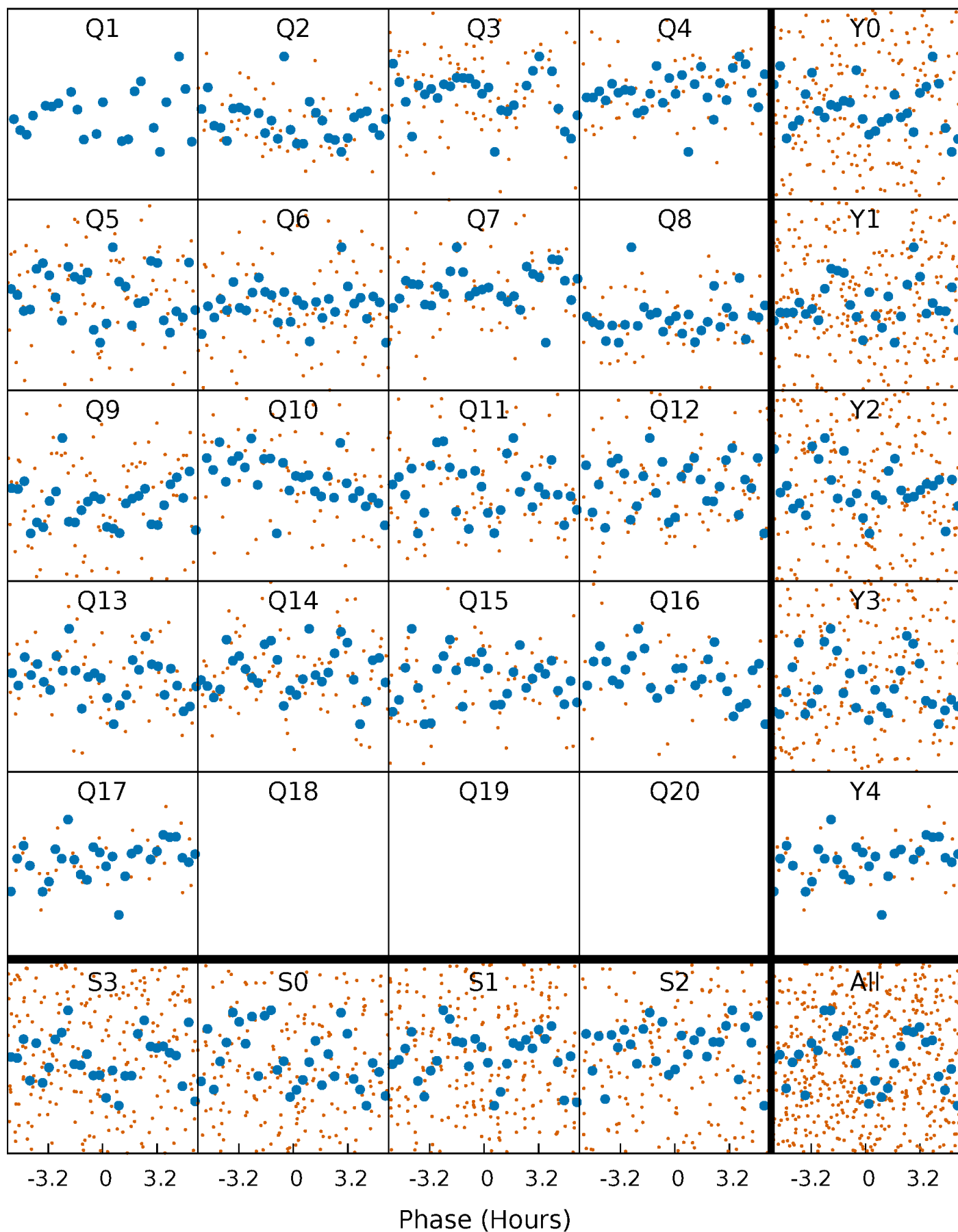


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



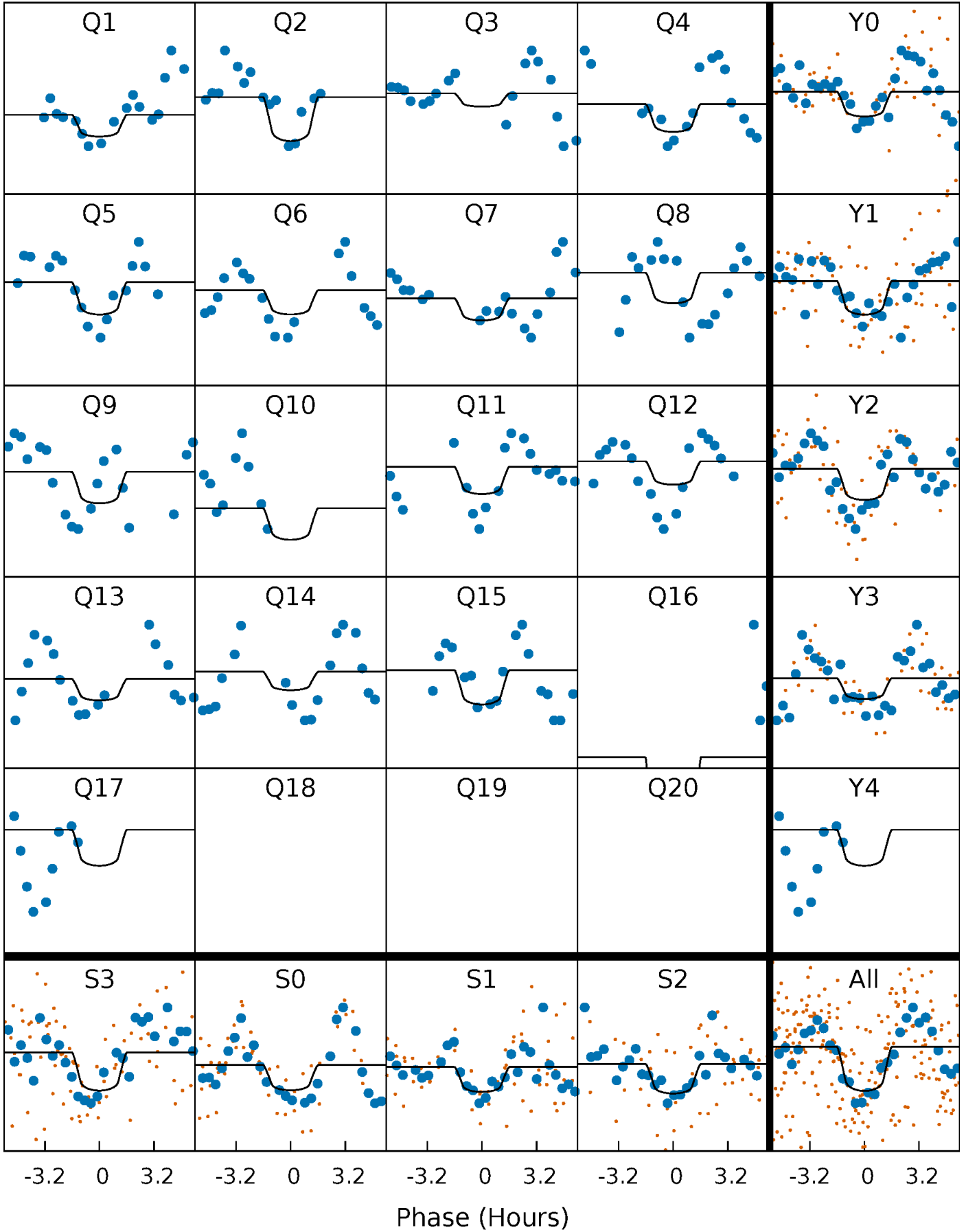
PDC Quarter-Phased Transit Curves

TCE 007045685-09 P= 25.396197 Days $T_0=140.340251$ (BKJD)



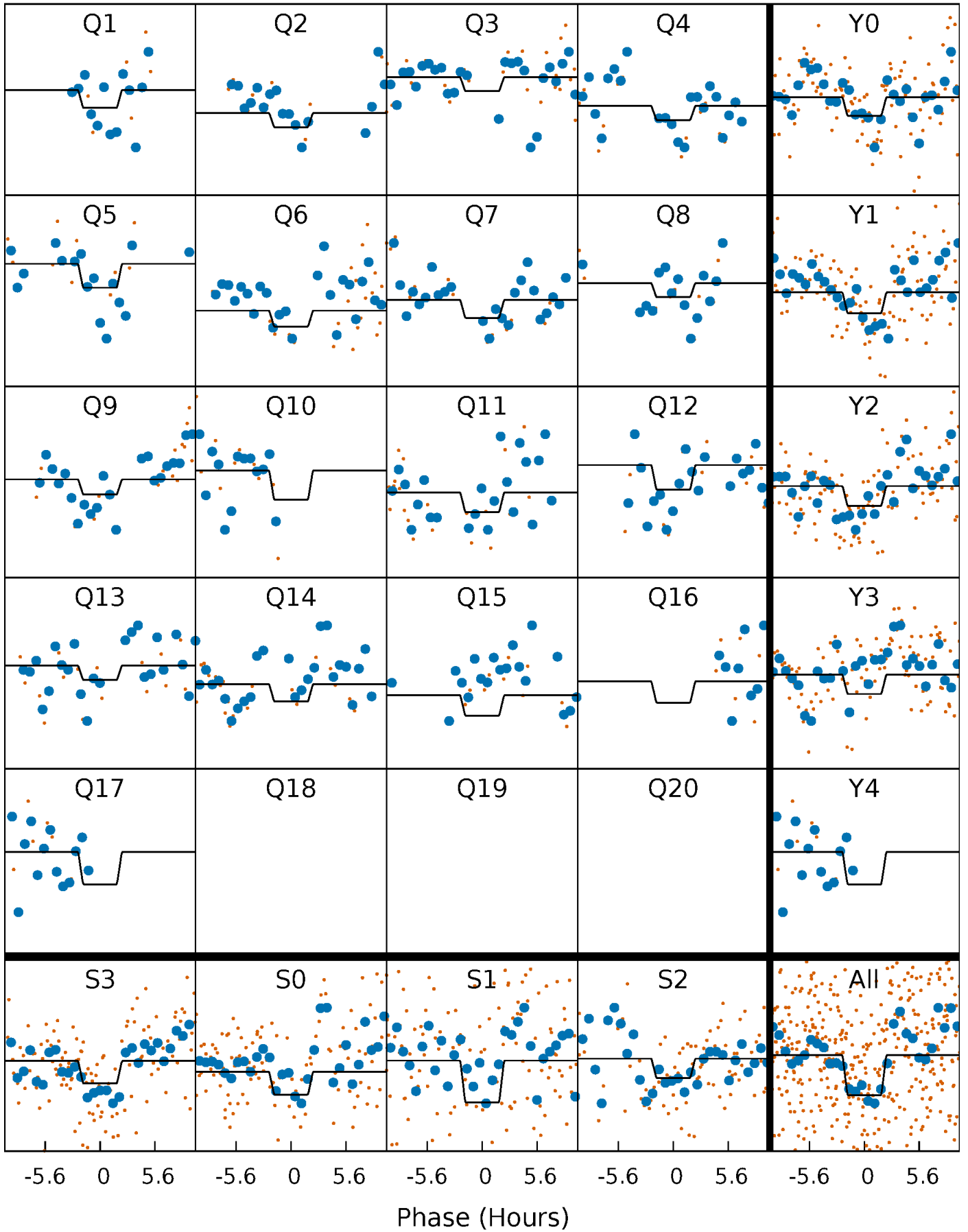
DV Quarter-Phased Transit Curves

TCE 007045685-09 P= 25.396197 Days $T_0=140.340251$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

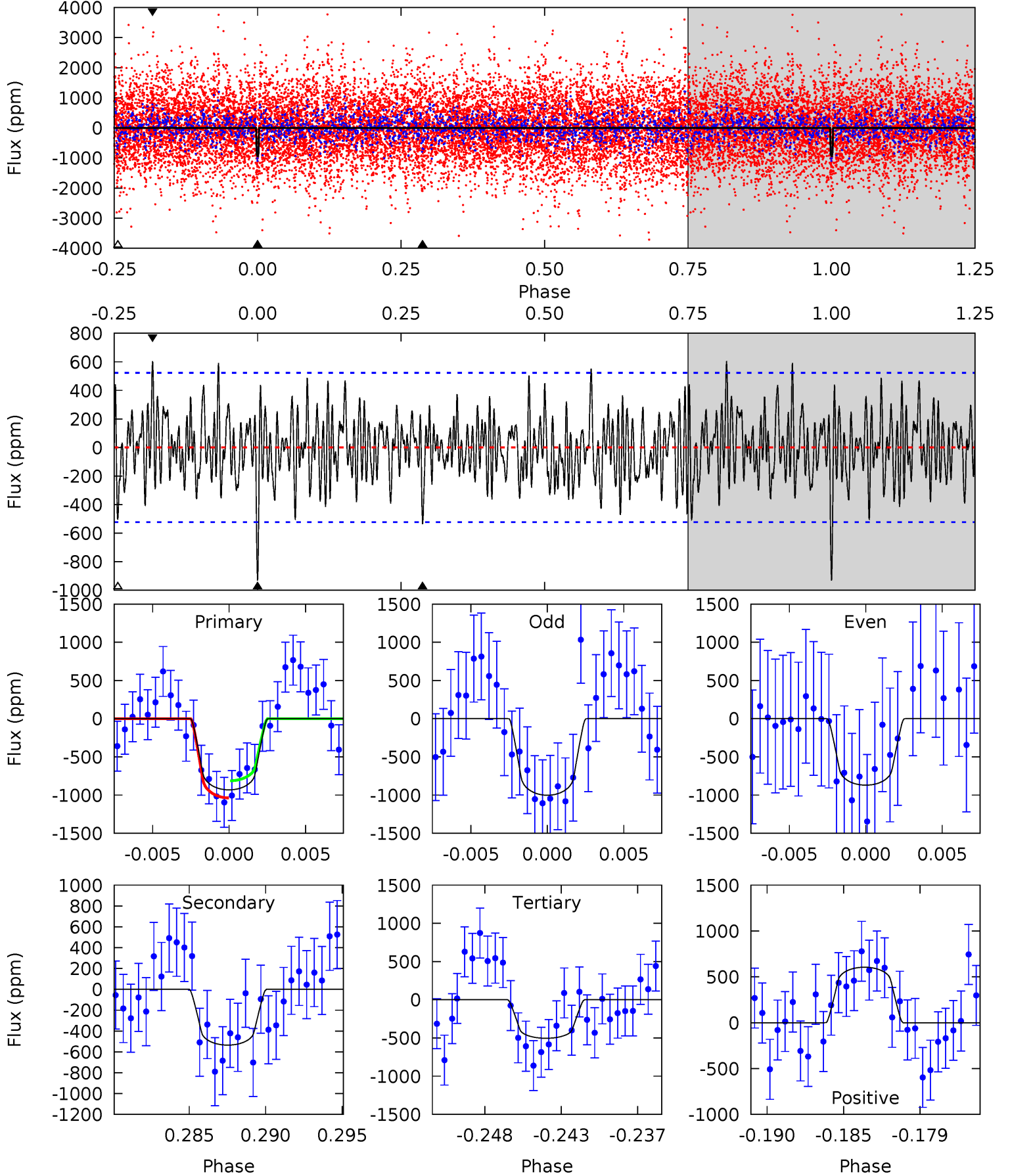
TCE 007045685-09 $P = 25.396541$ Days $T_0 = 140.328949$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-09, P = 25.396197 Days, E = 114.944054 Days

