

KIC 004284959

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})
004284959-01	OBS	No	1.192696	132.479950	0.0	8.808	8.7	0.0	1.22	6731	0.00	5236.33
004284959-02	OBS	No	22.480554	136.553048	557.1	1.737	18.7	16.0	1.22	6731	2.92	104.39
004284959-03	OBS	No	11.991718	139.115641	341.7	2.179	14.6	15.0	1.22	6731	2.59	241.30
004284959-04	OBS	No	16.423993	145.063114	362.2	1.746	14.6	12.9	1.22	6731	2.52	158.65
004284959-05	OBS	No	10.695476	141.822775	313.7	1.630	15.3	11.7	1.22	6731	2.47	281.06
004284959-06	OBS	No	9.748056	135.886355	673.8	0.641	11.4	12.2	1.22	6731	3.73	318.06
004284959-07	OBS	No	19.760540	147.133877	359.9	1.539	12.6	11.8	1.22	6731	2.43	123.97
004284959-08	OBS	No	15.793829	134.684111	799.9	2.000	11.9	-1.0	1.22	6731	3.50	167.14
004284959-09	OBS	No	19.757953	136.907984	357.3	1.958	12.7	11.4	1.22	6731	2.48	124.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004284959-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

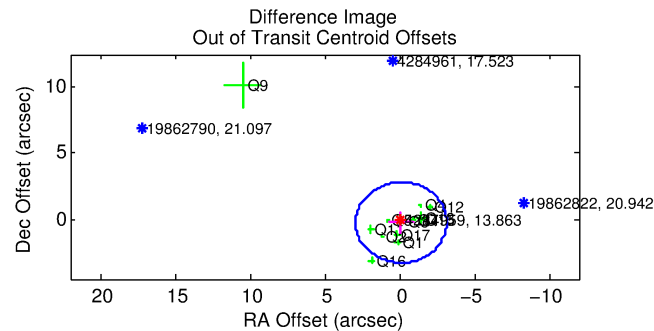
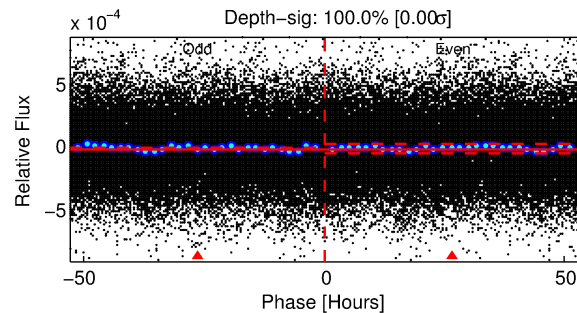
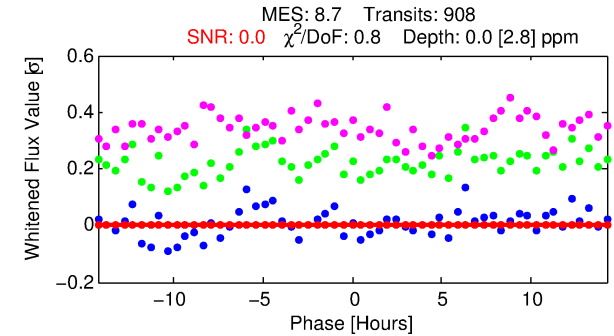
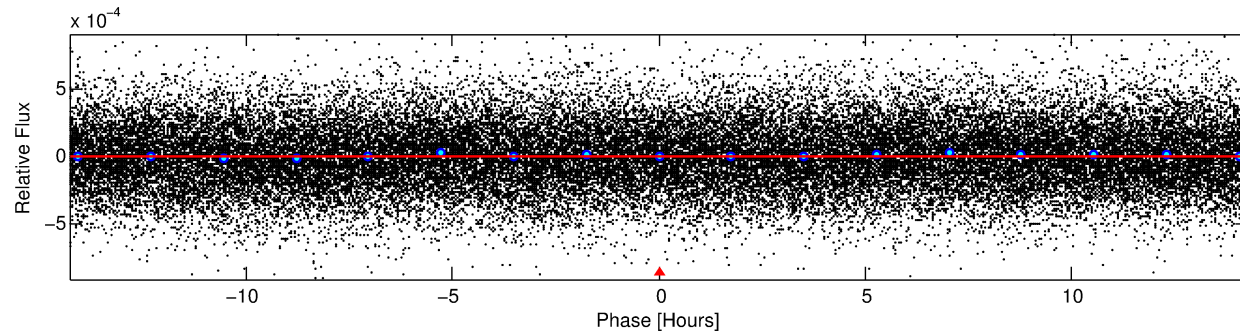
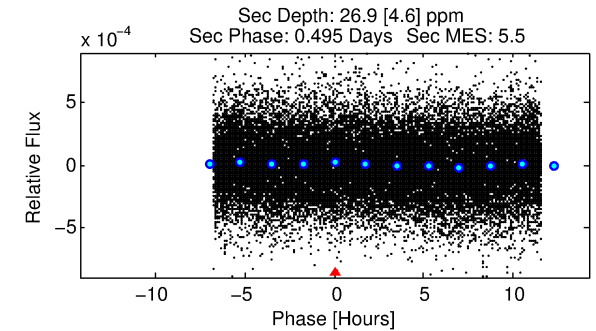
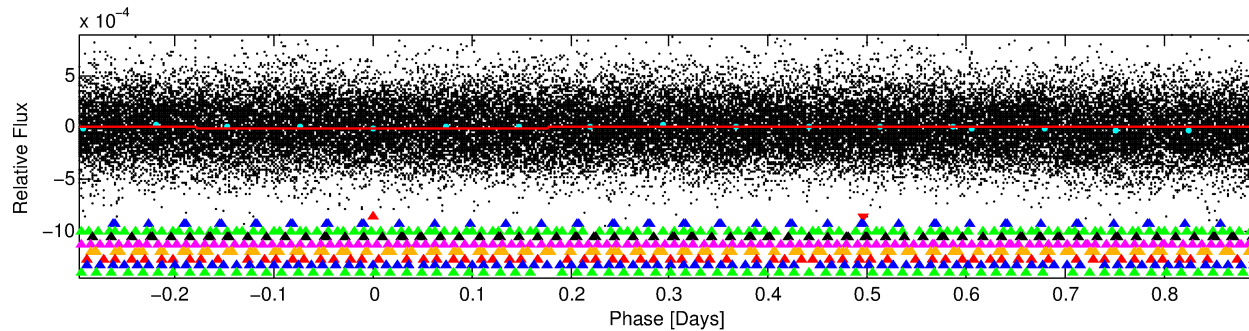
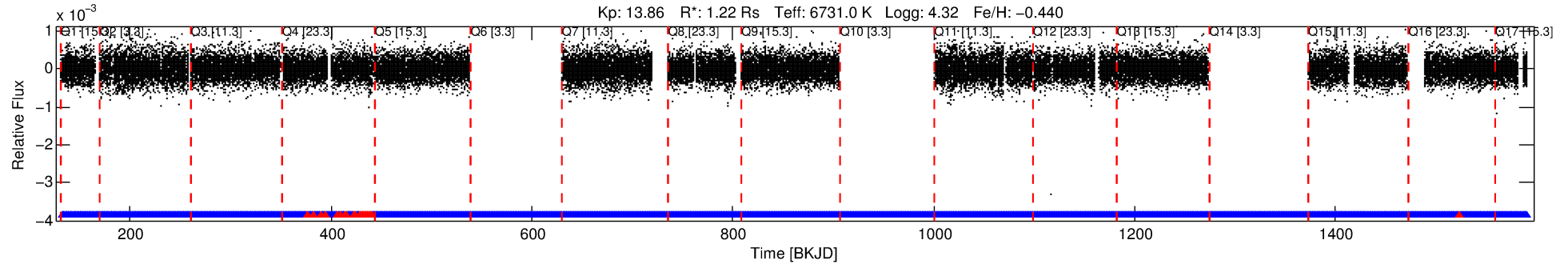
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004284959-01

No Significant Match Found

DV One-Page Summary

KIC: 4284959 Candidate: 1 of 9 Period: 1.193 d



DV Fit Results:

Period = 1.19270 [0.44610] d
Epoch = 132.4800 [143.6907] BKJD
Rp/R* = 0.0000 [0.0388]
a/R* = 1.19 [243.63]
b = 0.35 [1609.68]
Seff = 5236.33 [3262.75]
Teq = 2169 [338] K
Rp = 0.00 [5.18] Re
a = 0.0229 [0.0079] AU
Ag = 415653.24 [994375875.54] [0.00σ]
Teffp = 85154 [50932103] K [0.00σ]

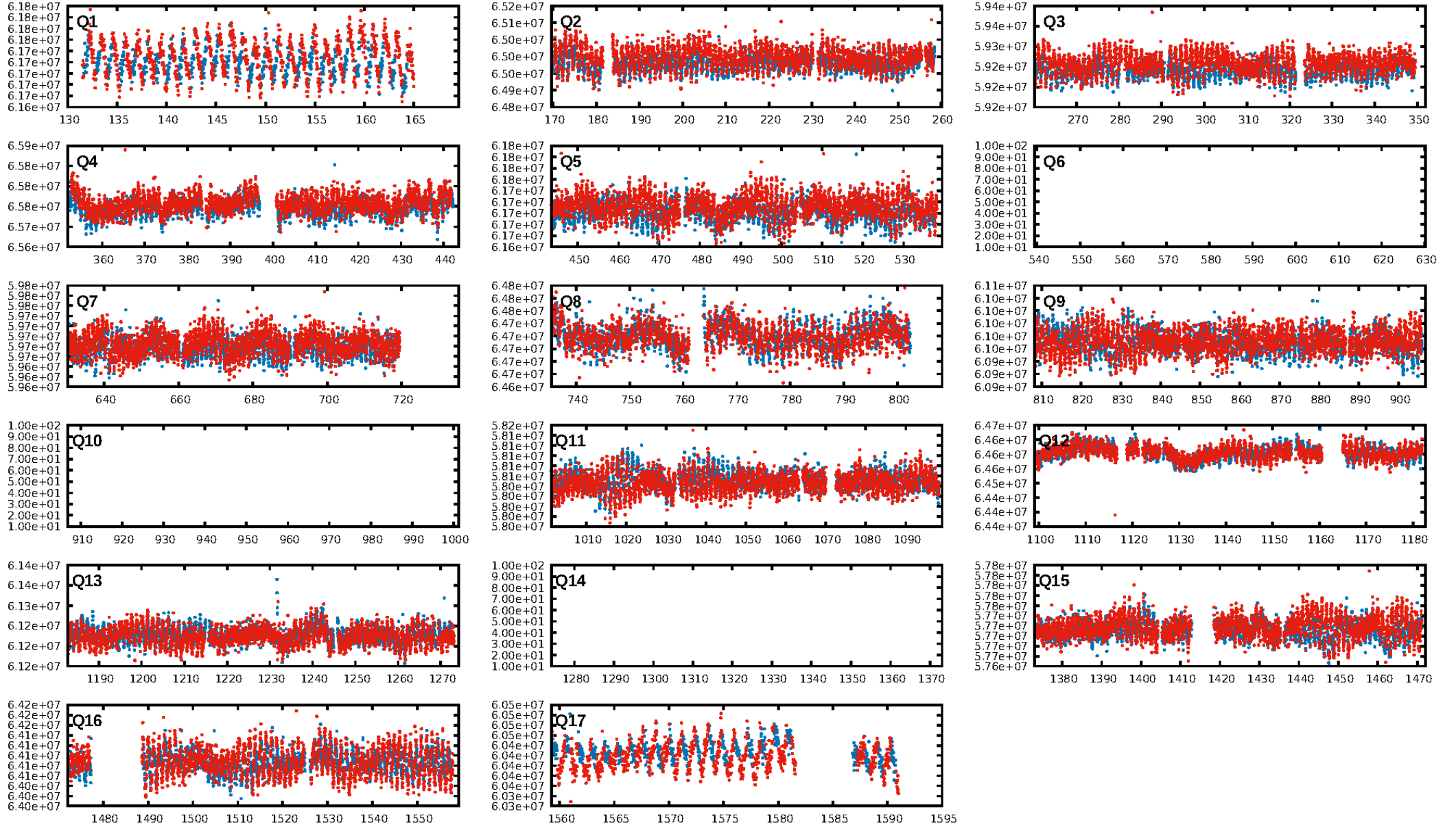
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [23.25σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [836/857]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.248 arcsec [0.24σ]
KicOffset-rm: 0.248 arcsec [0.29σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 1.00 [14/14]

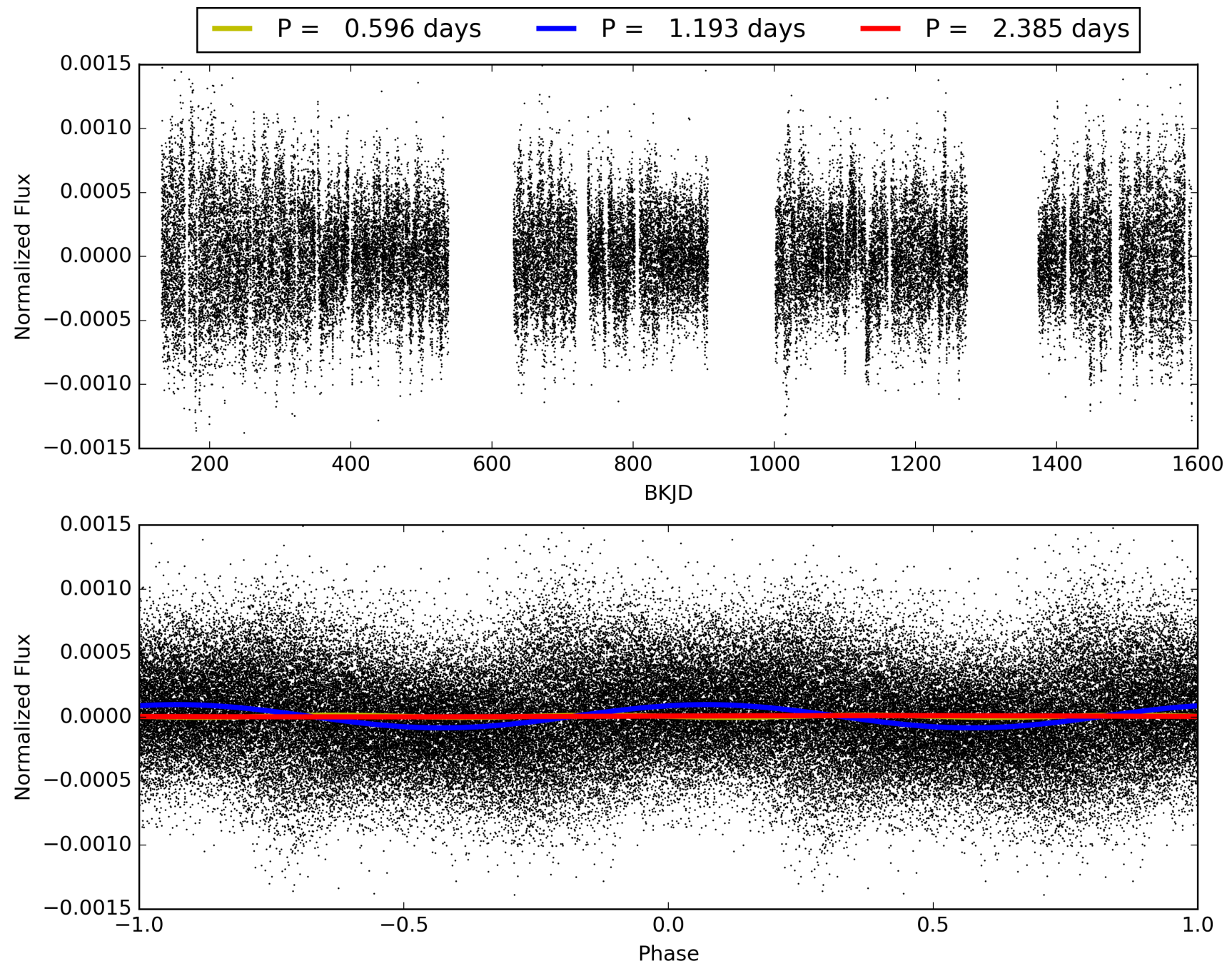
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:12:16 Z

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

TCE 004284959-01, PDC Light Curves

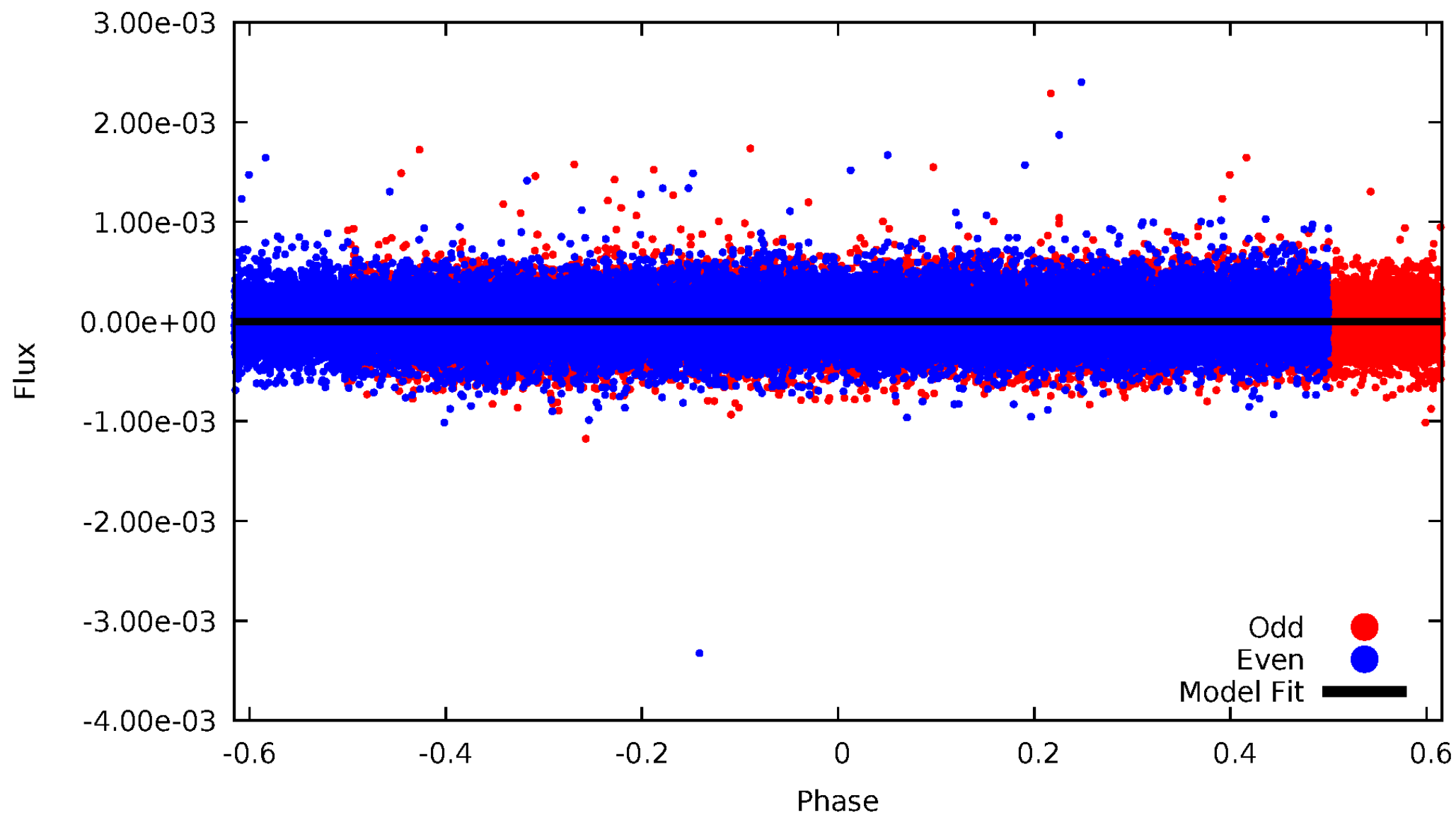


TCE 004284959-01



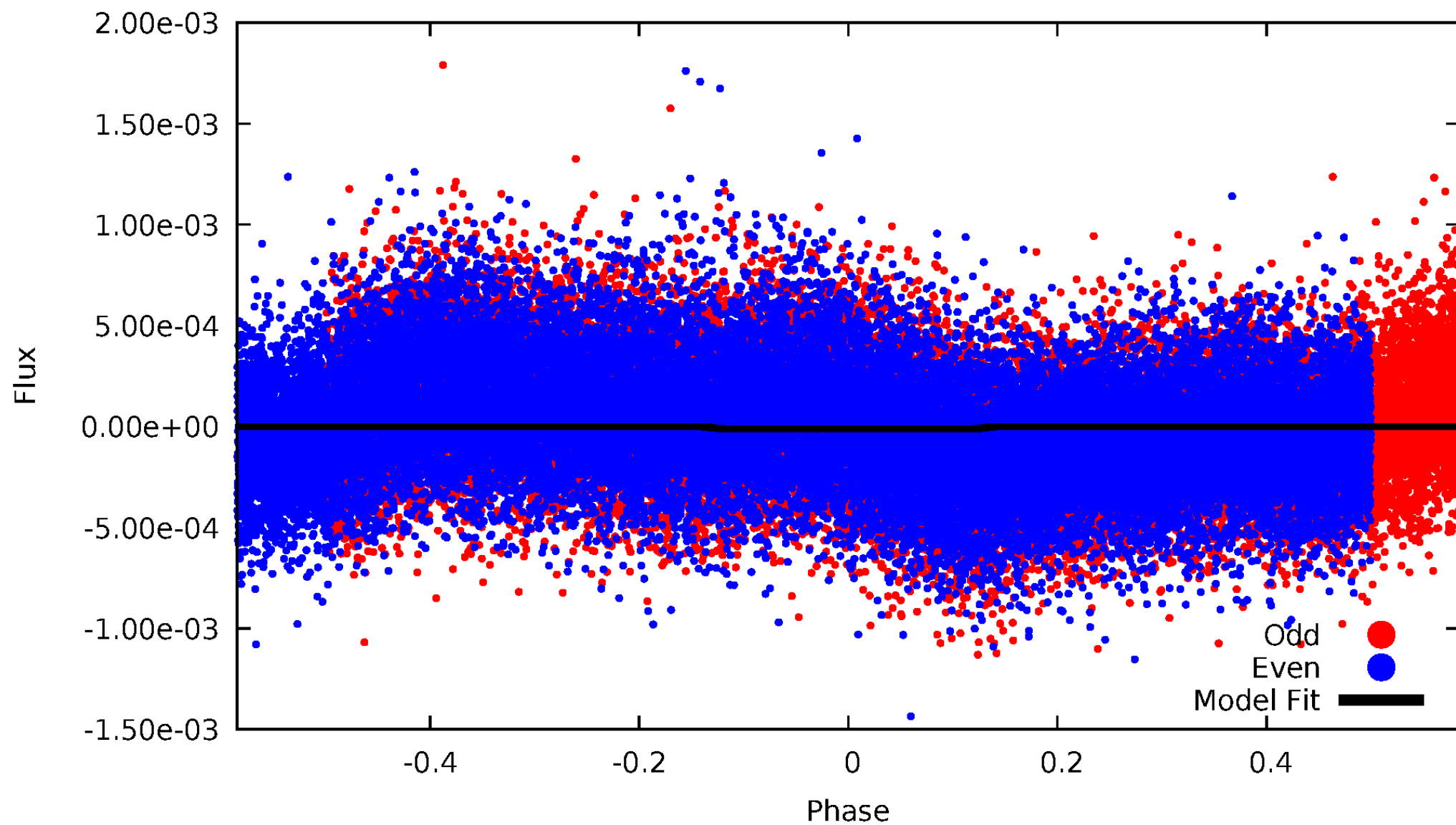
DV Odd/Even

TCE 004284959-01



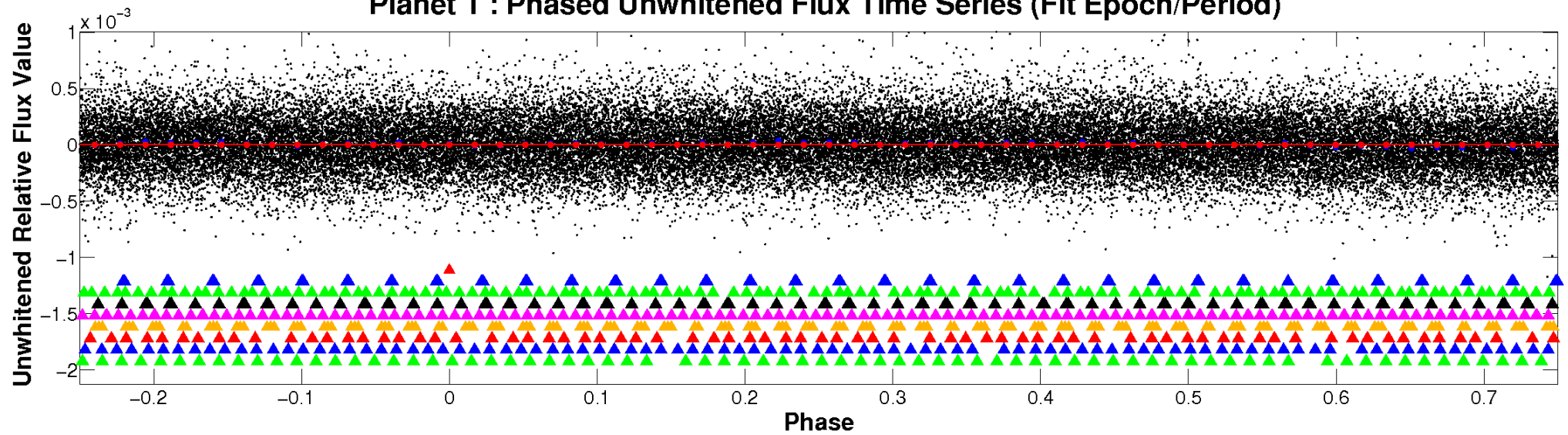
ALT Odd/Even

TCE 004284959-01

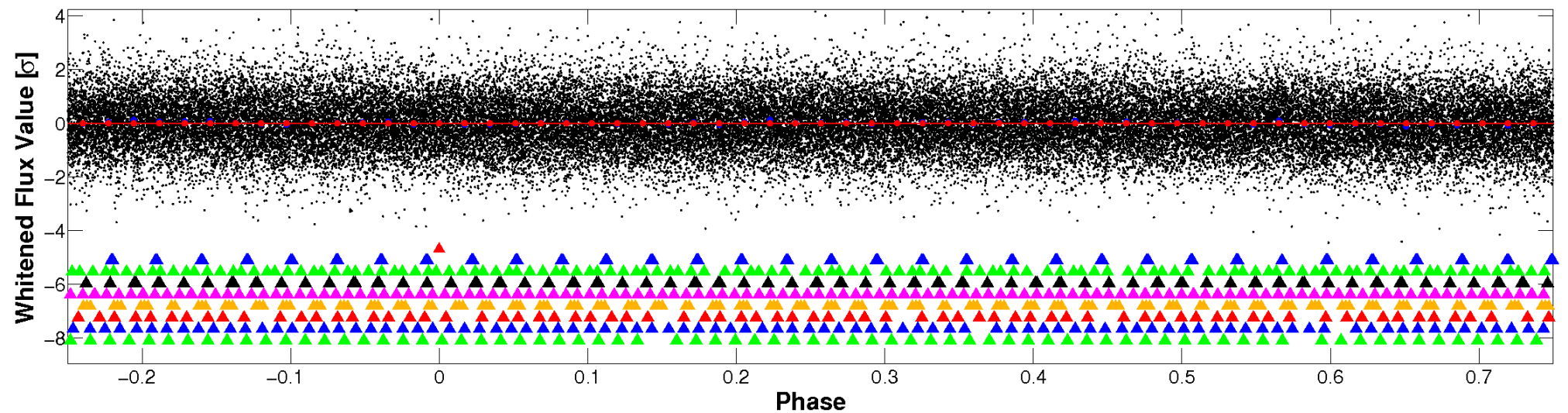


Non-Whitened Vs. Whitened Light Curve

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

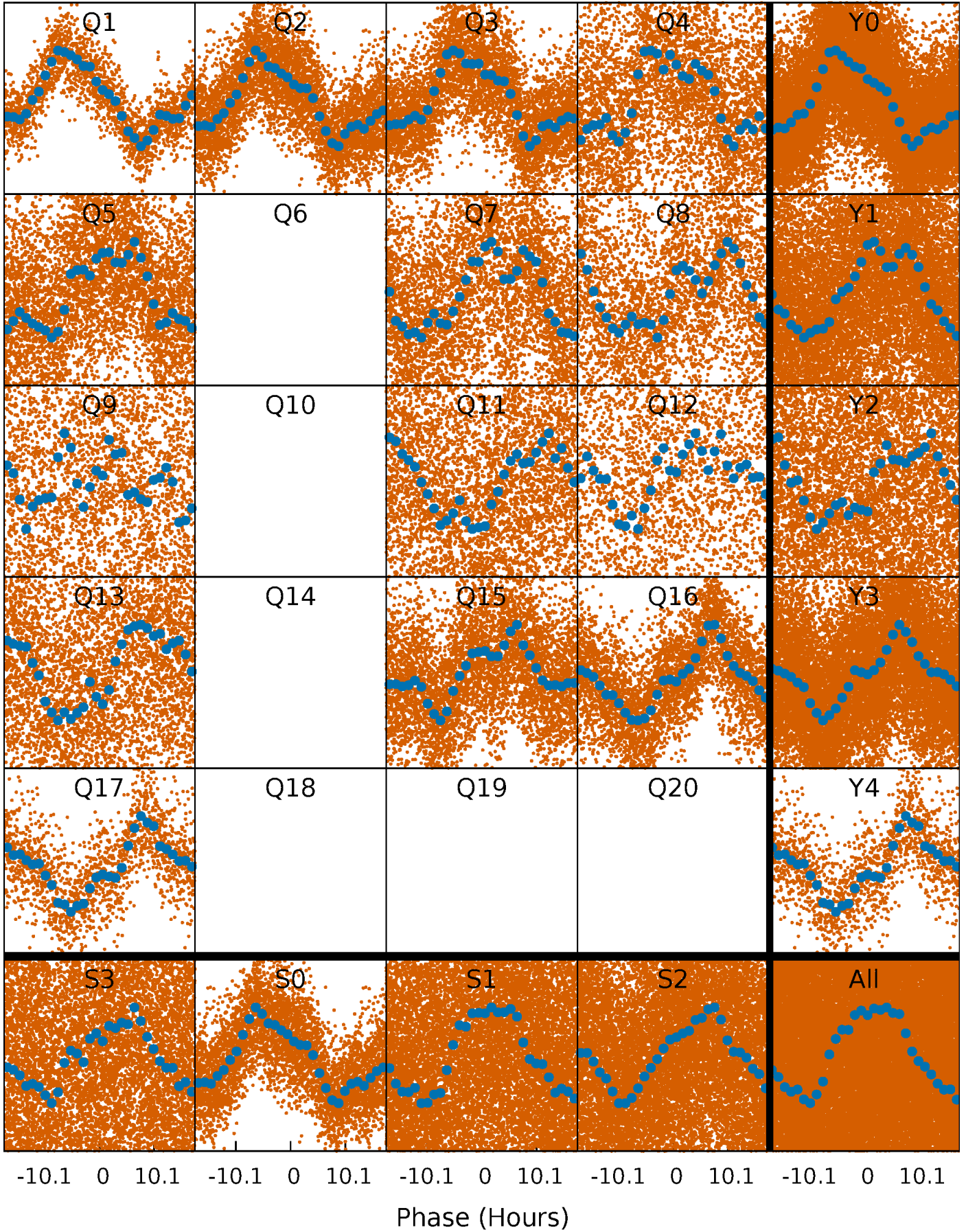


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



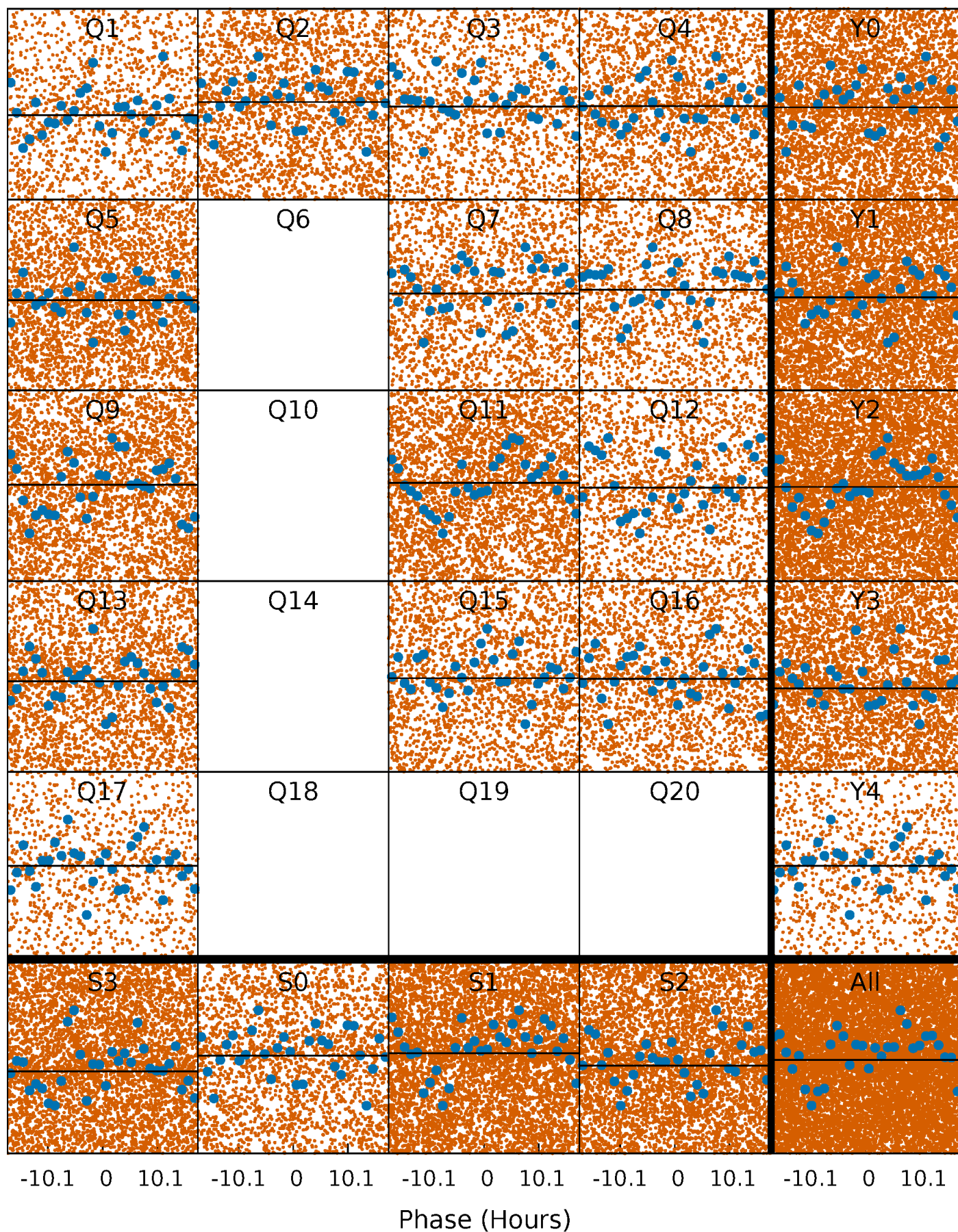
PDC Quarter-Phased Transit Curves

TCE 004284959-01 P= 1.192696 Days $T_0=132.479950$ (BKJD)



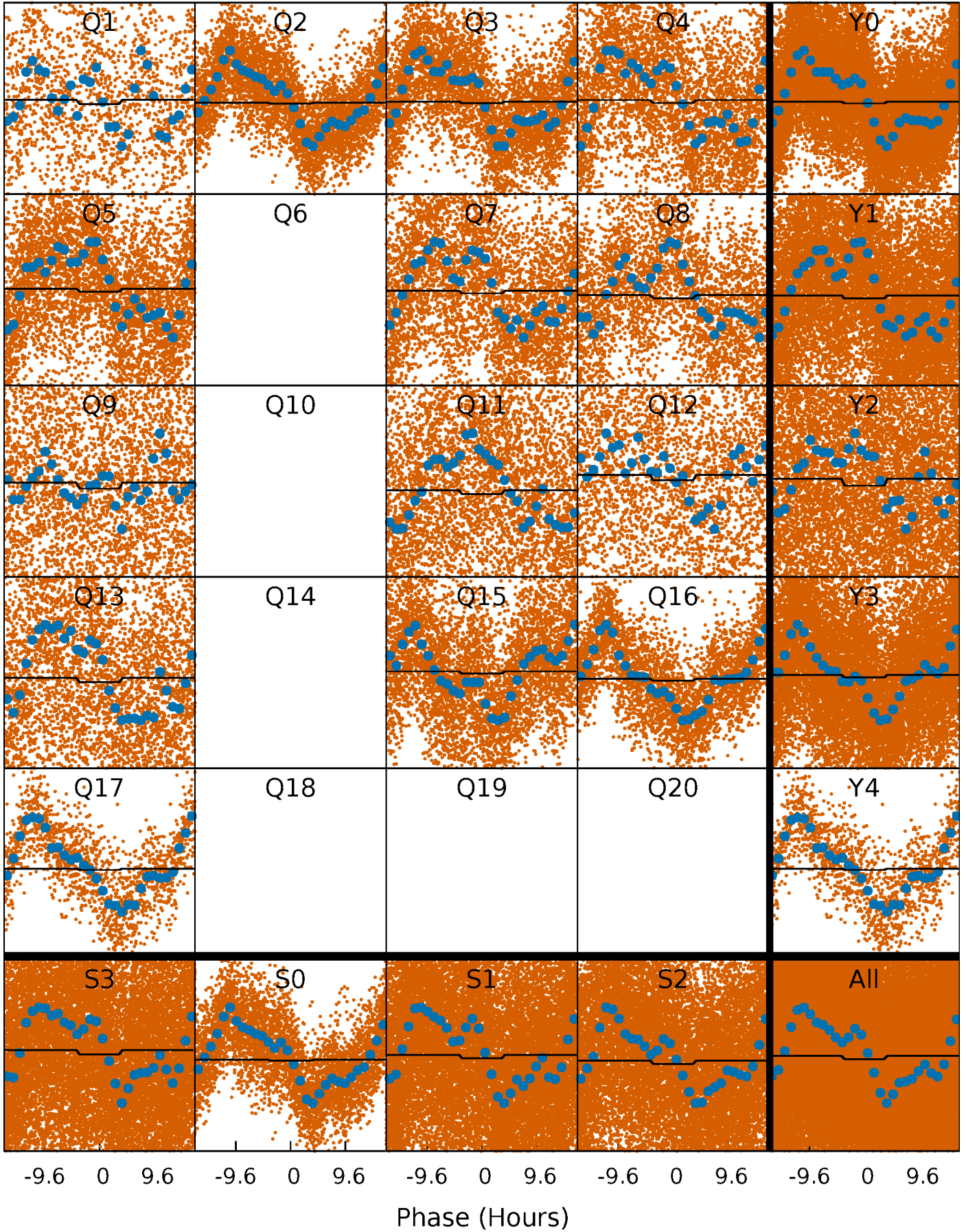
DV Quarter-Phased Transit Curves

TCE 004284959-01 P= 1.192696 Days $T_0=132.479950$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

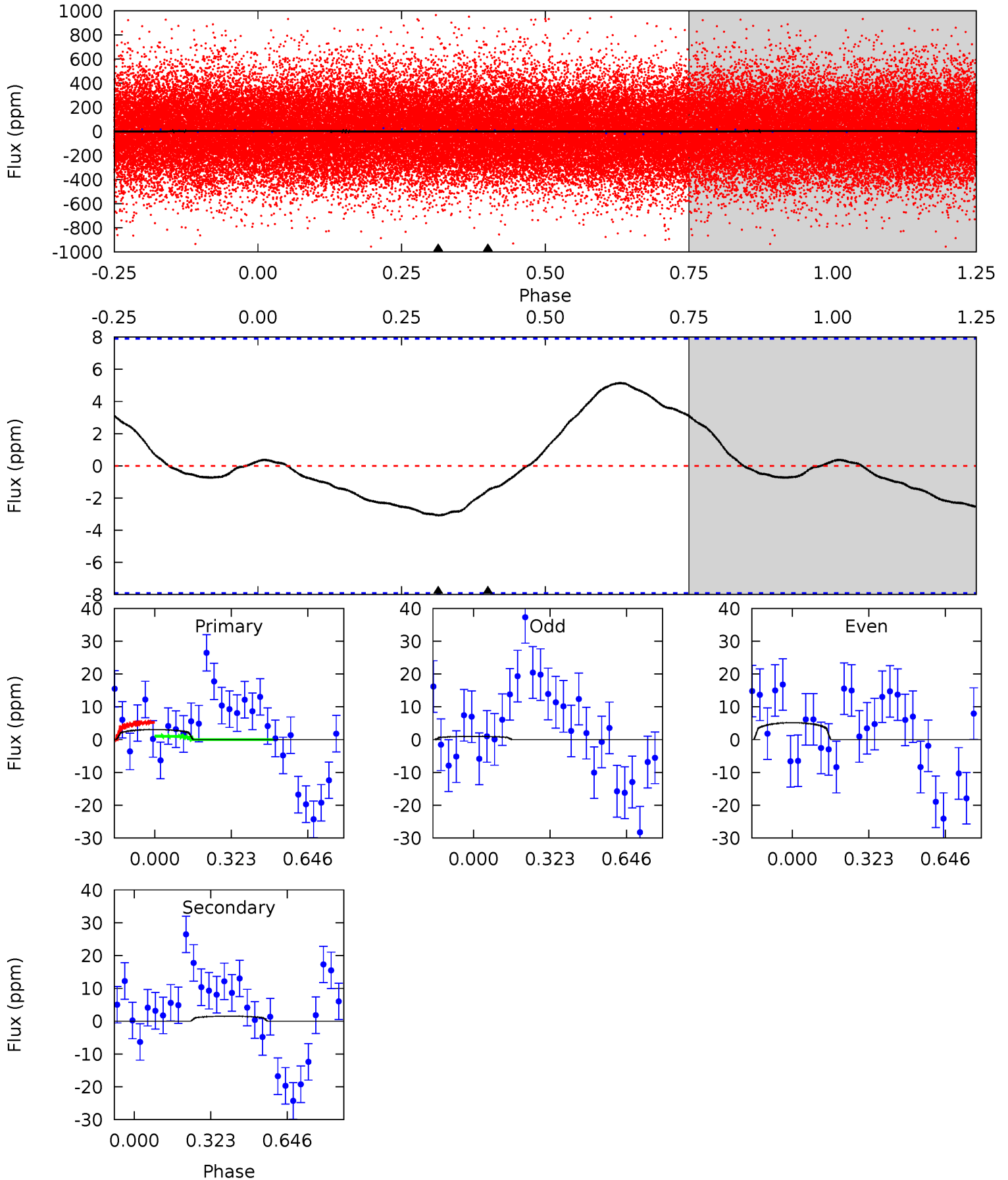
TCE 004284959-01 P= 1.193253 Days $T_0=132.628416$ (BKJD)



DV Model-Shift Uniqueness Test

004284959-01, P = 1.192696 Days, E = 131.287254 Days

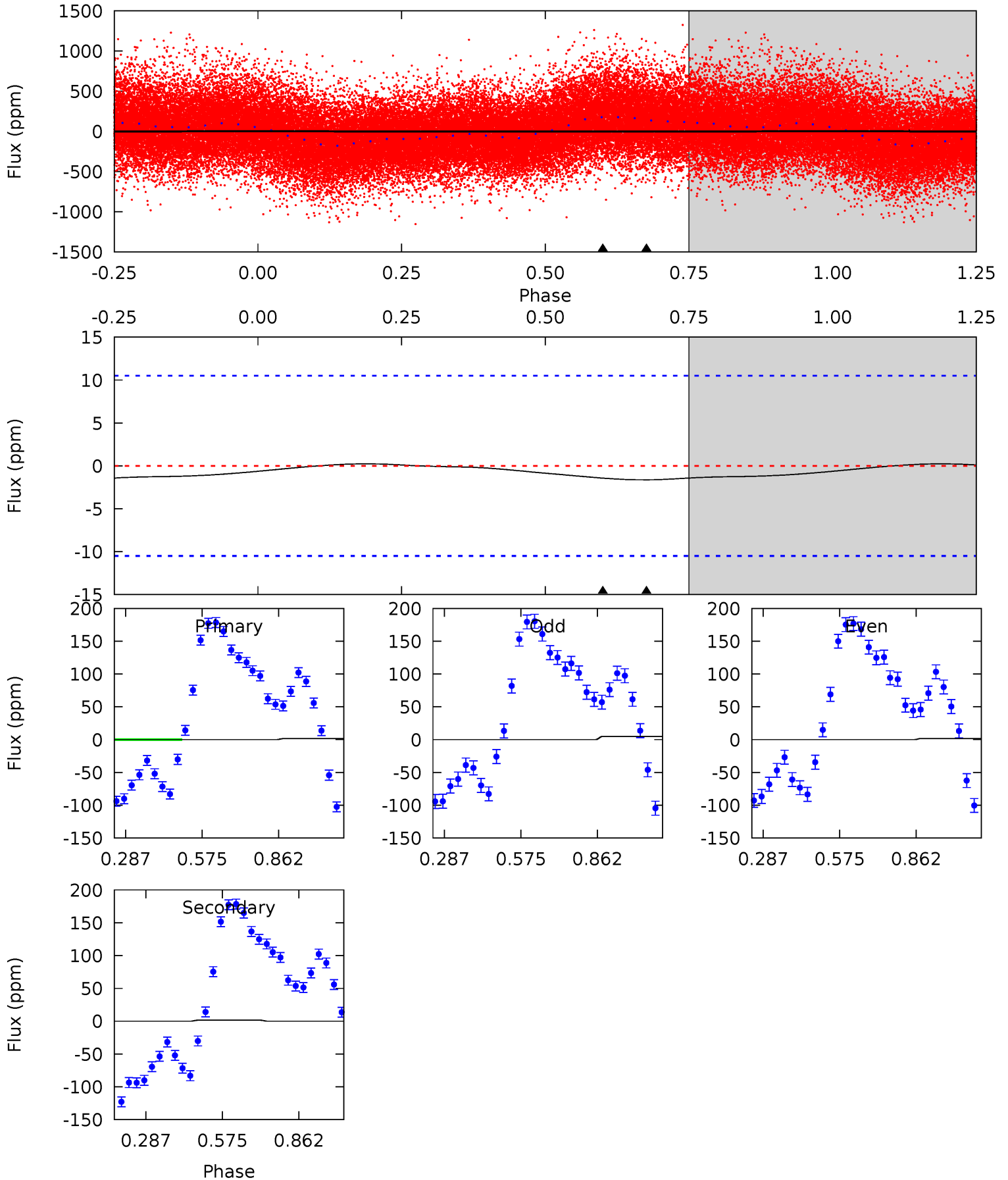
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.68	0.83	0	0	4.31	0.99	0.78	1.68	1.68	0.83	0.83	1.15	0.41	0.63	1.17



Alt Model-Shift Uniqueness Test

004284959-01, P = 1.193253 Days, E = 131.435163 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.67	0.59	0	0	4.34	1.06	0.13	0.67	0.67	0.59	0.59	0.66	-0.07	0.13	0.94



Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 2	$3.51^{+4.12}_{-2.44}$	3079^{+581}_{-384}	-3043^{+929}_{-429}	$0.018^{+0.273}_{-0.024}$
Alt.	-1 ± 2	$3.73^{+3.95}_{-2.51}$	3101^{+545}_{-375}	-3060^{+726}_{-410}	$0.015^{+0.241}_{-0.026}$

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

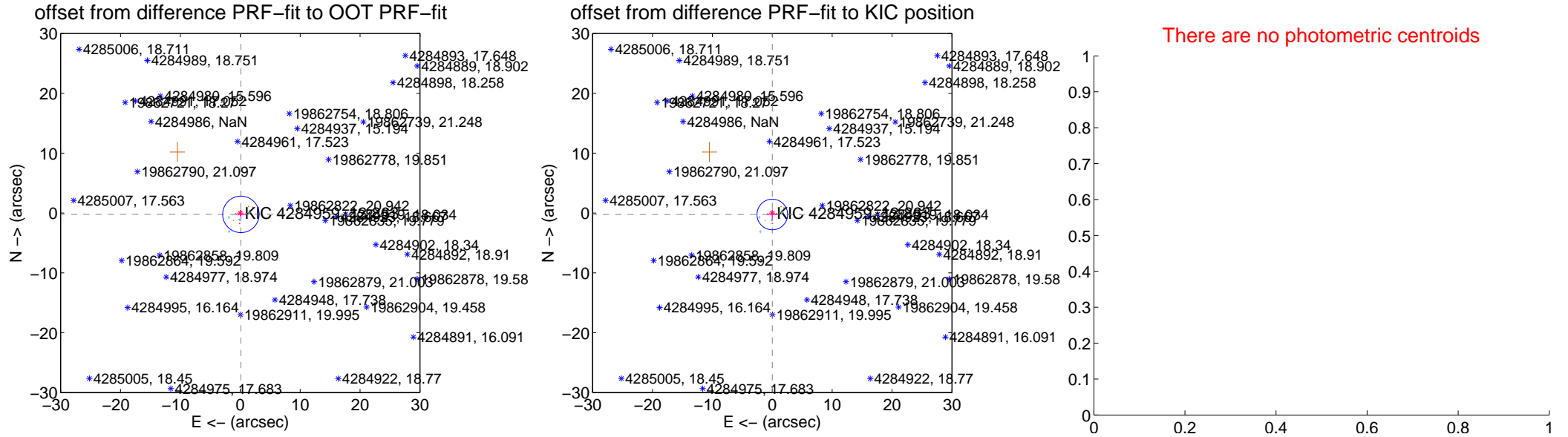
DV Centroid Data

Supplemental centroid analysis for 004284959-01. Kepler magnitude: 13.86. Transit SNR 0.00

There are 4 quarters with good PRF difference image offsets

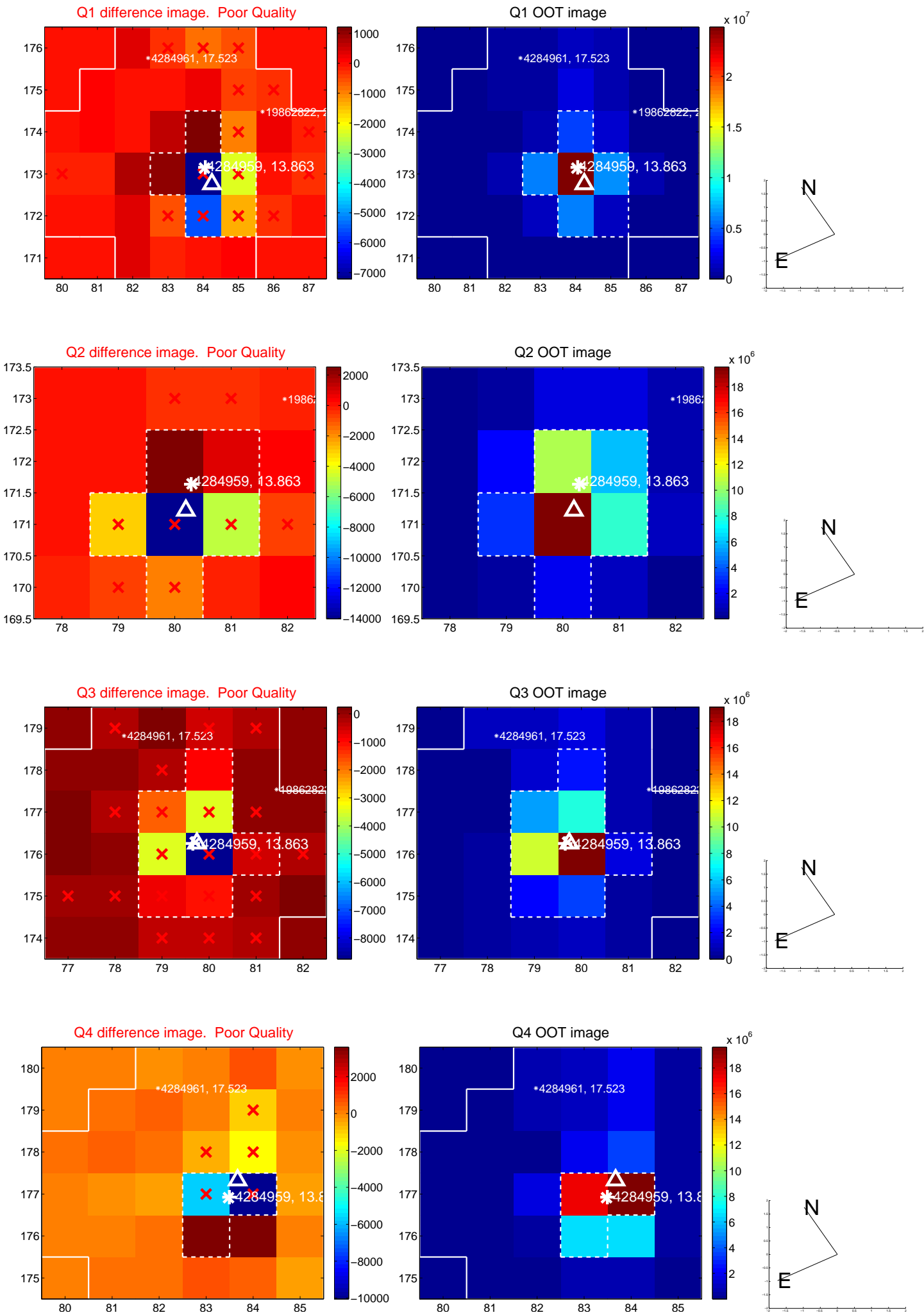
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.248 ± 1.015	0.24	-0.104 ± 0.839	-0.226 ± 0.812
PRF-fit source offset from KIC position	0.248 ± 0.853	0.29	-0.007 ± 0.910	-0.248 ± 0.833
photometric centroid source offset	—	—	—	—

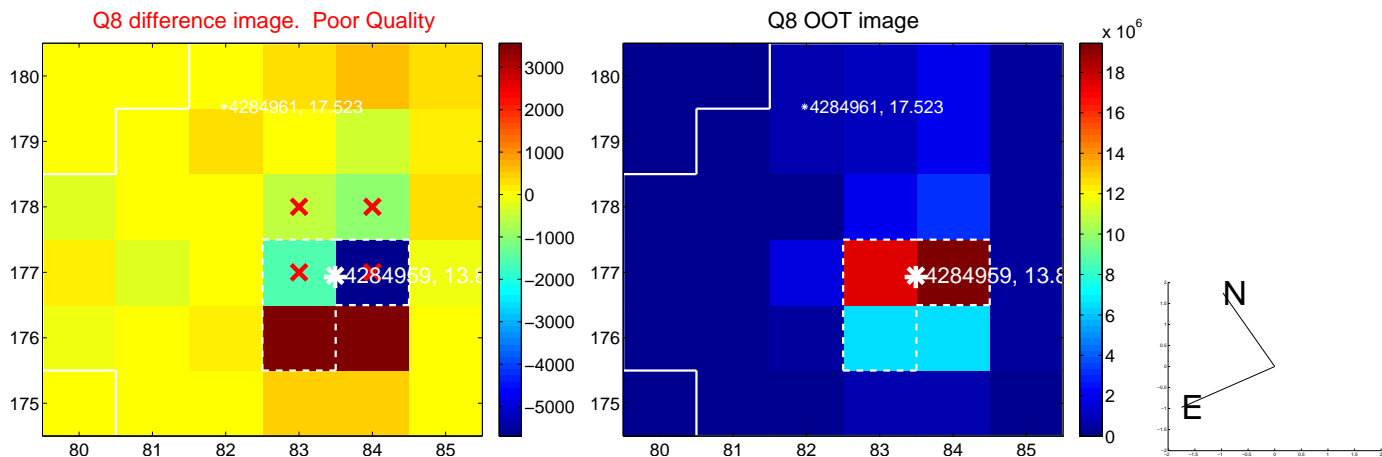
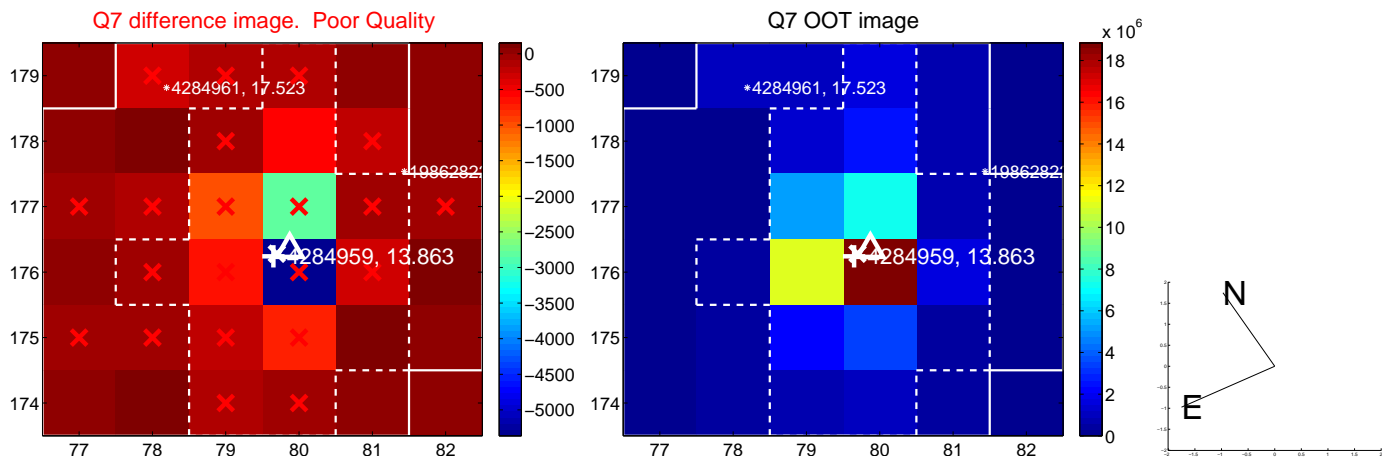
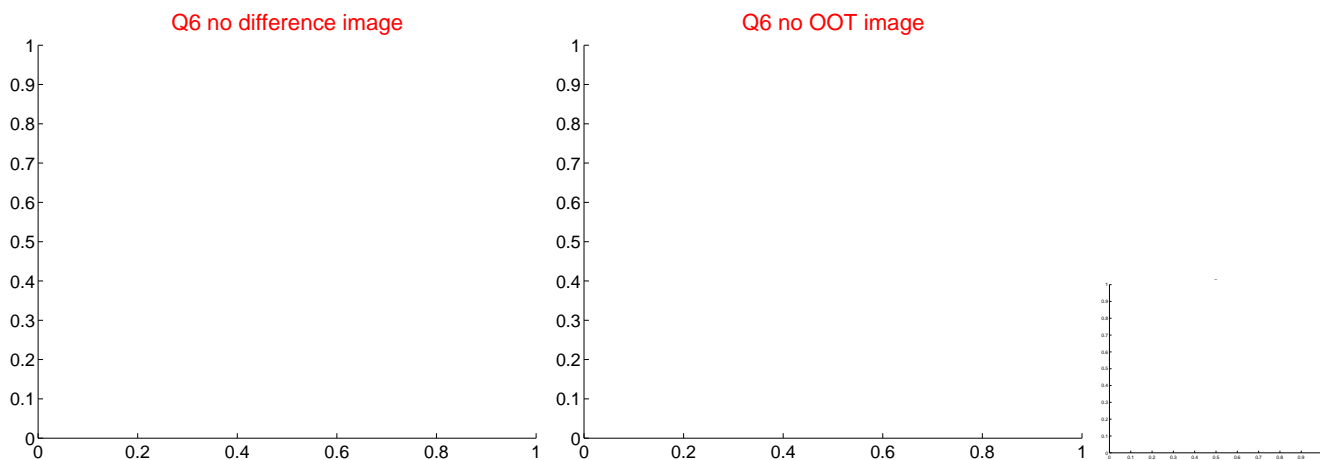
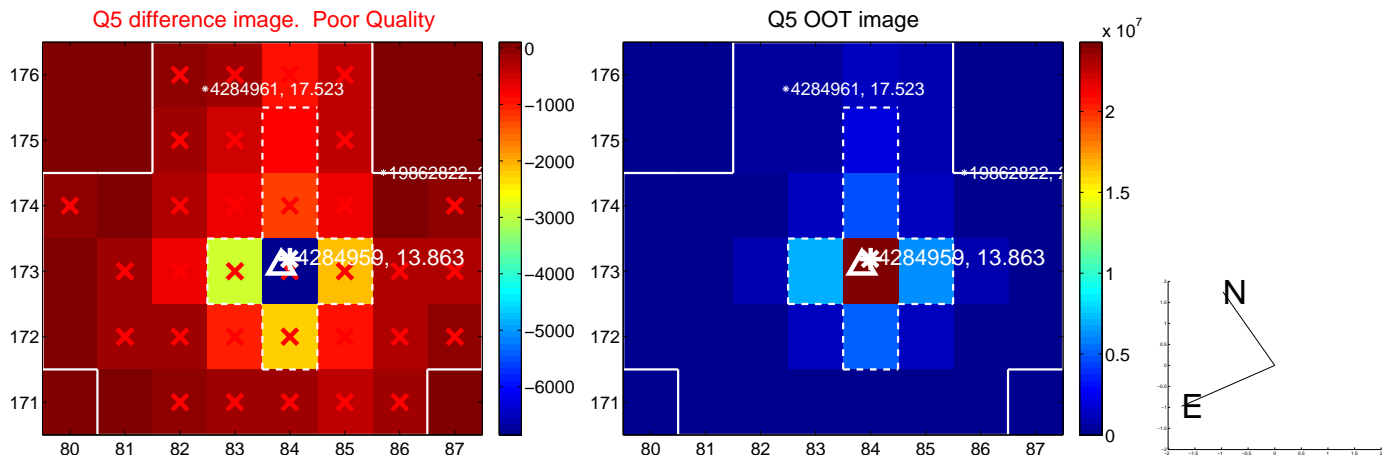


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

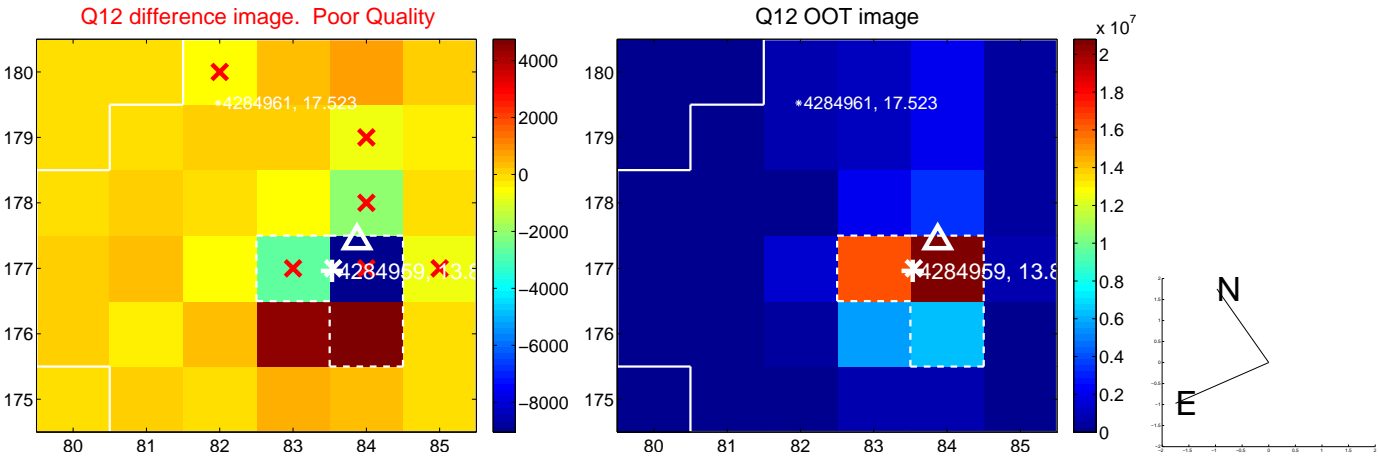
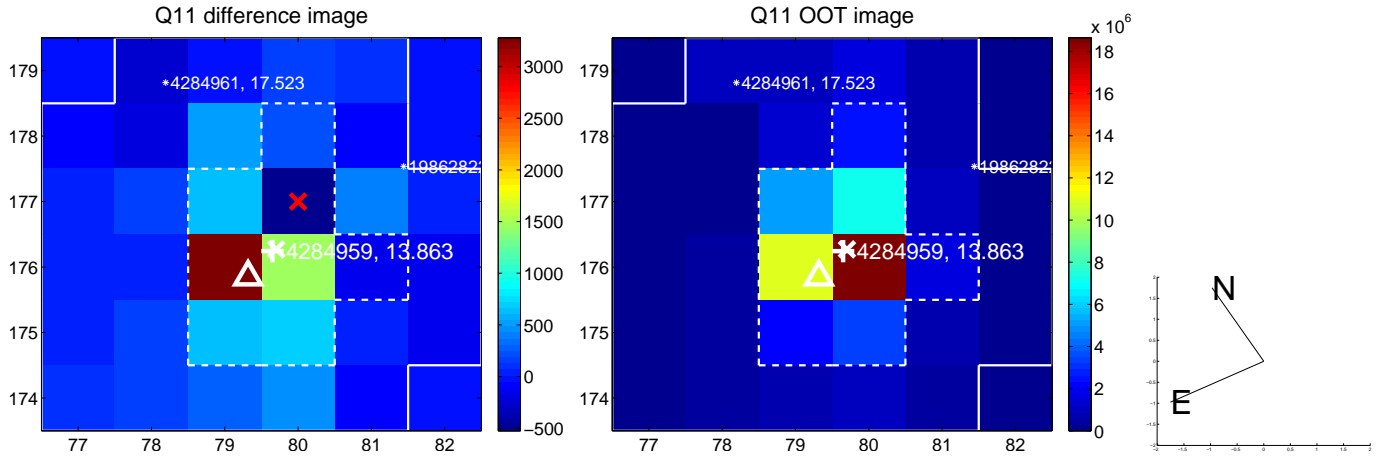
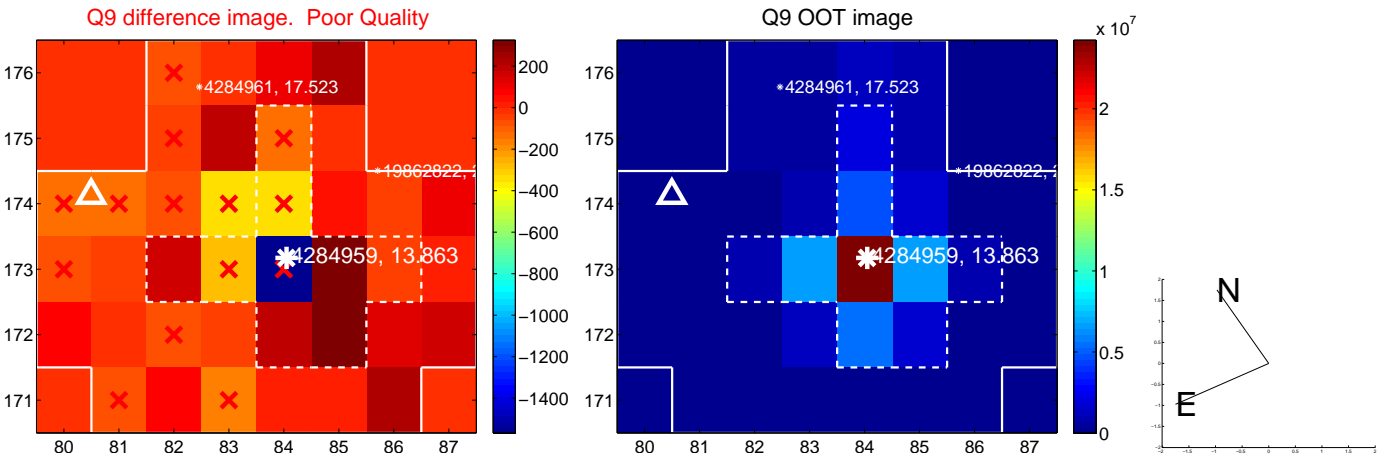
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



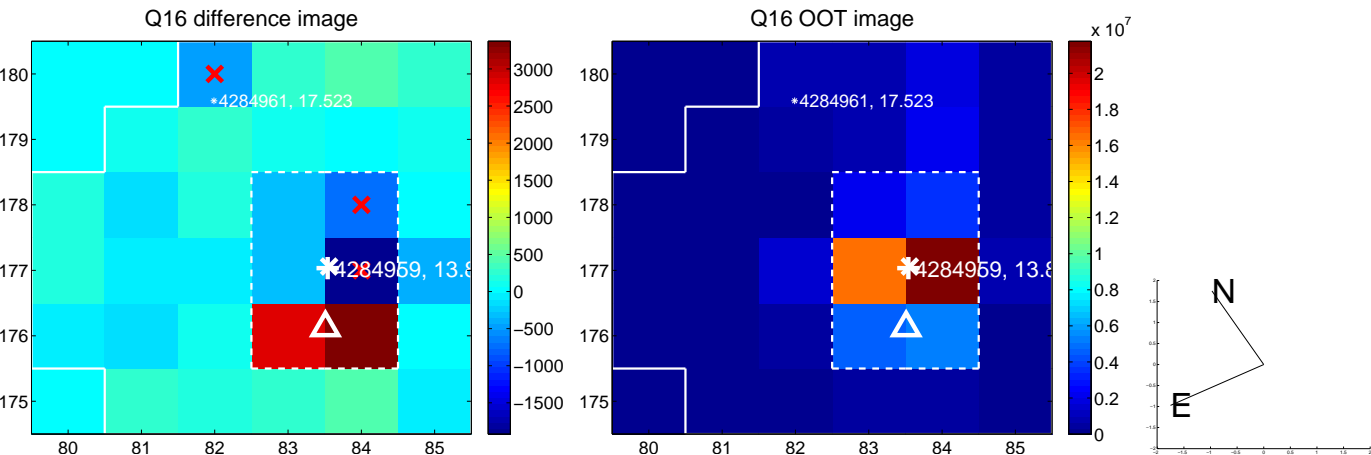
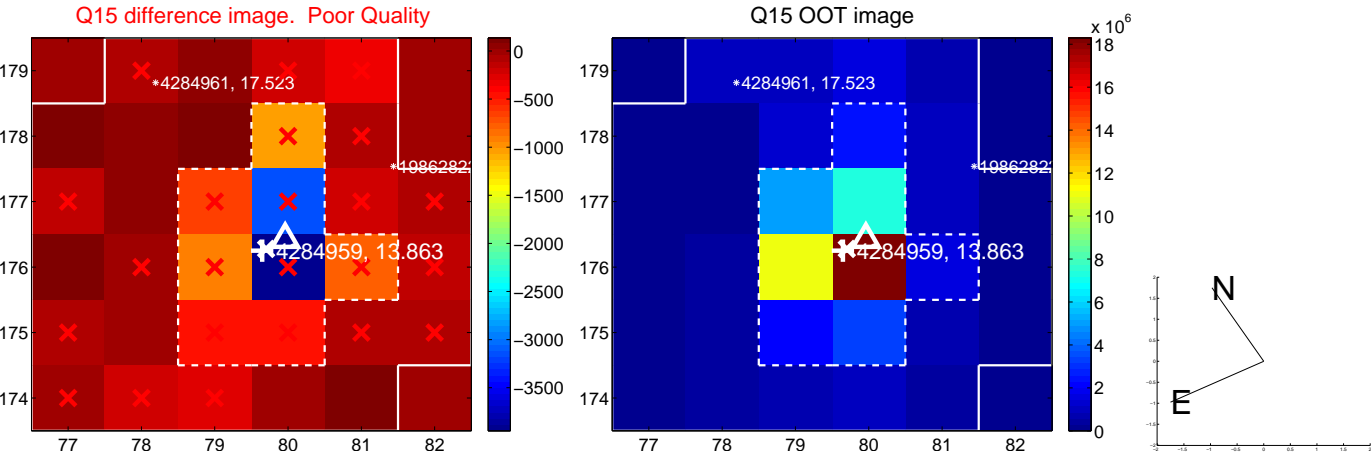
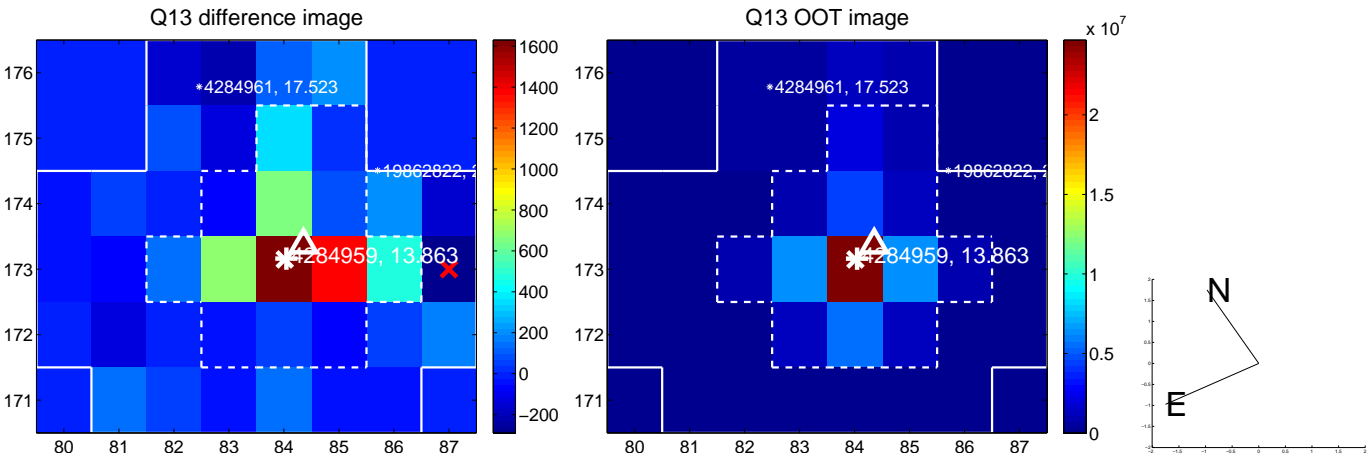
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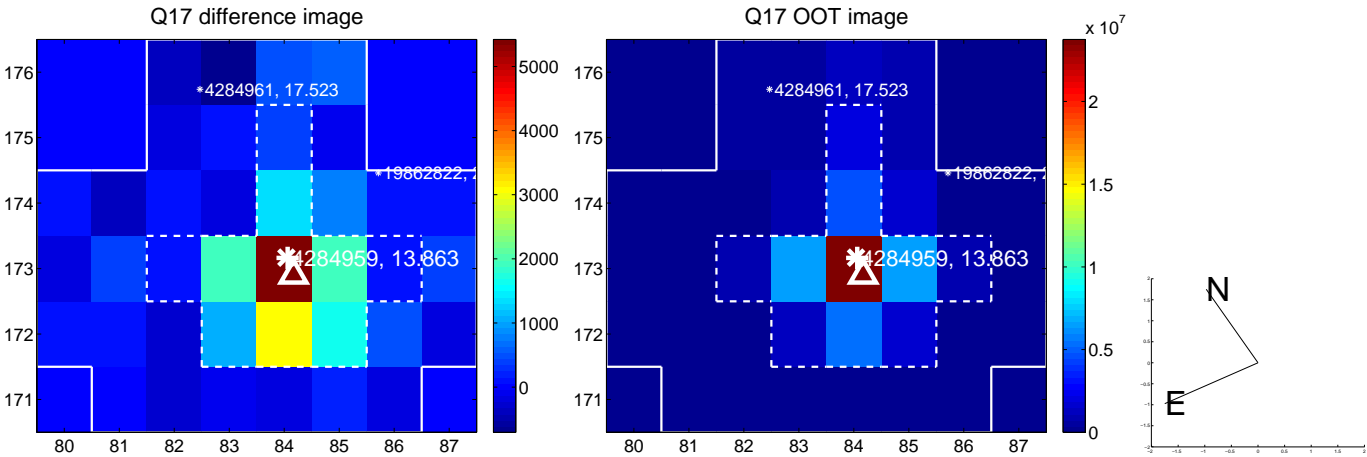
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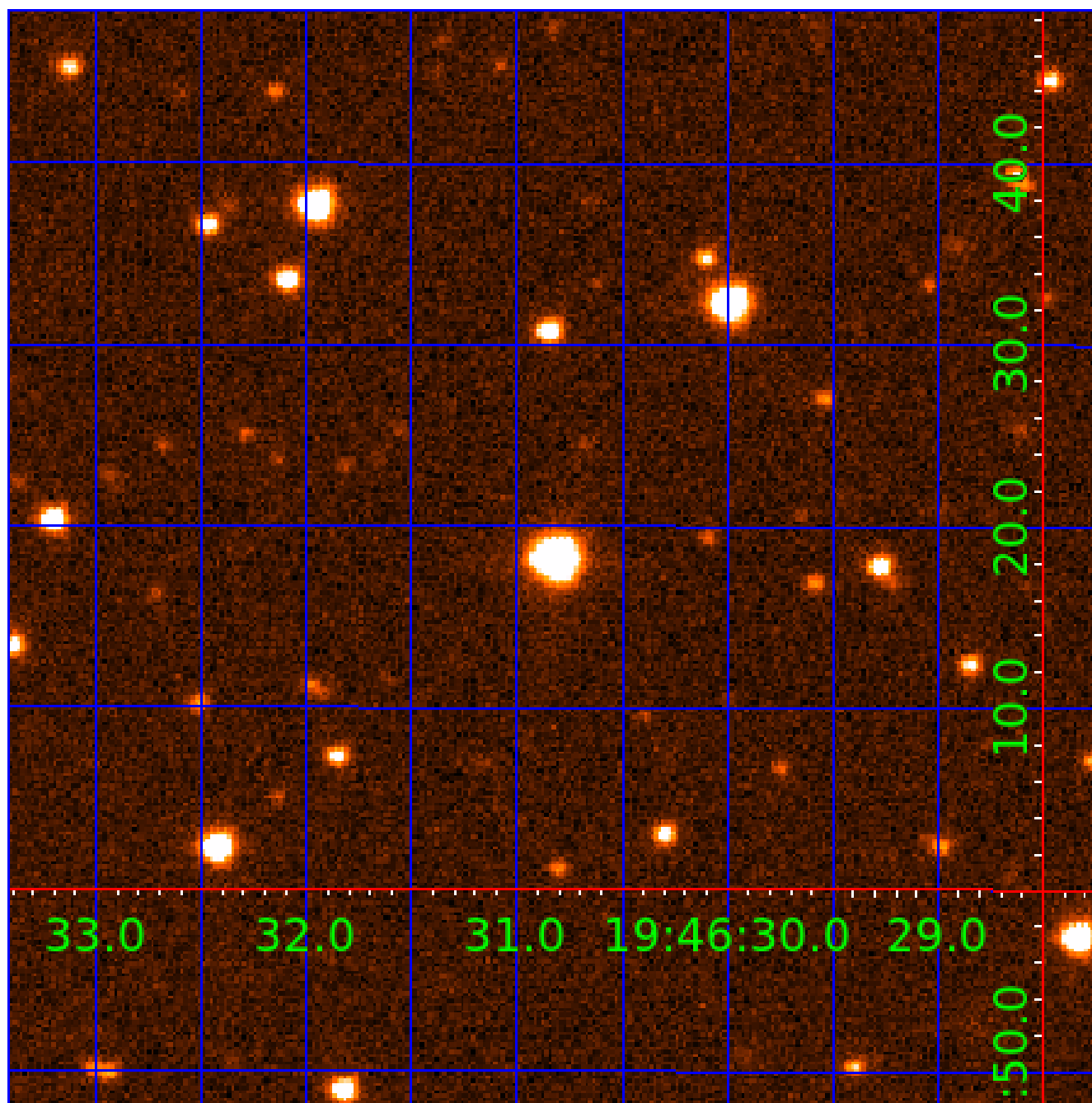
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 004284959

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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Robovetter Results

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004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

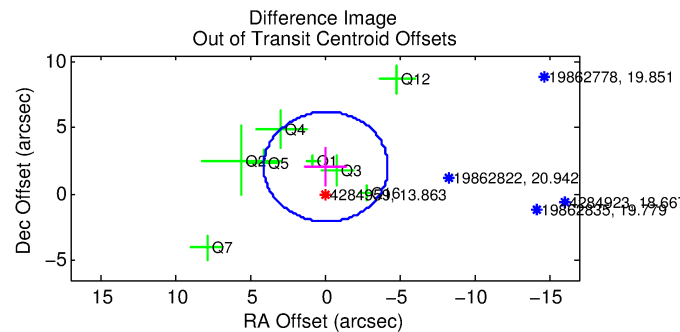
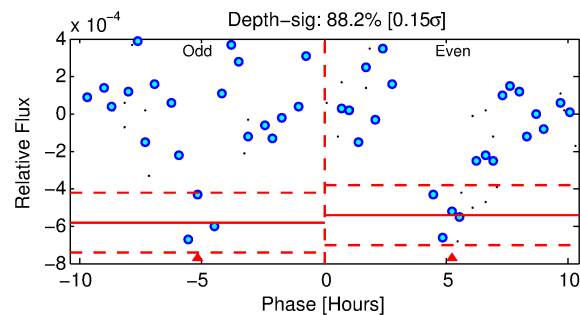
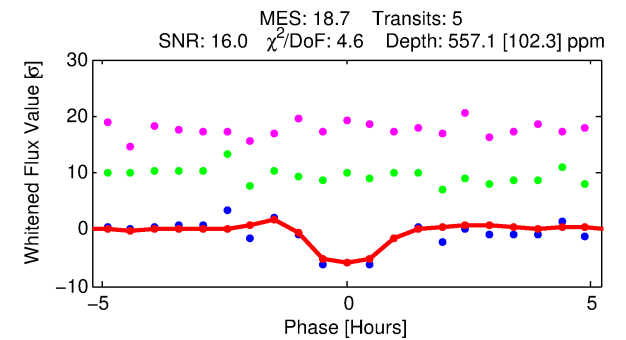
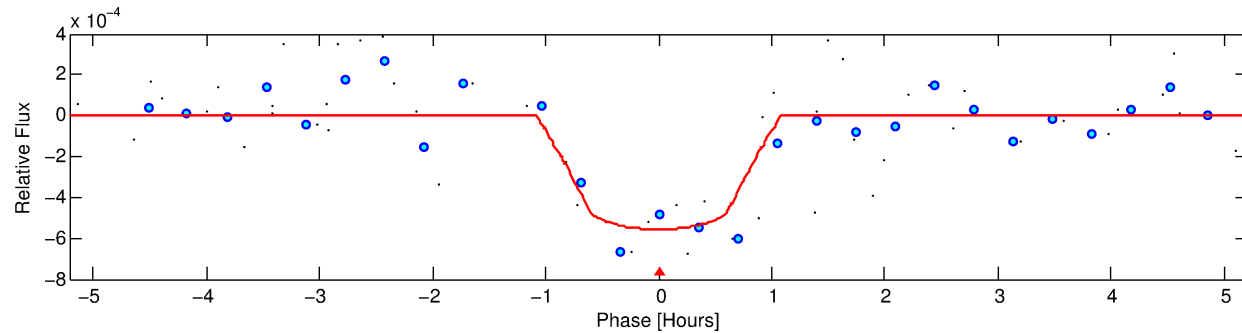
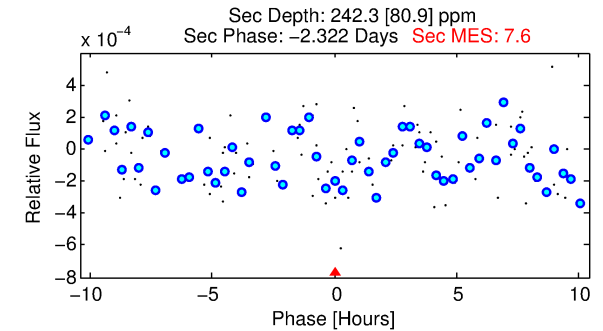
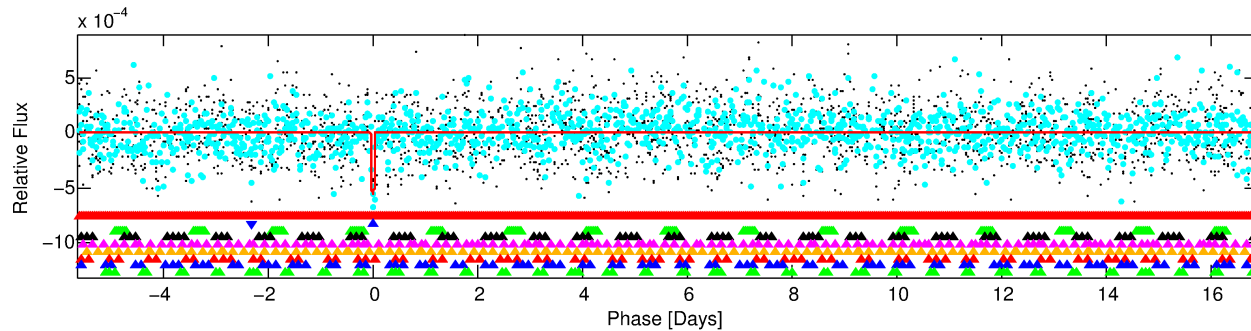
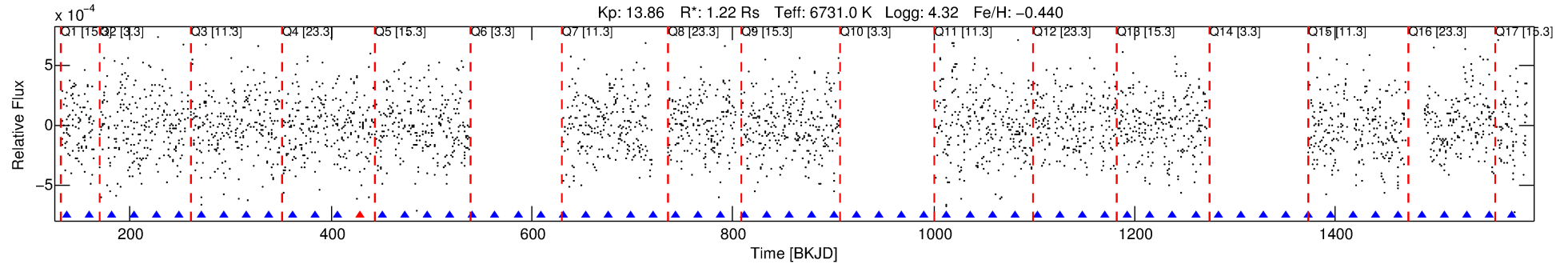
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004284959-02

No Significant Match Found

DV One-Page Summary

KIC: 4284959 Candidate: 2 of 9 Period: 22.481 d



DV Fit Results:

Period = 22.48055 [0.00024] d
Epoch = 136.5530 [0.0067] BKJD
Rp/R* = 0.0219 [0.0667]
a/R* = 100.98 [1647.06]
b = 0.03 [576.06]
Seff = 104.39 [39.00]
Teq = 815 [76] K
Rp = 2.92 [8.95] Re
a = 0.1625 [0.0390] AU
Ag = 412.86 [2528.26] [0.16 σ]
Teffp = 5680 [8685] K [0.56 σ]

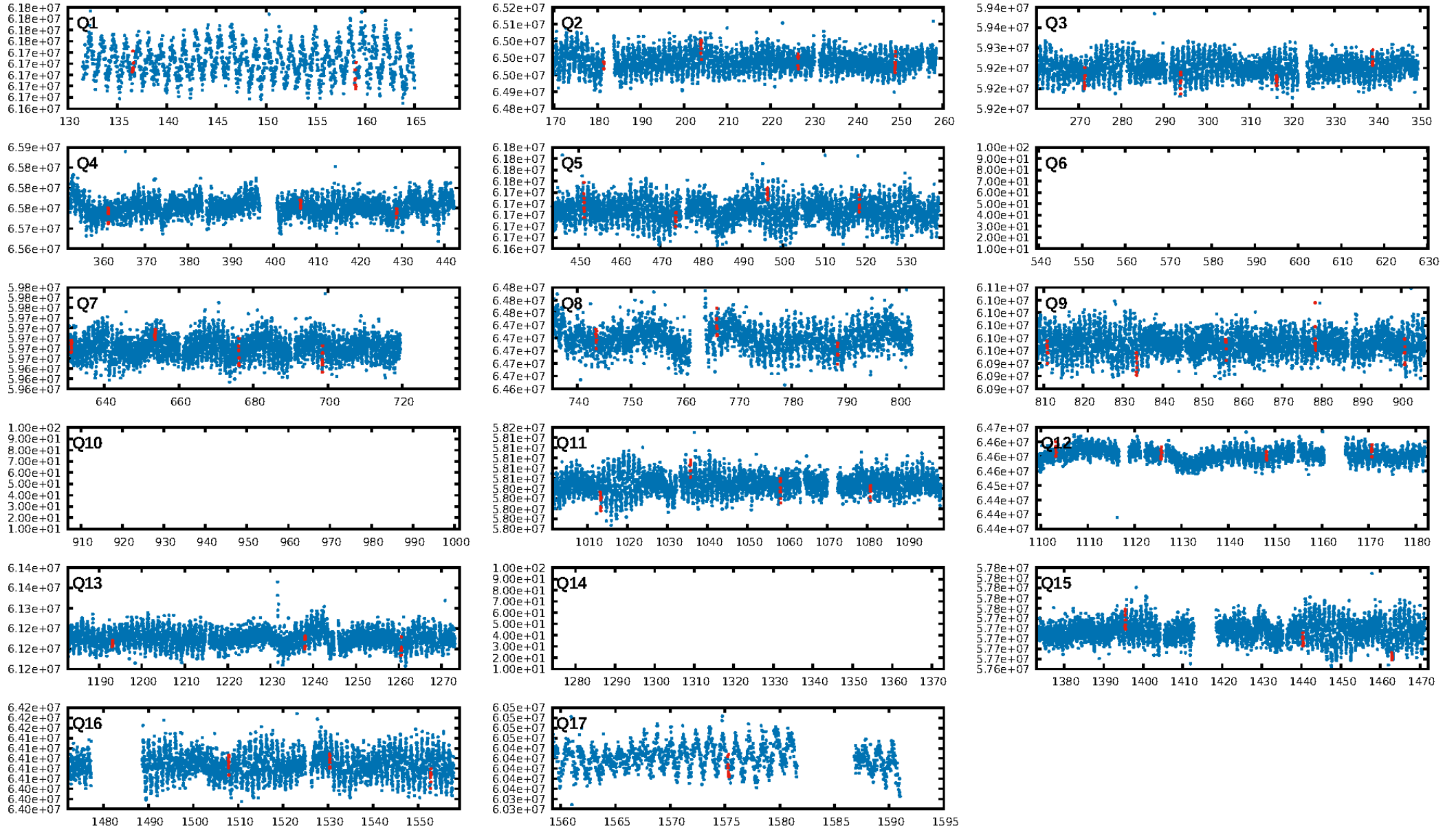
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.13 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.5%
ModelChiSquareGof-sig: 60.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: -3.137
Centroid-sig: 8.8%
Centroid-so: 0.784 arcsec [1.71 σ]
OotOffset-rm: 2.067 arcsec [1.49 σ]
OotOffset-st: 1/2/3/2 [8]
KicOffset-rm: 2.033 arcsec [1.69 σ]
KicOffset-st: 1/2/3/2 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.50 [7/14]

