

KIC 007685408

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})
007685408-01	OBS	No	5.234654	131.932192	4.0	0.631	17.9	1.2	2.67	7906	0.57	4647.42
007685408-02	OBS	No	5.233254	132.760847	30.7	12.000	18.2	-1.0	2.67	7906	1.50	4649.08
007685408-03	OBS	No	5.233231	134.831341	24.6	4.261	15.3	14.4	2.67	7906	1.54	4649.10
007685408-04	OBS	No	5.233136	133.547198	38.7	9.839	14.3	13.7	2.67	7906	1.93	4649.22
007685408-05	OBS	No	5.233728	135.900736	9.5	32.706	12.5	4.1	2.67	7906	0.85	4648.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007685408-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007685408-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—SAME_NTL_PERIOD—CENT_SATURATED
007685408-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

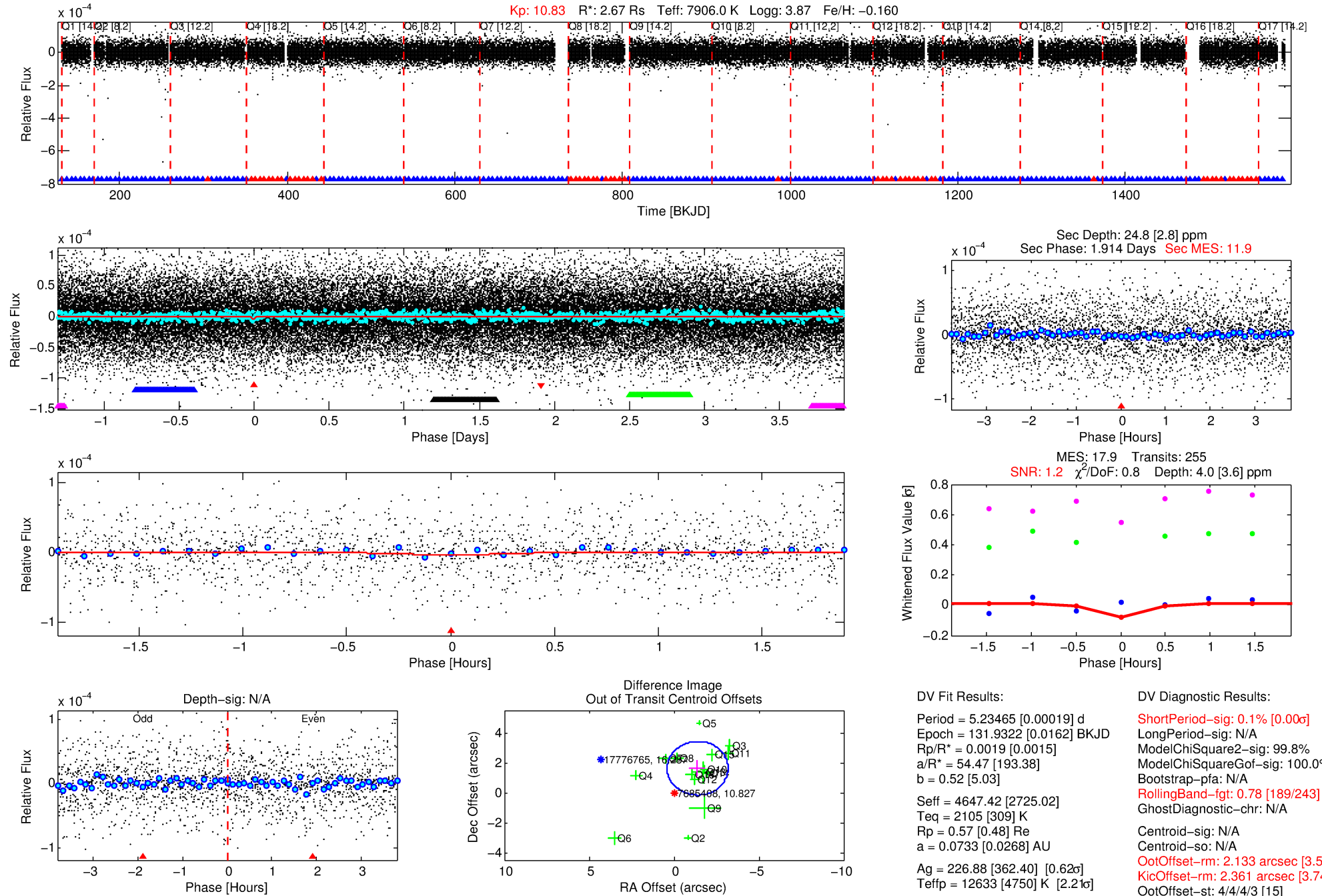
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007685408-01