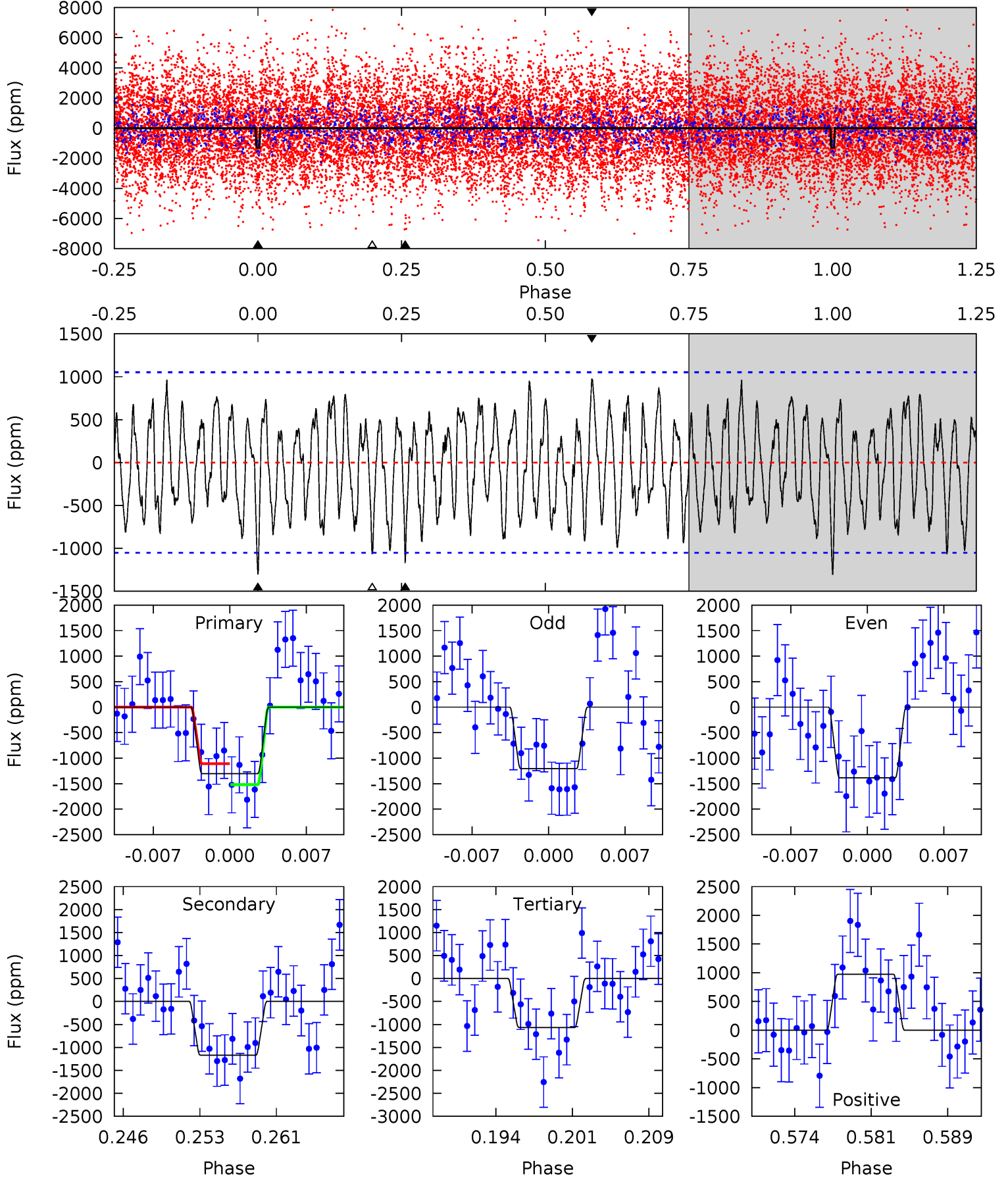
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.17	5.27	4.96	5.95	5.15	2.79	1.85	4.21	3.22	0.31	-0.69	0.65	1.04	0.39	1.11



Alt Model-Shift Uniqueness Test

007045685-09, P = 25.396541 Days, E = 114.932408 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.29	5.64	5.15	4.71	5.08	2.68	2.28	1.14	1.58	0.49	0.94	0.43	0.92	0.43	0.99



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-535 ± 102	$4.63^{+2.63}_{-2.46}$	1154^{+86}_{-64}	5948^{+3376}_{-1104}	469^{+1718}_{-285}
Alt.	-1168 ± 207	$5.73^{+2.93}_{-2.73}$	1156^{+89}_{-68}	6581^{+2944}_{-1221}	697^{+1752}_{-401}

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 $A_{obs} \gg 1.0$

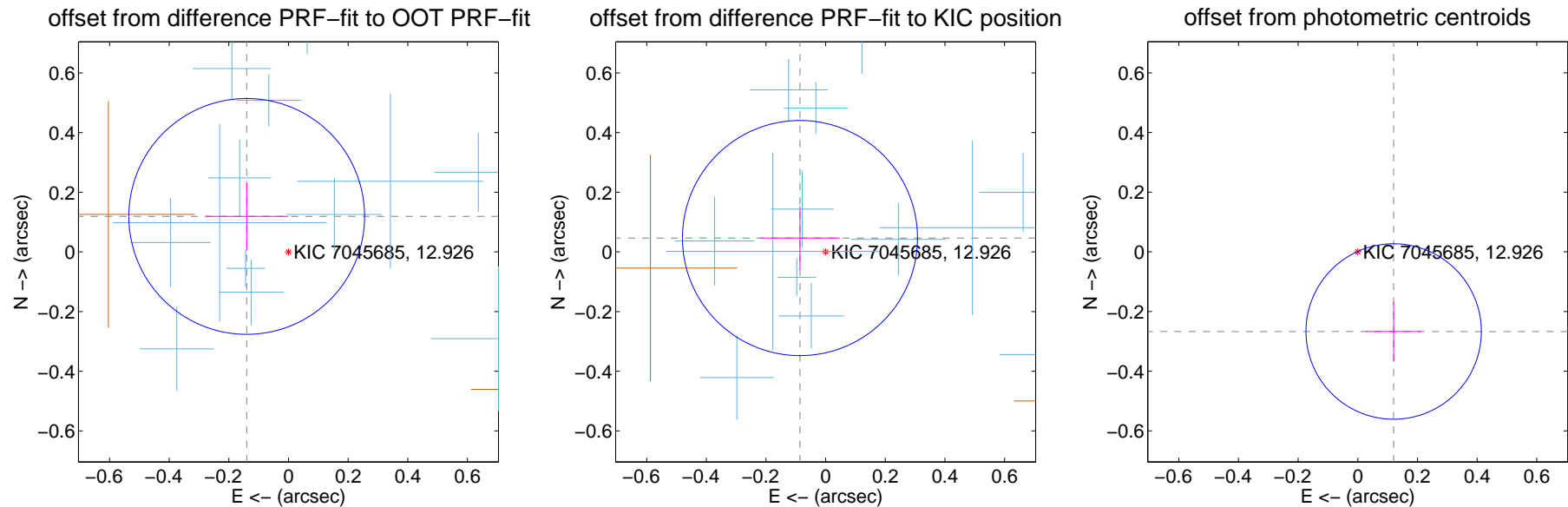
DV Centroid Data

Supplemental centroid analysis for 007045685-09. Kepler magnitude: 12.93. Transit SNR 8.76

There are 15 quarters with good PRF difference image offsets

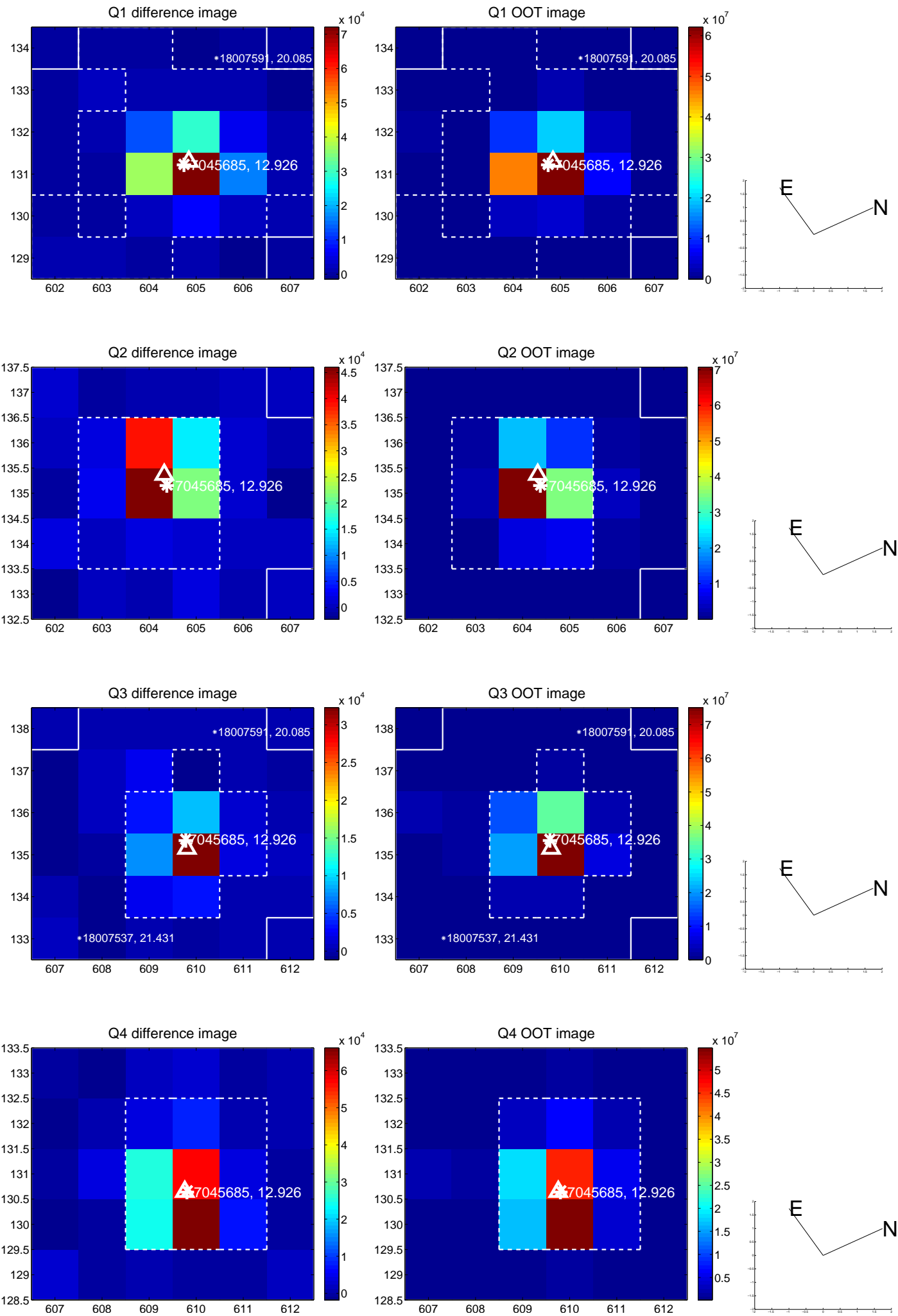
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.184 ± 0.132	1.40	0.140 ± 0.139	0.119 ± 0.115
PRF-fit source offset from KIC position	0.098 ± 0.131	0.74	0.086 ± 0.133	0.046 ± 0.107
photometric centroid source offset	0.29 ± 0.10	2.99	-0.12 ± 0.09	-0.27 ± 0.10