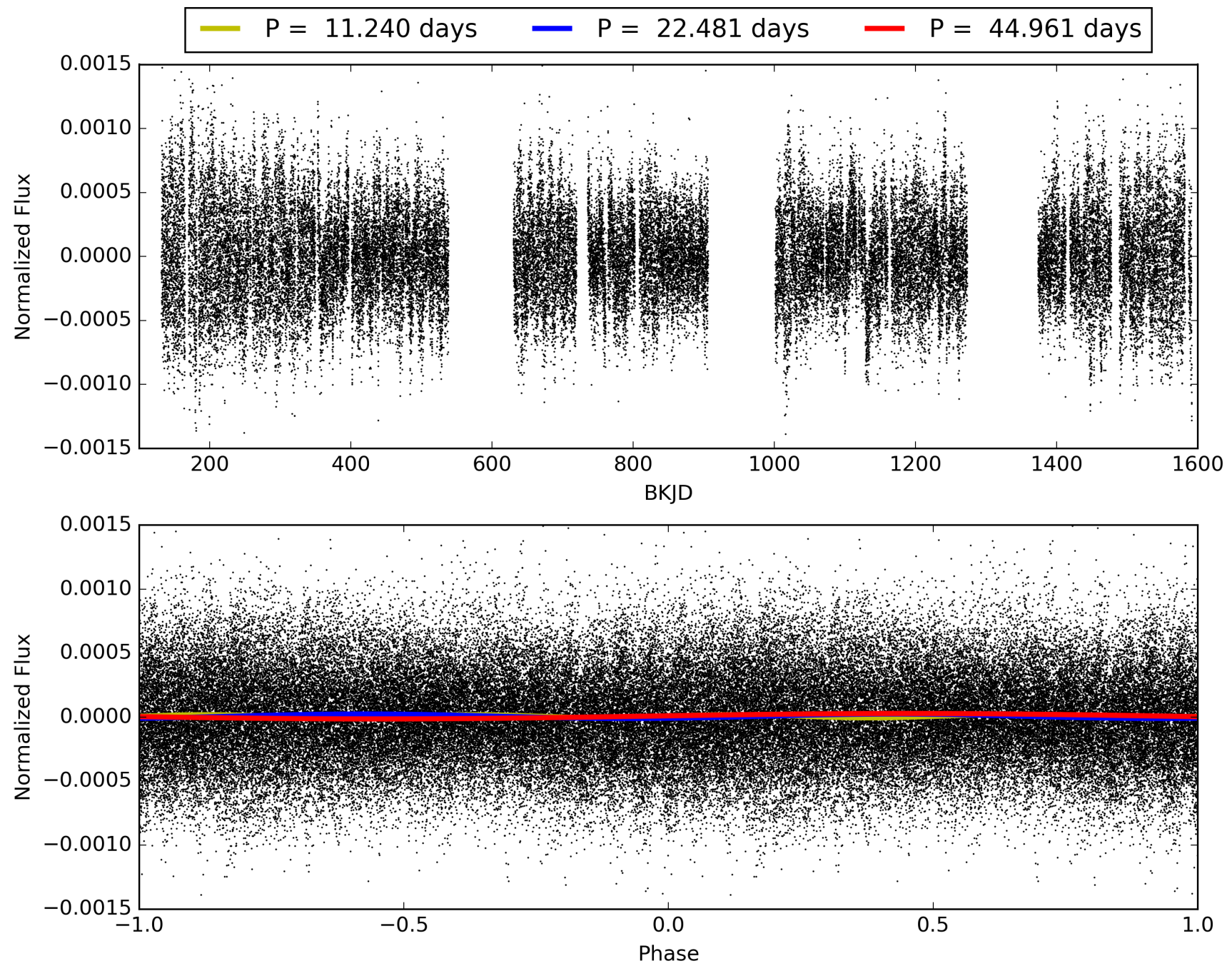
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:12:26 Z

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

TCE 004284959-02, PDC Light Curves

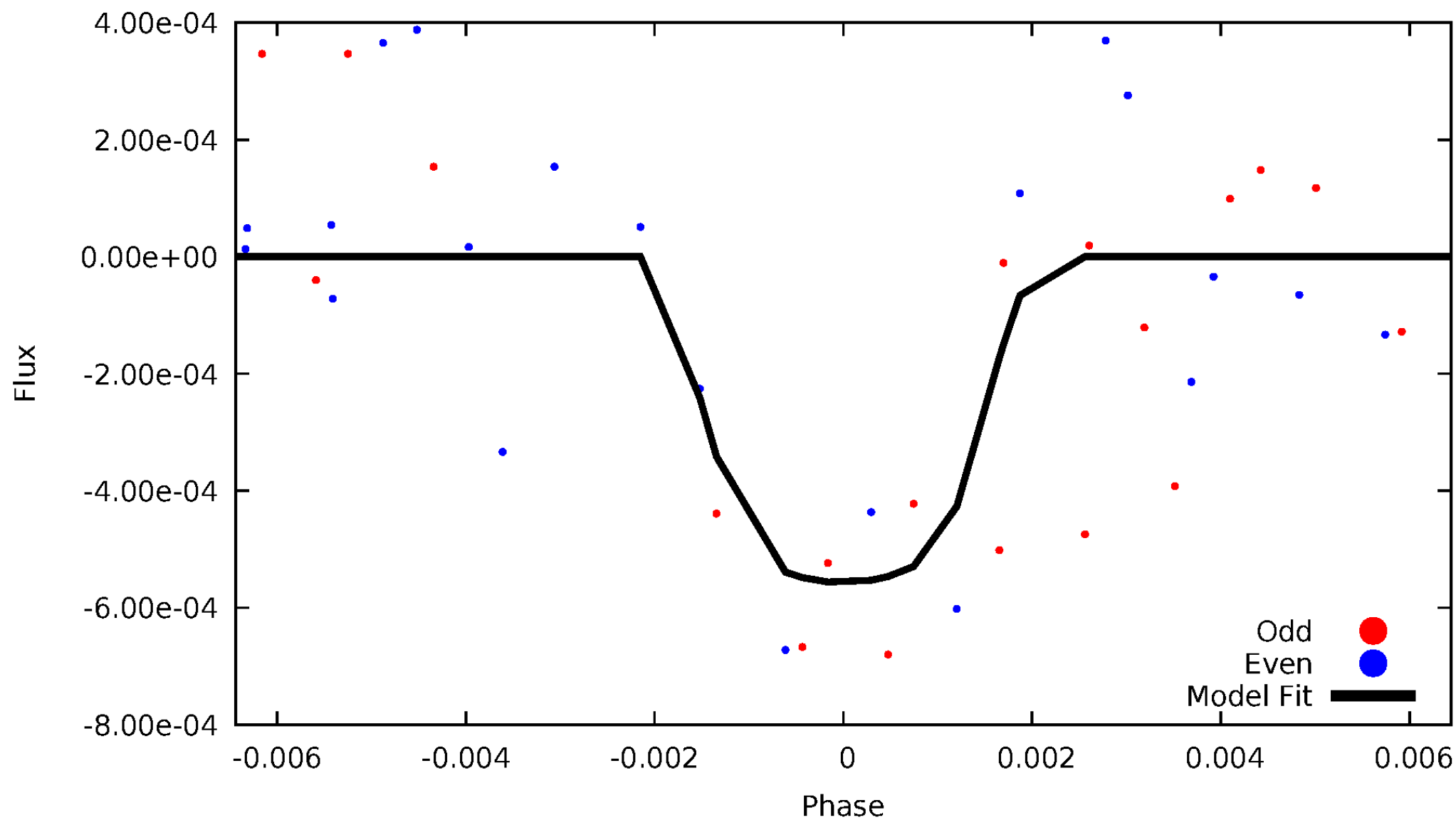


TCE 004284959-02



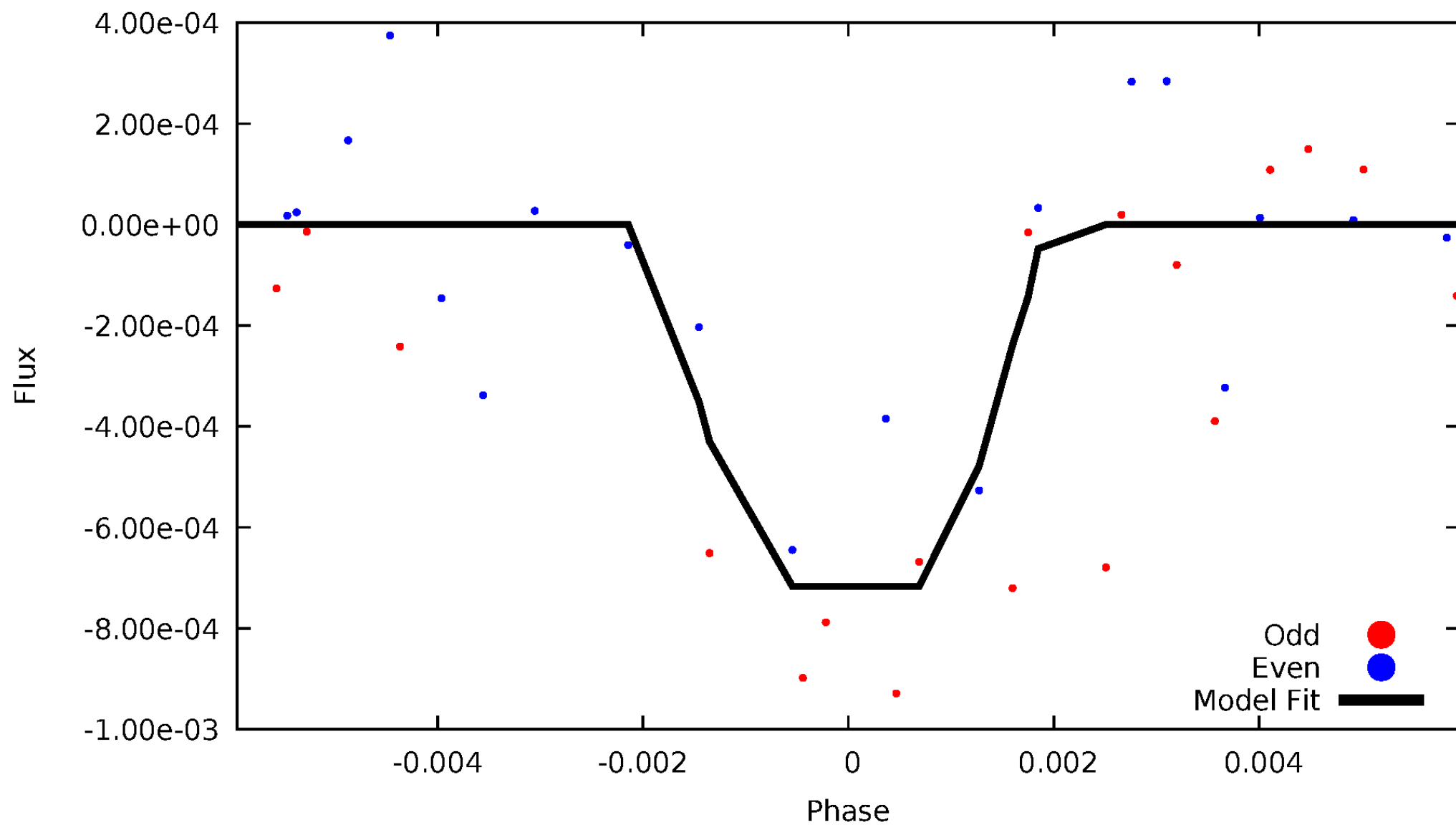
DV Odd/Even

TCE 004284959-02



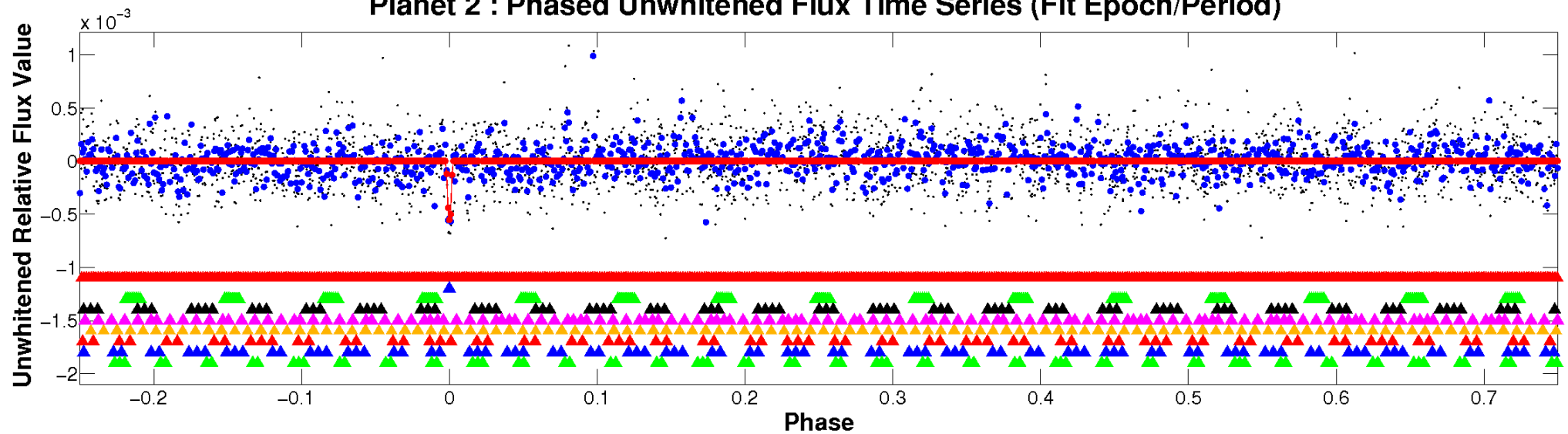
ALT Odd/Even

TCE 004284959-02

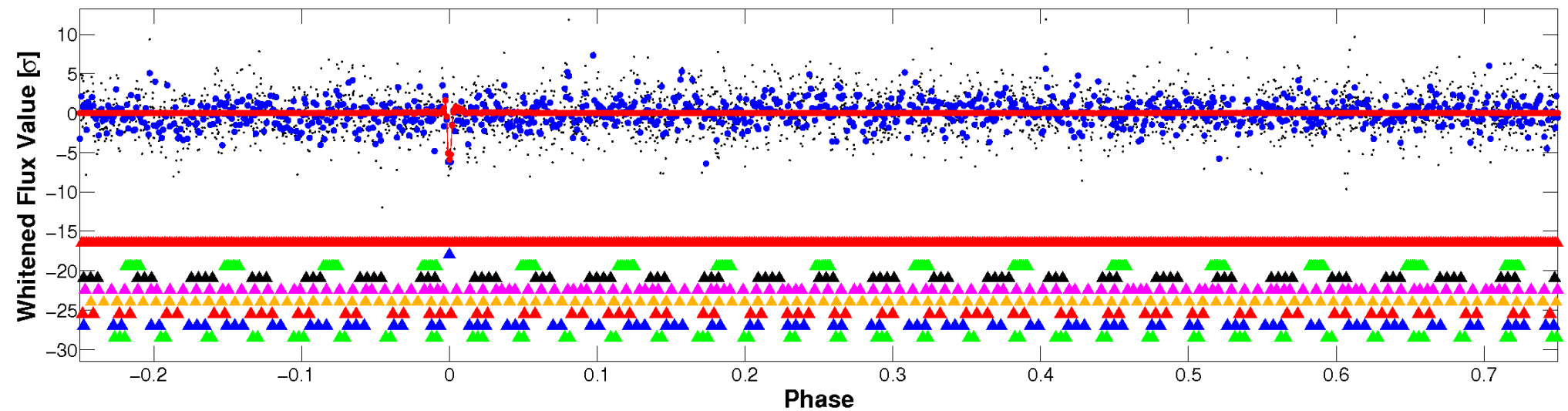


Non-Whitened Vs. Whitened Light Curve

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

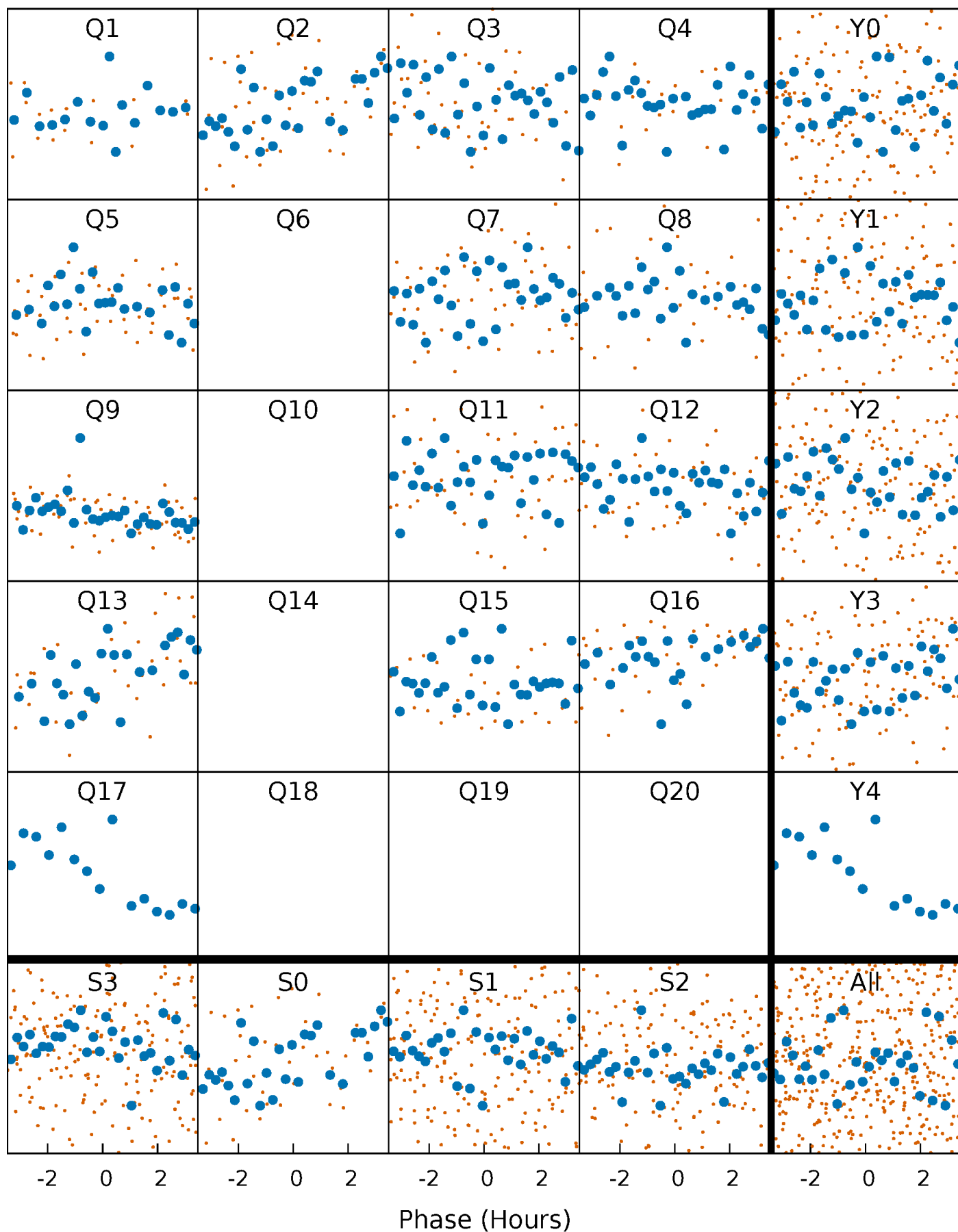


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



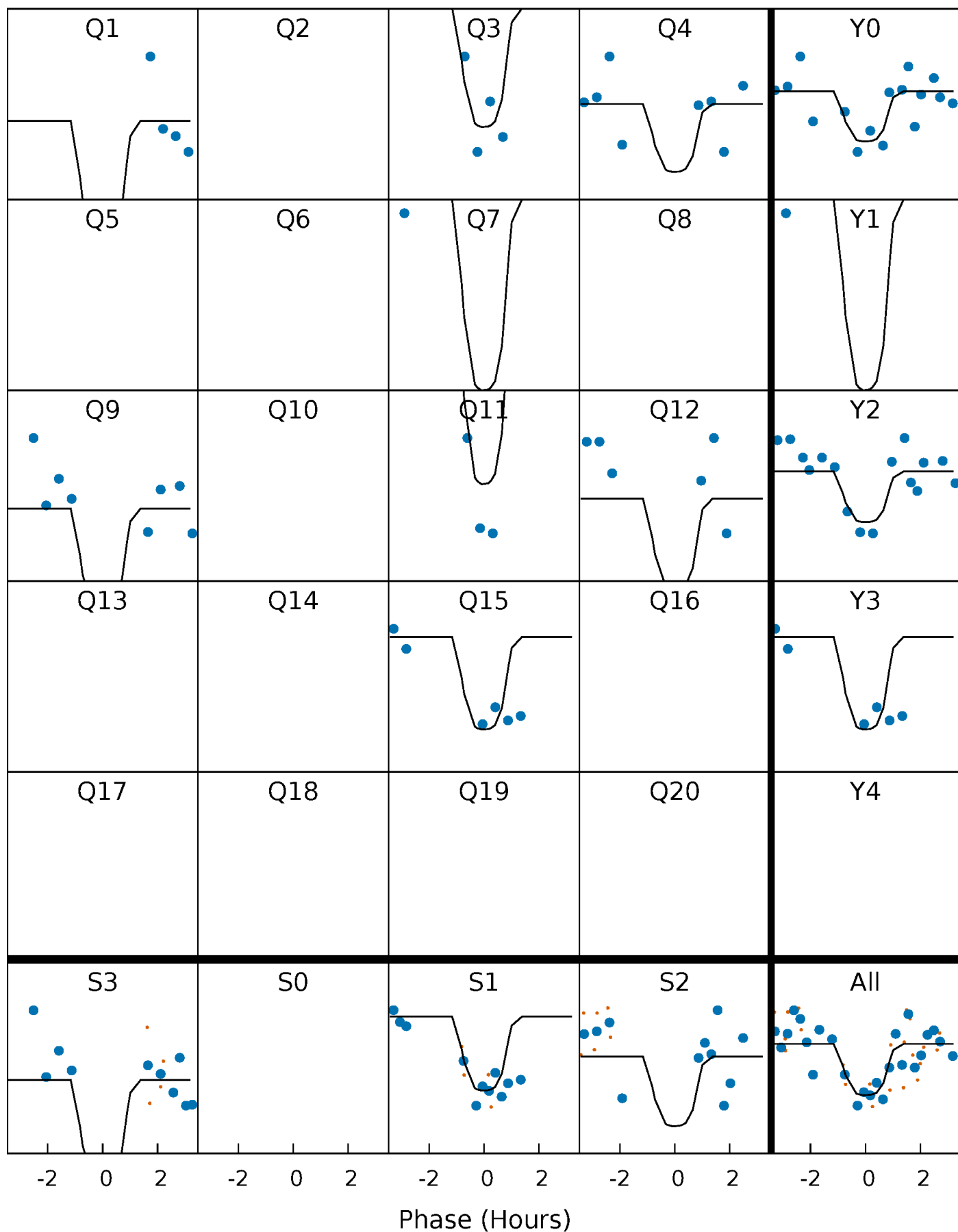
PDC Quarter-Phased Transit Curves

TCE 004284959-02 P= 22.480554 Days $T_0=136.553048$ (BKJD)



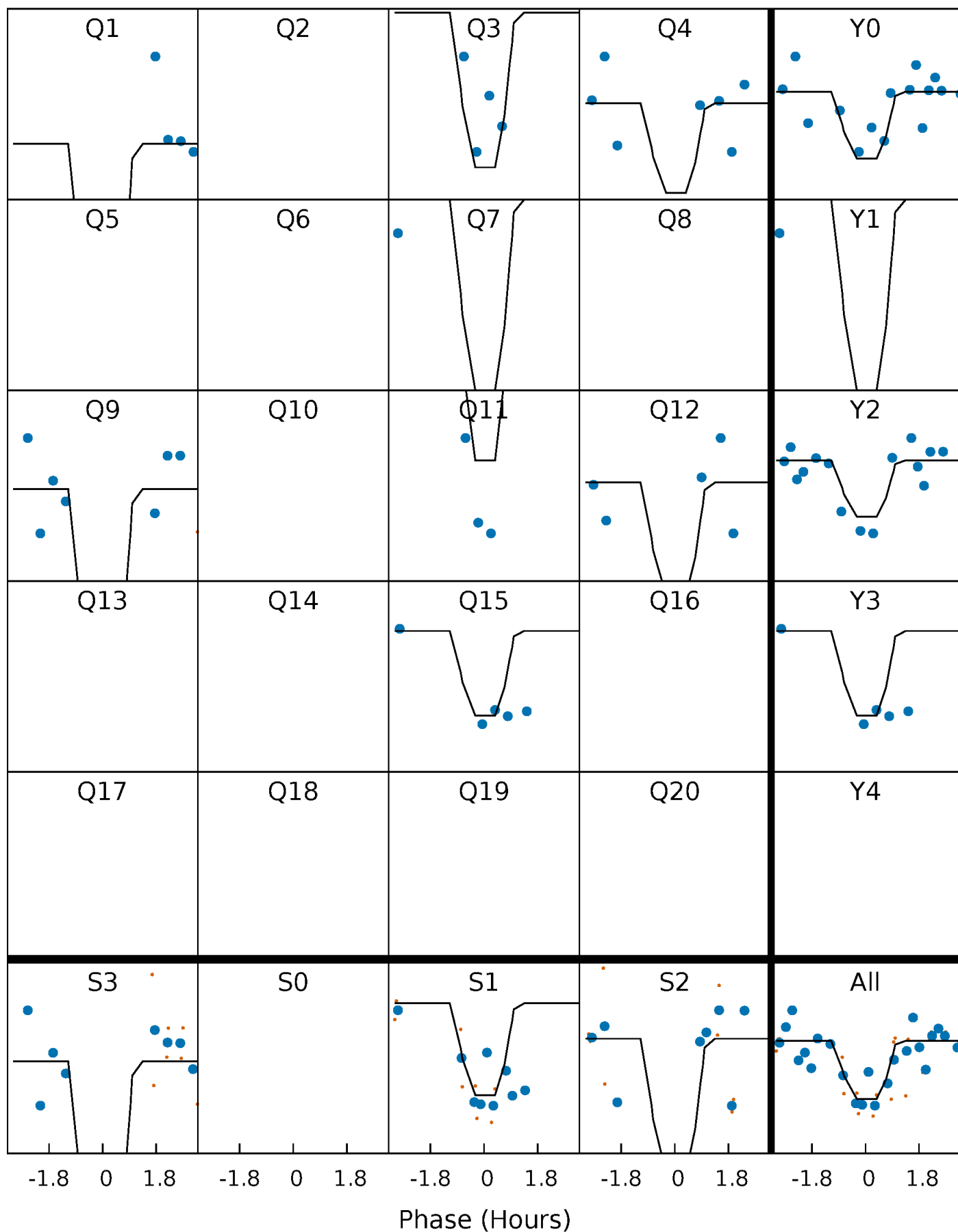
DV Quarter-Phased Transit Curves

TCE 004284959-02 P= 22.480554 Days $T_0=136.553048$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

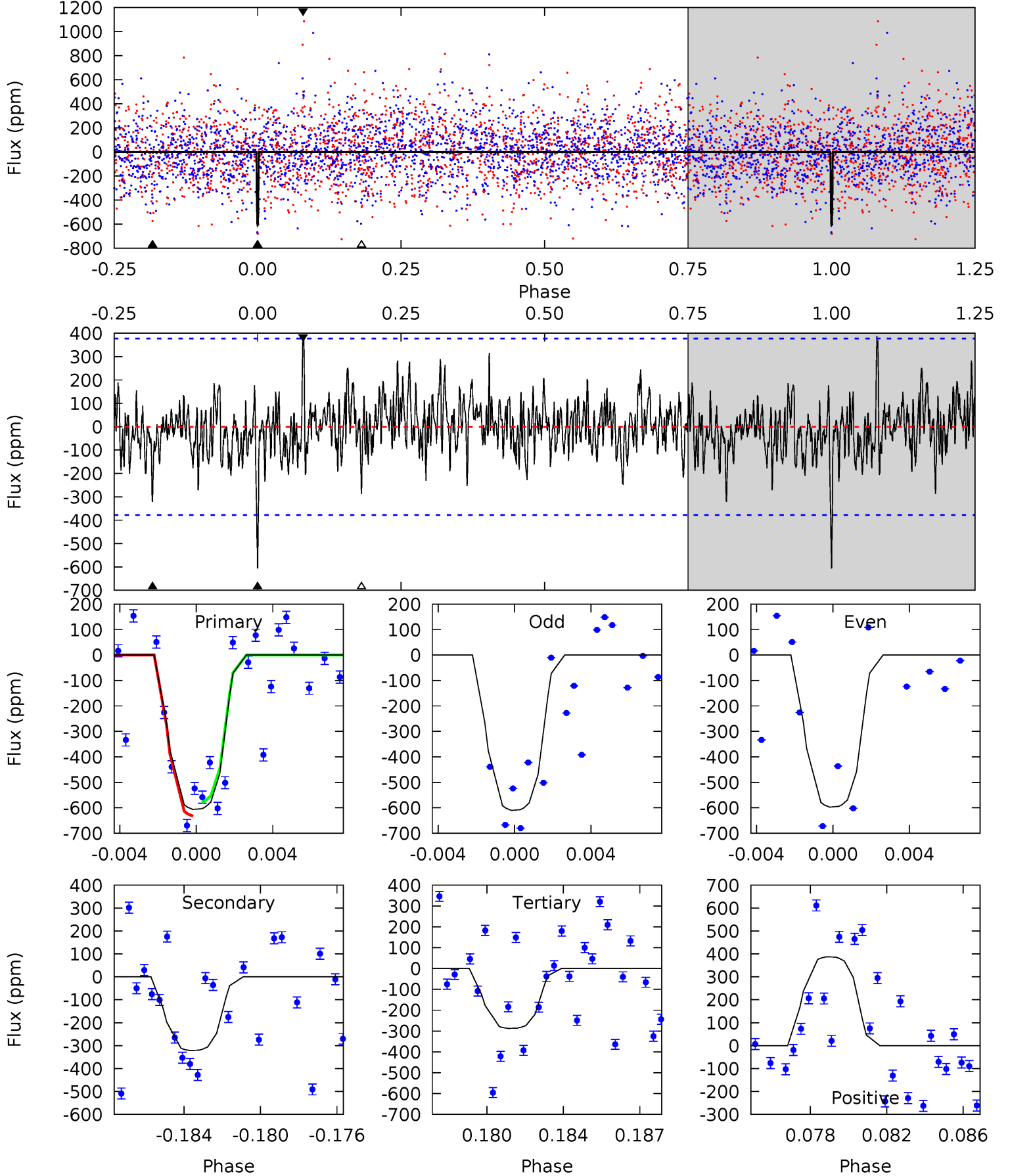
TCE 004284959-02 P= 22.480607 Days $T_0=136.551145$ (BKJD)



DV Model-Shift Uniqueness Test

004284959-02, P = 22.480554 Days, E = 114.072494 Days

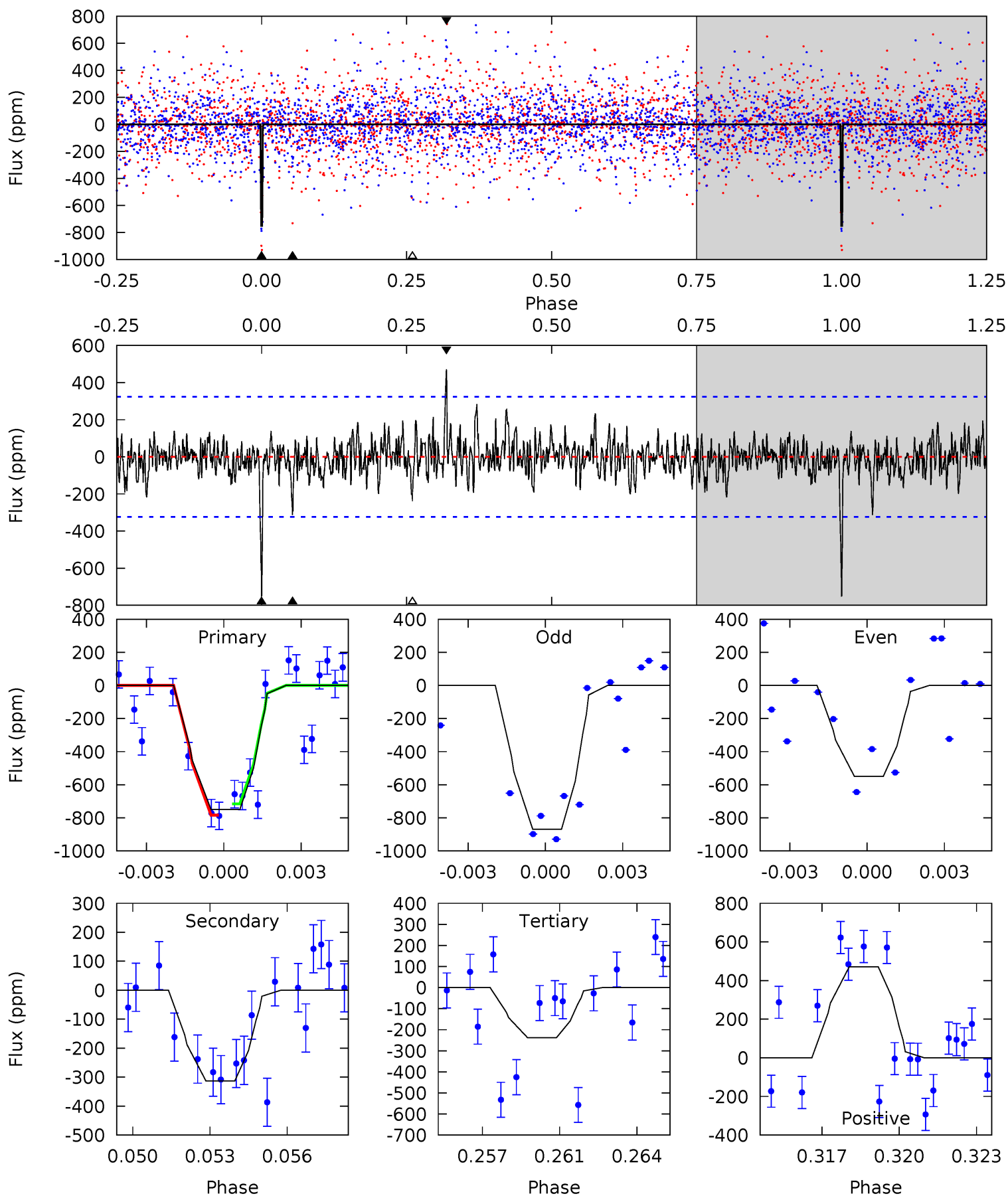
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.35	4.43	3.96	5.34	5.20	2.89	1.30	4.39	3.02	0.47	-0.91	0.09	1.01	0.39	0.35



Alt Model-Shift Uniqueness Test

004284959-02, P = 22.480607 Days, E = 114.070538 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	5.06	3.85	7.62	5.23	2.94	1.21	8.26	4.49	1.21	-2.56	2.38	0.95	0.39	0.55



Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-321 ± 73	$7.61^{+7.61}_{-4.81}$	1146^{+81}_{-66}	4077^{+2098}_{-796}	77^{+536}_{-56}
Alt.	-313 ± 62	$7.65^{+7.87}_{-5.44}$	1152^{+84}_{-65}	4030^{+2874}_{-793}	75^{+834}_{-57}

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

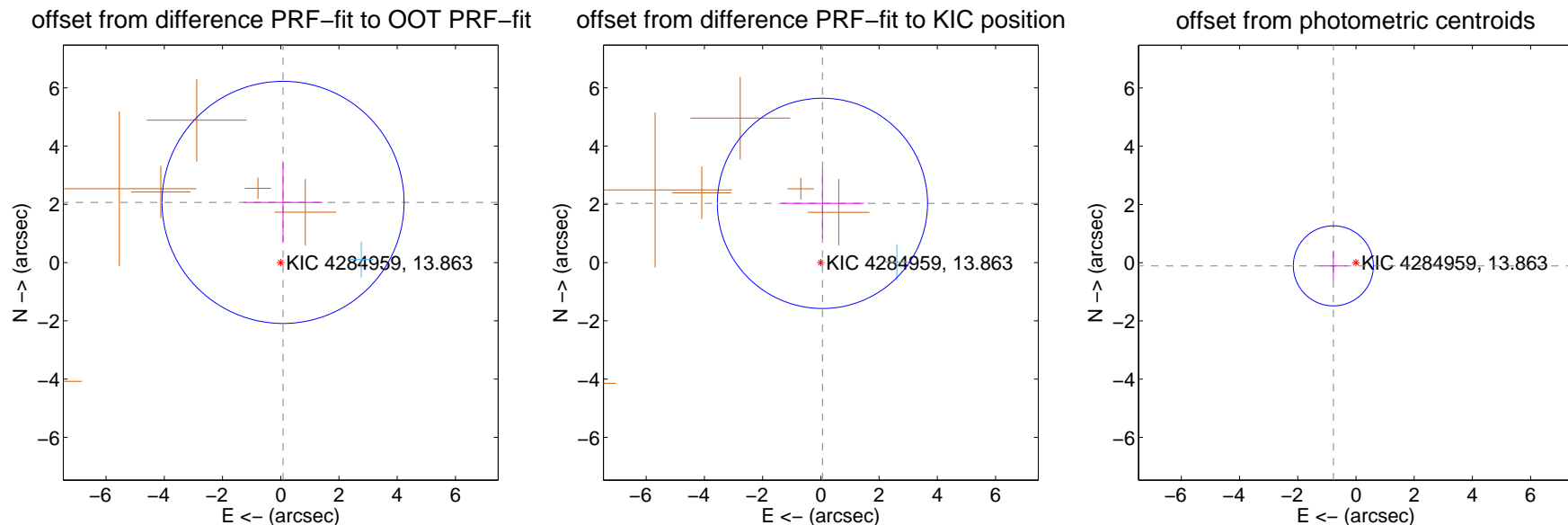
DV Centroid Data

Supplemental centroid analysis for 004284959-02. Kepler magnitude: 13.86. Transit SNR 16.03

There are 1 quarters with good PRF difference image offsets

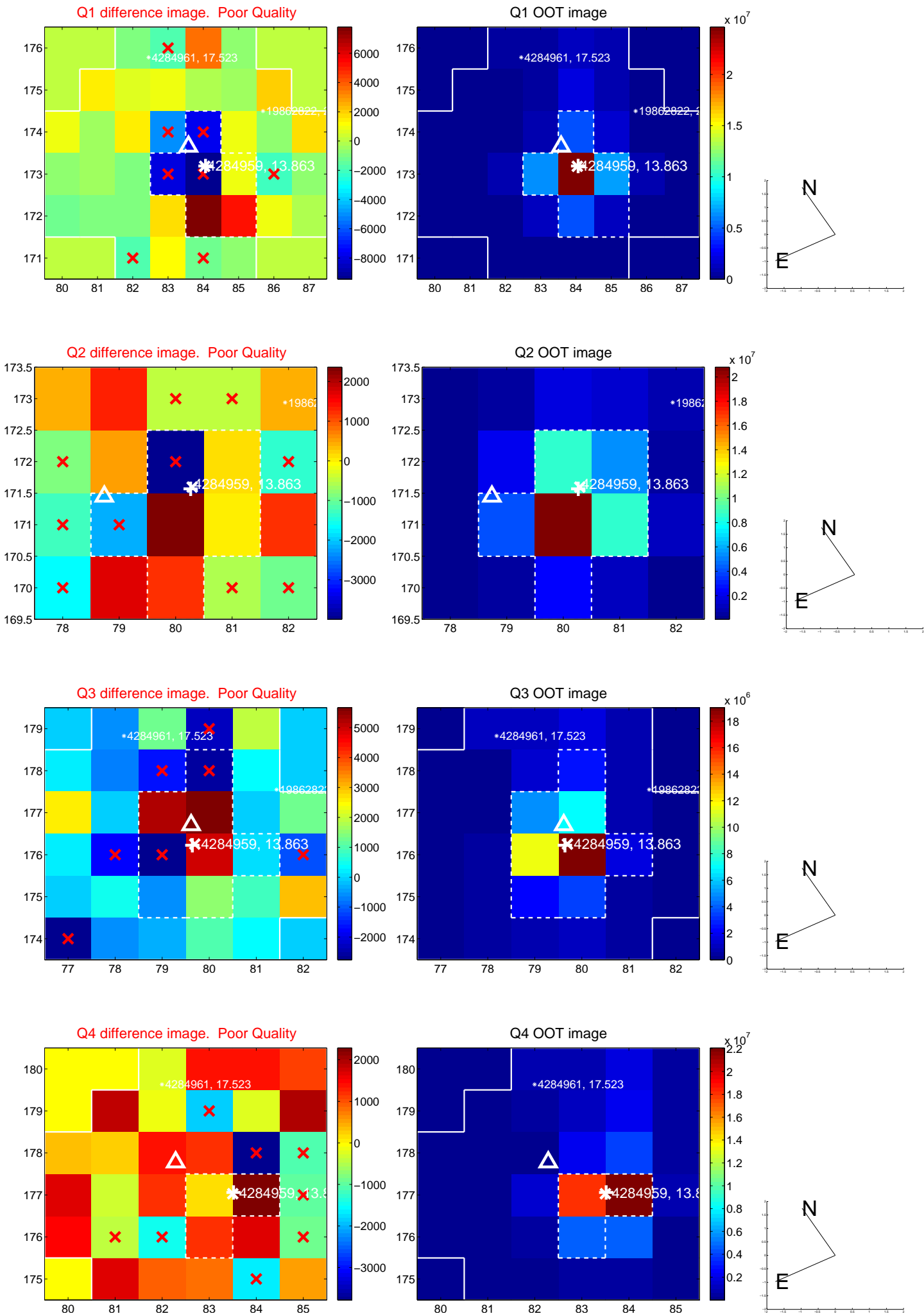
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.067 ± 1.385	1.49	-0.079 ± 1.353	2.066 ± 1.355
PRF-fit source offset from KIC position	2.033 ± 1.203	1.69	-0.054 ± 1.416	2.033 ± 1.191
photometric centroid source offset	0.78 ± 0.46	1.71	0.78 ± 0.46	-0.11 ± 0.49

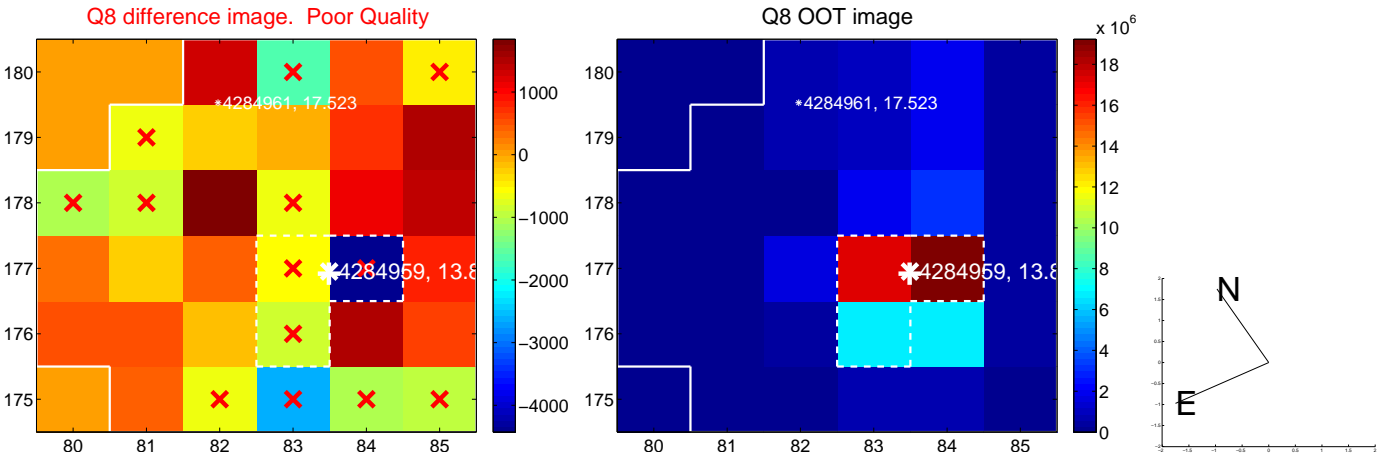
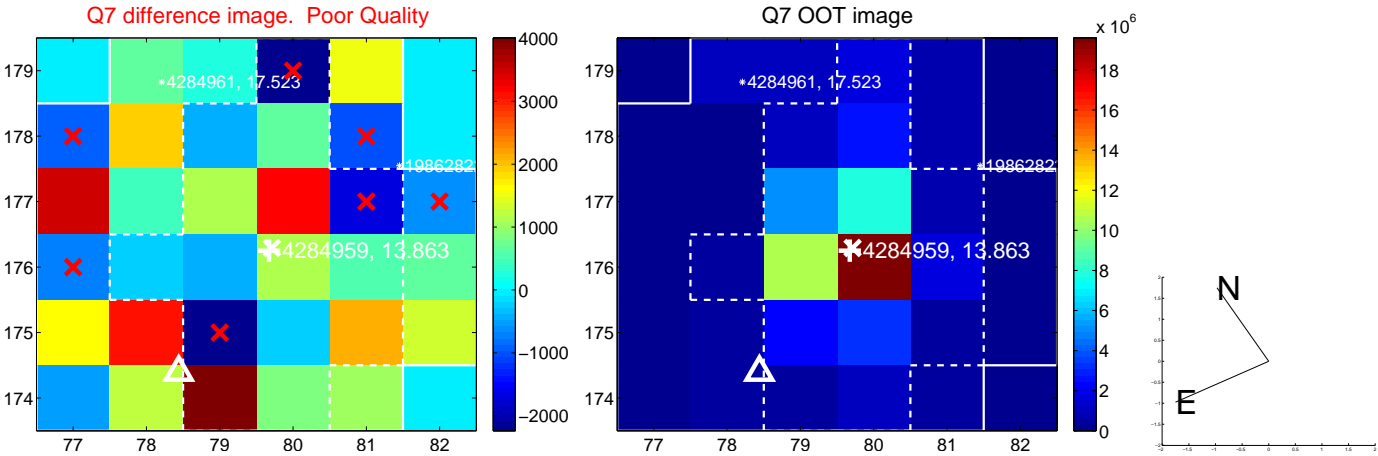
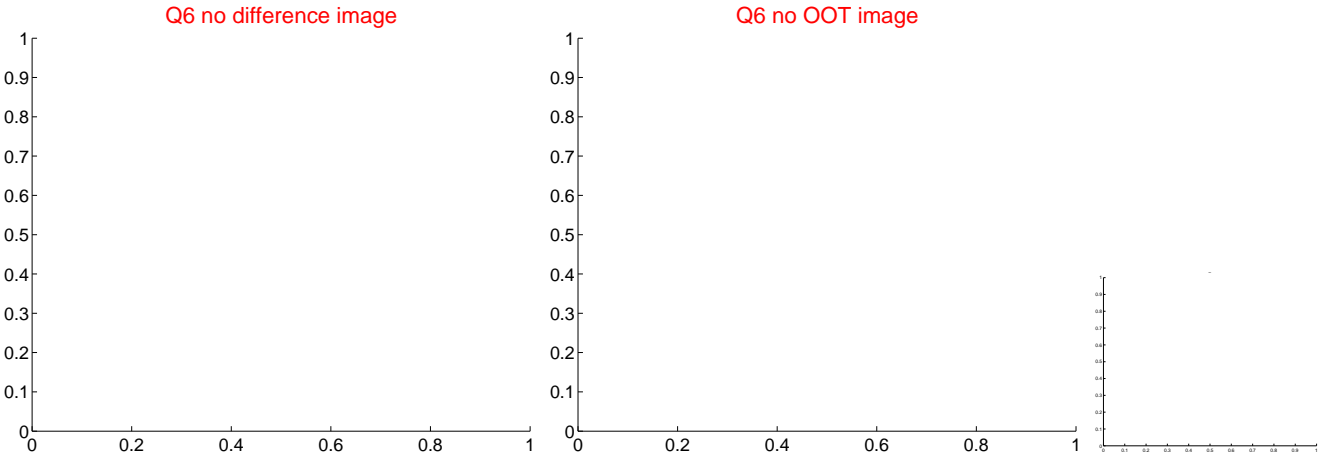
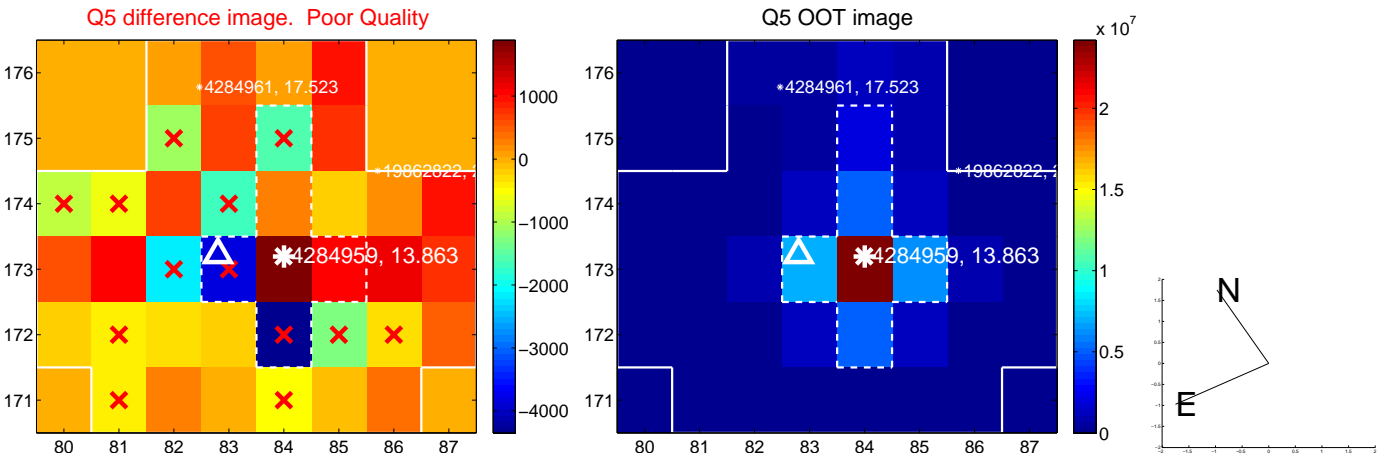


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

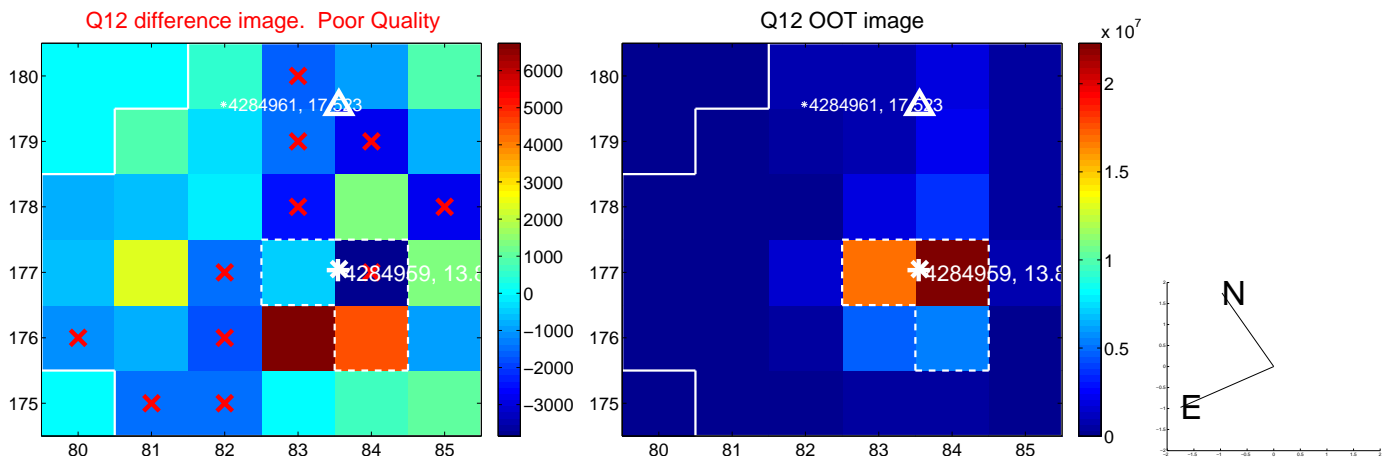
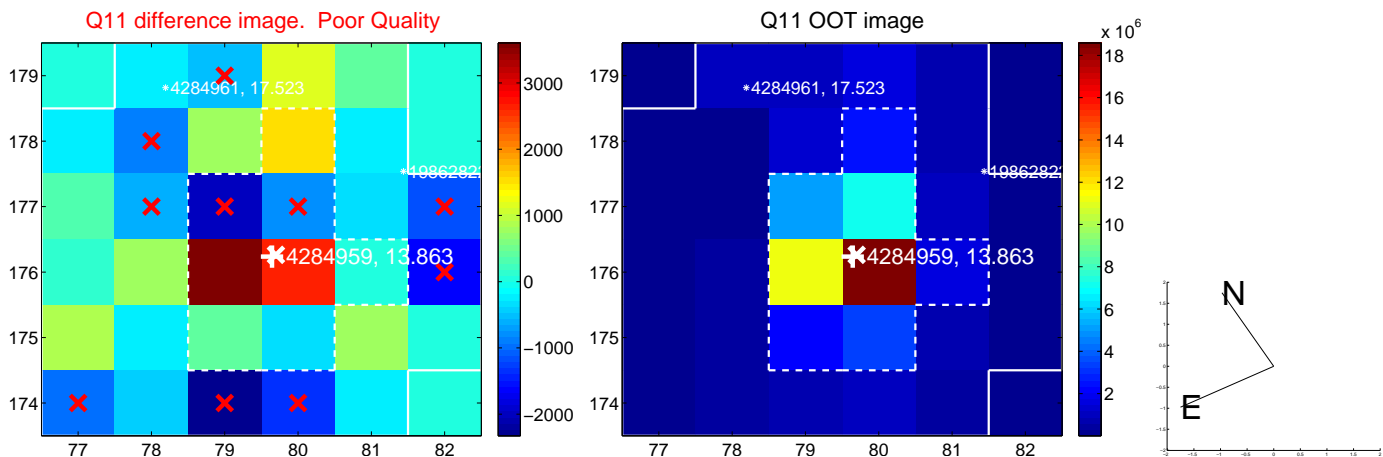
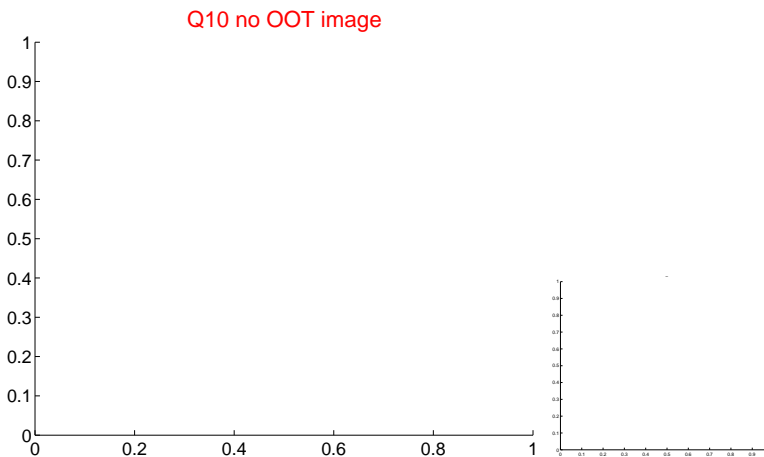
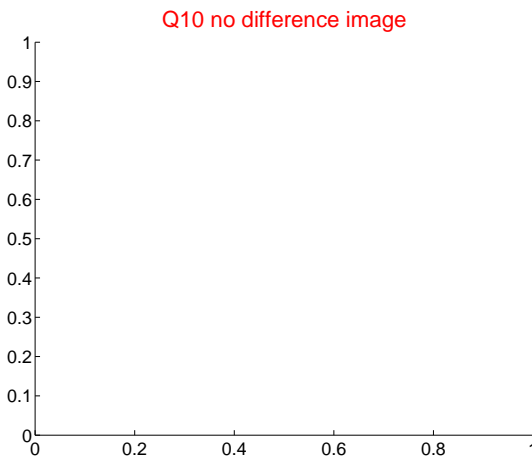
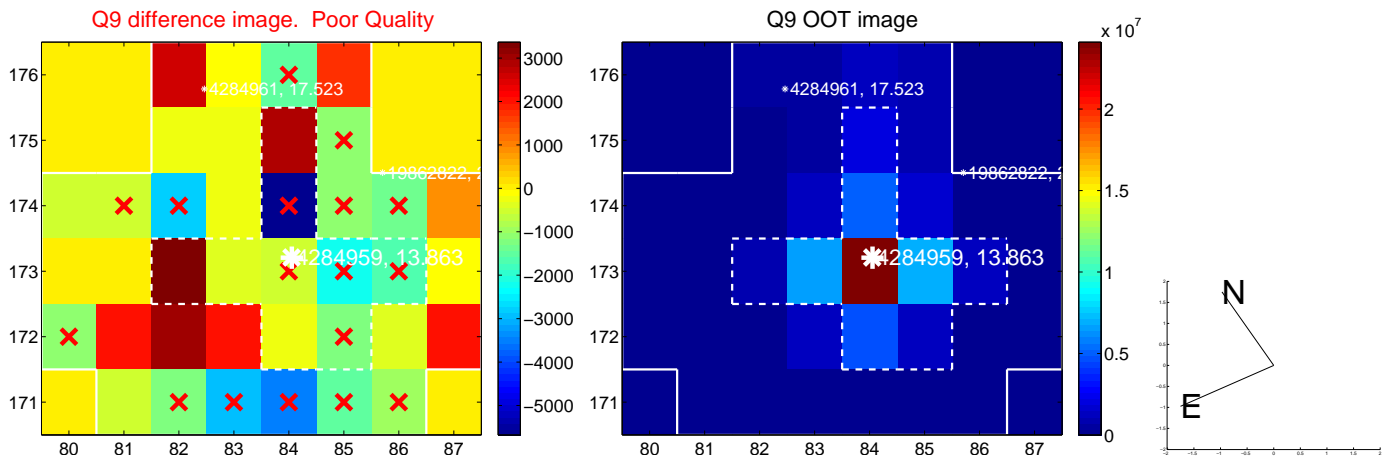
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



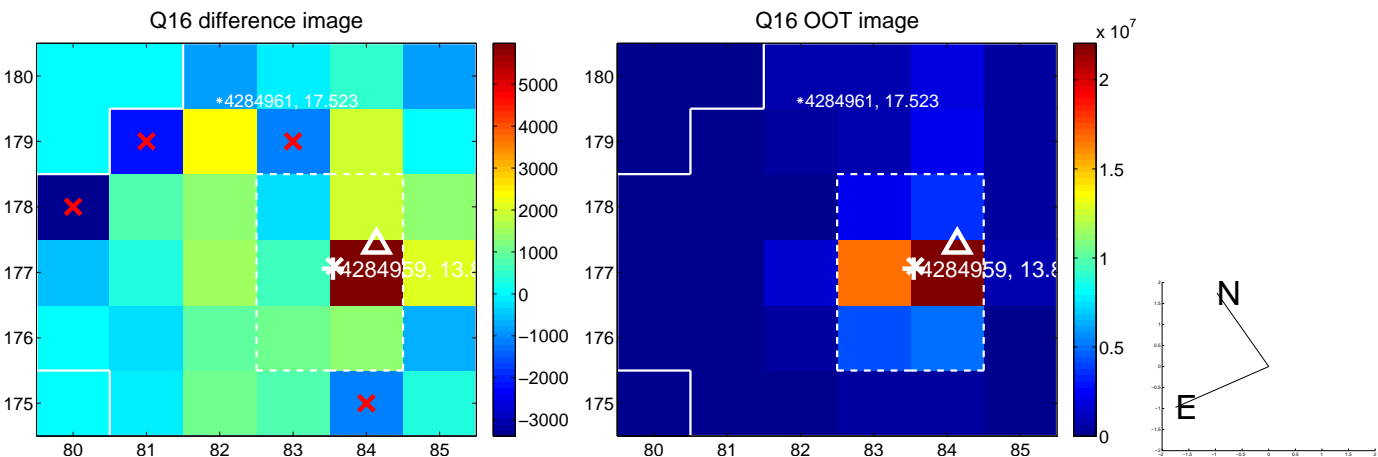
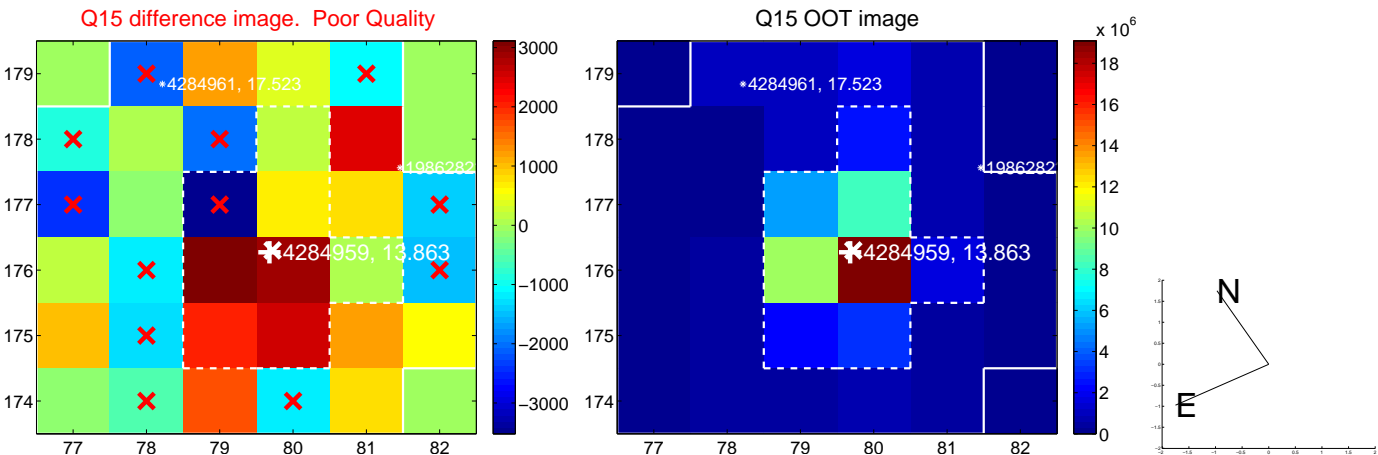
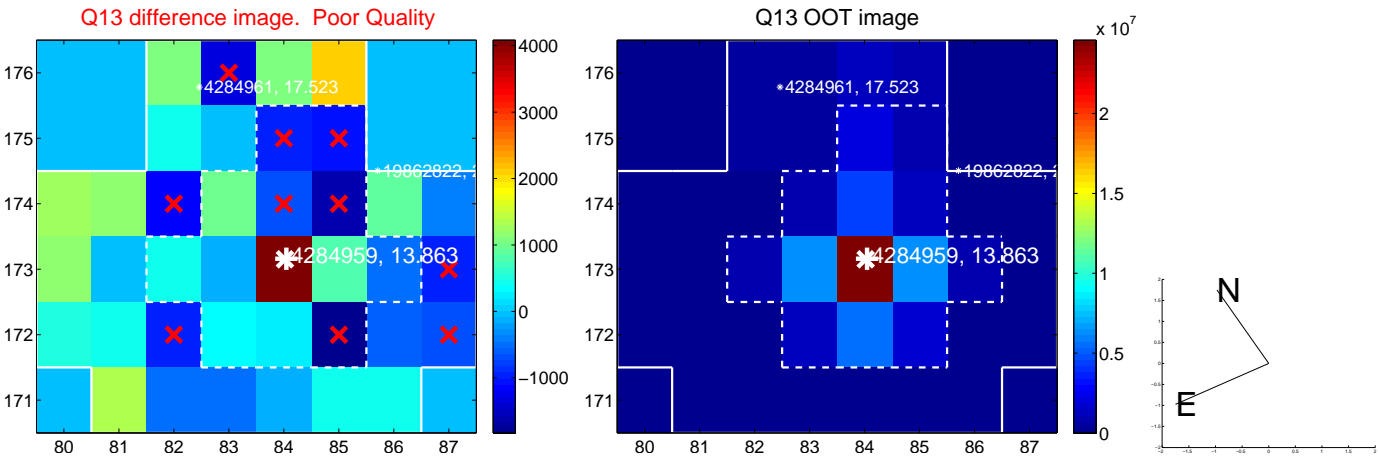
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



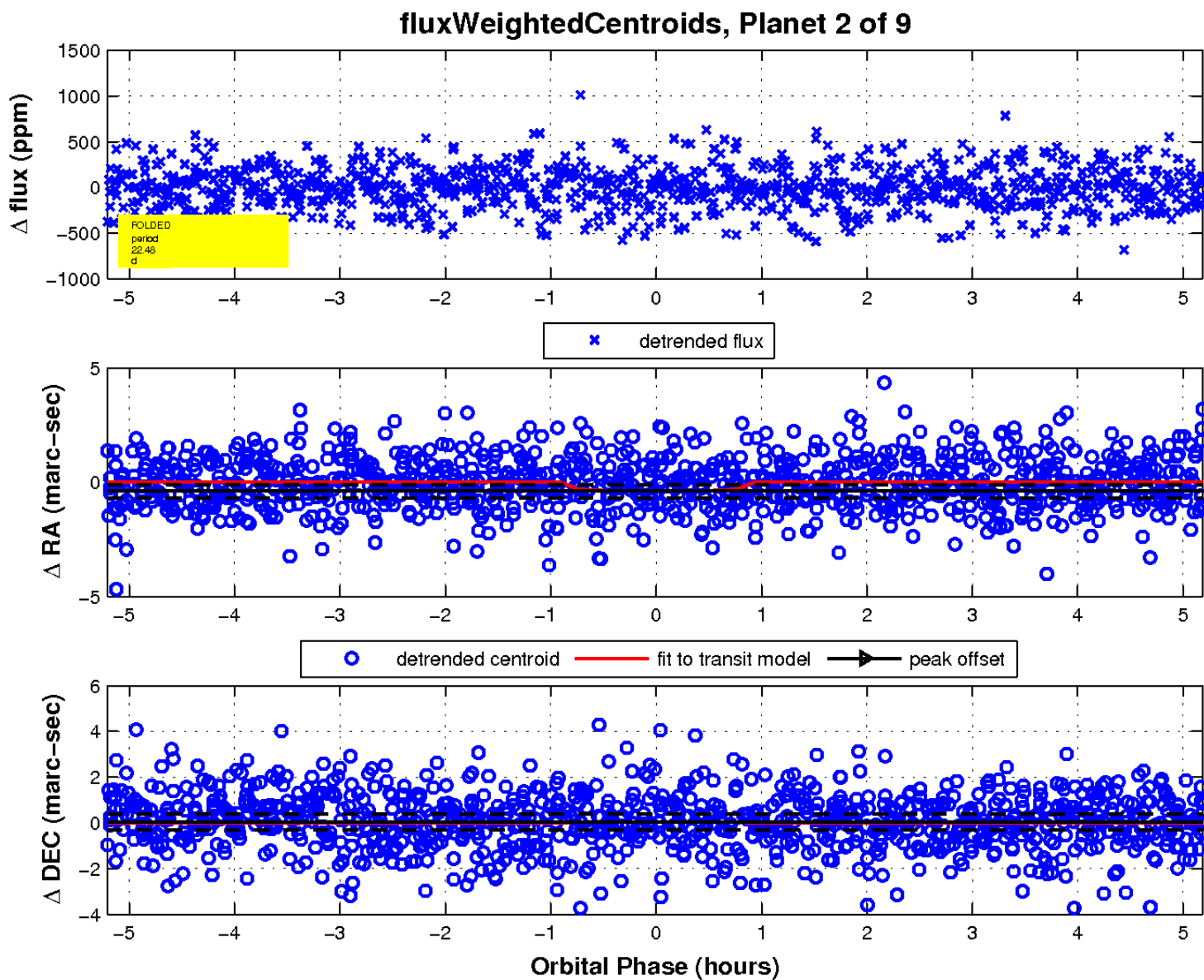
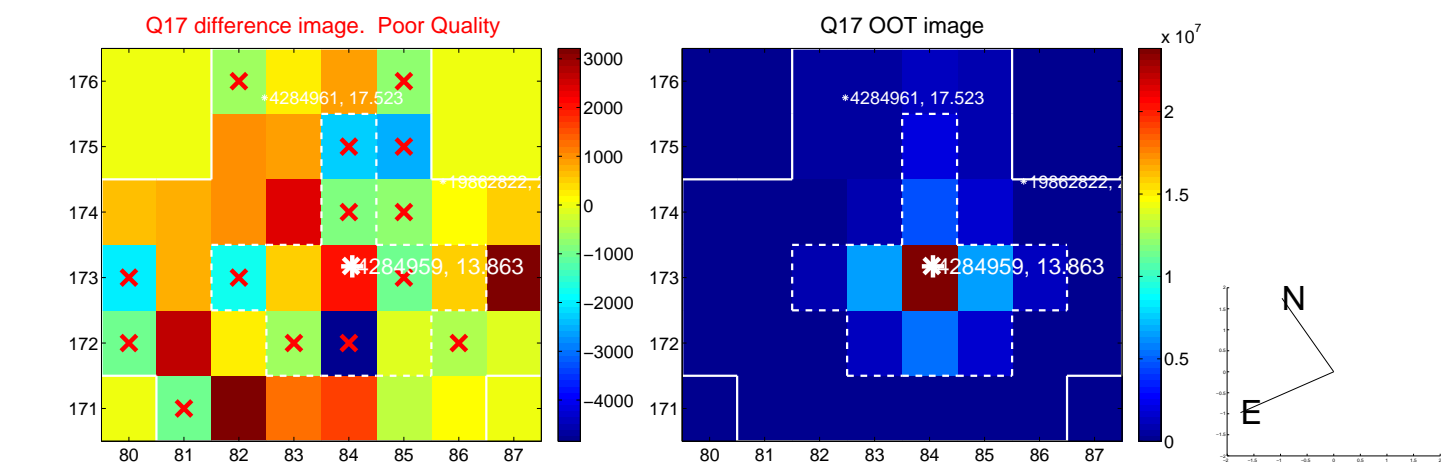
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

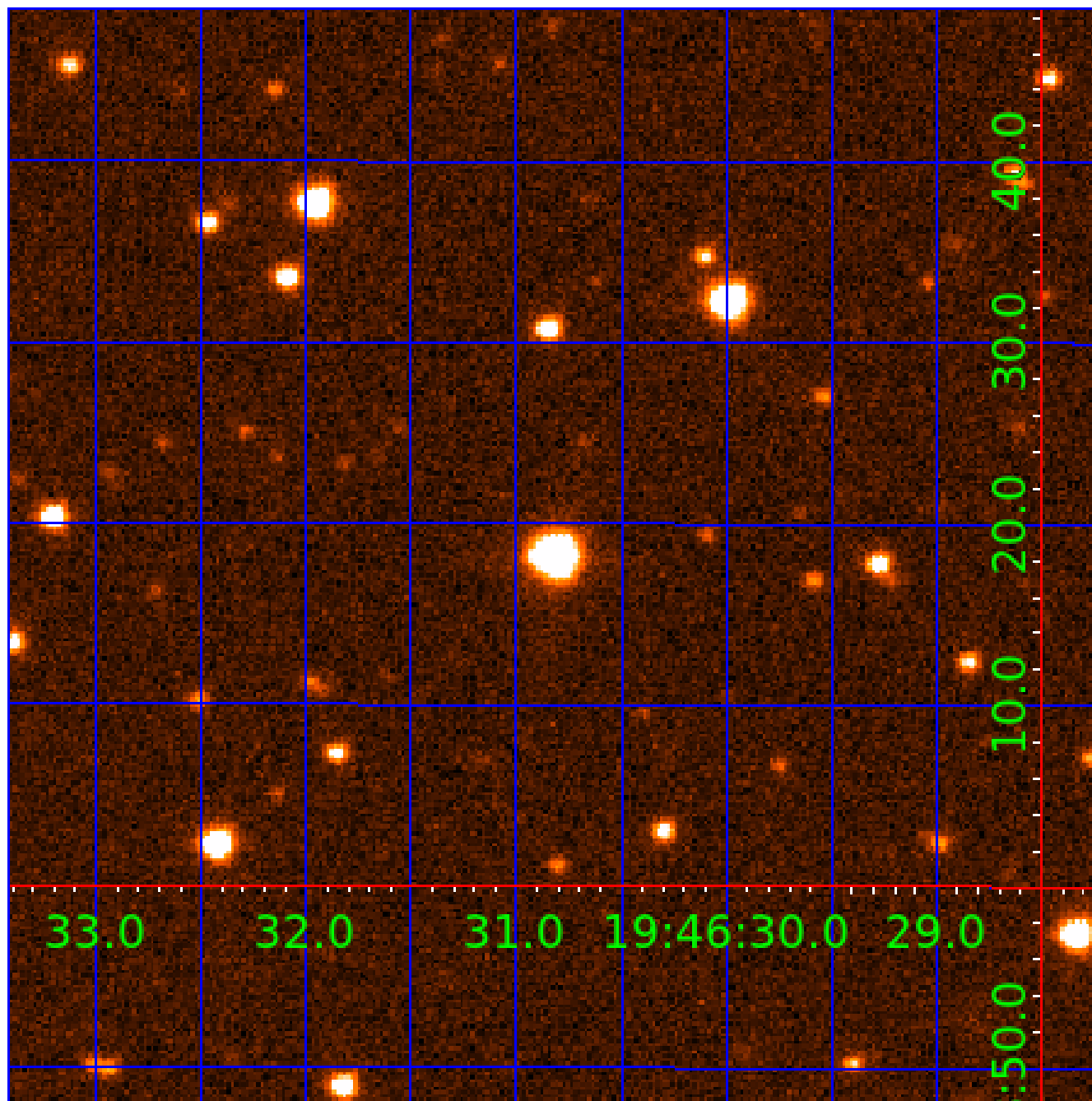


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004284959

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})
004284959-01	OBS	No	1.192696	132.479950	0.0	8.808	8.7	0.0	1.22	6731	0.00	5236.33
004284959-02	OBS	No	22.480554	136.553048	557.1	1.737	18.7	16.0	1.22	6731	2.92	104.39
004284959-03	OBS	No	11.991718	139.115641	341.7	2.179	14.6	15.0	1.22	6731	2.59	241.30
004284959-04	OBS	No	16.423993	145.063114	362.2	1.746	14.6	12.9	1.22	6731	2.52	158.65
004284959-05	OBS	No	10.695476	141.822775	313.7	1.630	15.3	11.7	1.22	6731	2.47	281.06
004284959-06	OBS	No	9.748056	135.886355	673.8	0.641	11.4	12.2	1.22	6731	3.73	318.06
004284959-07	OBS	No	19.760540	147.133877	359.9	1.539	12.6	11.8	1.22	6731	2.43	123.97
004284959-08	OBS	No	15.793829	134.684111	799.9	2.000	11.9	-1.0	1.22	6731	3.50	167.14
004284959-09	OBS	No	19.757953	136.907984	357.3	1.958	12.7	11.4	1.22	6731	2.48	124.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004284959-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

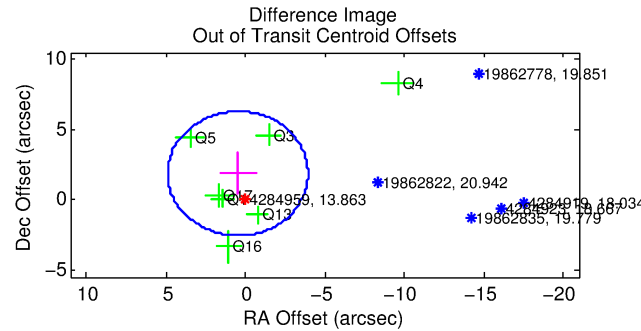
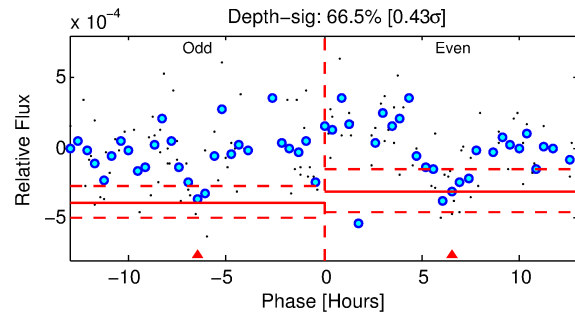
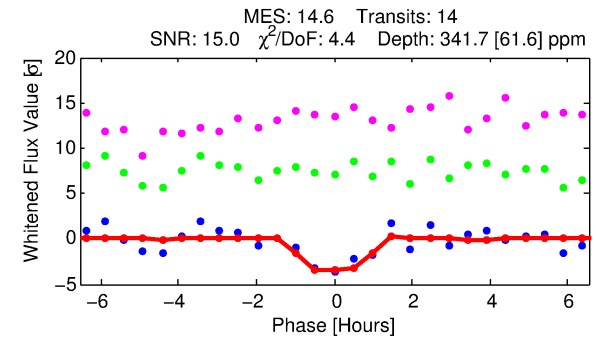
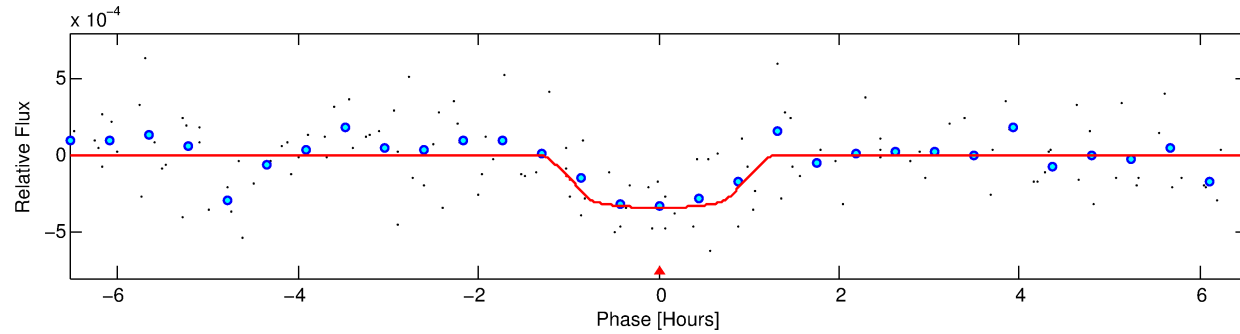
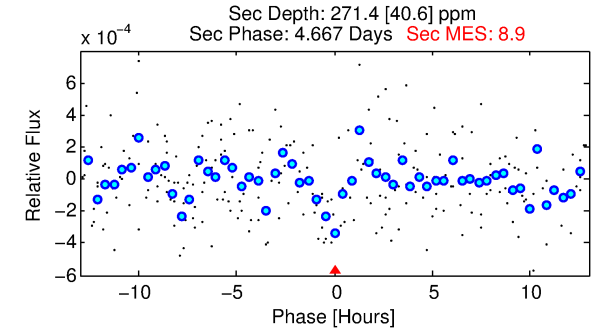
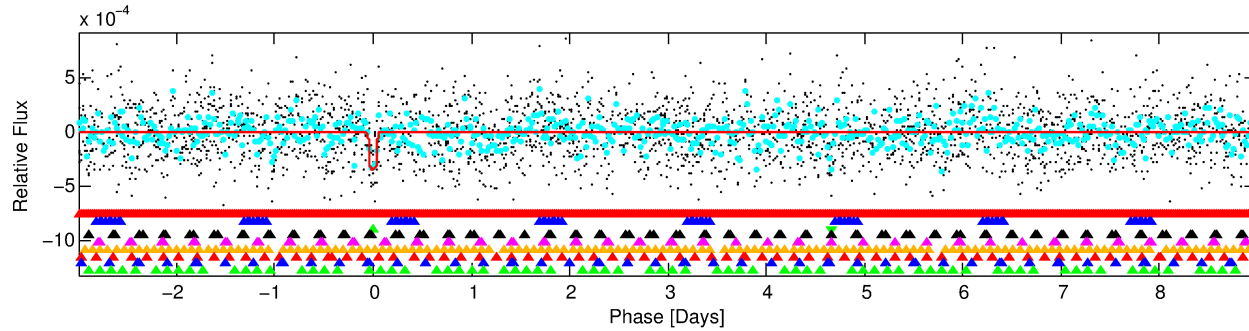
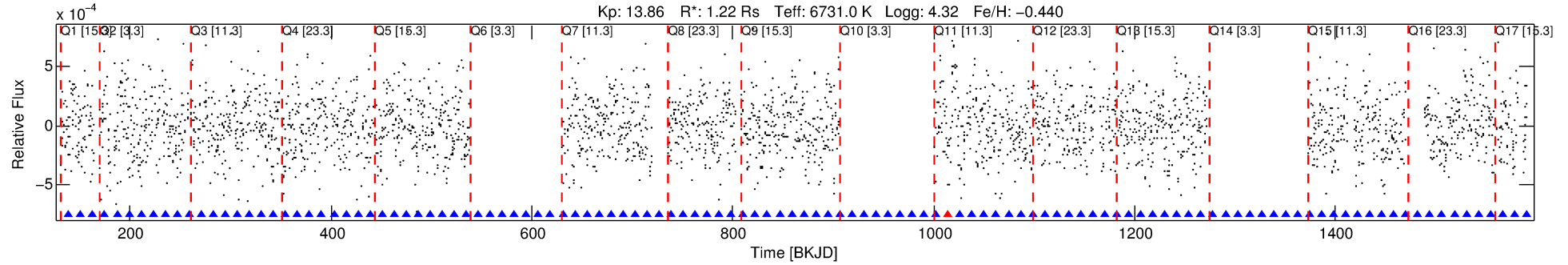
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004284959-03

No Significant Match Found

DV One-Page Summary

KIC: 4284959 Candidate: 3 of 9 Period: 11.992 d



DV Fit Results:

Period = 11.99172 [0.00011] d
Epoch = 139.1156 [0.0071] BKJD
Rp/R* = 0.0194 [0.0287]
a/R* = 22.28 [195.08]
b = 0.87 [2.46]
Seff = 241.30 [90.14]
Teq = 1005 [94] K
Rp = 2.59 [3.91] Re
a = 0.1069 [0.0256] AU
Ag = 254.86 [762.04] [0.33σ]
Teffp = 6208 [4615] K [1.13σ]

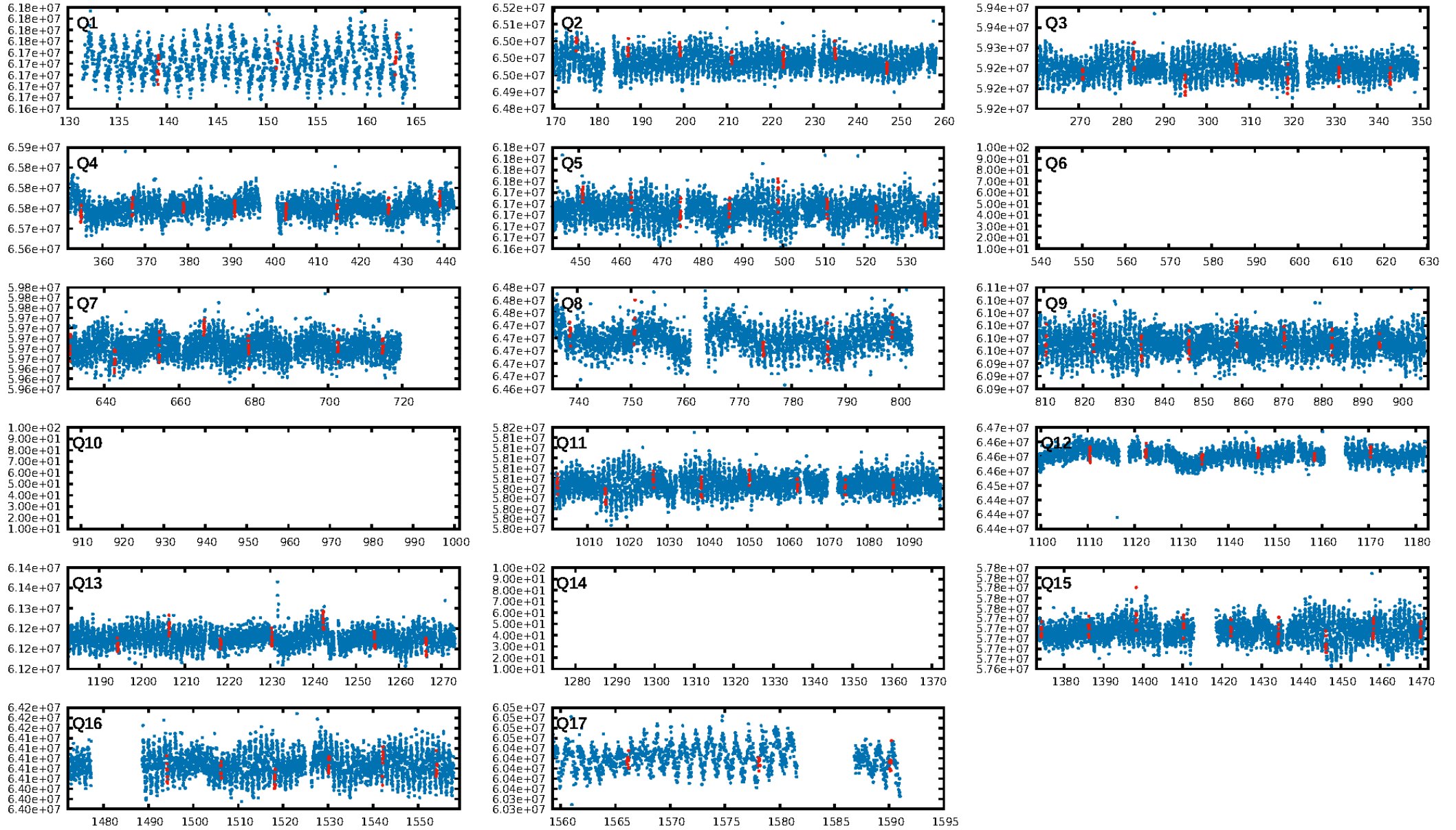
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.43σ]
LongPeriod-sig: 100.0% [30.85σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 3.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [12/13]
GhostDiagnostic-chr: -0.6211
Centroid-sig: 24.0%
Centroid-so: 0.603 arcsec [1.23σ]
OotOffset-rm: 1.920 arcsec [1.30σ]
OotOffset-st: 0/1/2/4 [7]
KicOffset-rm: 1.891 arcsec [1.27σ]
KicOffset-st: 0/1/2/4 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.57 [8/14]

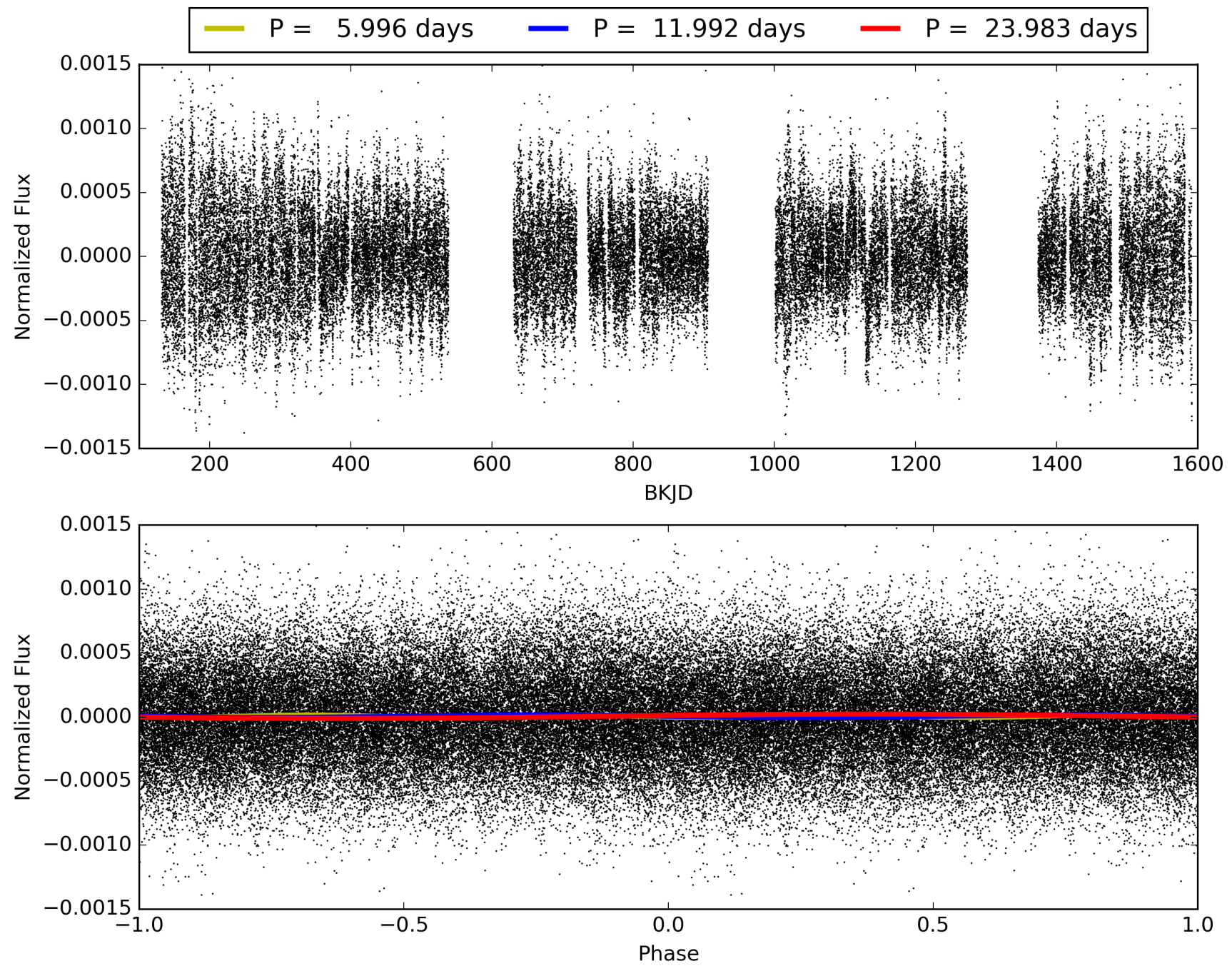
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:12:29 Z