No Significant Match Found

DV One-Page Summary

KIC: 7685408 Candidate: 1 of 5 Period: 5.235 d



DV Fit Results:

Period = 5.23465 [0.00019] d
Epoch = 131.9322 [0.0162] BKJD
Rp/R* = 0.0019 [0.0015]
a/R* = 54.47 [193.38]
b = 0.52 [5.03]
Seff = 4647.42 [2725.02]
Teq = 2105 [309] K
Rp = 0.57 [0.48] Re
a = 0.0733 [0.0268] AU
Ag = 226.88 [362.40] [0.62] σ
Teffp = 12633 [4750] K [2.21] σ

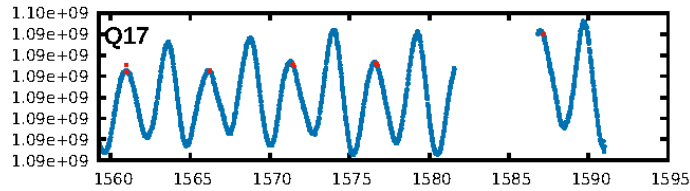
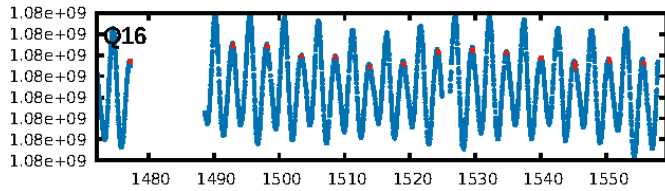
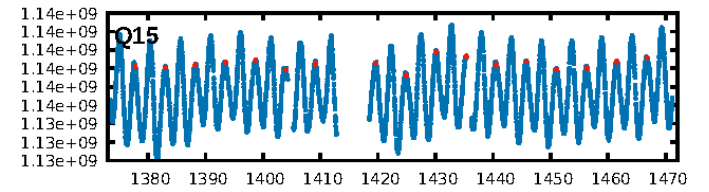
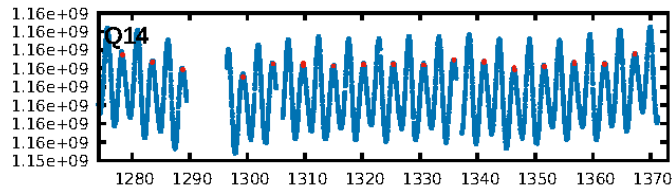
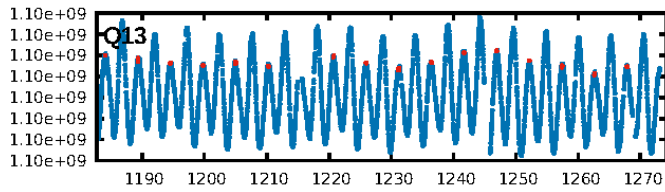
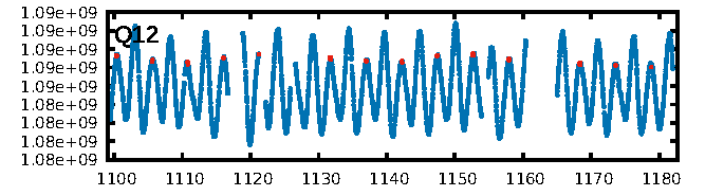
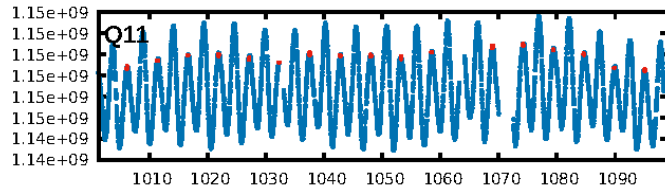
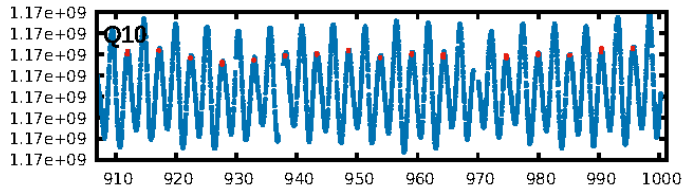