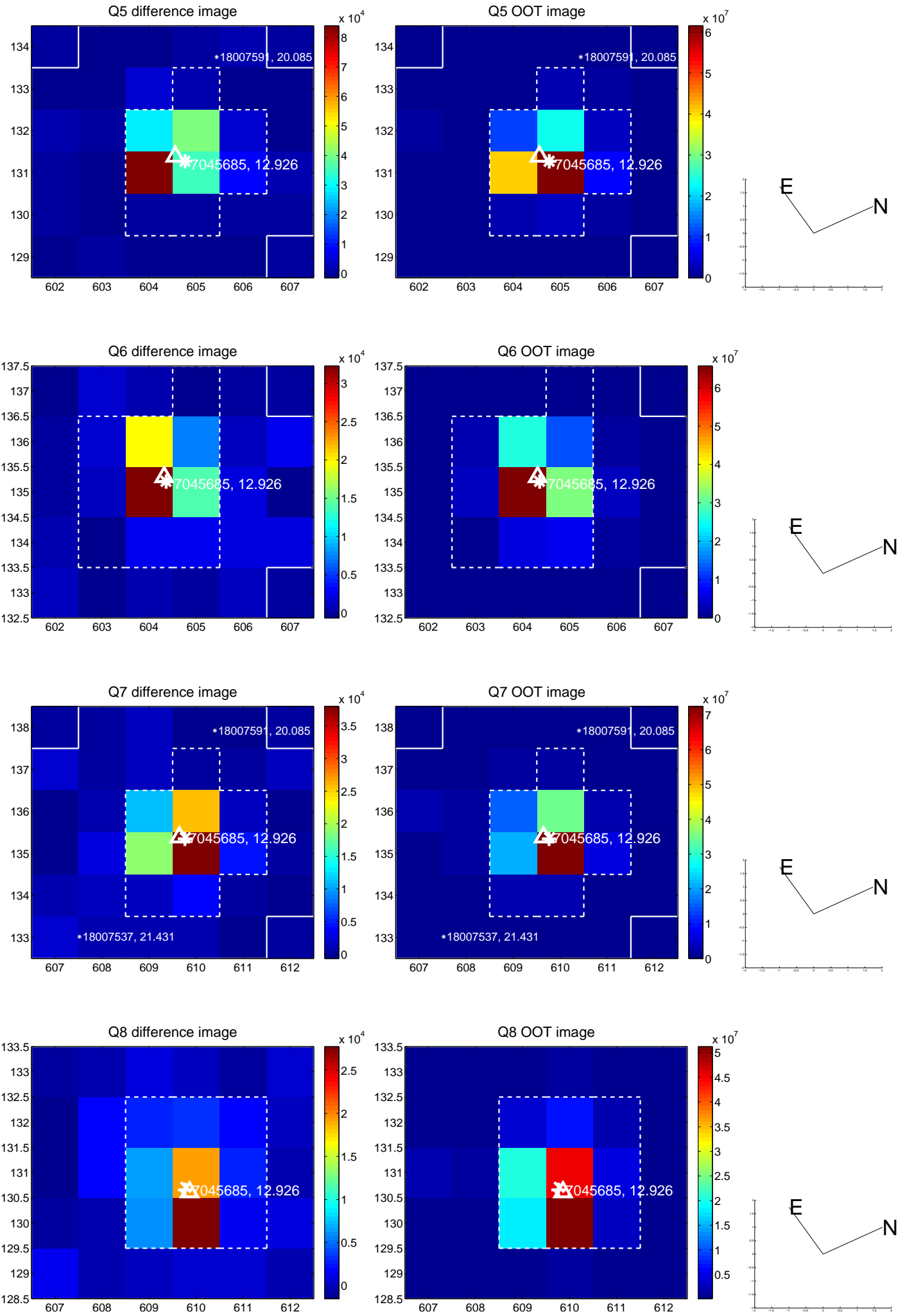


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

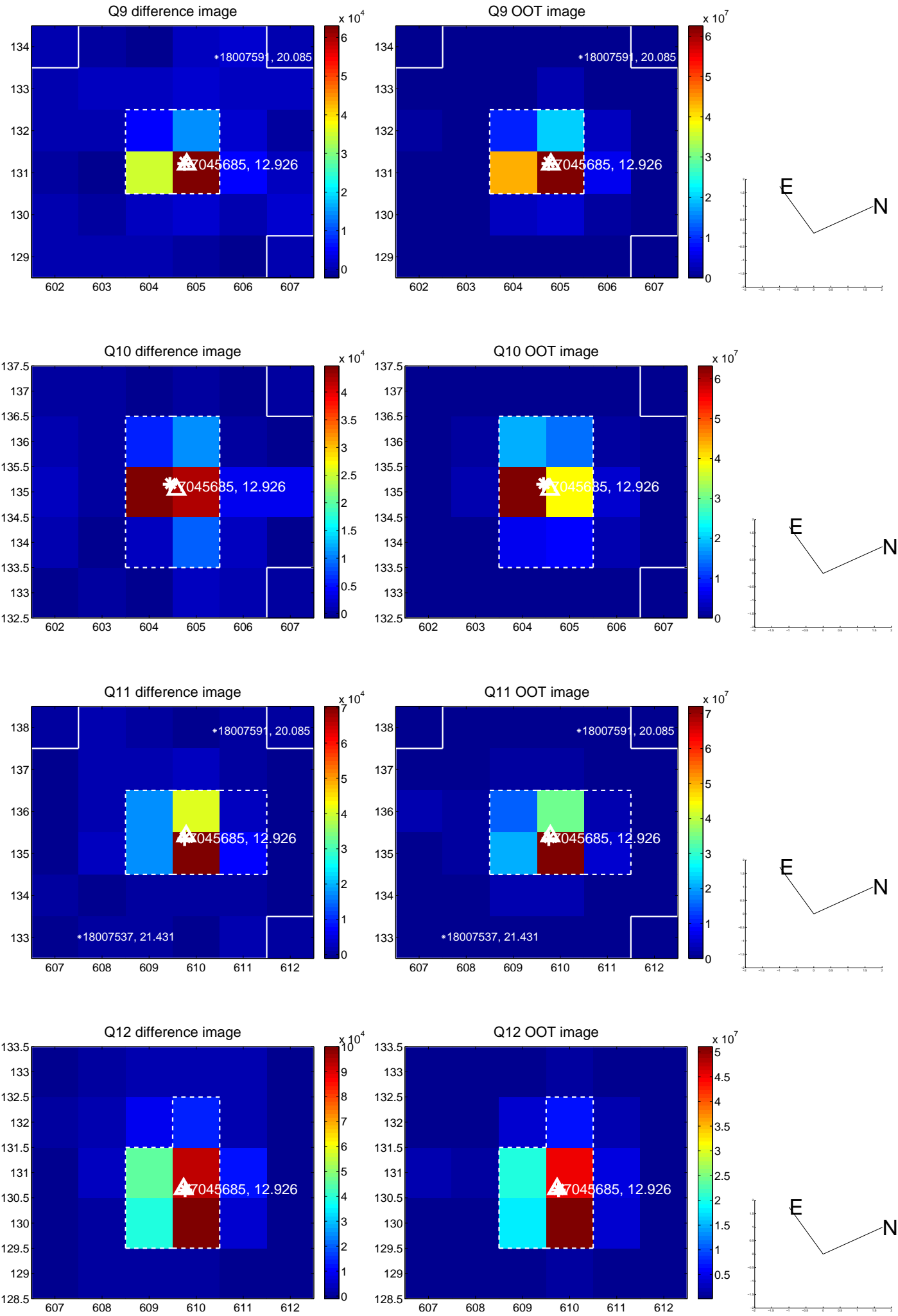
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



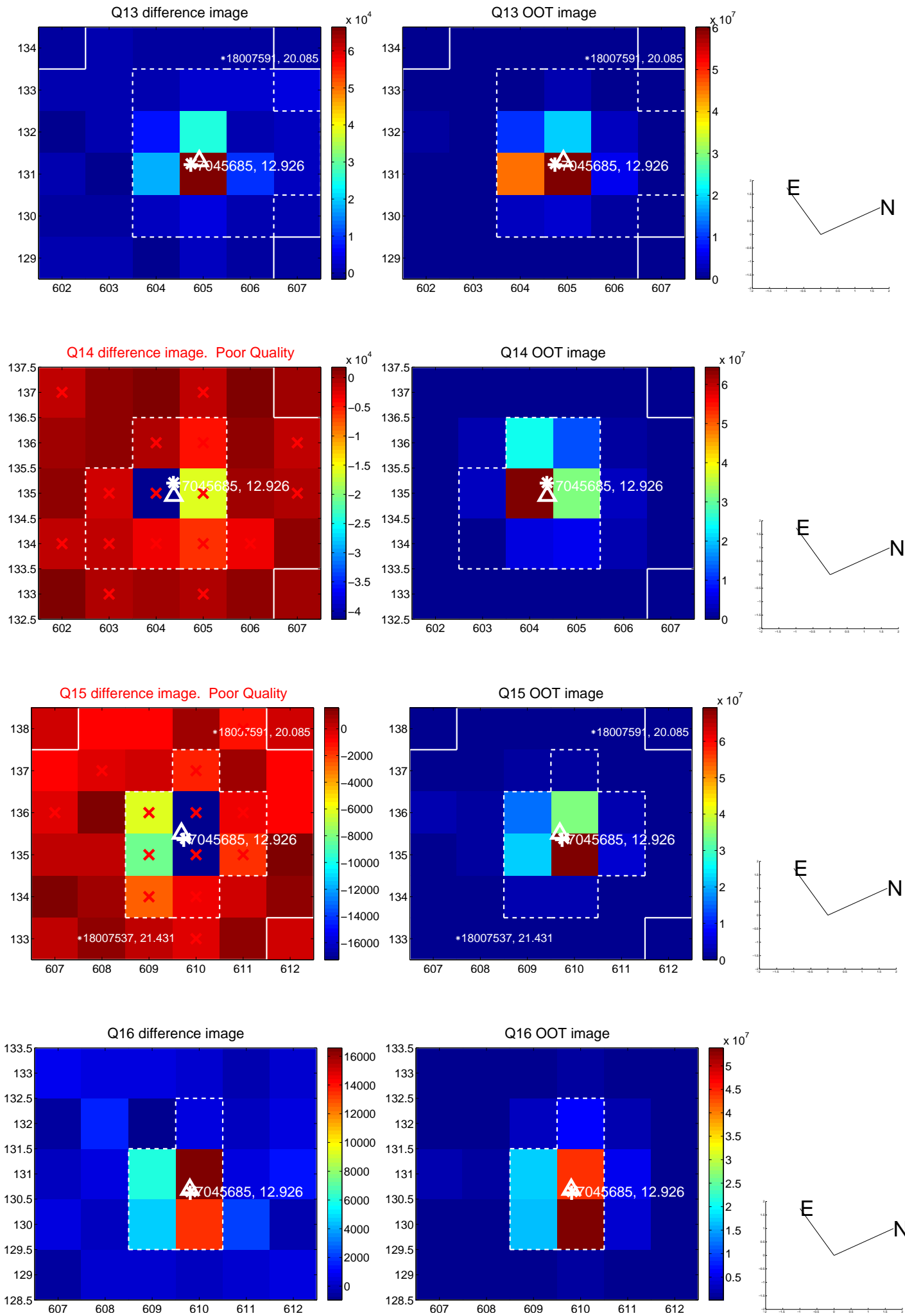
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



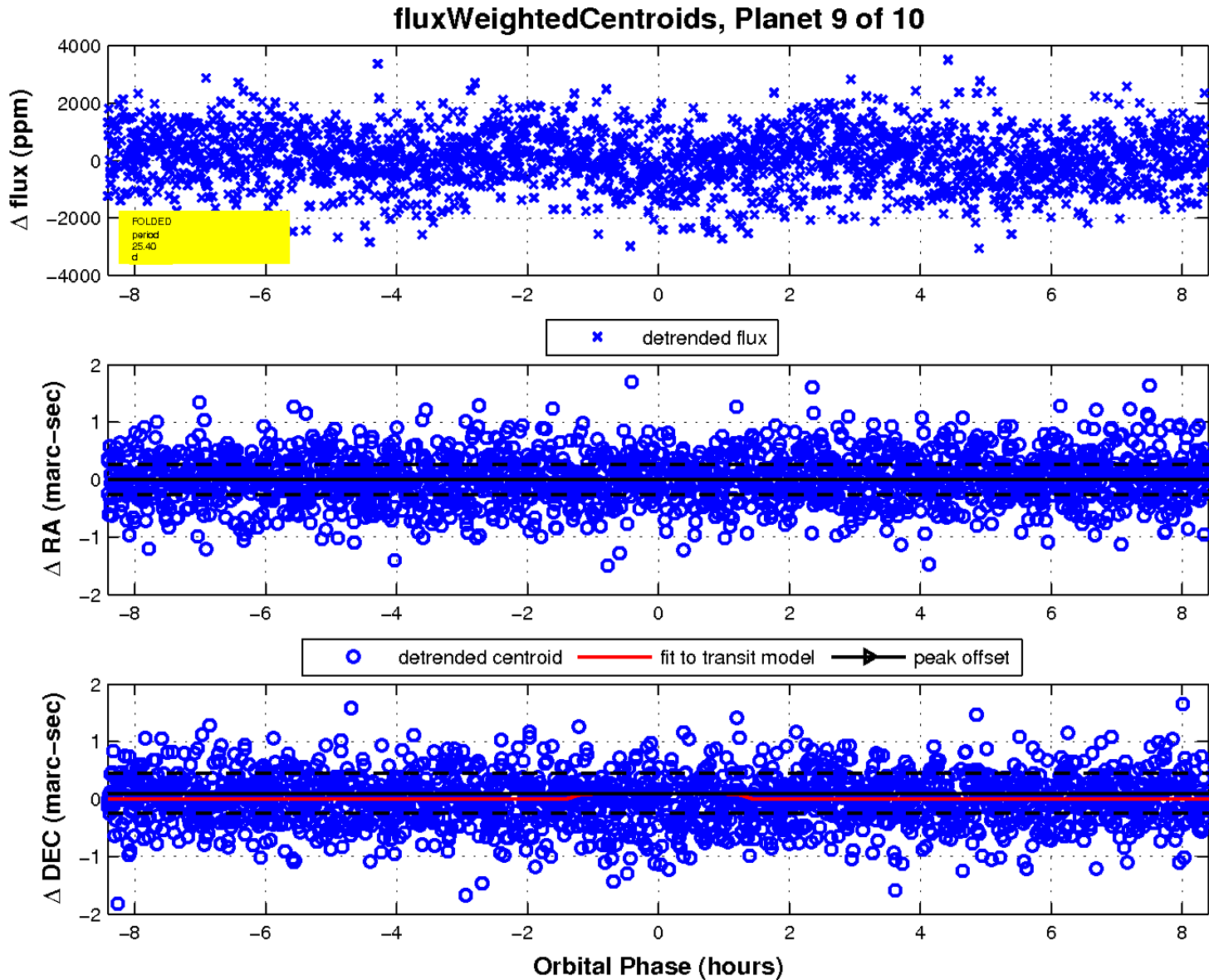
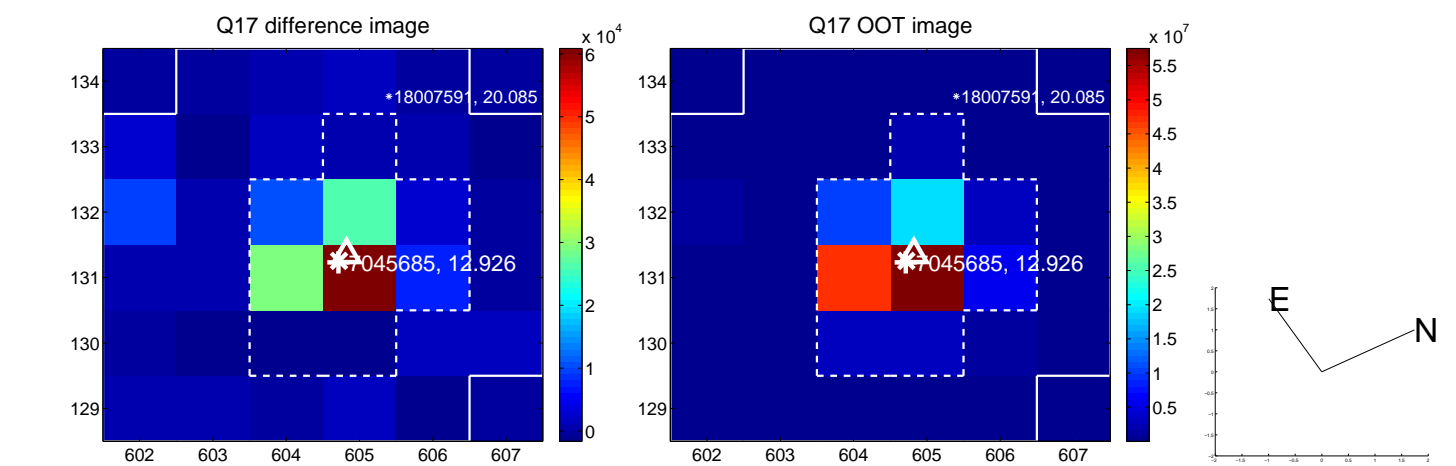
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