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

TCE 004284959-03, PDC Light Curves

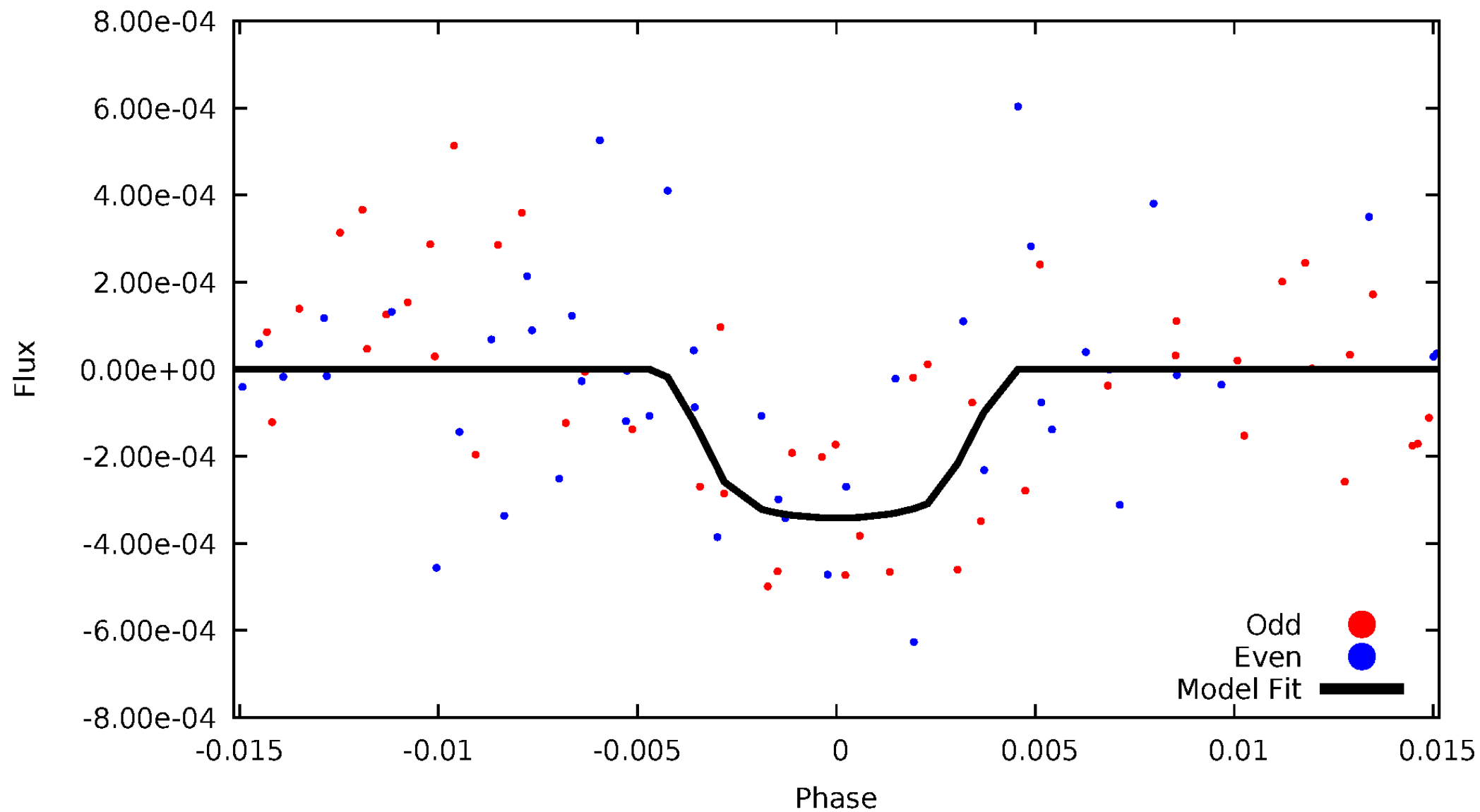


TCE 004284959-03



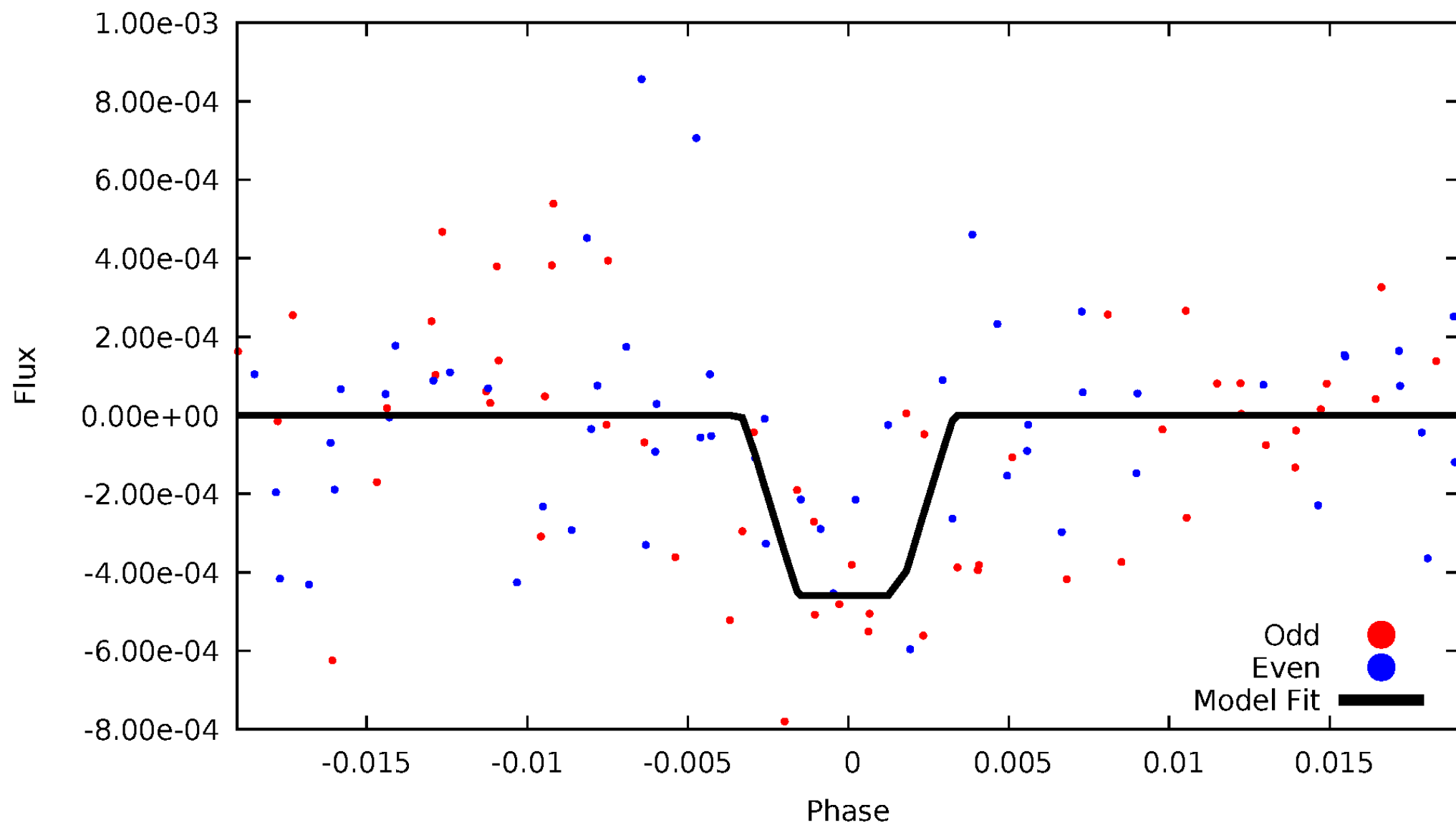
DV Odd/Even

TCE 004284959-03



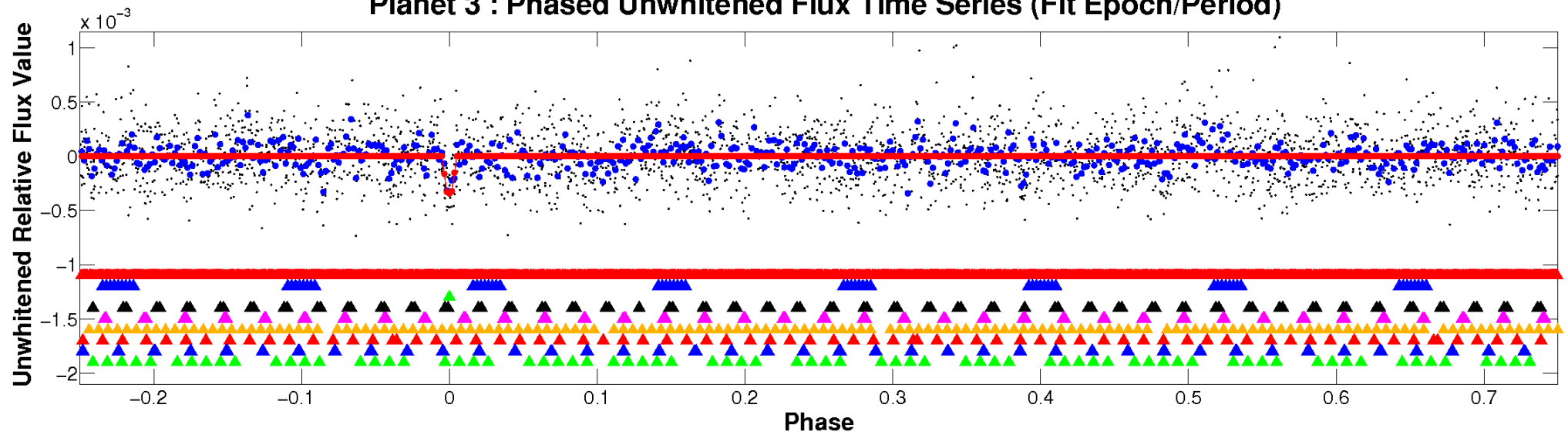
ALT Odd/Even

TCE 004284959-03

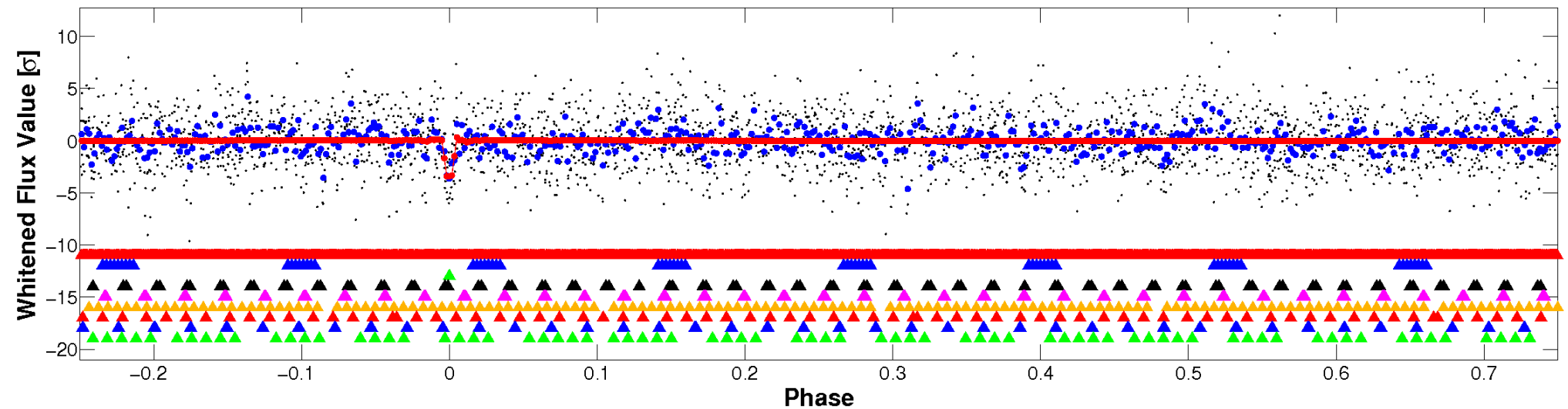


Non-Whitened Vs. Whitened Light Curve

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

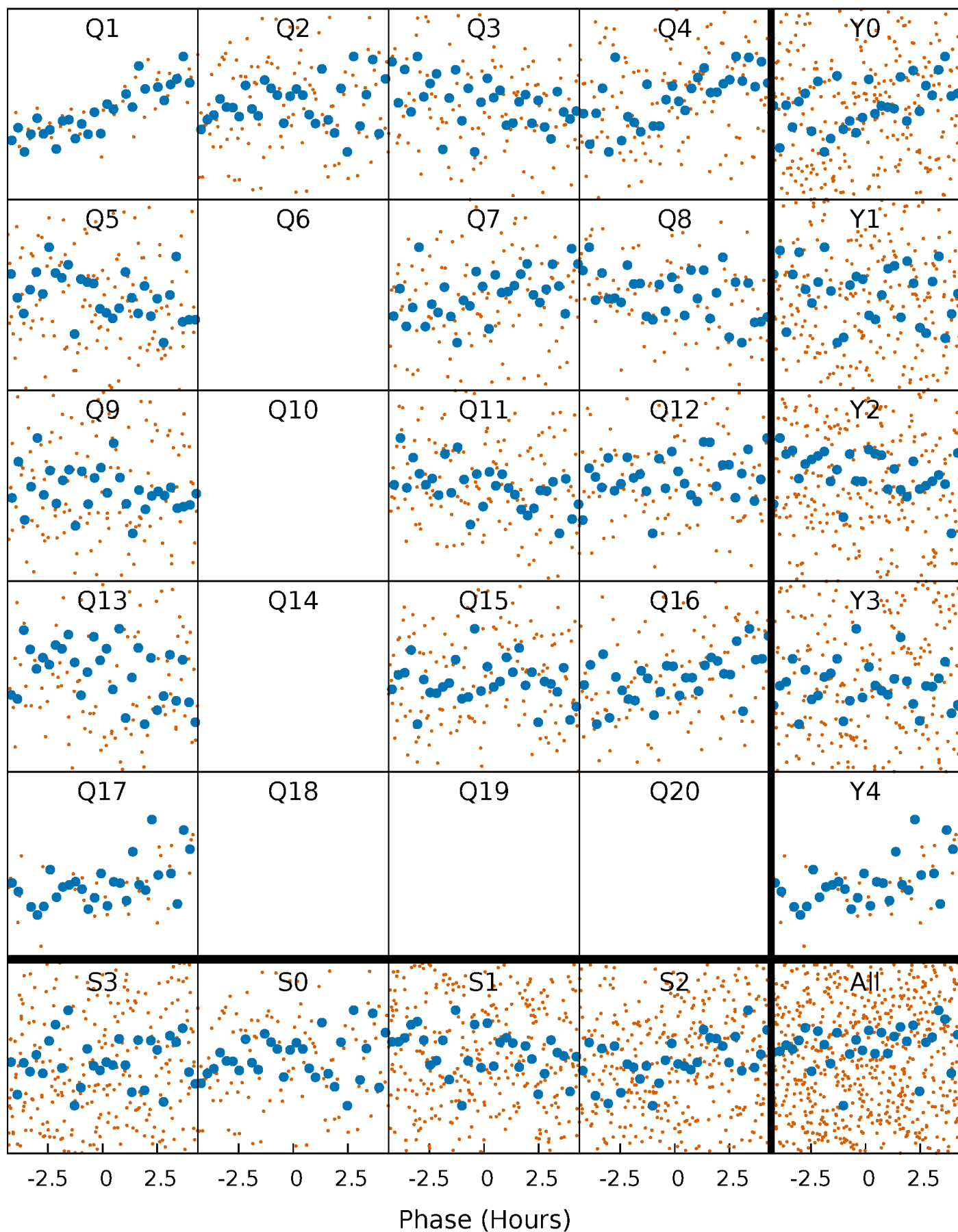


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



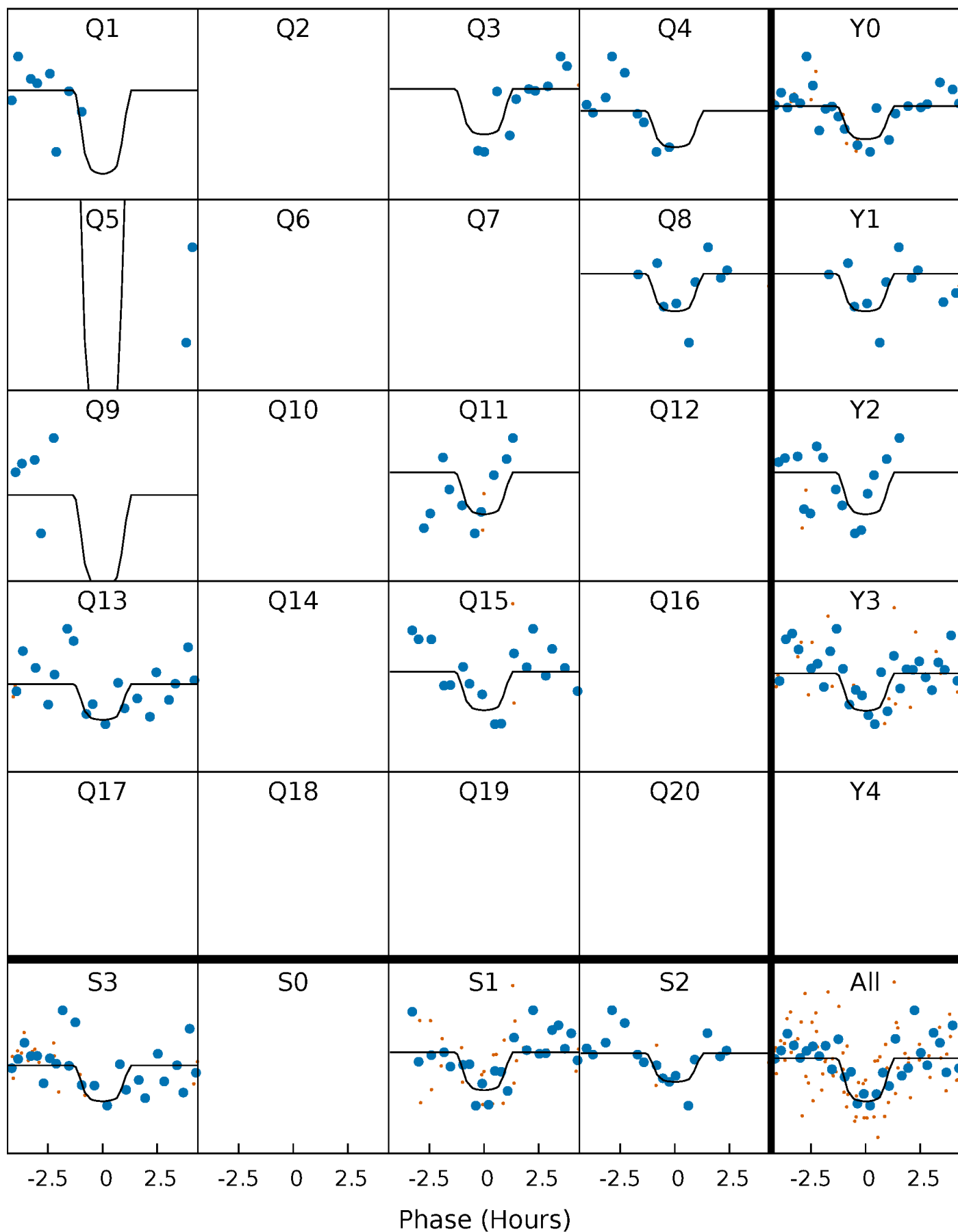
PDC Quarter-Phased Transit Curves

TCE 004284959-03 P= 11.991718 Days $T_0=139.115641$ (BKJD)



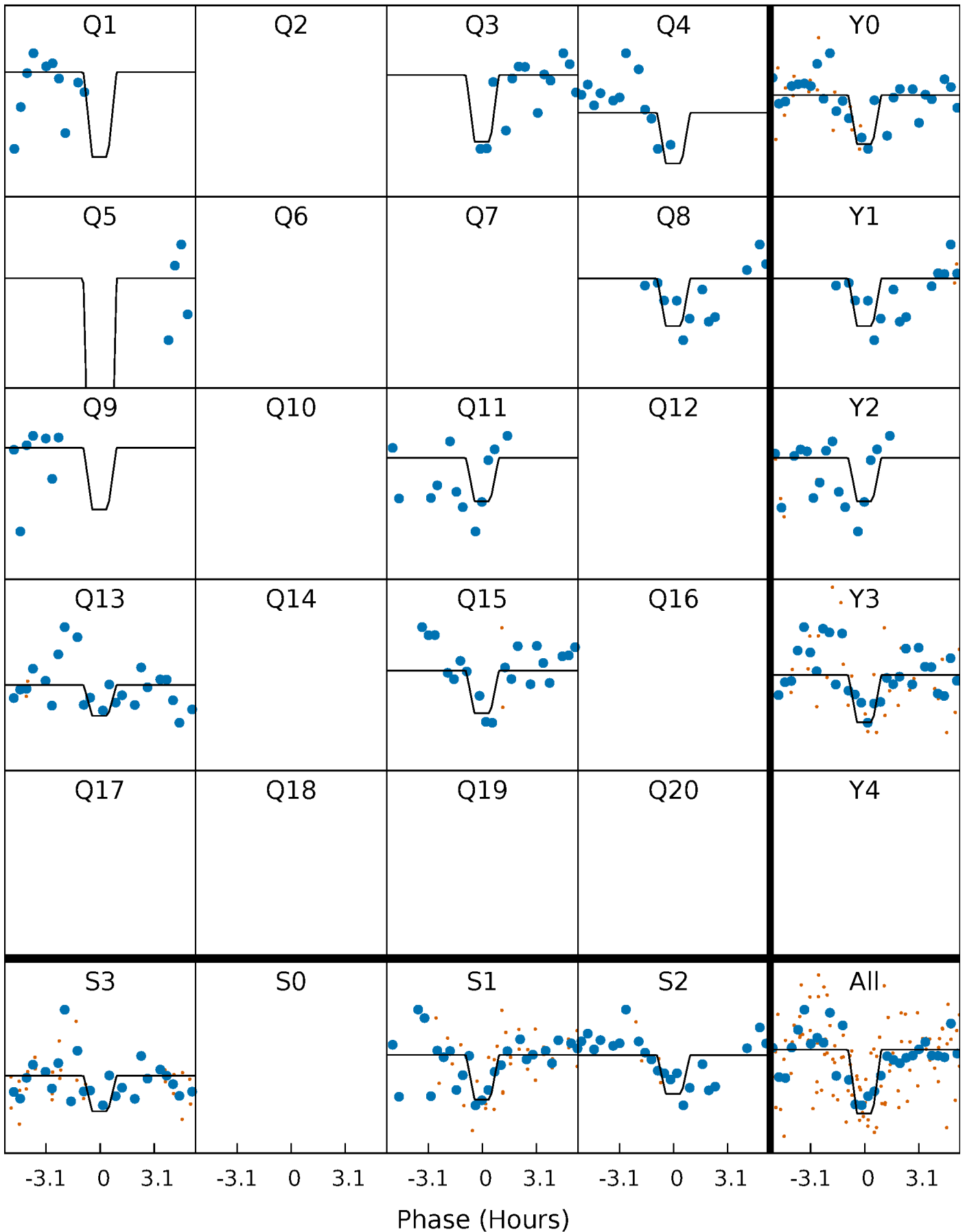
DV Quarter-Phased Transit Curves

TCE 004284959-03 P= 11.991718 Days $T_0=139.115641$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

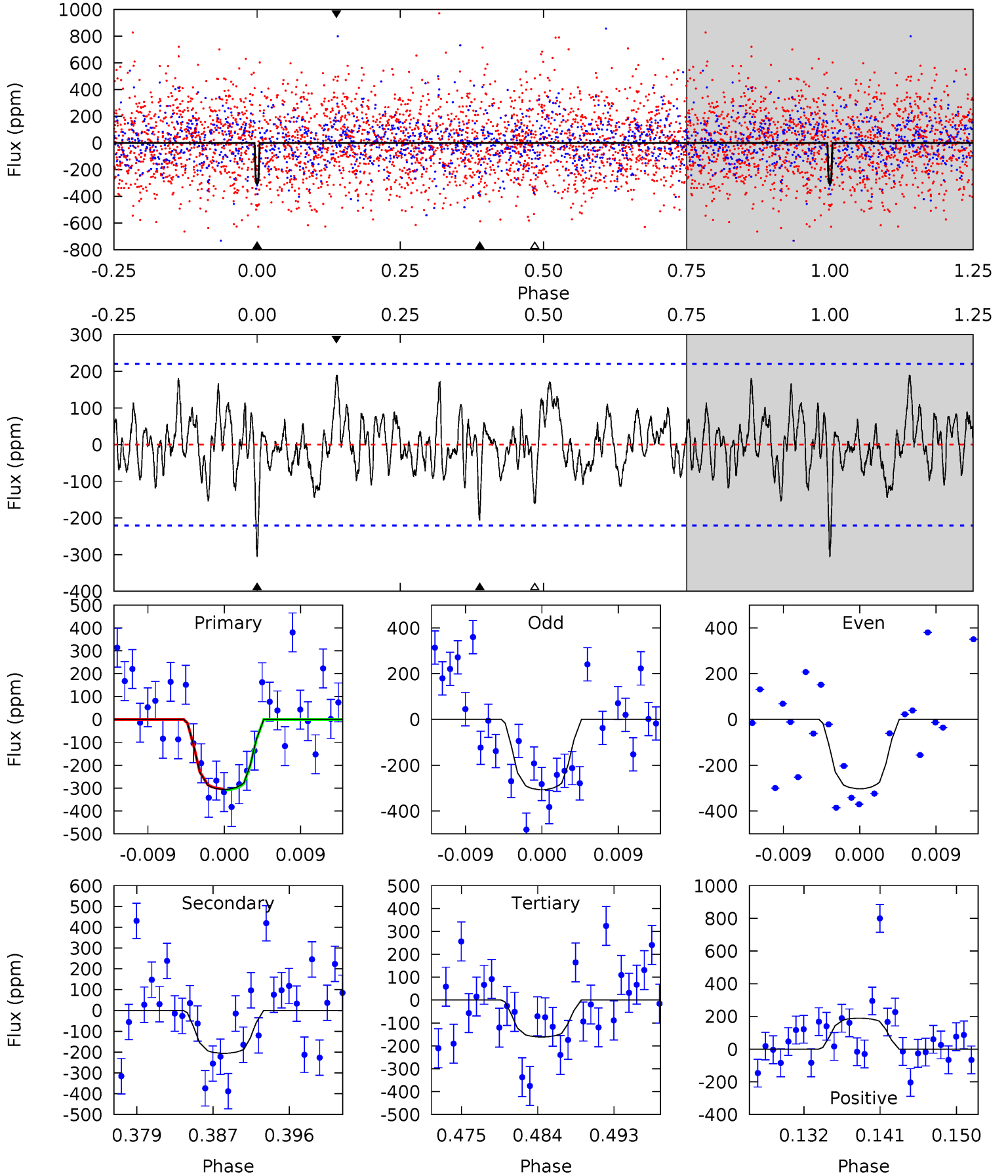
TCE 004284959-03 P= 11.991868 Days $T_0=139.107811$ (BKJD)



DV Model-Shift Uniqueness Test

004284959-03, P = 11.991718 Days, E = 127.123923 Days

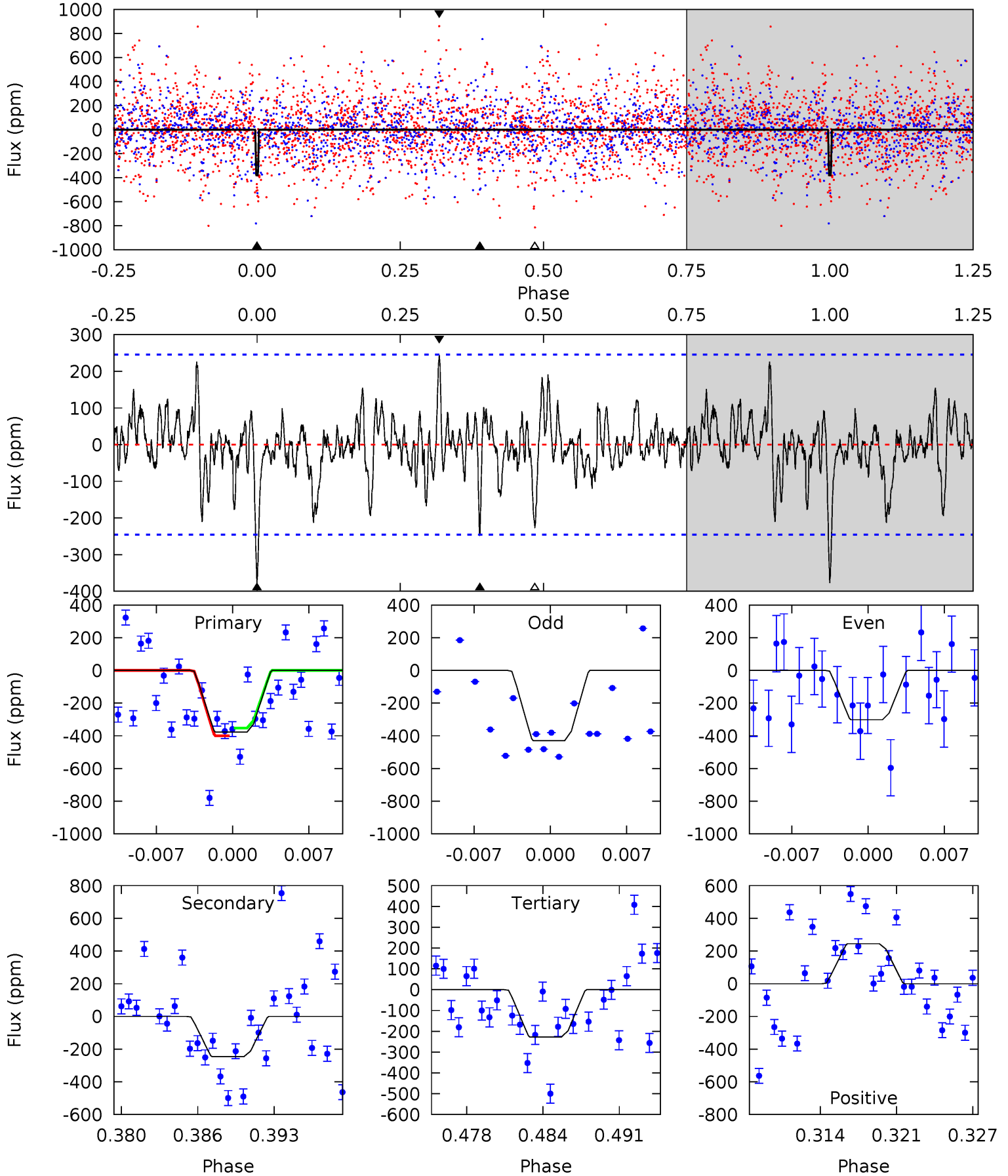
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.01	4.73	3.70	4.34	5.05	2.62	1.43	3.31	2.67	1.02	0.39	0.05	0.85	0.38	0.06



Alt Model-Shift Uniqueness Test

004284959-03, P = 11.991868 Days, E = 127.115943 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.85	5.12	4.73	5.09	5.11	2.72	1.38	3.12	2.76	0.39	0.03	1.33	1.09	0.39	0.49



Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-206 ± 44	$3.99^{+3.39}_{-2.53}$	1417^{+92}_{-81}	4794^{+3235}_{-1006}	80^{+530}_{-57}
Alt.	-246 ± 48	$4.04^{+3.53}_{-2.56}$	1419^{+104}_{-79}	5008^{+3341}_{-1148}	95^{+606}_{-71}

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

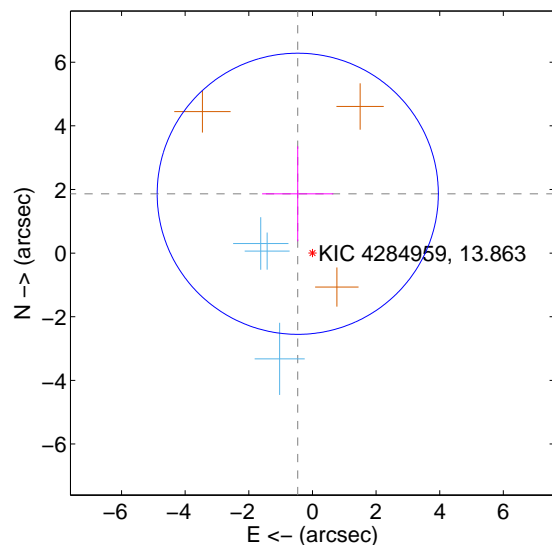
Supplemental centroid analysis for 004284959-03. Kepler magnitude: 13.86. Transit SNR 15.00

There are 3 quarters with good PRF difference image offsets

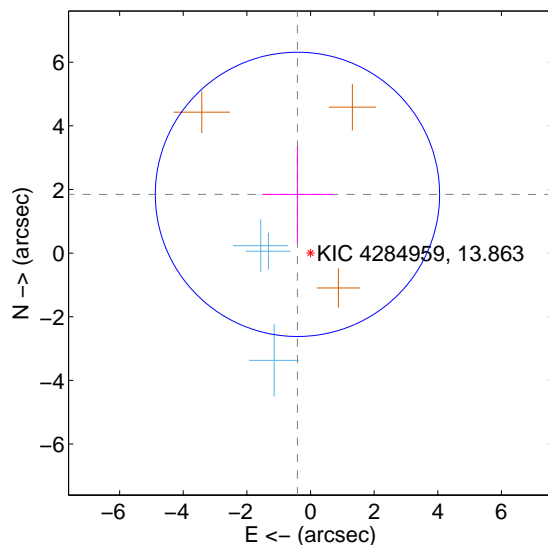
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.920 ± 1.473	1.30	0.462 ± 1.120	1.864 ± 1.491
PRF-fit source offset from KIC position	1.891 ± 1.489	1.27	0.410 ± 1.111	1.846 ± 1.505
photometric centroid source offset	0.60 ± 0.49	1.23	0.58 ± 0.49	0.17 ± 0.52

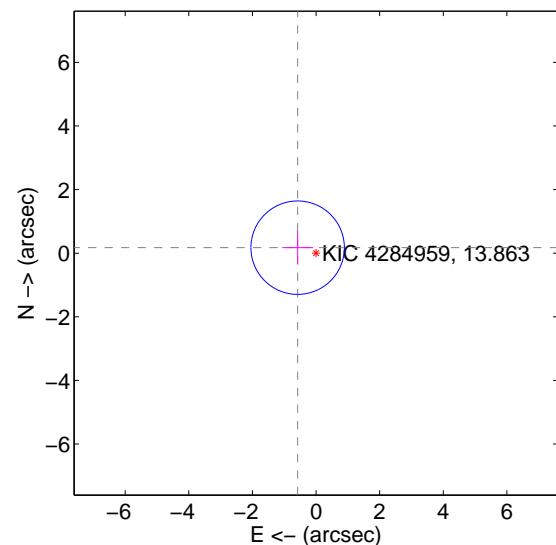
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

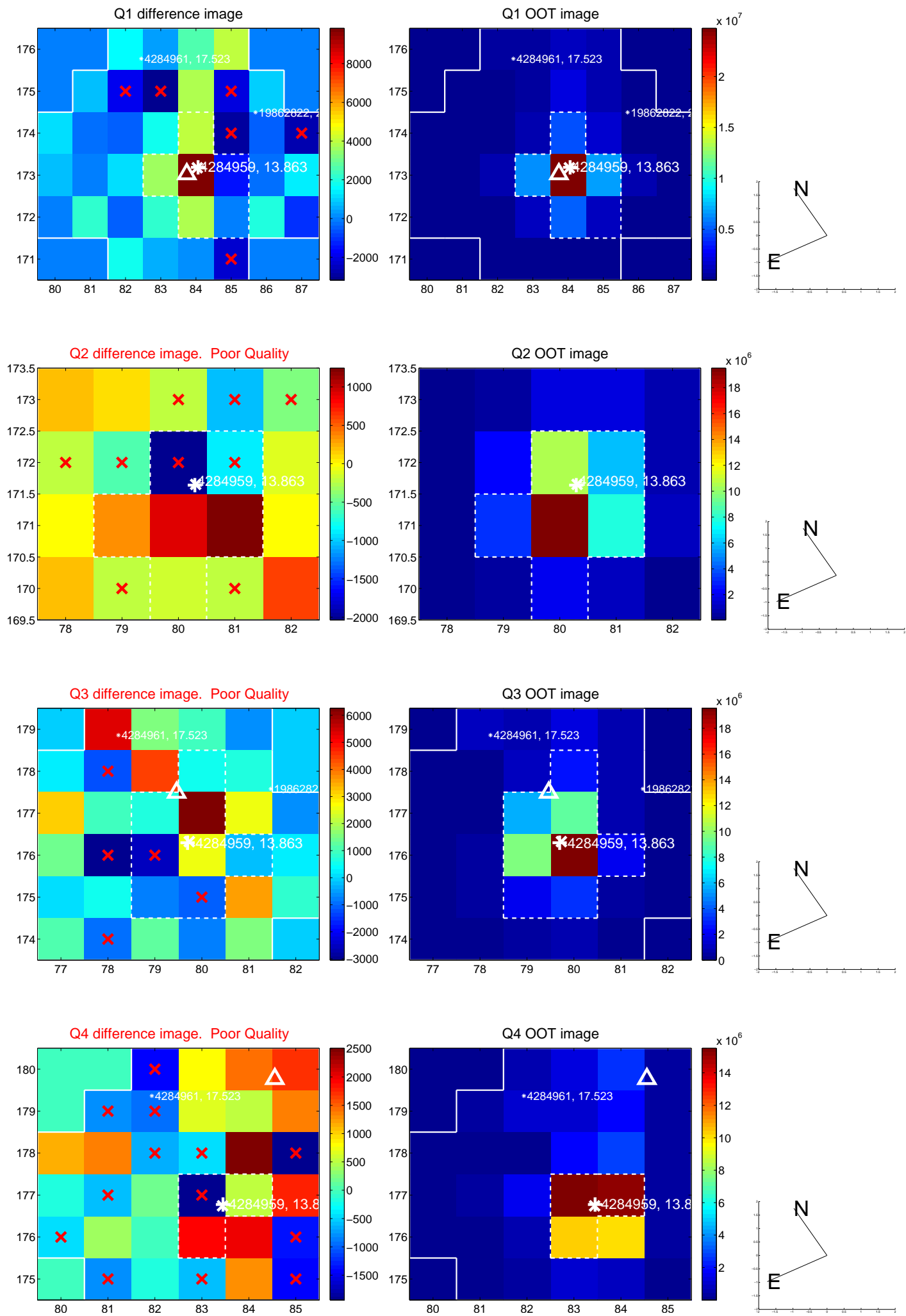


offset from photometric centroids

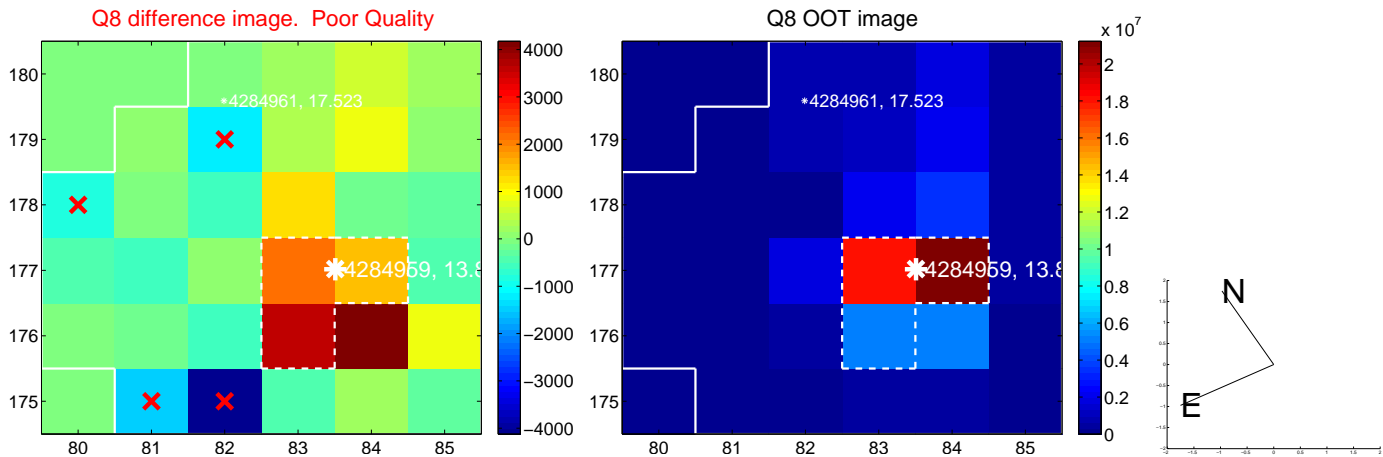
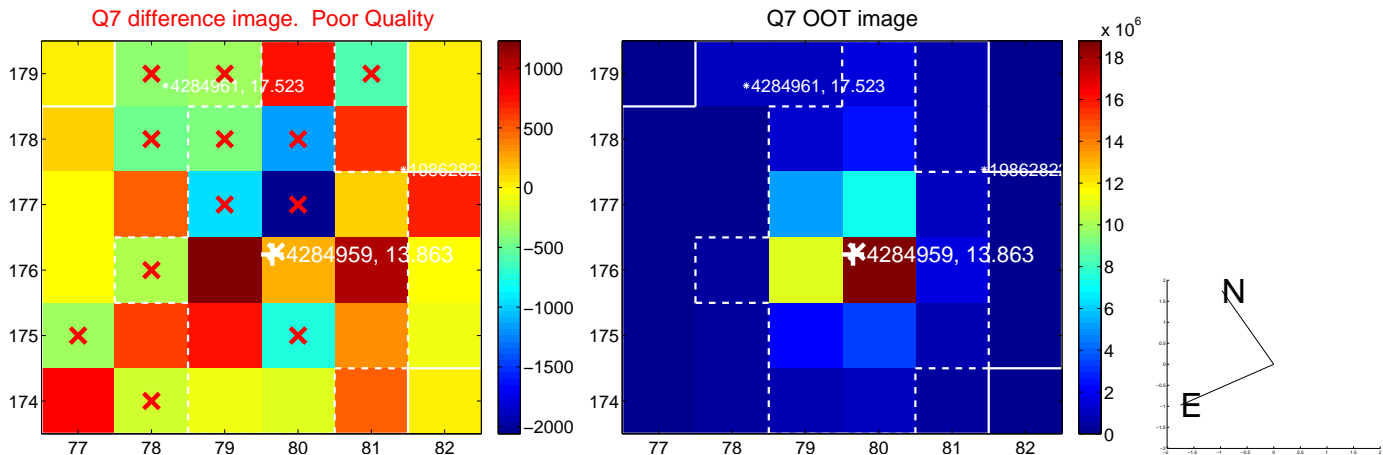
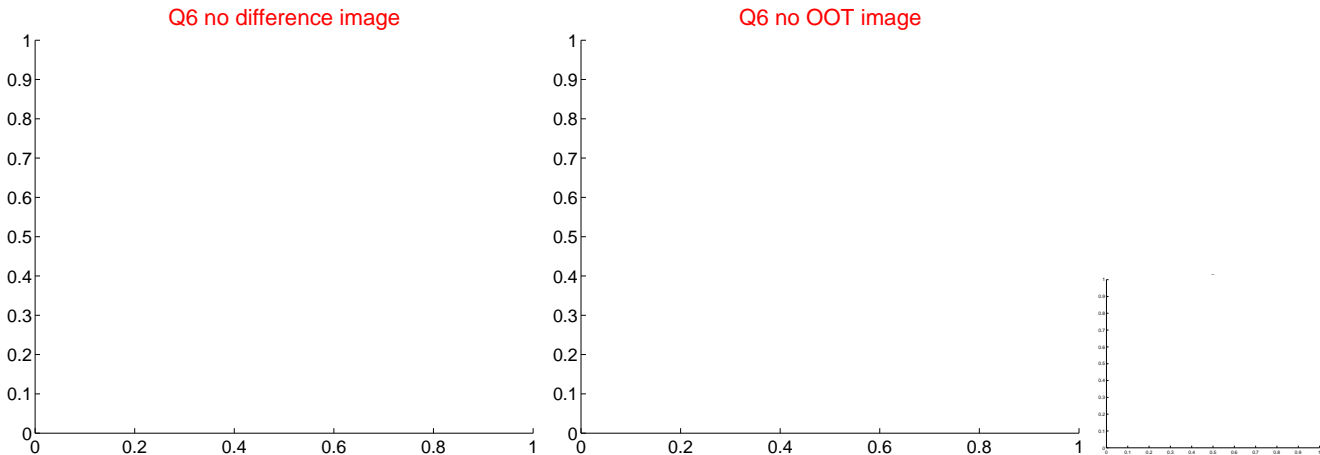
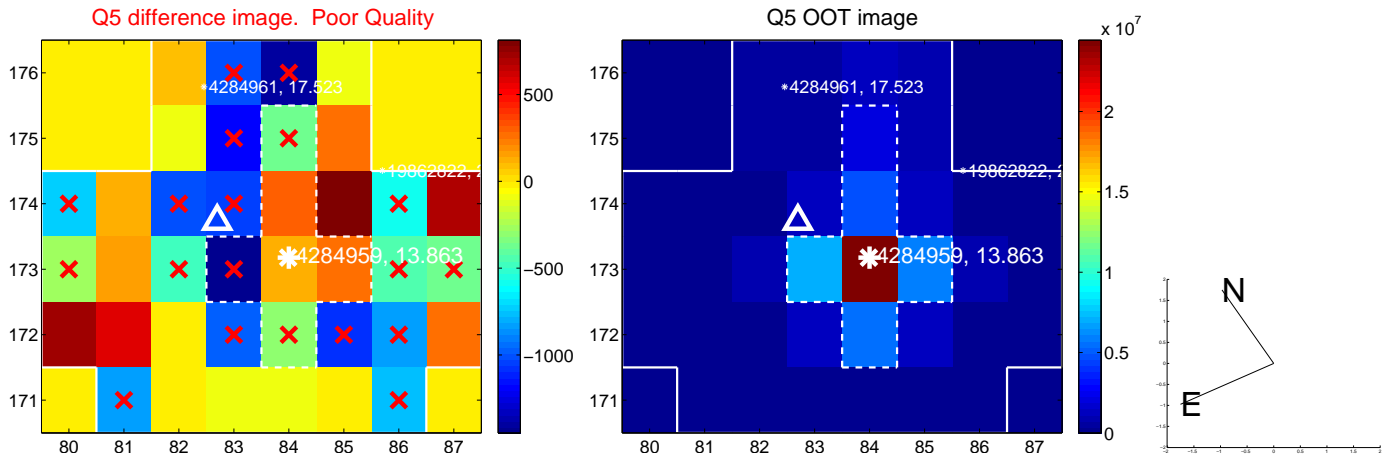


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

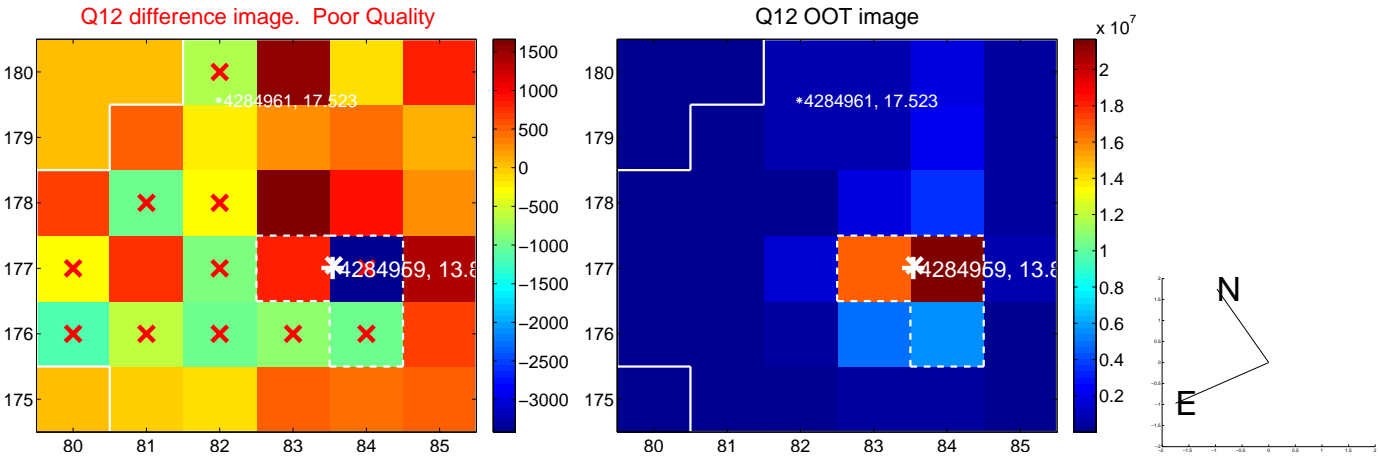
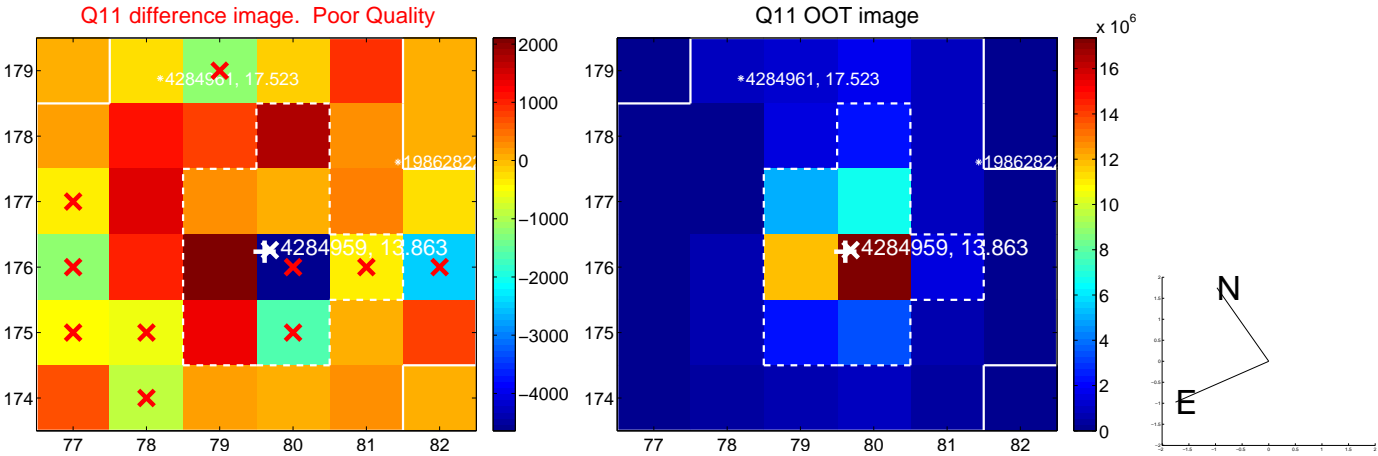
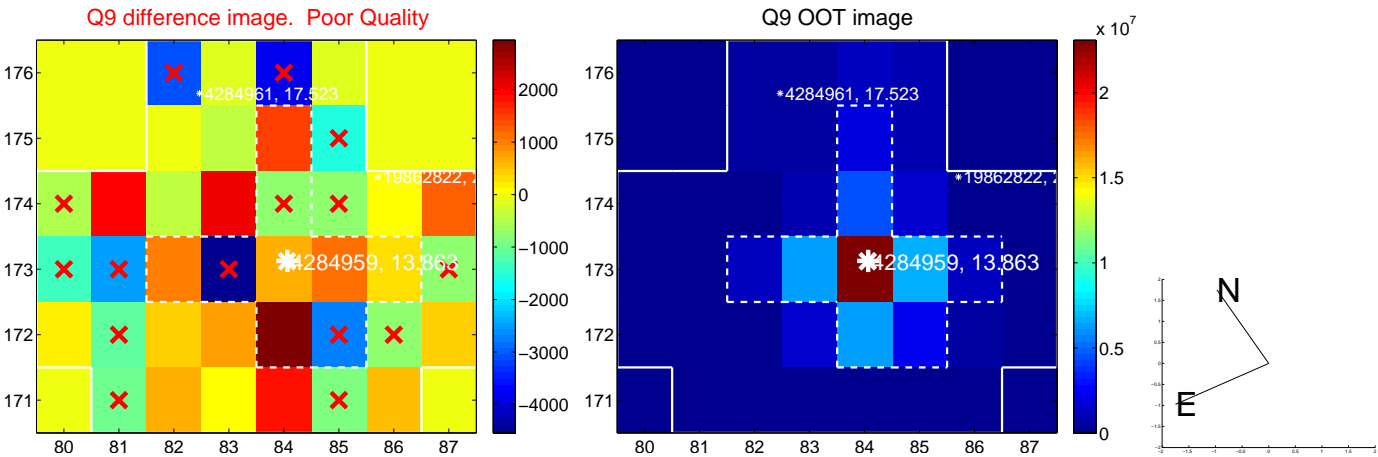
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



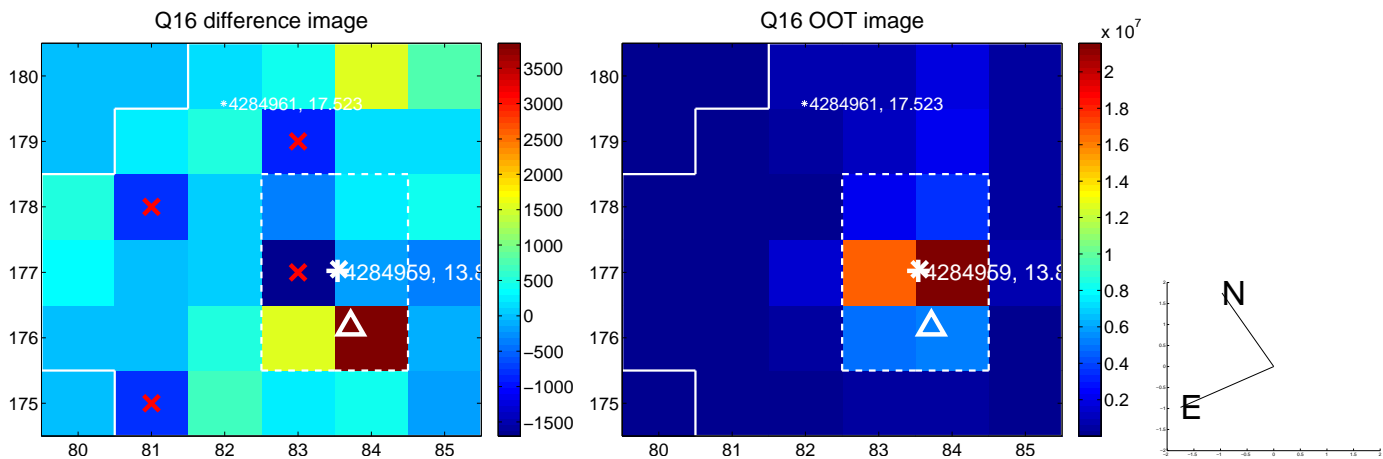
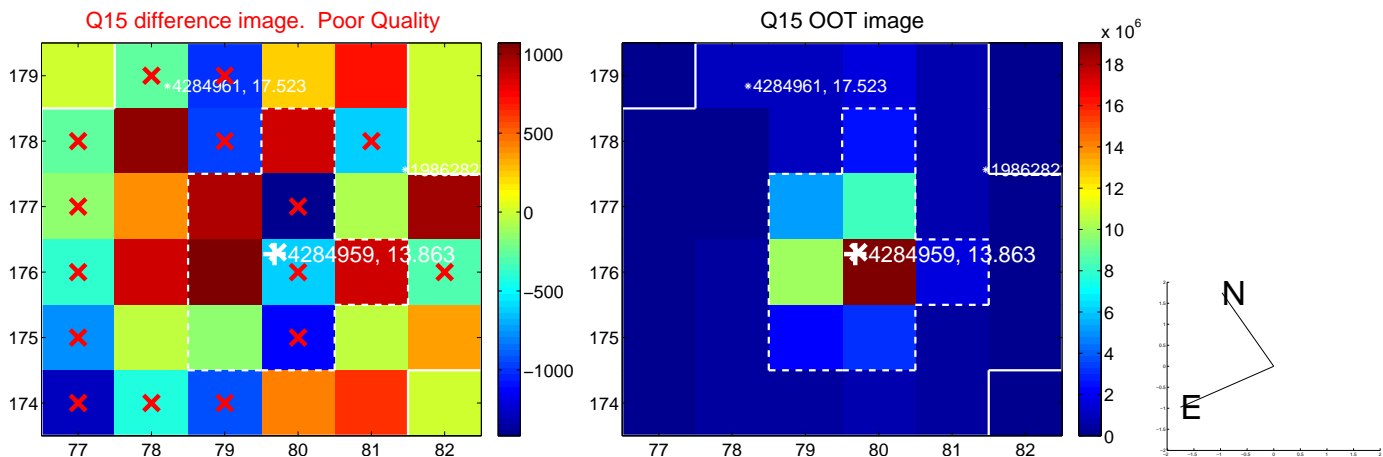
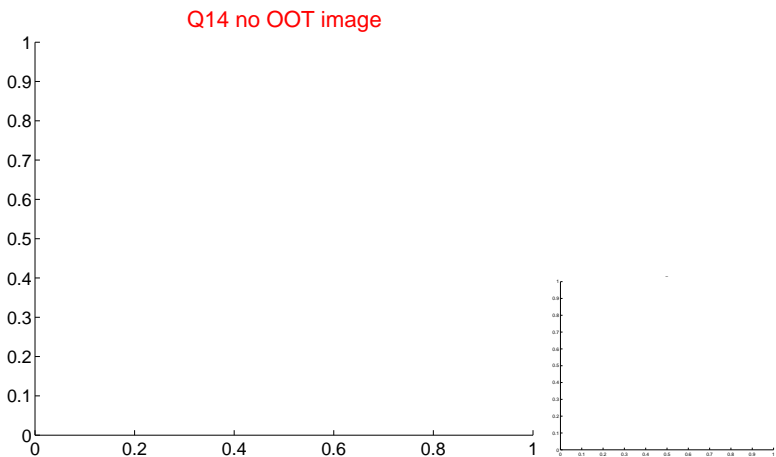
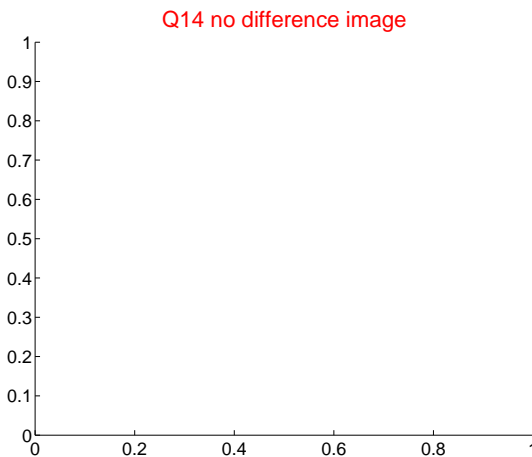
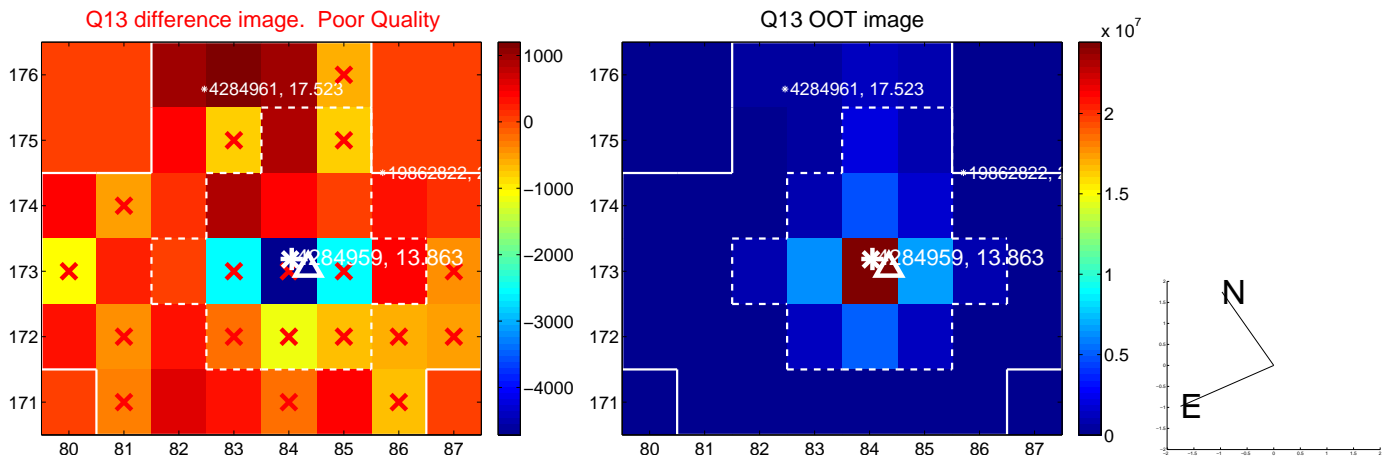
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



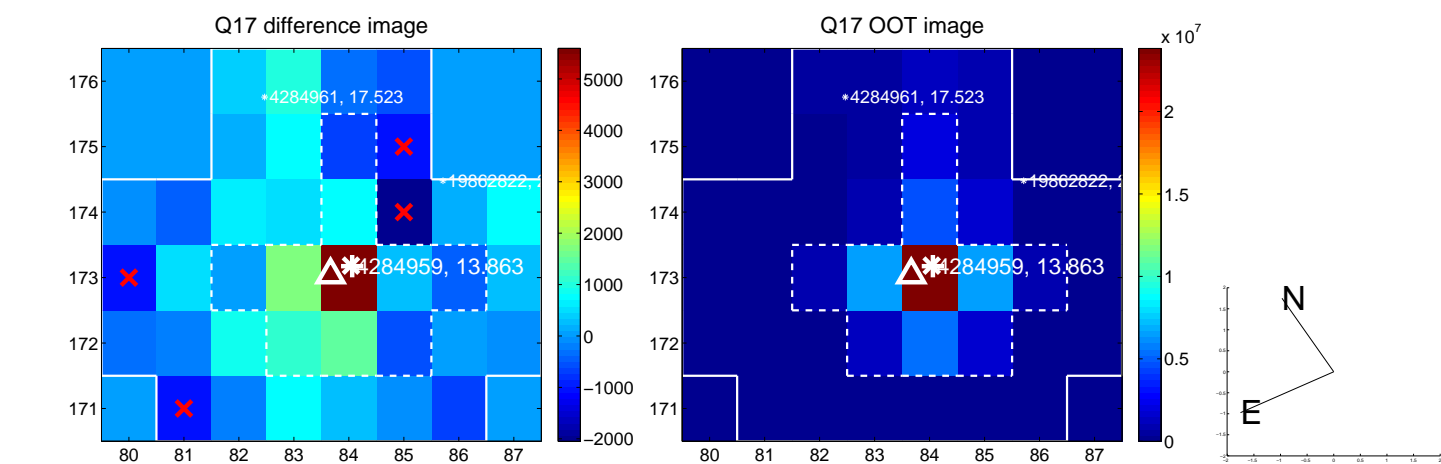
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



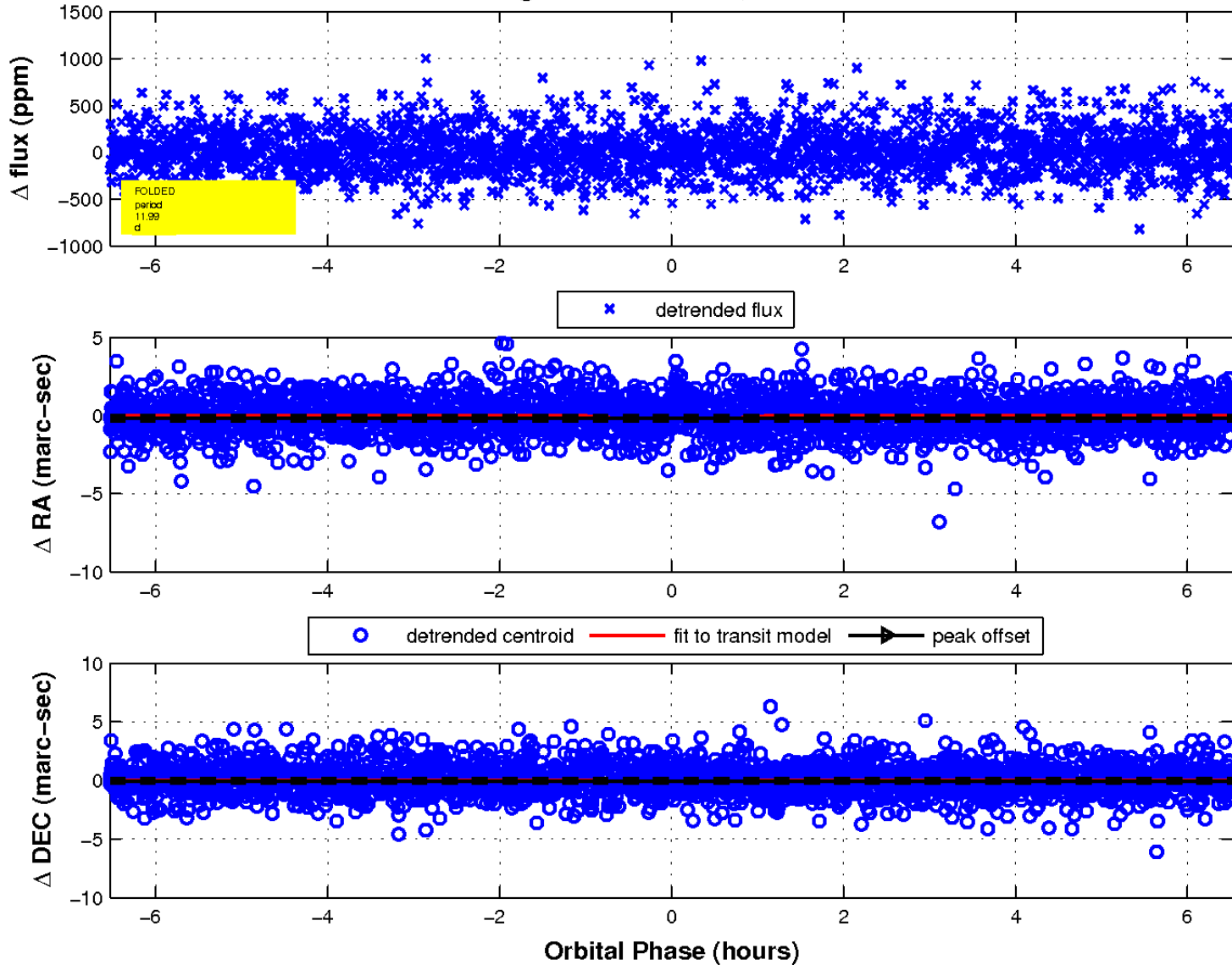
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

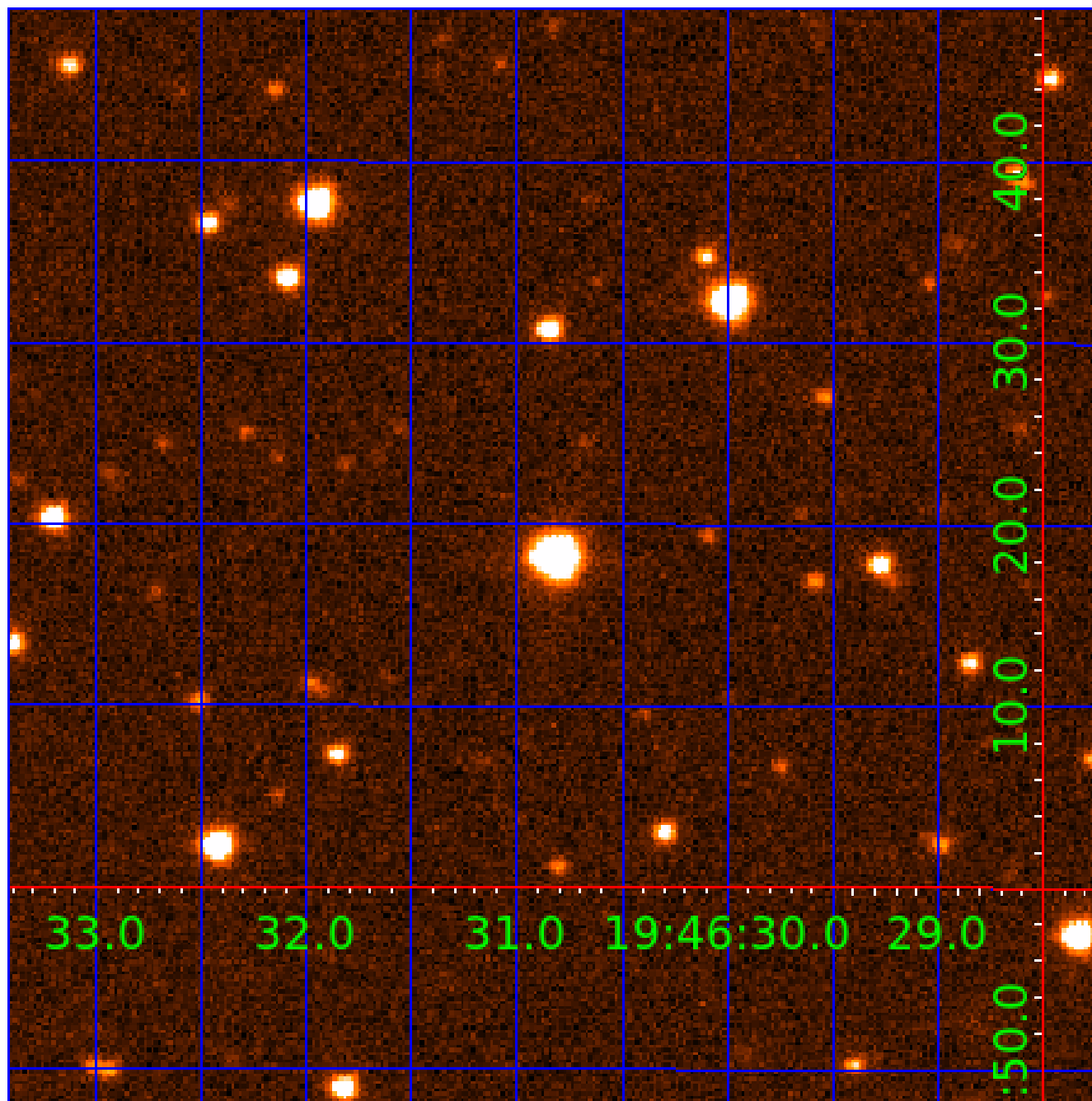


fluxWeightedCentroids, Planet 3 of 9



UKIRT Image

Declination



KIC 004284959

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})
004284959-01	OBS	No	1.192696	132.479950	0.0	8.808	8.7	0.0	1.22	6731	0.00	5236.33
004284959-02	OBS	No	22.480554	136.553048	557.1	1.737	18.7	16.0	1.22	6731	2.92	104.39
004284959-03	OBS	No	11.991718	139.115641	341.7	2.179	14.6	15.0	1.22	6731	2.59	241.30
004284959-04	OBS	No	16.423993	145.063114	362.2	1.746	14.6	12.9	1.22	6731	2.52	158.65
004284959-05	OBS	No	10.695476	141.822775	313.7	1.630	15.3	11.7	1.22	6731	2.47	281.06
004284959-06	OBS	No	9.748056	135.886355	673.8	0.641	11.4	12.2	1.22	6731	3.73	318.06
004284959-07	OBS	No	19.760540	147.133877	359.9	1.539	12.6	11.8	1.22	6731	2.43	123.97
004284959-08	OBS	No	15.793829	134.684111	799.9	2.000	11.9	-1.0	1.22	6731	3.50	167.14
004284959-09	OBS	No	19.757953	136.907984	357.3	1.958	12.7	11.4	1.22	6731	2.48	124.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004284959-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

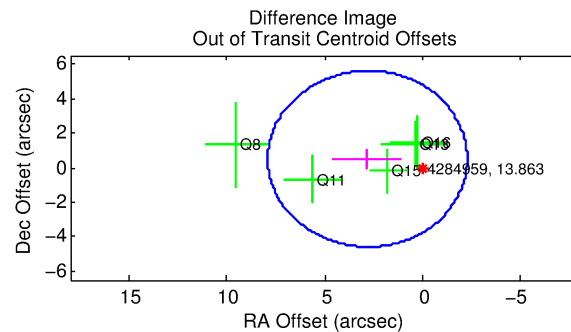
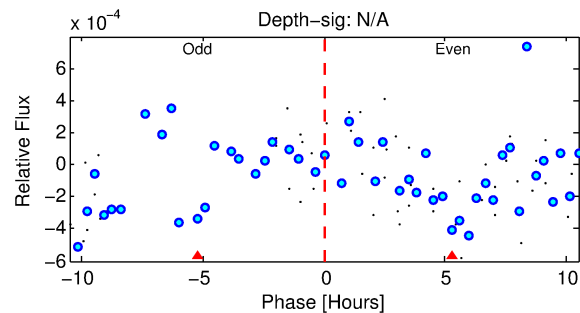
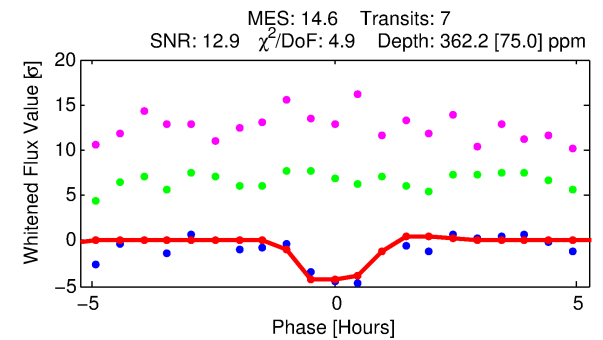
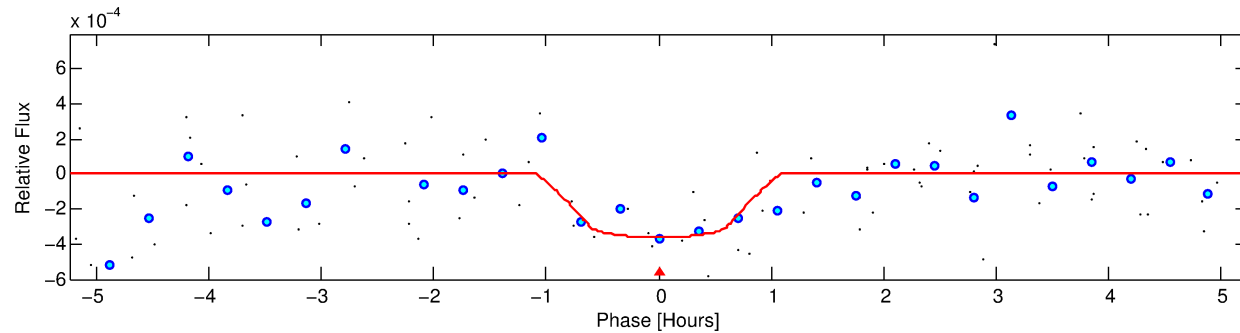
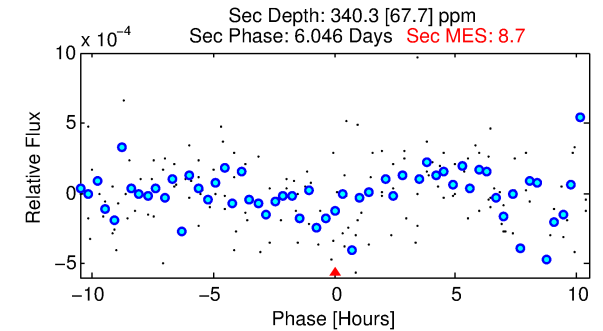
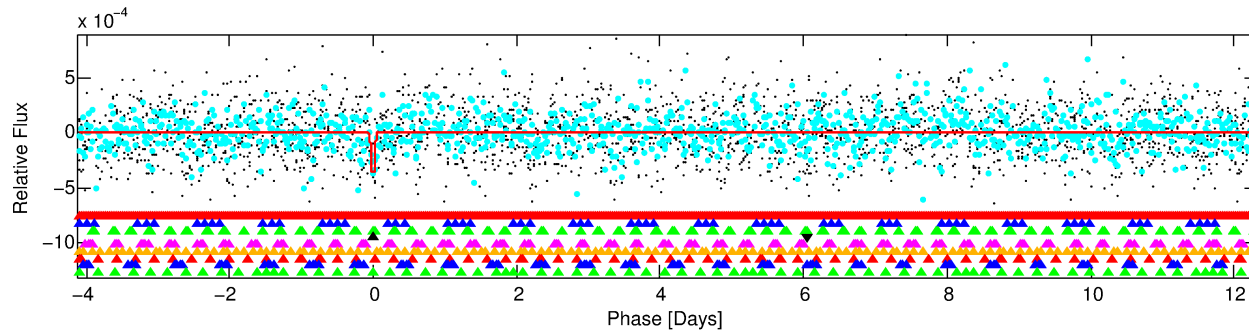
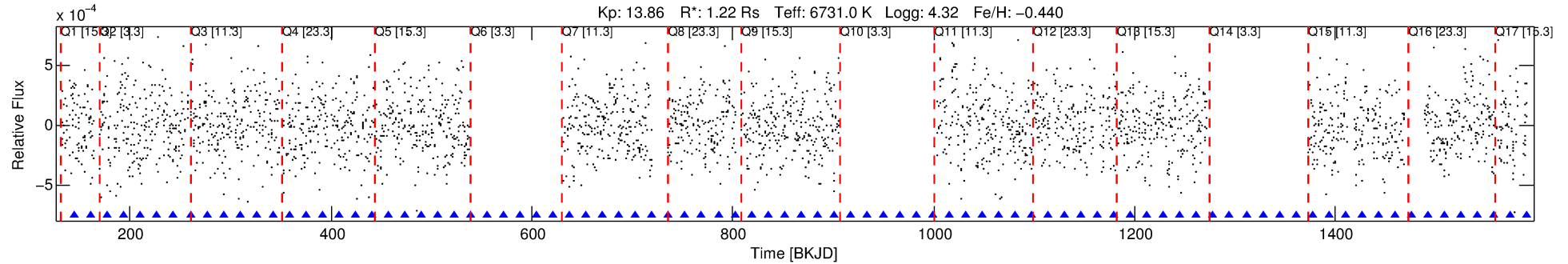
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004284959-04

No Significant Match Found

DV One-Page Summary

KIC: 4284959 Candidate: 4 of 9 Period: 16.424 d



DV Fit Results:

Period = 16.42399 [0.00020] d
Epoch = 145.0631 [0.0098] BKJD
Rp/R* = 0.0188 [0.0829]
a/R* = 51.41 [1292.46]
b = 0.73 [16.62]
Seff = 158.65 [59.26]
Teq = 905 [85] K
Rp = 2.52 [11.10] Re
a = 0.1318 [0.0316] AU
Ag = 513.50 [4526.48] [0.11σ]
Teffp = 6661 [14668] K [0.39σ]

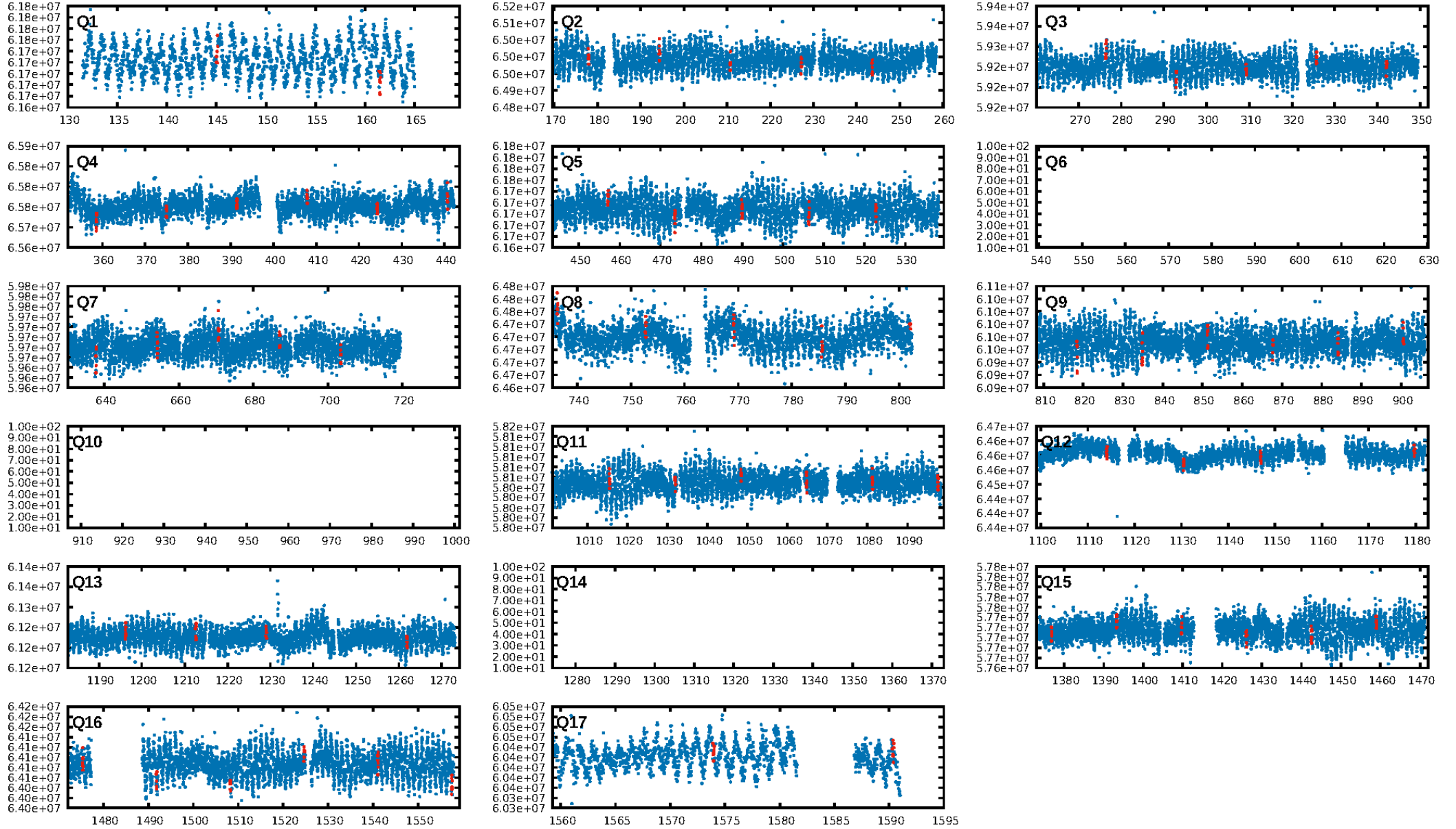
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.70σ]
LongPeriod-sig: 100.0% [30.50σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 5.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -2.401
Centroid-sig: 2.3%
Centroid-so: 0.930 arcsec [1.59σ]
OotOffset-rm: 2.853 arcsec [1.68σ]
OotOffset-st: 0.2/2/1 [5]
KicOffset-rm: 3.005 arcsec [1.75σ]
KicOffset-st: 0.2/2/1 [5]
DiffImageQuality-fgm: 0.20 [1/5]
DiffImageOverlap-fno: 0.71 [10/14]

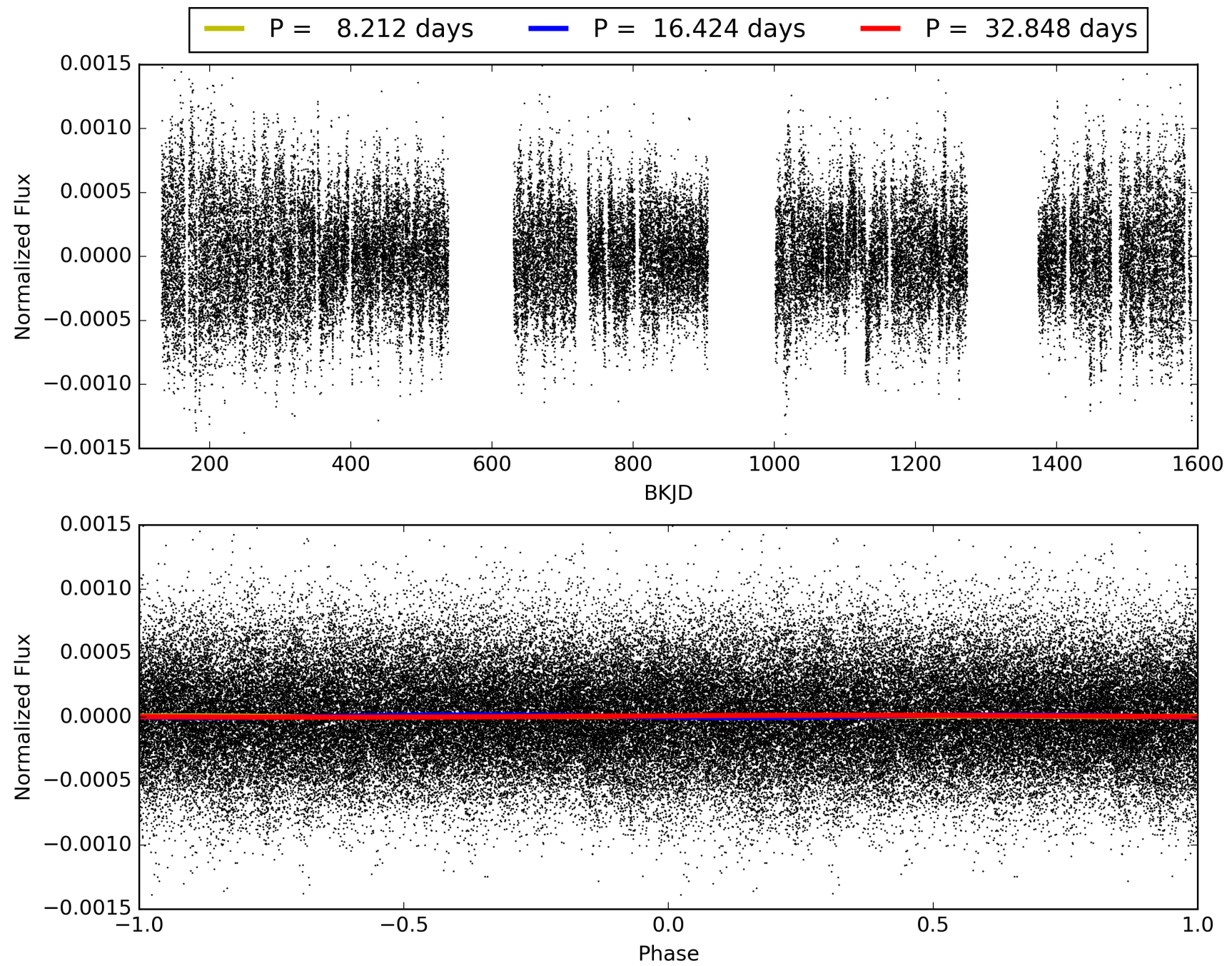
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:12:32 Z

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

TCE 004284959-04, PDC Light Curves

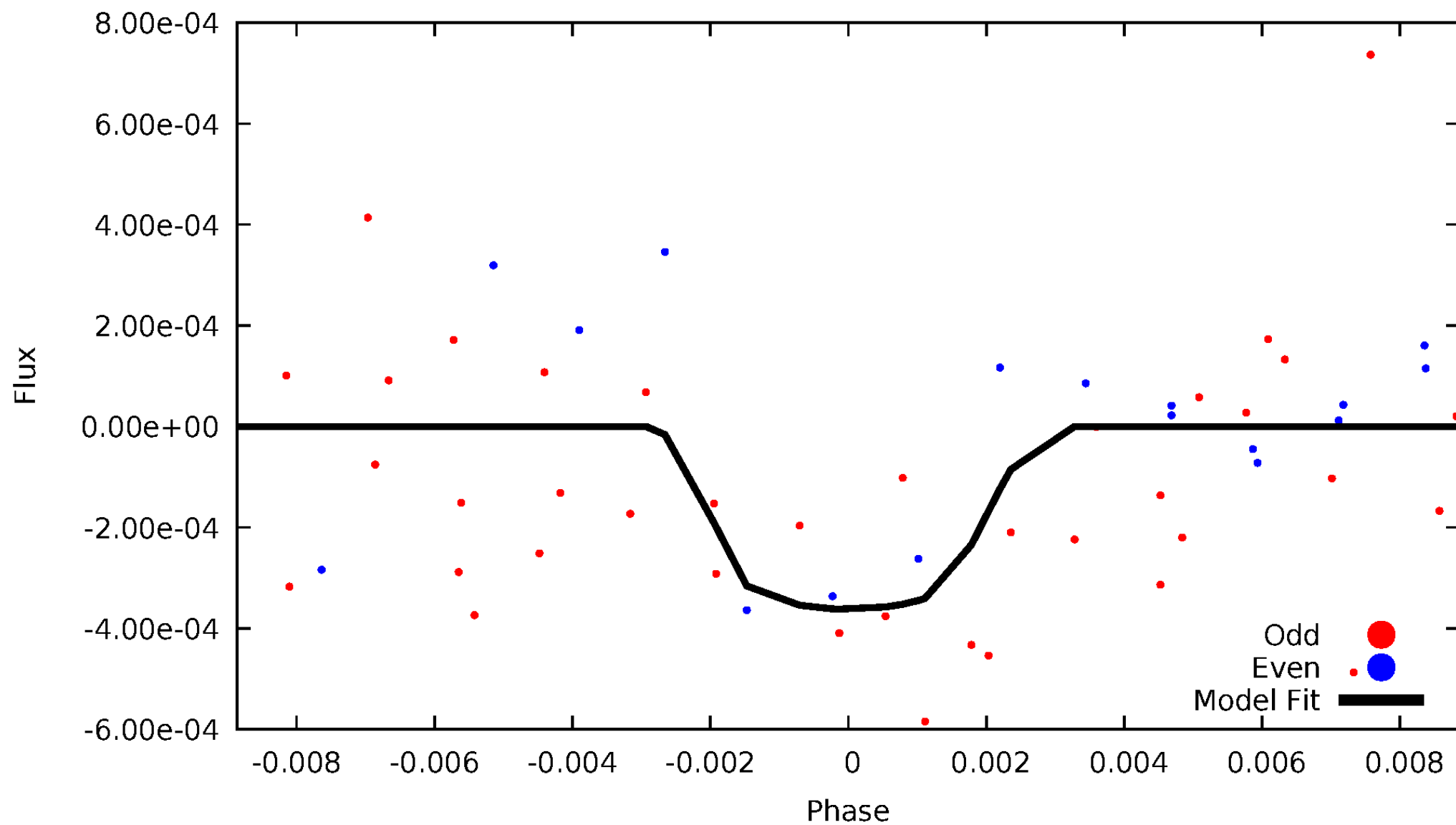


TCE 004284959-04



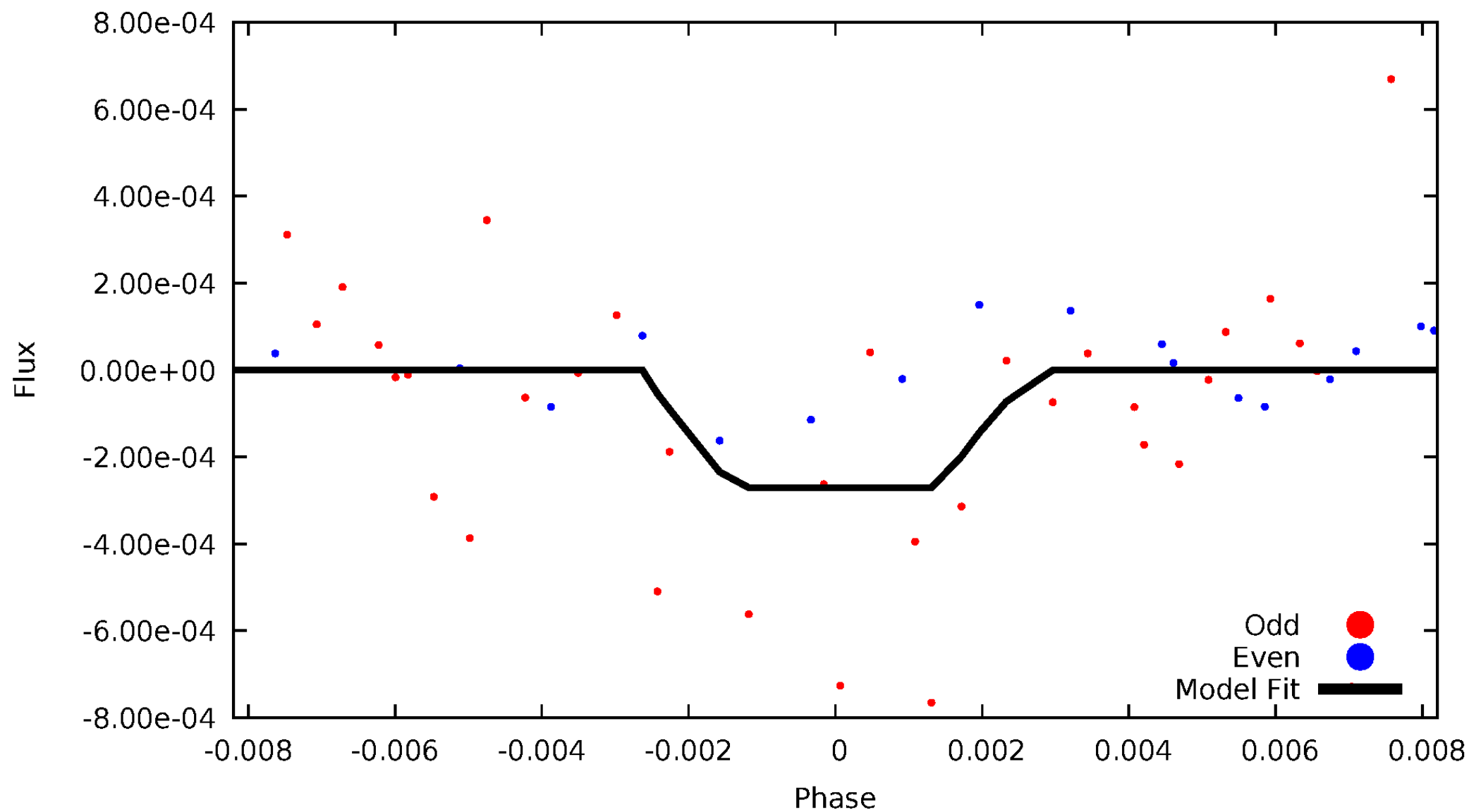
DV Odd/Even

TCE 004284959-04



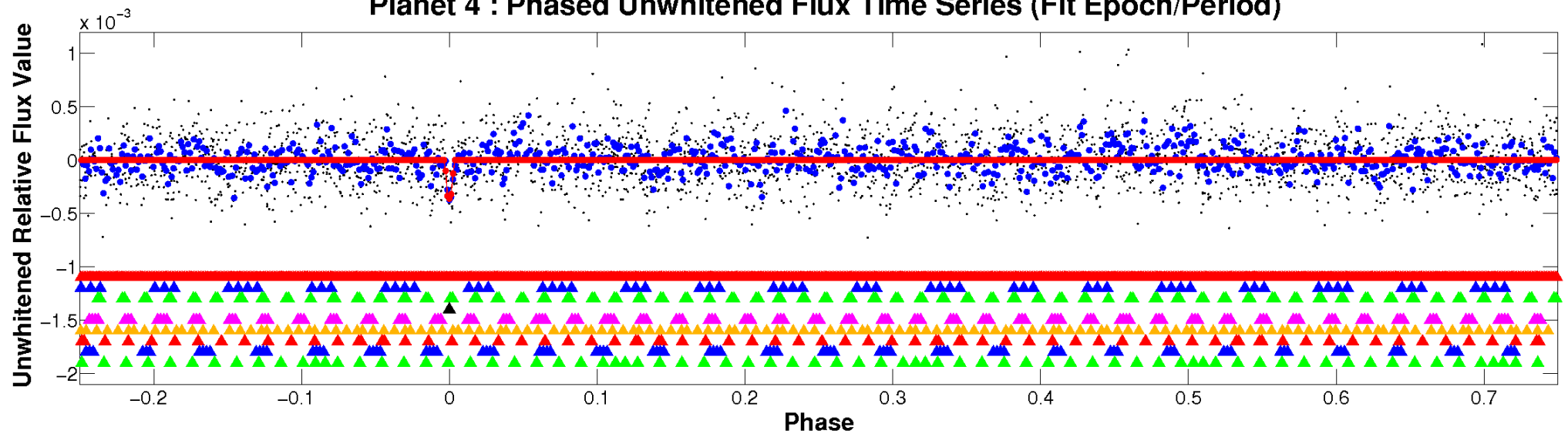
ALT Odd/Even

TCE 004284959-04

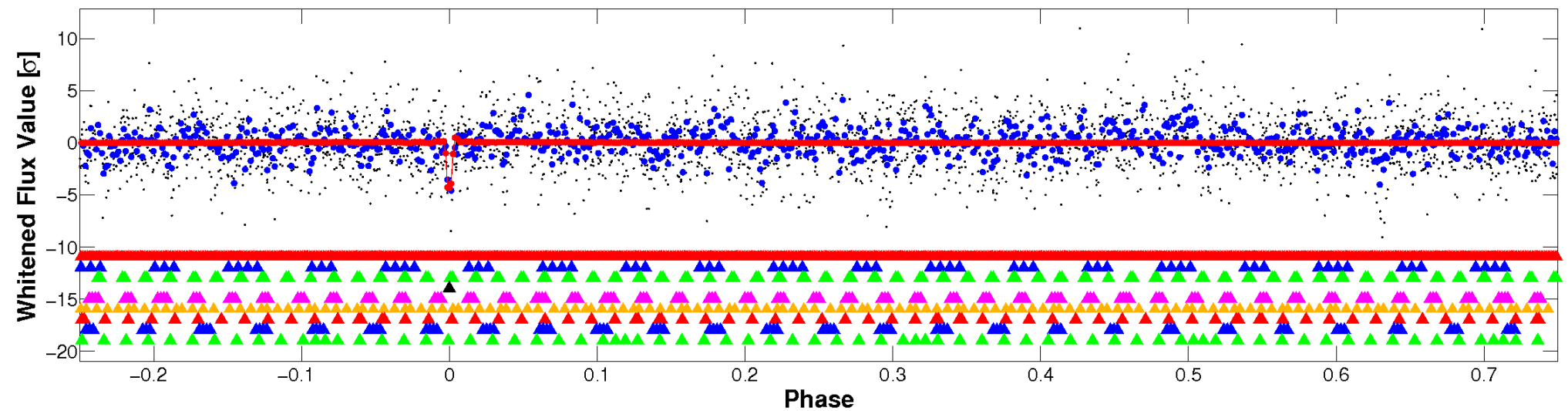


Non-Whitened Vs. Whitened Light Curve

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

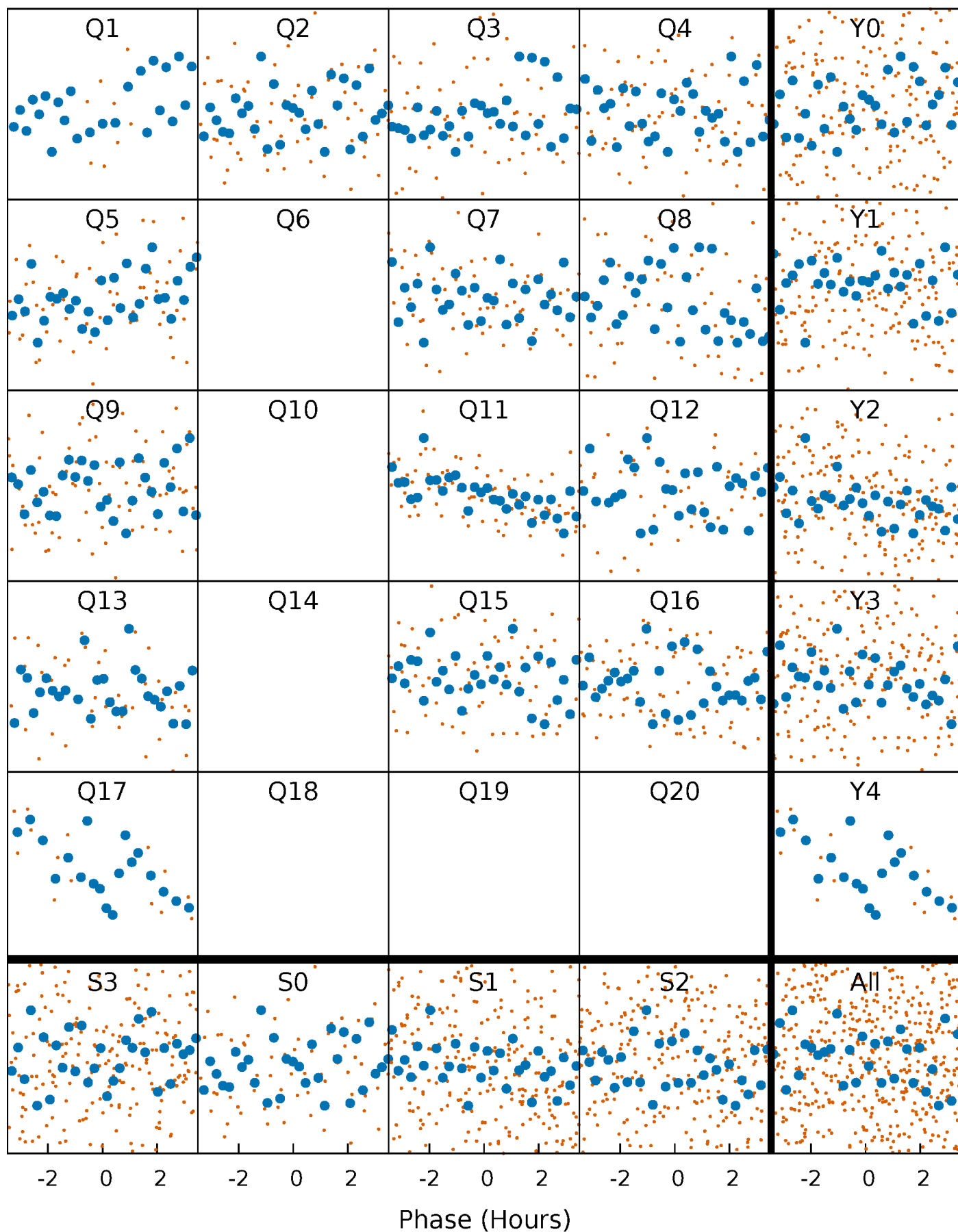


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



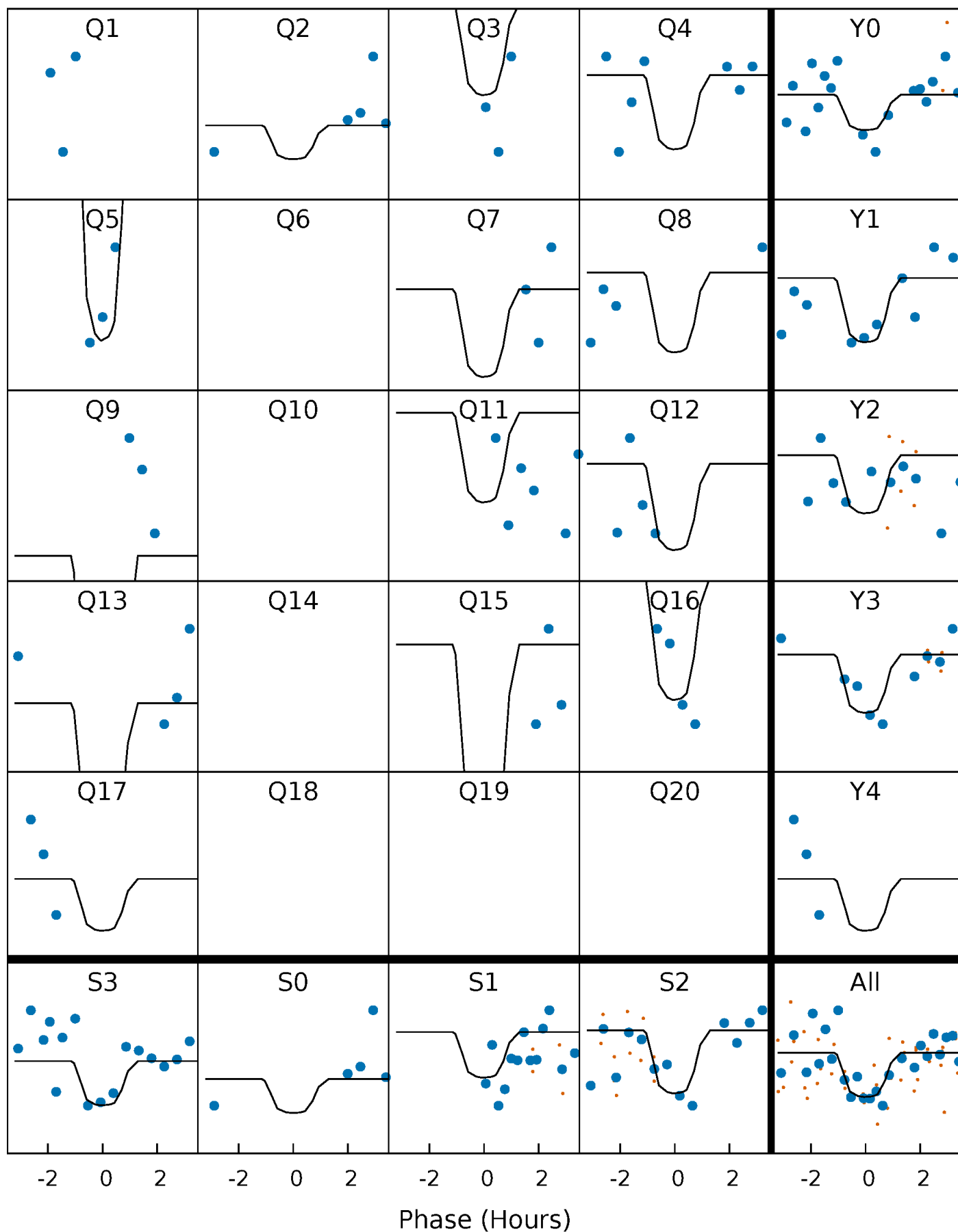
PDC Quarter-Phased Transit Curves

TCE 004284959-04 P= 16.423993 Days $T_0=145.063114$ (BKJD)