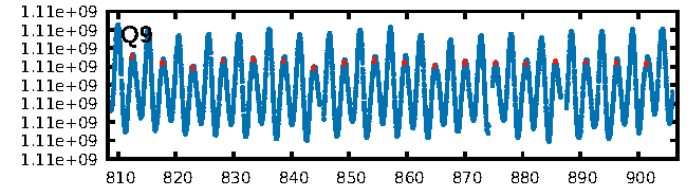
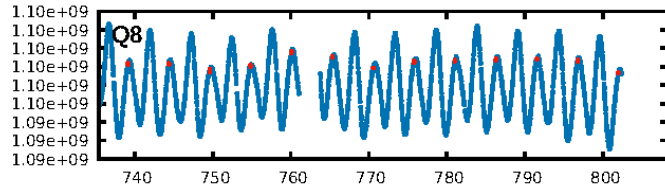
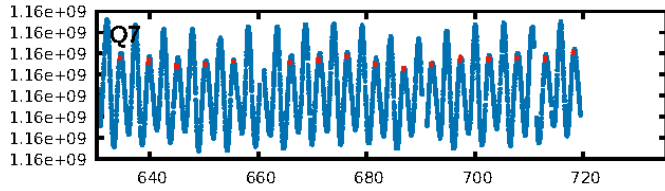
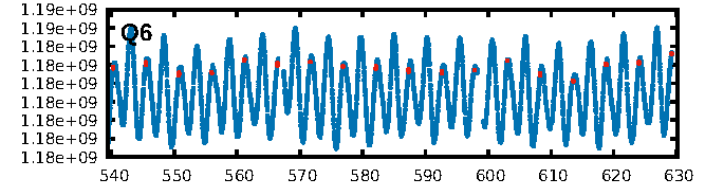
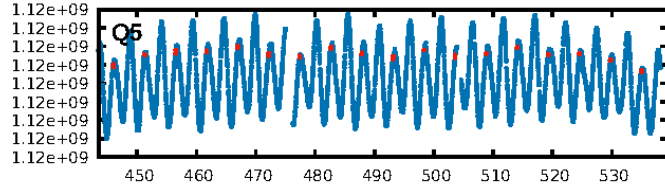
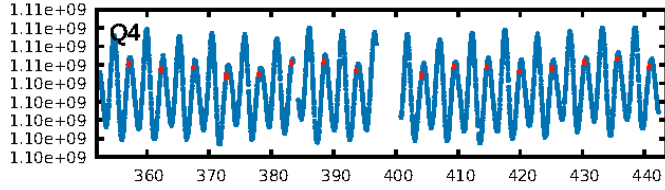
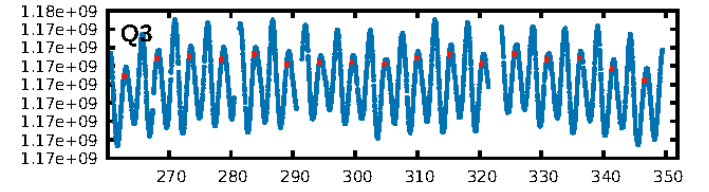
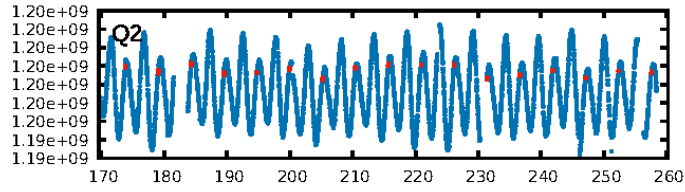
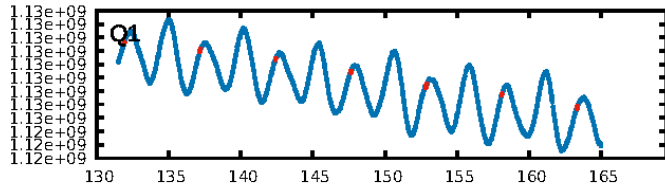
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.006]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.78 [189/243]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 2.133 arcsec [3.57] σ
KicOffset-rm: 2.361 arcsec [3.74] σ
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.00 [0/15]
DiffImageOverlap-fno: 0.94 [16/17]