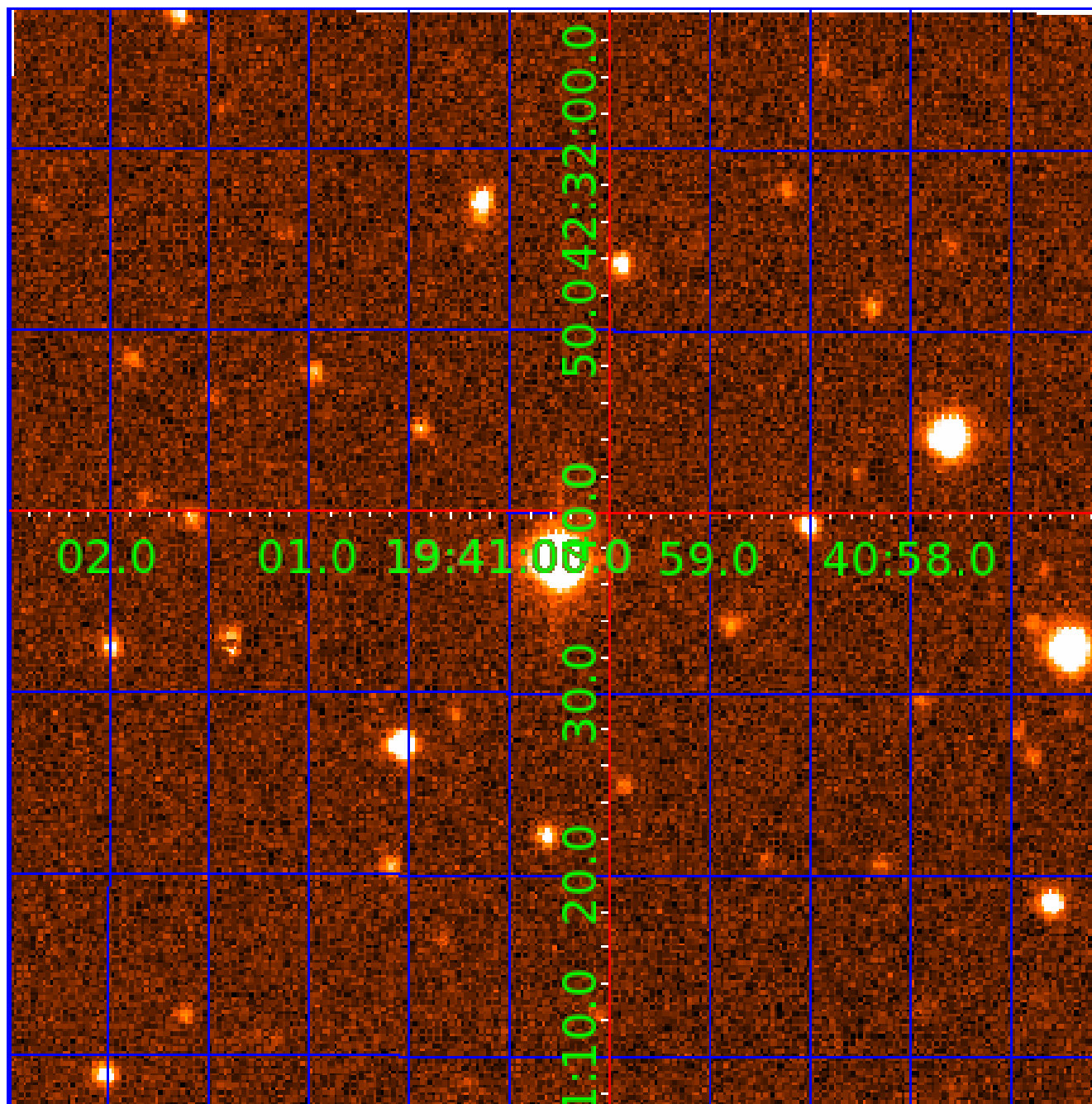


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007045685

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})
007045685-01	OBS	No	1.653417	132.923690	120.1	10.128	8.7	10.5	1.38	6817	1.54	3964.79
007045685-02	OBS	No	114.573642	217.561224	3135.8	4.695	13.5	12.3	1.38	6817	14.07	13.93
007045685-03	OBS	No	82.752815	138.657120	2226.3	3.195	11.1	10.5	1.38	6817	11.12	21.50
007045685-04	OBS	No	91.982205	145.135948	1459.8	2.482	9.9	6.4	1.38	6817	5.62	18.67
007045685-05	OBS	No	75.690770	165.957500	2136.9	2.707	9.6	10.8	1.38	6817	9.50	24.21
007045685-06	OBS	No	156.566147	269.757548	2240.7	3.006	9.0	9.9	1.38	6817	7.97	9.19
007045685-08	OBS	No	52.127694	144.577139	1090.1	3.932	8.8	8.1	1.38	6817	4.99	39.81
007045685-09	OBS	No	25.396197	140.340251	853.5	2.804	8.3	8.8	1.38	6817	4.30	103.84
007045685-10	OBS	No	366.988439	209.909297	1066.8	3.551	8.1	7.2	1.38	6817	4.56	2.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007045685-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007045685-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

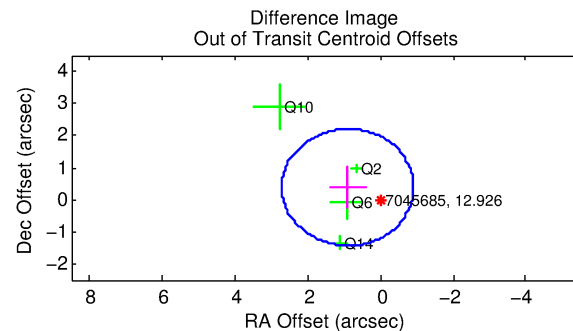
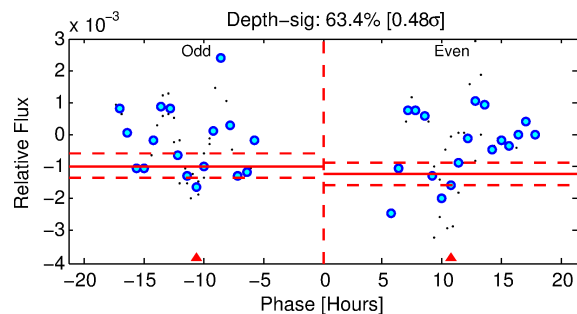
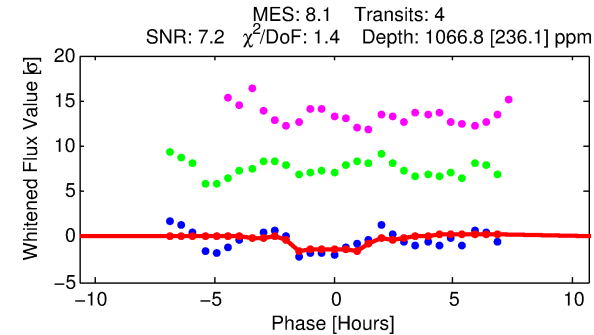
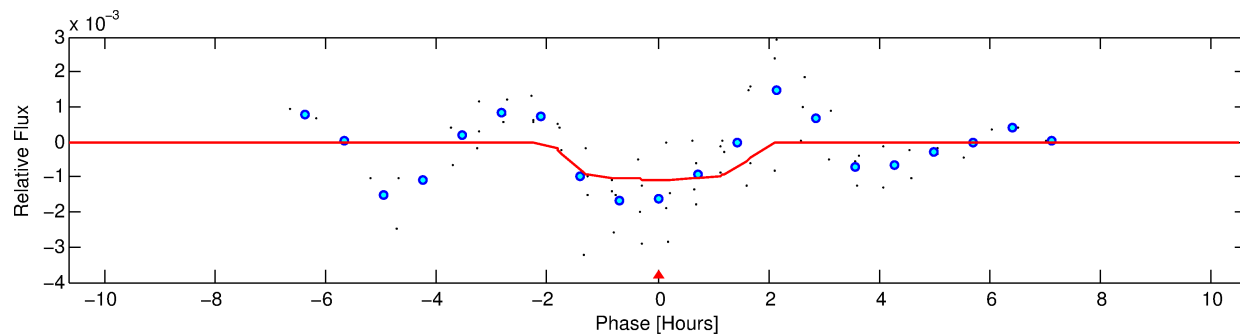
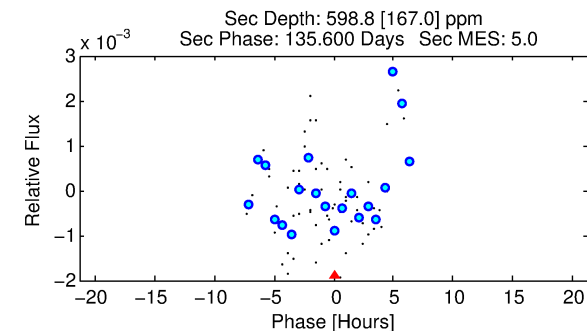
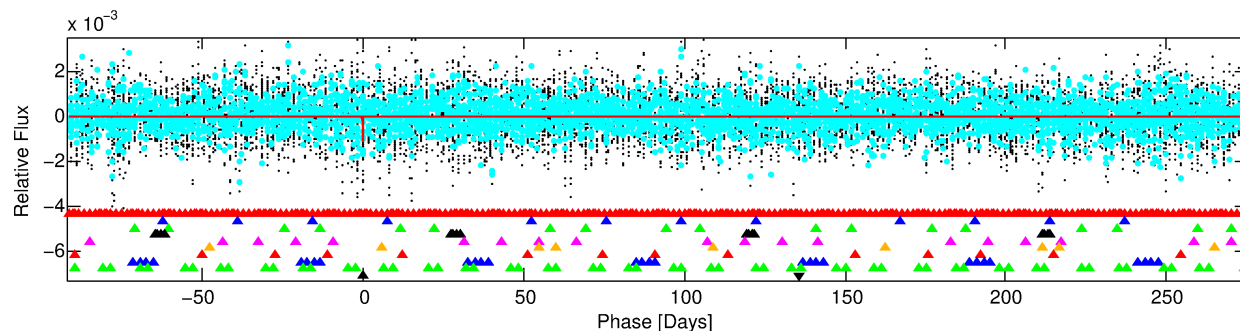
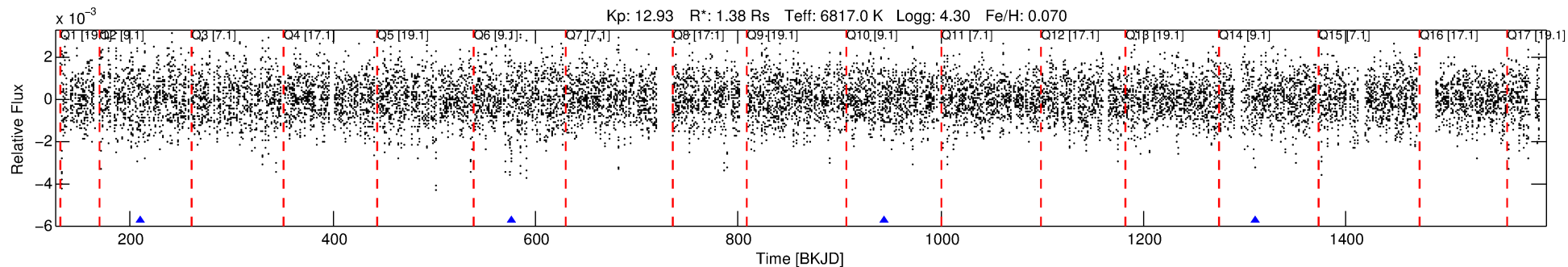
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045685-10

No Significant Match Found

DV One-Page Summary

KIC: 7045685 Candidate: 10 of 10 Period: 366.988 d



DV Fit Results:

Period = 366.98844 [0.00526] d
Epoch = 209.9093 [0.0089] BKJD
Rp/R* = 0.0303 [0.0948]
a/R* = 802.62 [13803.35]
b = 0.17 [100.61]
Seff = 2.95 [1.30]
Teq = 334 [37] K
Rp = 4.56 [14.38] Re
a = 1.1184 [0.3289] AU
Ag = 19808.38 [124448.06] [0.16σ]
Teff = 6130 [9610] K [0.60σ]

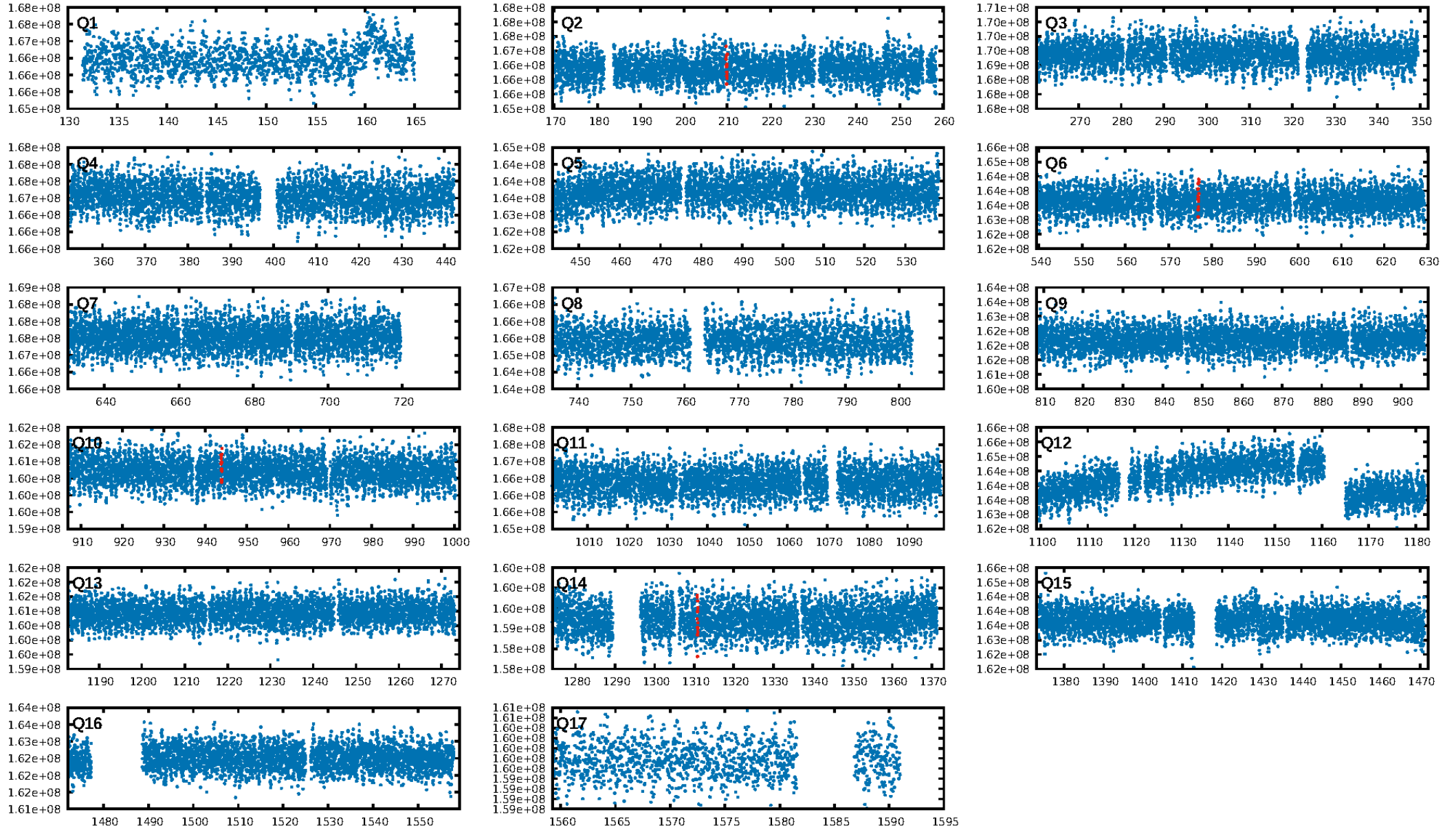
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1085.45σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 89.6%
ModelChiSquareGof-sig: 87.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.752
Centroid-sig: 68.0%
Centroid-so: 0.198 arcsec [0.77σ]
OotOffset-rm: 0.978 arcsec [1.61σ]
KicOffset-rm: 0.943 arcsec [1.24σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

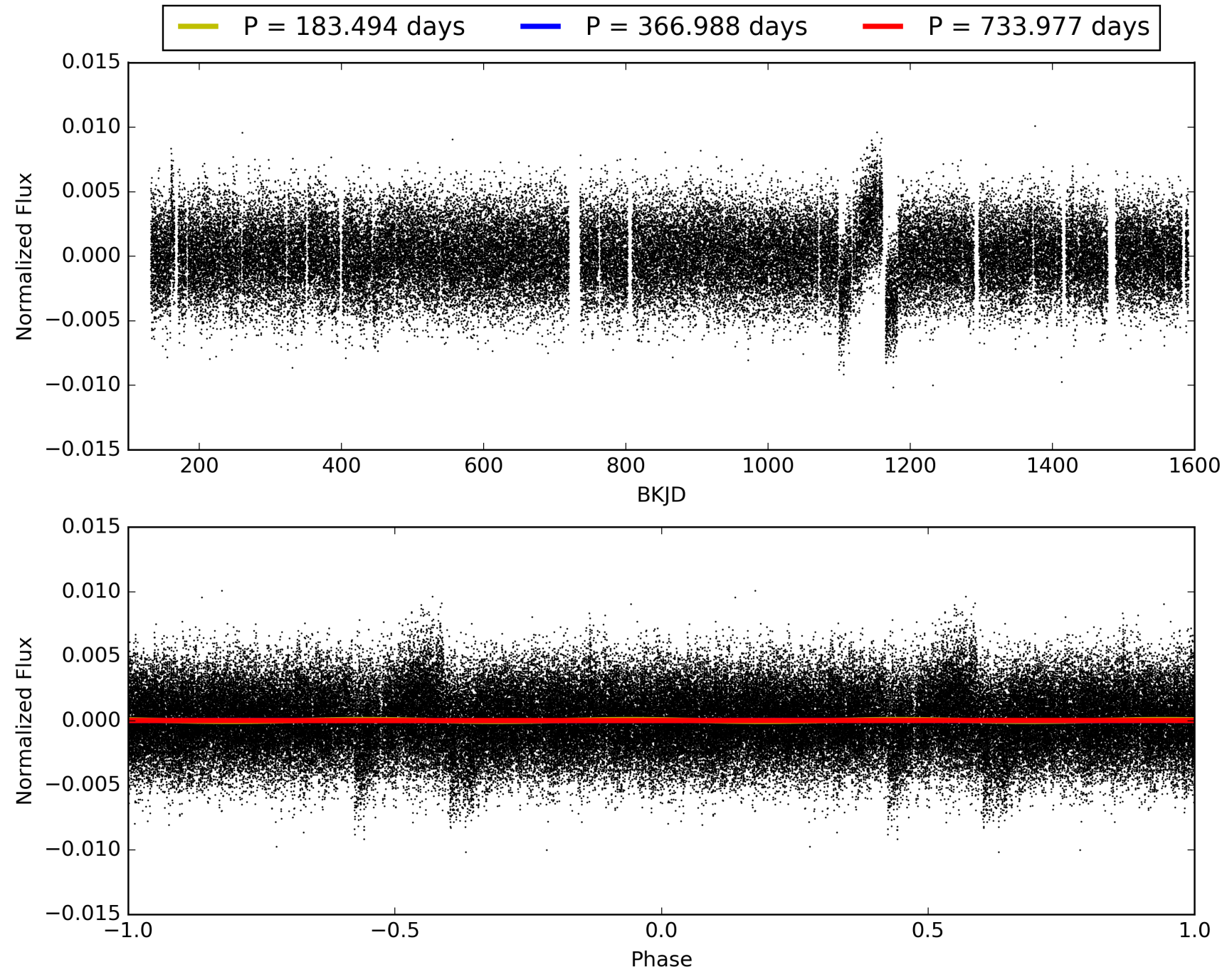
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:46:03 Z