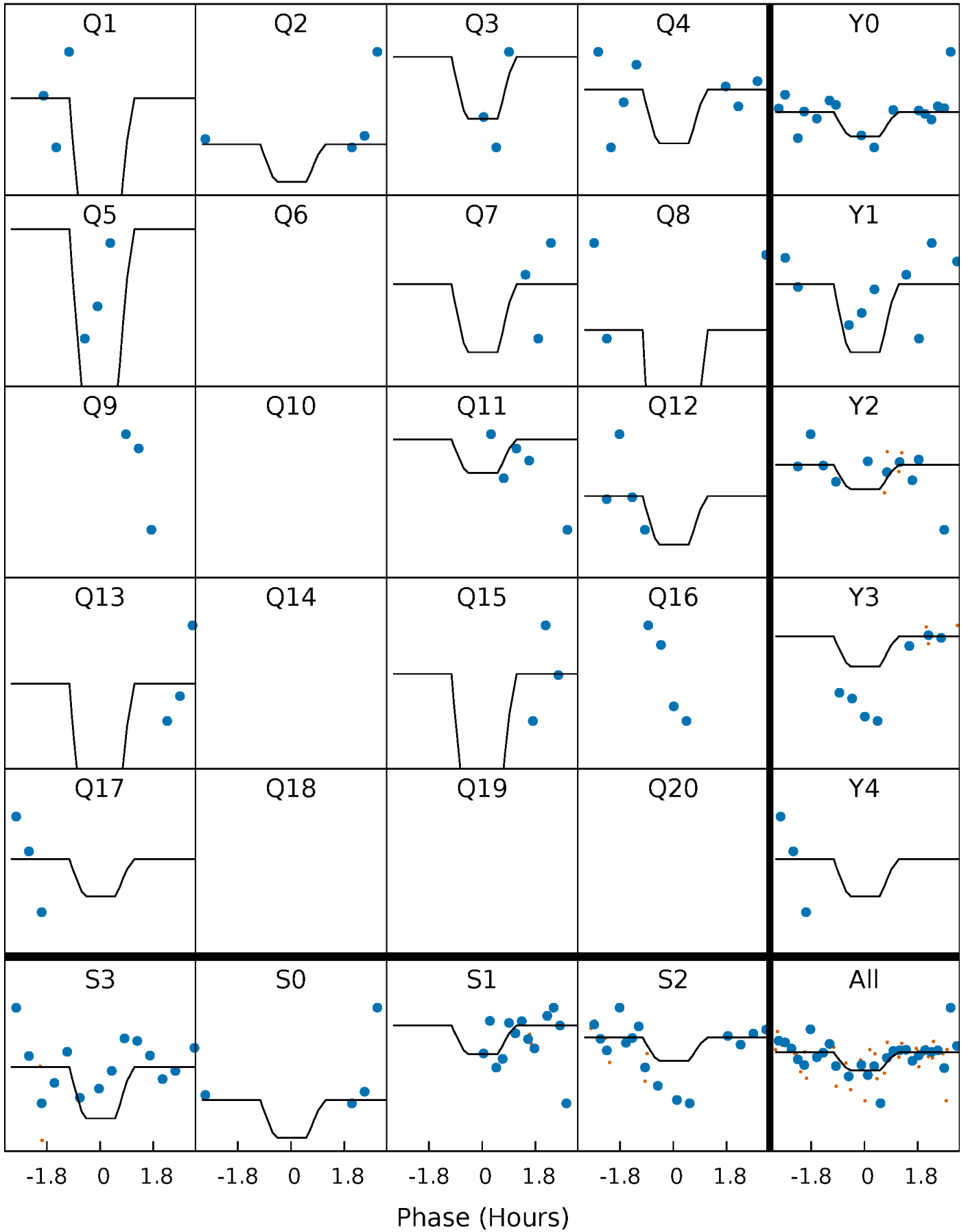
DV Quarter-Phased Transit Curves

TCE 004284959-04 P= 16.423993 Days $T_0=145.063114$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

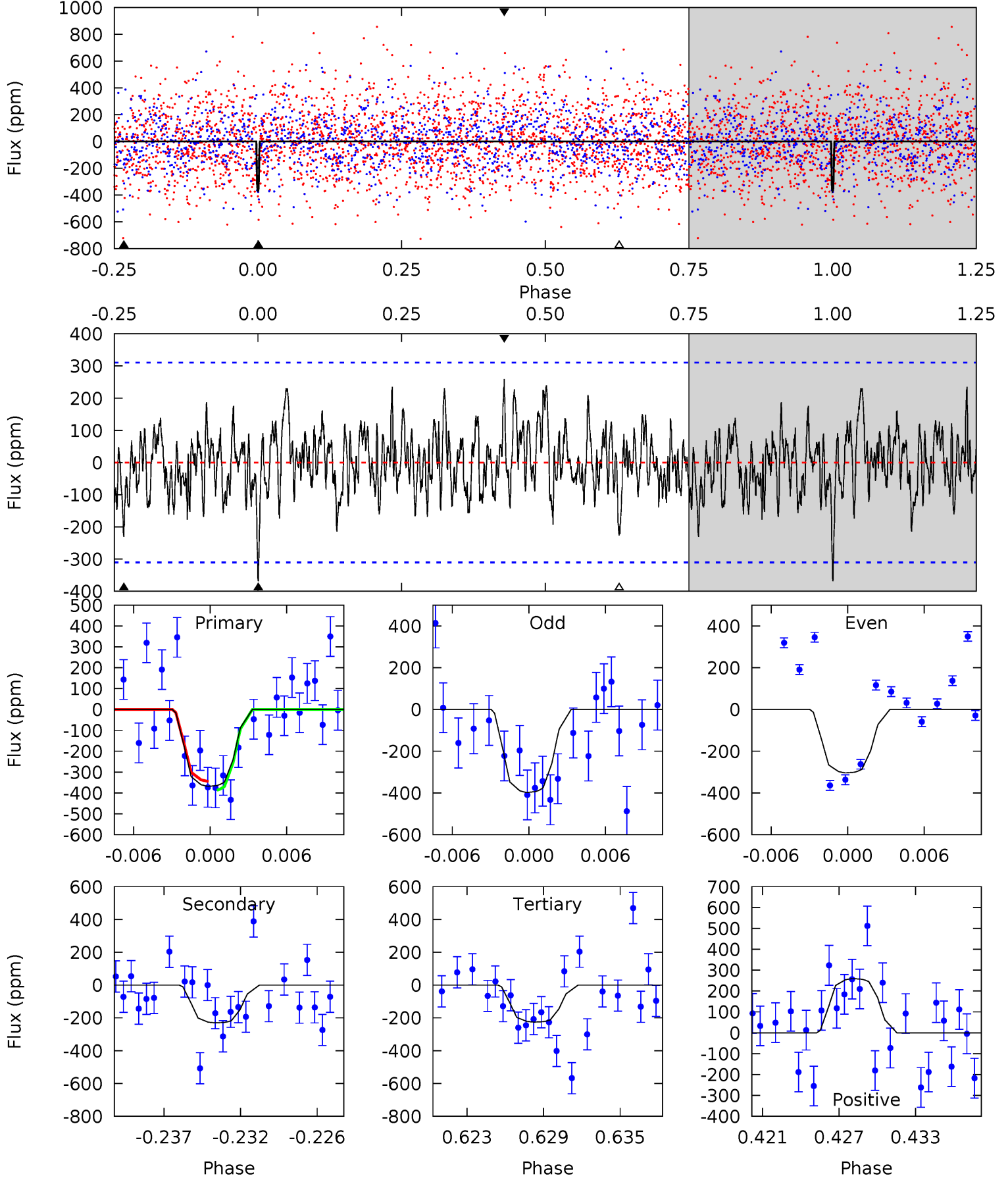
TCE 004284959-04 P= 16.424092 Days $T_0=145.062649$ (BKJD)



DV Model-Shift Uniqueness Test

004284959-04, P = 16.423993 Days, E = 128.639121 Days

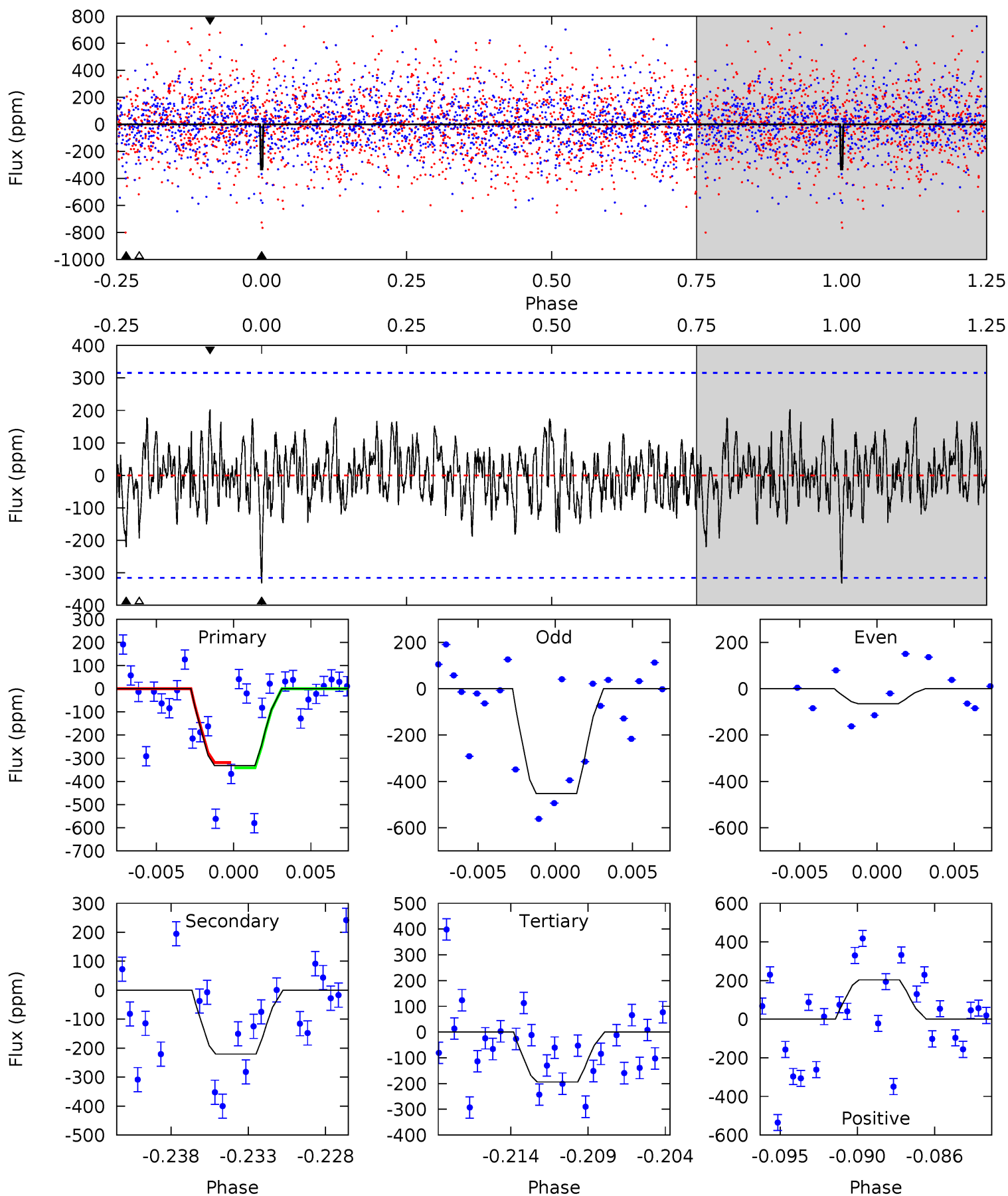
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.08	3.80	3.73	4.28	5.13	2.75	1.35	2.35	1.80	0.08	-0.48	0.70	1.07	0.41	0.35



Alt Model-Shift Uniqueness Test

004284959-04, P = 16.424092 Days, E = 128.638557 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.44	3.61	3.18	3.33	5.17	2.82	1.12	2.26	2.11	0.43	0.28	3.03	1.42	0.38	0.18



Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-231 ± 61	$8.69^{+10.38}_{-6.07}$	1279^{+91}_{-74}	3692^{+2039}_{-803}	28^{+250}_{-23}
Alt.	-220 ± 61	$8.61^{+8.96}_{-5.89}$	1278^{+86}_{-73}	3664^{+2147}_{-758}	29^{+256}_{-22}

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

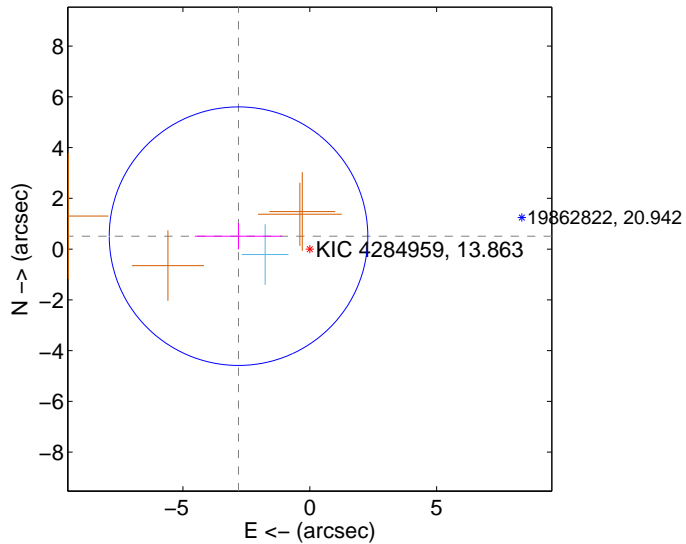
Supplemental centroid analysis for 004284959-04. Kepler magnitude: 13.86. Transit SNR 12.93

There are 1 quarters with good PRF difference image offsets

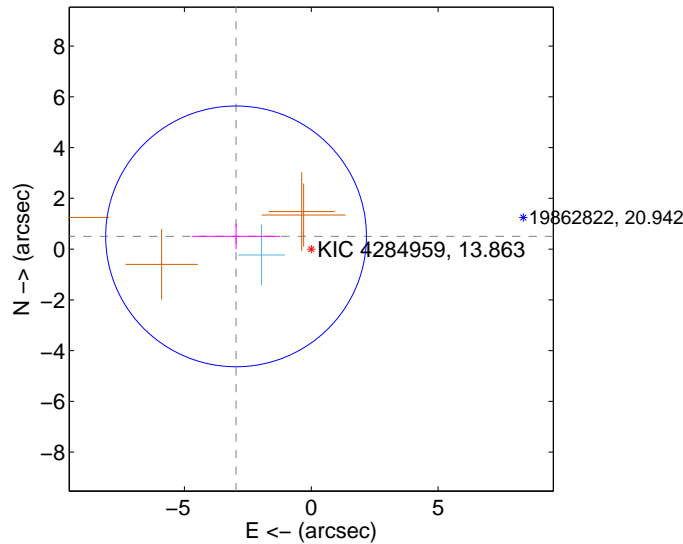
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.853 ± 1.698	1.68	2.808 ± 1.723	0.509 ± 0.514
PRF-fit source offset from KIC position	3.005 ± 1.713	1.75	2.963 ± 1.735	0.502 ± 0.499
photometric centroid source offset	0.93 ± 0.58	1.59	-0.79 ± 0.57	0.49 ± 0.61

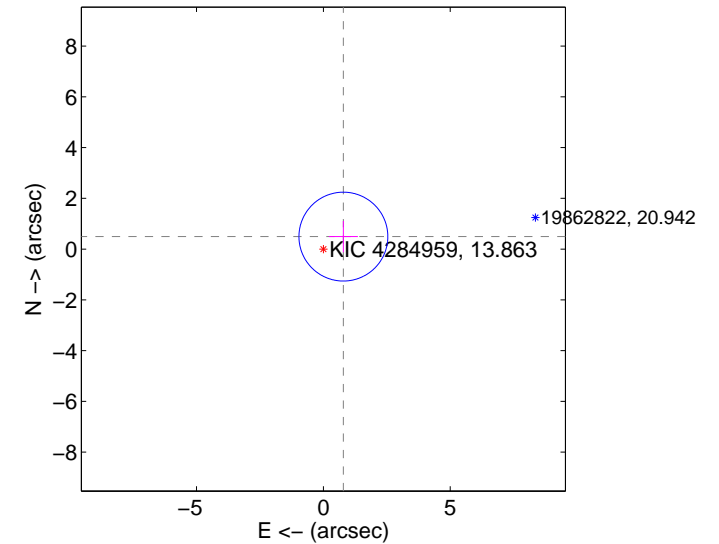
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

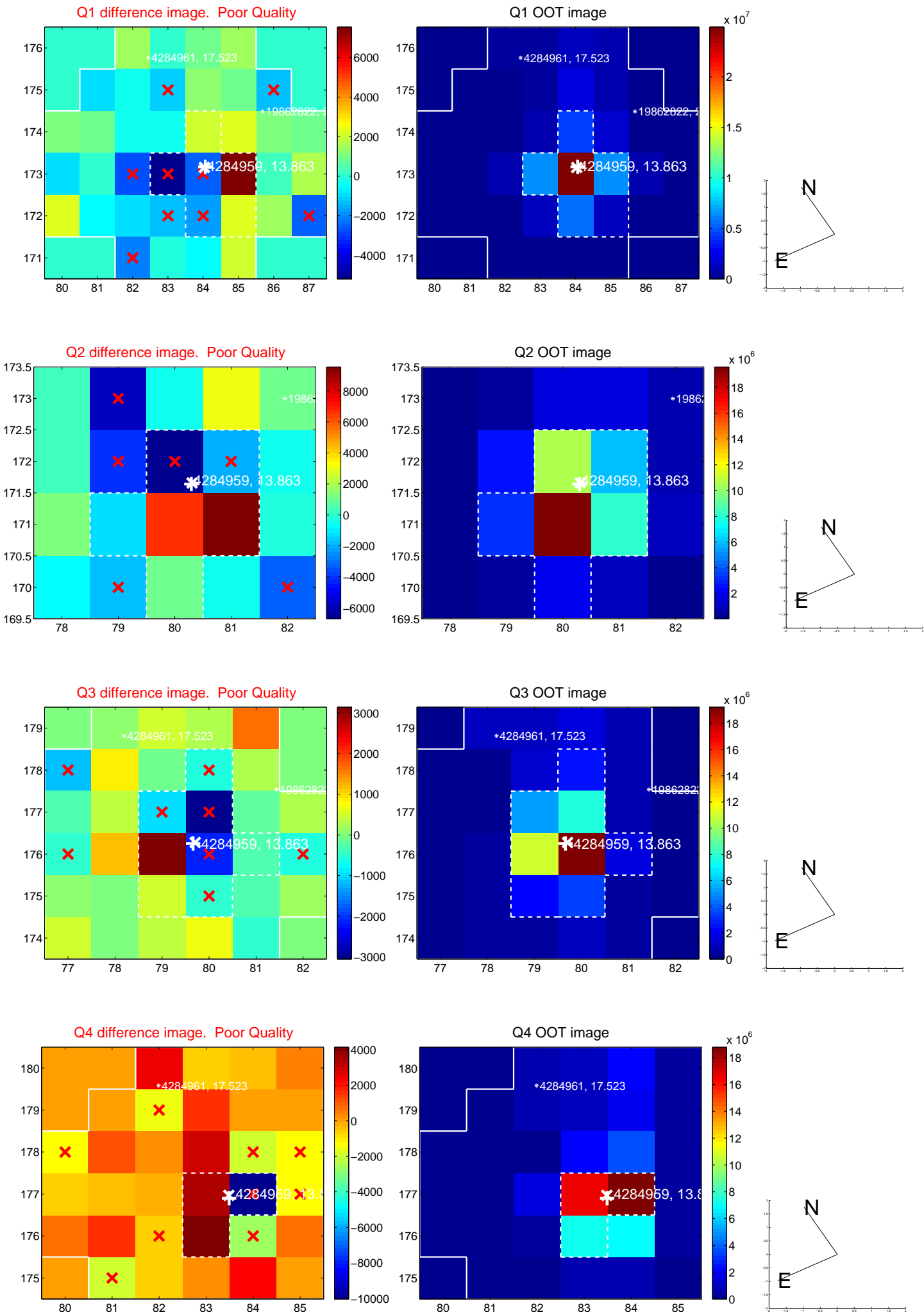


offset from photometric centroids

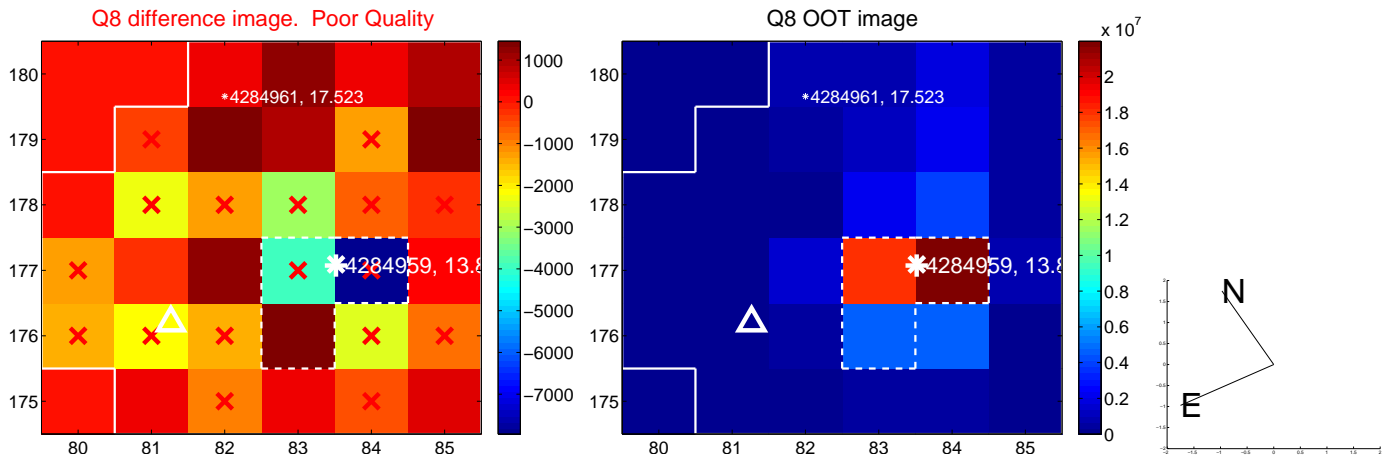
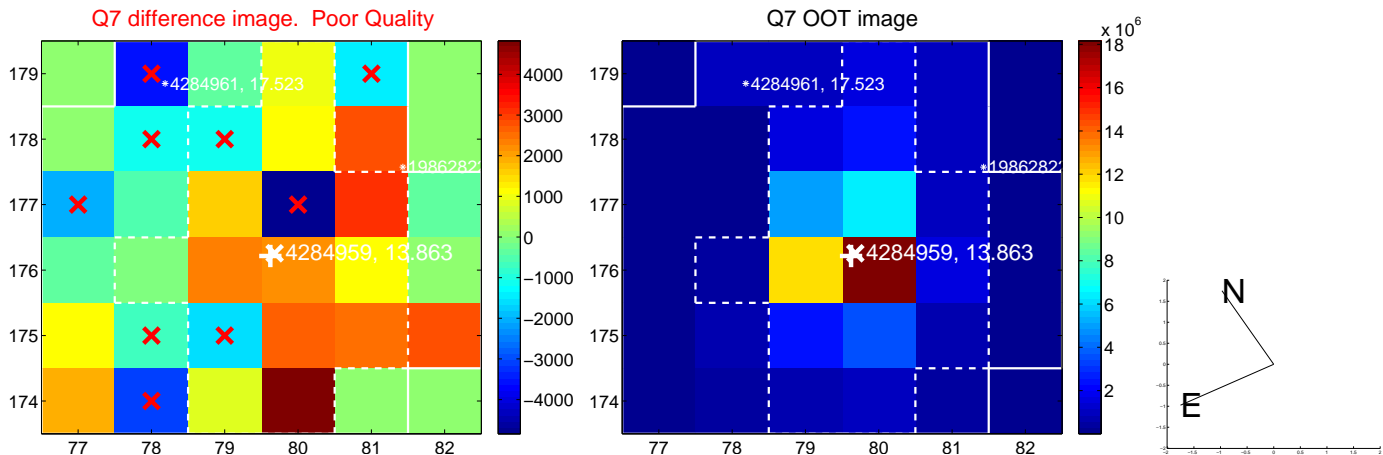
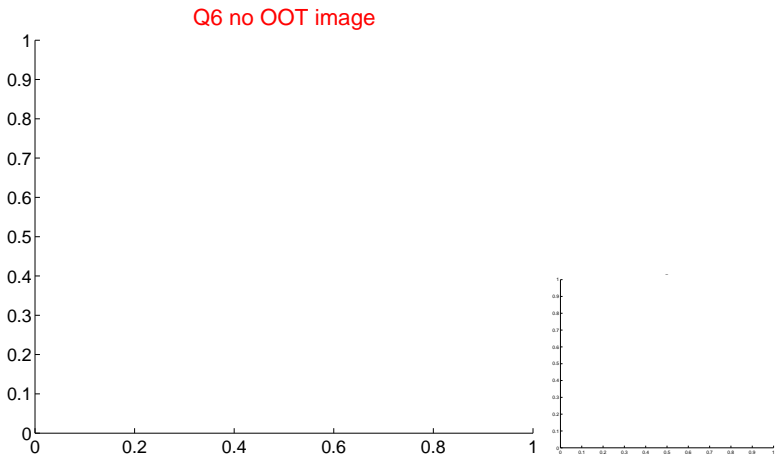
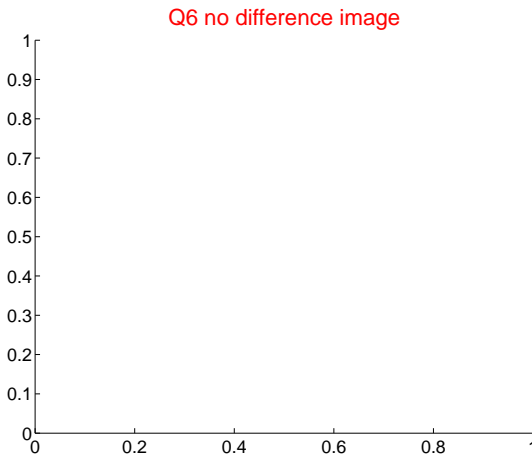
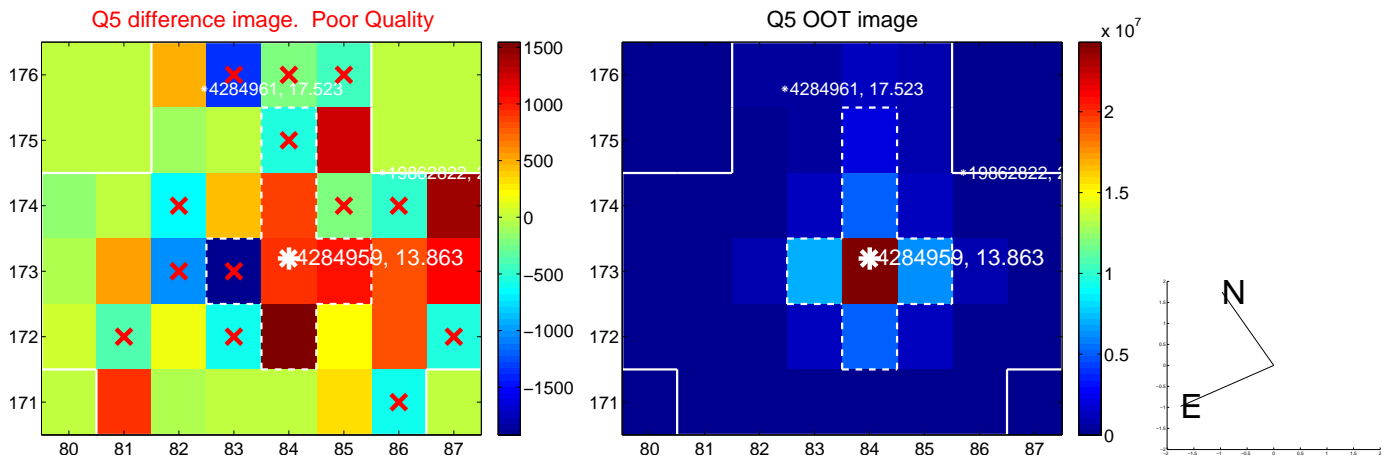


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

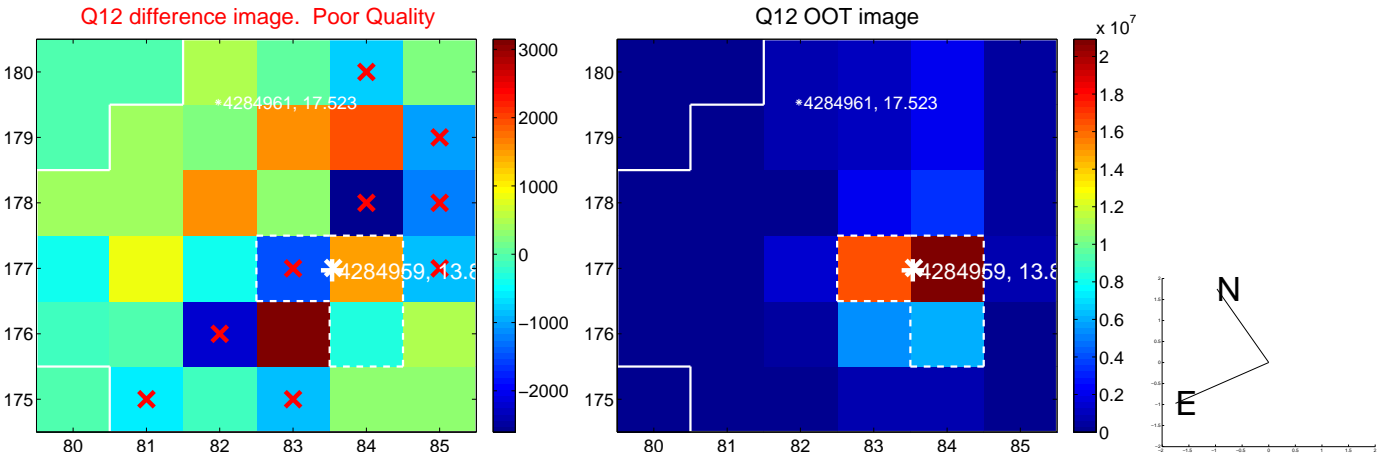
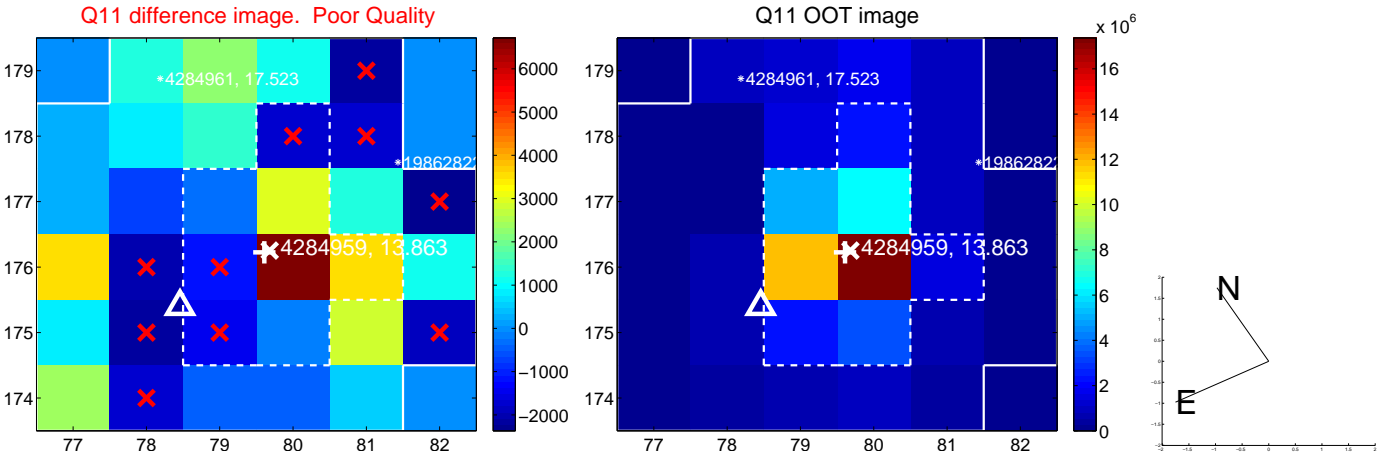
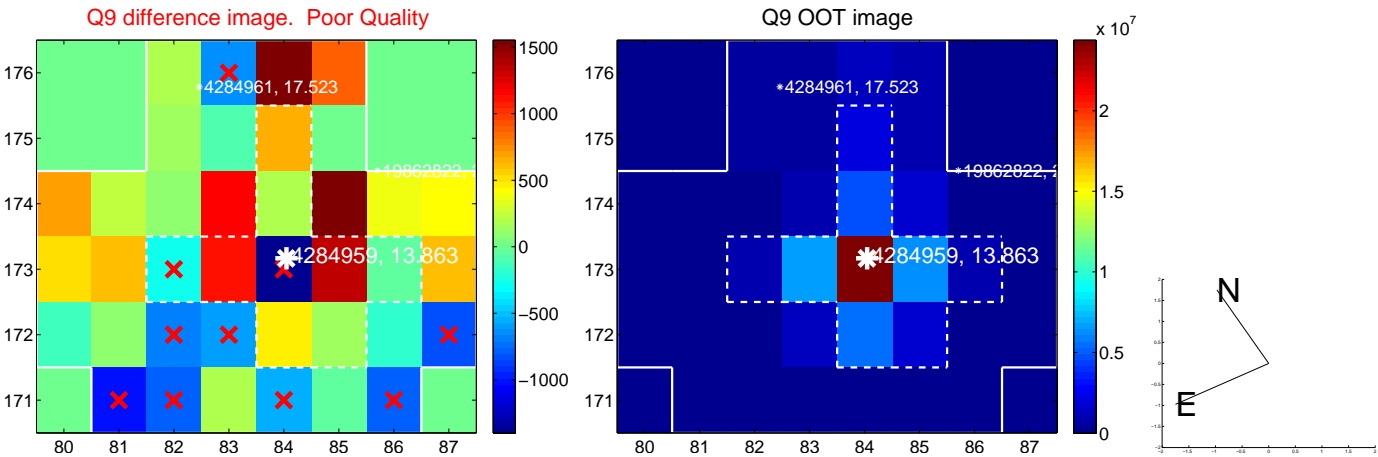
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



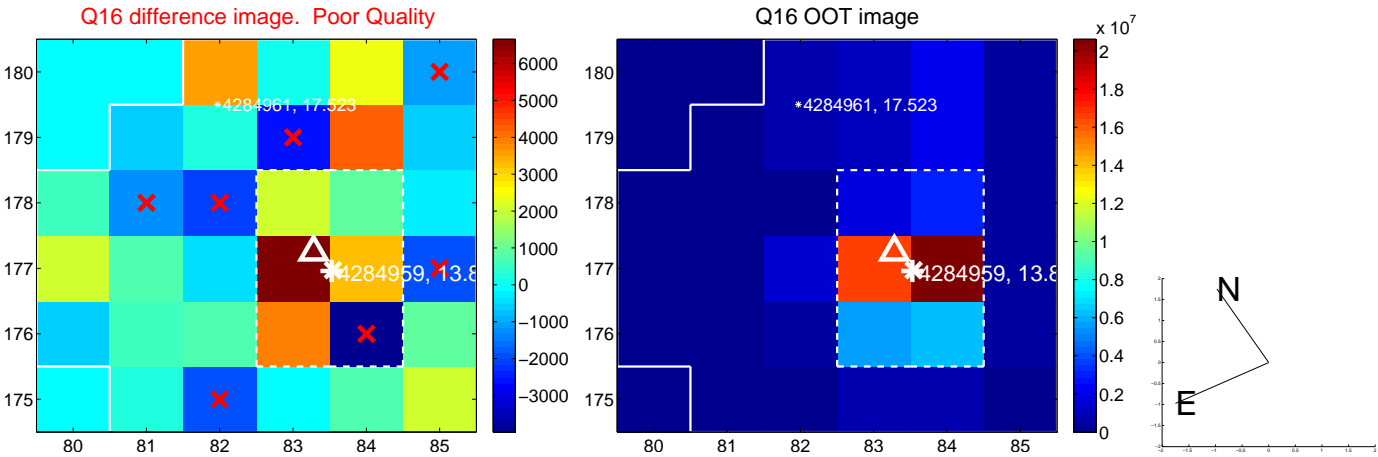
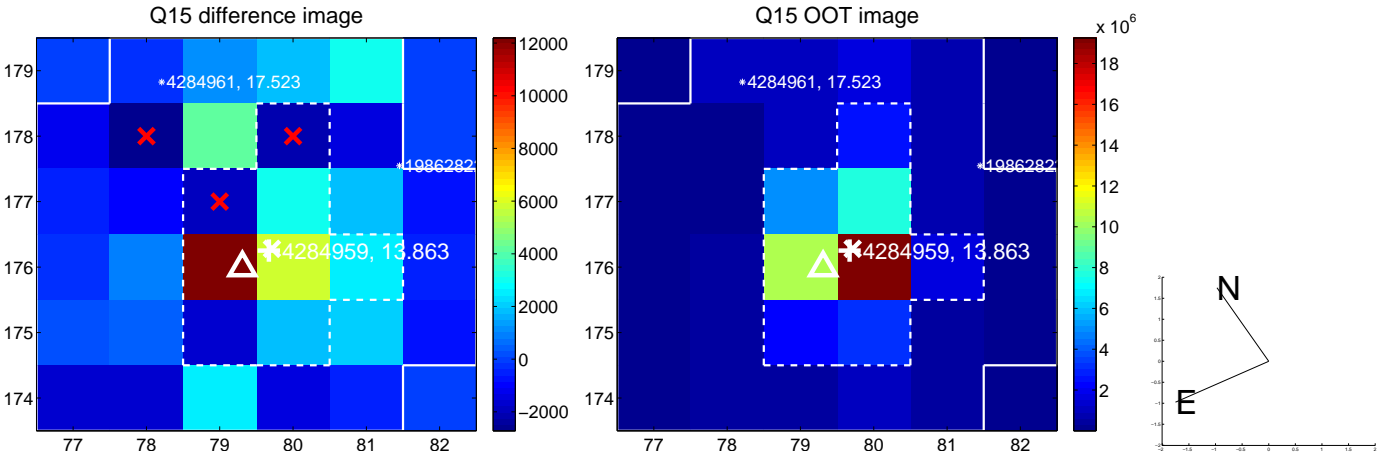
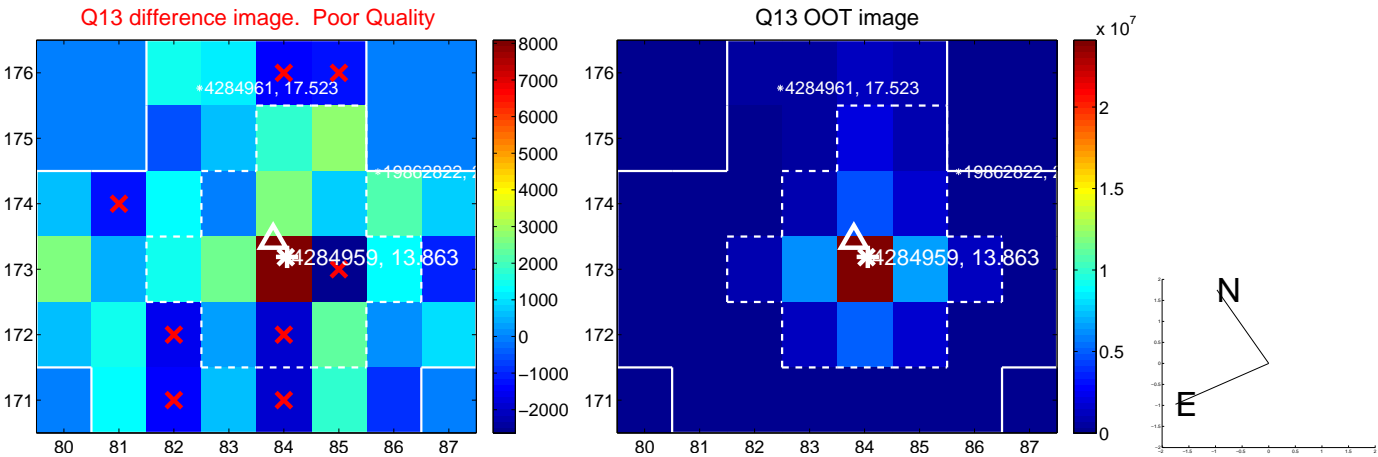
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



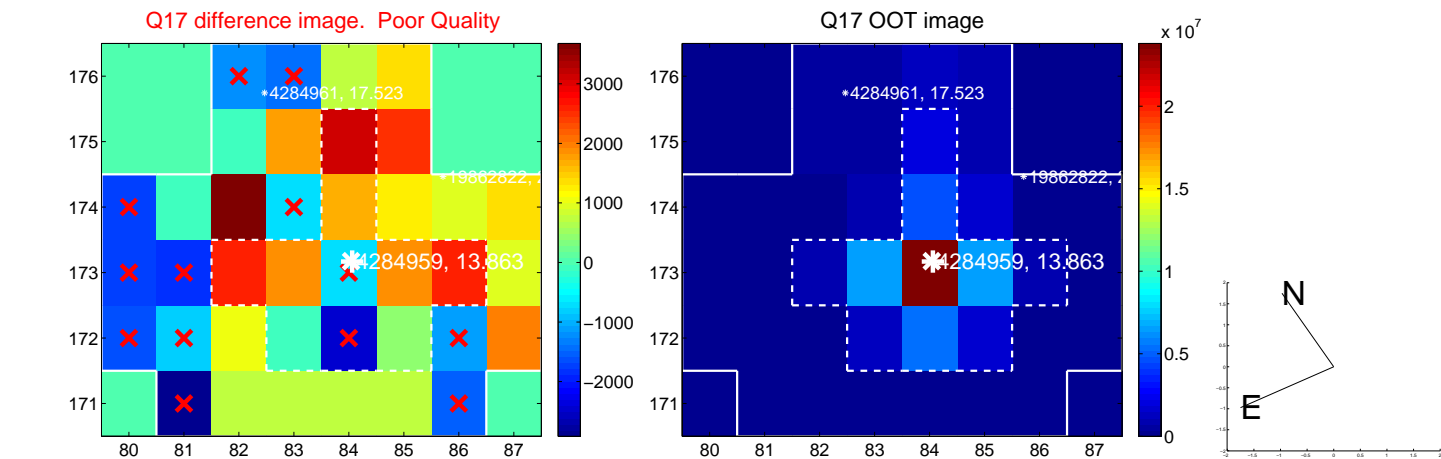
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



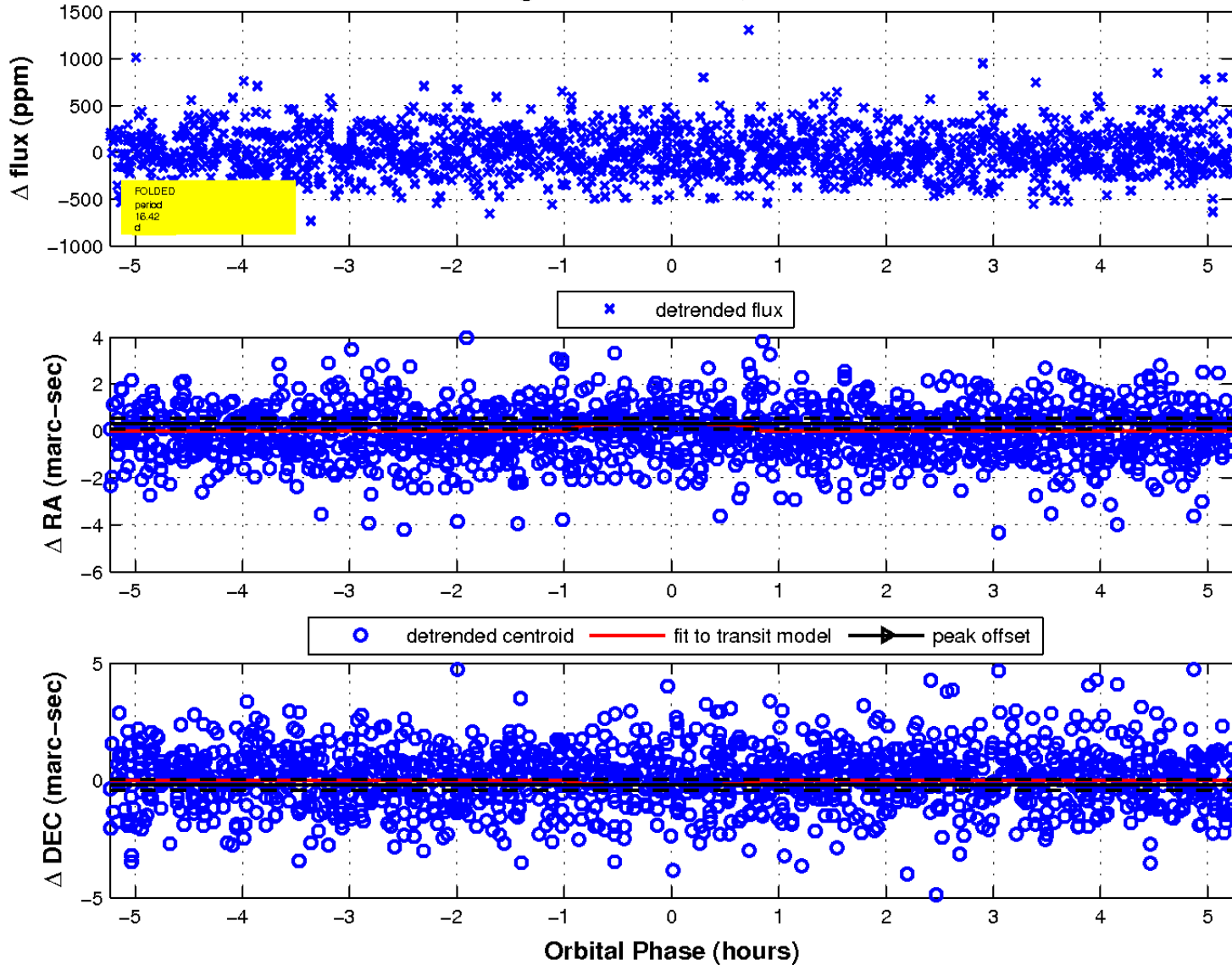
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

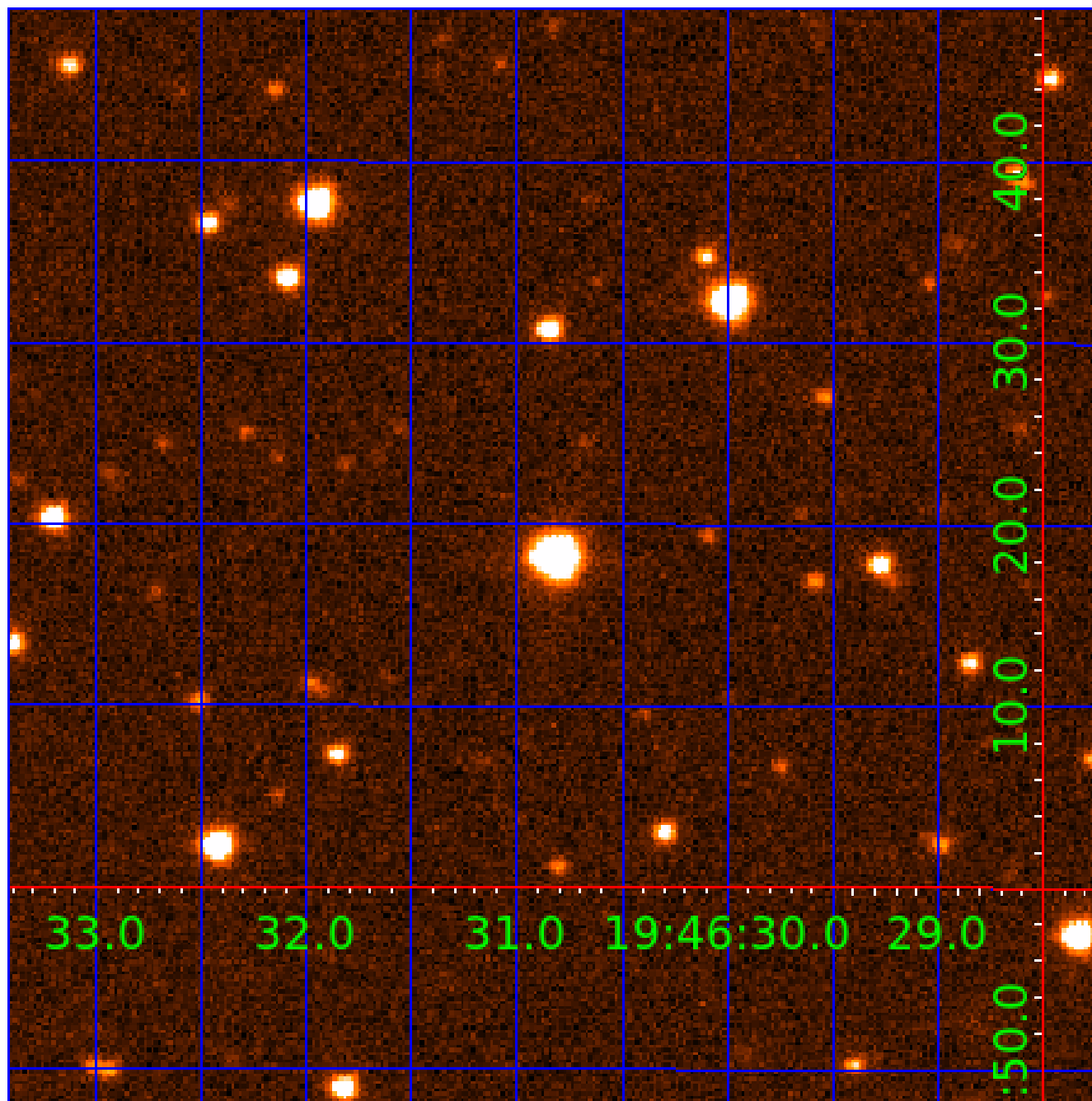


fluxWeightedCentroids, Planet 4 of 9



UKIRT Image

Declination



KIC 004284959

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})
004284959-01	OBS	No	1.192696	132.479950	0.0	8.808	8.7	0.0	1.22	6731	0.00	5236.33
004284959-02	OBS	No	22.480554	136.553048	557.1	1.737	18.7	16.0	1.22	6731	2.92	104.39
004284959-03	OBS	No	11.991718	139.115641	341.7	2.179	14.6	15.0	1.22	6731	2.59	241.30
004284959-04	OBS	No	16.423993	145.063114	362.2	1.746	14.6	12.9	1.22	6731	2.52	158.65
004284959-05	OBS	No	10.695476	141.822775	313.7	1.630	15.3	11.7	1.22	6731	2.47	281.06
004284959-06	OBS	No	9.748056	135.886355	673.8	0.641	11.4	12.2	1.22	6731	3.73	318.06
004284959-07	OBS	No	19.760540	147.133877	359.9	1.539	12.6	11.8	1.22	6731	2.43	123.97
004284959-08	OBS	No	15.793829	134.684111	799.9	2.000	11.9	-1.0	1.22	6731	3.50	167.14
004284959-09	OBS	No	19.757953	136.907984	357.3	1.958	12.7	11.4	1.22	6731	2.48	124.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004284959-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

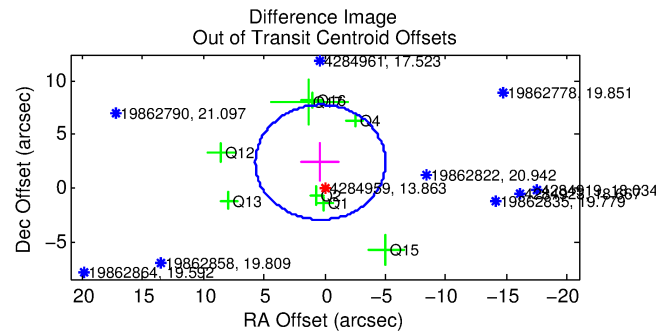
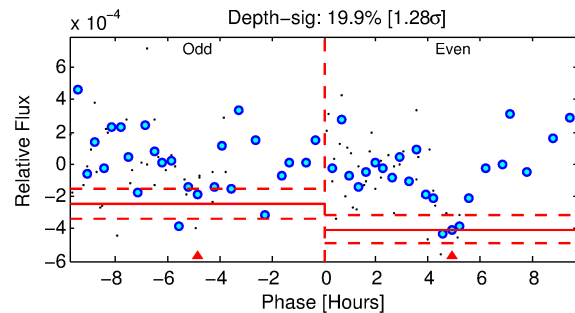
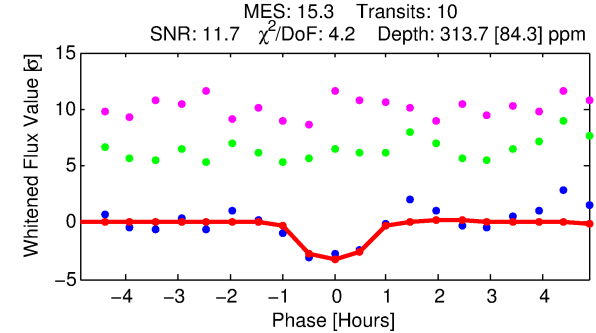
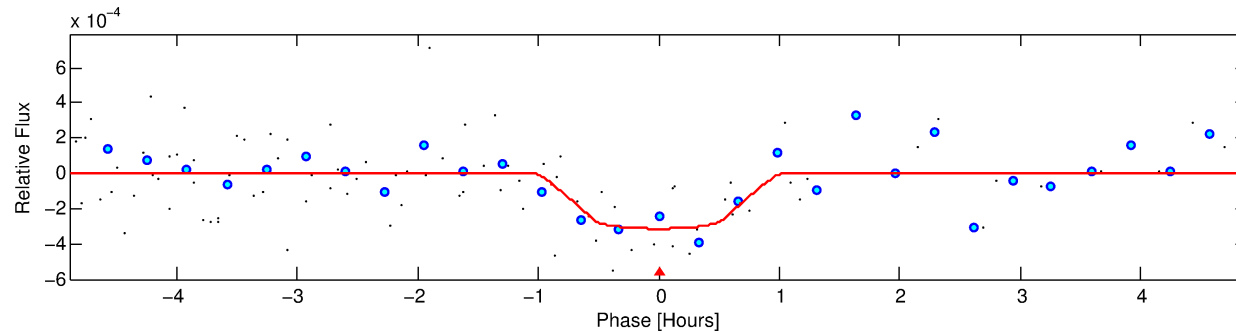
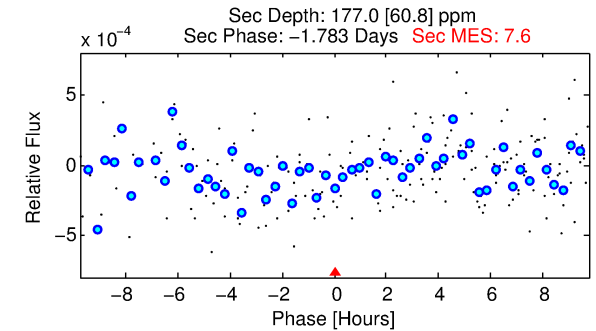
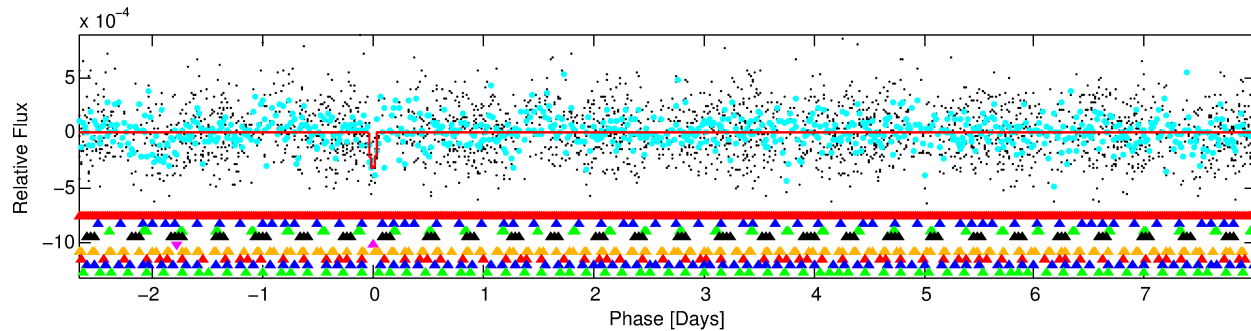
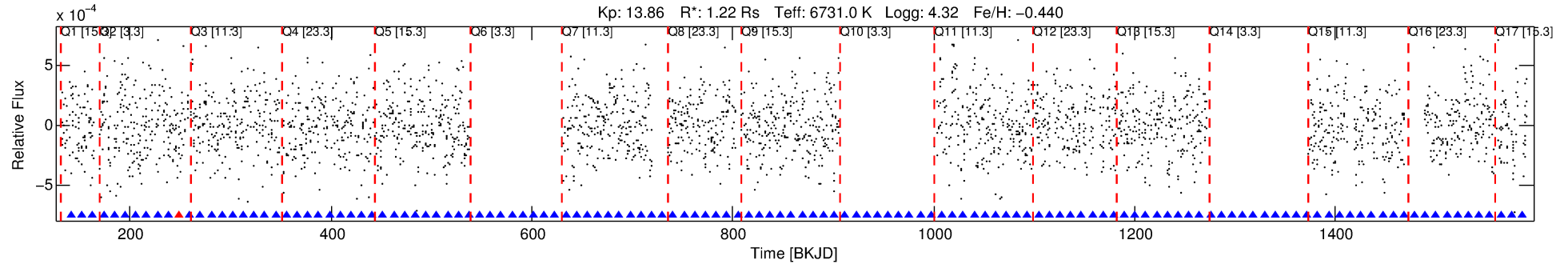
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004284959-05

No Significant Match Found

DV One-Page Summary

KIC: 4284959 Candidate: 5 of 9 Period: 10.695 d



DV Fit Results:

Period = 10.69548 [0.00009] d
Epoch = 141.8228 [0.0070] BKJD
Rp/R* = 0.0185 [0.0653]
a/R* = 27.31 [573.80]
b = 0.86 [6.38]
Seff = 281.06 [104.99]
Teq = 1044 [98] K
Rp = 2.47 [8.76] Re
a = 0.0990 [0.0238] AU
Ag = 156.91 [1113.08] [0.14σ]
Teffp = 5713 [10122] K [0.46σ]

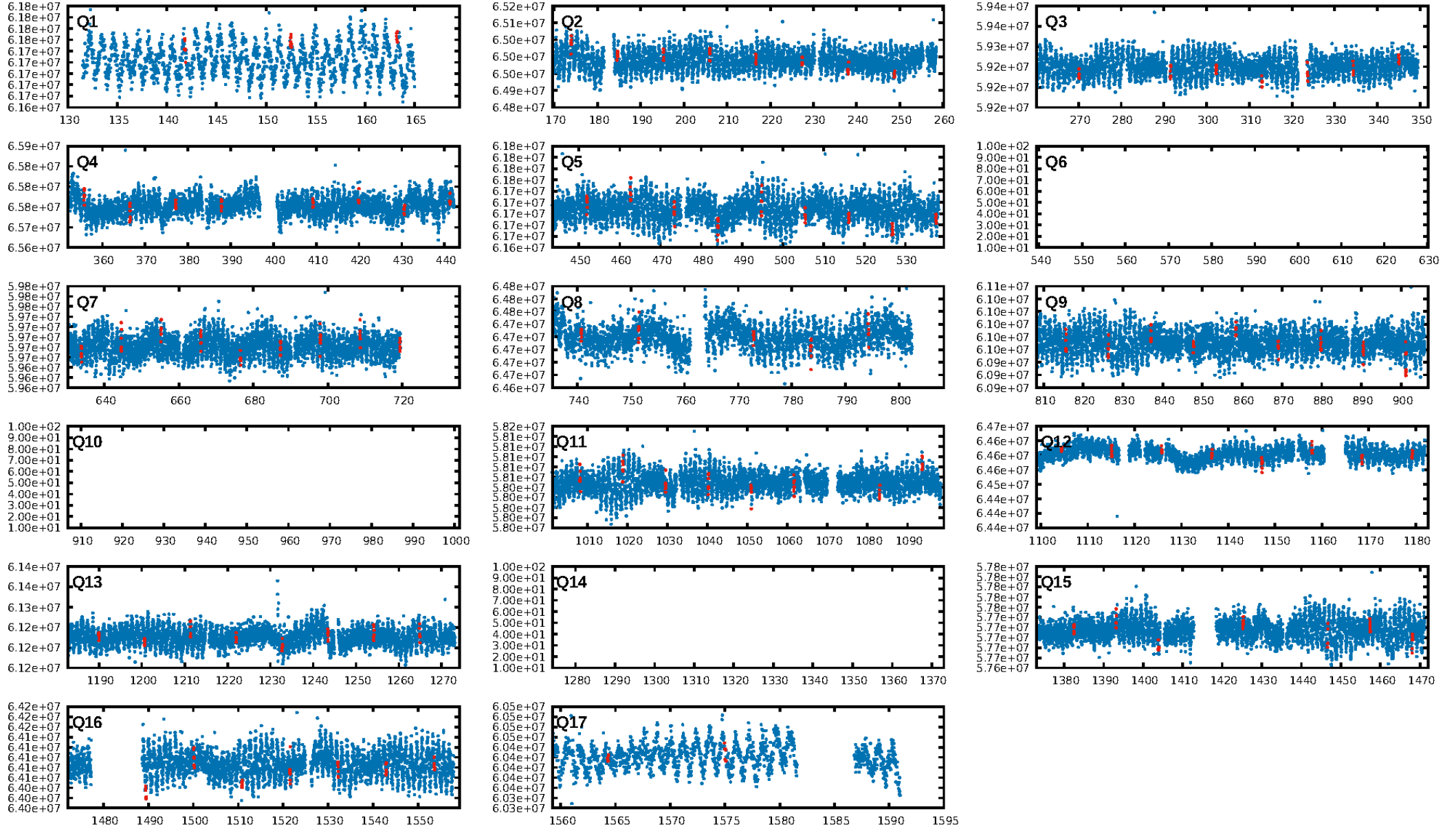
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.98σ]
LongPeriod-sig: 100.0% [11.43σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 8.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.88 [7/8]
GhostDiagnostic-chr: -0.2821
Centroid-sig: 2.0%
Centroid-so: 1.058 arcsec [1.74σ]
OotOffset-rm: 2.436 arcsec [1.36σ]
KicOffset-rm: 2.496 arcsec [1.34σ]
OotOffset-st: 1/1/3/3 [8]
KicOffset-st: 1/1/3/3 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.50 [7/14]

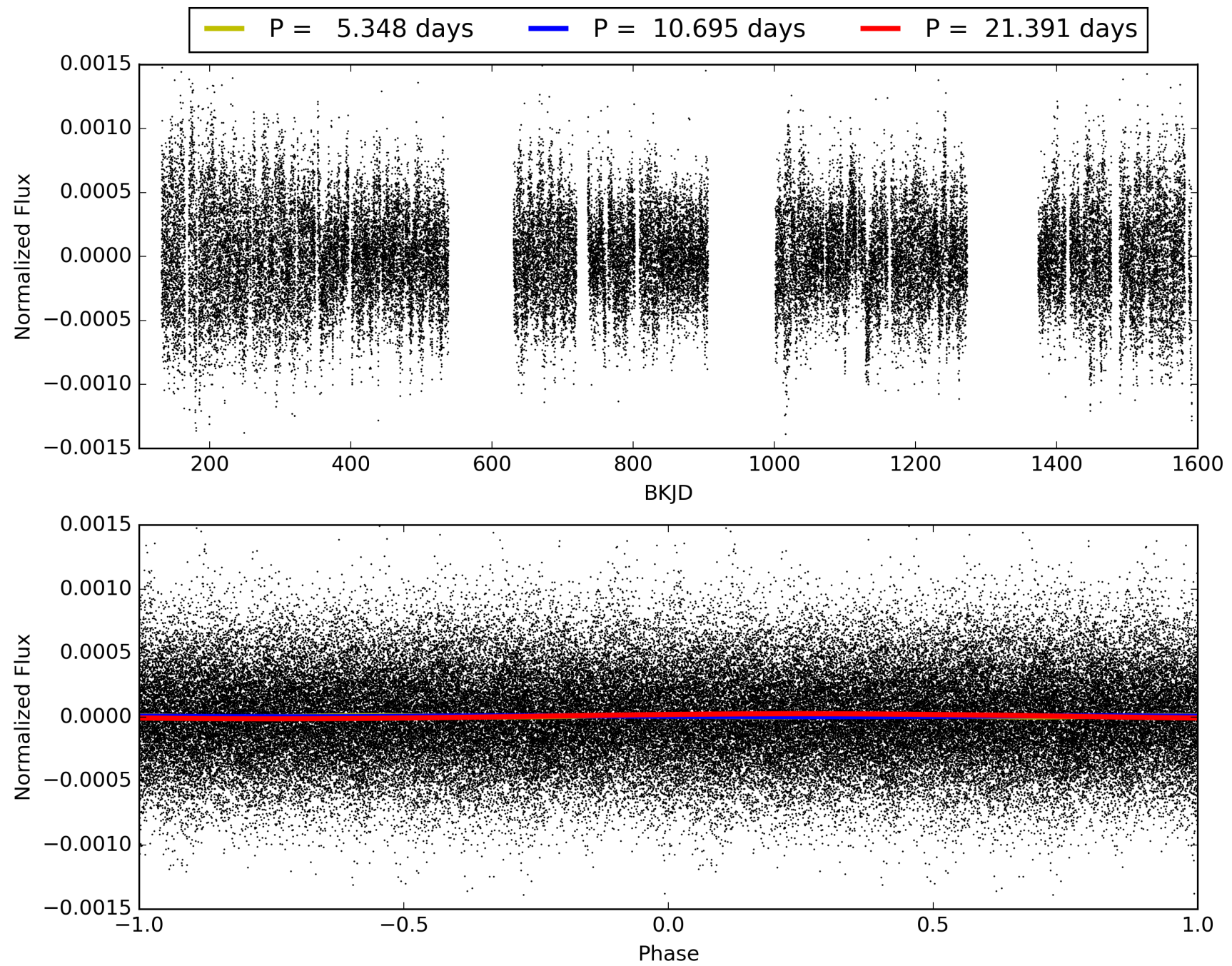
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:12:36 Z

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

TCE 004284959-05, PDC Light Curves

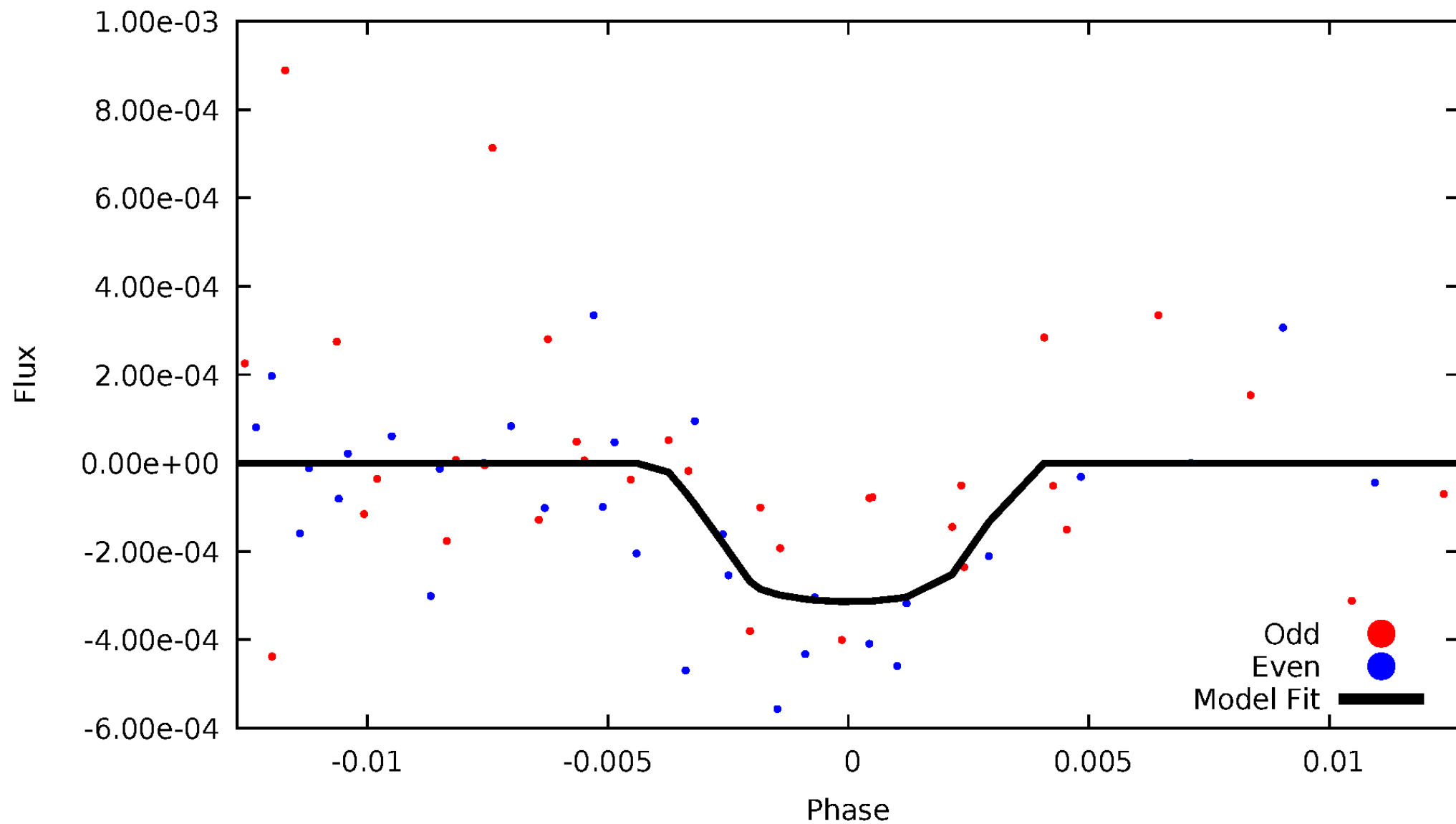


TCE 004284959-05



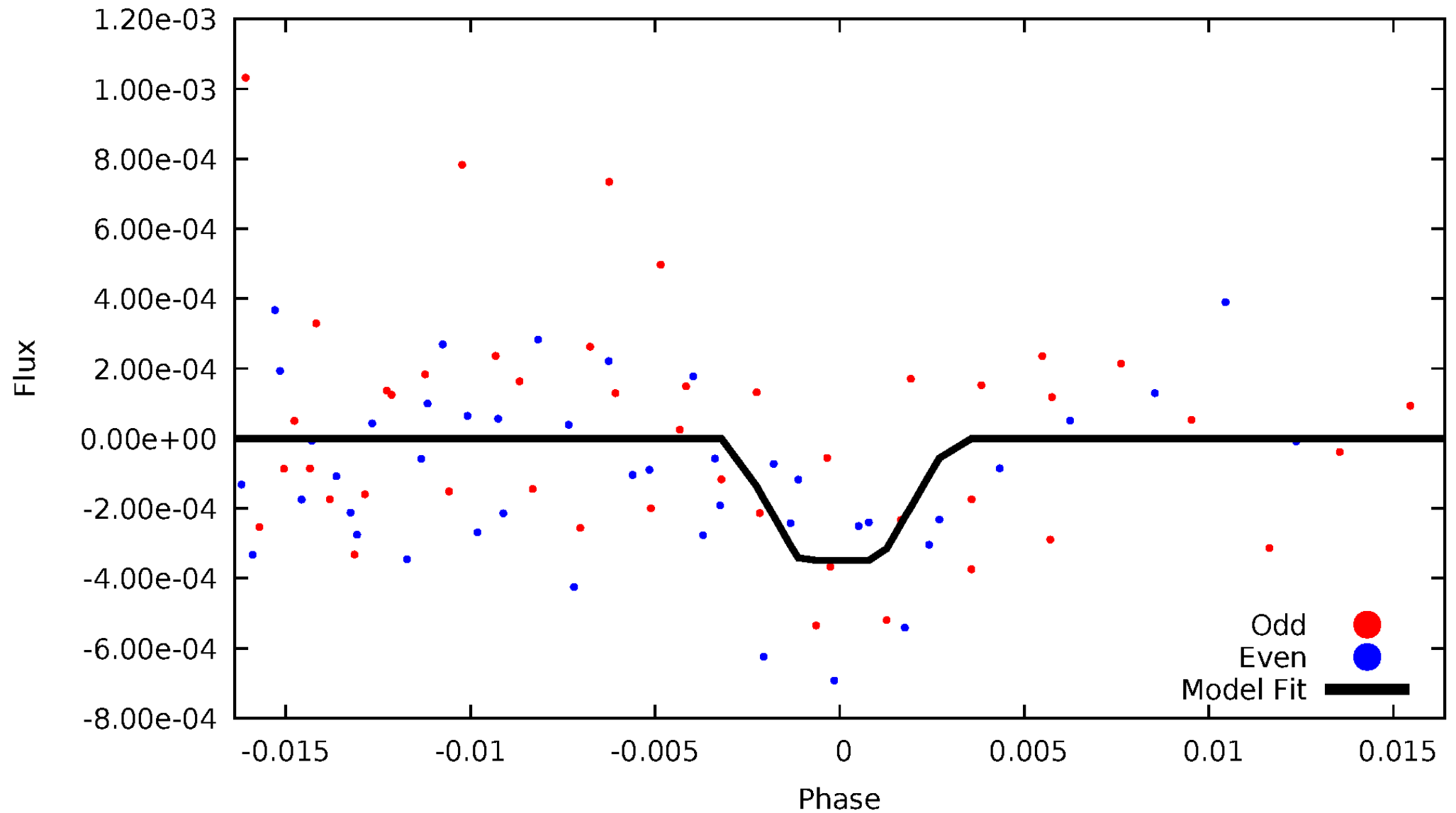
DV Odd/Even

TCE 004284959-05



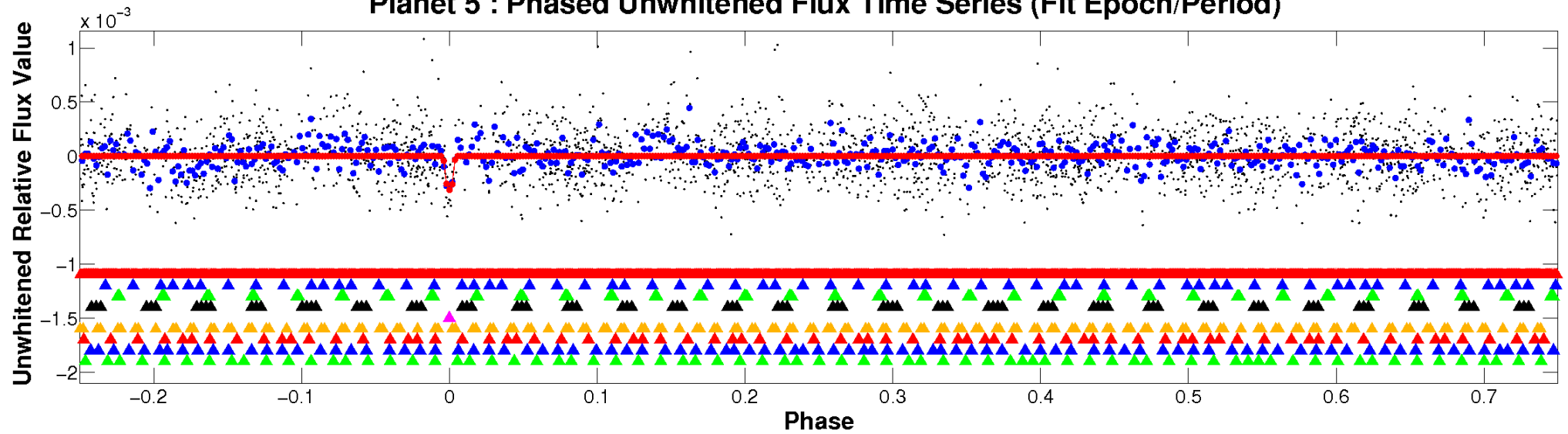
ALT Odd/Even

TCE 004284959-05

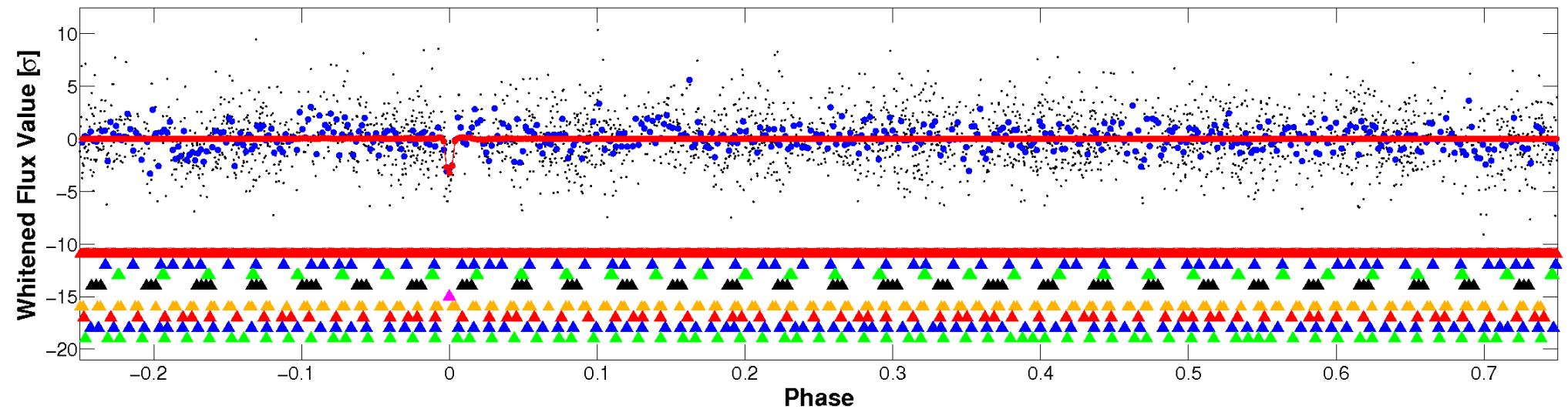


Non-Whitened Vs. Whitened Light Curve

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

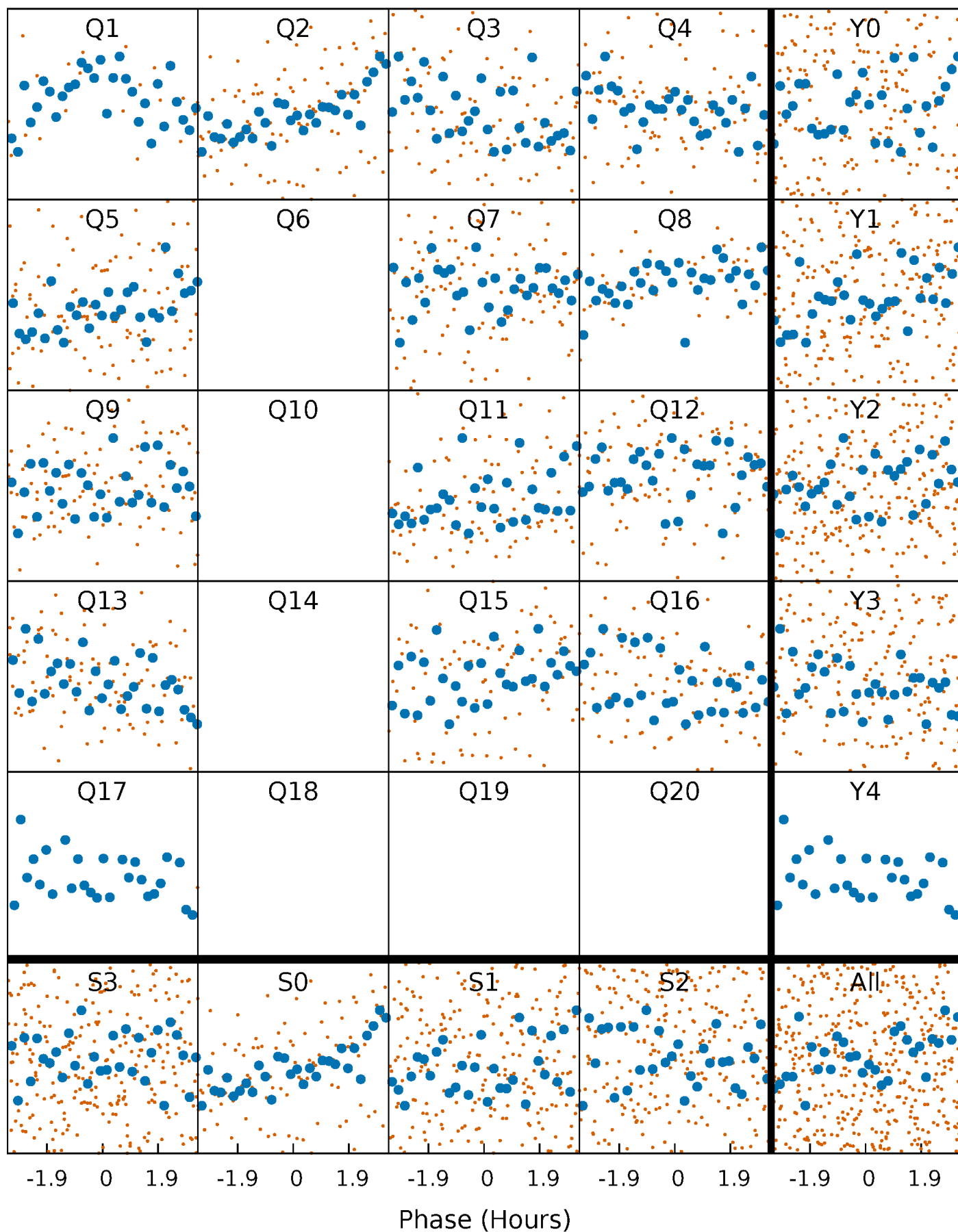


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



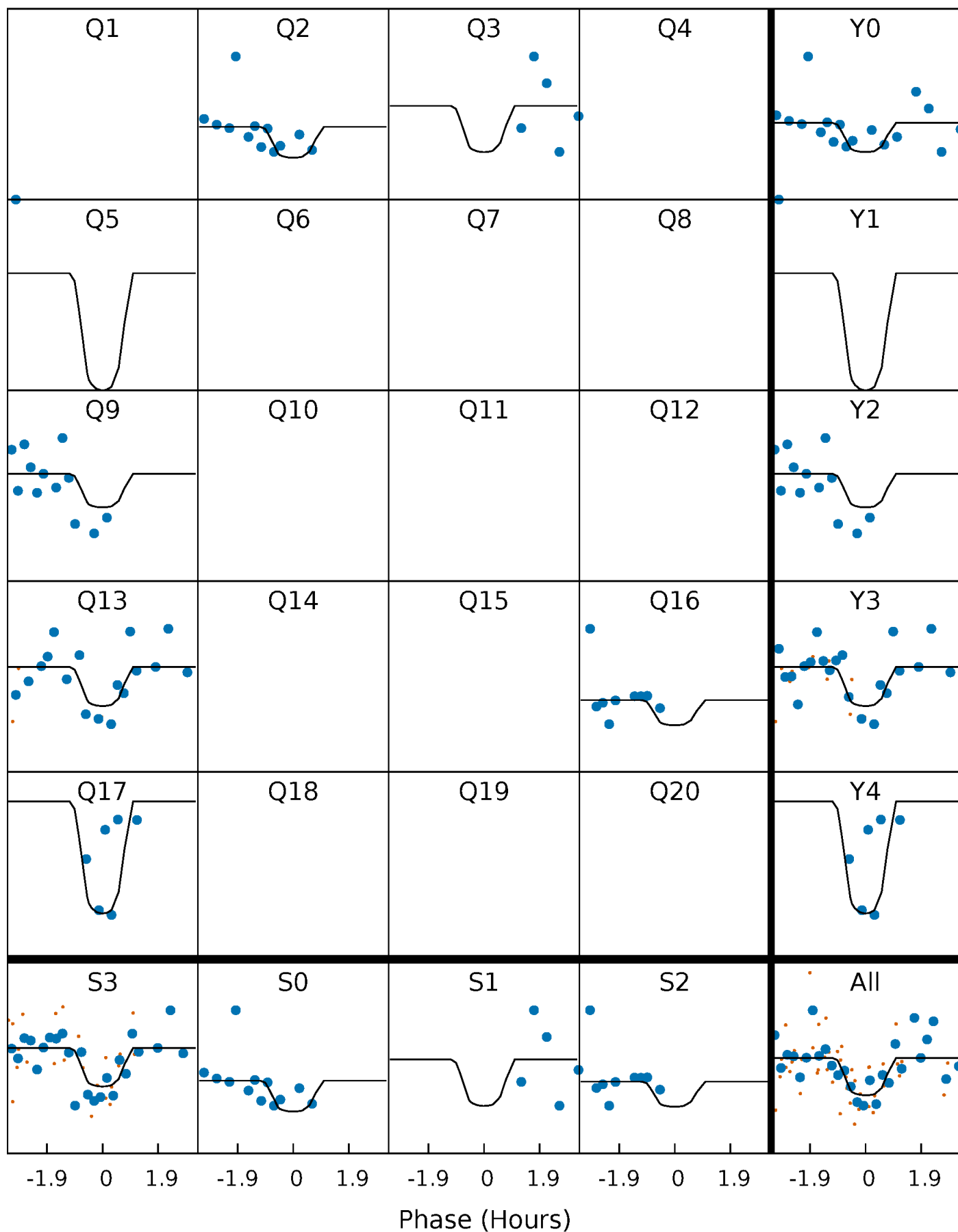
PDC Quarter-Phased Transit Curves

TCE 004284959-05 P= 10.695476 Days $T_0=141.822775$ (BKJD)