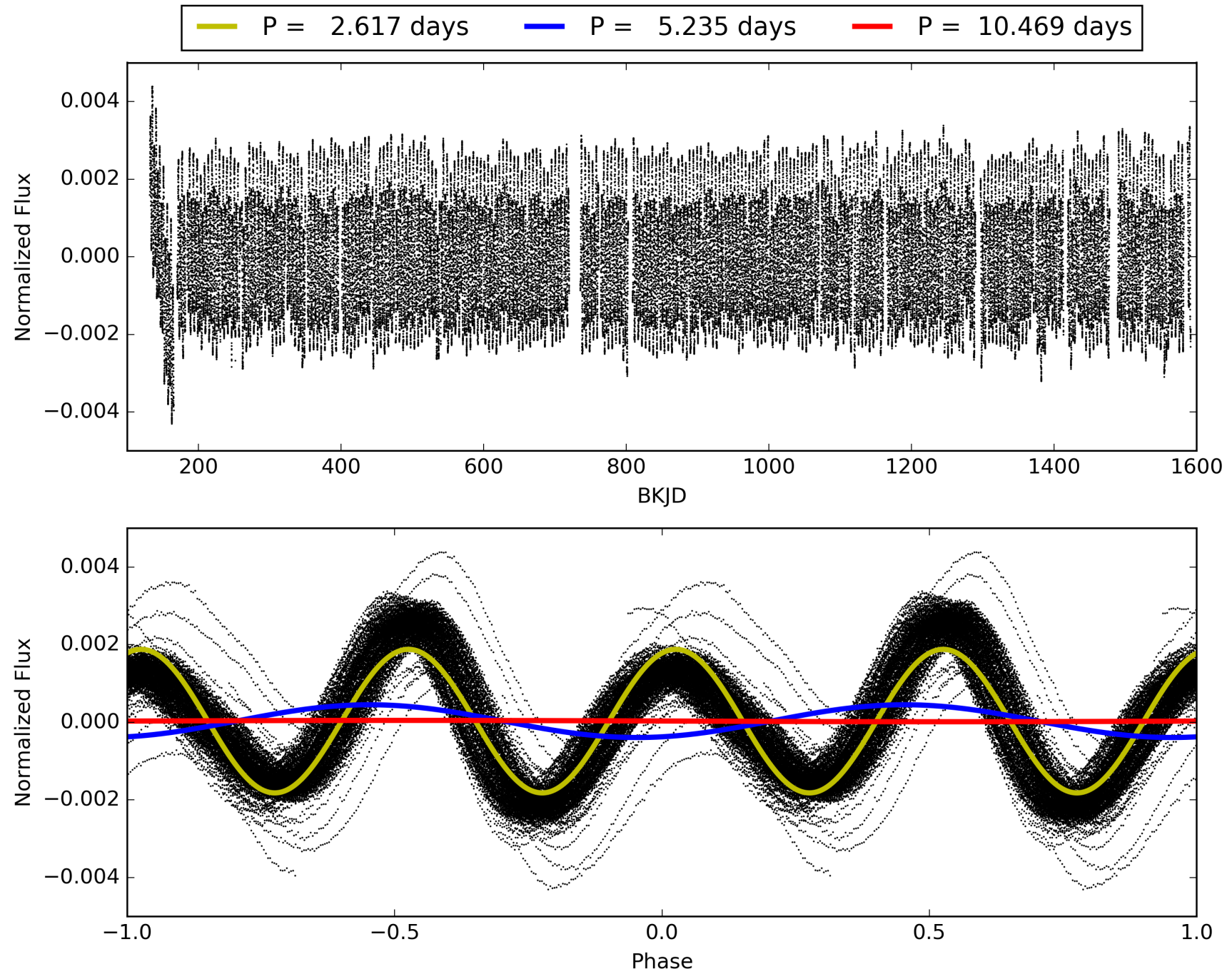
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:31:57 Z