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

TCE 007045685-10, PDC Light Curves

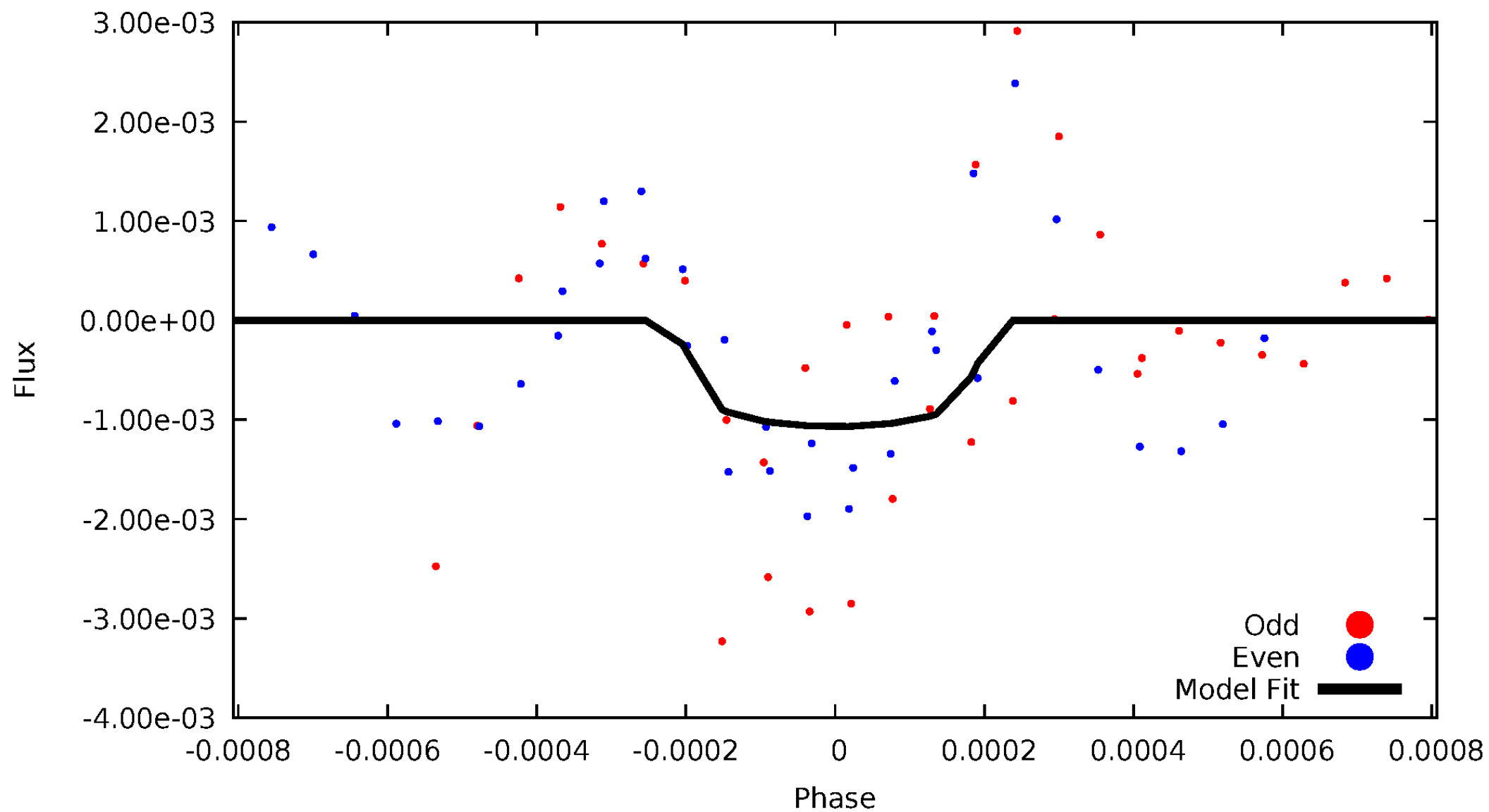


TCE 007045685-10



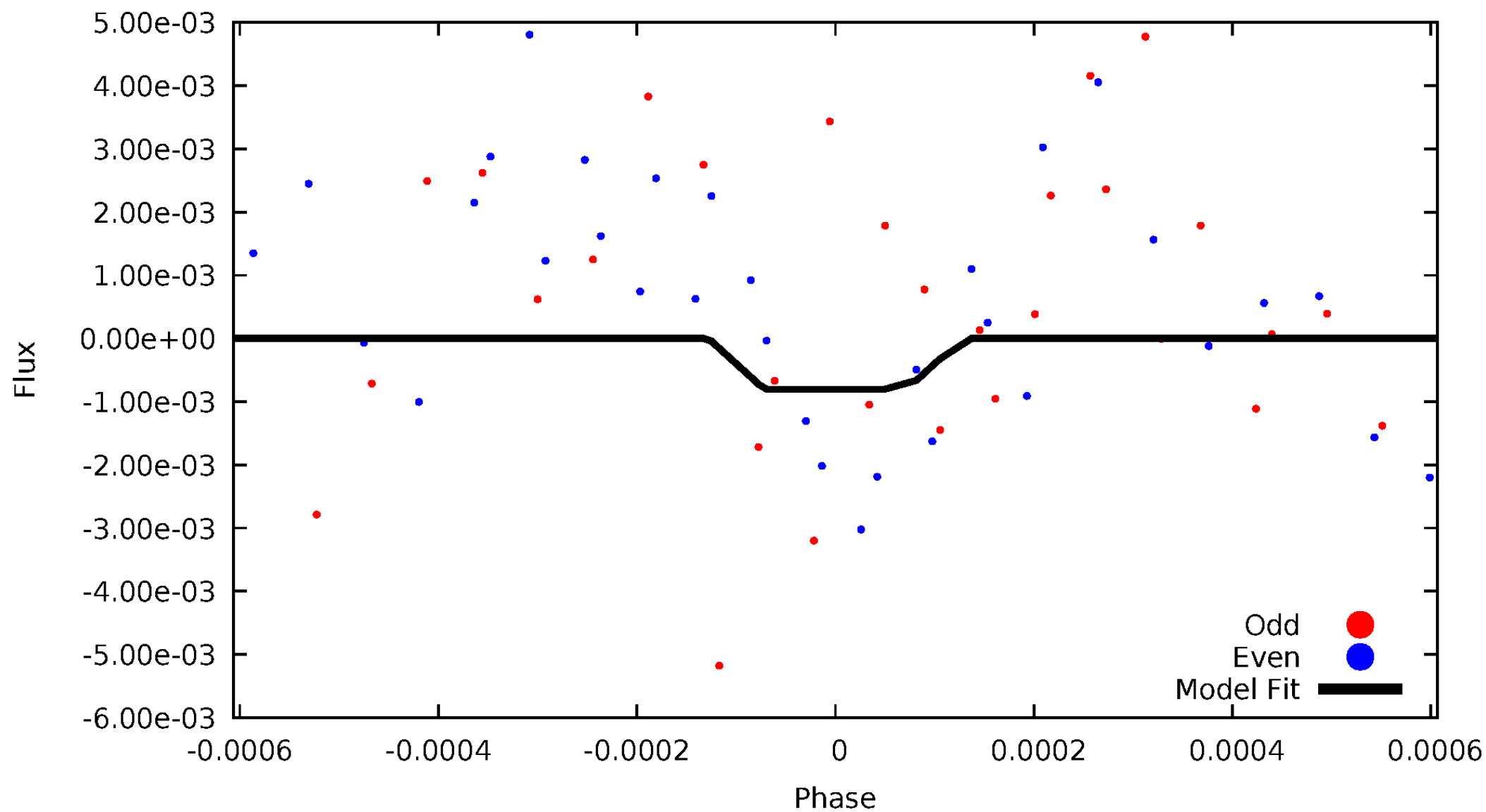
DV Odd/Even

TCE 007045685-10



ALT Odd/Even

TCE 007045685-10

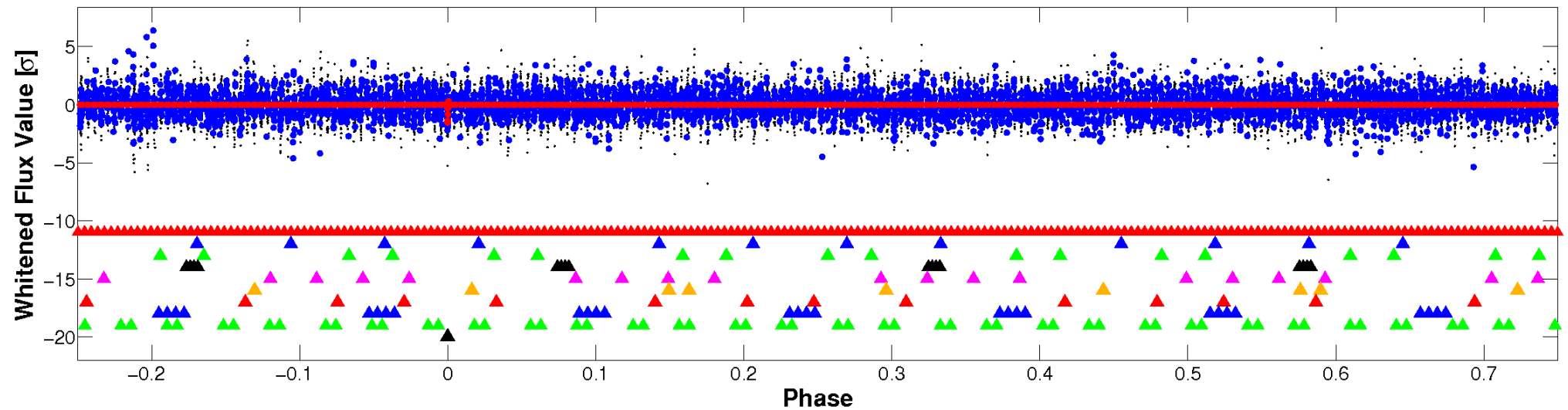


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

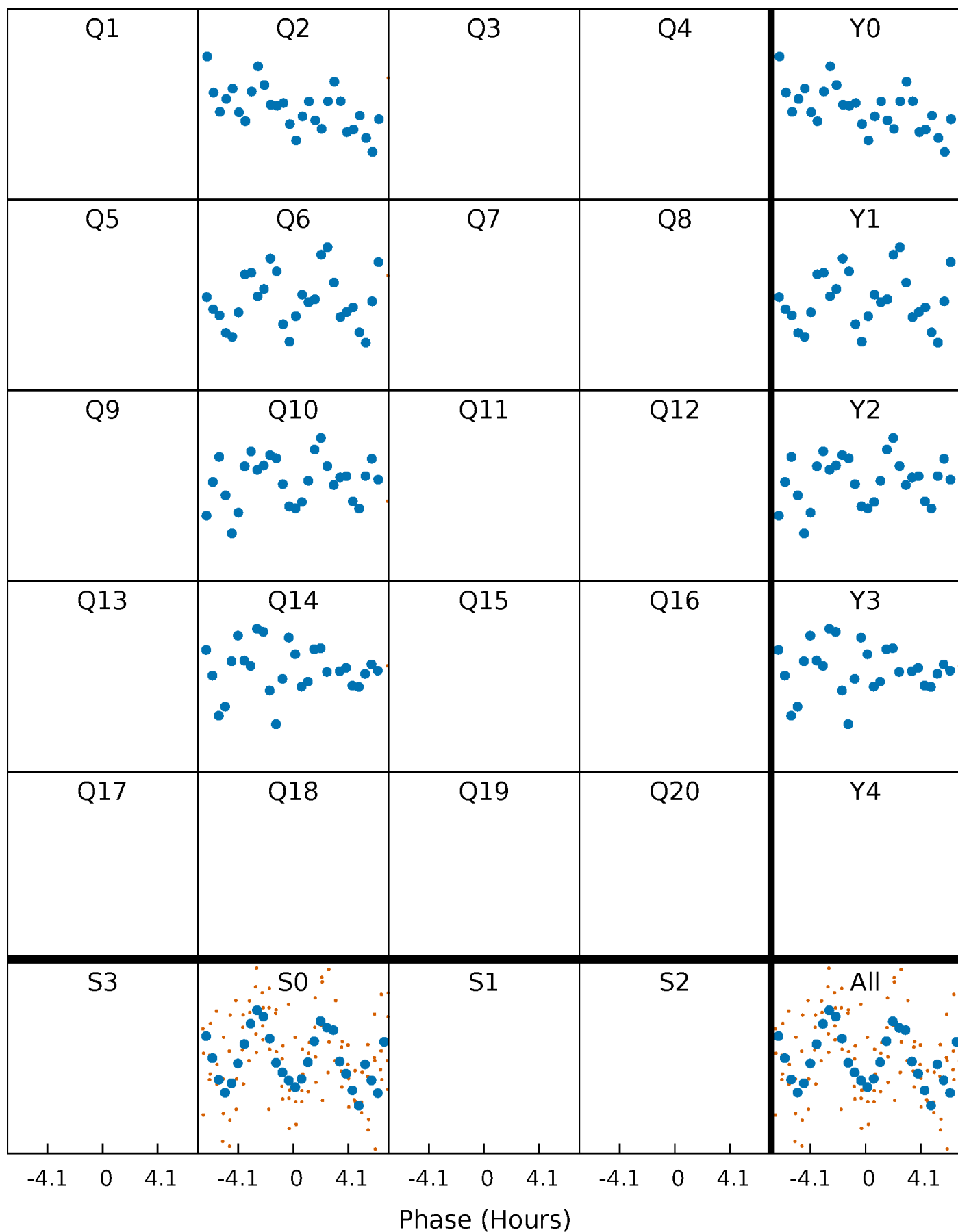


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 007045685-10 P=366.988438 Days $T_0=209.909297$ (BKJD)



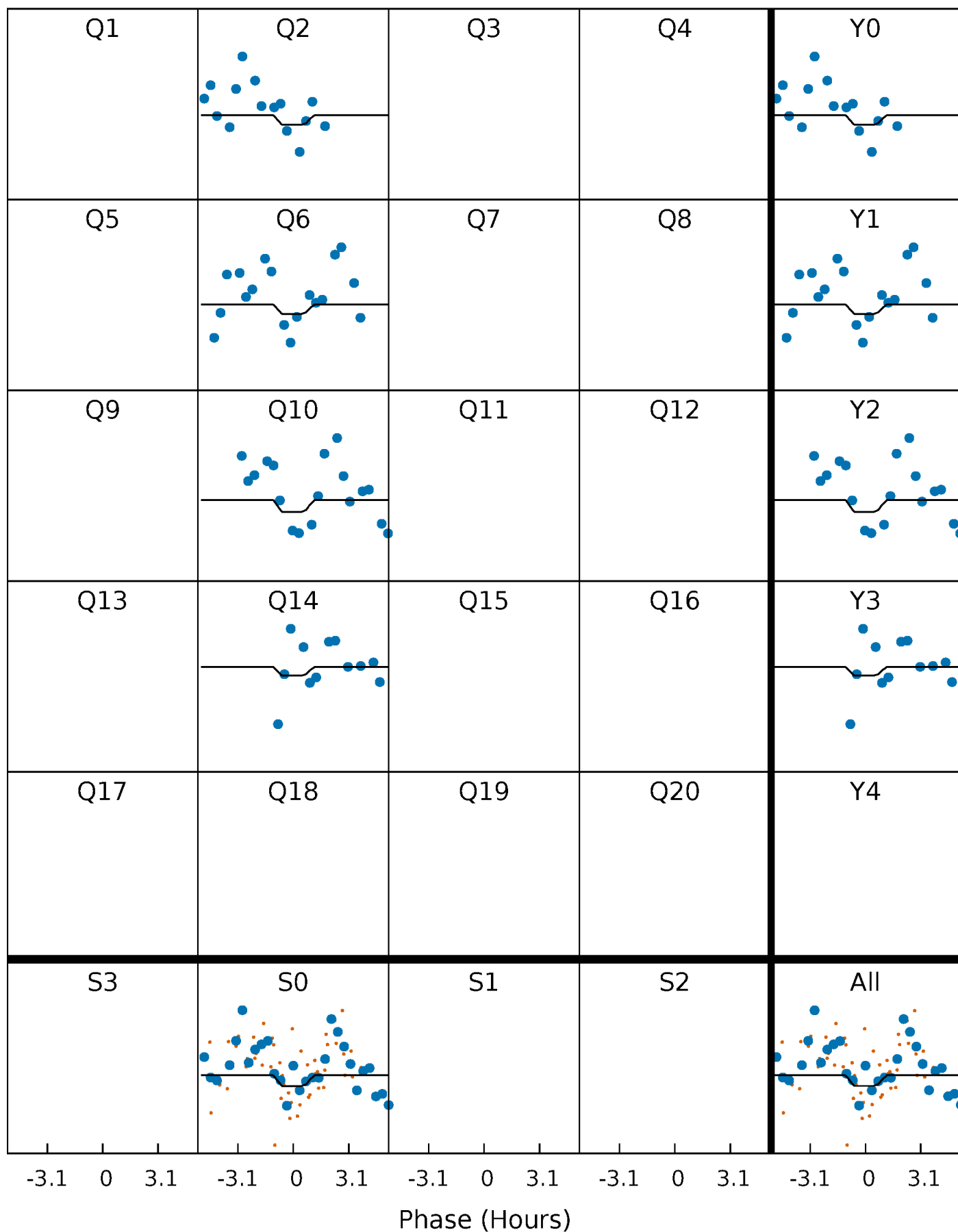
DV Quarter-Phased Transit Curves

TCE 007045685-10 P=366.988438 Days $T_0=209.909297$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

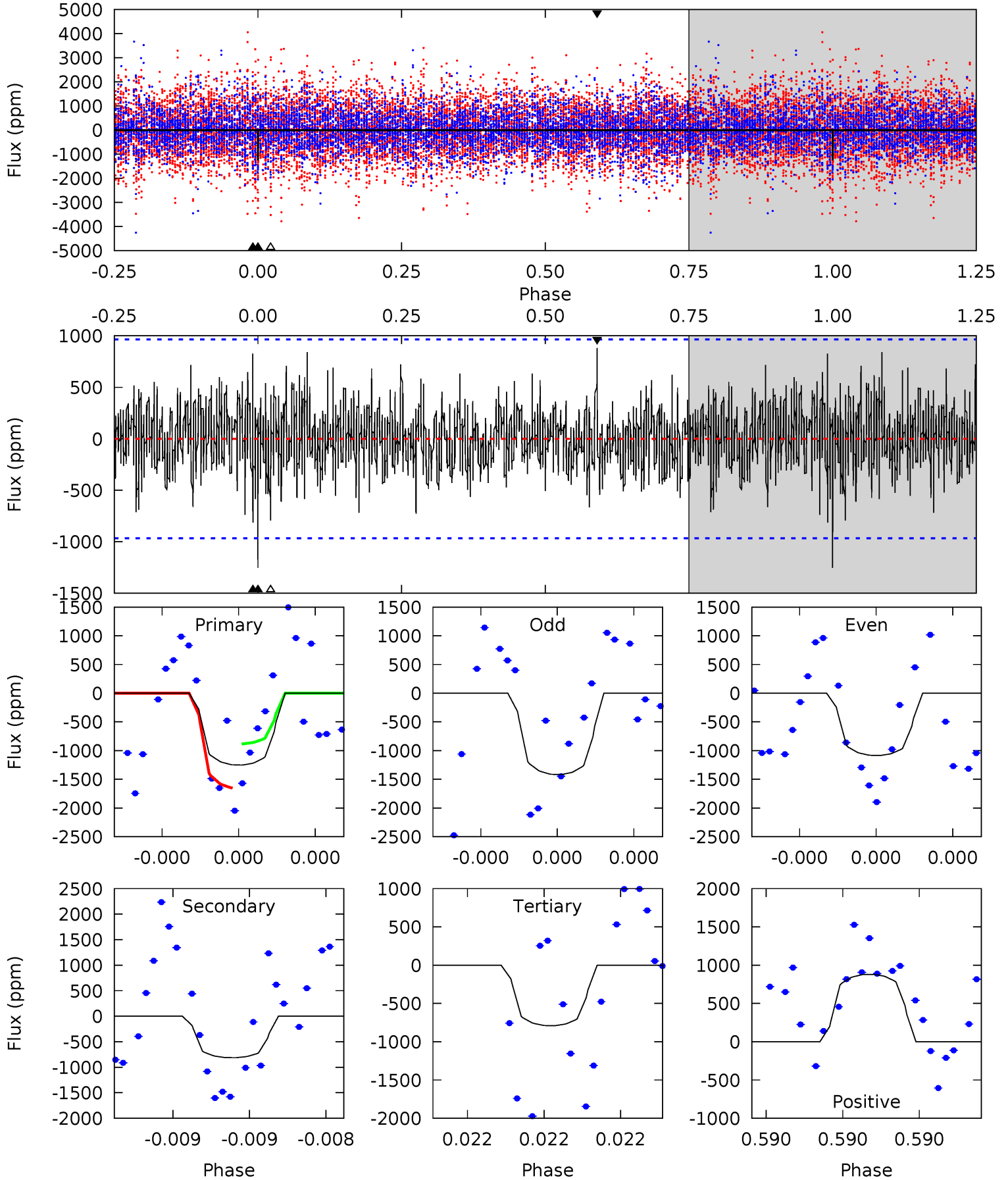
TCE 007045685-10 P=366.984437 Days $T_0=209.908681$ (BKJD)