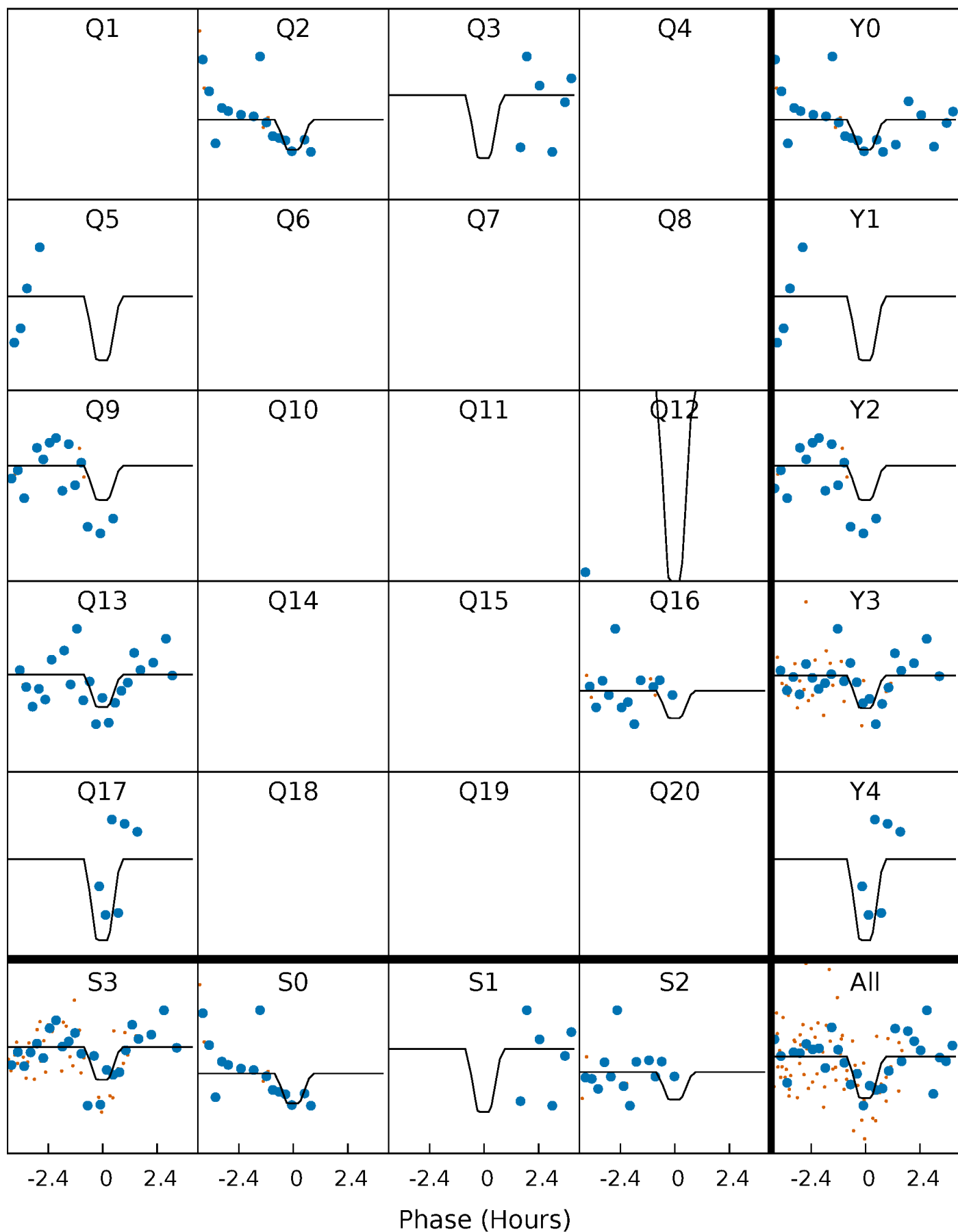
DV Quarter-Phased Transit Curves

TCE 004284959-05 $P = 10.695476$ Days $T_0 = 141.822775$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

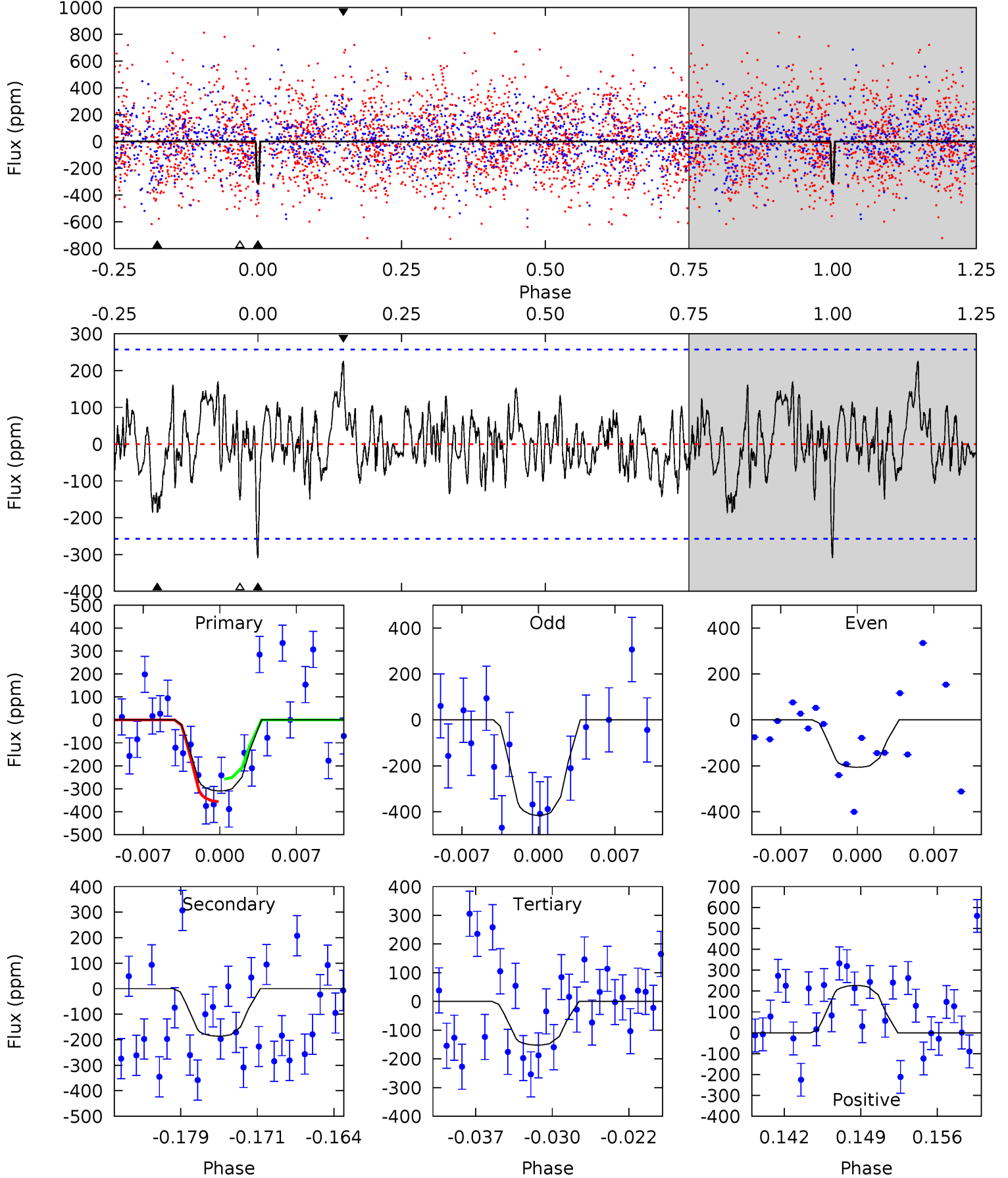
TCE 004284959-05 P= 10.695448 Days $T_0=141.810633$ (BKJD)



DV Model-Shift Uniqueness Test

004284959-05, P = 10.695476 Days, E = 131.127299 Days

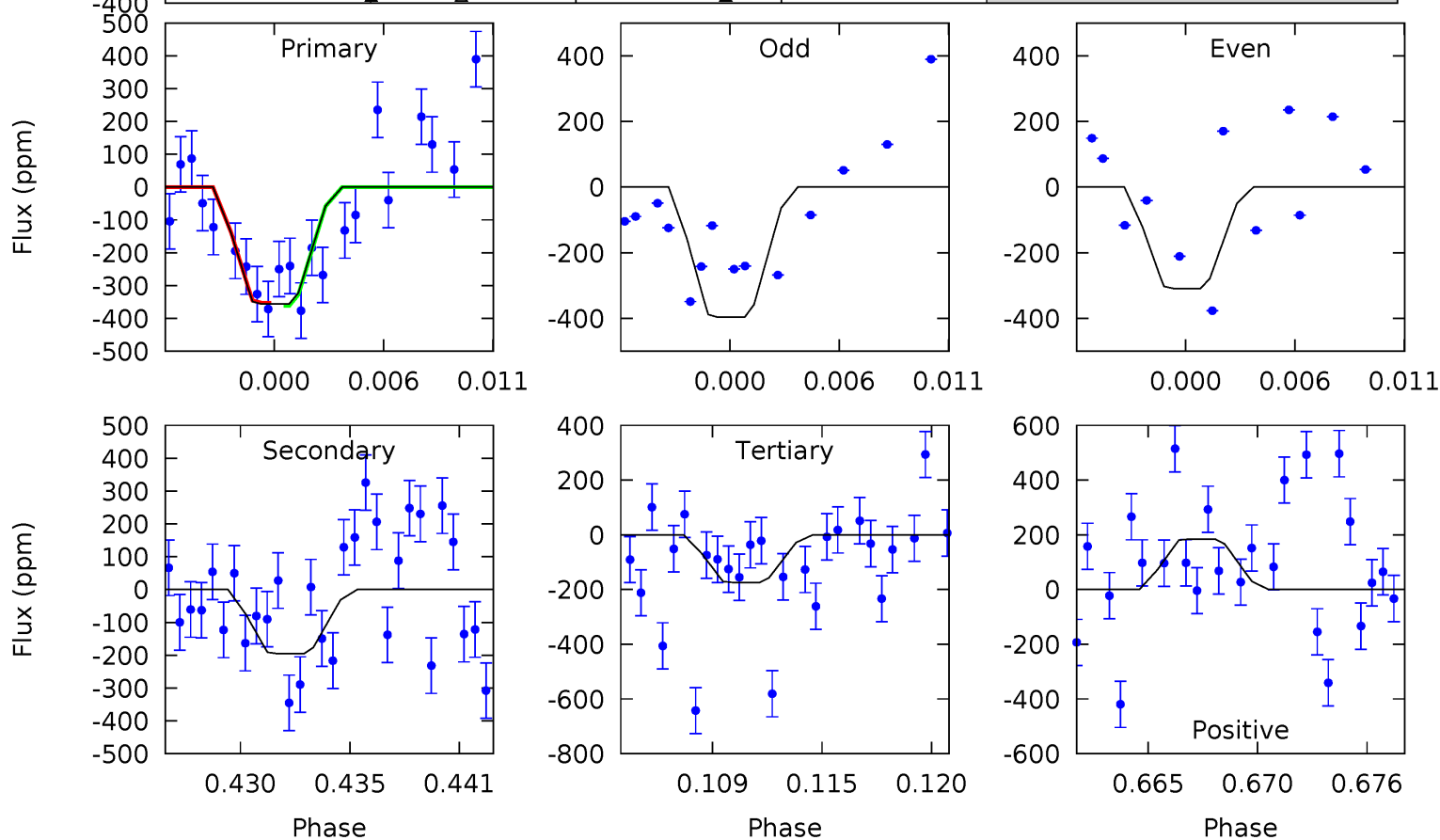
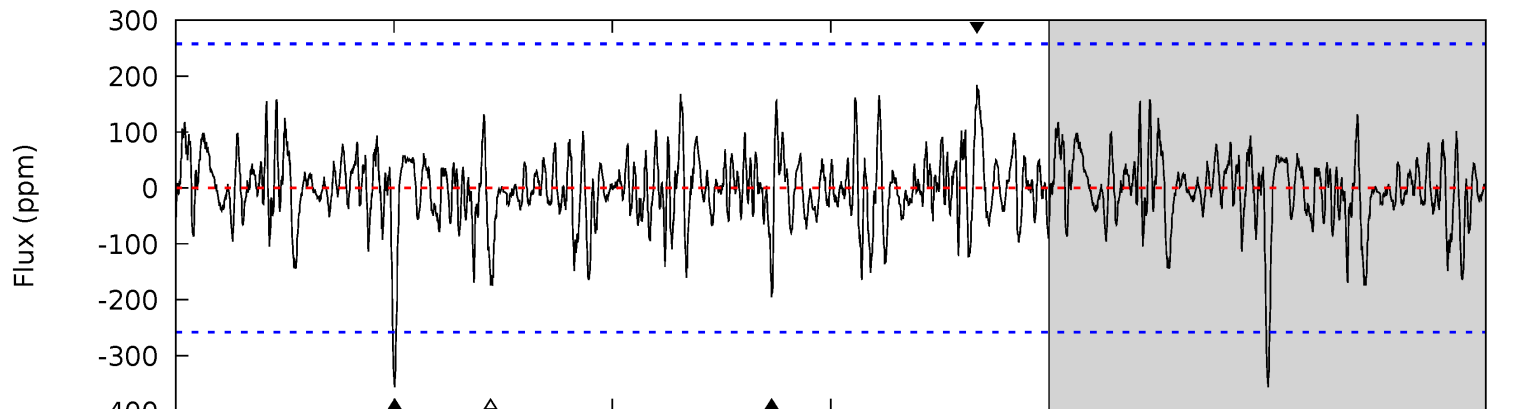
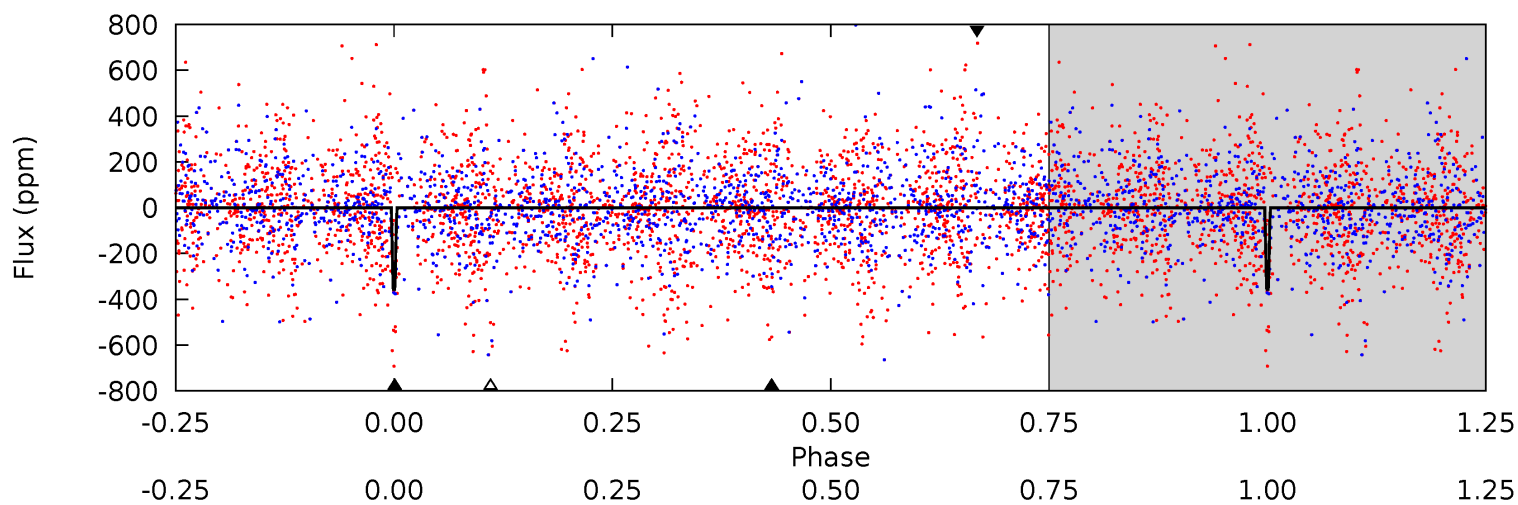
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.12	3.67	3.00	4.48	5.08	2.68	1.24	3.11	1.64	0.67	-0.80	2.07	0.95	0.42	0.97



Alt Model-Shift Uniqueness Test

004284959-05, P = 10.695448 Days, E = 131.115185 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.09	3.89	3.47	3.67	5.13	2.76	1.12	3.63	3.43	0.42	0.22	0.84	1.10	0.34	0.09



Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-186 ± 51	$6.85^{+7.89}_{-4.74}$	1470^{+111}_{-76}	3793^{+2465}_{-804}	20^{+185}_{-15}
Alt.	-195 ± 50	$6.72^{+7.41}_{-4.56}$	1477^{+109}_{-81}	3896^{+2422}_{-816}	23^{+205}_{-18}

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

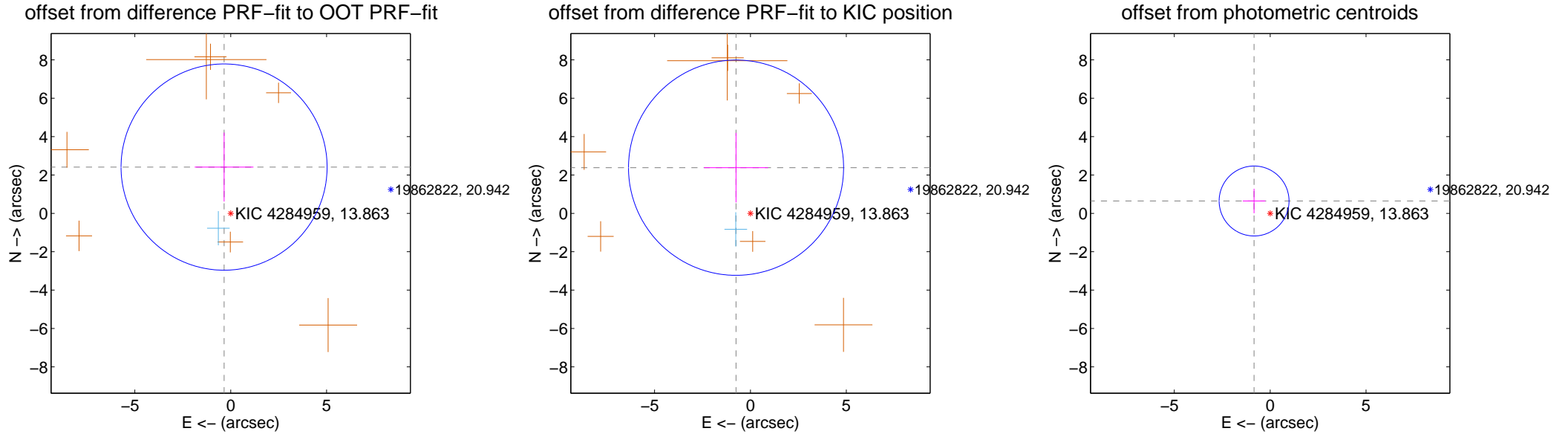
DV Centroid Data

Supplemental centroid analysis for 004284959-05. Kepler magnitude: 13.86. Transit SNR 11.72

There are 1 quarters with good PRF difference image offsets

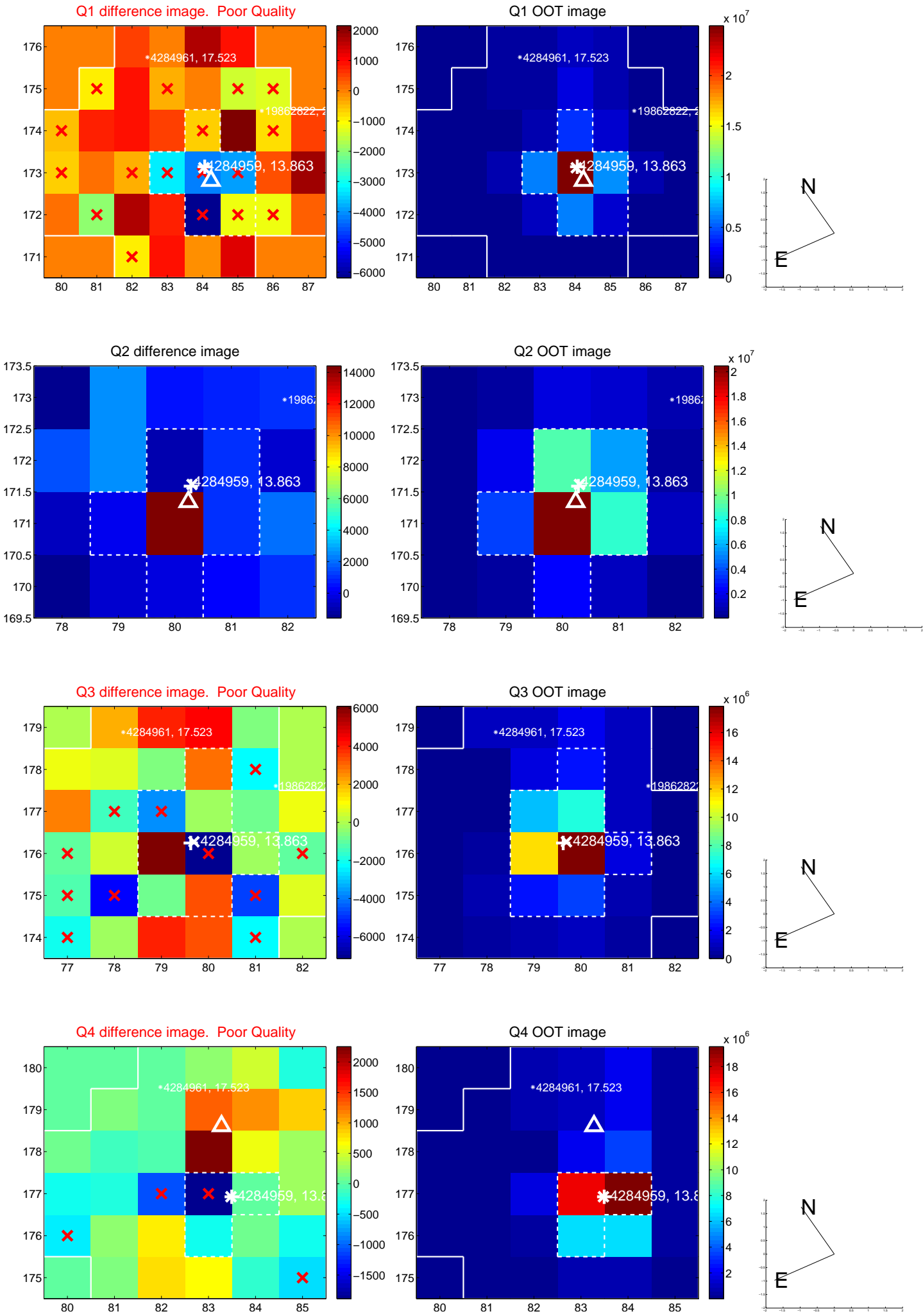
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.436 ± 1.791	1.36	0.346 ± 1.533	2.411 ± 1.796
PRF-fit source offset from KIC position	2.496 ± 1.870	1.34	0.751 ± 1.671	2.380 ± 1.812
photometric centroid source offset	1.06 ± 0.61	1.74	0.84 ± 0.59	0.64 ± 0.64

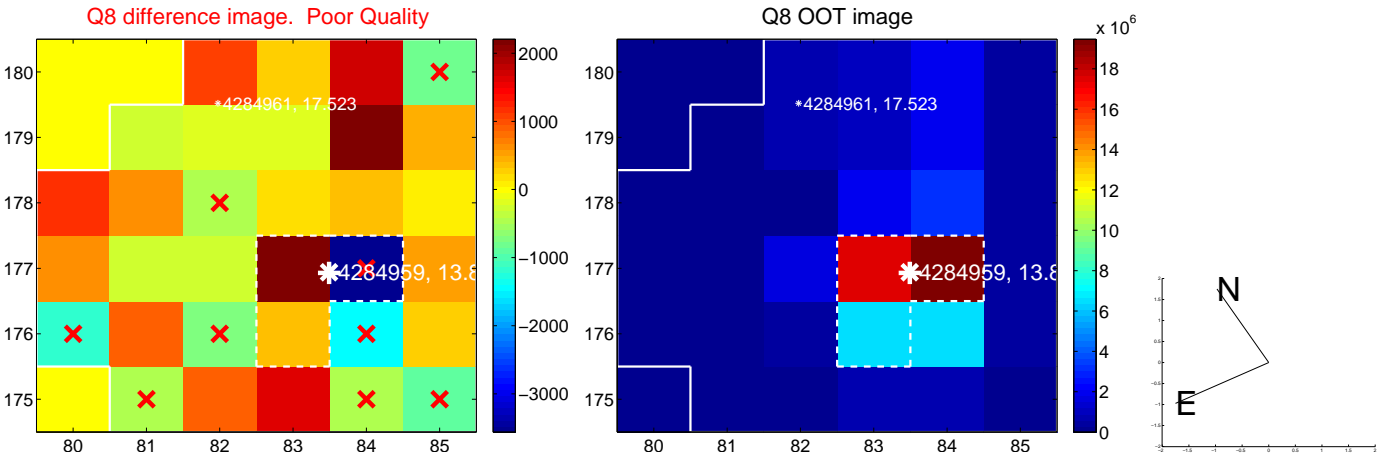
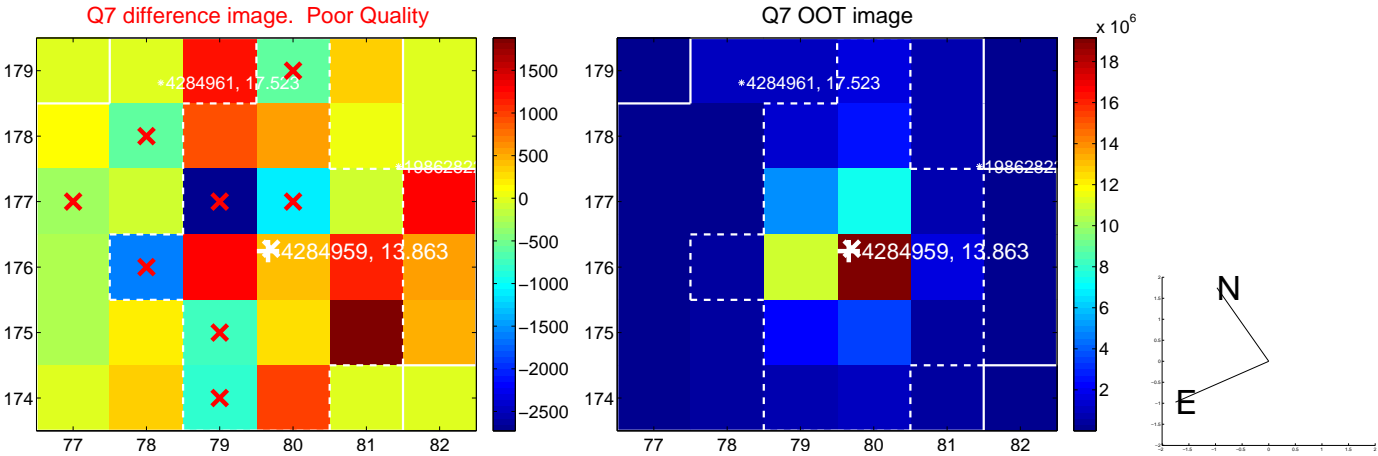
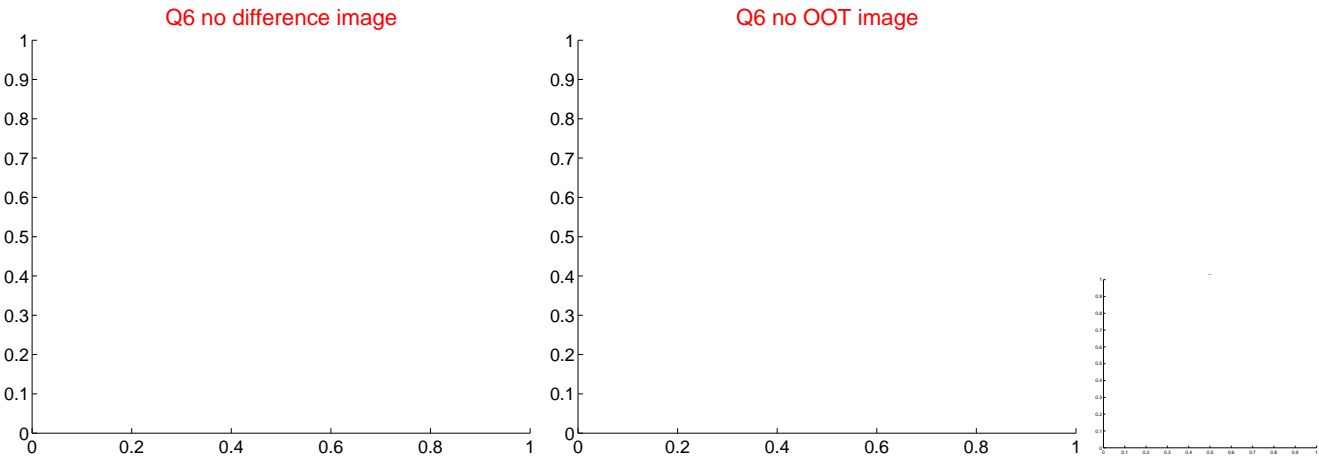
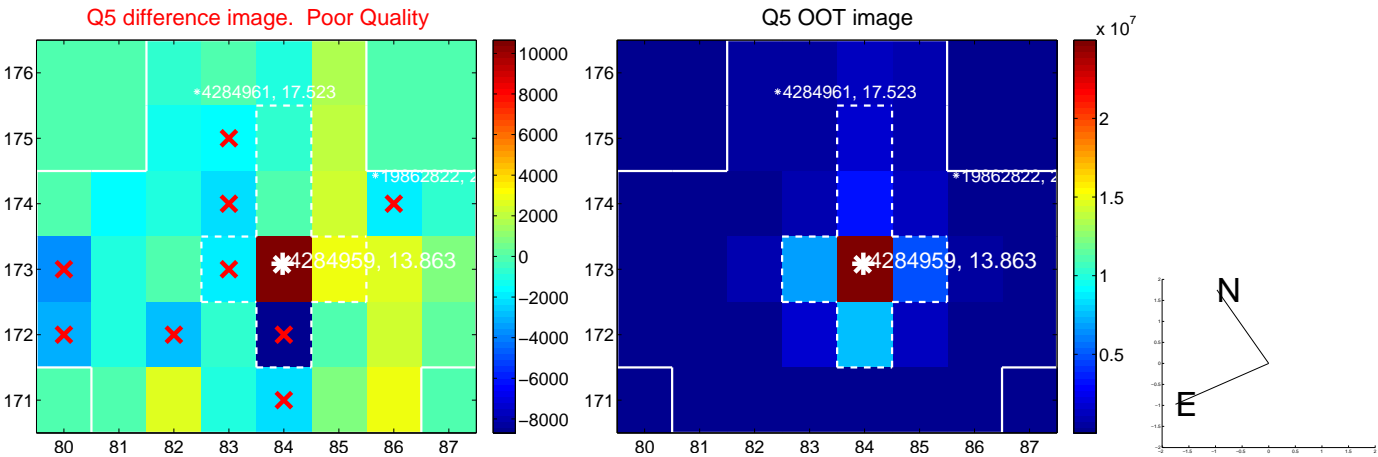


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

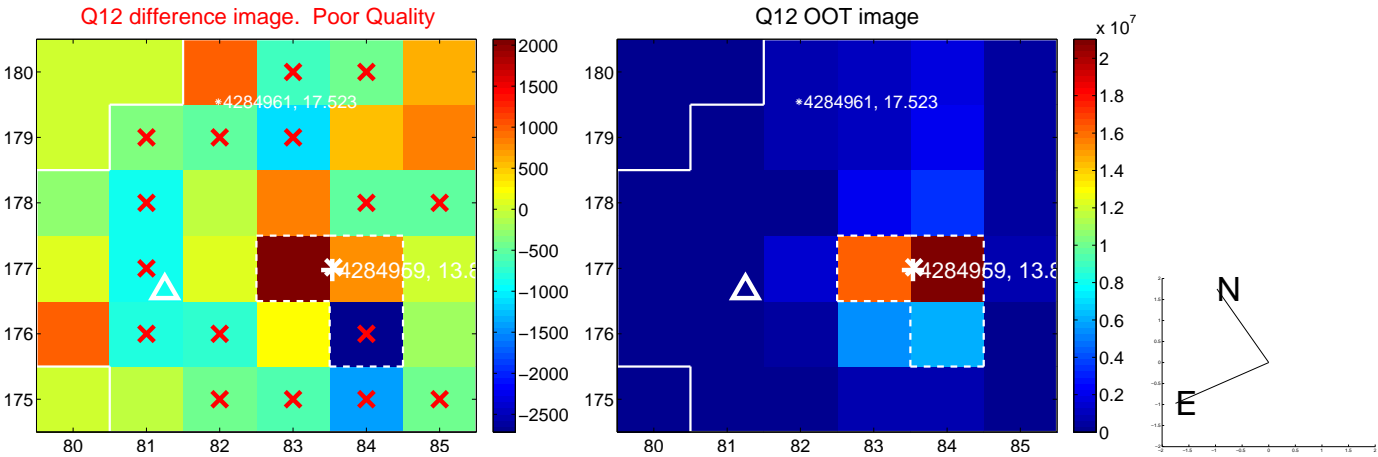
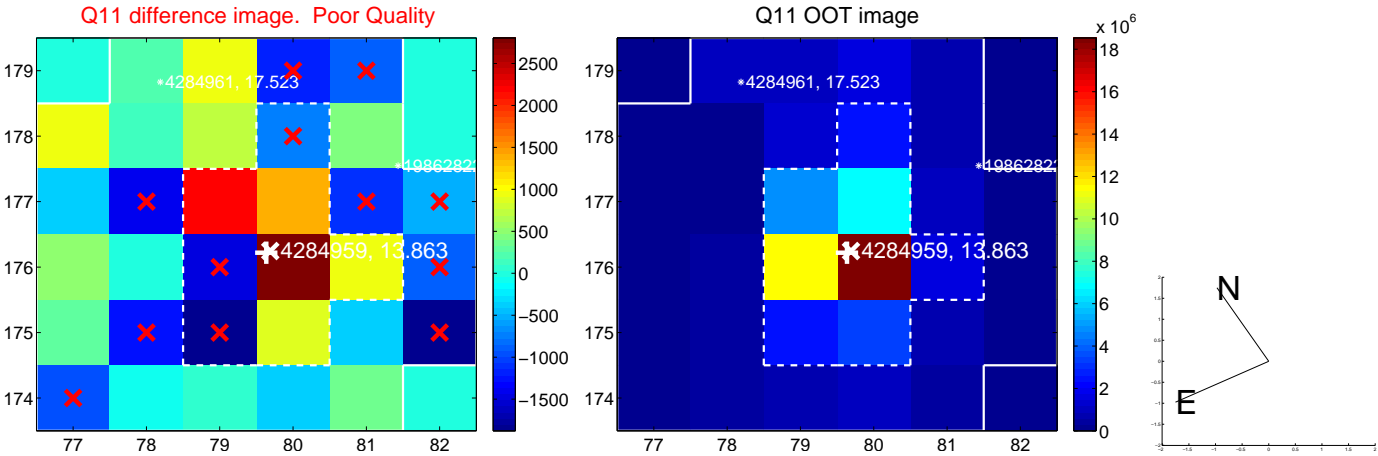
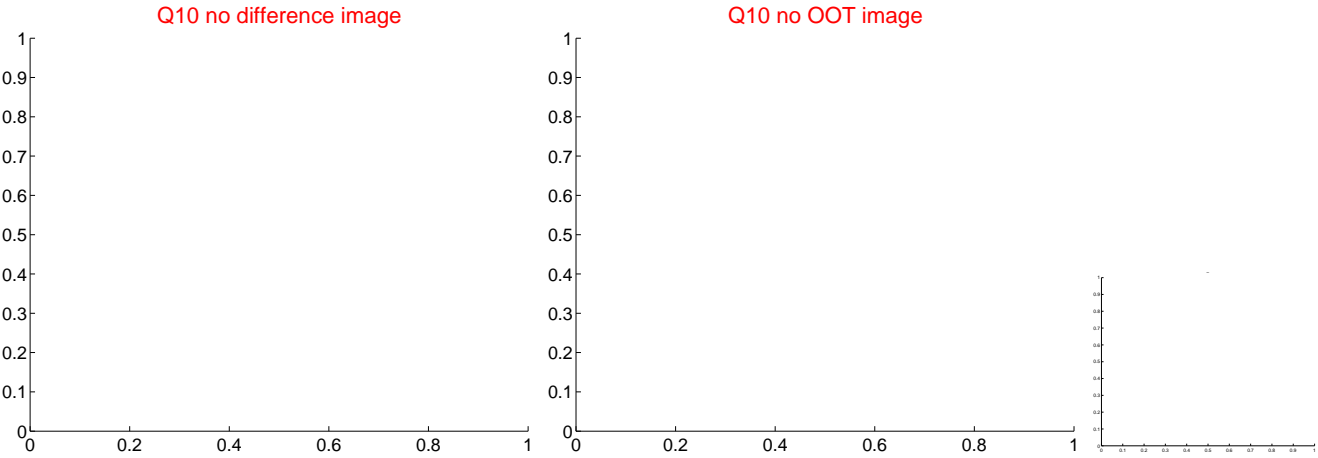
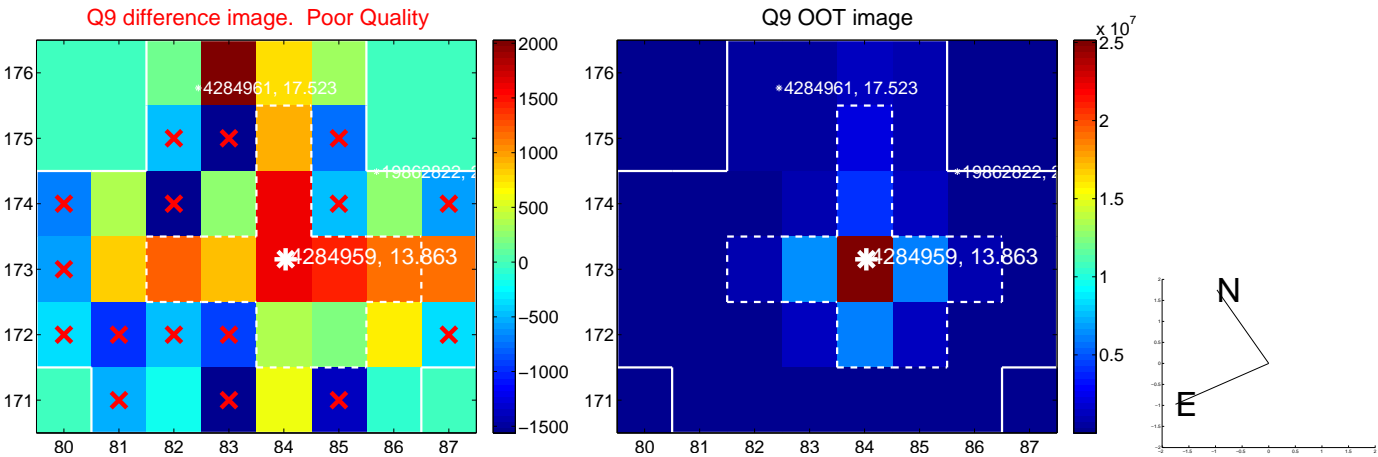
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



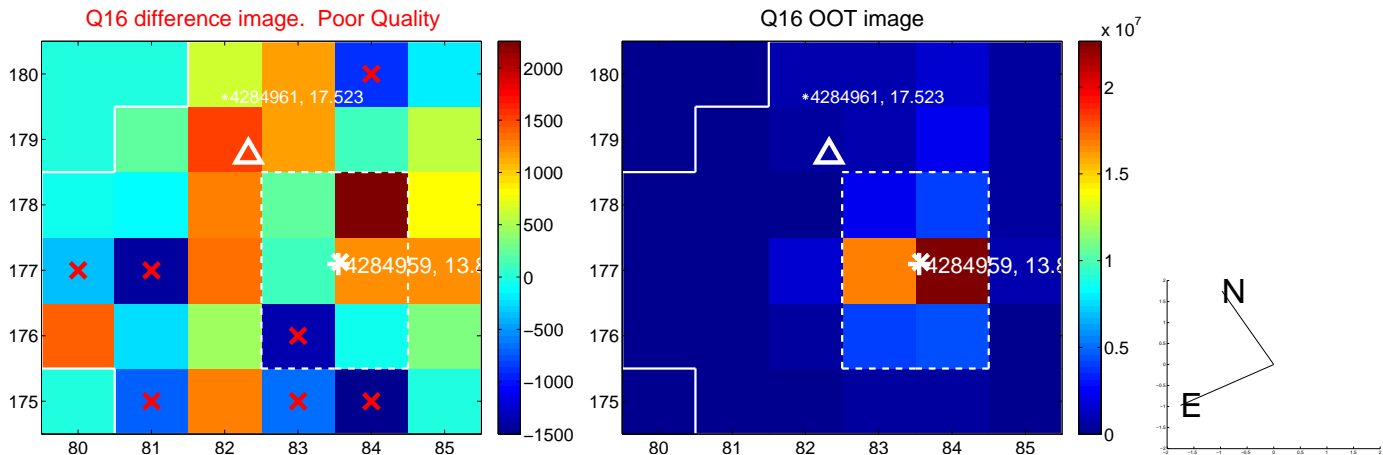
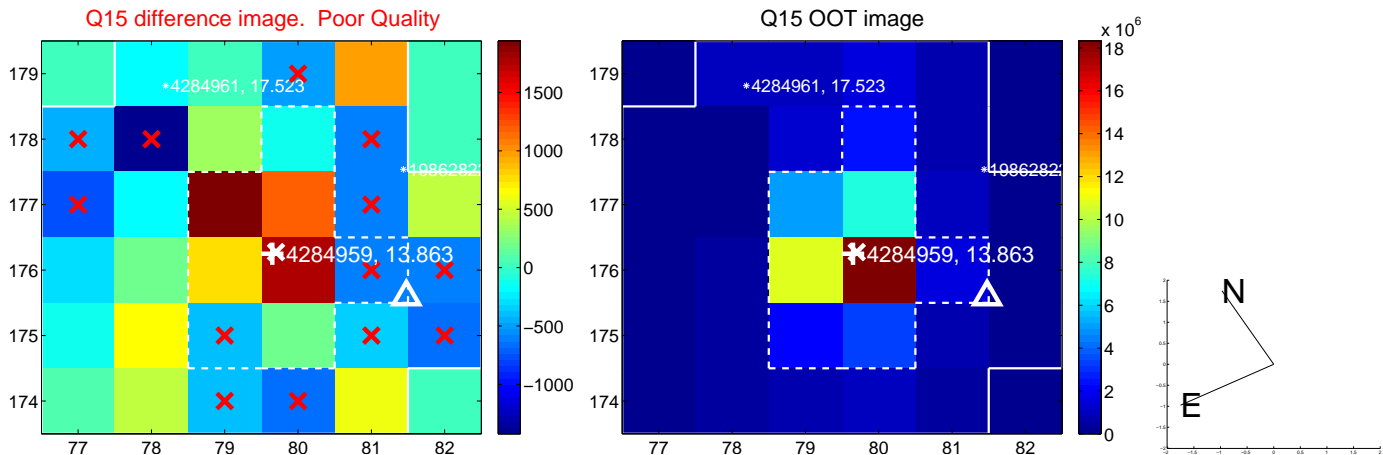
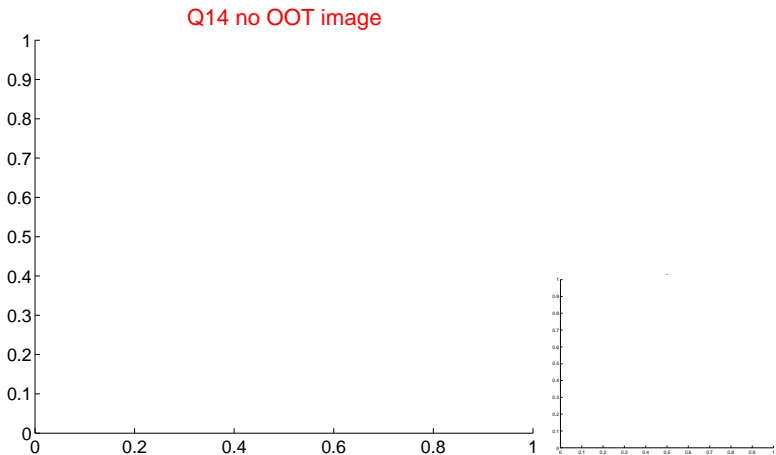
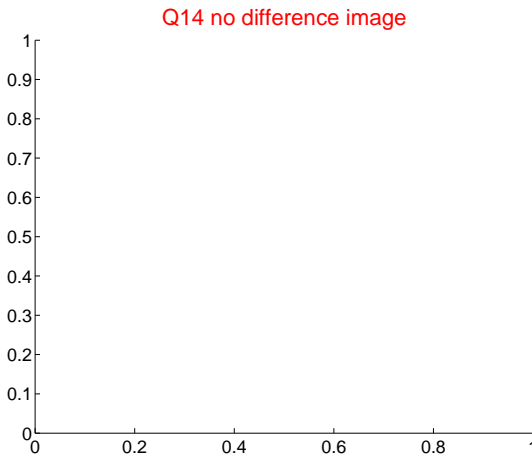
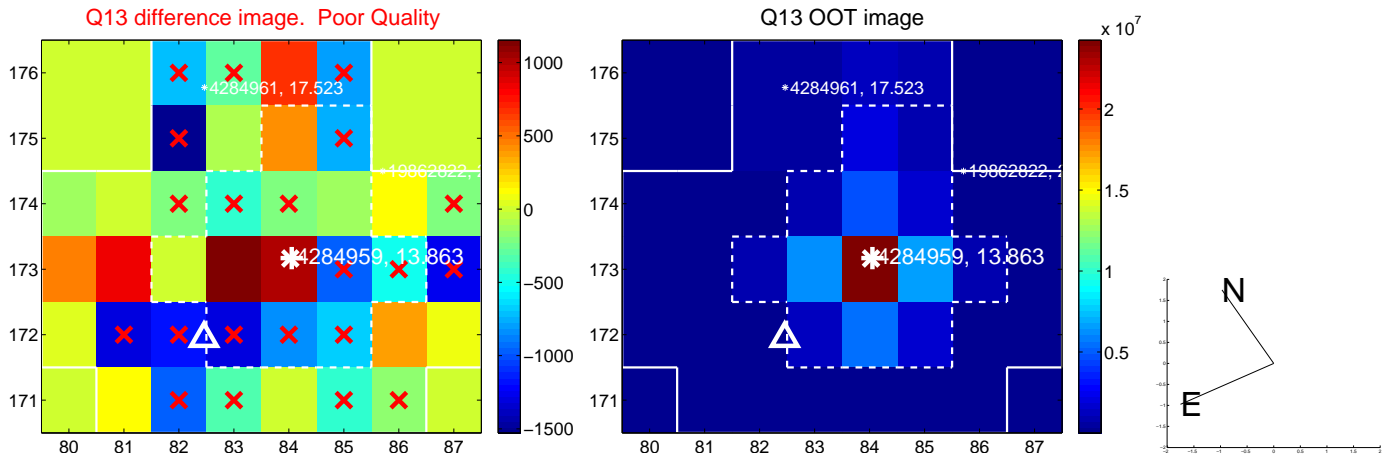
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



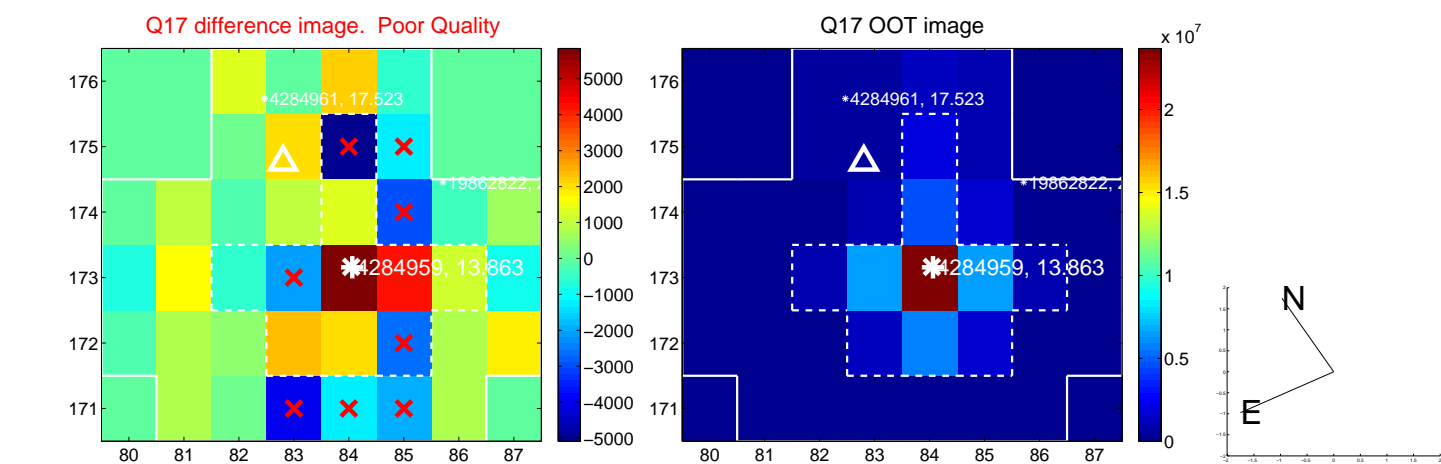
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



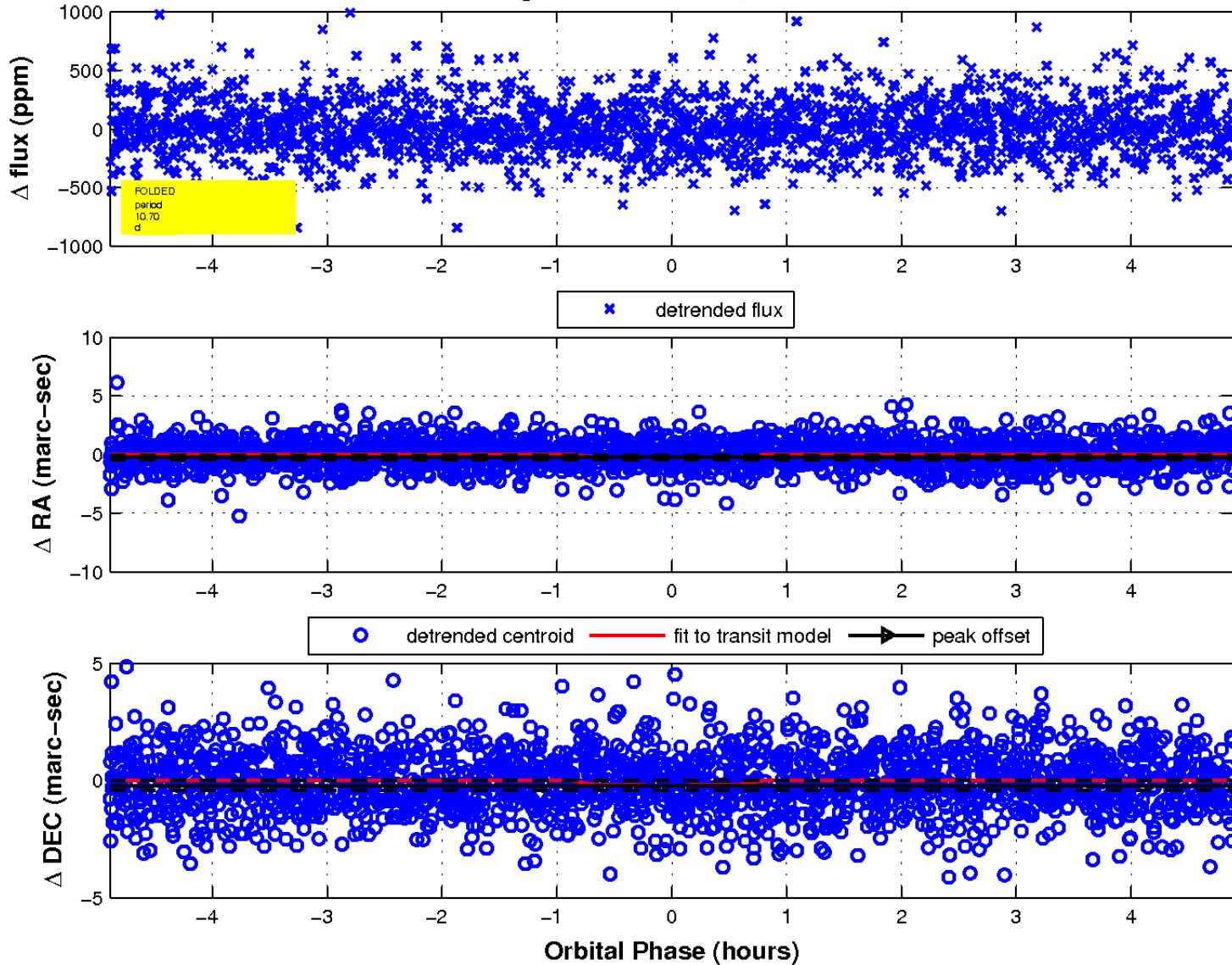
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

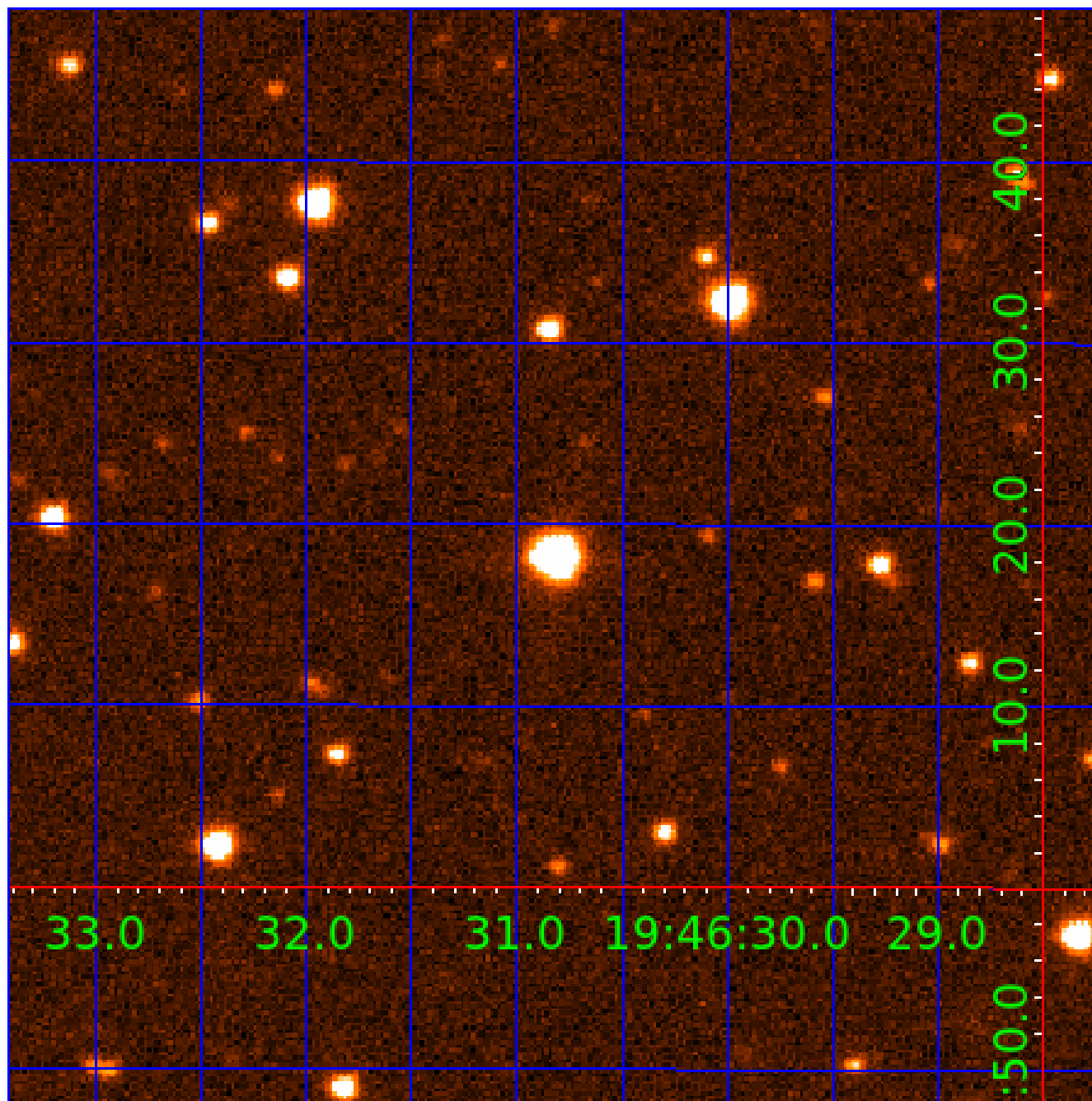


fluxWeightedCentroids, Planet 5 of 9



UKIRT Image

Declination



KIC 004284959

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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004284959-02	OBS	No	22.480554	136.553048	557.1	1.737	18.7	16.0	1.22	6731	2.92	104.39
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004284959-07	OBS	No	19.760540	147.133877	359.9	1.539	12.6	11.8	1.22	6731	2.43	123.97
004284959-08	OBS	No	15.793829	134.684111	799.9	2.000	11.9	-1.0	1.22	6731	3.50	167.14
004284959-09	OBS	No	19.757953	136.907984	357.3	1.958	12.7	11.4	1.22	6731	2.48	124.00

Robovetter Results

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004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

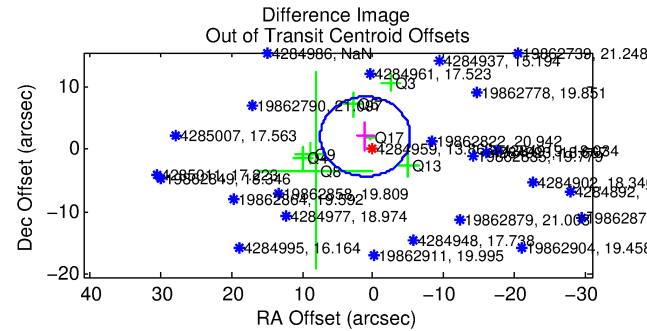
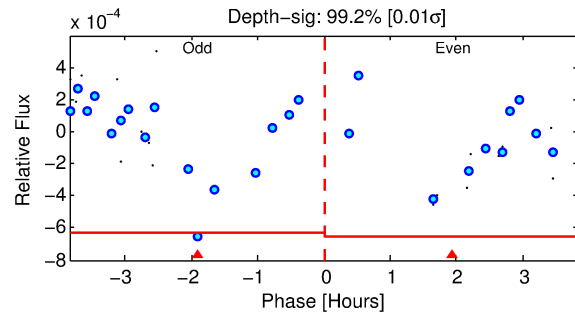
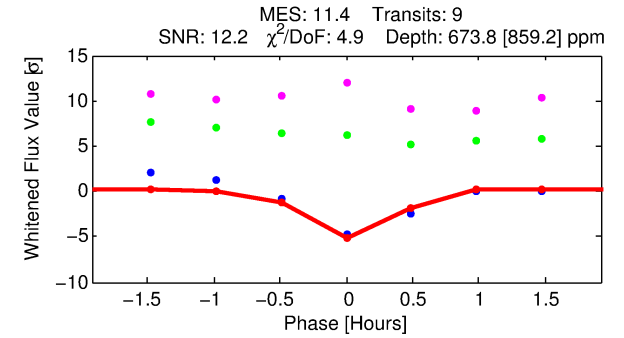
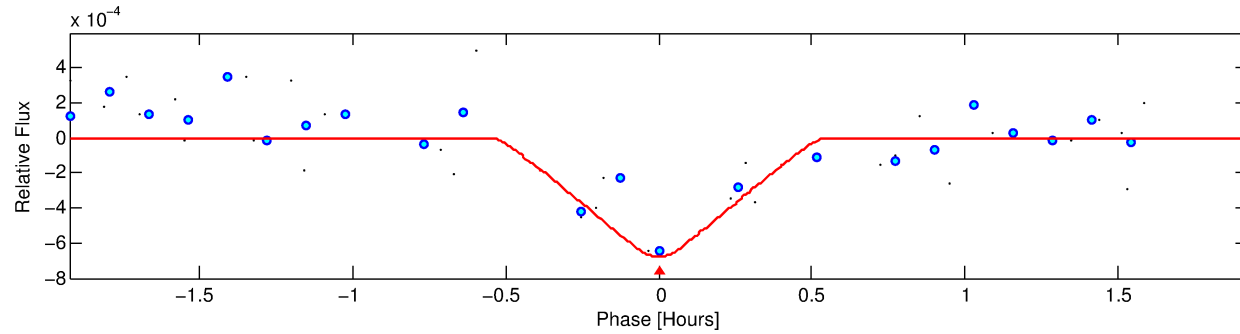
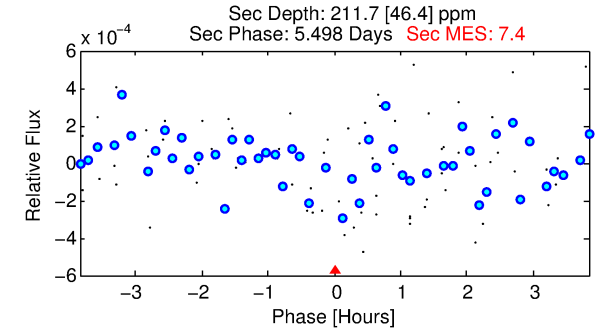
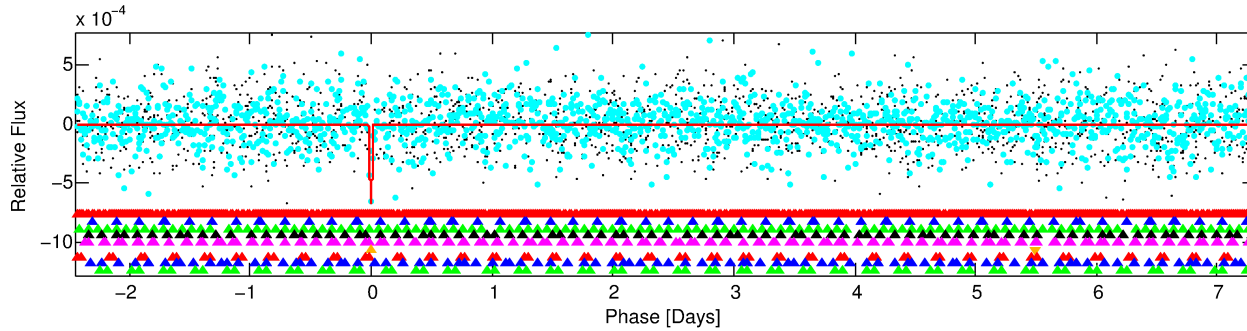
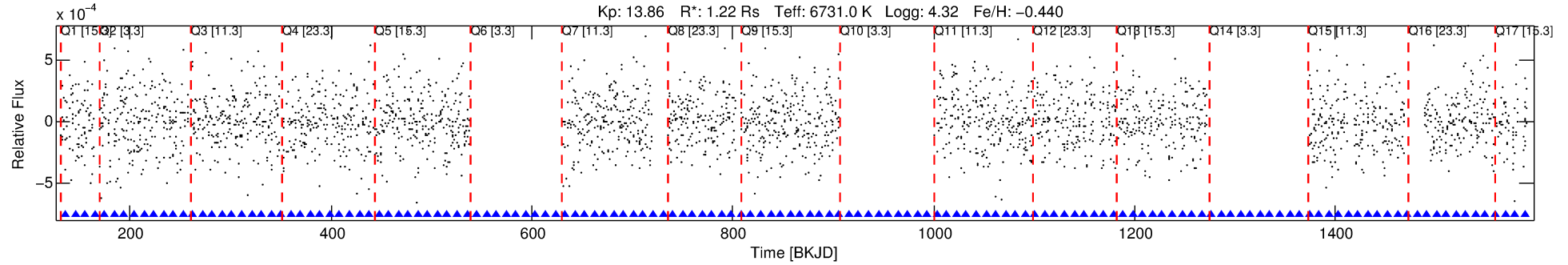
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004284959-06

No Significant Match Found

DV One-Page Summary

KIC: 4284959 Candidate: 6 of 9 Period: 9.748 d



DV Fit Results:

Period = 9.74806 [0.00008] d
Epoch = 135.8864 [0.0058] BKJD
Rp/R* = 0.0280 [0.0732]
a/R* = 62.36 [706.18]
b = 0.88 [3.28]
Seff = 318.06 [118.81]
Teff = 1077 [101] K
Rp = 3.74 [9.84] Re
a = 0.0931 [0.0223] AU
Ag = 72.32 [379.93] [0.19σ]
Teffp = 4855 [6365] K [0.59σ]

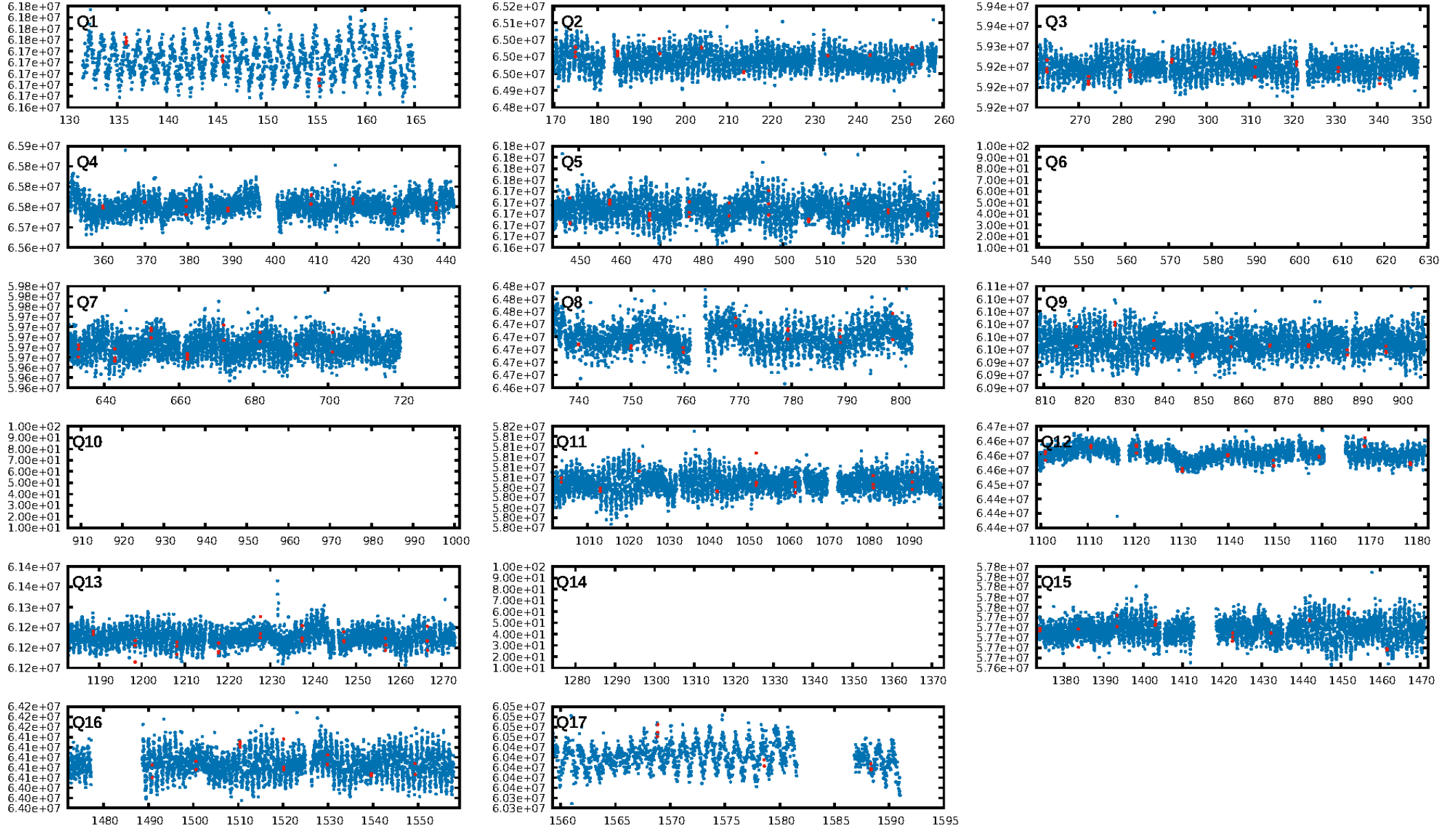
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.25σ]
LongPeriod-sig: 100.0% [12.98σ]
ModelChiSquare2-sig: 37.3%
ModelChiSquareGof-sig: 74.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 18.25
Centroid-sig: 41.7%
Centroid-so: 0.445 arcsec [0.97σ]
OotOffset-rm: 2.283 arcsec [1.07σ]
KicOffset-rm: 2.190 arcsec [1.03σ]
OotOffset-st: 0/1/2/4 [7]
KicOffset-st: 0/1/2/4 [7]
DiffImageQuality-fgm: 0.29 [2/7]
DiffImageOverlap-fno: 0.91 [10/11]

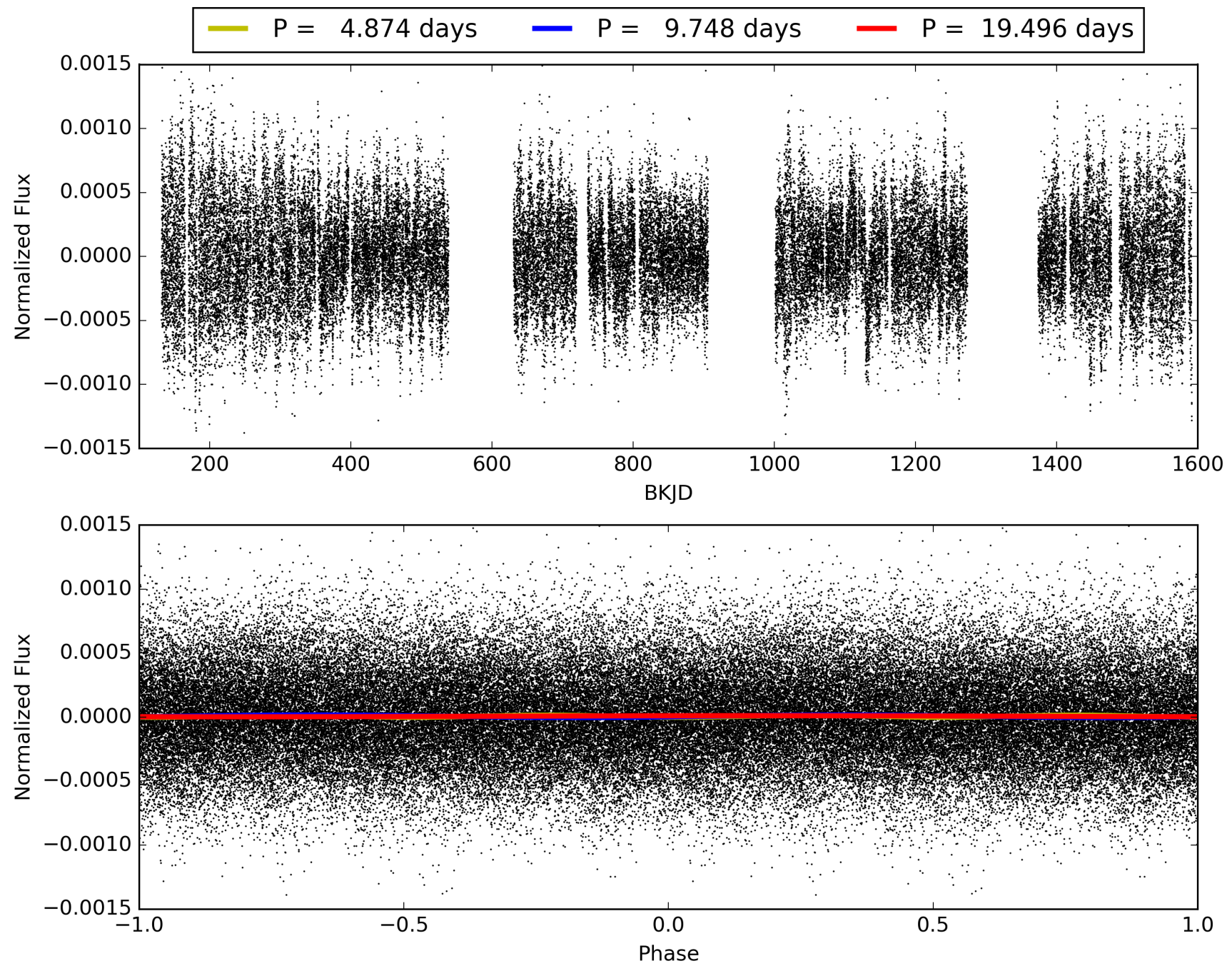
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:12:39 Z

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

TCE 004284959-06, PDC Light Curves

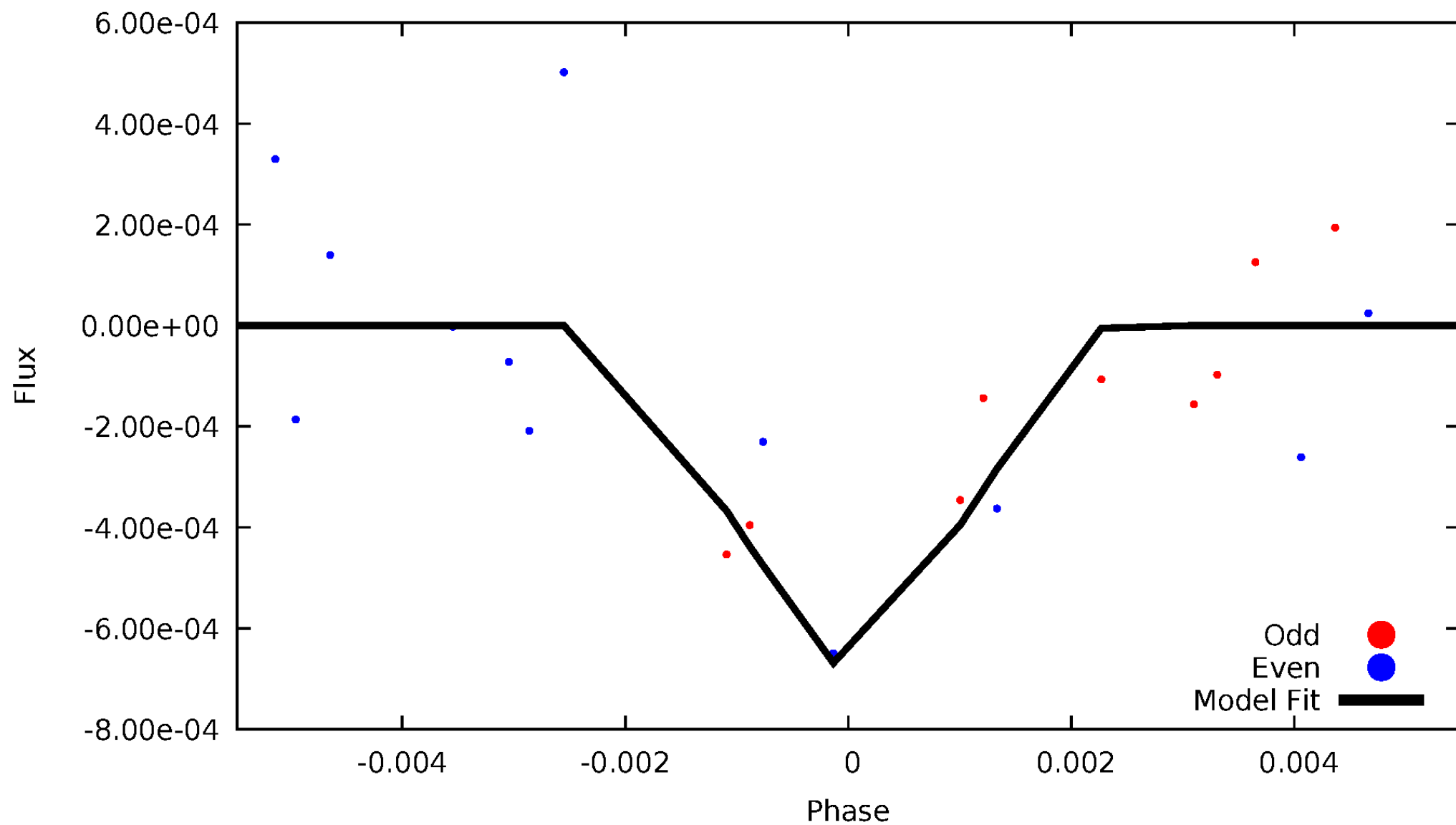


TCE 004284959-06



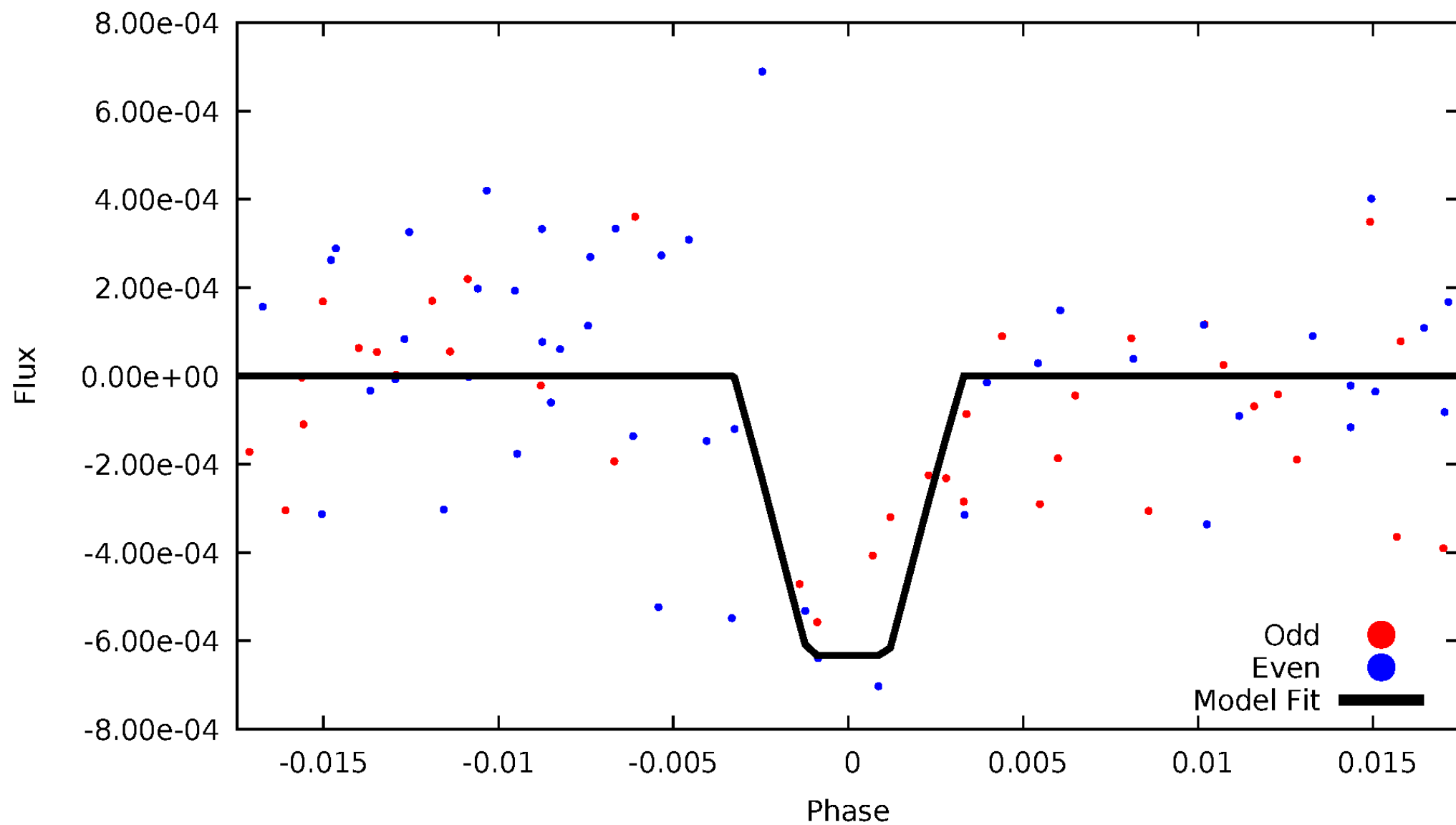
DV Odd/Even

TCE 004284959-06



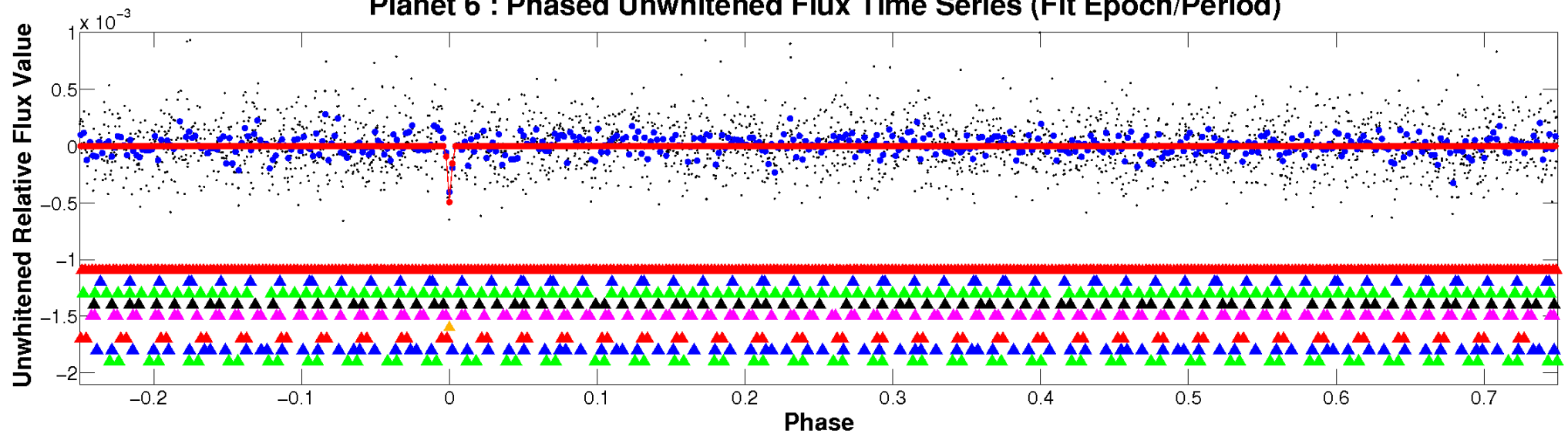
ALT Odd/Even

TCE 004284959-06

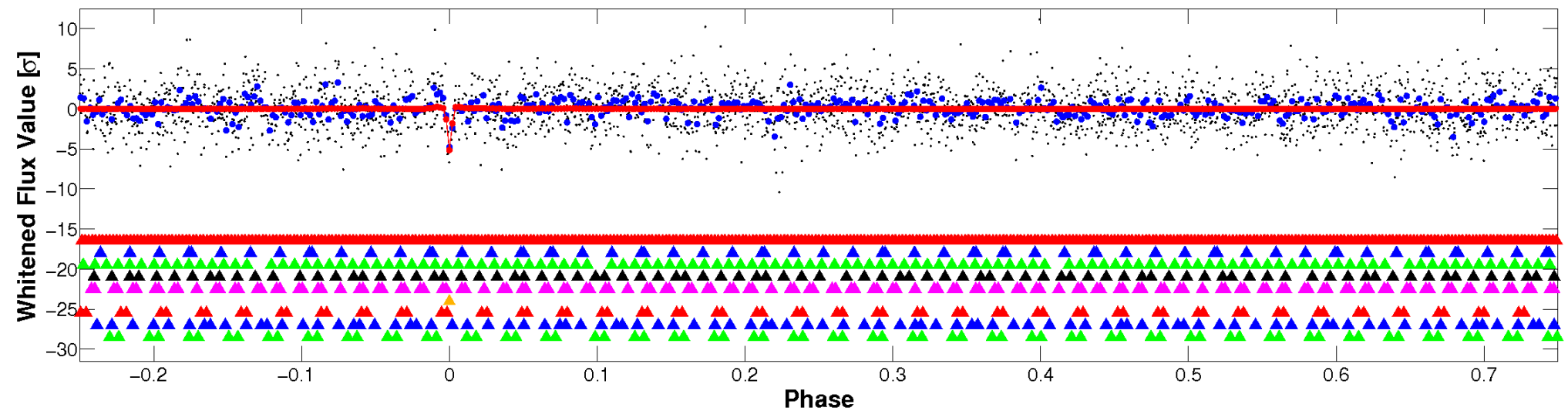


Non-Whitened Vs. Whitened Light Curve

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

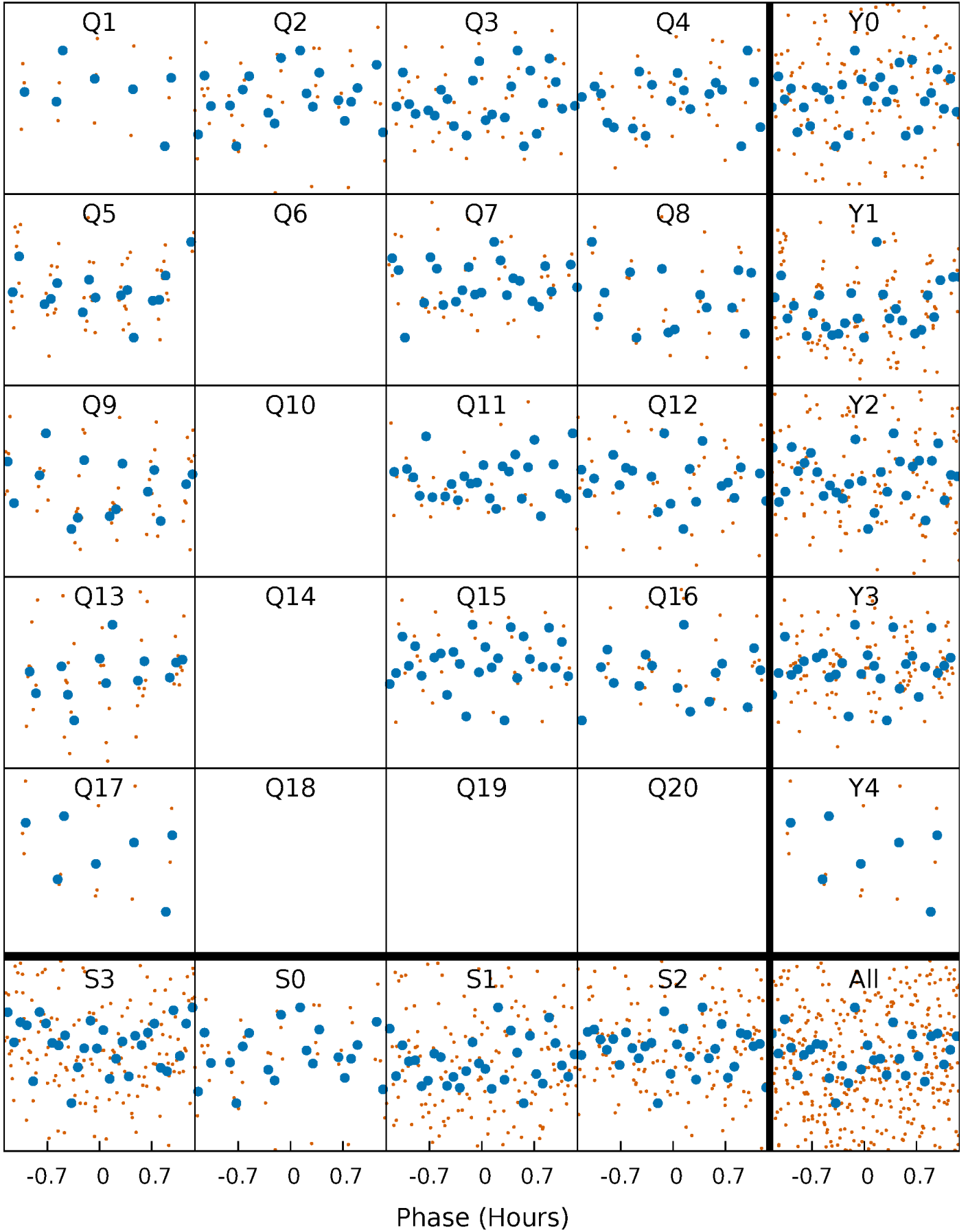


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



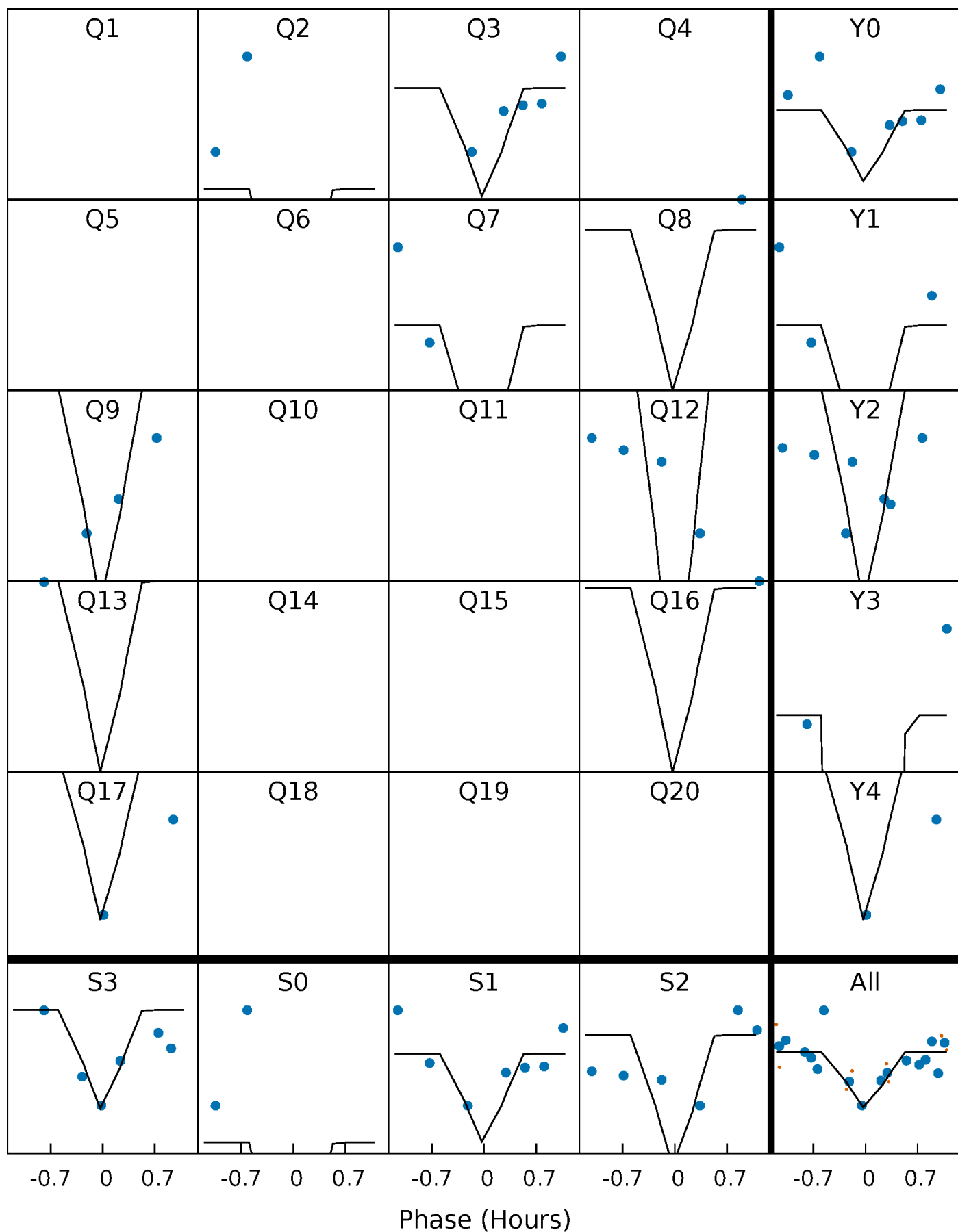
PDC Quarter-Phased Transit Curves

TCE 004284959-06 P= 9.748056 Days $T_0=135.886355$ (BKJD)