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

TCE 007685408-01, PDC Light Curves

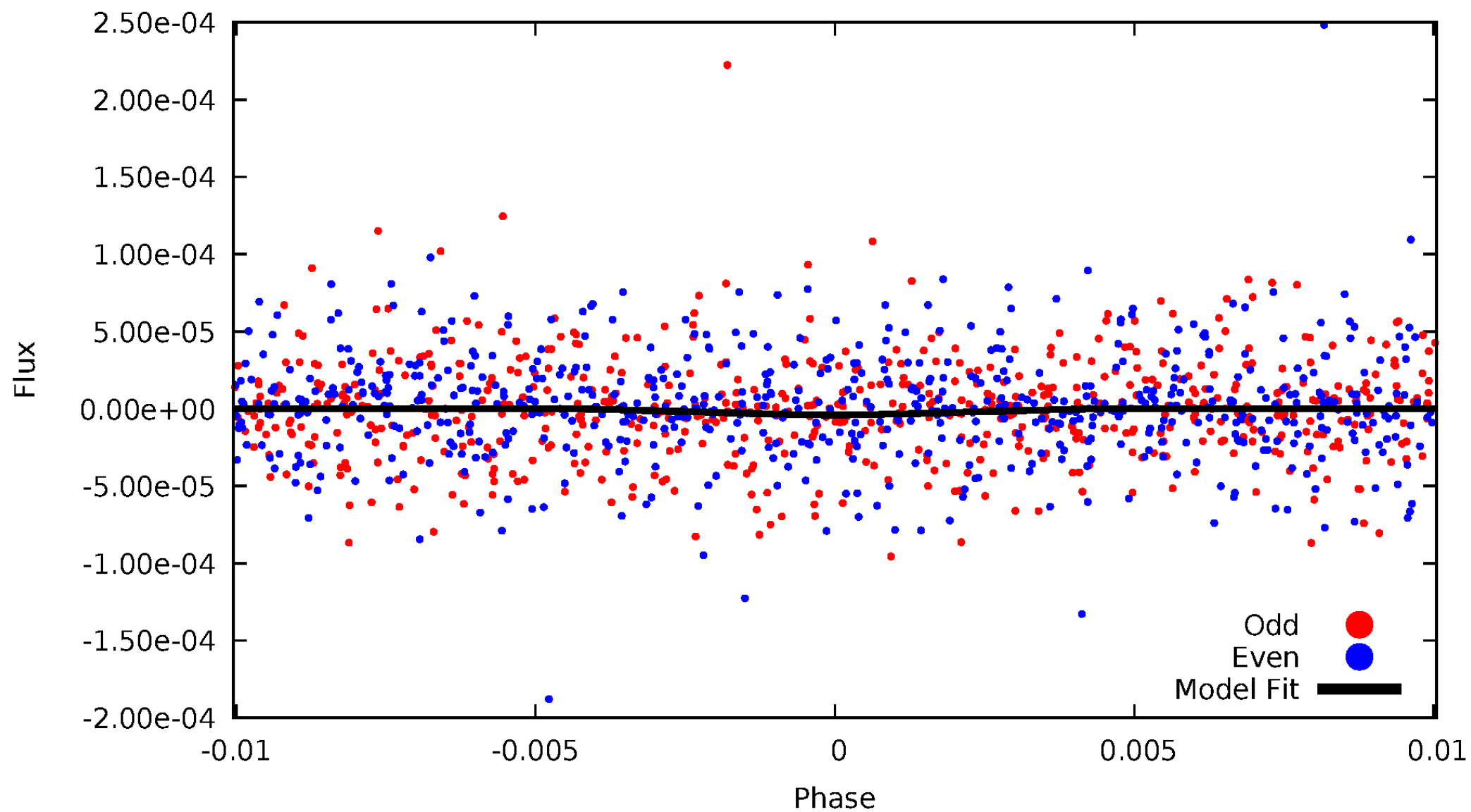


TCE 007685408-01



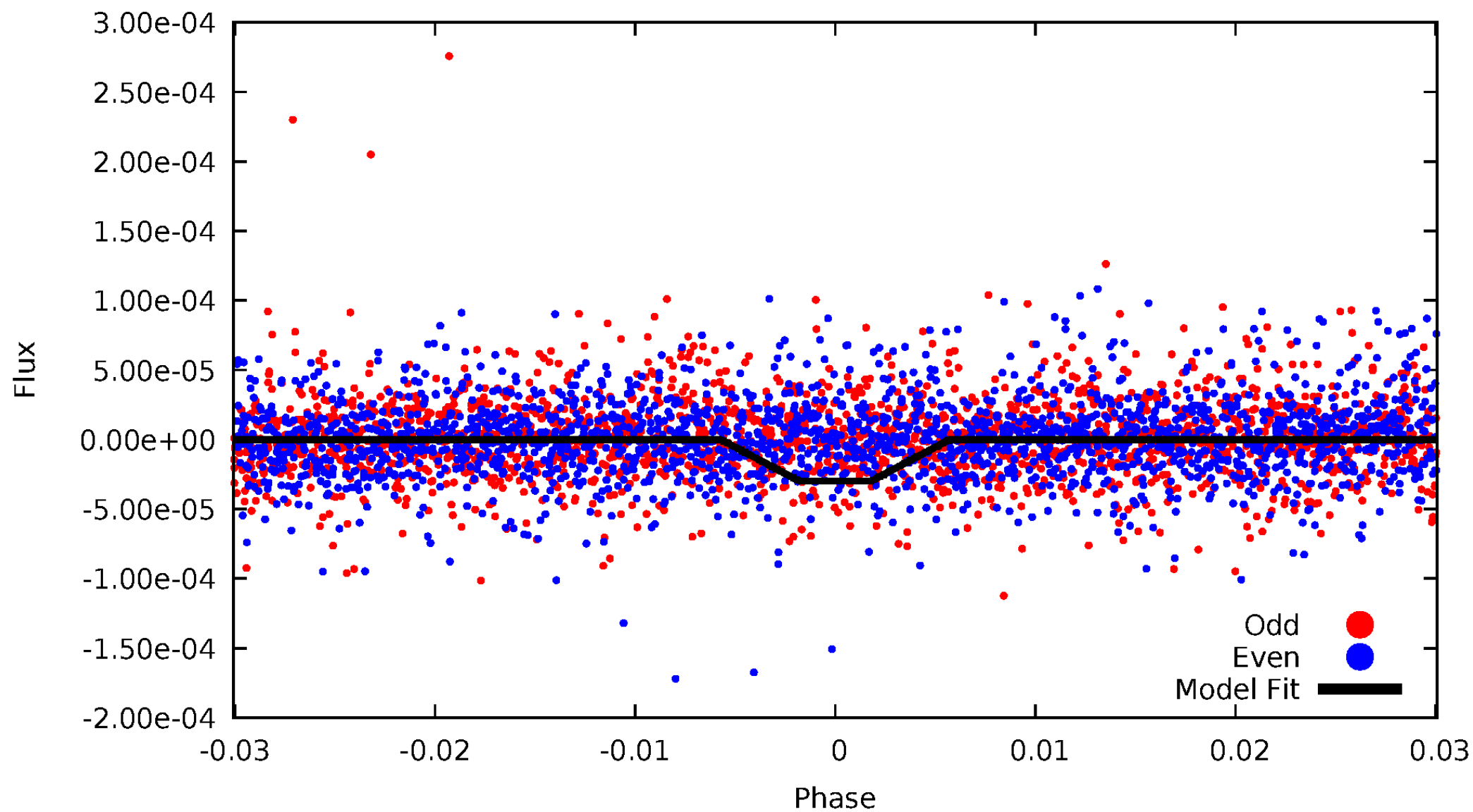