DV Model-Shift Uniqueness Test

007045685-10, P = 366.988438 Days, E = 209.909297 Days

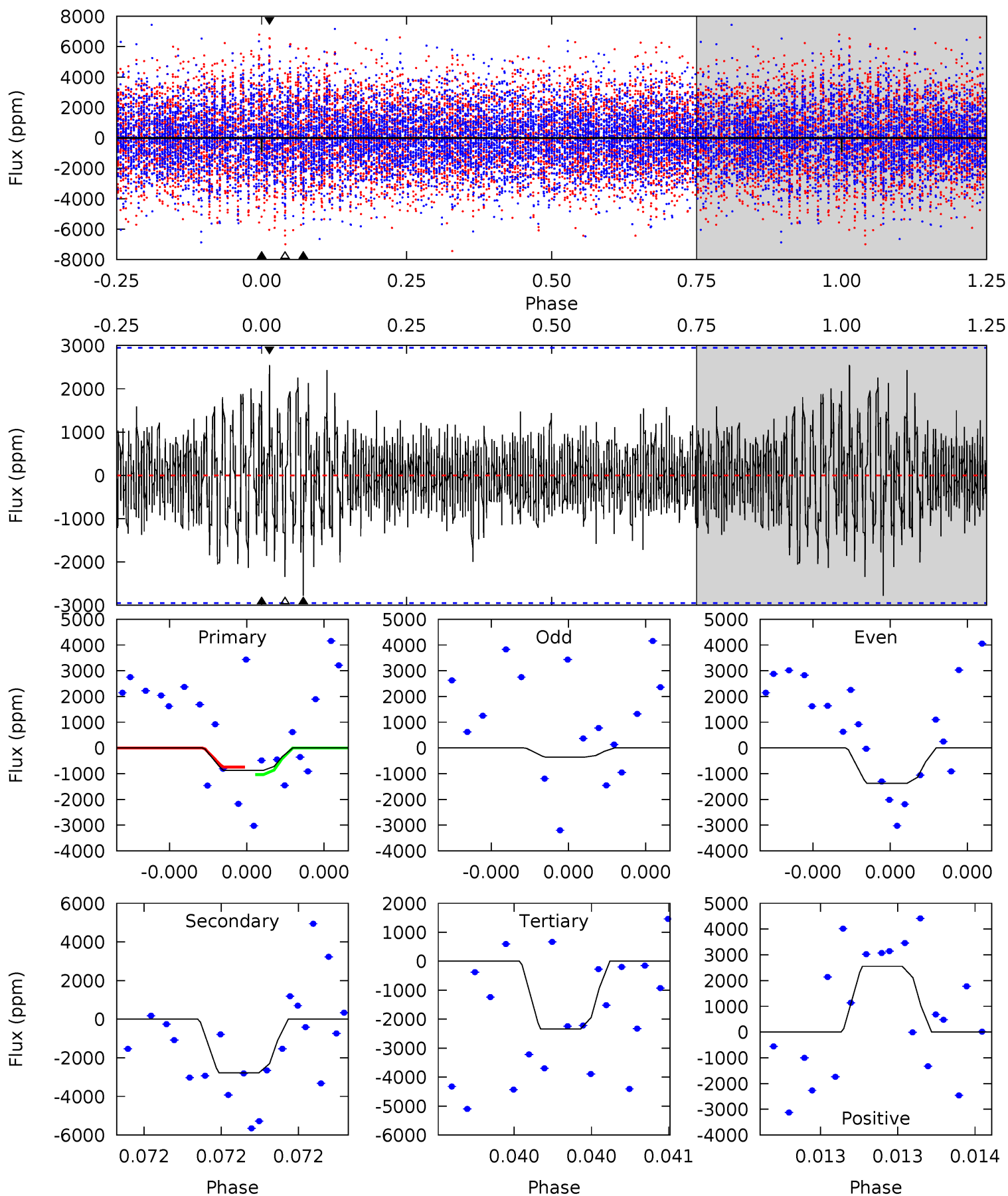
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.28	4.73	4.60	5.12	5.62	3.55	1.36	2.68	2.16	0.13	-0.39	0.97	1.11	0.41	2.23



Alt Model-Shift Uniqueness Test

007045685-10, P = 366.984437 Days, E = 209.908681 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.68	5.38	4.53	4.94	5.71	3.68	1.28	-2.85	-3.25	0.85	0.44	0.99	0.62	0.48	0.28



Stellar Parameters For KIC 007045685

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6817^{+162}_{-263}	$4.299^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.381^{+0.502}_{-0.167}$	$1.384^{+0.190}_{-0.209}$	$0.740^{+0.230}_{-0.389}$
	+2%/-4%	+2%/-5%	+286%/-500%	+36%/-12%	+14%/-15%	+31%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007045685-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-813 ± 172	$11.76^{+13.39}_{-8.03}$	473^{+36}_{-24}	4352^{+3306}_{-975}	3817^{+37365}_{-2972}
Alt.	-2778 ± 517	$12.02^{+12.53}_{-8.36}$	473^{+37}_{-24}	5635^{+5954}_{-1417}	$13320^{+127436}_{-10233}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

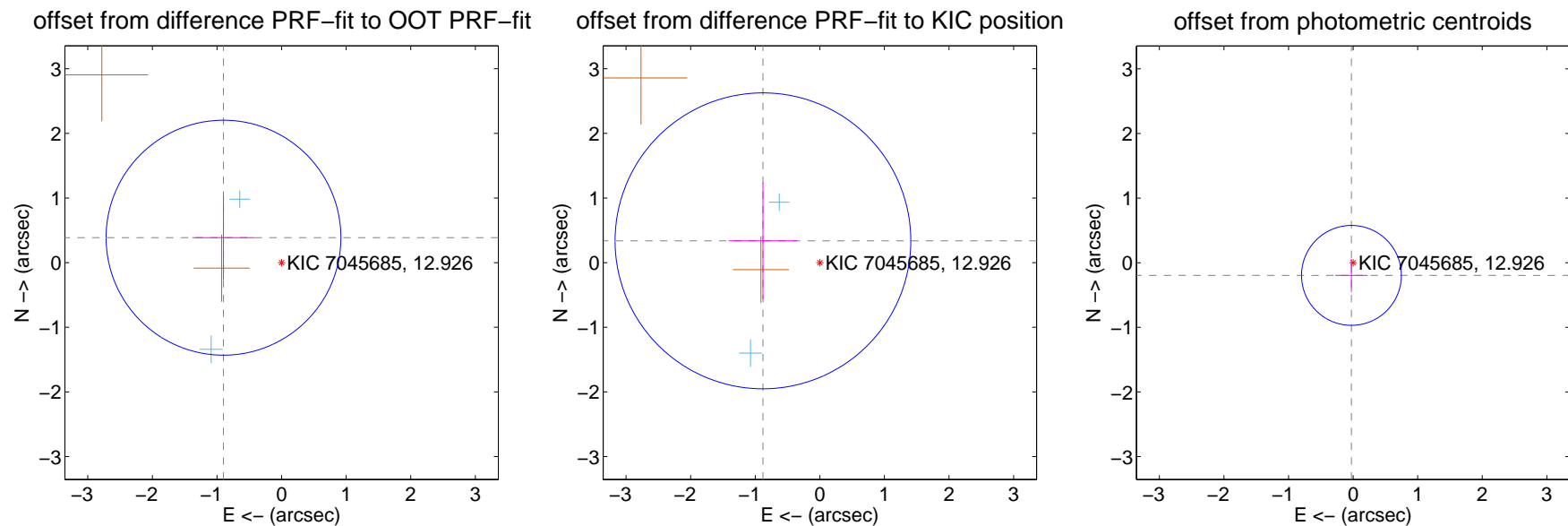
DV Centroid Data

Supplemental centroid analysis for 007045685-10. Kepler magnitude: 12.93. Transit SNR 7.17

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.978 ± 0.606	1.61	0.899 ± 0.480	0.386 ± 0.645
PRF-fit source offset from KIC position	0.943 ± 0.763	1.24	0.881 ± 0.531	0.337 ± 0.900
photometric centroid source offset	0.20 ± 0.26	0.77	0.03 ± 0.25	-0.20 ± 0.26



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

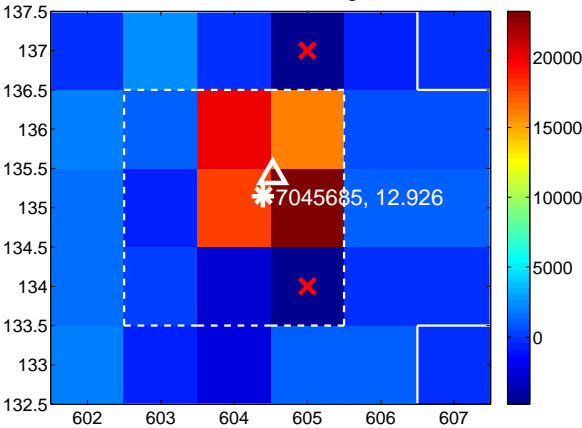
Q1 no difference image



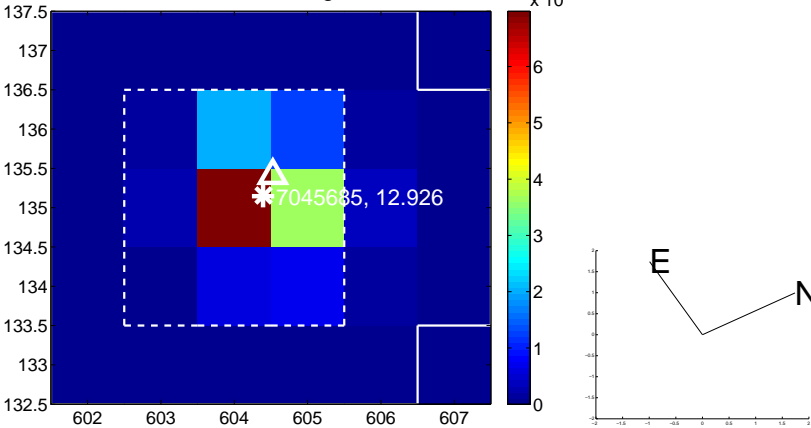
Q1 no OOT image



Q2 difference image



Q2 OOT image



Q3 no difference image



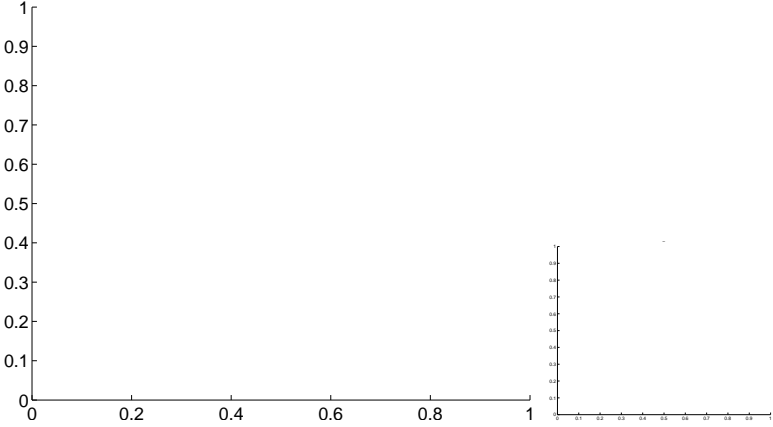
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