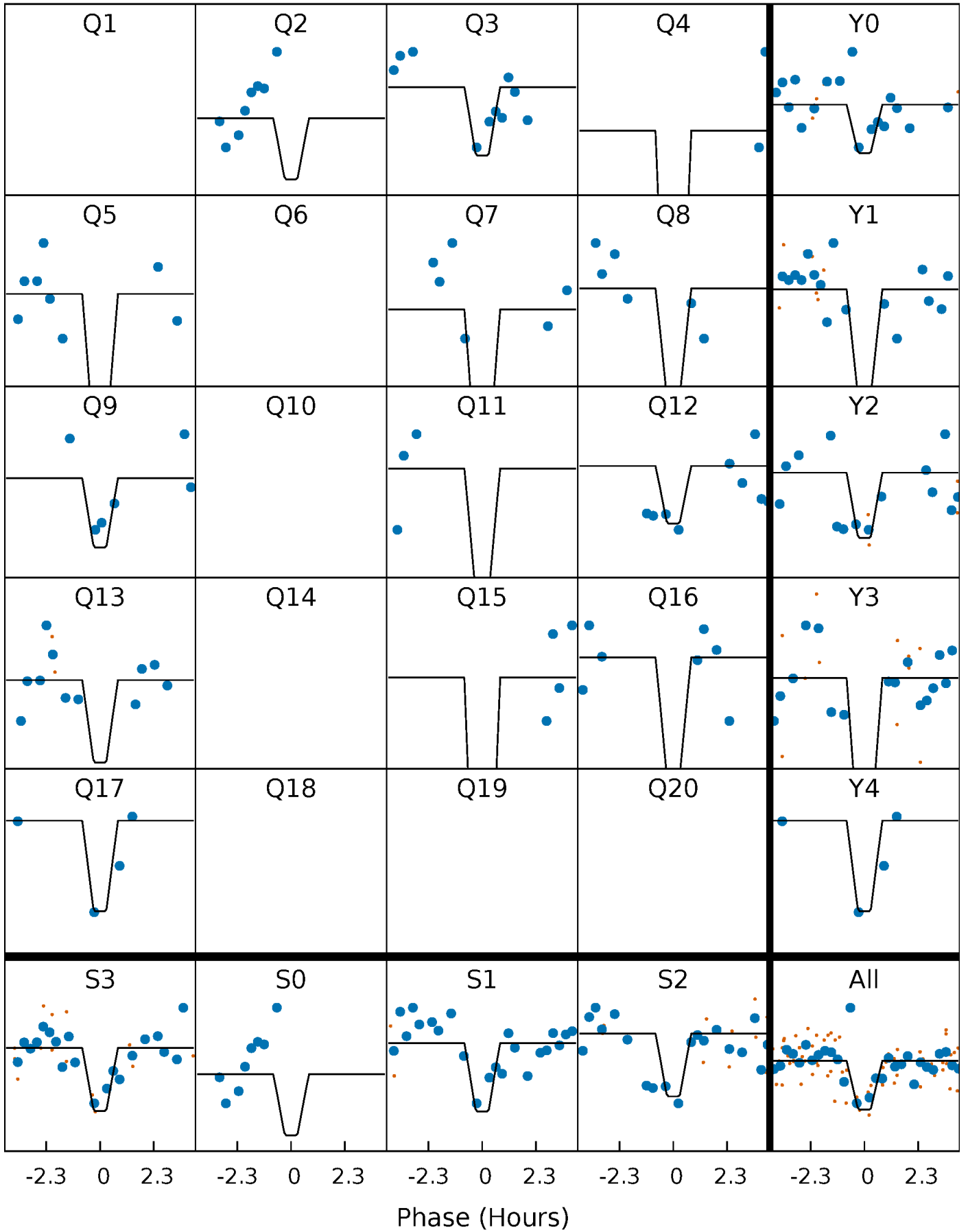
DV Quarter-Phased Transit Curves

TCE 004284959-06 P= 9.748056 Days $T_0=135.886355$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

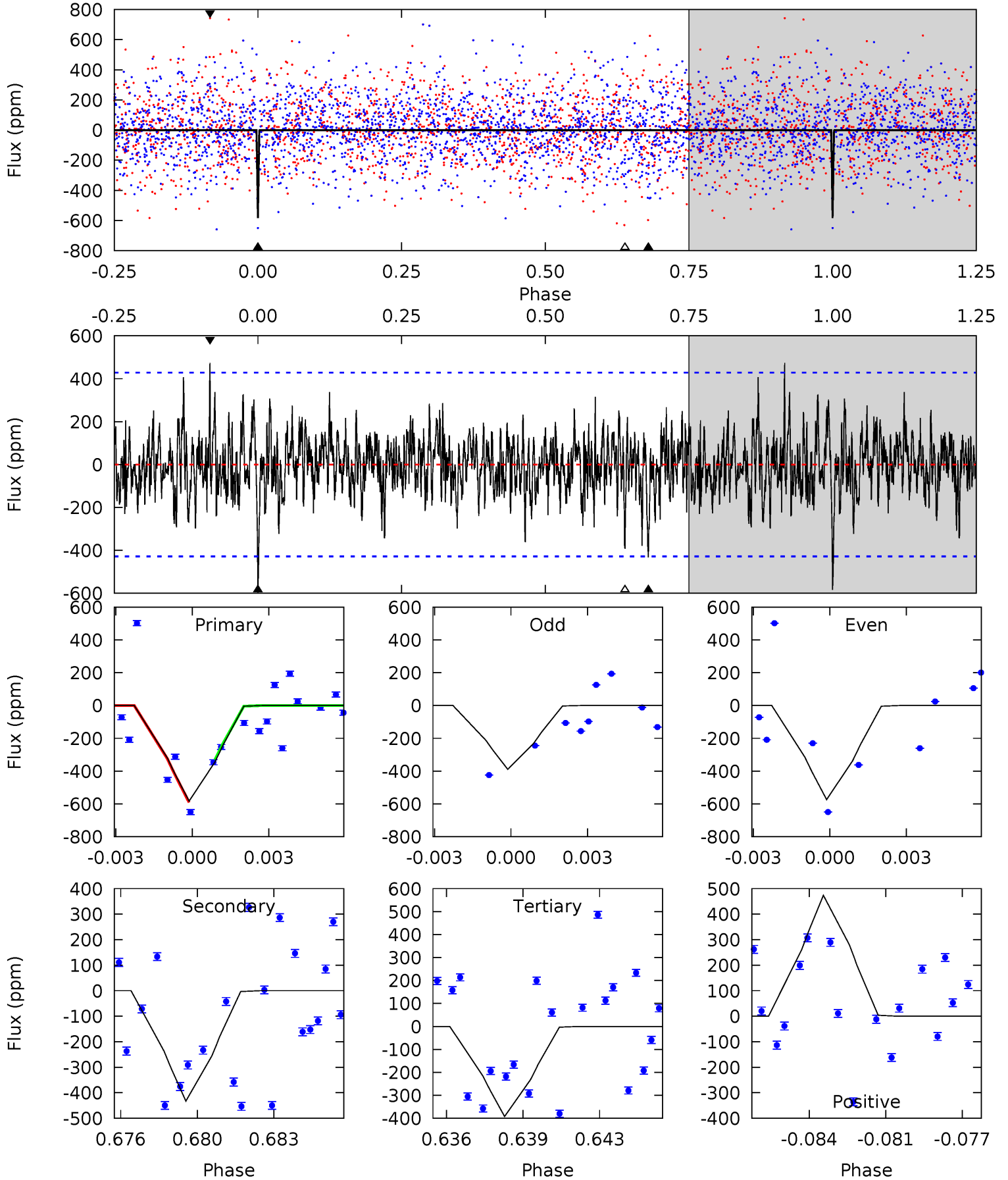
TCE 004284959-06 P= 9.748111 Days $T_0=135.885251$ (BKJD)



DV Model-Shift Uniqueness Test

004284959-06, P = 9.748056 Days, E = 126.138299 Days

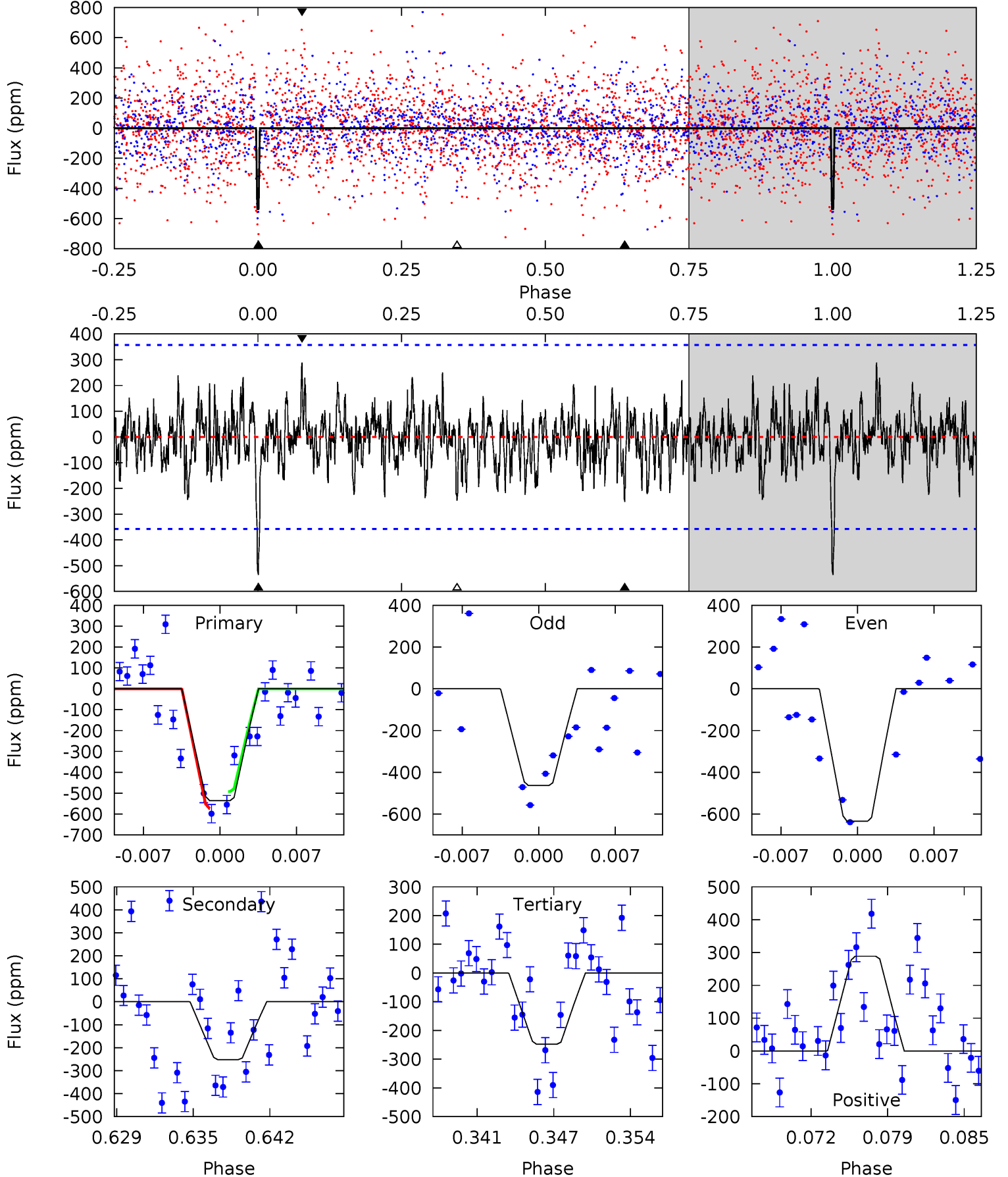
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.12	5.28	4.78	5.78	5.23	2.93	1.40	2.33	1.33	0.50	-0.50	1.13	1.12	0.45	1.60



Alt Model-Shift Uniqueness Test

004284959-06, P = 9.748111 Days, E = 126.137140 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.66	3.61	3.54	4.13	5.11	2.72	1.23	4.12	3.53	0.06	-0.52	1.15	1.09	0.35	0.57



Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-433 ± 82	$8.48^{+8.67}_{-6.01}$	1521^{+117}_{-85}	4148^{+3078}_{-877}	28^{+301}_{-21}
Alt.	-252 ± 70	$7.53^{+8.98}_{-5.35}$	1516^{+101}_{-81}	3906^{+3152}_{-897}	21^{+251}_{-17}

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

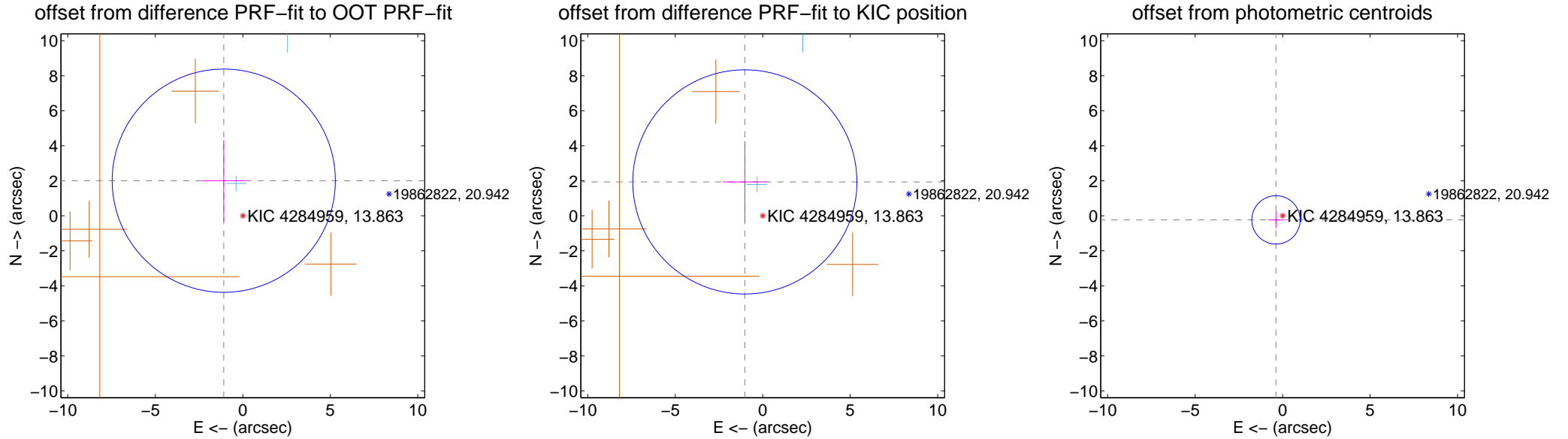
DV Centroid Data

Supplemental centroid analysis for 004284959-06. Kepler magnitude: 13.86. Transit SNR 12.24

There are 2 quarters with good PRF difference image offsets

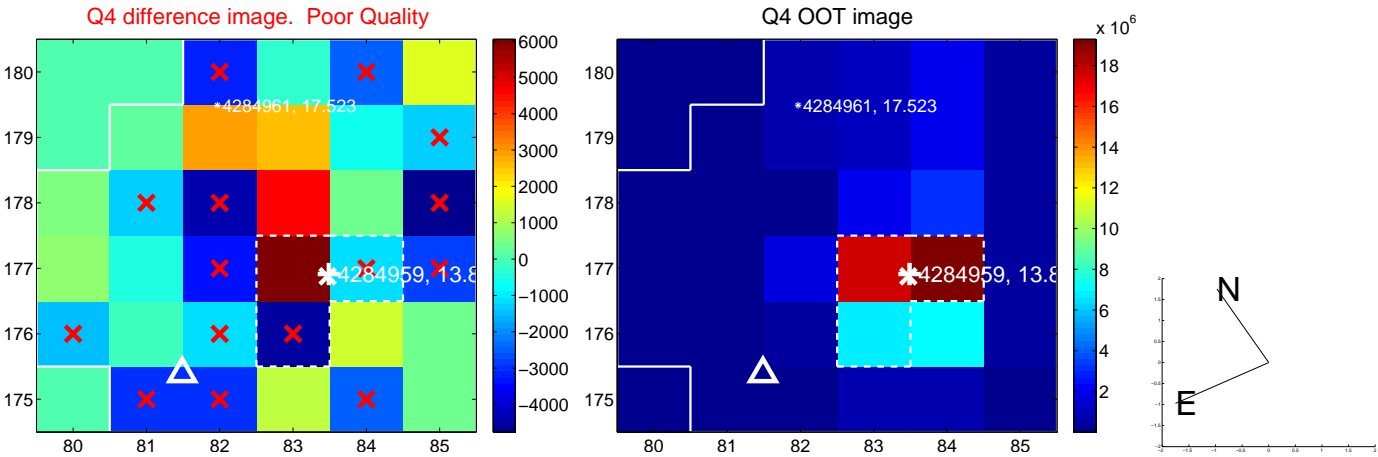
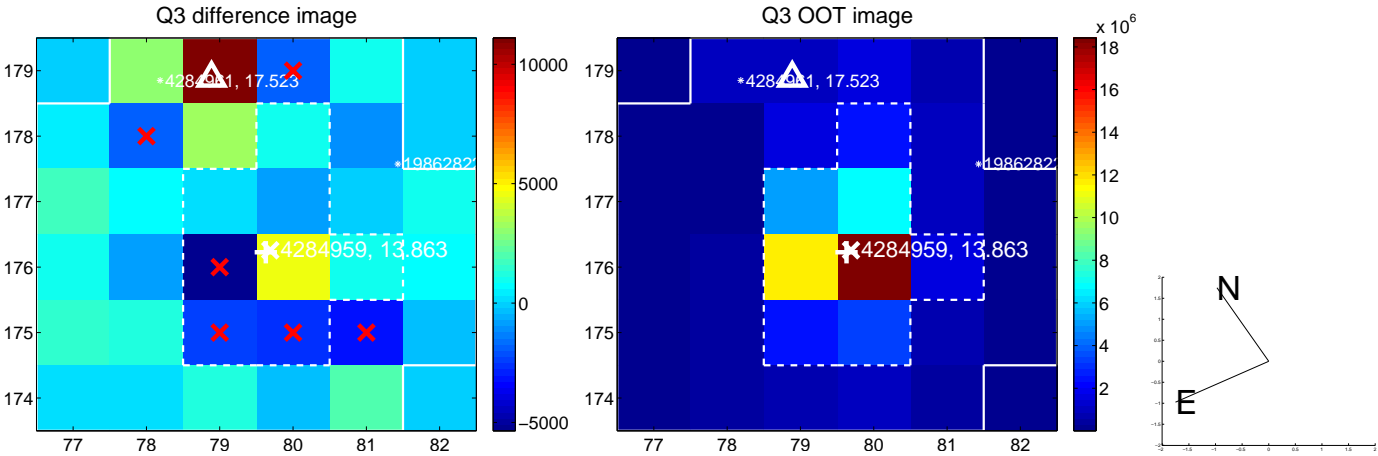
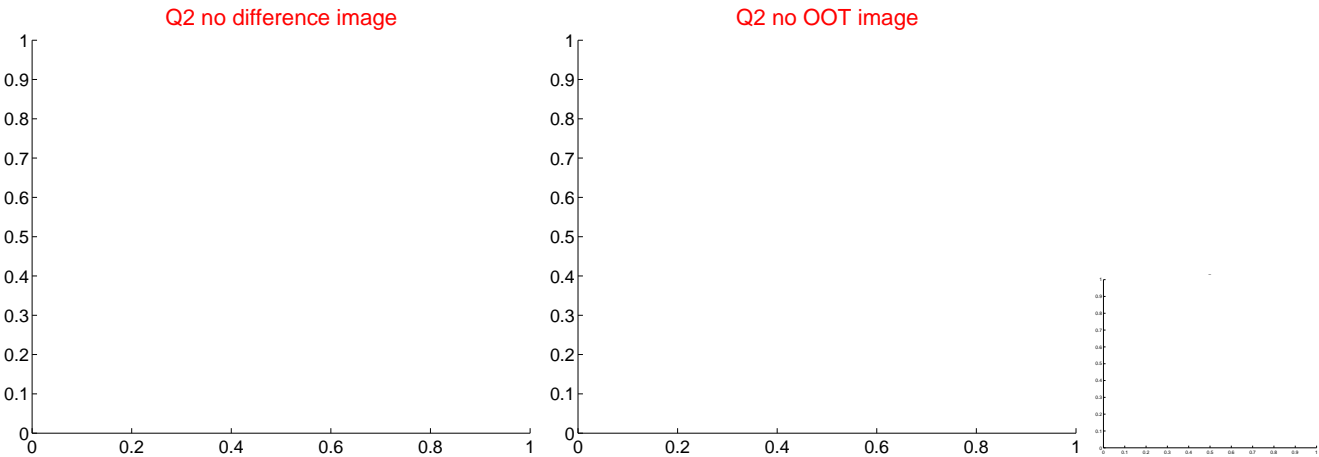
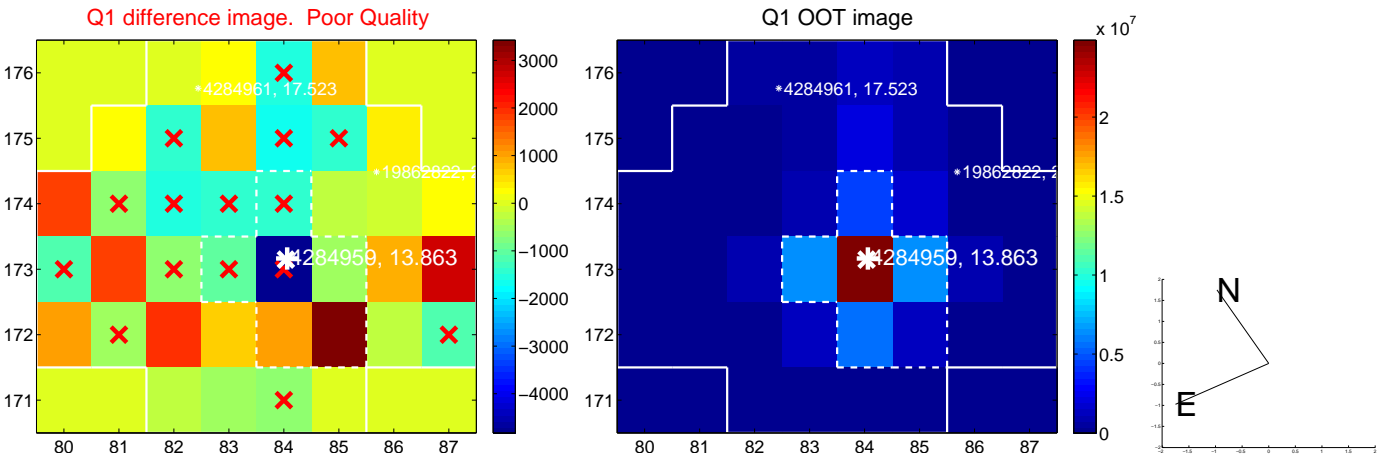
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.283 ± 2.126	1.07	1.089 ± 1.247	2.007 ± 2.322
PRF-fit source offset from KIC position	2.190 ± 2.135	1.03	1.022 ± 1.247	1.937 ± 2.322
photometric centroid source offset	0.45 ± 0.46	0.97	0.38 ± 0.45	-0.23 ± 0.48

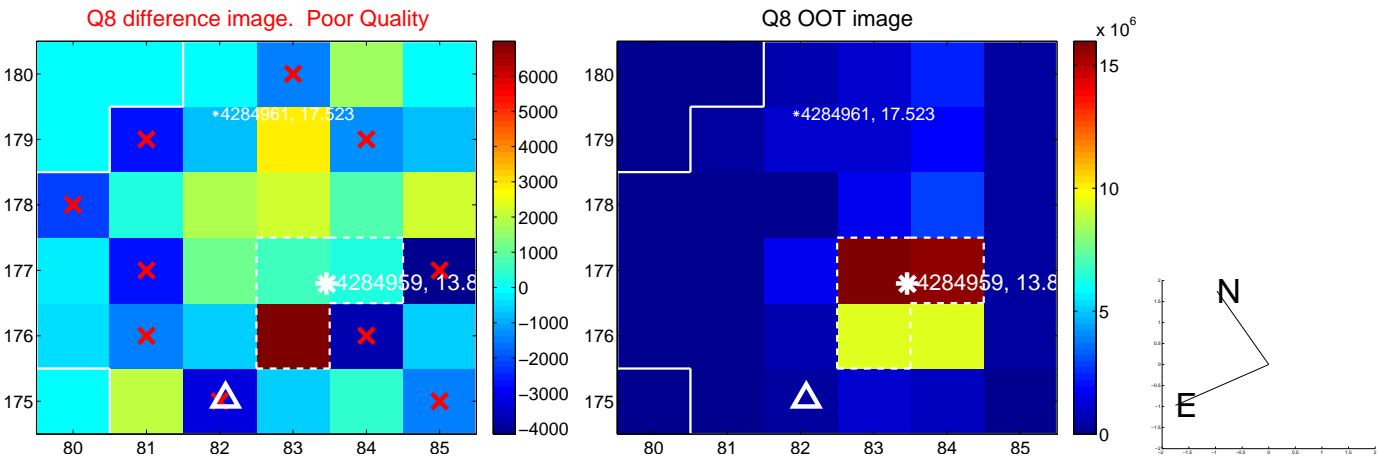
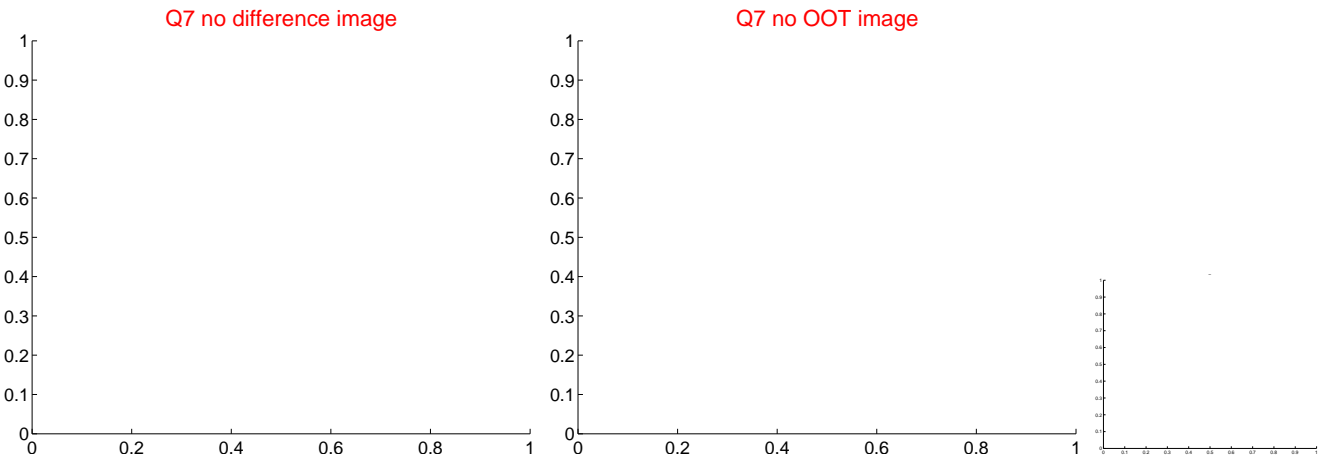
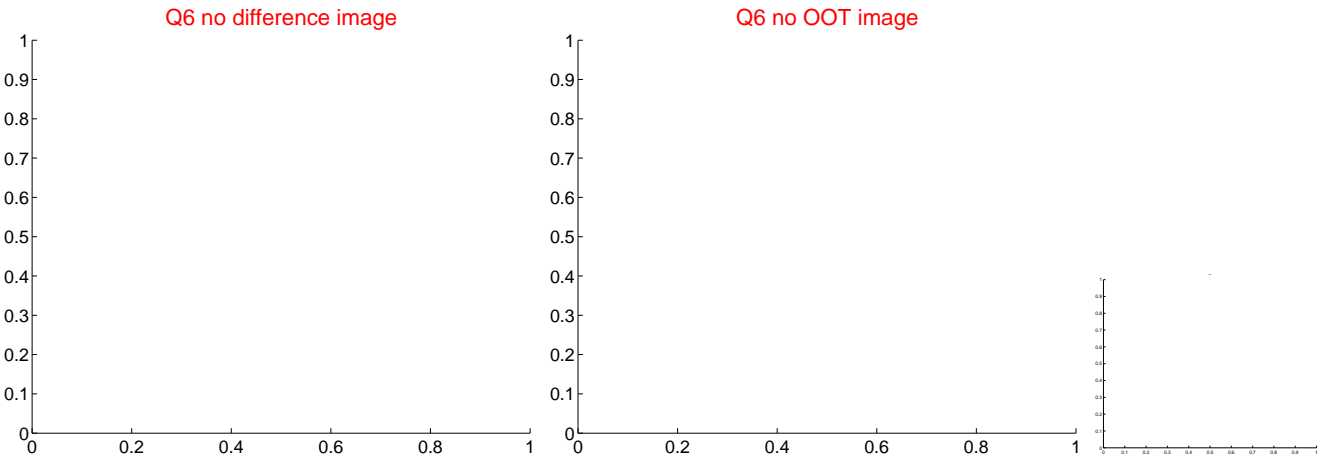
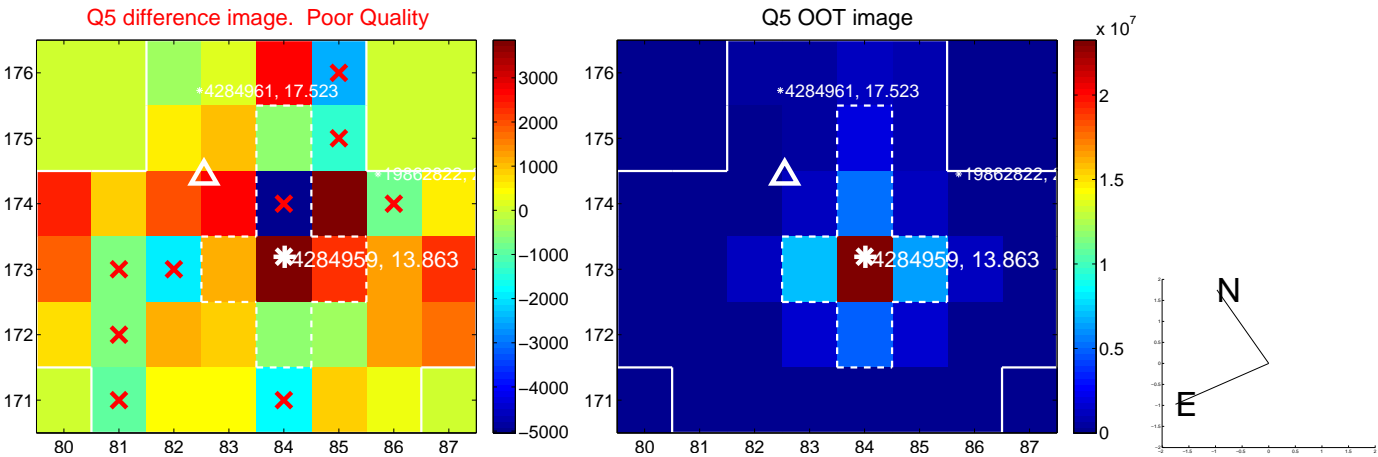


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

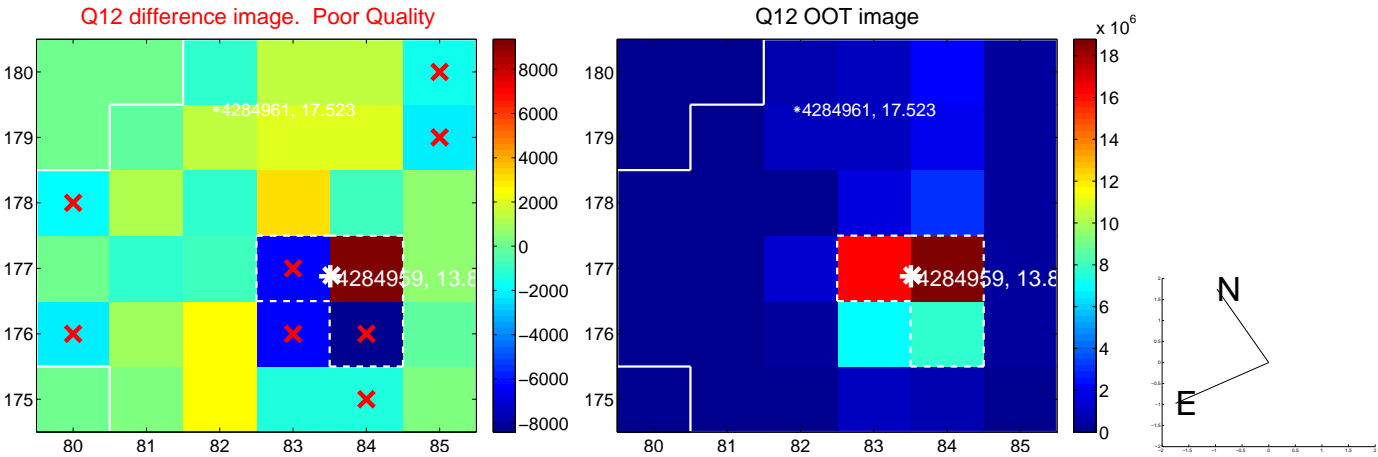
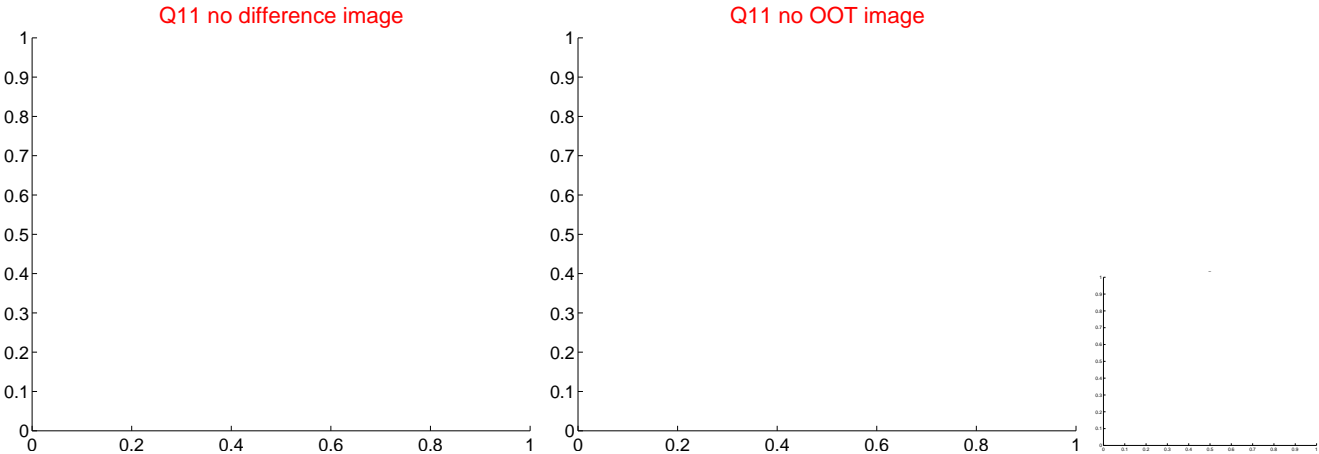
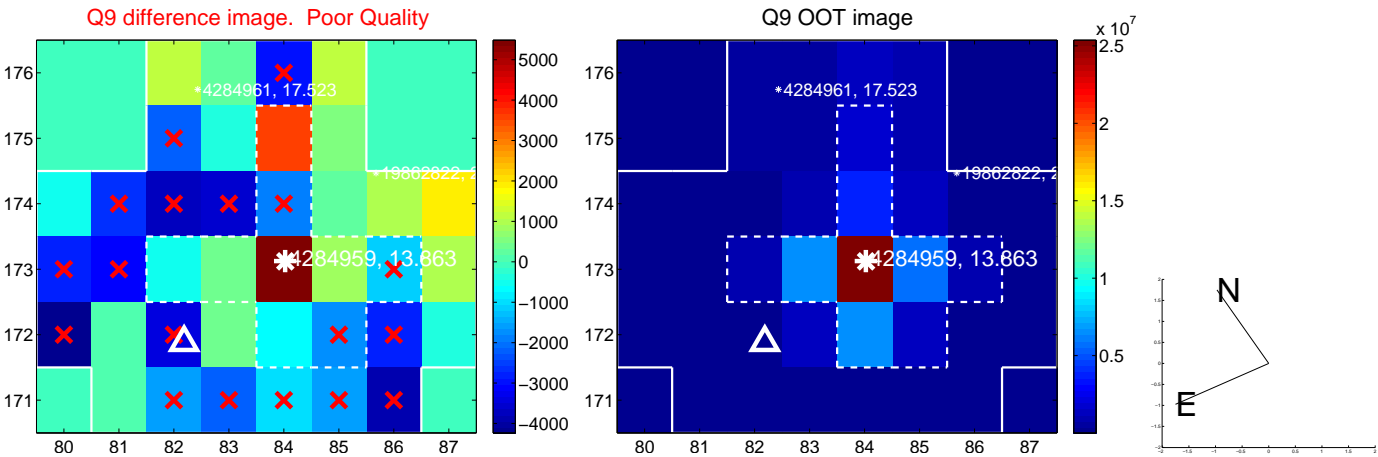
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



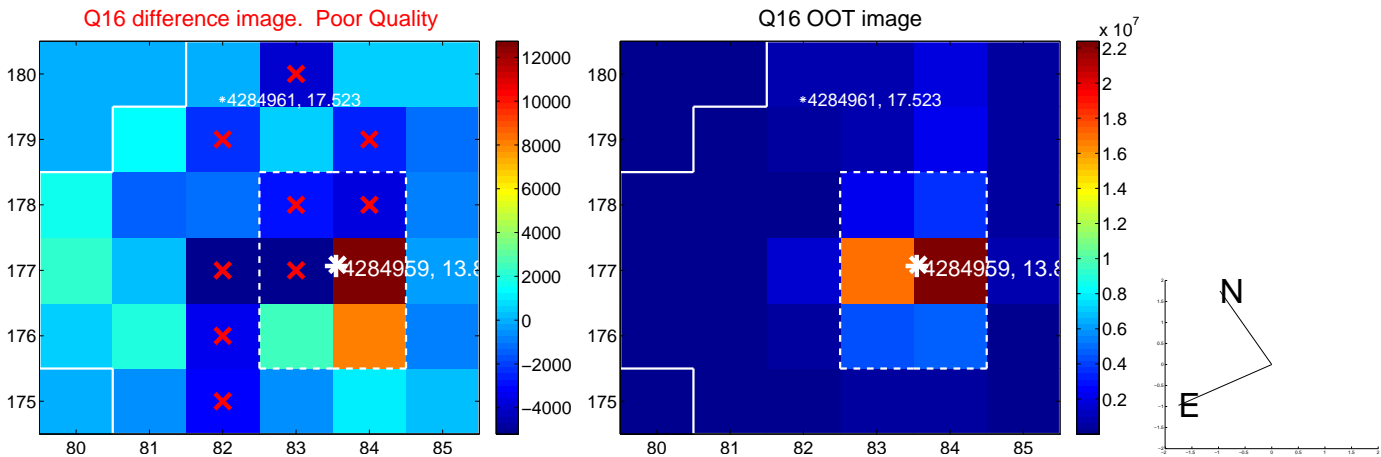
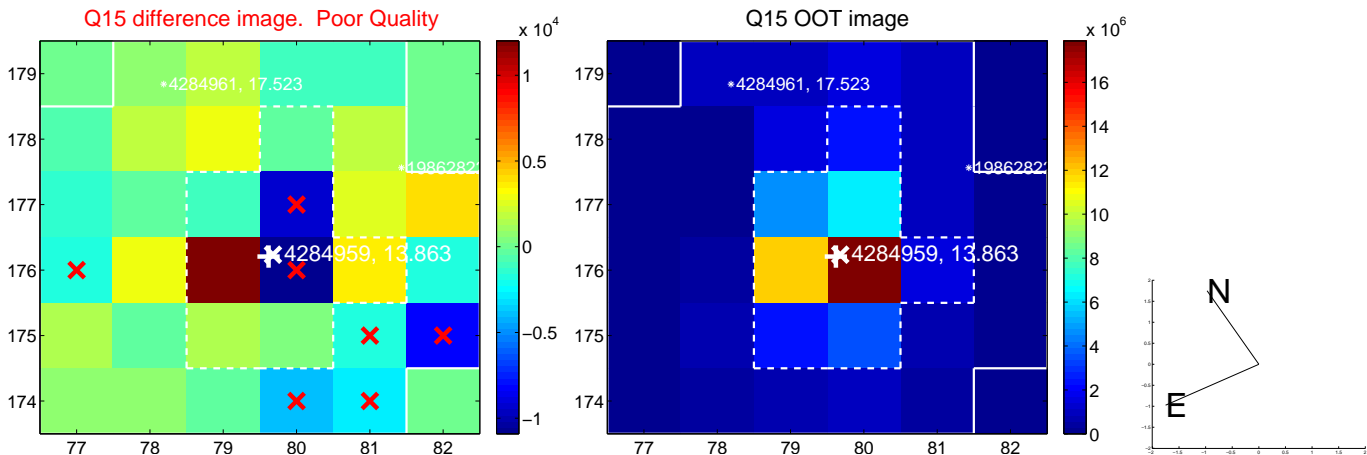
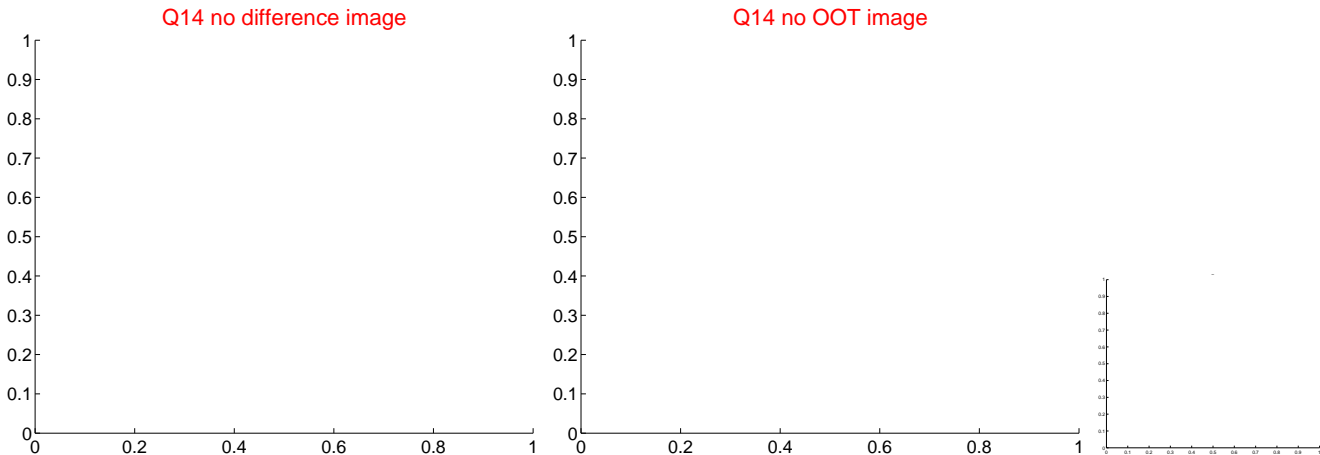
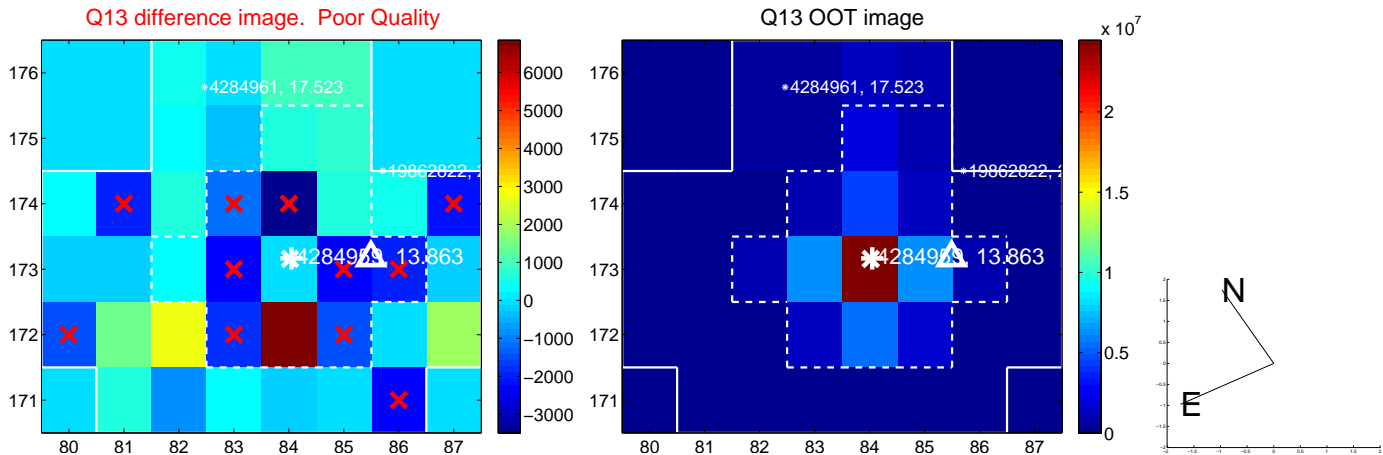
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



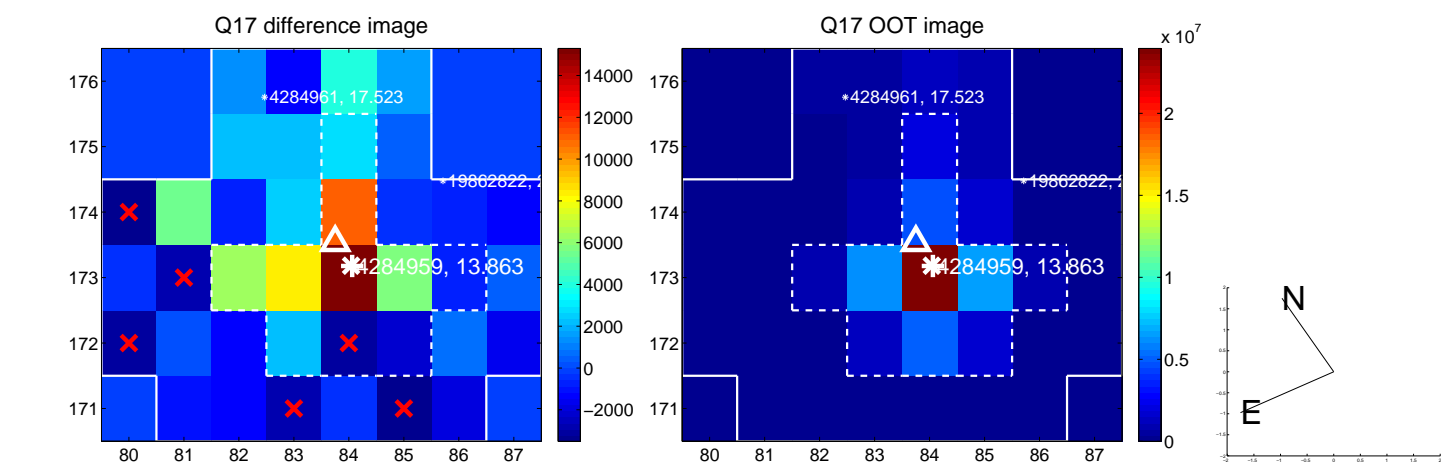
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



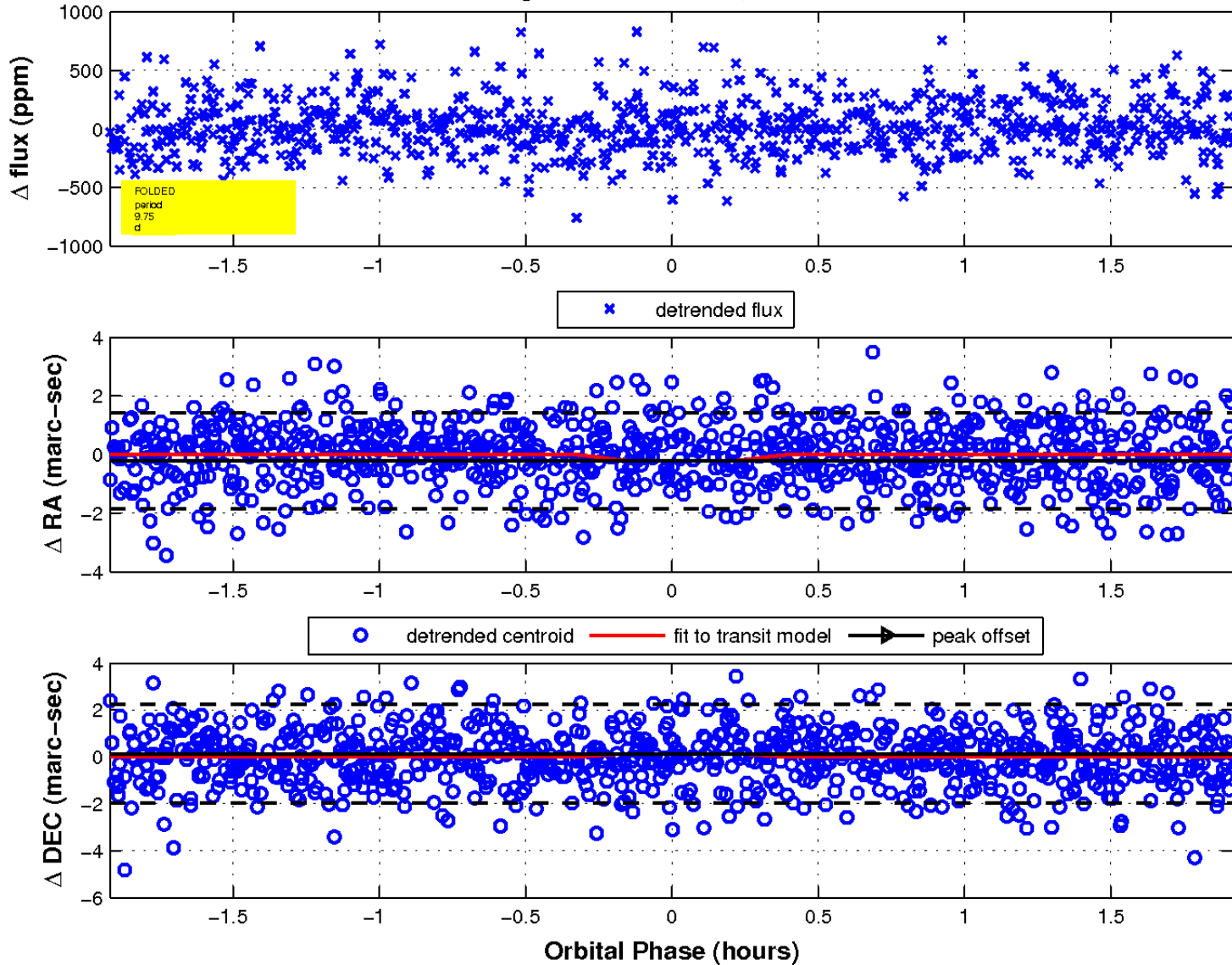
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

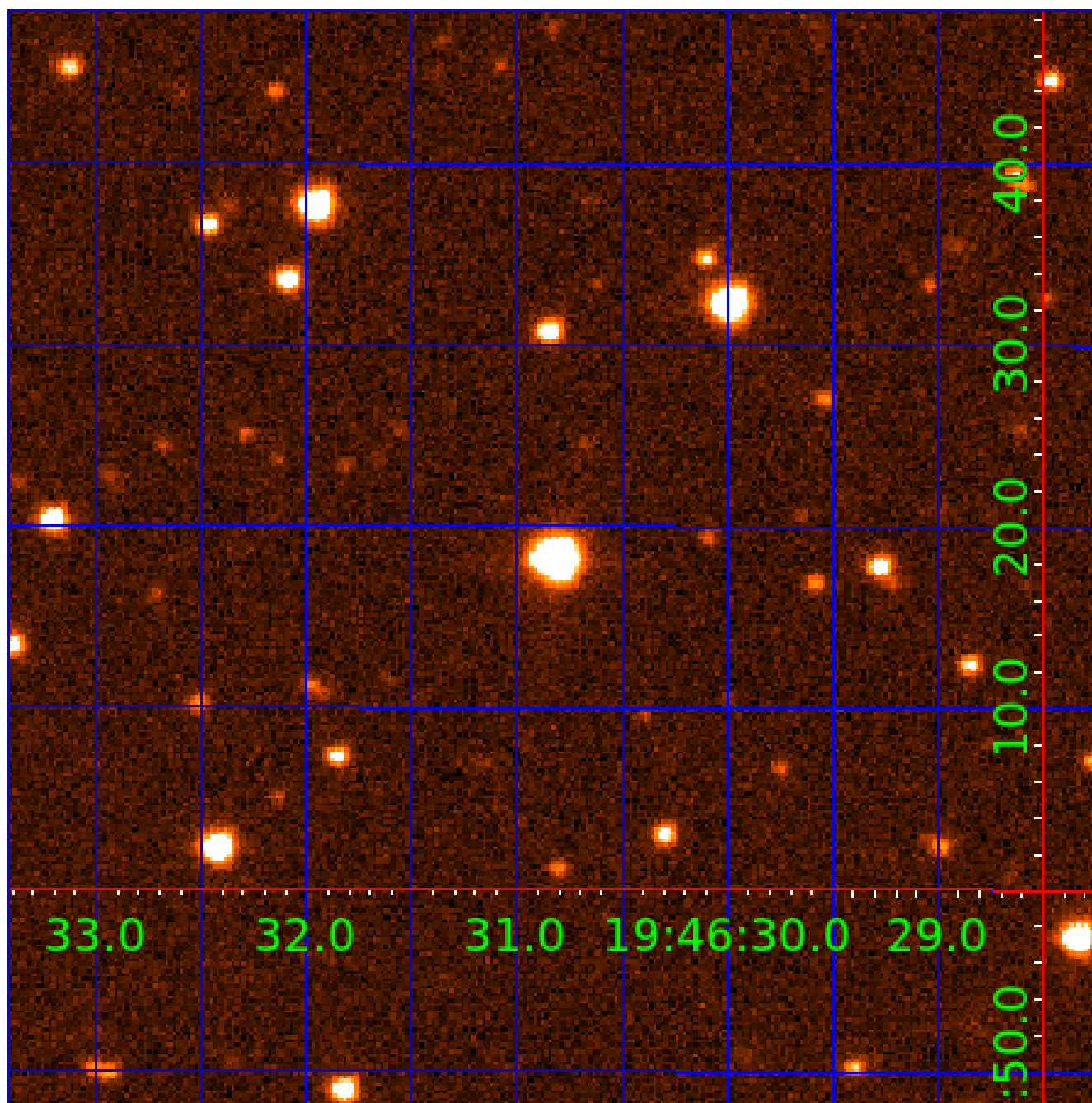


fluxWeightedCentroids, Planet 6 of 9



UKIRT Image

Declination



KIC 004284959

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})
004284959-01	OBS	No	1.192696	132.479950	0.0	8.808	8.7	0.0	1.22	6731	0.00	5236.33
004284959-02	OBS	No	22.480554	136.553048	557.1	1.737	18.7	16.0	1.22	6731	2.92	104.39
004284959-03	OBS	No	11.991718	139.115641	341.7	2.179	14.6	15.0	1.22	6731	2.59	241.30
004284959-04	OBS	No	16.423993	145.063114	362.2	1.746	14.6	12.9	1.22	6731	2.52	158.65
004284959-05	OBS	No	10.695476	141.822775	313.7	1.630	15.3	11.7	1.22	6731	2.47	281.06
004284959-06	OBS	No	9.748056	135.886355	673.8	0.641	11.4	12.2	1.22	6731	3.73	318.06
004284959-07	OBS	No	19.760540	147.133877	359.9	1.539	12.6	11.8	1.22	6731	2.43	123.97
004284959-08	OBS	No	15.793829	134.684111	799.9	2.000	11.9	-1.0	1.22	6731	3.50	167.14
004284959-09	OBS	No	19.757953	136.907984	357.3	1.958	12.7	11.4	1.22	6731	2.48	124.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004284959-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

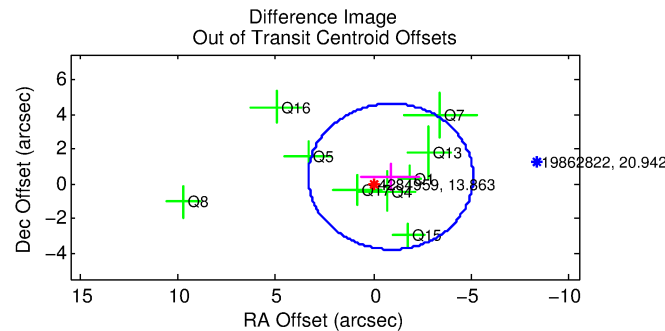
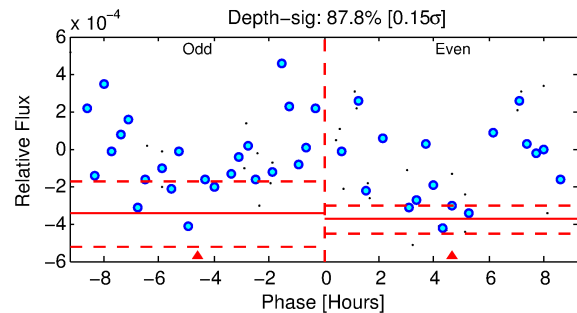
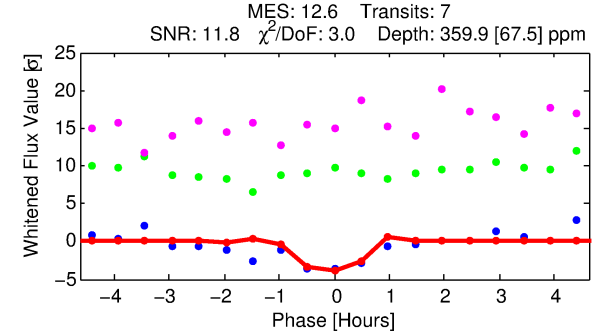
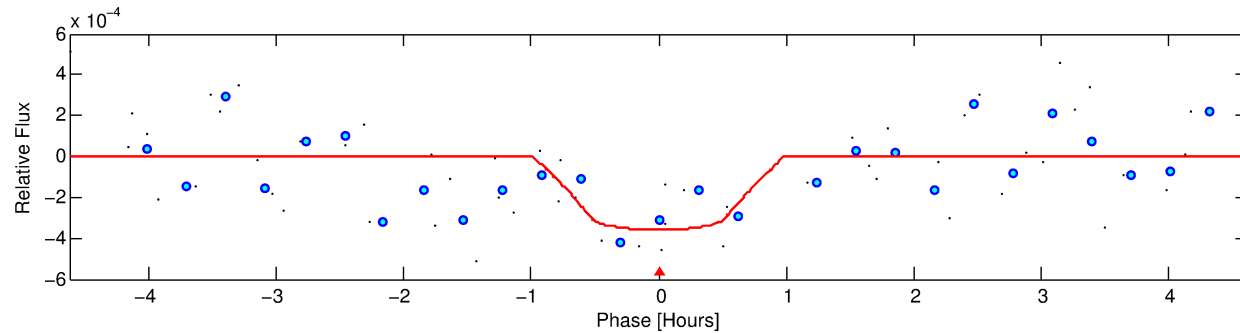
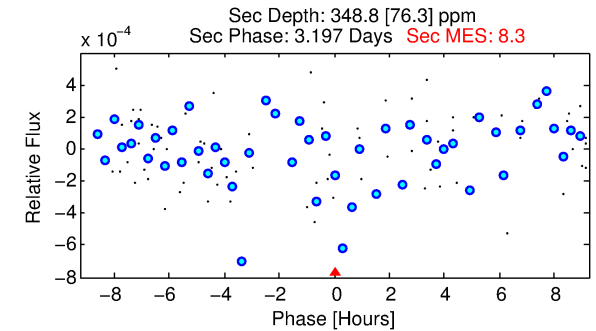
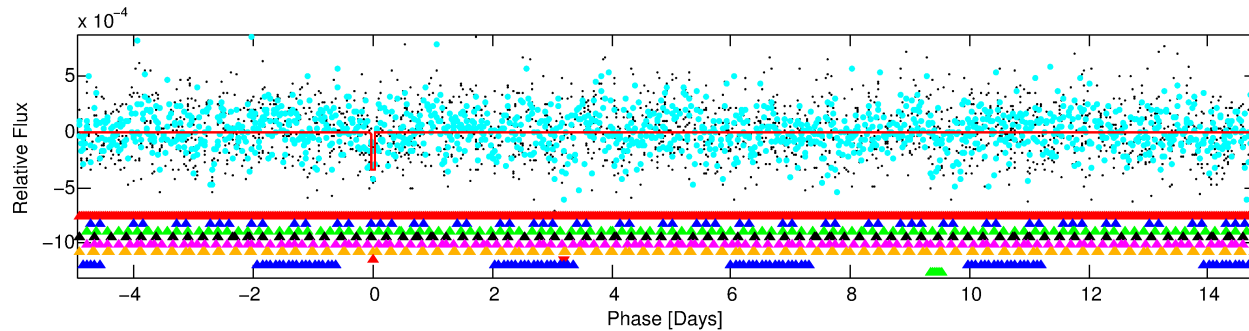
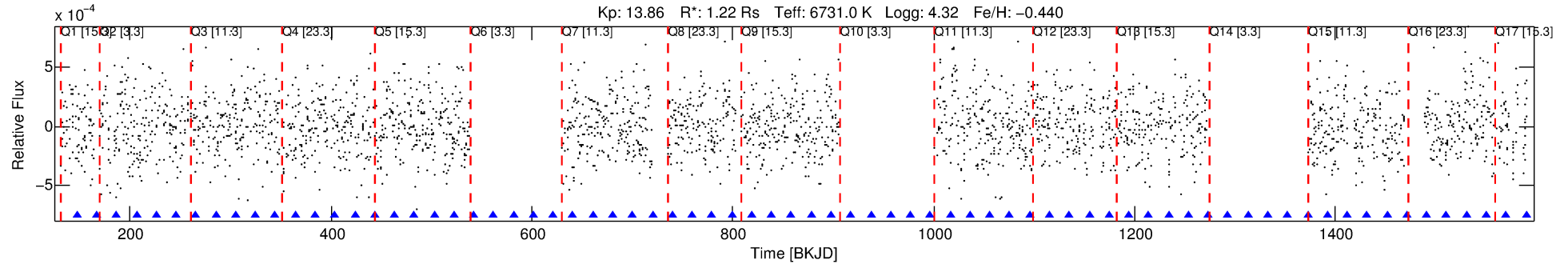
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004284959-07

No Significant Match Found

DV One-Page Summary

KIC: 4284959 Candidate: 7 of 9 Period: 19.761 d



DV Fit Results:

Period = 19.76054 [0.00035] d
Epoch = 147.1339 [0.0156] BKJD
Rp/R* = 0.0182 [0.0224]
a/R* = 83.89 [559.81]
b = 0.55 [8.58]
Seff = 123.98 [46.31]
Teq = 851 [79] K
Rp = 2.43 [3.08] Re
a = 0.1491 [0.0358] AU
Ag = 723.90 [1812.21] [0.40σ]
Teffp = 6824 [4236] K [1.41σ]

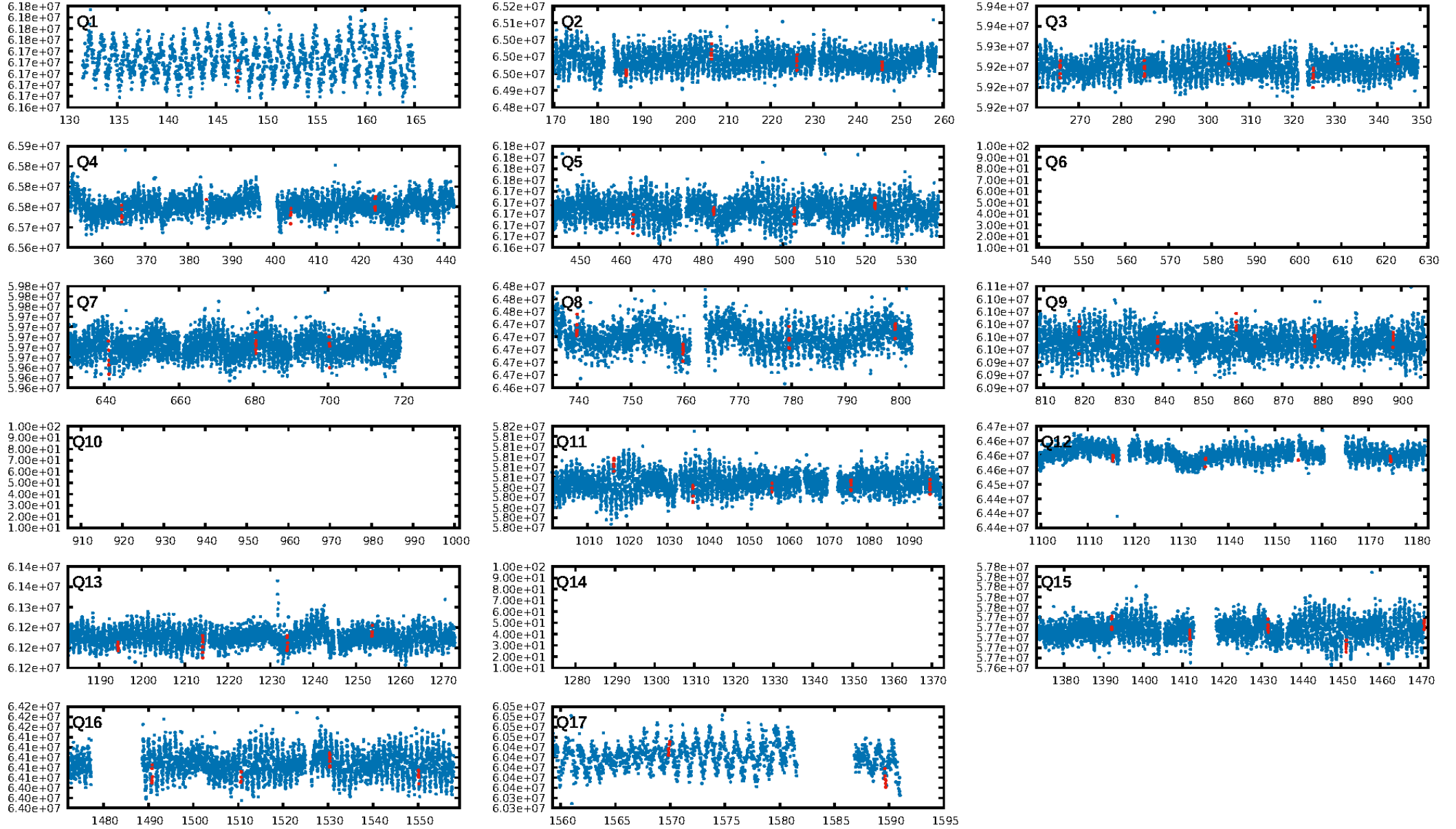
DV Diagnostic Results:

ShortPeriod-sig: 2.0% [0.02σ]
LongPeriod-sig: 100.0% [28.13σ]
ModelChiSquare2-sig: 14.5%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 1.255
Centroid-sig: 19.4%
Centroid-so: 0.951 arcsec [1.33σ]
OotOffset-rm: 0.975 arcsec [0.69σ]
OotOffset-st: 0.2/3/4 [9]
KicOffset-rm: 0.885 arcsec [0.70σ]
KicOffset-st: 0.2/3/4 [9]
DiffImageQuality-fgm: 0.22 [2/9]
DiffImageOverlap-fno: 0.71 [10/14]

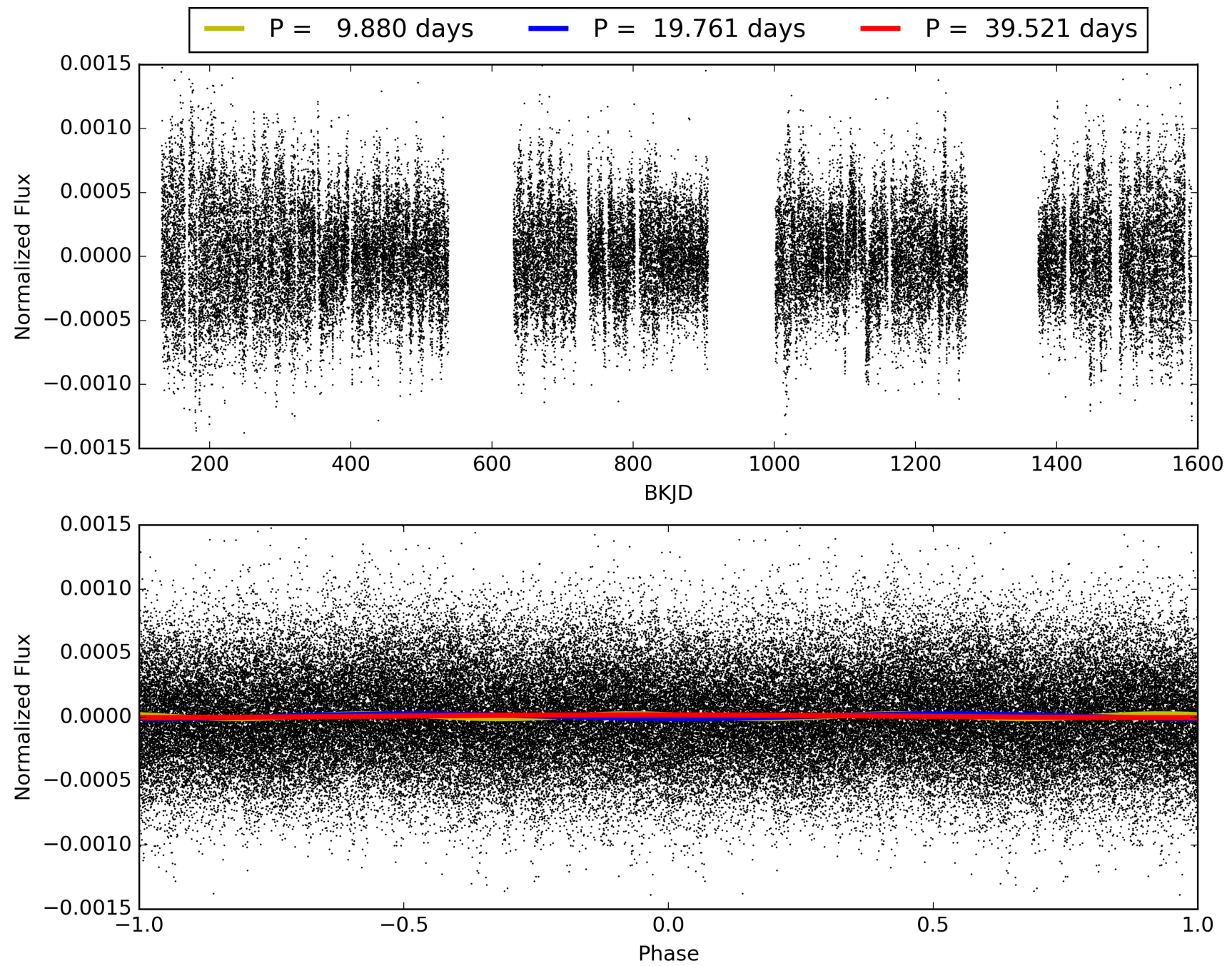
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:12:42 Z

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

TCE 004284959-07, PDC Light Curves

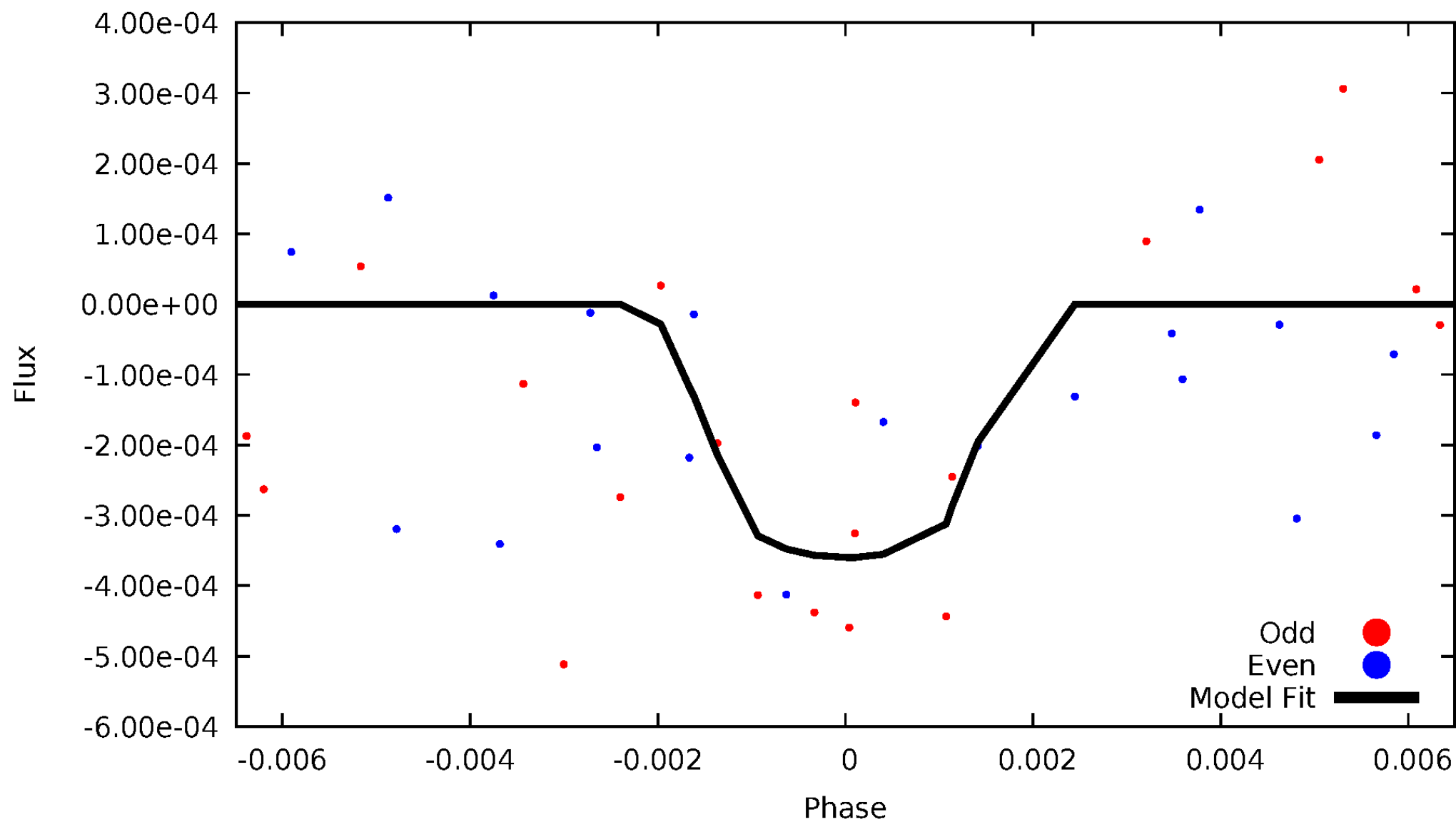


TCE 004284959-07



DV Odd/Even

TCE 004284959-07

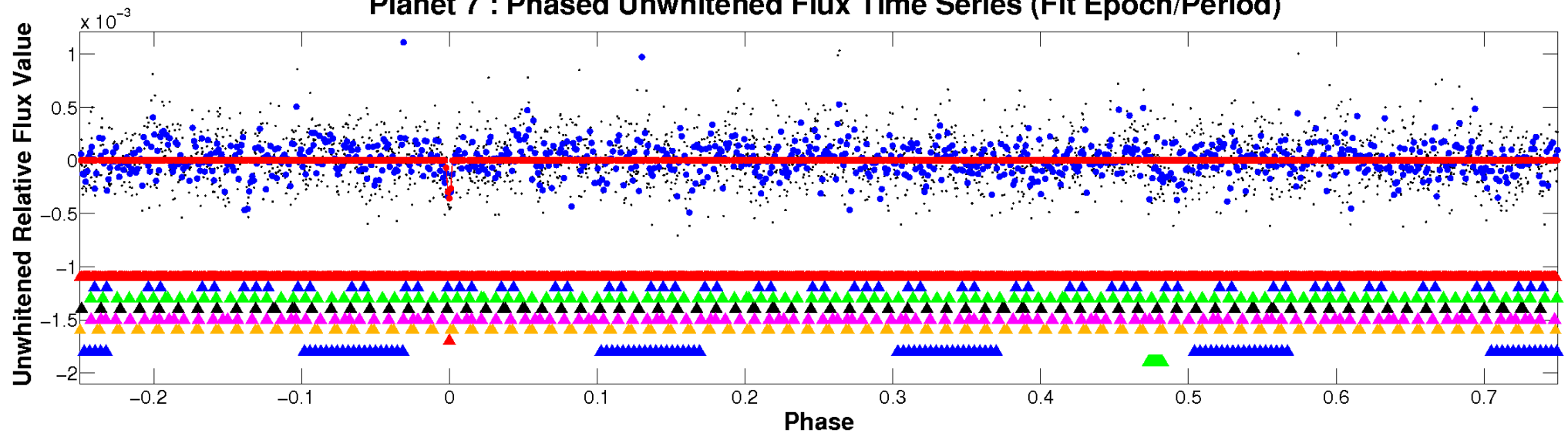


ALT Odd/Even

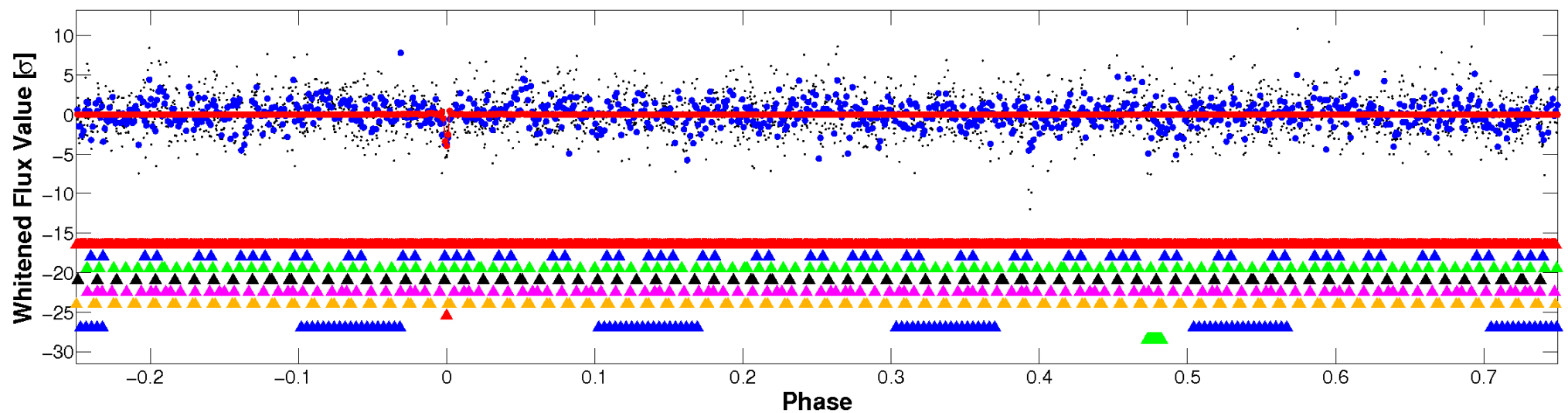
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

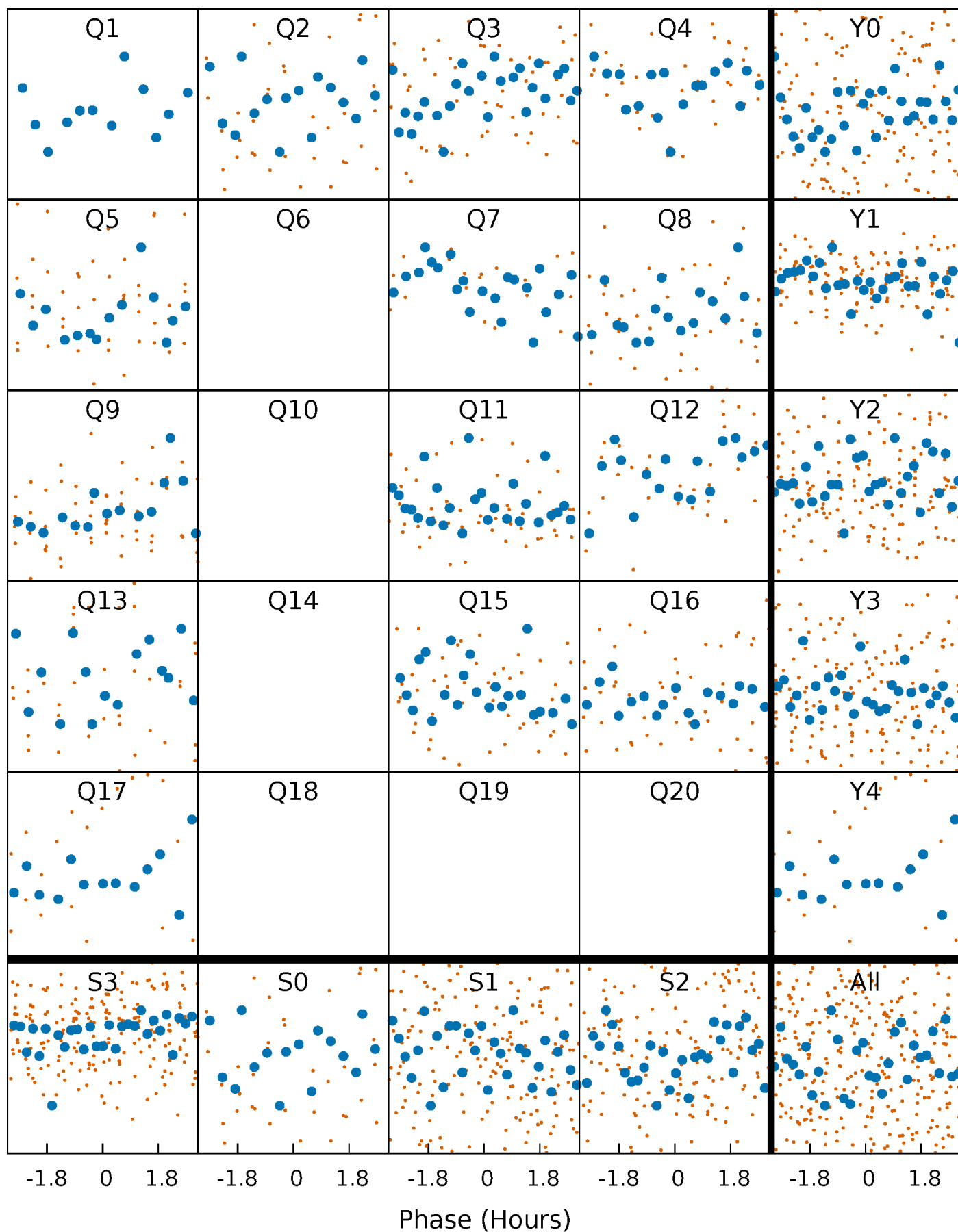


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



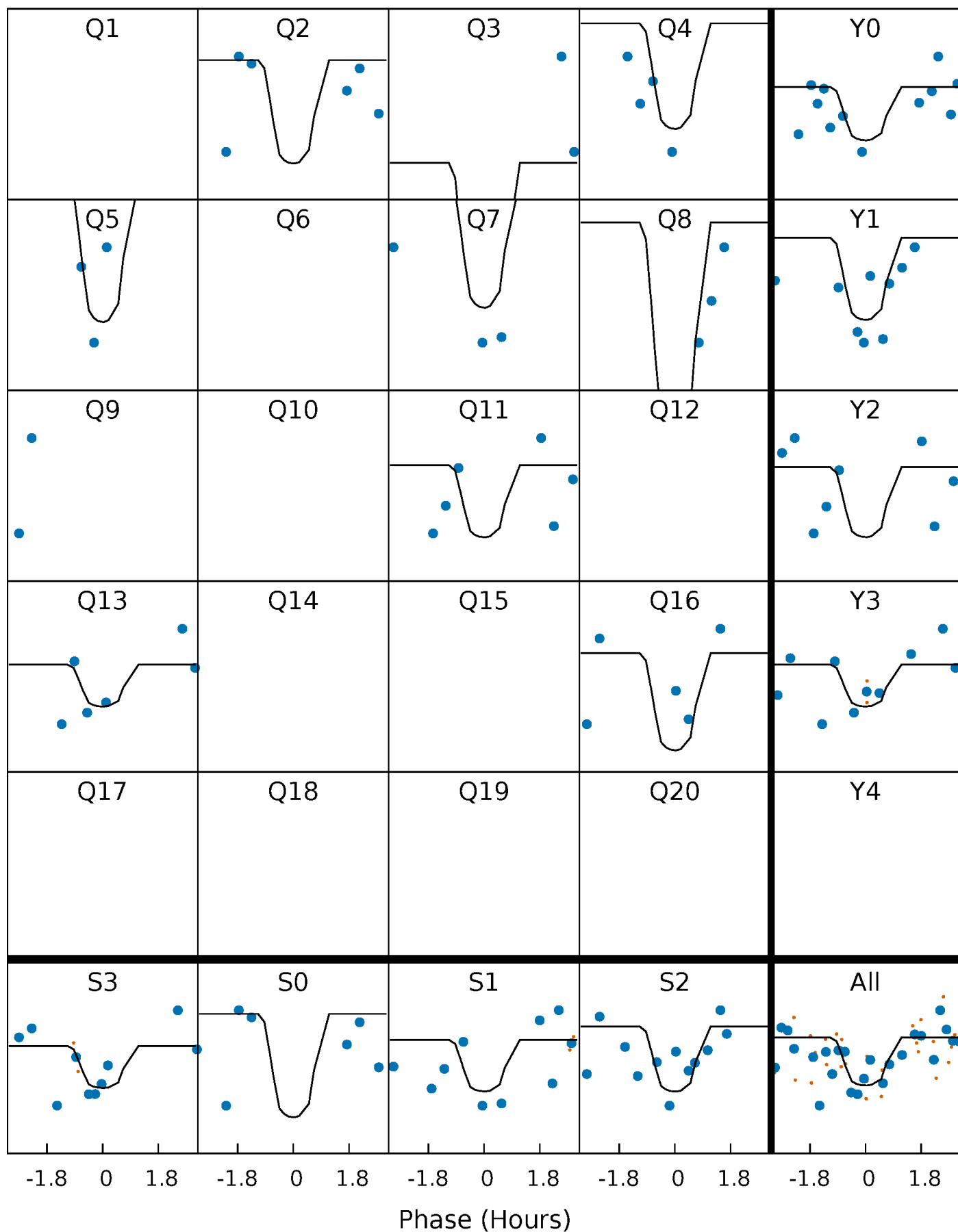
PDC Quarter-Phased Transit Curves

TCE 004284959-07 $P = 19.760540$ Days $T_0 = 147.133877$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004284959-07 P= 19.760540 Days $T_0=147.133877$ (BKJD)

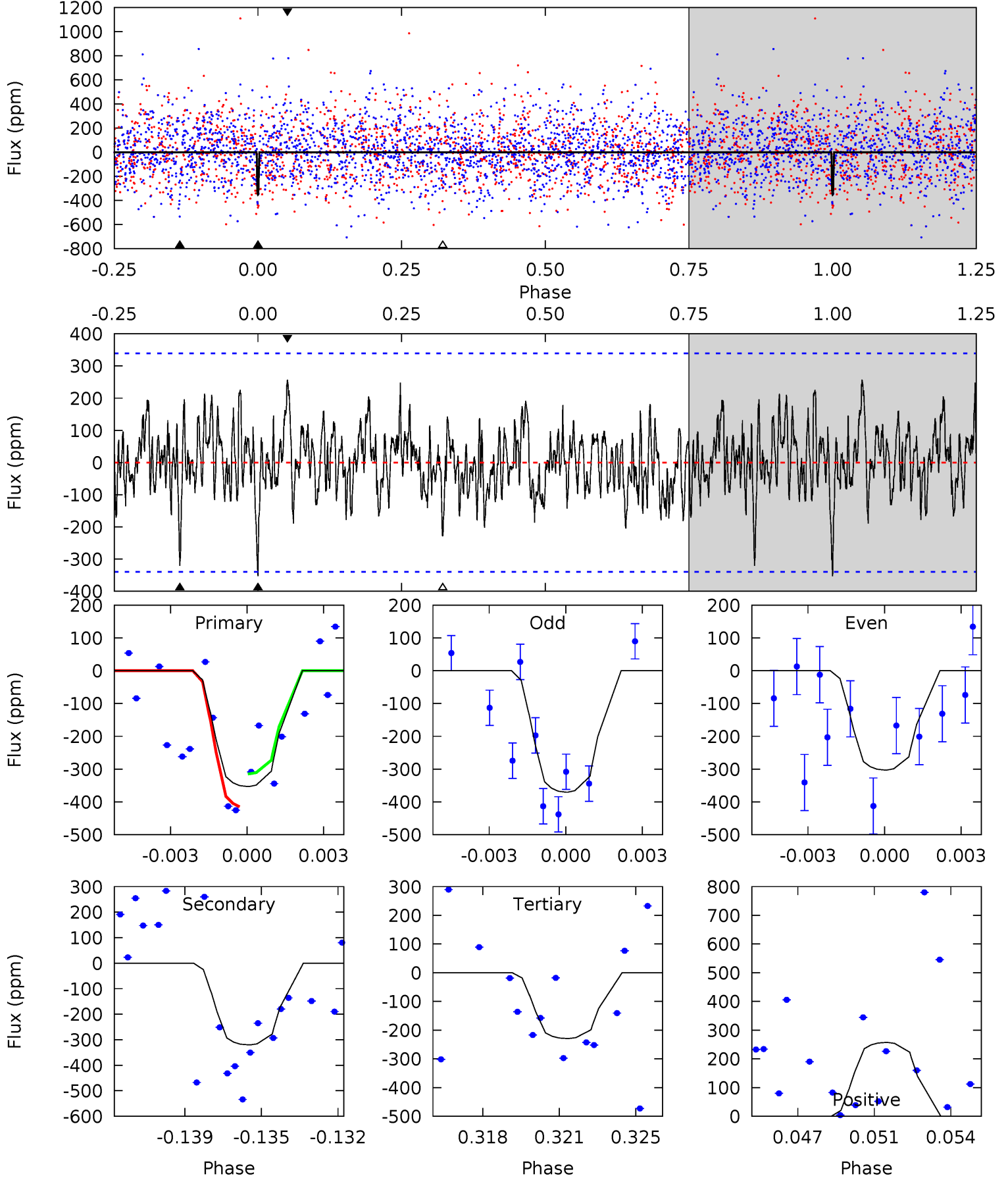


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

004284959-07, P = 19.760540 Days, E = 127.373337 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.45	4.94	3.53	3.97	5.23	2.93	1.27	1.91	1.48	1.40	0.97	0.49	0.94	0.42	0.77



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-320 ± 65	$3.40^{+2.81}_{-2.29}$	1200^{+90}_{-70}	5679^{+5473}_{-1307}	323^{+2632}_{-226}
Alt.	N/A	N/A	N/A	N/A	N/A

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

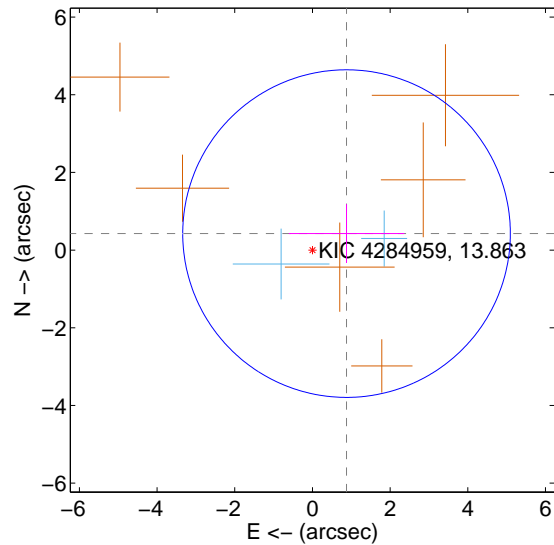
Supplemental centroid analysis for 004284959-07. Kepler magnitude: 13.86. Transit SNR 11.85

There are 2 quarters with good PRF difference image offsets

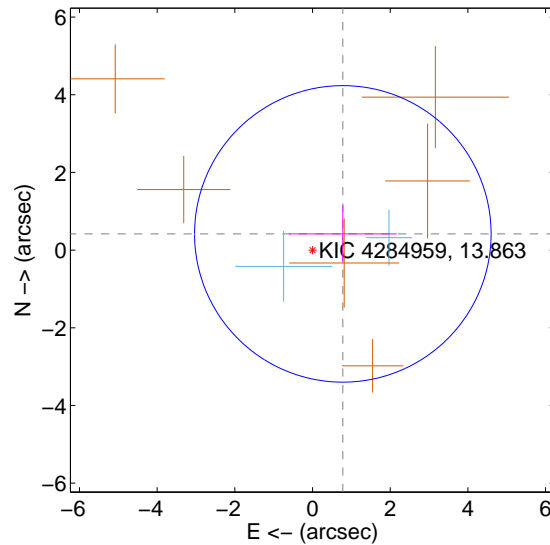
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.975 ± 1.406	0.69	-0.878 ± 1.487	0.425 ± 0.757
PRF-fit source offset from KIC position	0.885 ± 1.272	0.70	-0.780 ± 1.389	0.417 ± 0.738
photometric centroid source offset	0.95 ± 0.71	1.33	0.90 ± 0.71	-0.30 ± 0.74

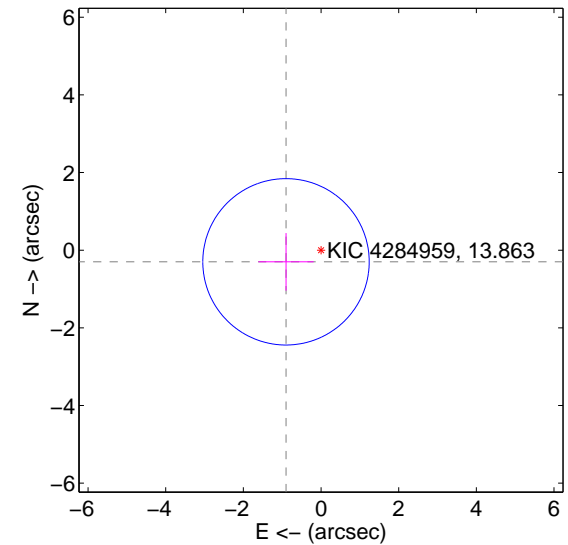
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

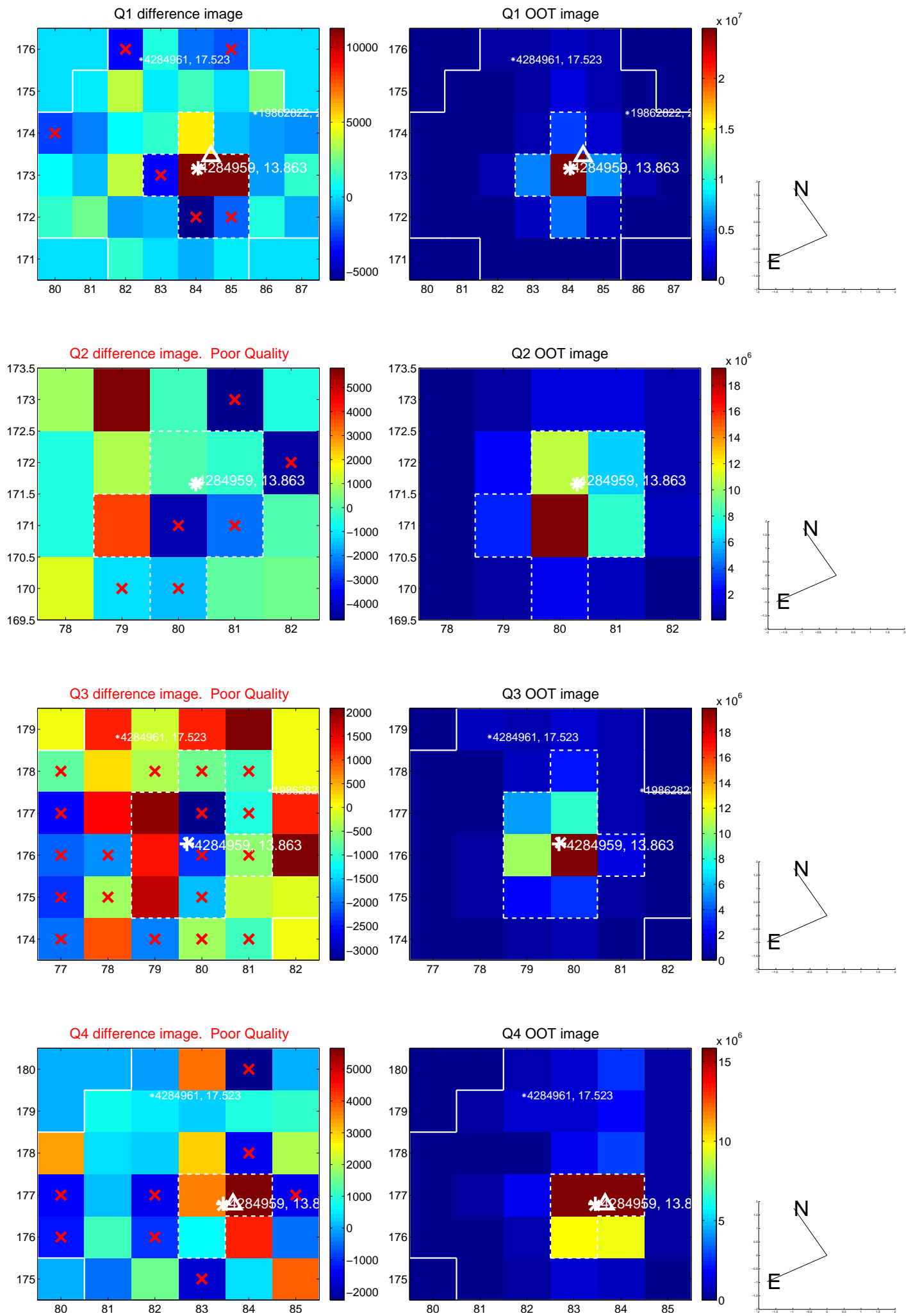


offset from photometric centroids

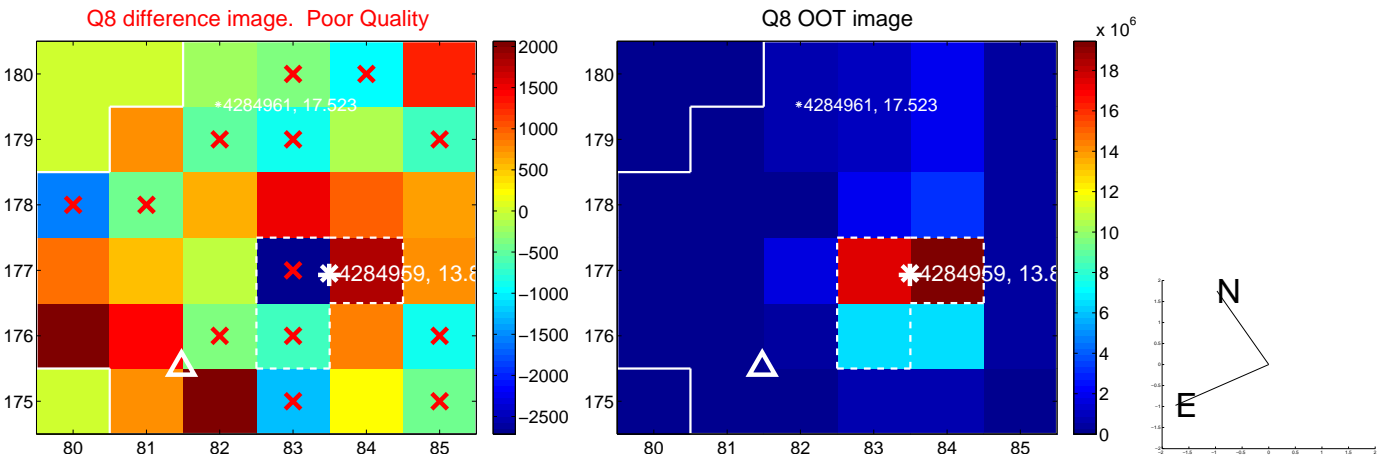
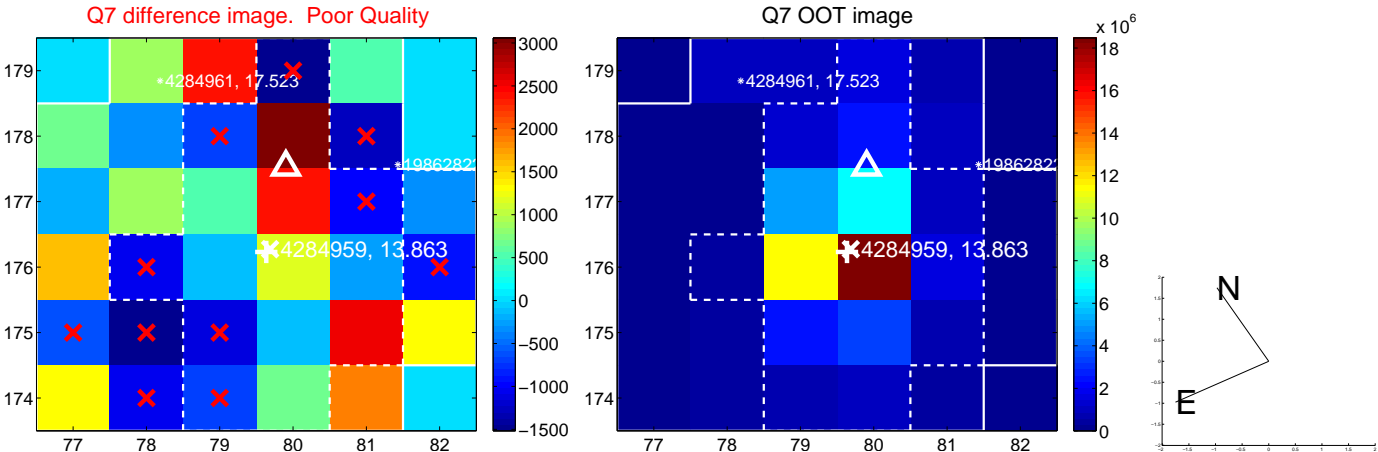
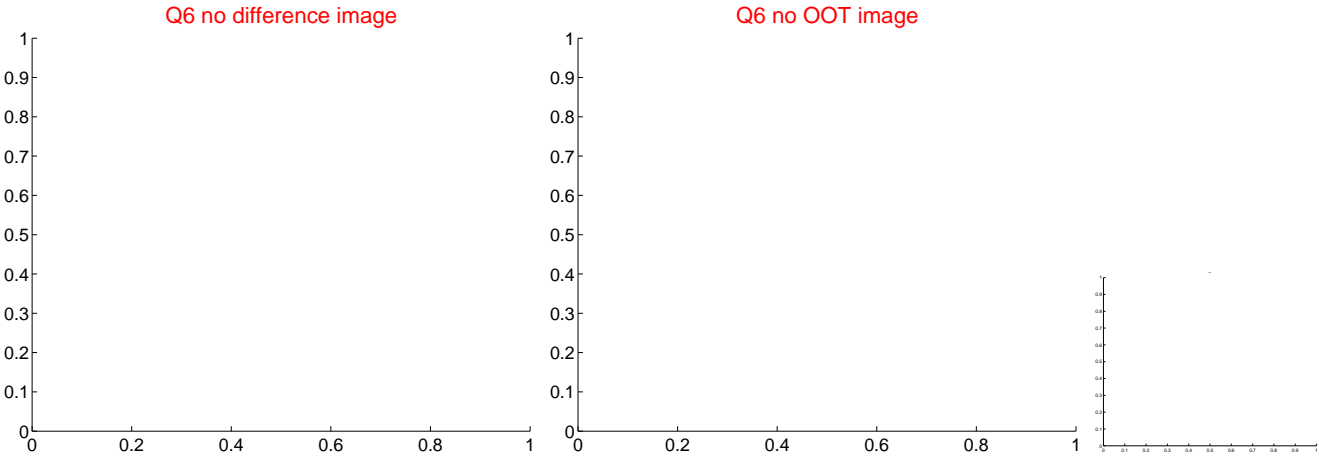
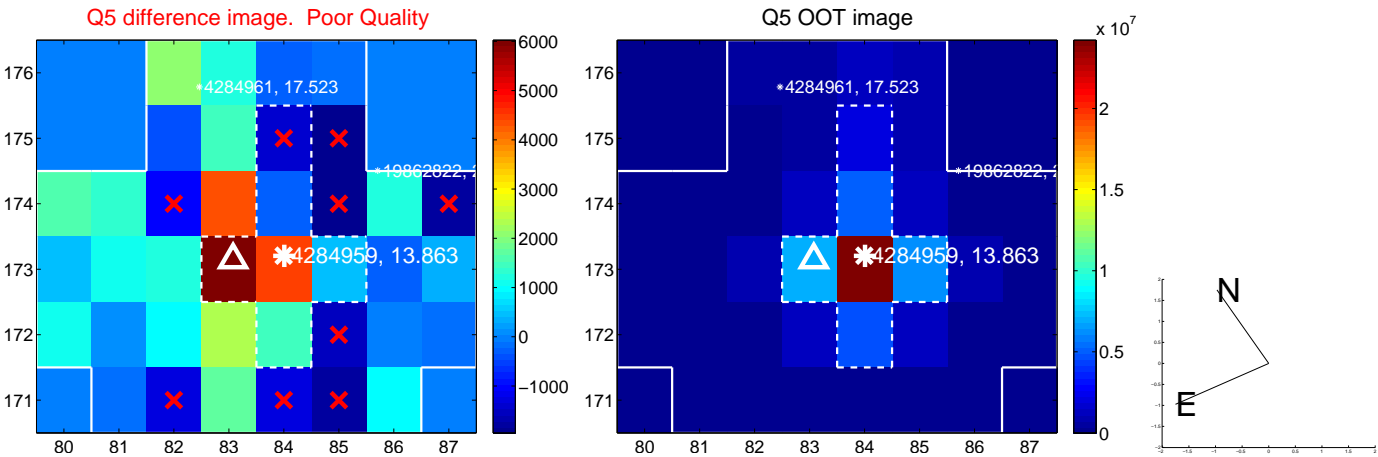


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

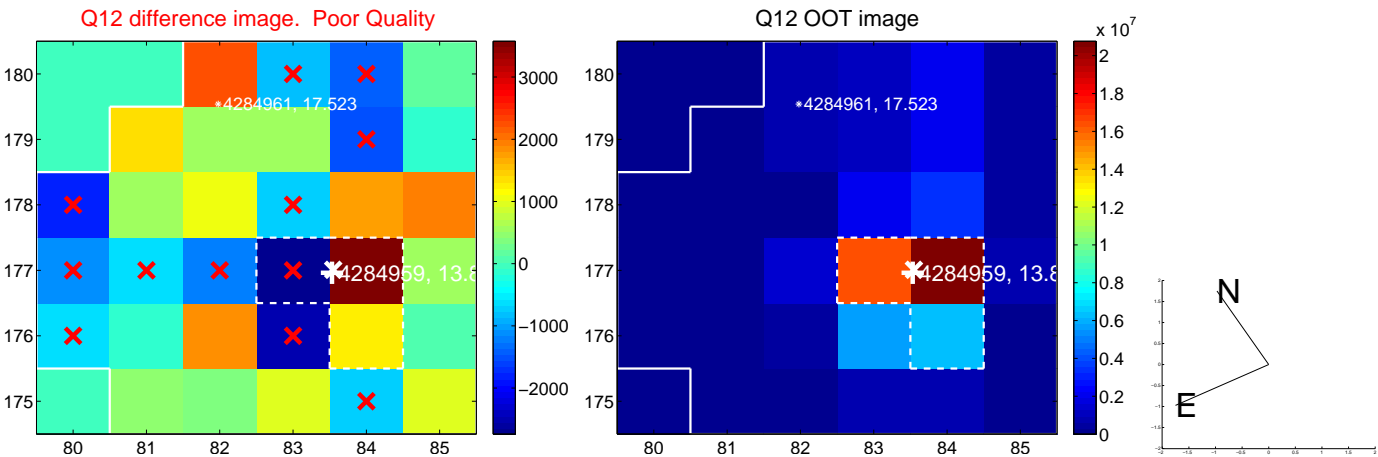
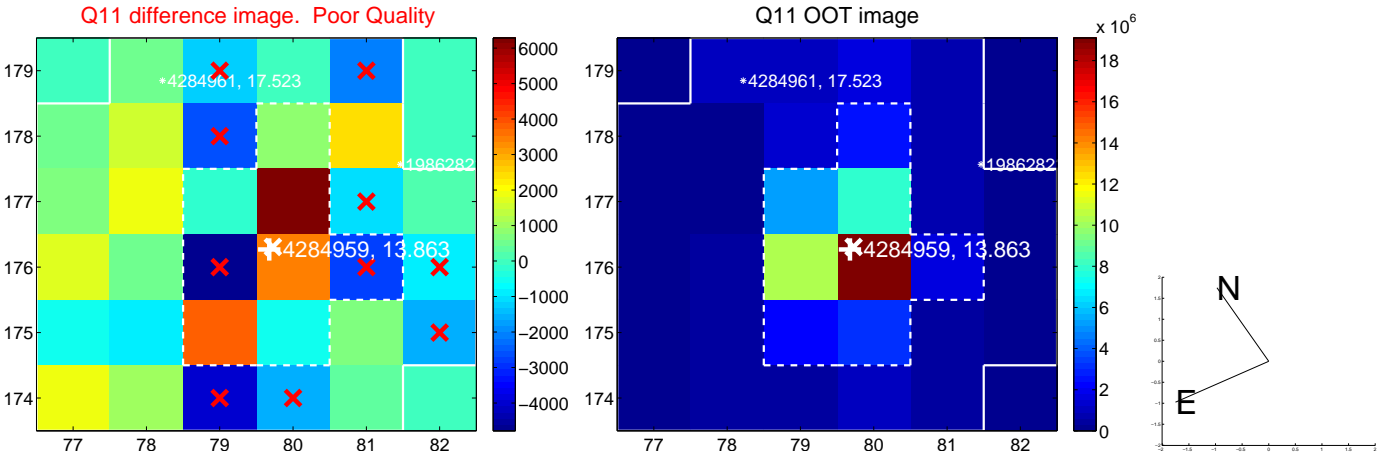
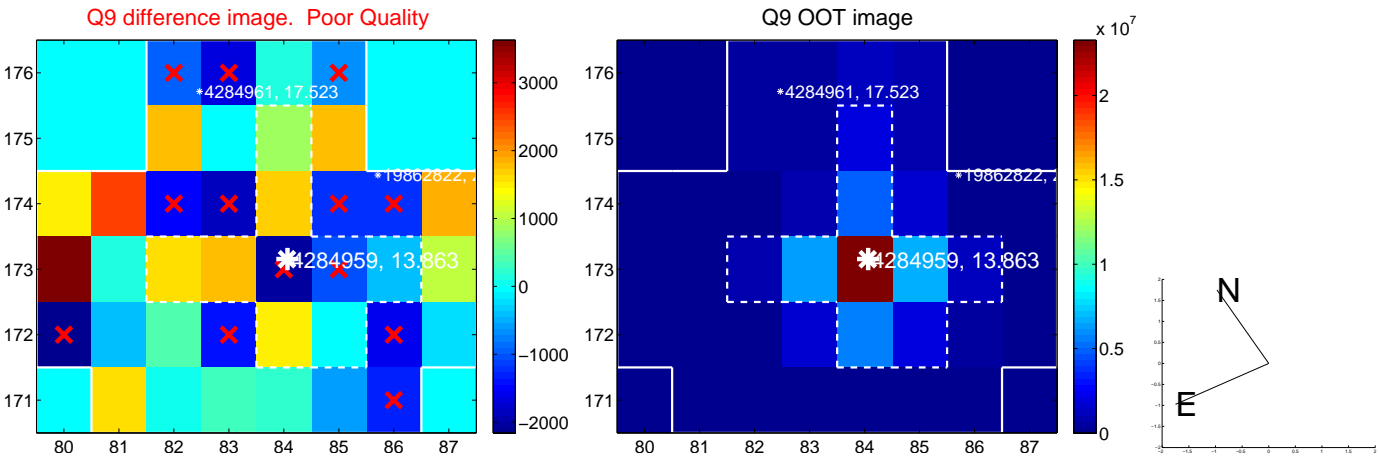
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



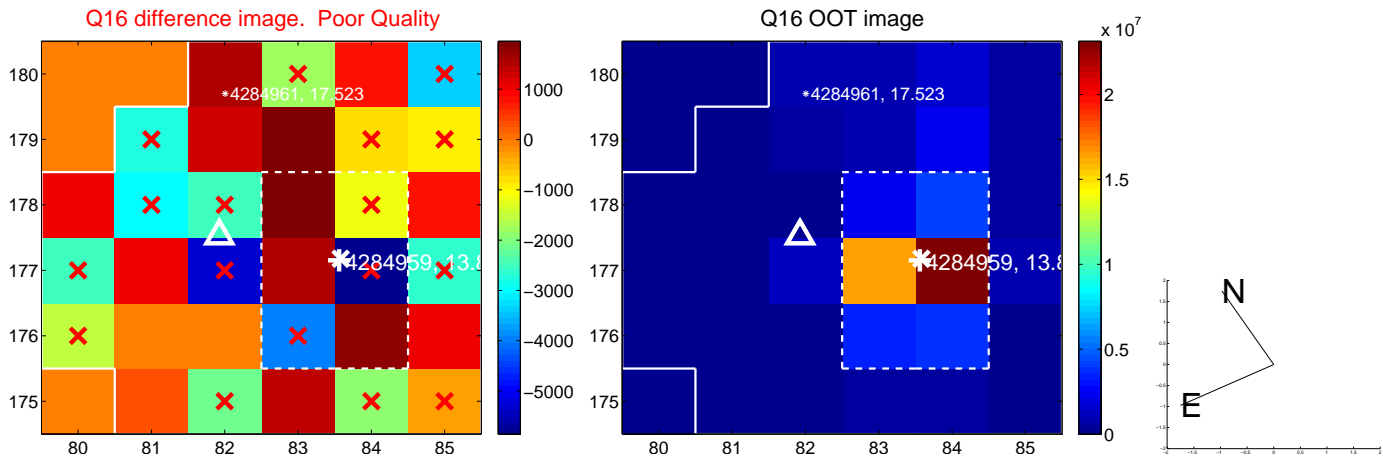
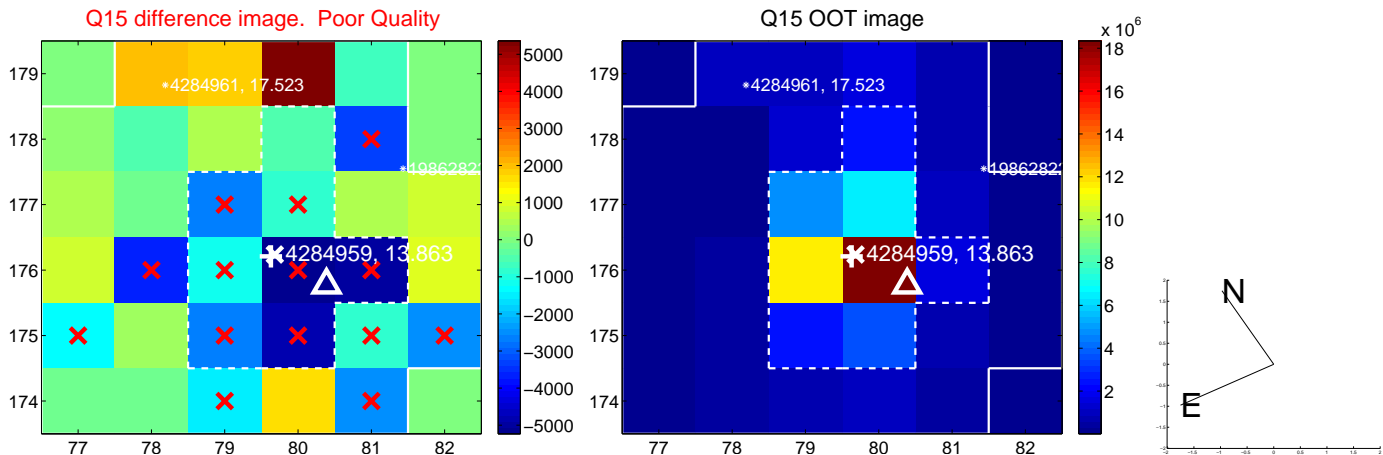
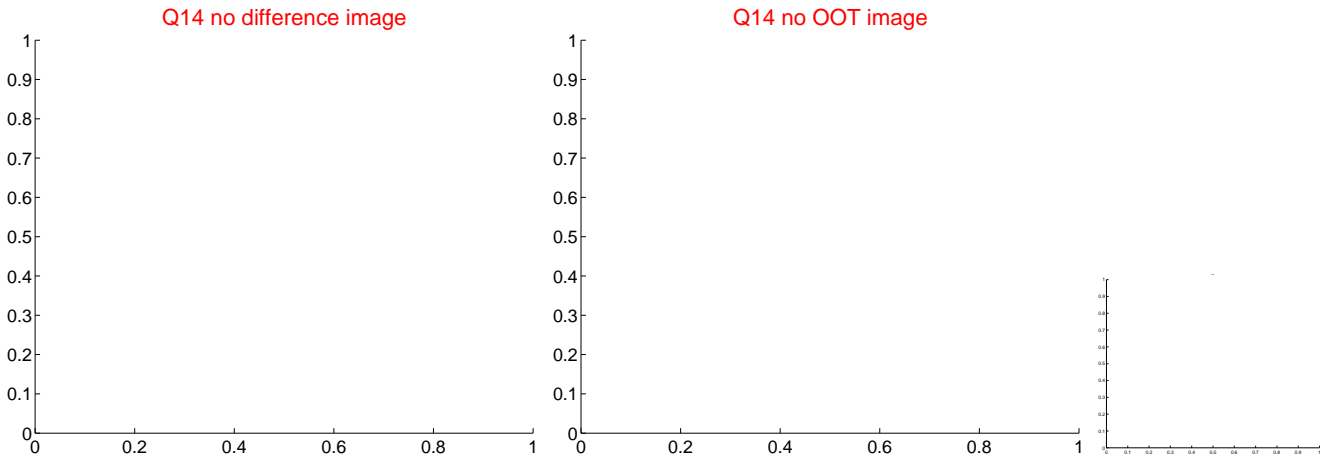
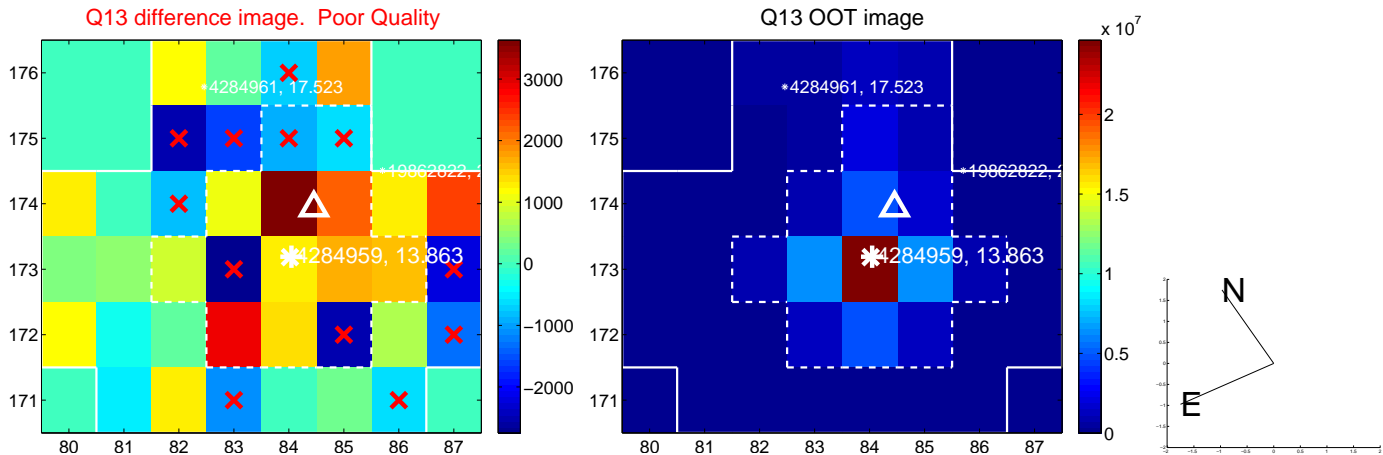
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



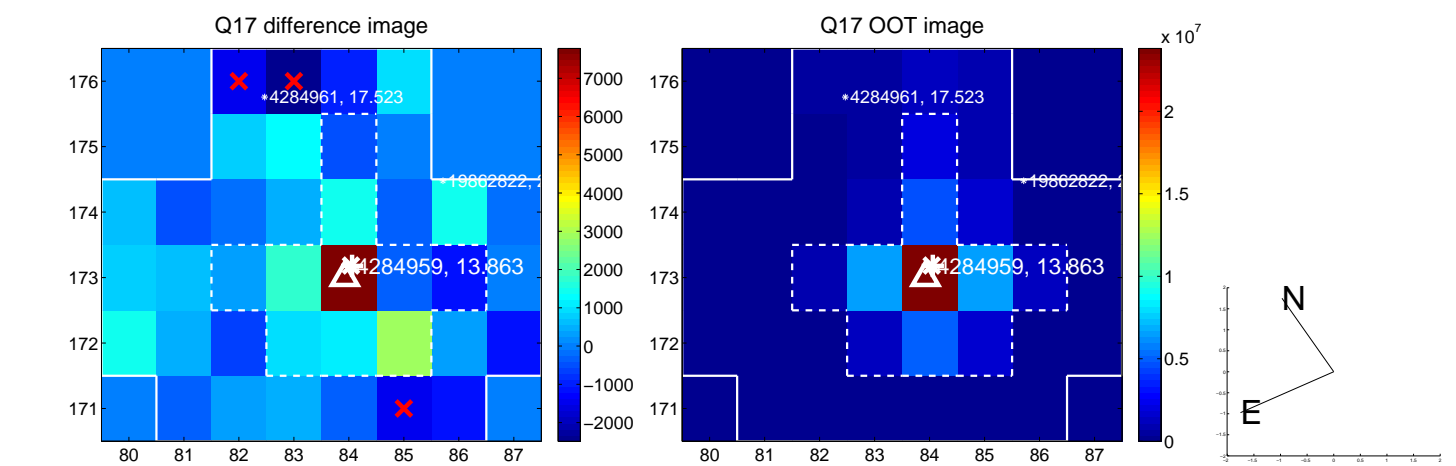
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



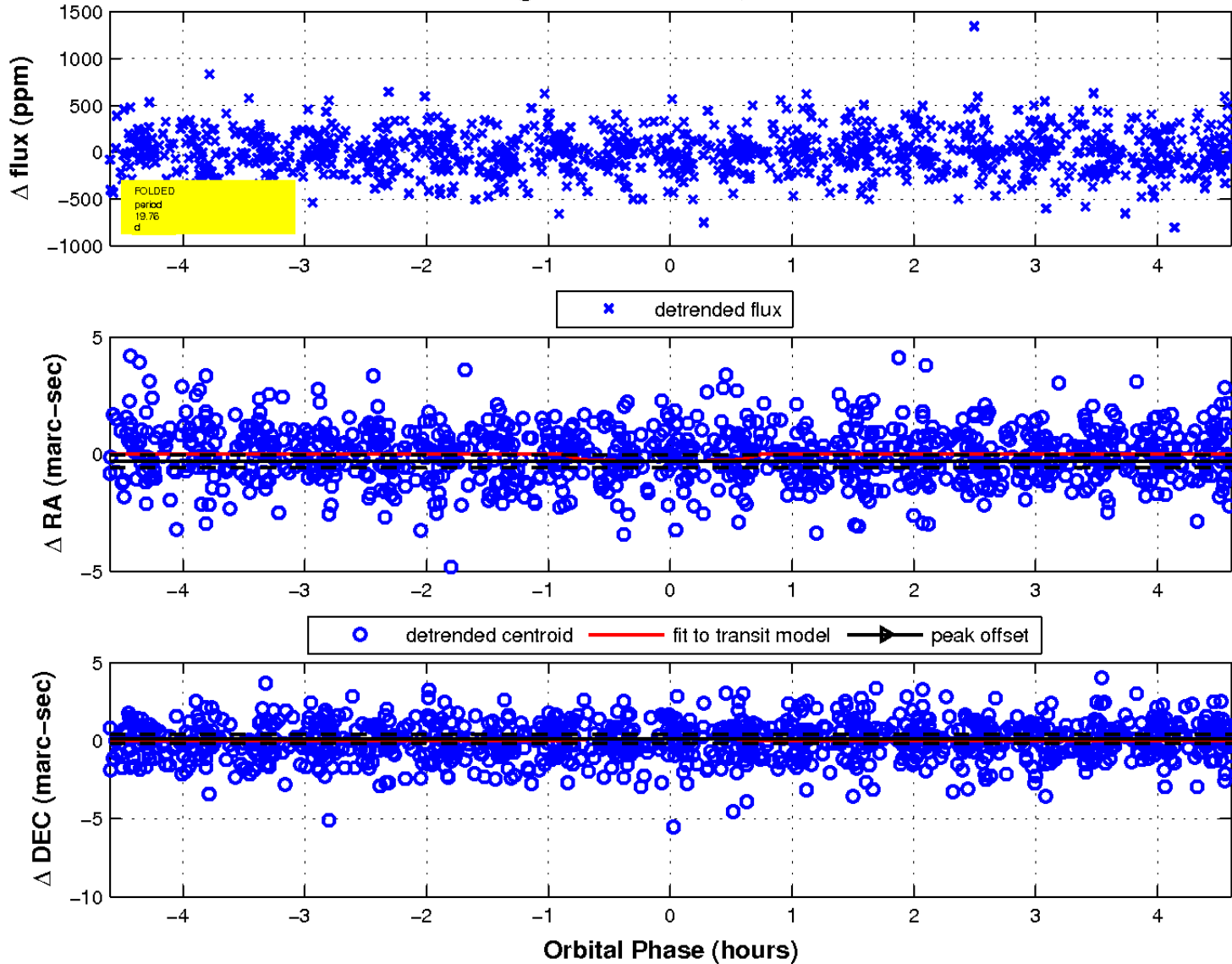
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

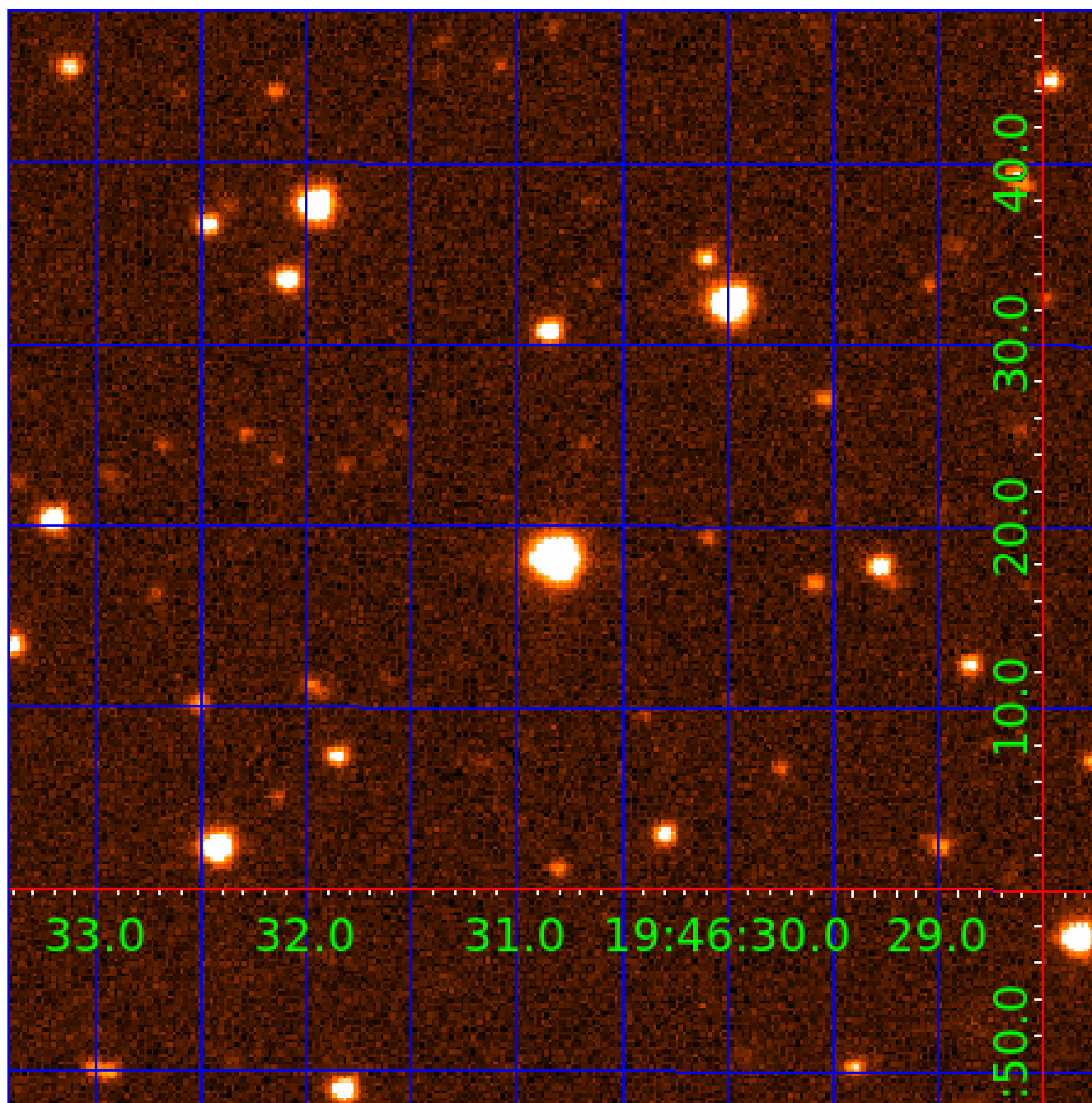


fluxWeightedCentroids, Planet 7 of 9



UKIRT Image

Declination



KIC 004284959

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})
004284959-01	OBS	No	1.192696	132.479950	0.0	8.808	8.7	0.0	1.22	6731	0.00	5236.33
004284959-02	OBS	No	22.480554	136.553048	557.1	1.737	18.7	16.0	1.22	6731	2.92	104.39
004284959-03	OBS	No	11.991718	139.115641	341.7	2.179	14.6	15.0	1.22	6731	2.59	241.30
004284959-04	OBS	No	16.423993	145.063114	362.2	1.746	14.6	12.9	1.22	6731	2.52	158.65
004284959-05	OBS	No	10.695476	141.822775	313.7	1.630	15.3	11.7	1.22	6731	2.47	281.06
004284959-06	OBS	No	9.748056	135.886355	673.8	0.641	11.4	12.2	1.22	6731	3.73	318.06
004284959-07	OBS	No	19.760540	147.133877	359.9	1.539	12.6	11.8	1.22	6731	2.43	123.97
004284959-08	OBS	No	15.793829	134.684111	799.9	2.000	11.9	-1.0	1.22	6731	3.50	167.14
004284959-09	OBS	No	19.757953	136.907984	357.3	1.958	12.7	11.4	1.22	6731	2.48	124.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004284959-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

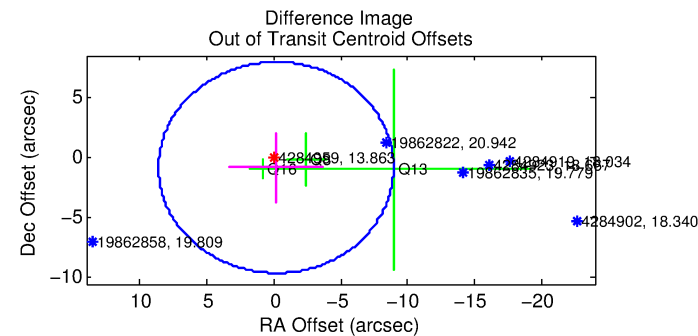
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 004284959-08

No Significant Match Found

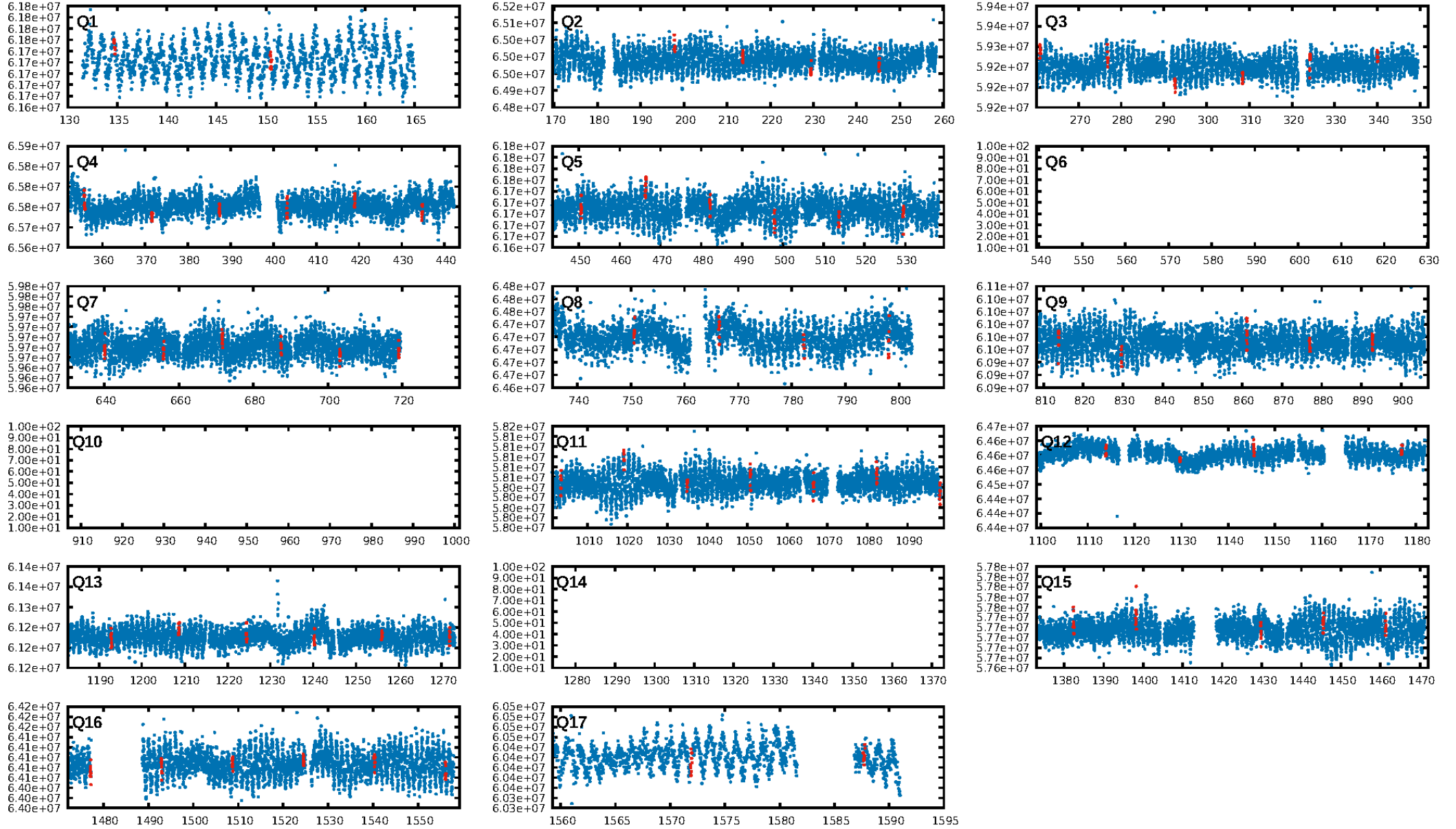
KIC: 4284959 Candidate: 8 of 9 Period: 15.794 d



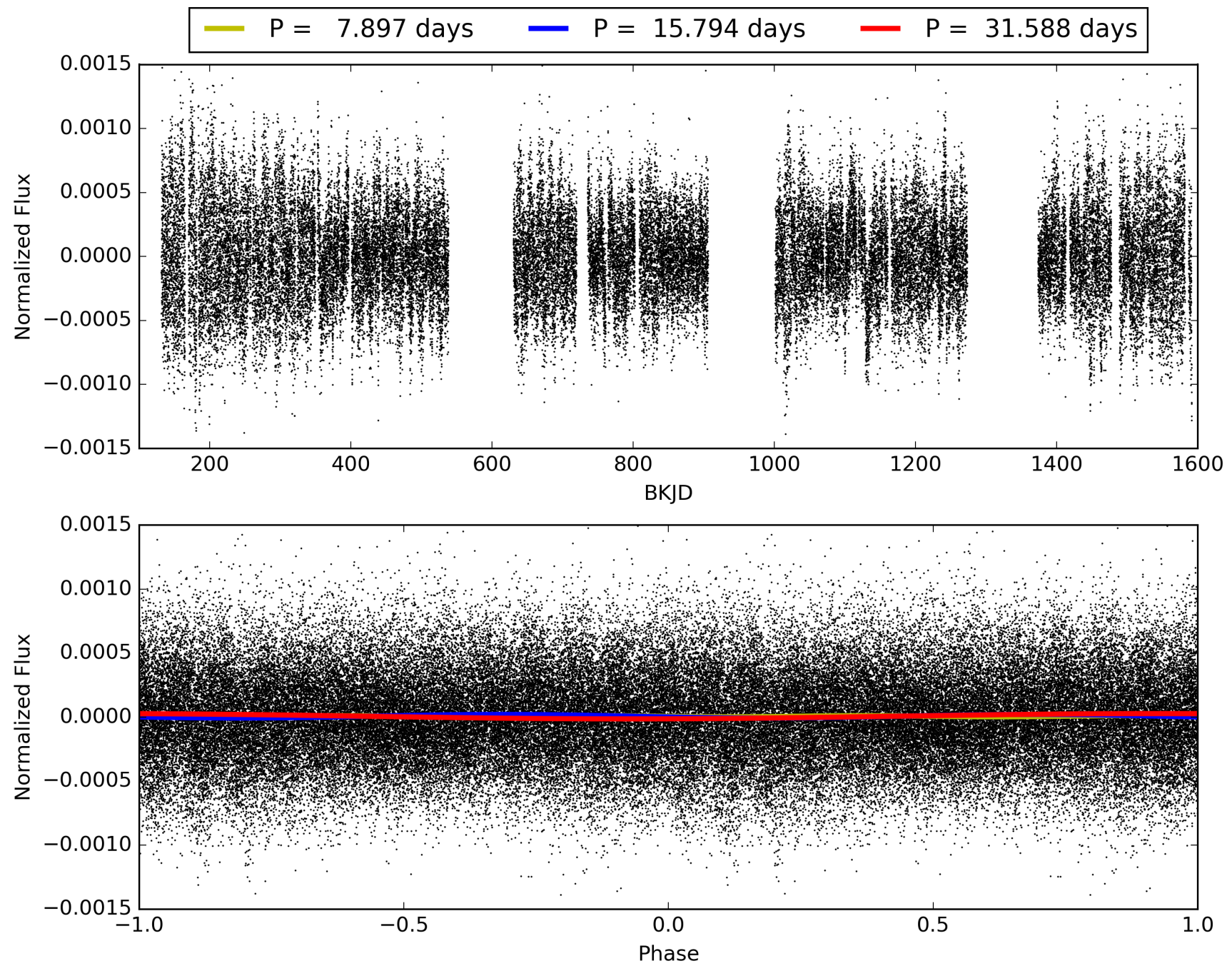
Centroid-sig: 0.3%
Centroid-so: 1.424 arcsec [2.04σ]
OotOffset-rm: 0.836 arcsec [0.29σ]
KicOffset-rm: 0.857 arcsec [0.29σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [5/5]

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TCE 004284959-08, PDC Light Curves

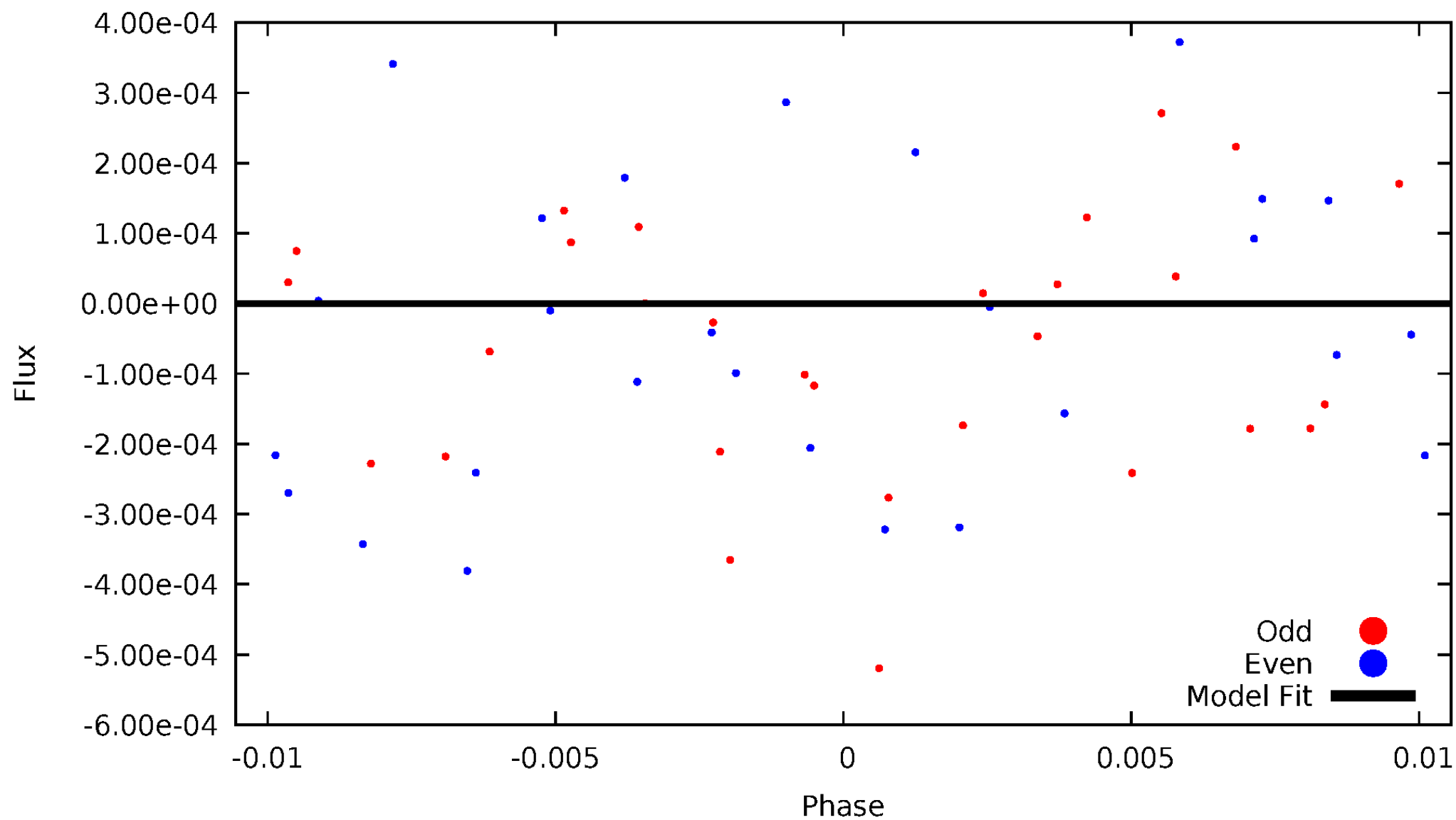


TCE 004284959-08



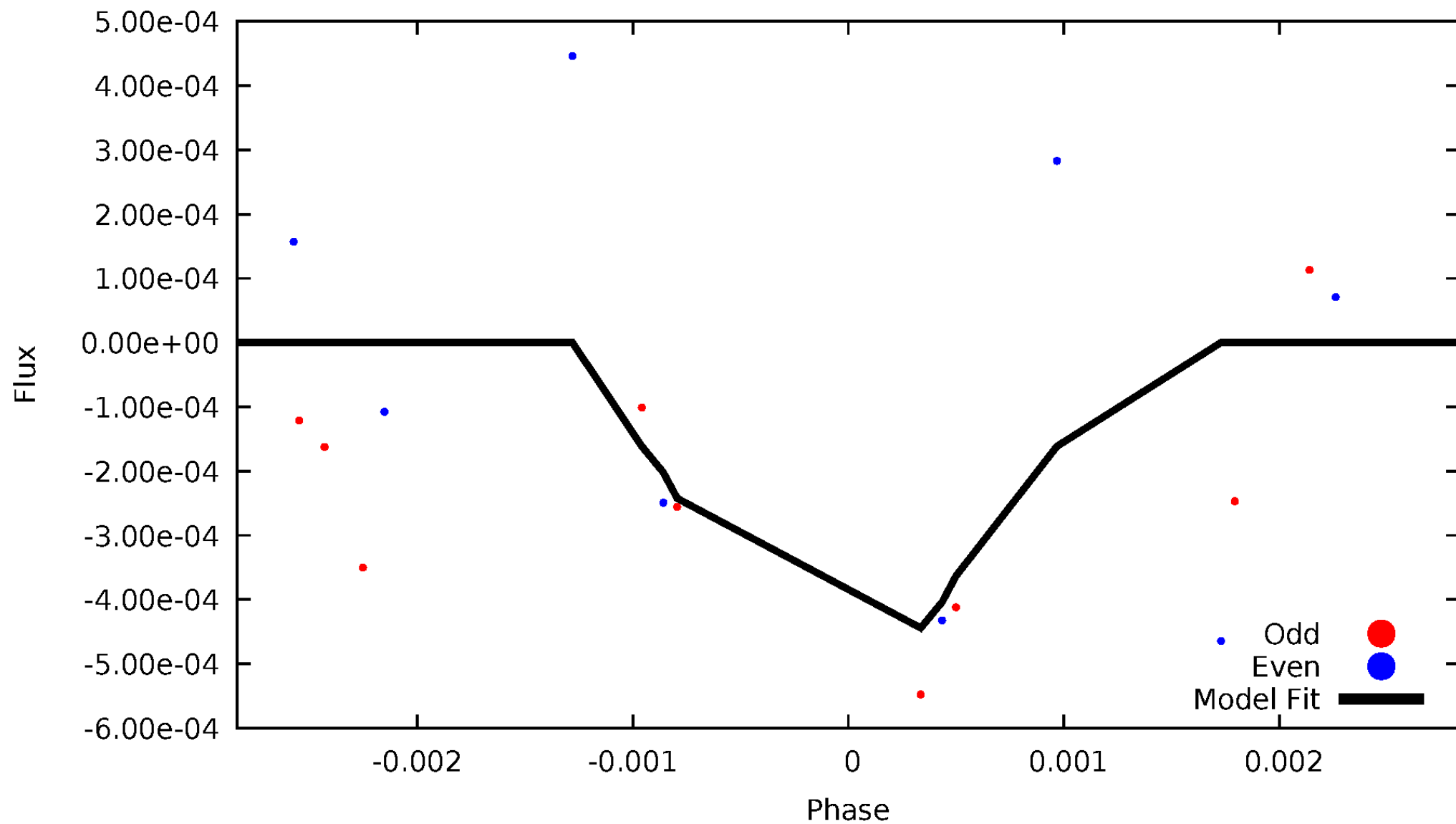
DV Odd/Even

TCE 004284959-08



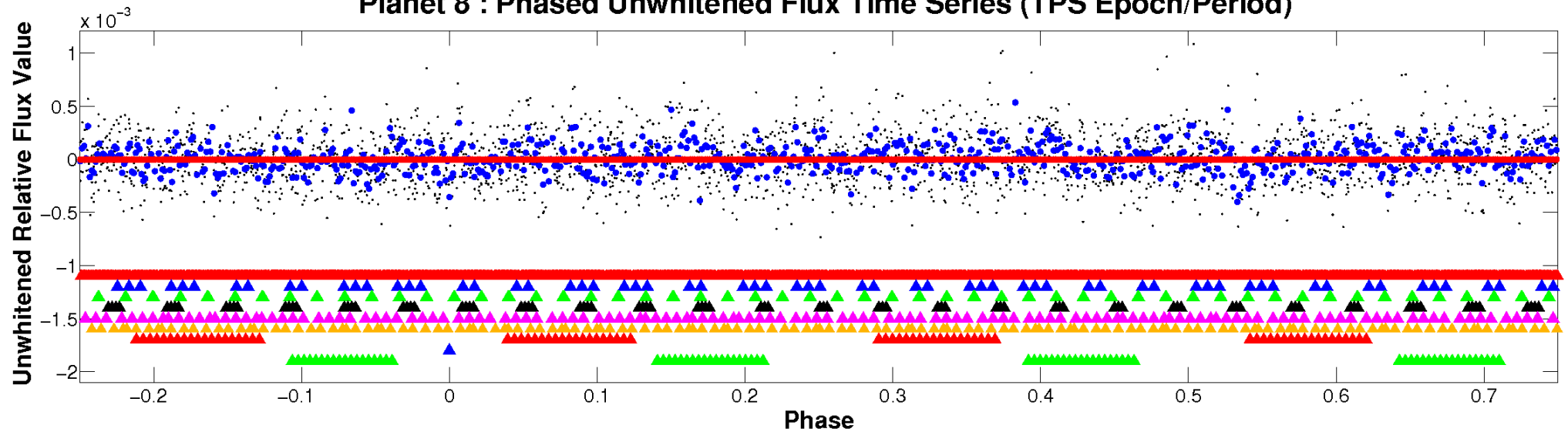
ALT Odd/Even

TCE 004284959-08

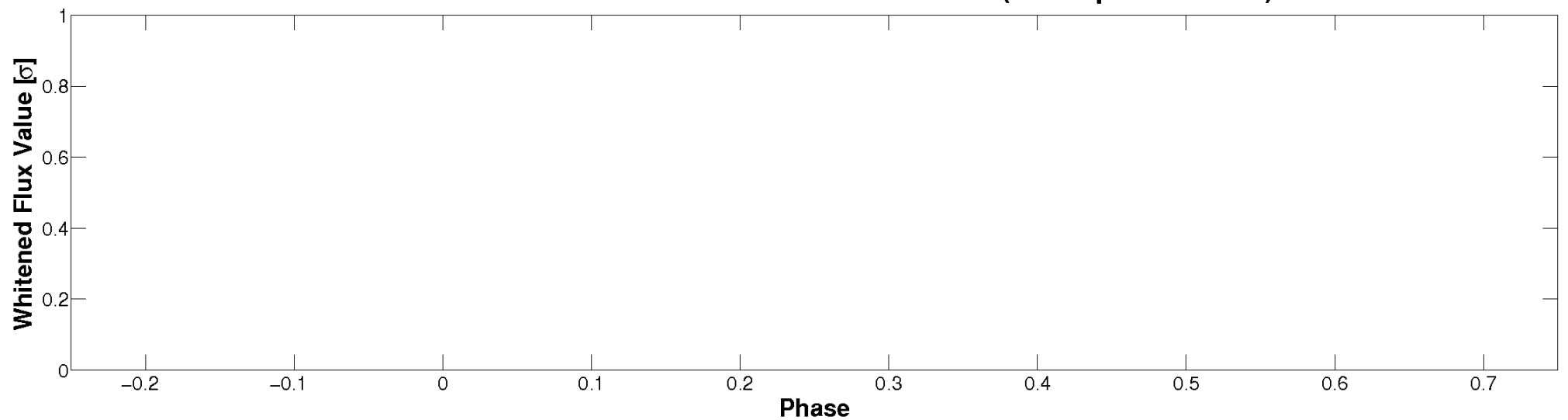


Non-Whitened Vs. Whitened Light Curve

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

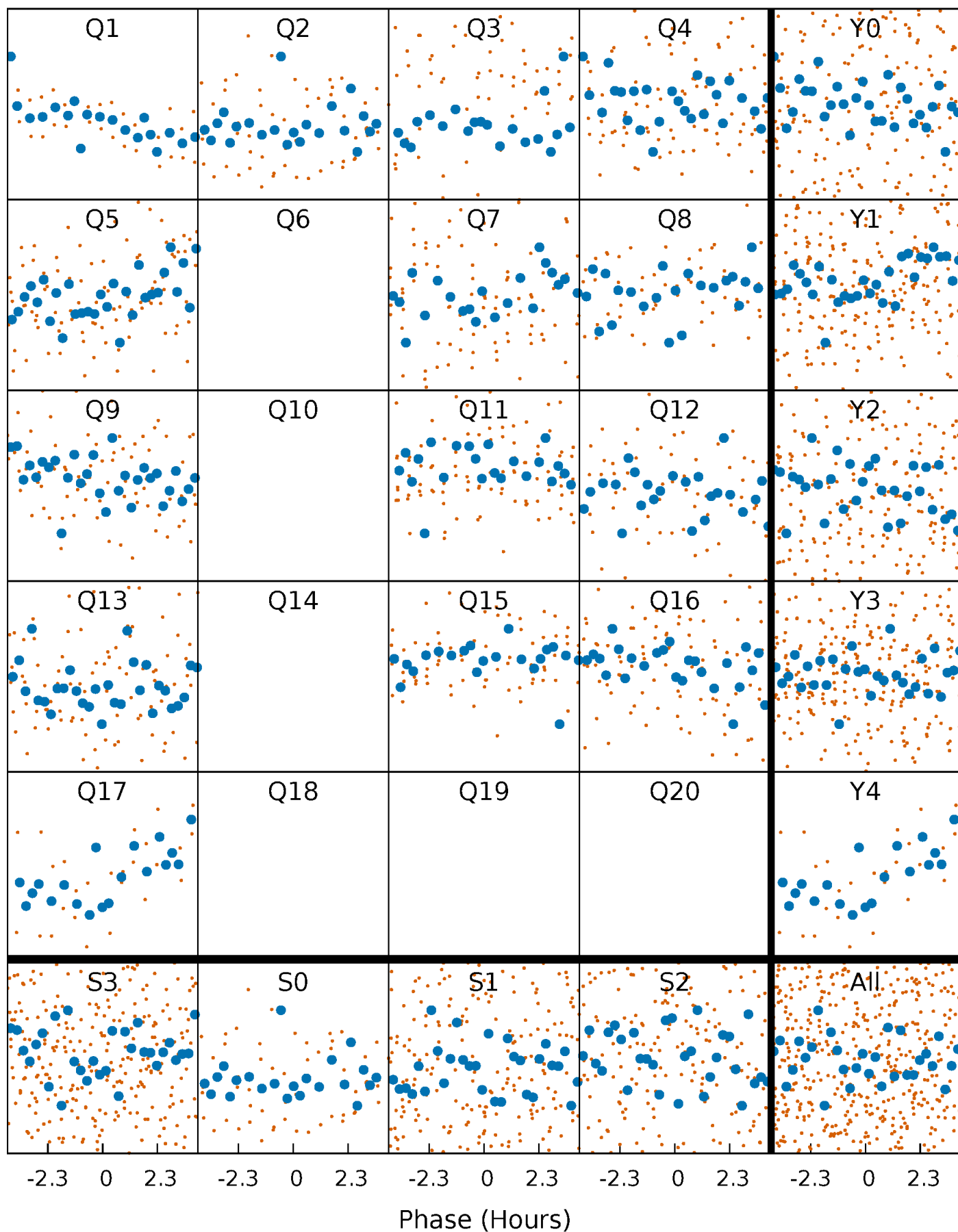


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



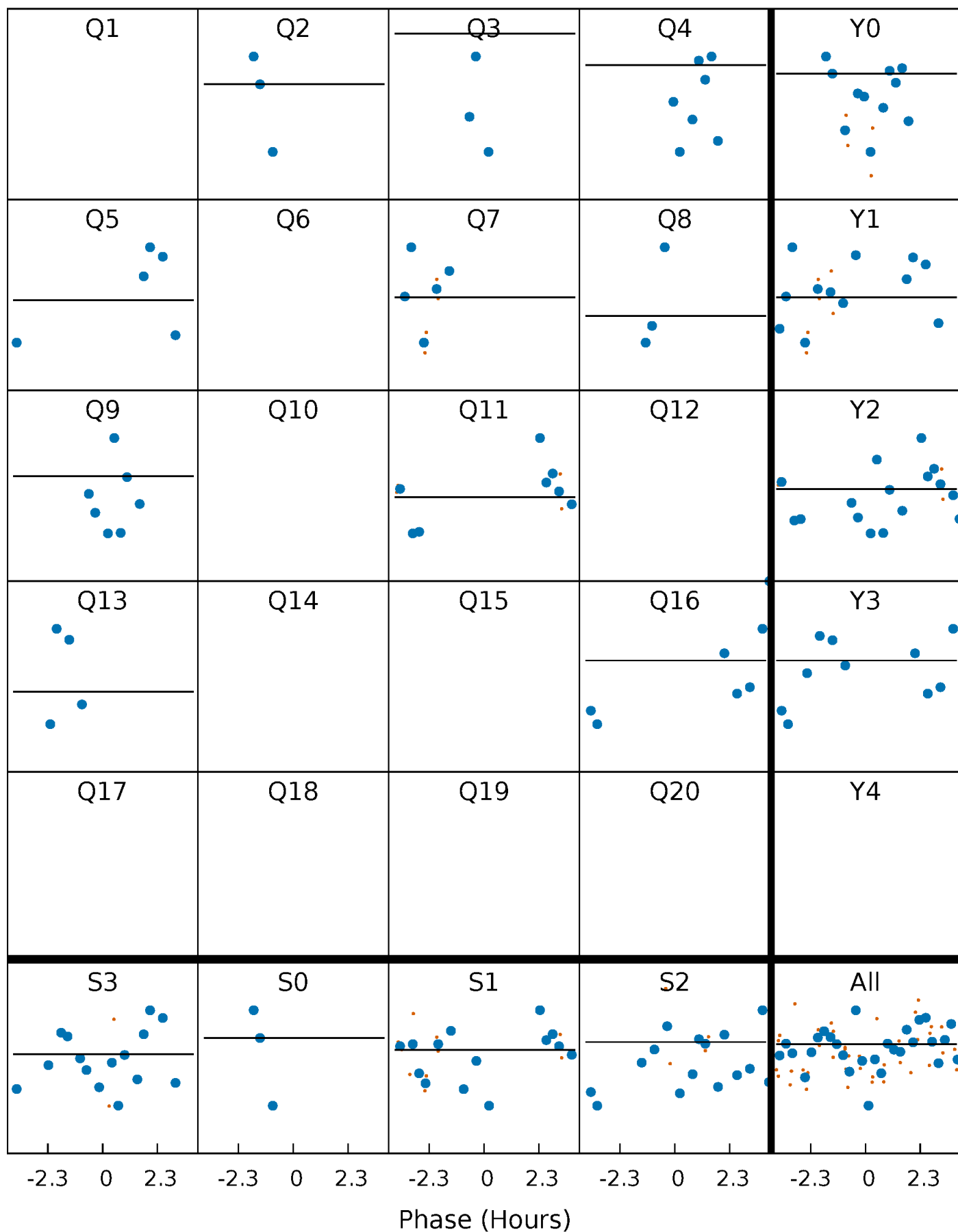
PDC Quarter-Phased Transit Curves

TCE 004284959-08 P= 15.793829 Days $T_0=134.684111$ (BKJD)



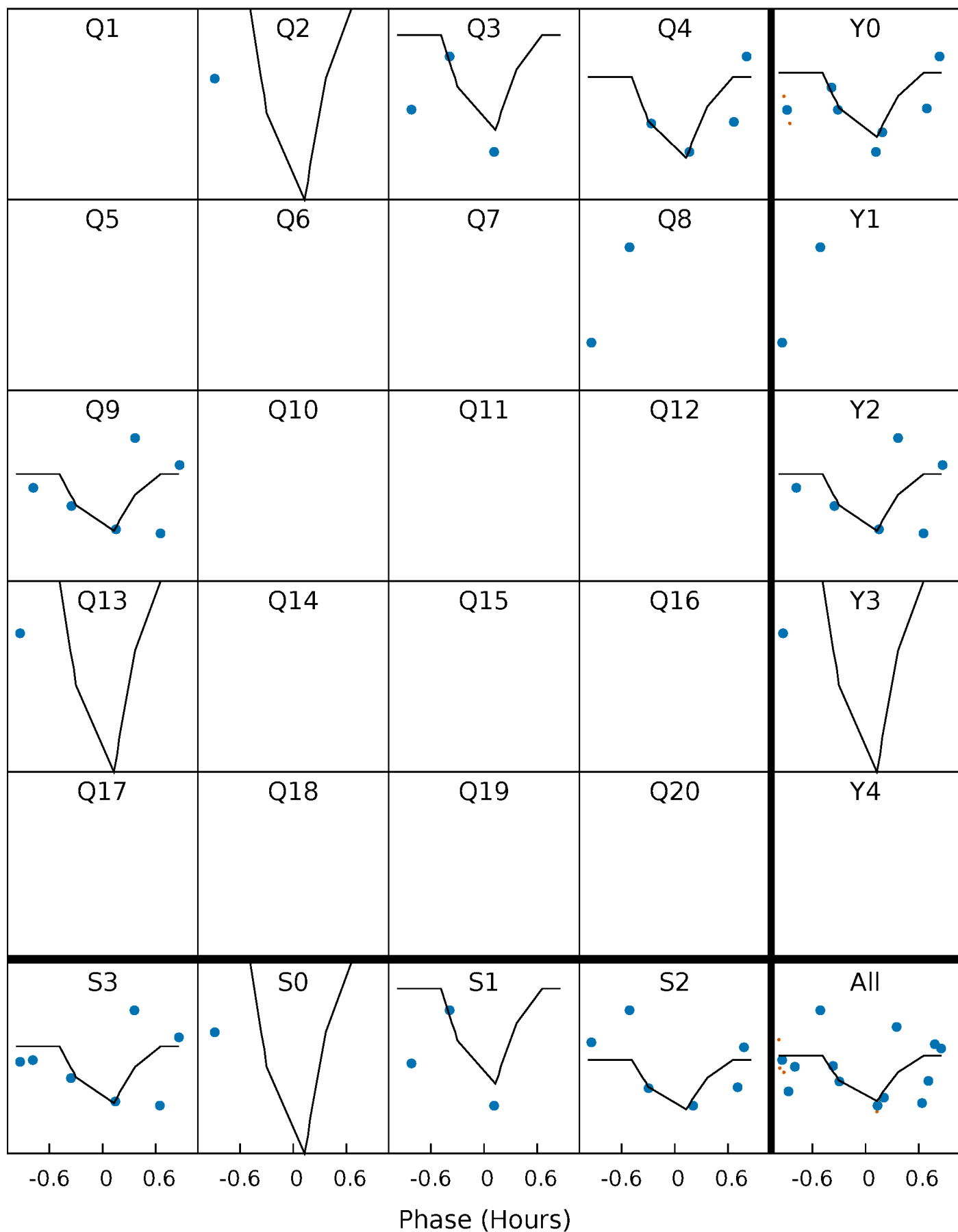
DV Quarter-Phased Transit Curves

TCE 004284959-08 P= 15.793829 Days $T_0=134.684111$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

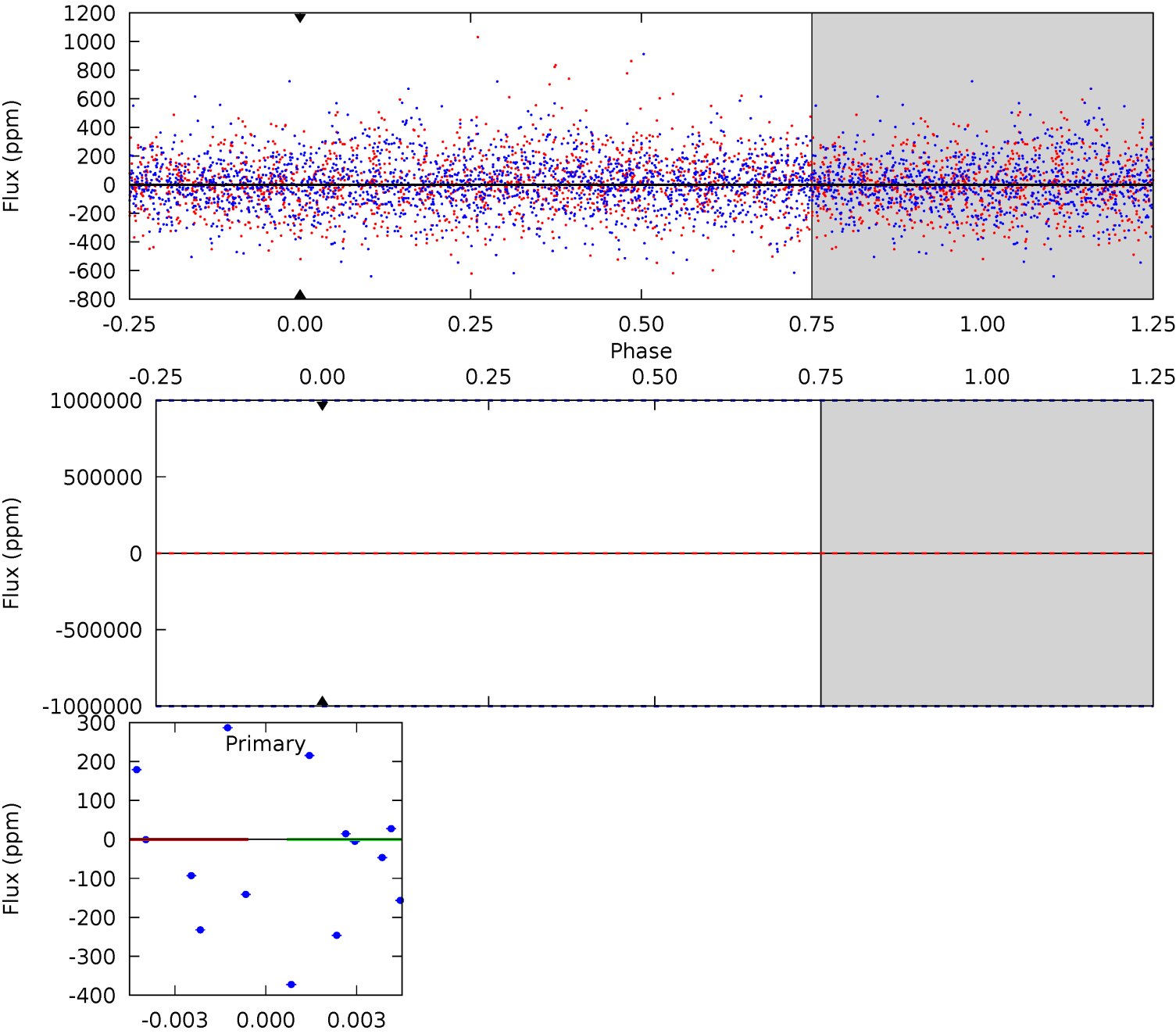
TCE 004284959-08 P= 15.793829 Days $T_0=134.688626$ (BKJD)



DV Model-Shift Uniqueness Test

004284959-08, P = 15.793829 Days, E = 118.890282 Days

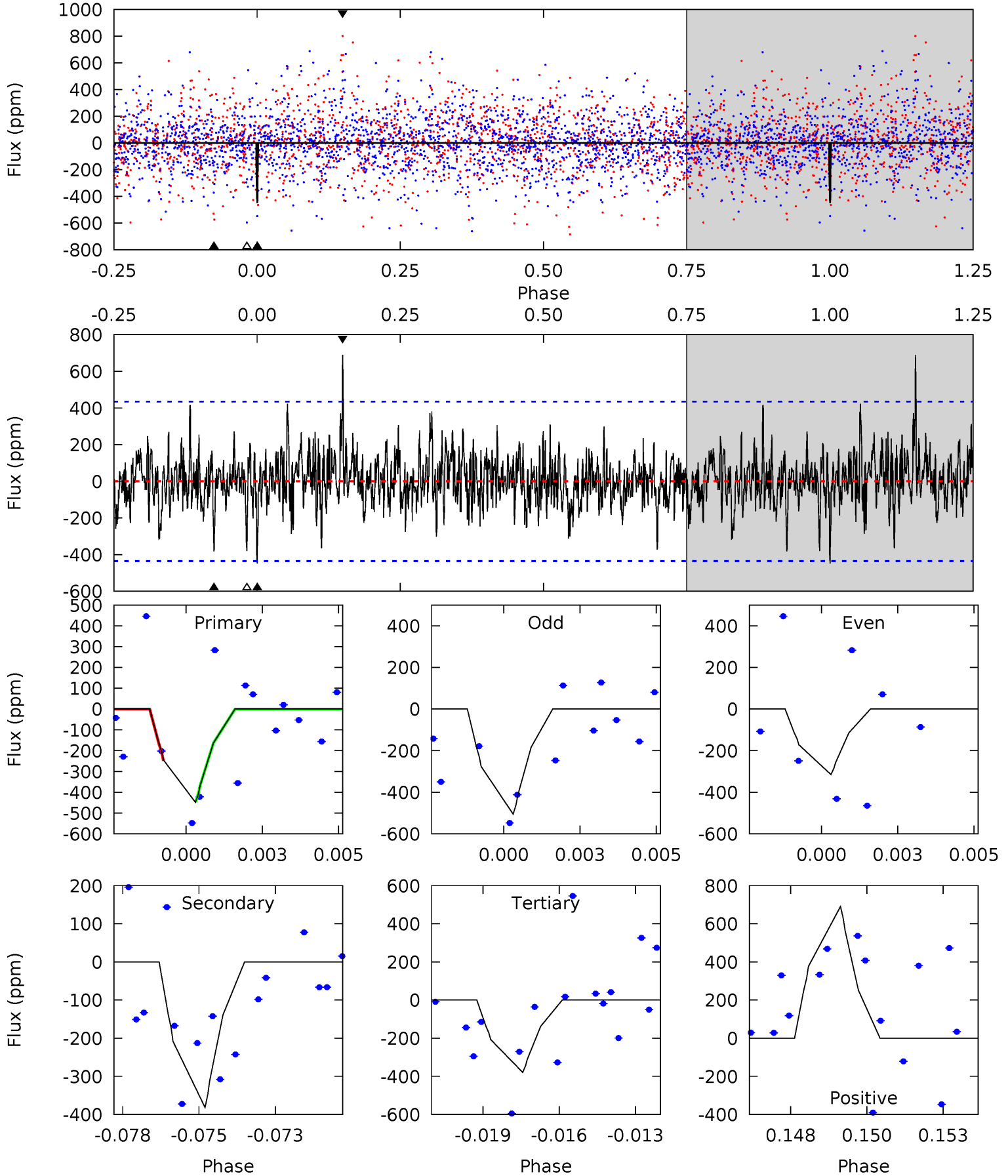
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004284959-08, P = 15.793829 Days, E = 118.894797 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.44	4.62	4.60	8.36	5.27	3.00	1.42	0.84	-2.93	0.03	-3.74	1.16	1.01	0.61	1.16



Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$10.10^{+12.16}_{-6.73}$	1293^{+93}_{-68}	-5829^{+35719}_{-21582}	$-266.251^{+15356.259}_{-13109.799}$
Alt.	-382 ± 83	$10.39^{+10.26}_{-6.93}$	1291^{+92}_{-75}	3779^{+2058}_{-750}	32^{+239}_{-24}

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

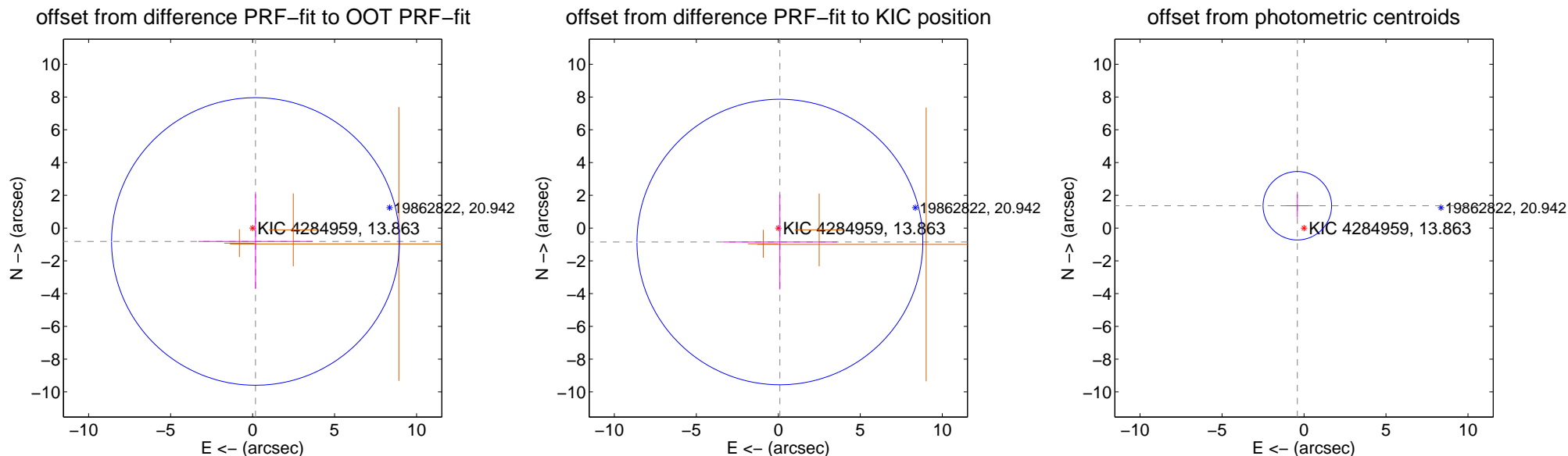
DV Centroid Data

Supplemental centroid analysis for 004284959-08. Kepler magnitude: 13.86. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

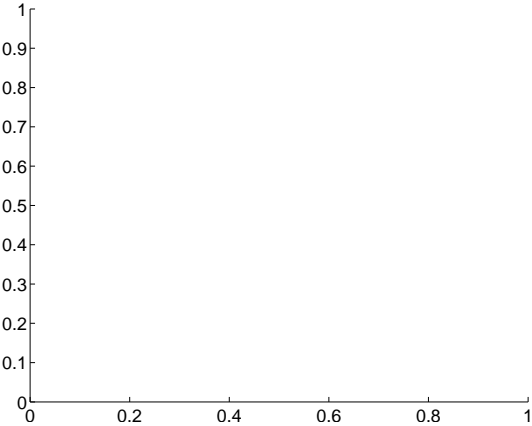
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.836 ± 2.926	0.29	-0.178 ± 3.482	-0.817 ± 2.897
PRF-fit source offset from KIC position	0.857 ± 2.905	0.29	-0.096 ± 3.482	-0.851 ± 2.897
photometric centroid source offset	1.42 ± 0.70	2.04	0.41 ± 0.68	1.36 ± 0.70



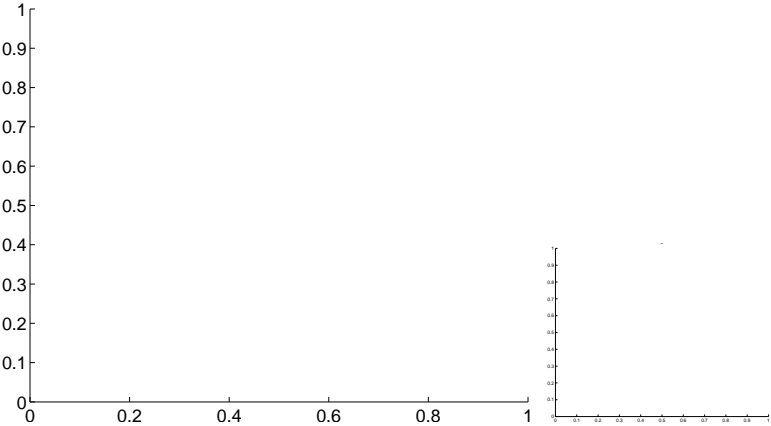
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

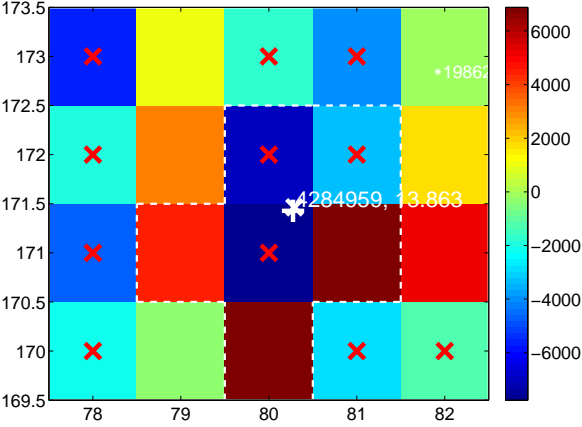
Q1 no difference image



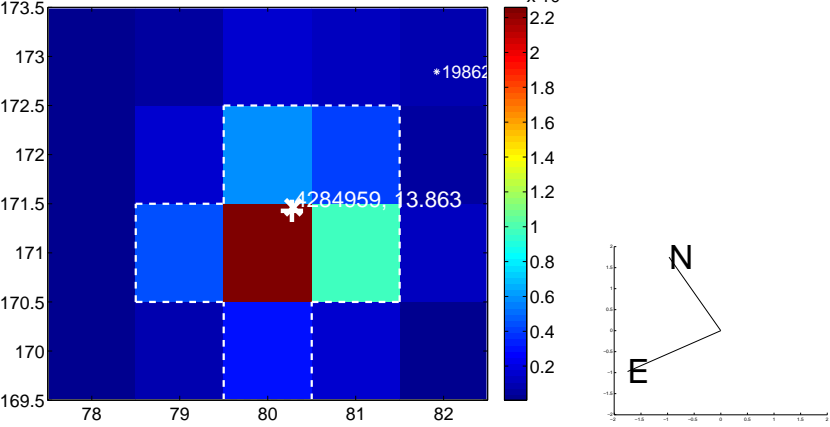
Q1 no OOT image



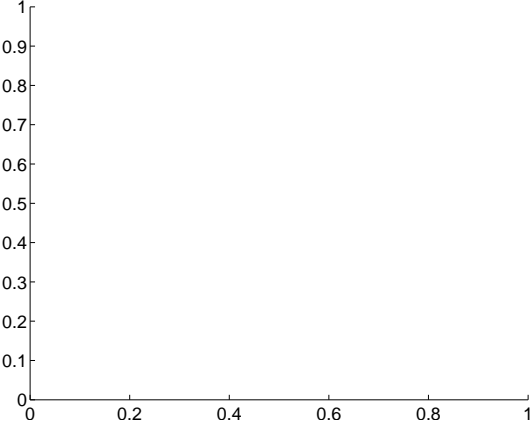
Q2 difference image. Poor Quality



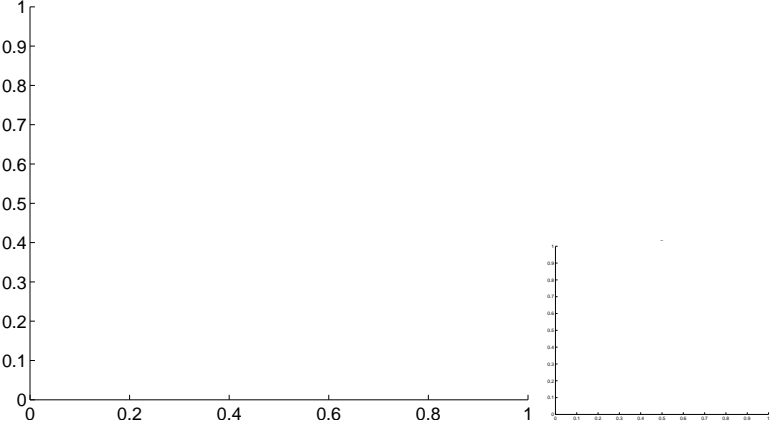
Q2 OOT image



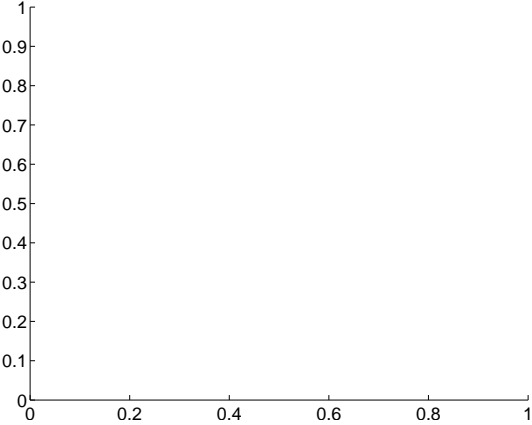
Q3 no difference image



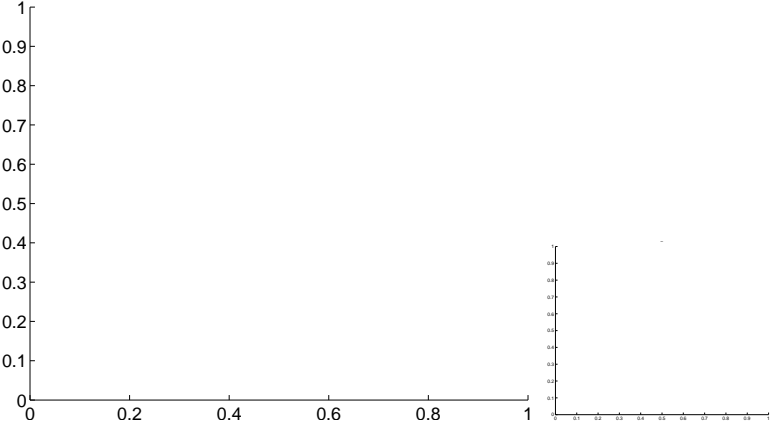
Q3 no OOT image



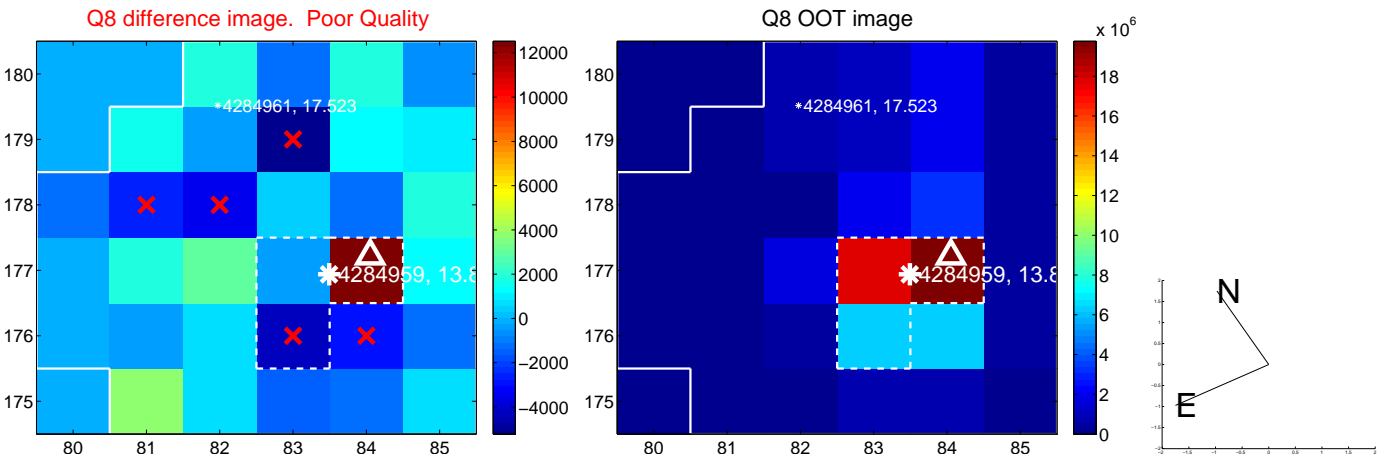
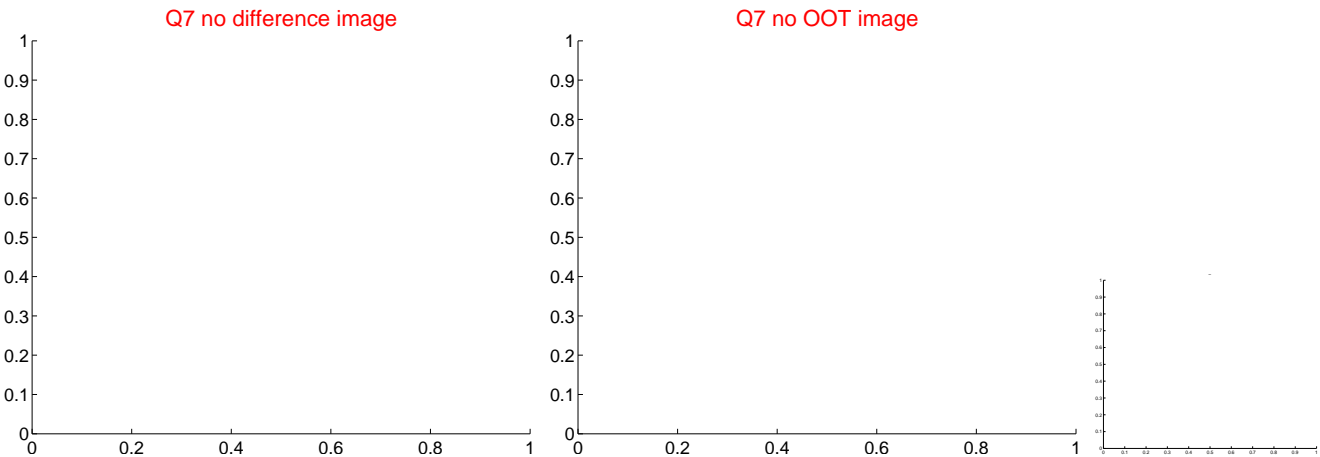
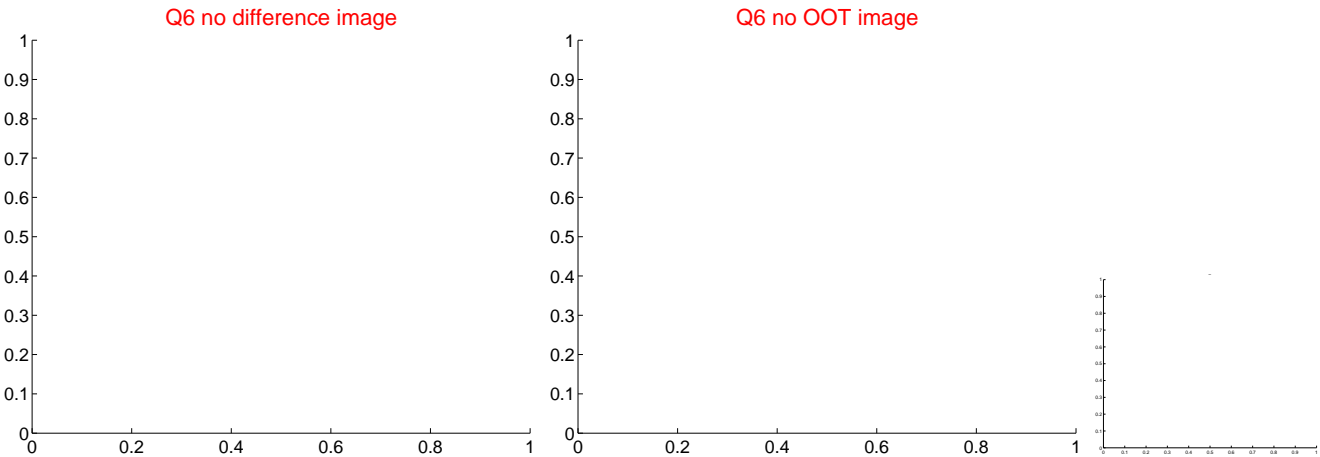
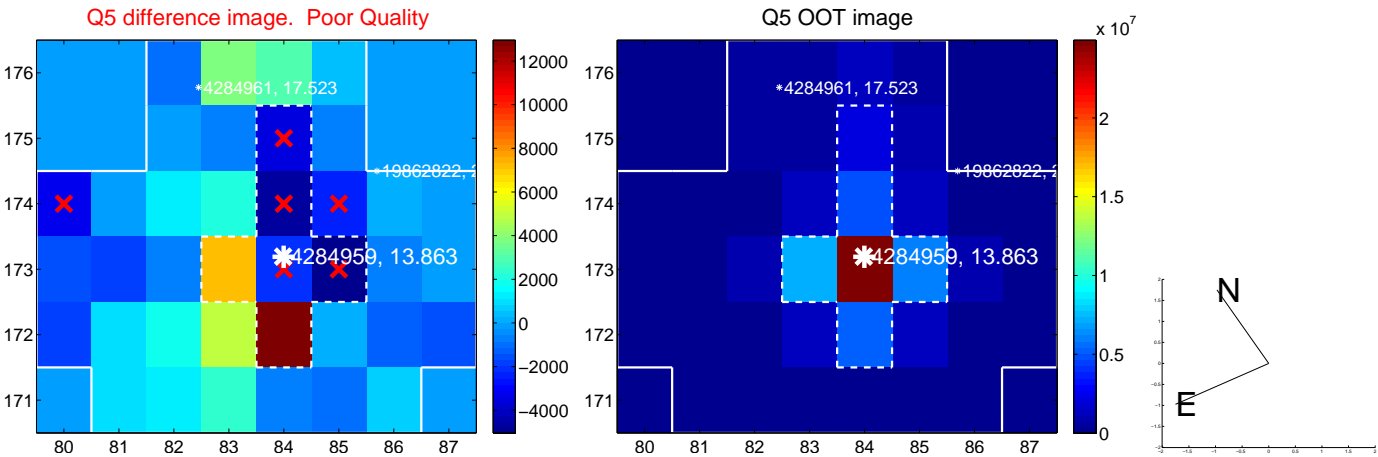
Q4 no difference image