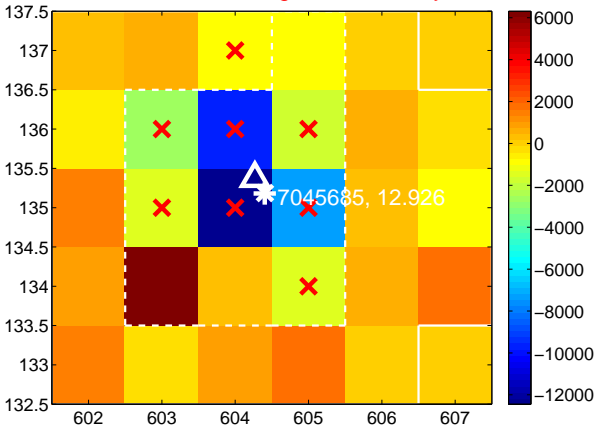
Q5 no difference image



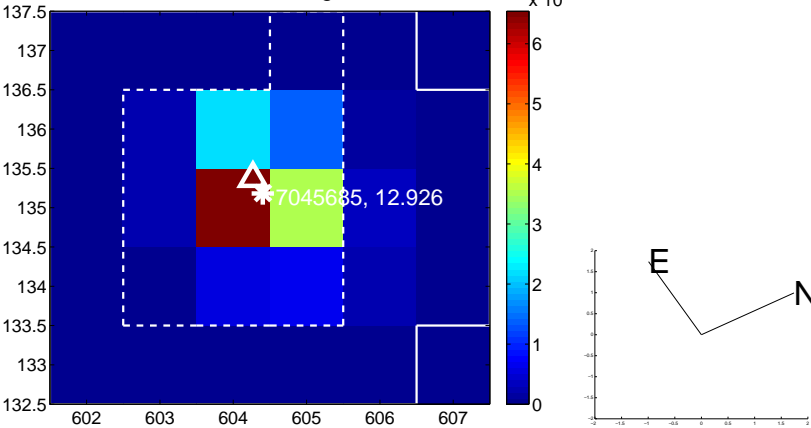
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

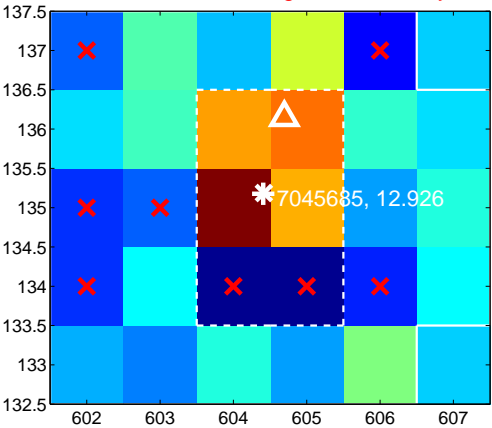
Q9 no difference image



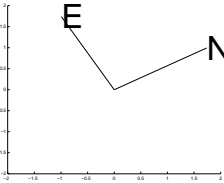
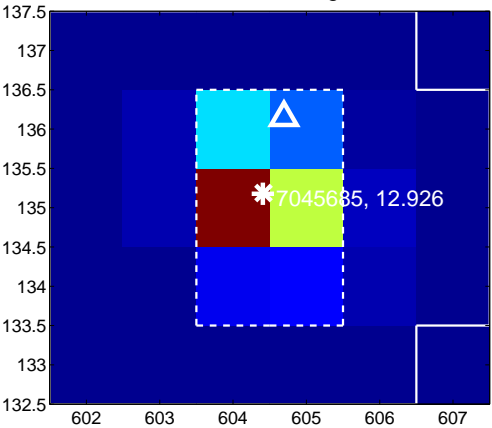
Q9 no OOT image



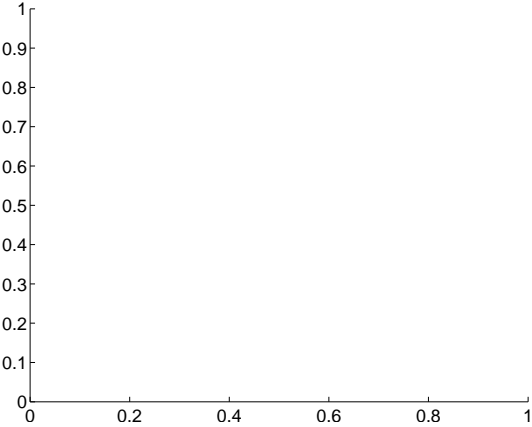
Q10 difference image. Poor Quality



Q10 OOT image



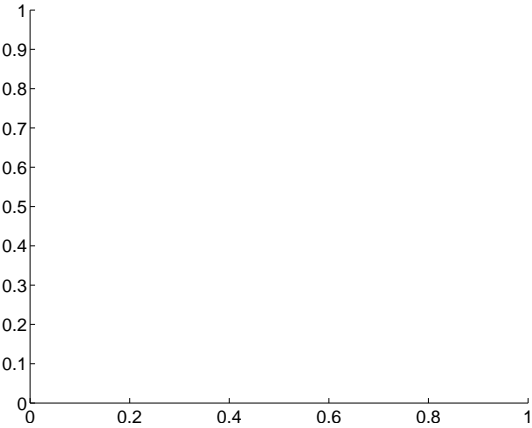
Q11 no difference image



Q11 no OOT image



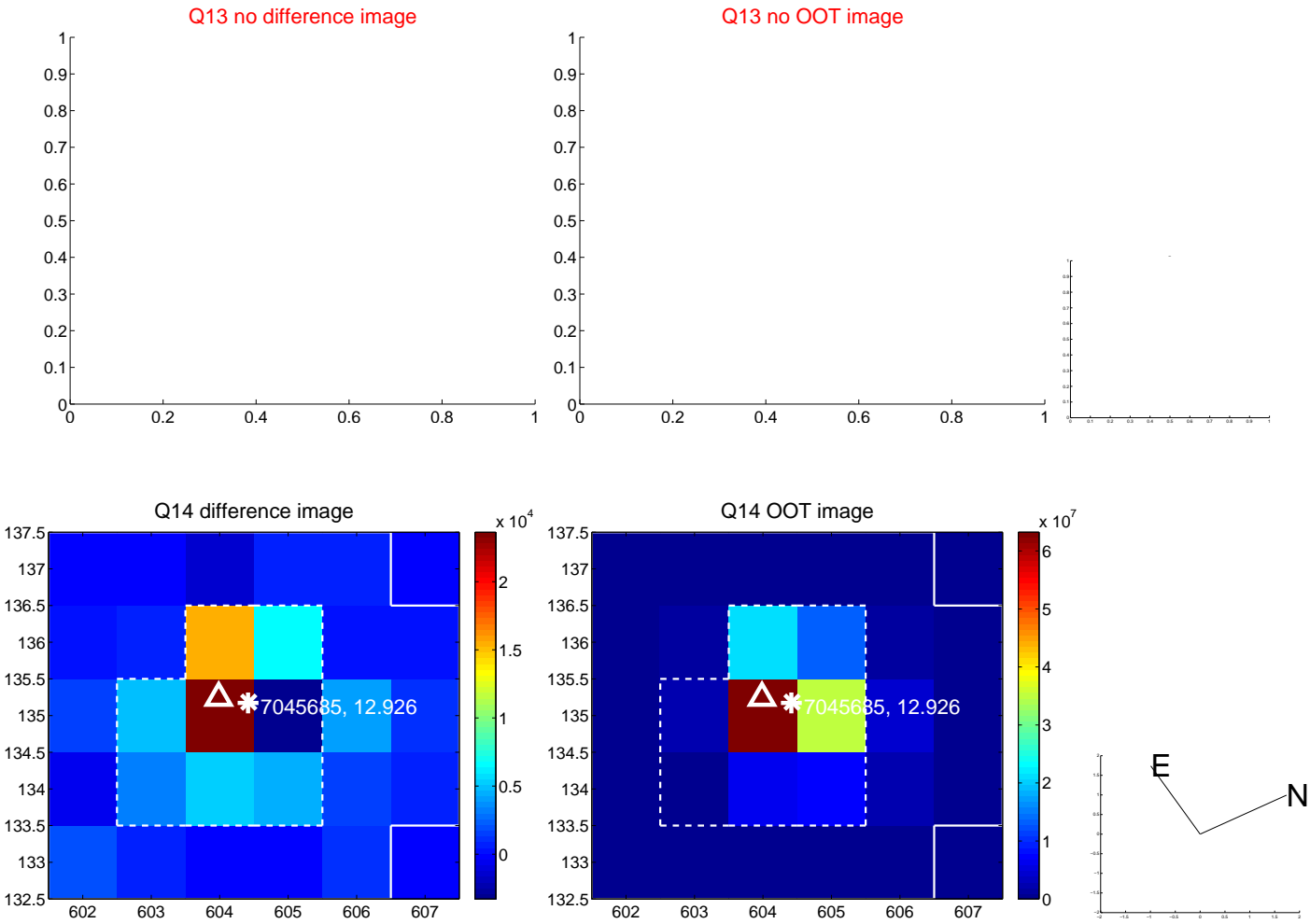
Q12 no difference image



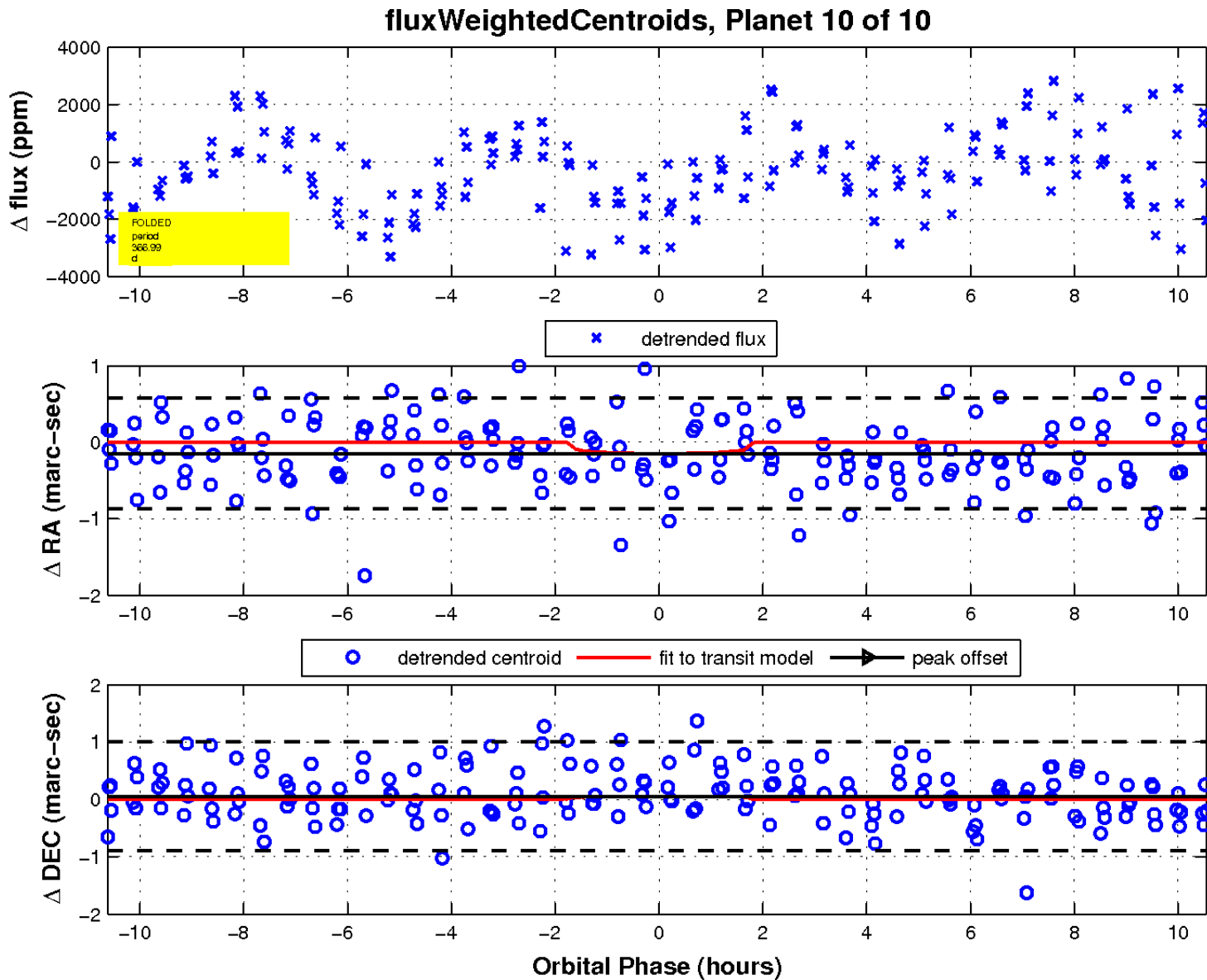
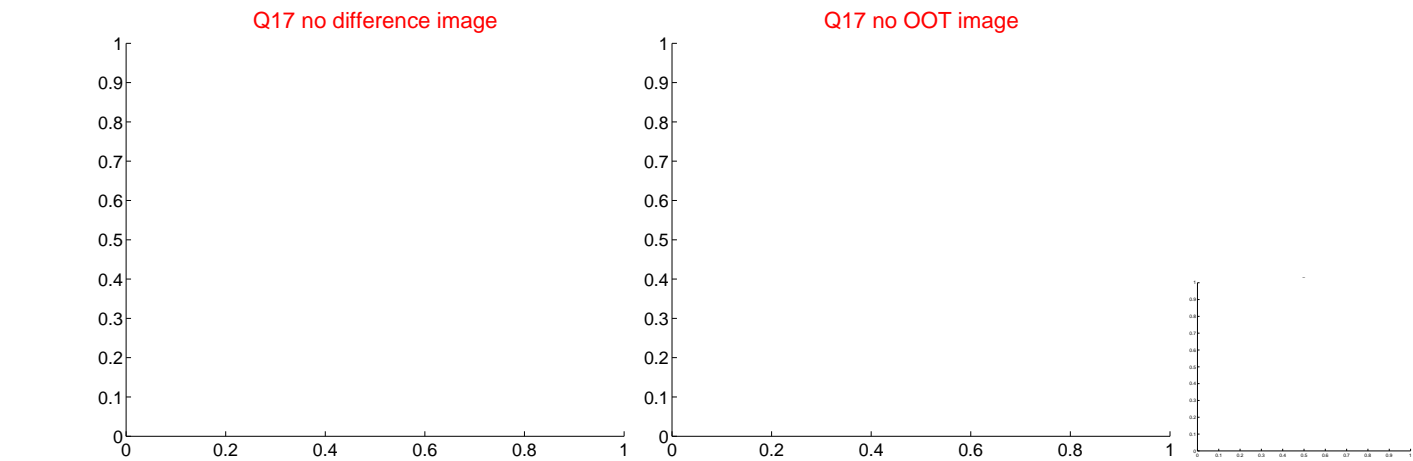
Q12 no OOT image



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.



UKIRT Image