Q4 no OOT image



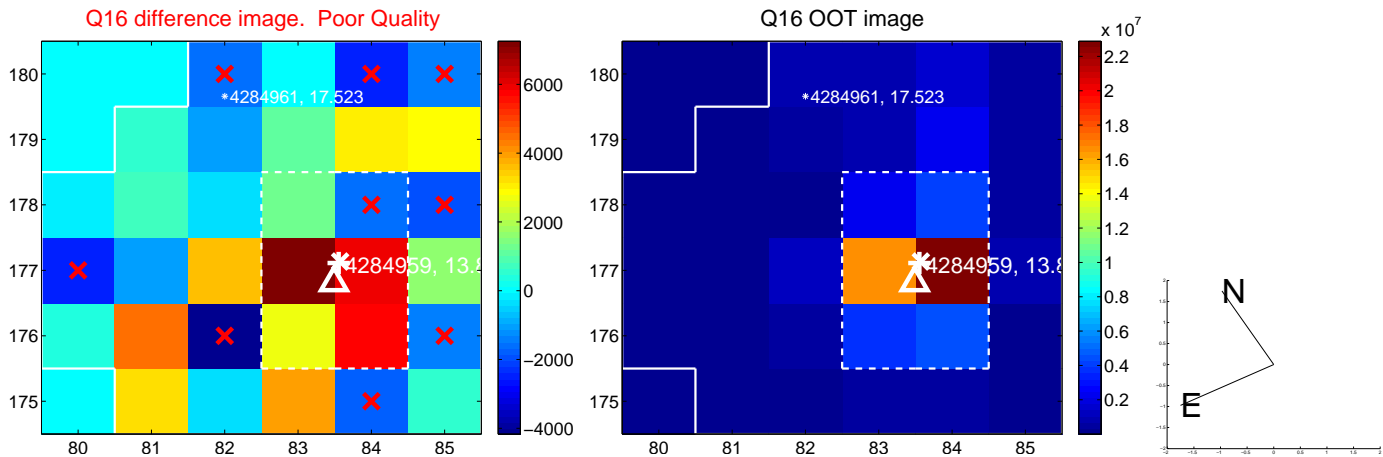
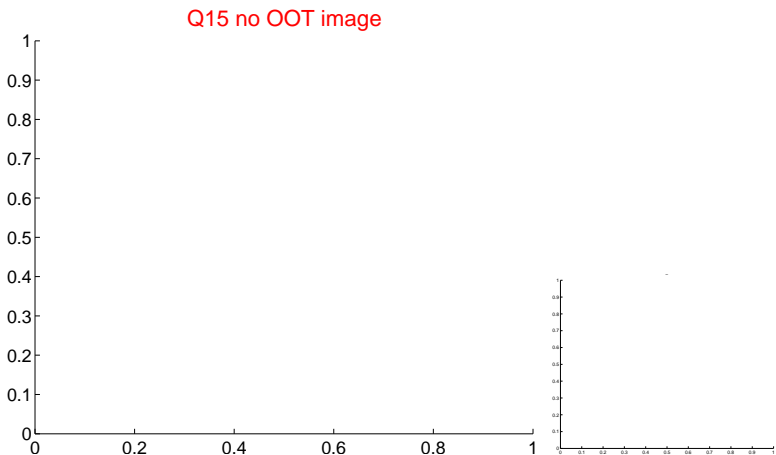
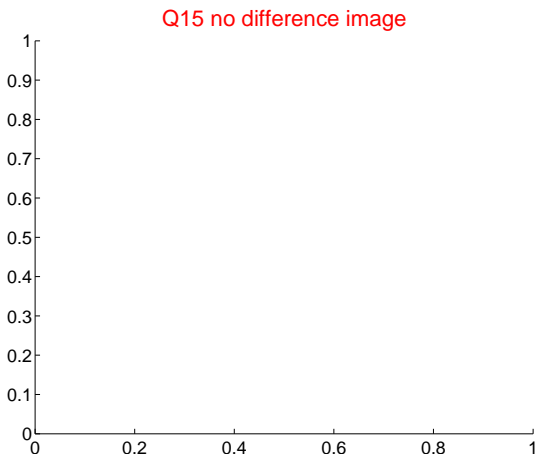
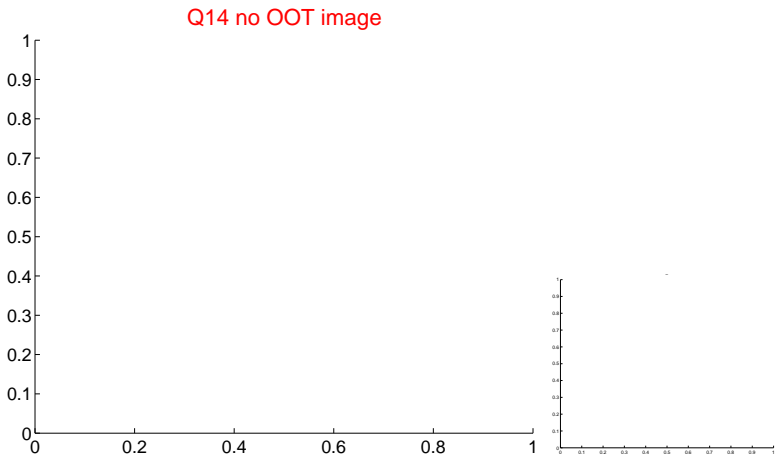
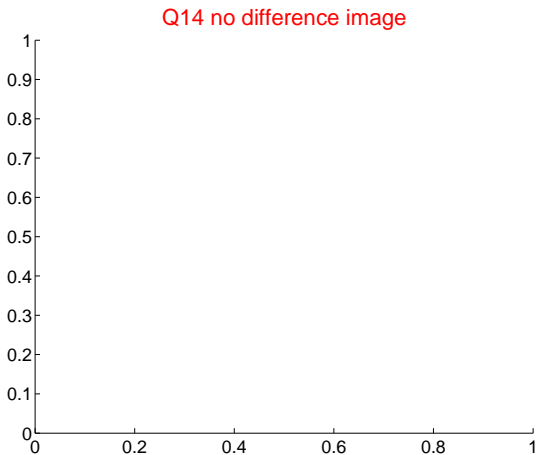
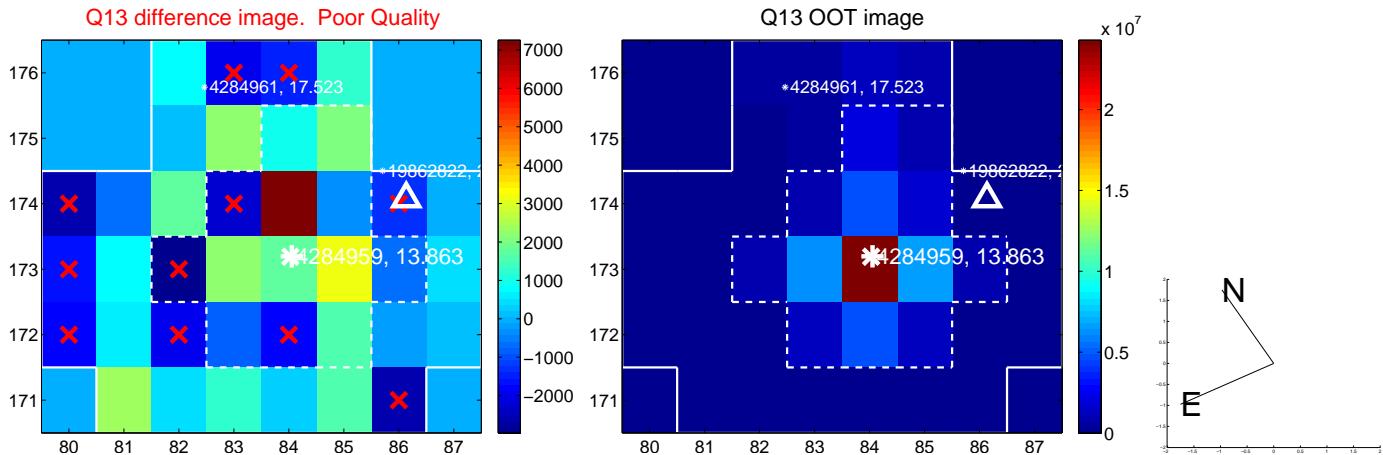
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



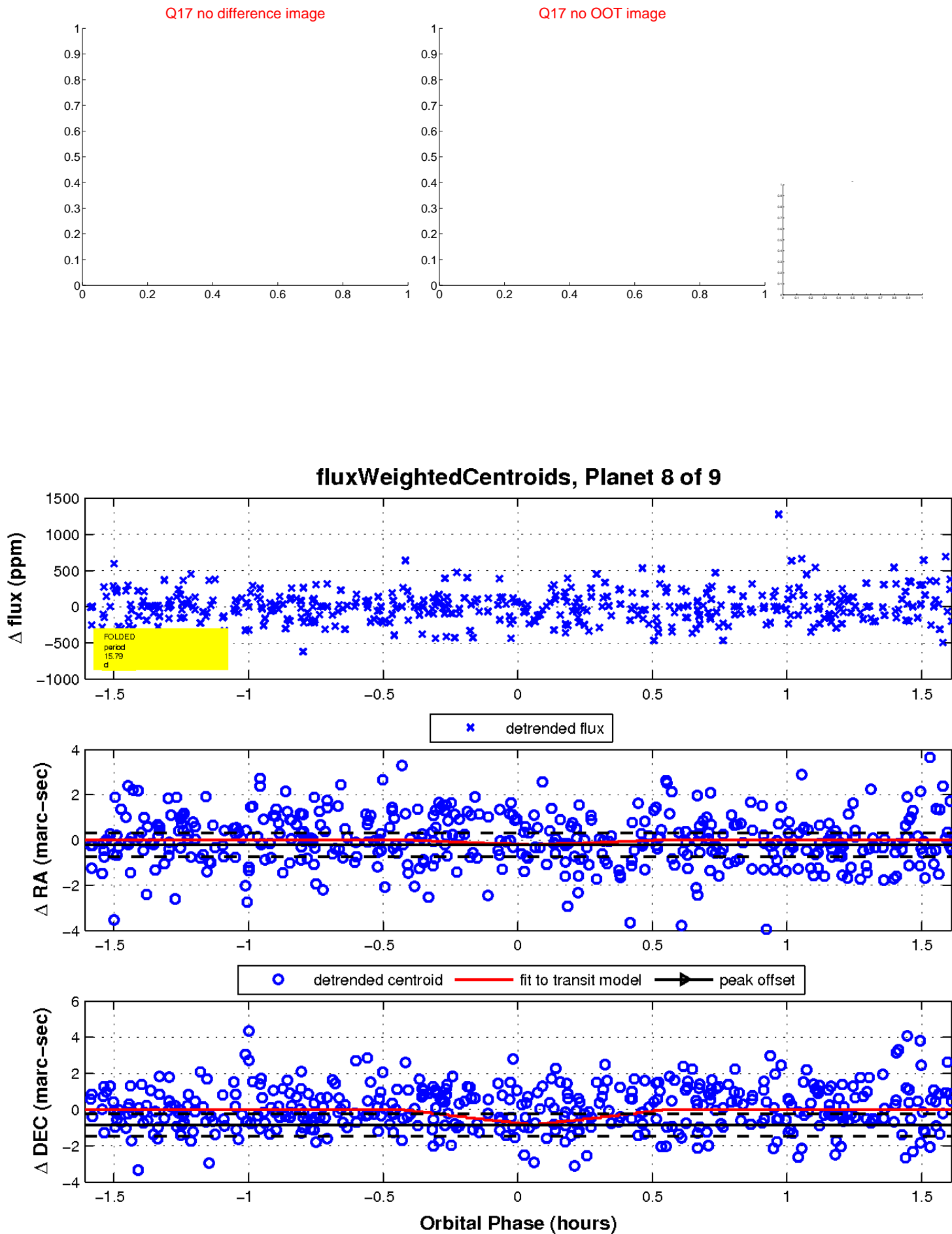
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

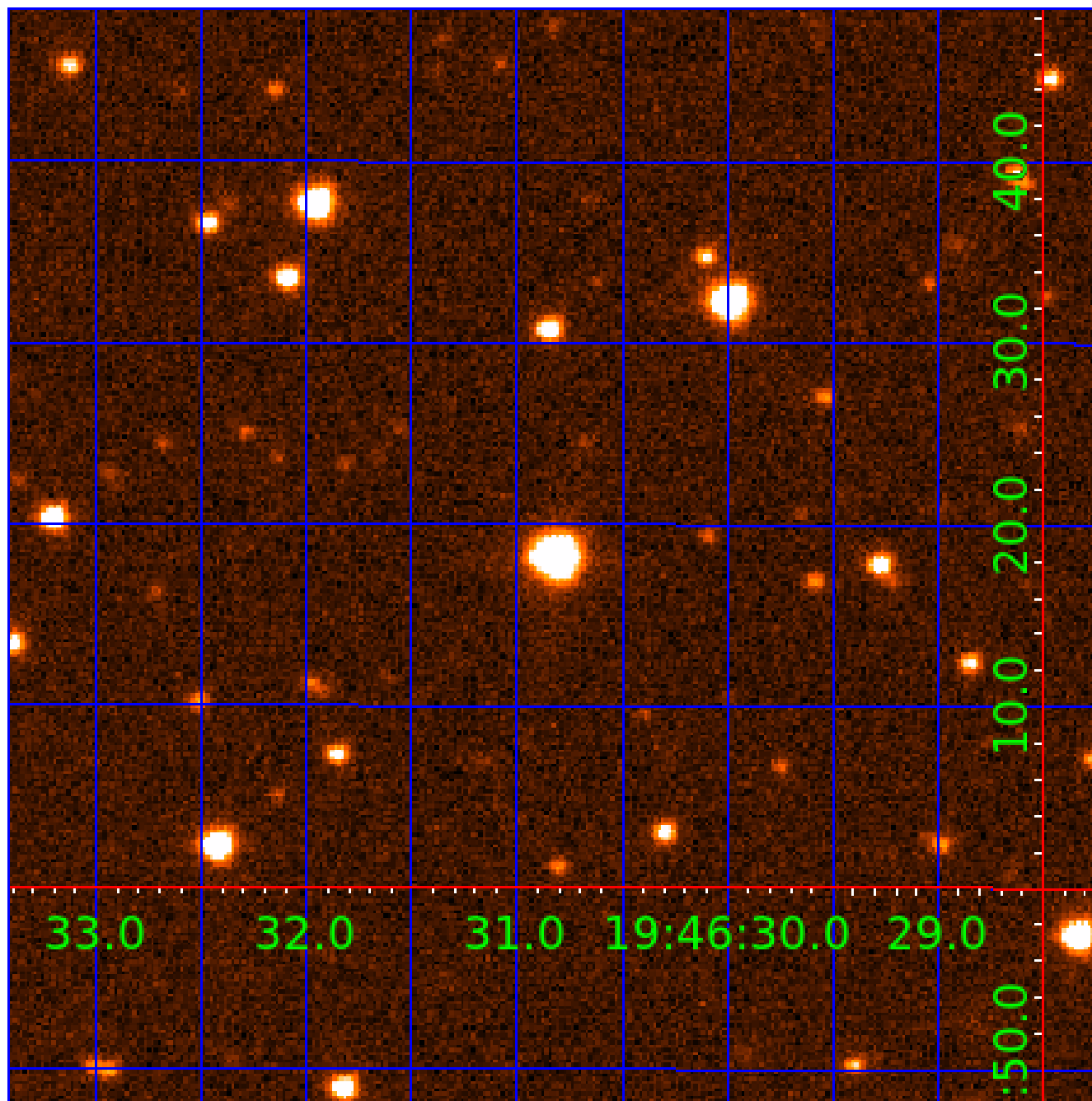


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004284959

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})
004284959-01	OBS	No	1.192696	132.479950	0.0	8.808	8.7	0.0	1.22	6731	0.00	5236.33
004284959-02	OBS	No	22.480554	136.553048	557.1	1.737	18.7	16.0	1.22	6731	2.92	104.39
004284959-03	OBS	No	11.991718	139.115641	341.7	2.179	14.6	15.0	1.22	6731	2.59	241.30
004284959-04	OBS	No	16.423993	145.063114	362.2	1.746	14.6	12.9	1.22	6731	2.52	158.65
004284959-05	OBS	No	10.695476	141.822775	313.7	1.630	15.3	11.7	1.22	6731	2.47	281.06
004284959-06	OBS	No	9.748056	135.886355	673.8	0.641	11.4	12.2	1.22	6731	3.73	318.06
004284959-07	OBS	No	19.760540	147.133877	359.9	1.539	12.6	11.8	1.22	6731	2.43	123.97
004284959-08	OBS	No	15.793829	134.684111	799.9	2.000	11.9	-1.0	1.22	6731	3.50	167.14
004284959-09	OBS	No	19.757953	136.907984	357.3	1.958	12.7	11.4	1.22	6731	2.48	124.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004284959-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
004284959-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004284959-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004284959-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004284959-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
004284959-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

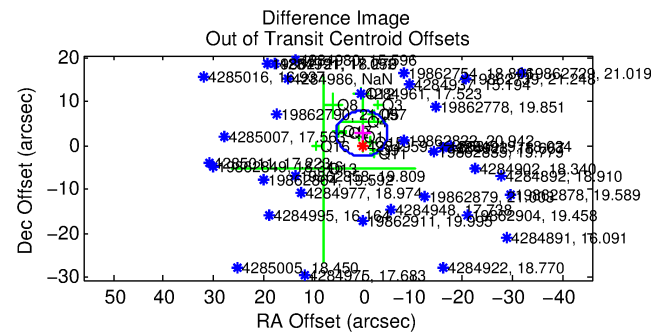
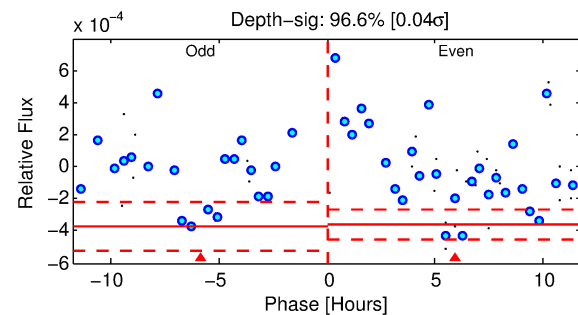
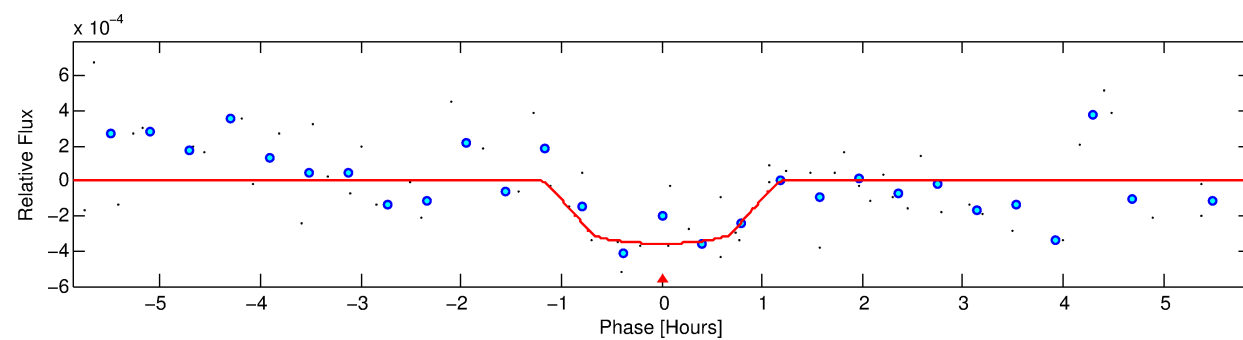
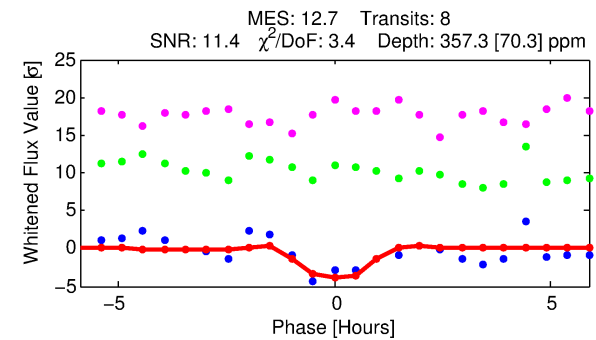
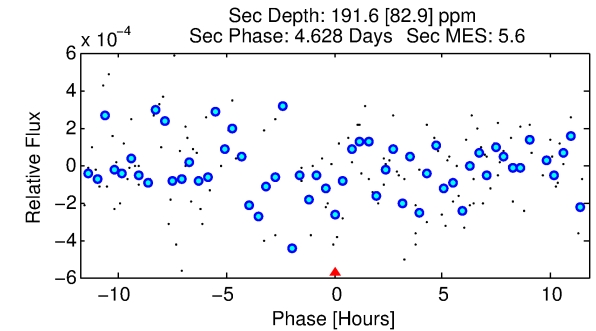
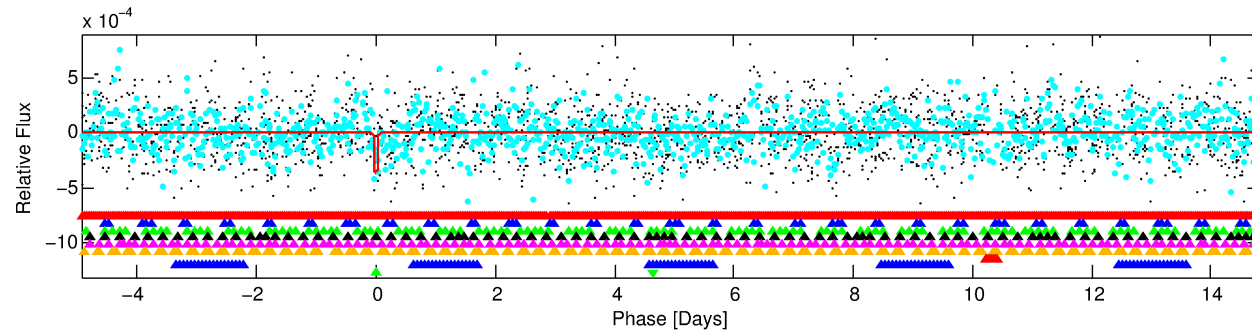
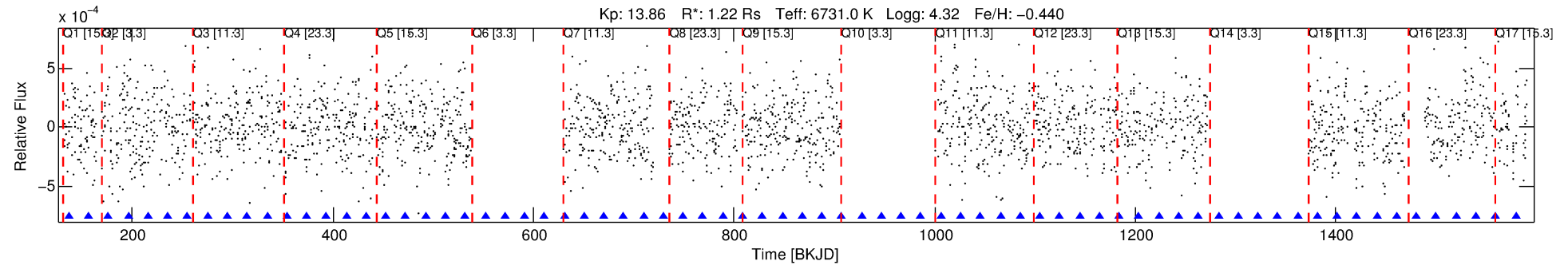
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004284959-09

No Significant Match Found

DV One-Page Summary

KIC: 4284959 Candidate: 9 of 9 Period: 19.758 d



DV Fit Results:

Period = 19.75795 [0.00025] d
Epoch = 136.9080 [0.0092] BKJD
Rp/R* = 0.0186 [0.0420]
a/R* = 57.18 [734.65]
b = 0.70 [9.53]
Seff = 124.00 [46.32]
Teq = 851 [79] K
Rp = 2.48 [5.65] Re
a = 0.1491 [0.0358] AU
Ag = 380.55 [1732.36] [0.22σ]
Teffp = 5811 [6597] K [0.75σ]

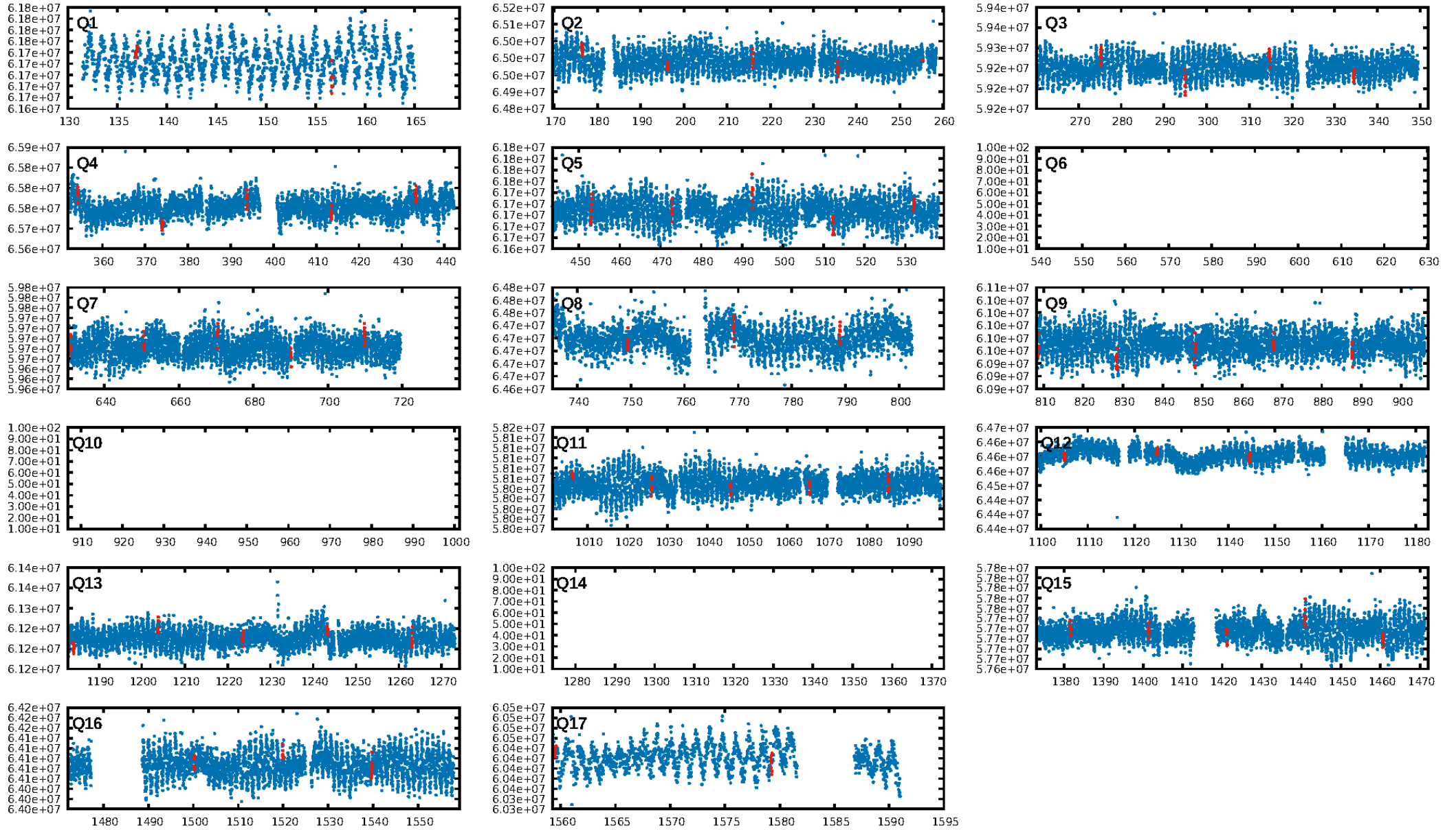
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [30.50σ]
LongPeriod-sig: 2.0% [0.02σ]
ModelChiSquare2-sig: 3.0%
ModelChiSquareGof-sig: 86.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.8336
Centroid-sig: 42.1%
Centroid-so: 0.606 arcsec [0.99σ]
OotOffset-rm: 2.786 arcsec [1.62σ]
KicOffset-rm: 2.793 arcsec [1.62σ]
OotOffset-st: 1/3/4/5 [13]
KicOffset-st: 1/3/4/5 [13]
DiffImageQuality-fgm: 0.15 [2/13]
DiffImageOverlap-fno: 0.57 [8/14]

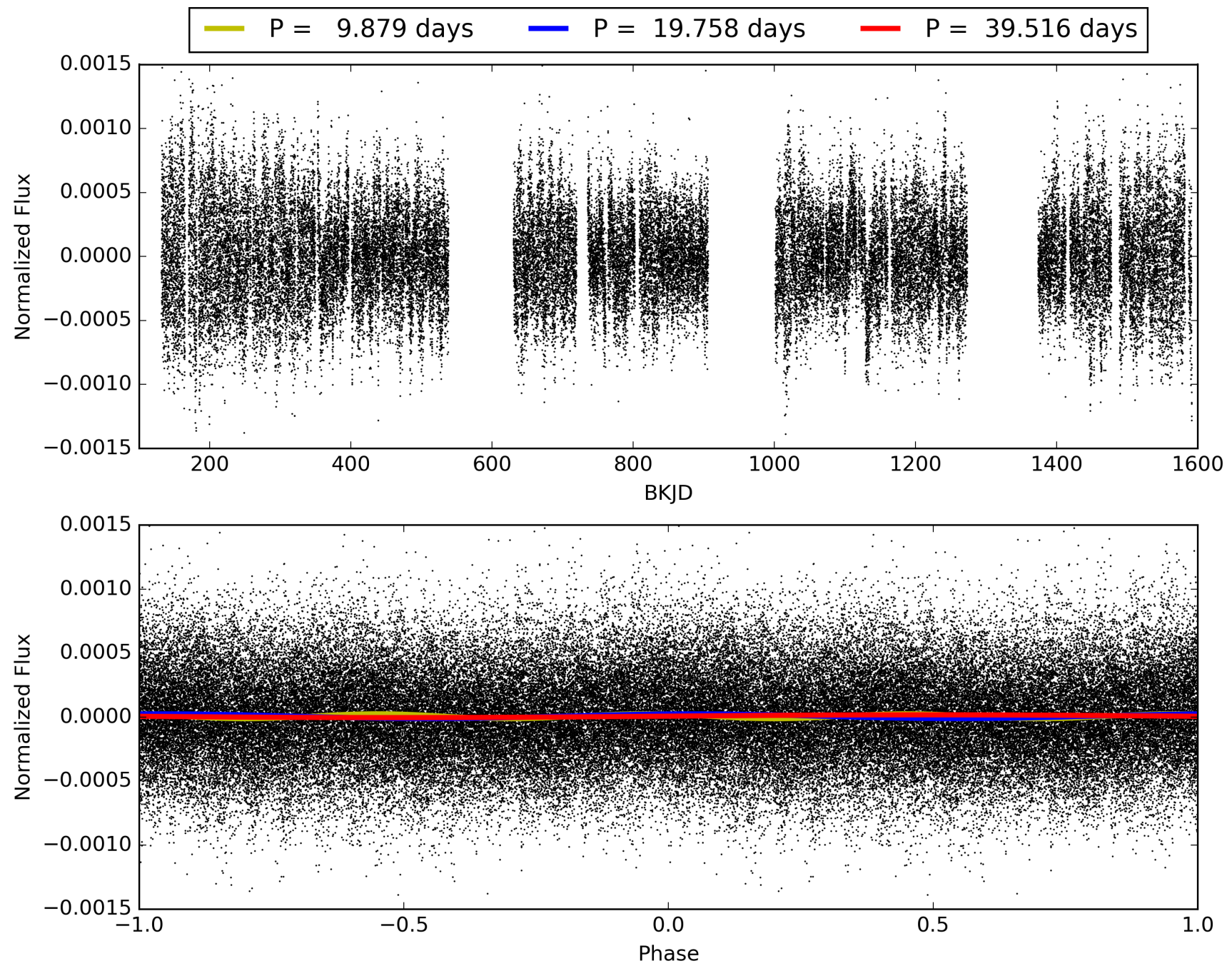
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:12:48 Z

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

TCE 004284959-09, PDC Light Curves

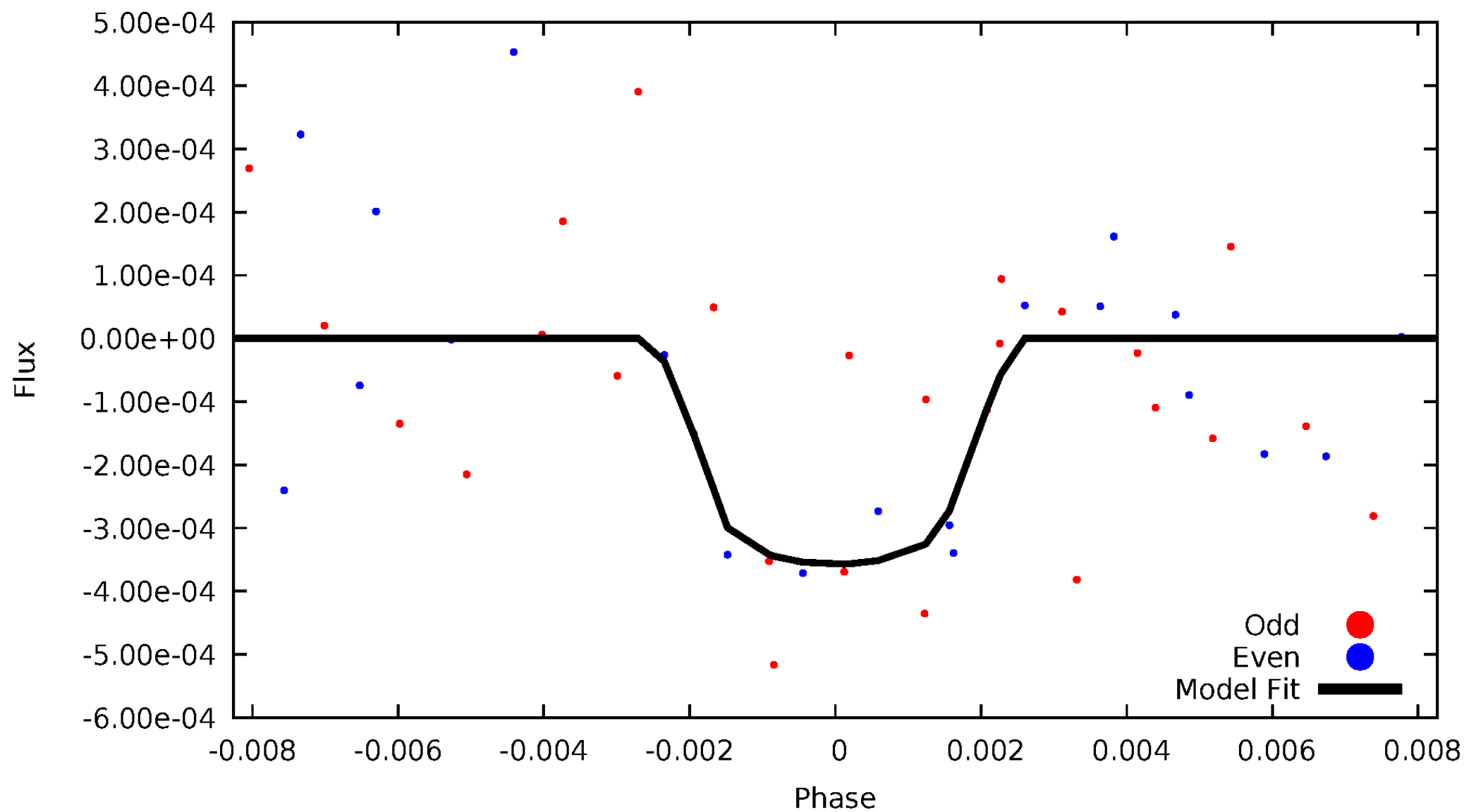


TCE 004284959-09



DV Odd/Even

TCE 004284959-09

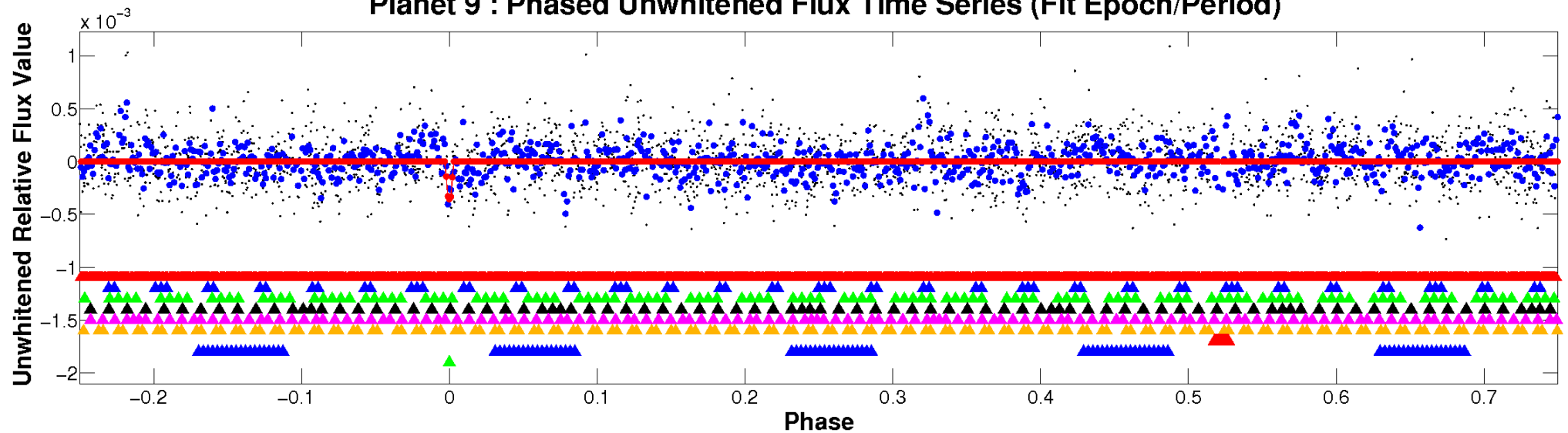


ALT Odd/Even

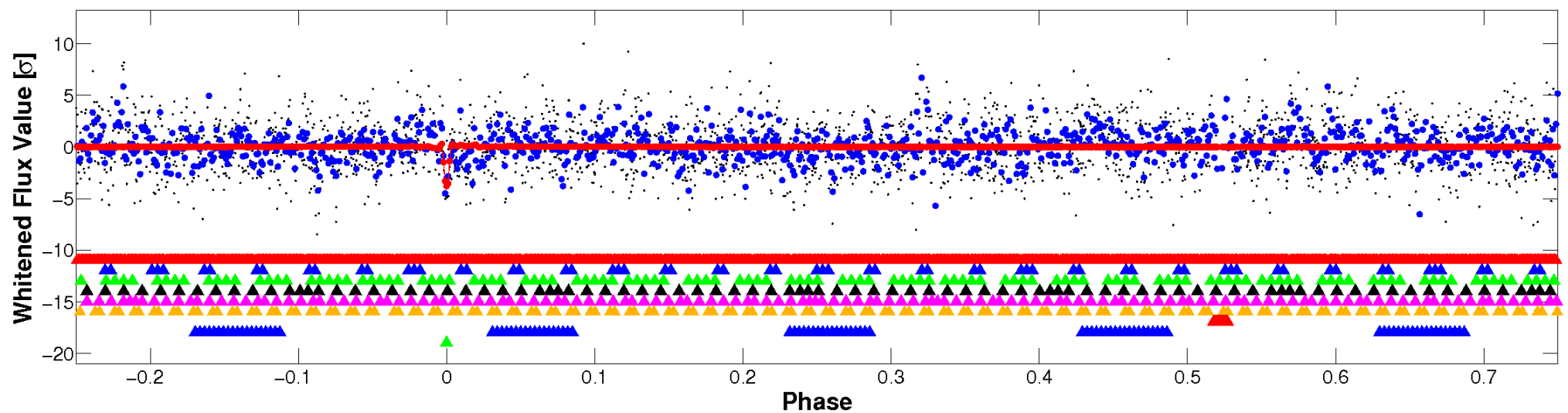
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

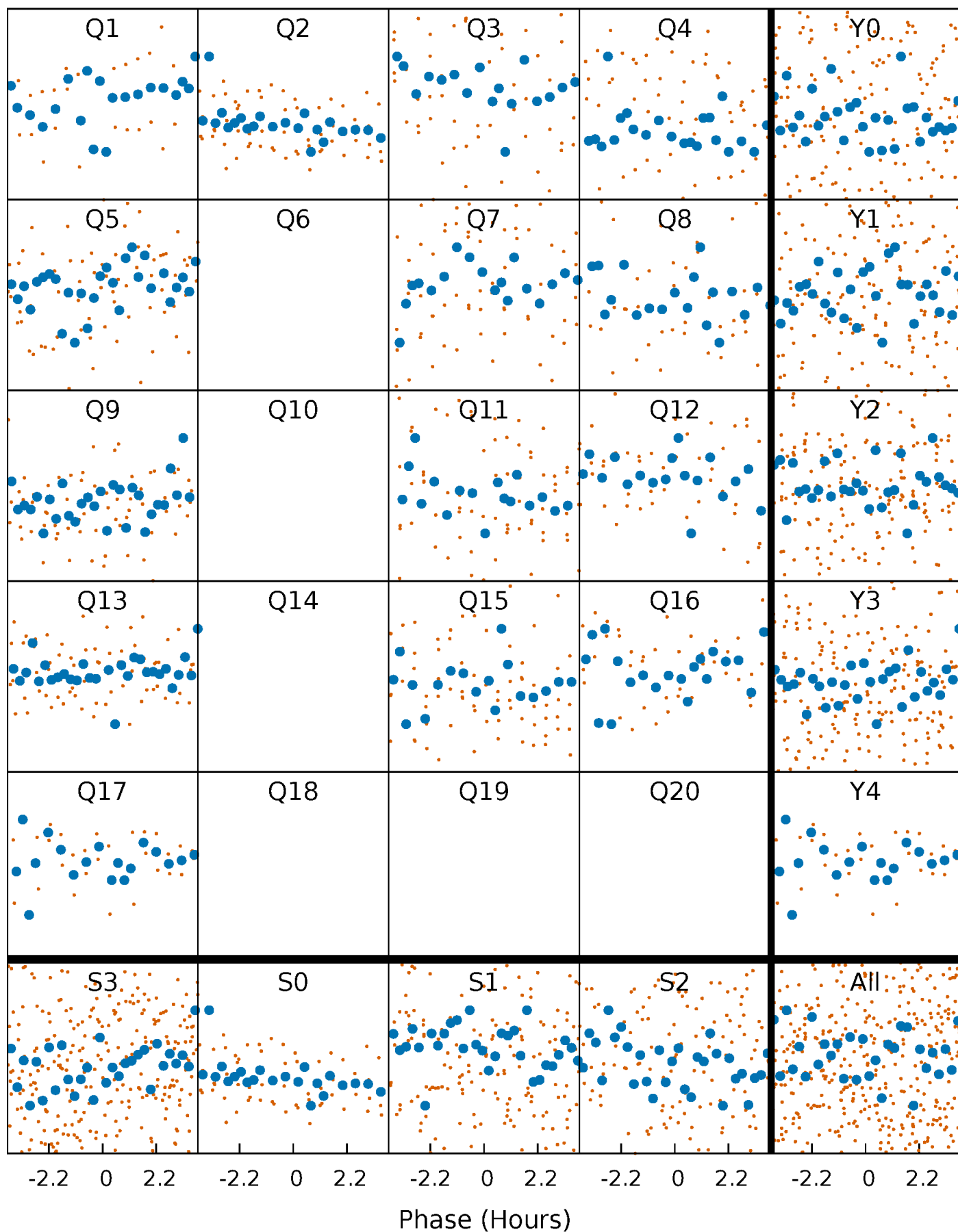


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



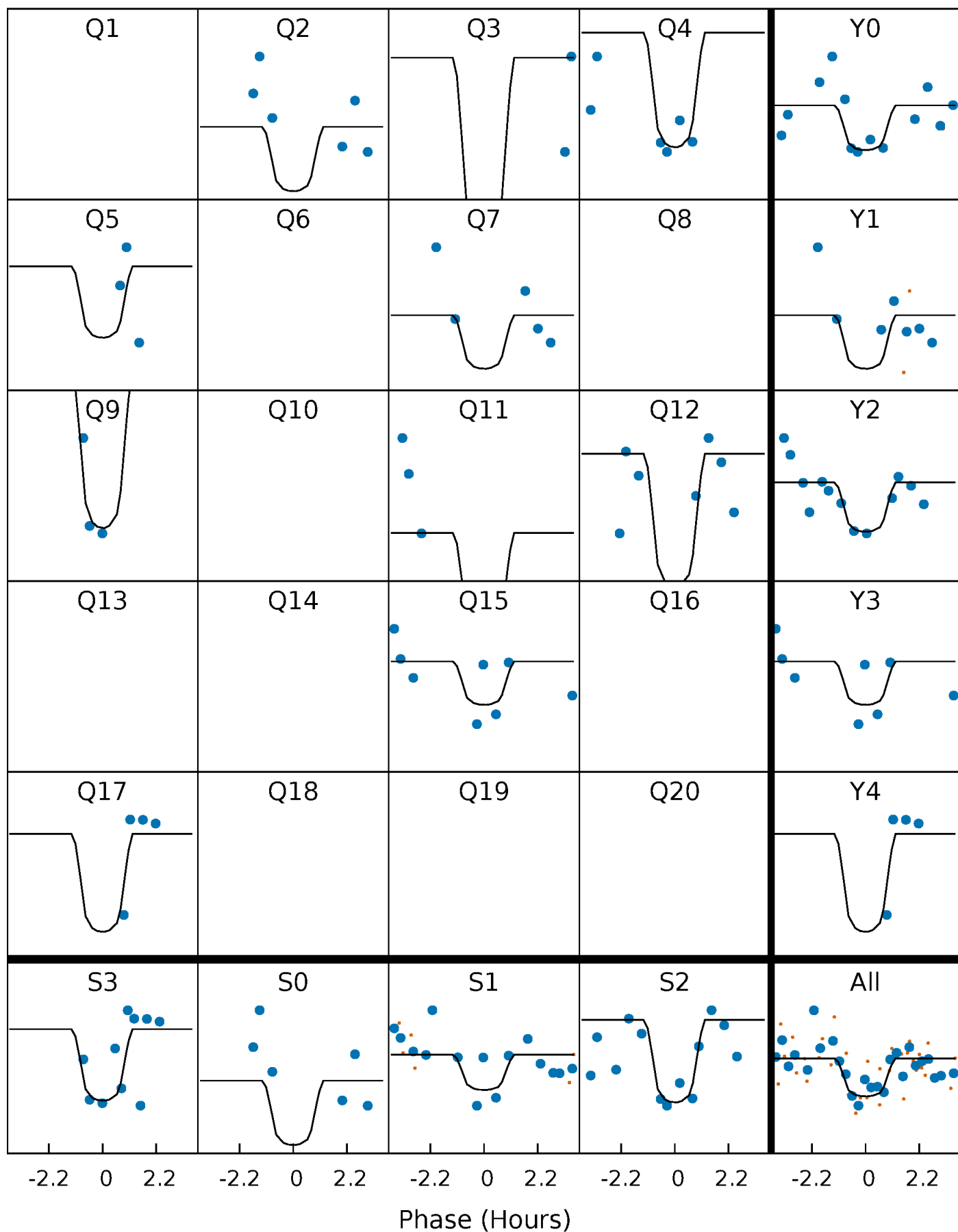
PDC Quarter-Phased Transit Curves

TCE 004284959-09 P= 19.757953 Days $T_0=136.907984$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004284959-09 P= 19.757953 Days $T_0=136.907984$ (BKJD)

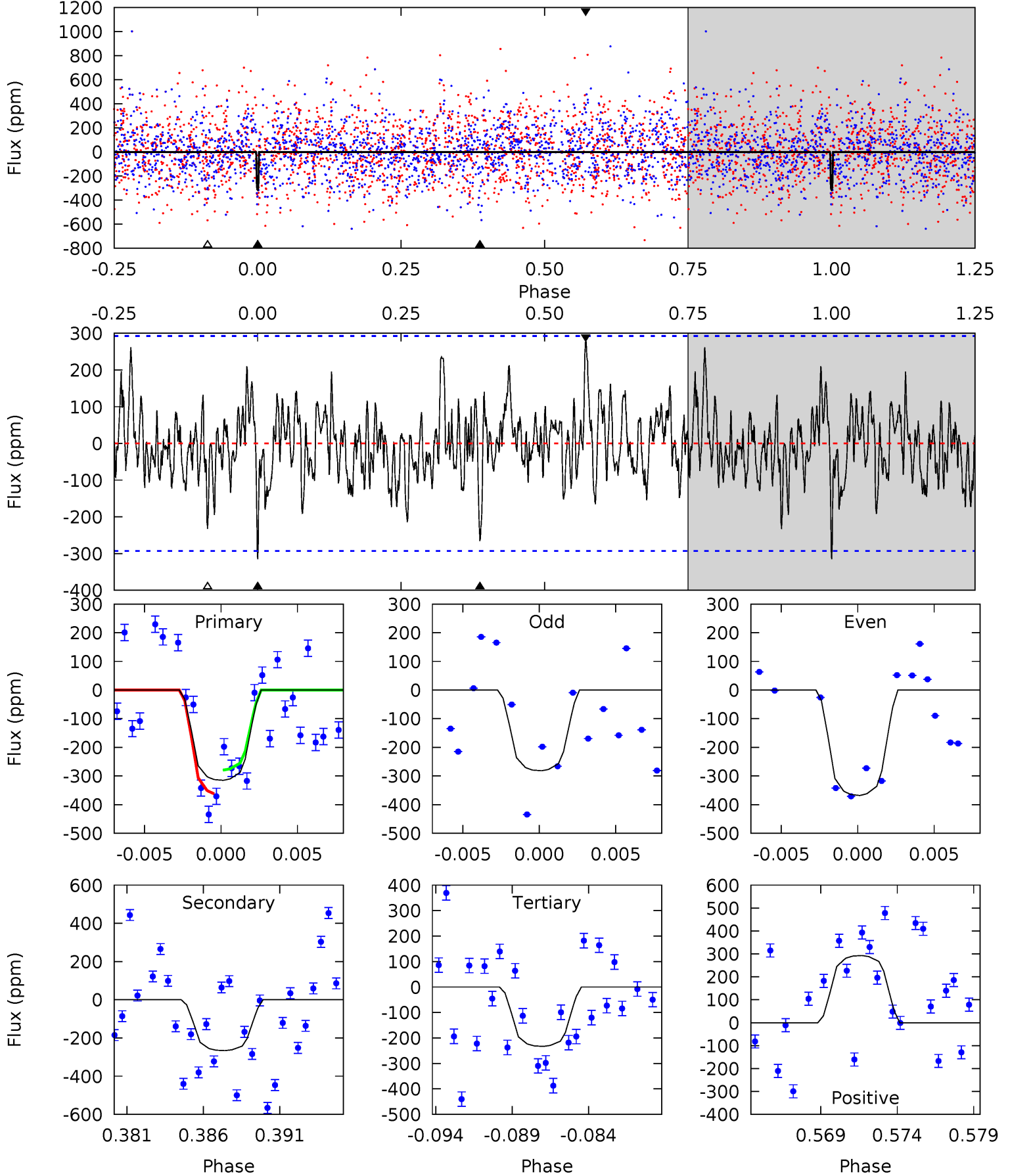


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

004284959-09, P = 19.757953 Days, E = 117.150031 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.55	4.69	4.11	5.16	5.16	2.81	1.39	1.45	0.39	0.58	-0.47	0.79	0.83	0.48	0.71



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 004284959

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6731^{+188}_{-235}	$4.316^{+0.101}_{-0.188}$	$-0.440^{+0.250}_{-0.300}$	$1.224^{+0.352}_{-0.189}$	$1.134^{+0.164}_{-0.148}$	$0.871^{+0.406}_{-0.445}$
	+3%/-3%	+2%/-4%	+57%/-68%	+29%/-15%	+14%/-13%	+47%/-51%
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 004284959-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-266 ± 57	$4.93^{+5.15}_{-3.43}$	1206^{+85}_{-70}	4626^{+3643}_{-1011}	129^{+1169}_{-98}
Alt.	N/A	N/A	N/A	N/A	N/A

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

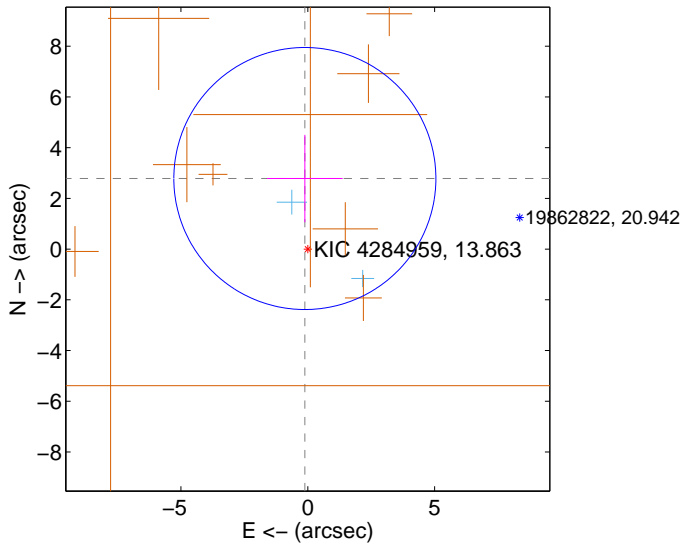
Supplemental centroid analysis for 004284959-09. Kepler magnitude: 13.86. Transit SNR 11.42

There are 2 quarters with good PRF difference image offsets

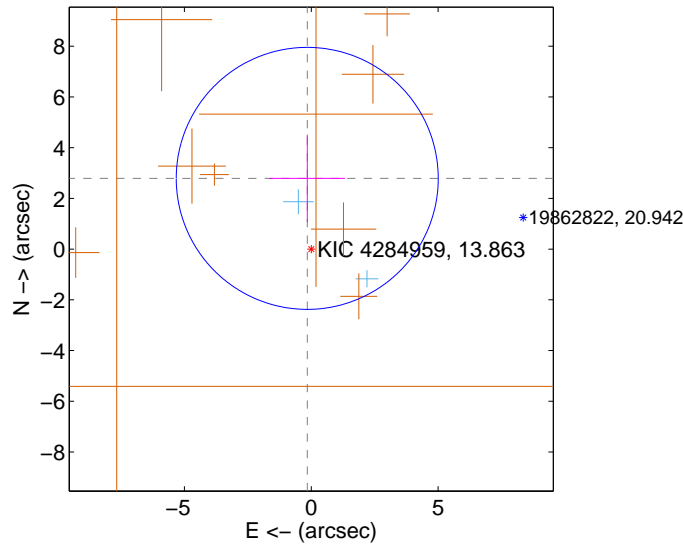
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.786 ± 1.722	1.62	0.115 ± 1.492	2.783 ± 1.722
PRF-fit source offset from KIC position	2.793 ± 1.721	1.62	0.158 ± 1.492	2.788 ± 1.722
photometric centroid source offset	0.61 ± 0.61	0.99	0.59 ± 0.61	-0.14 ± 0.67

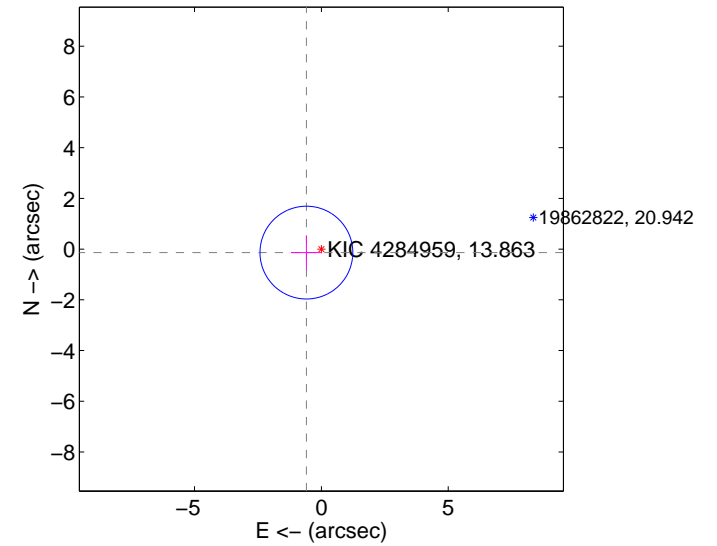
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

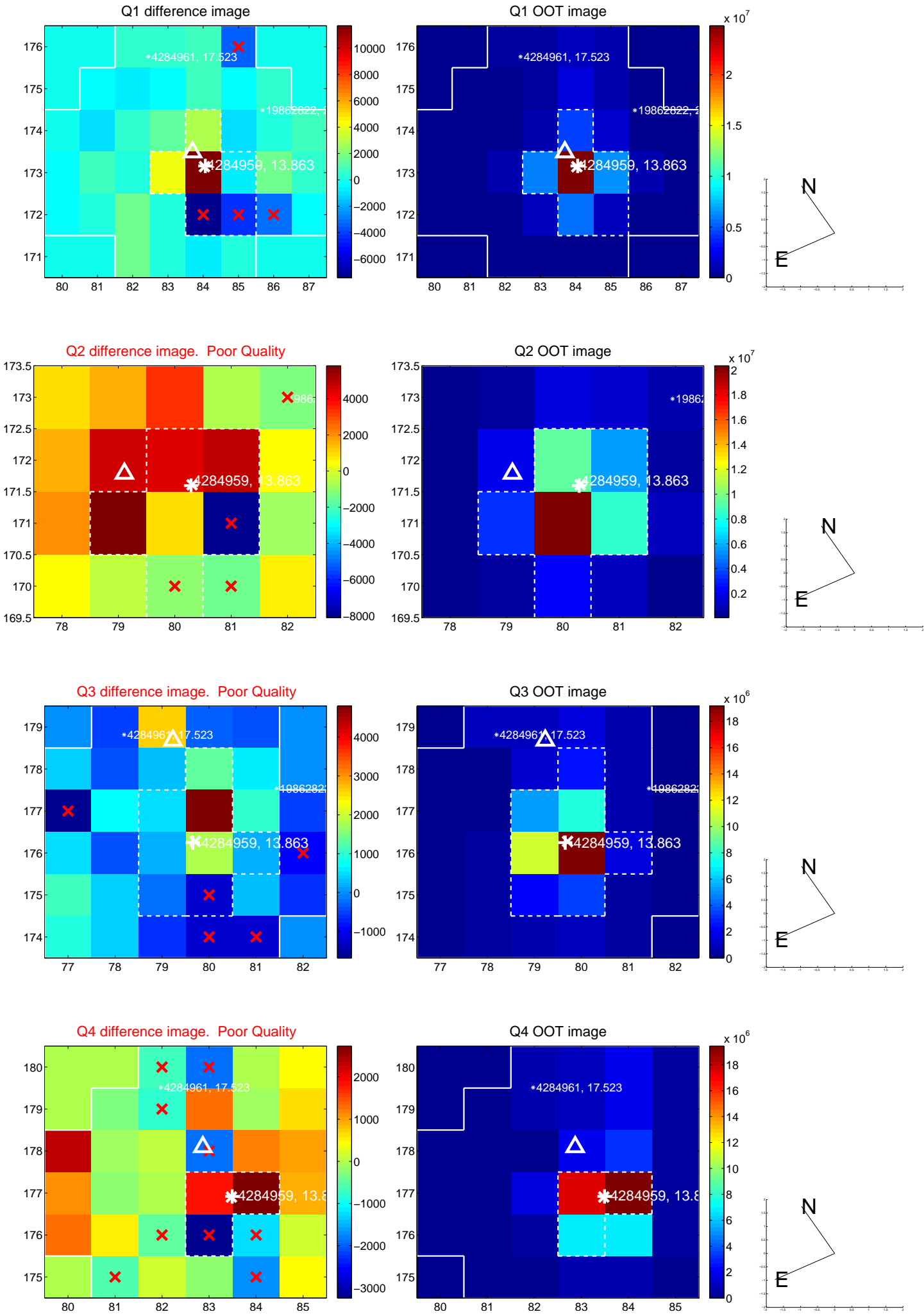


offset from photometric centroids

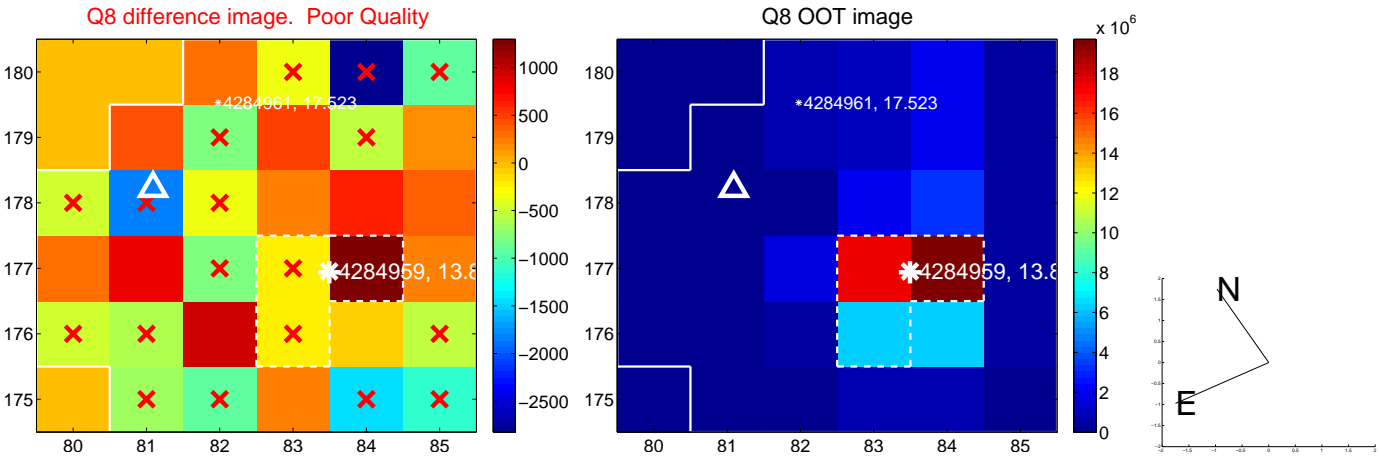
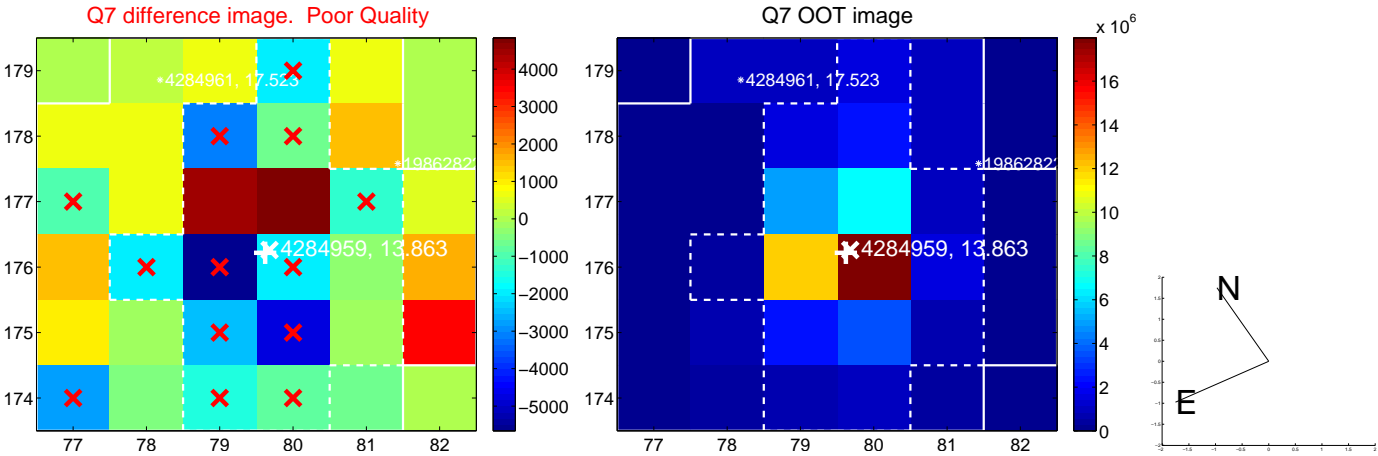
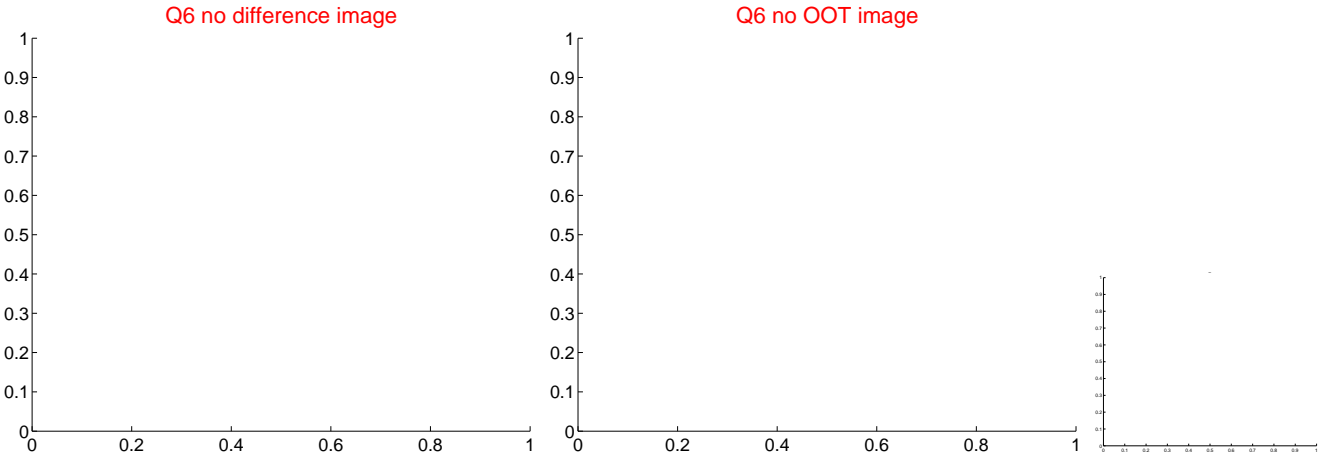
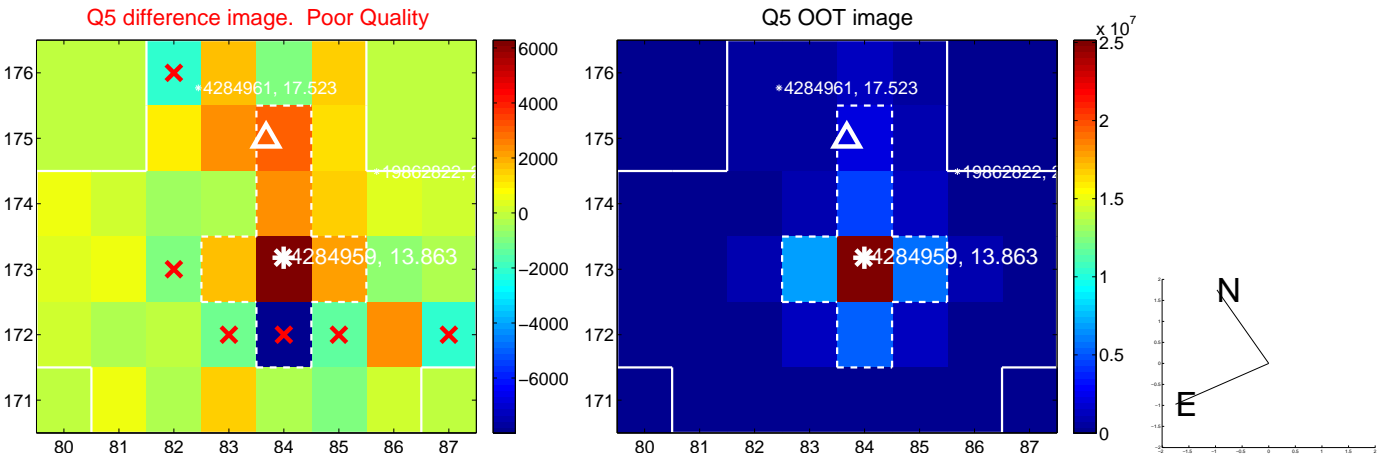


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

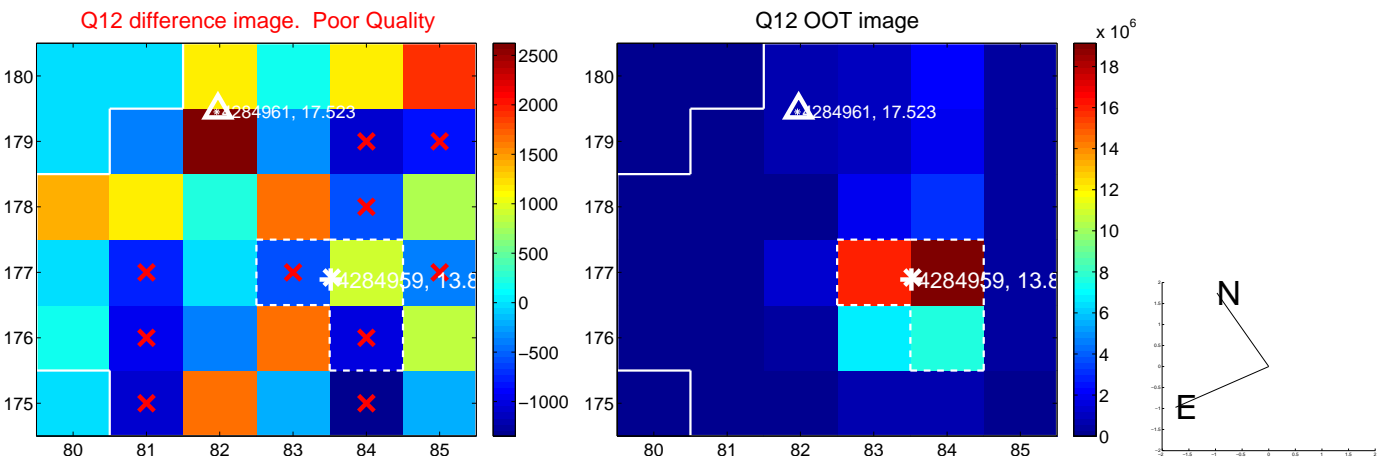
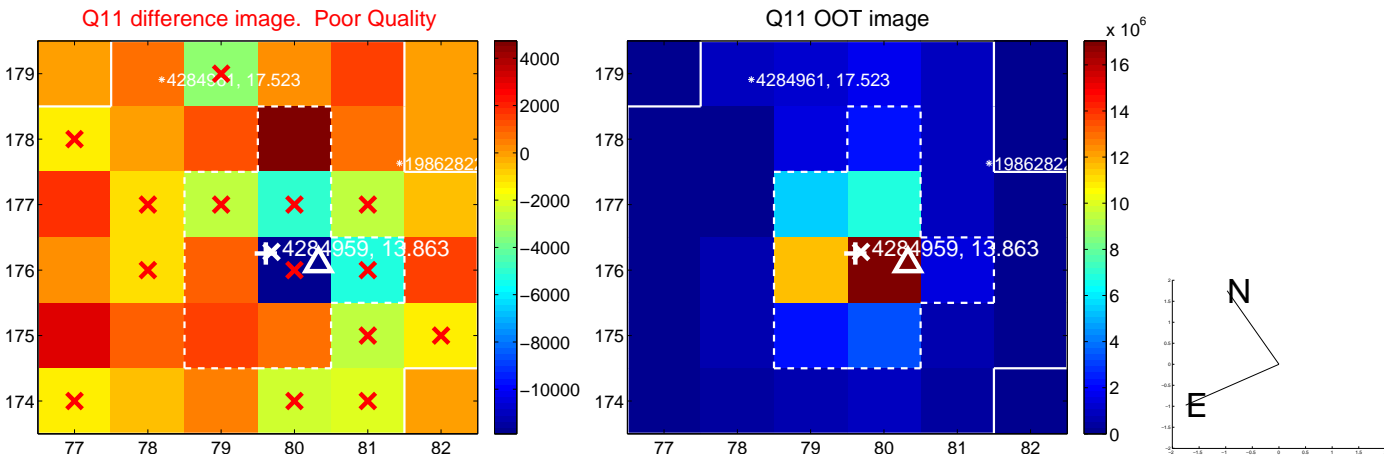
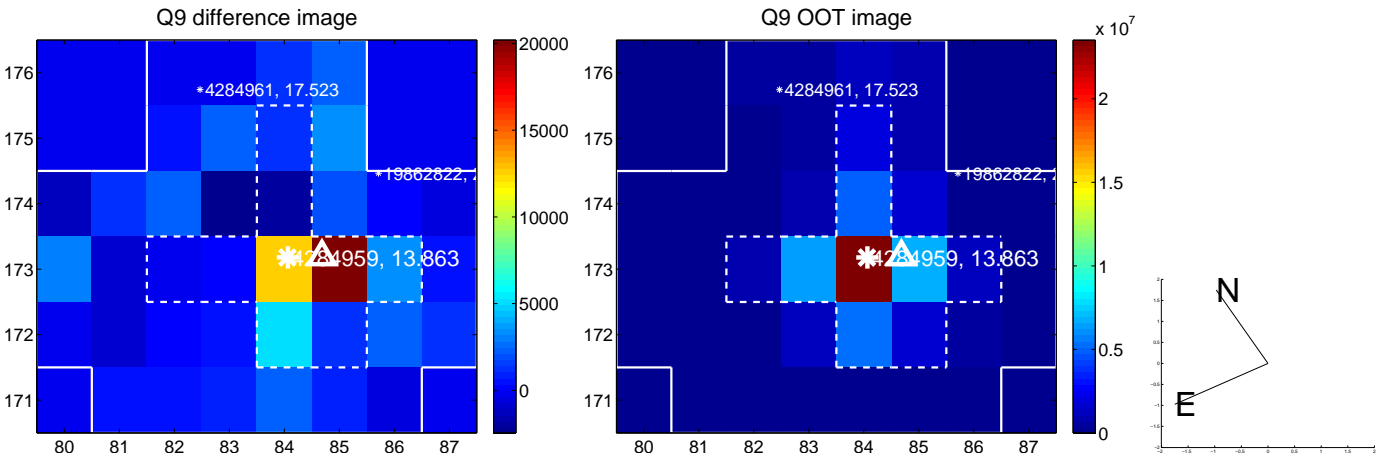
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



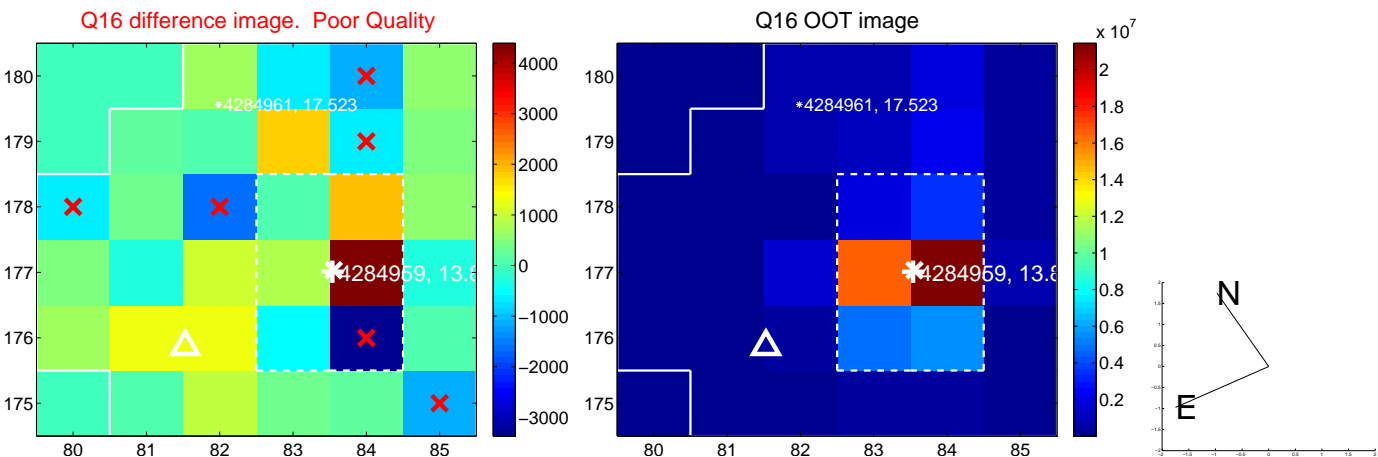
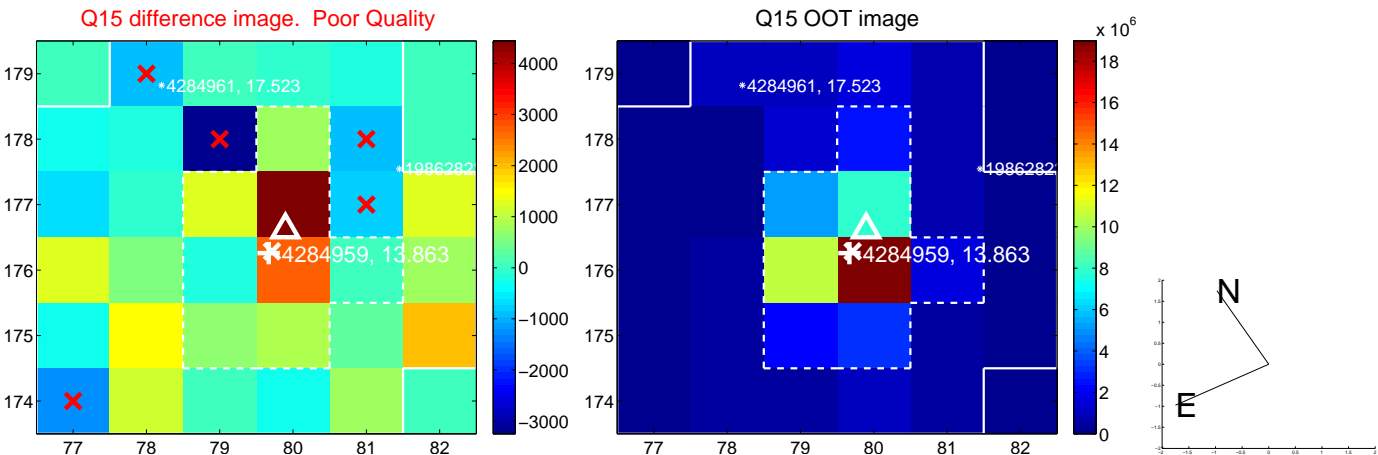
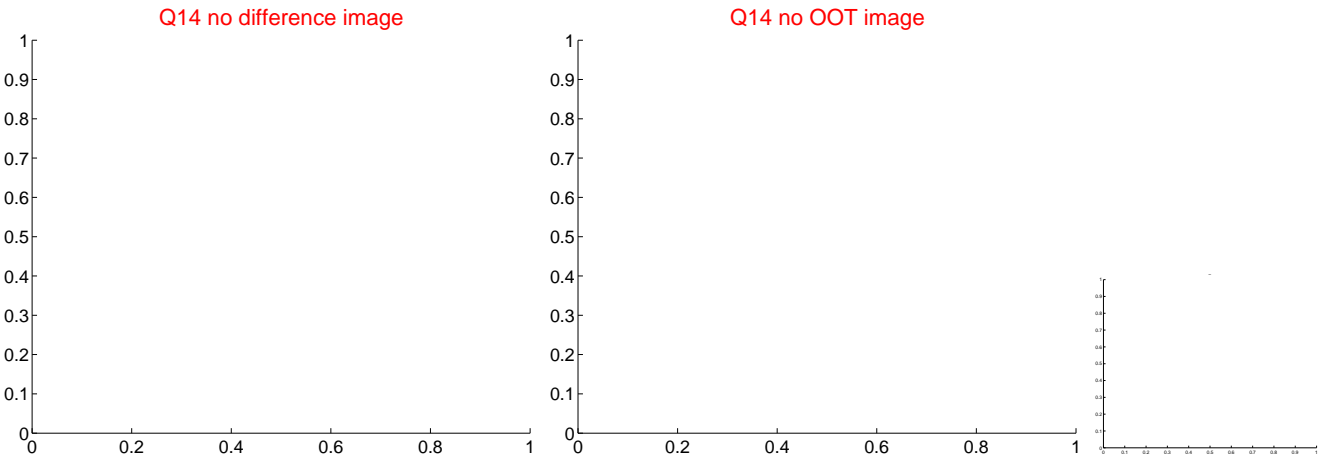
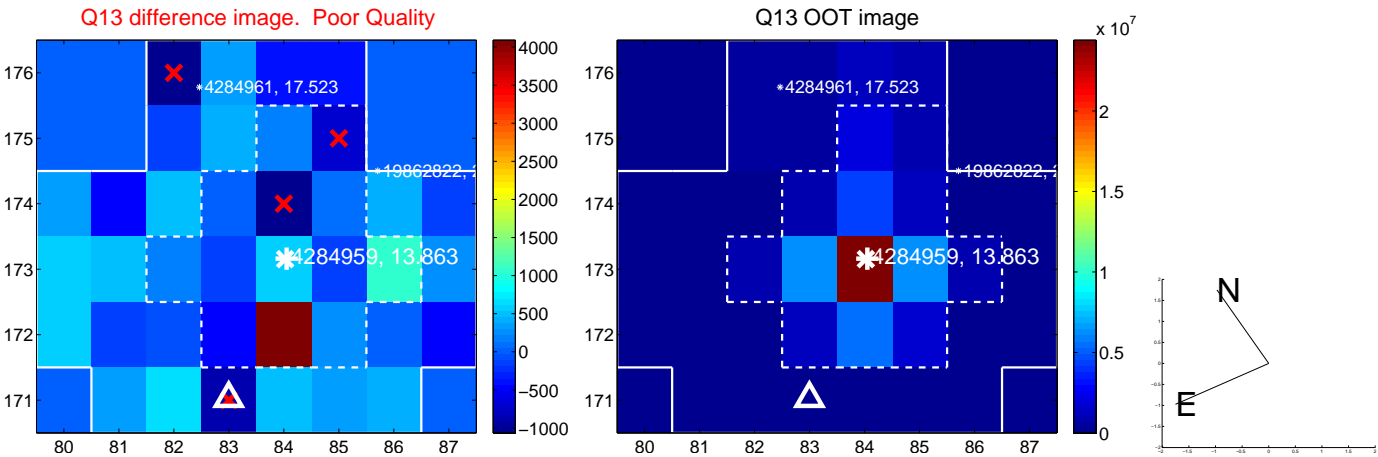
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



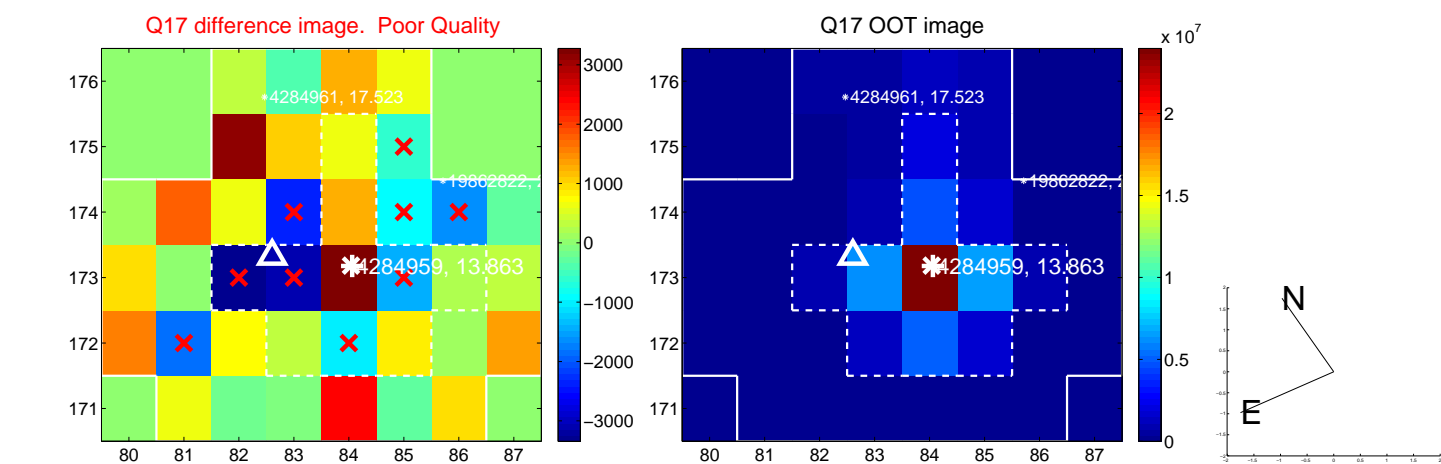
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



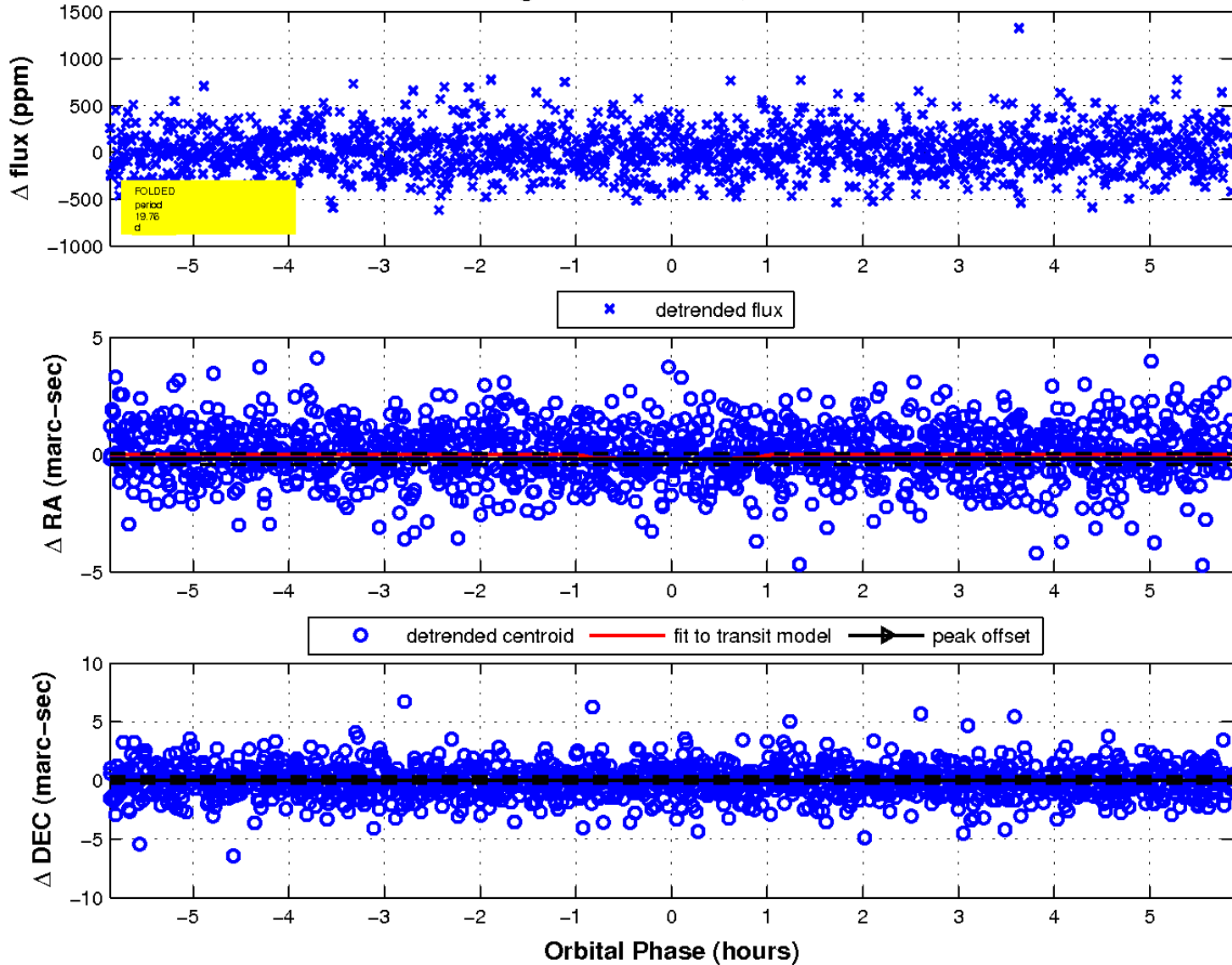
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 9 of 9



UKIRT Image

Declination