DV Odd/Even

TCE 007685408-01



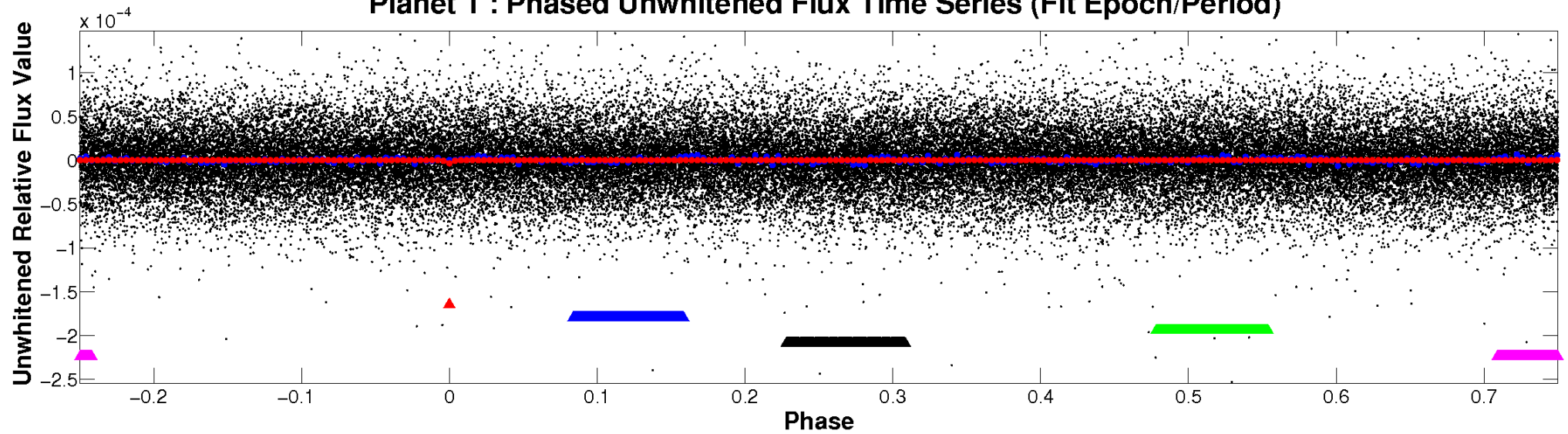
ALT Odd/Even

TCE 007685408-01

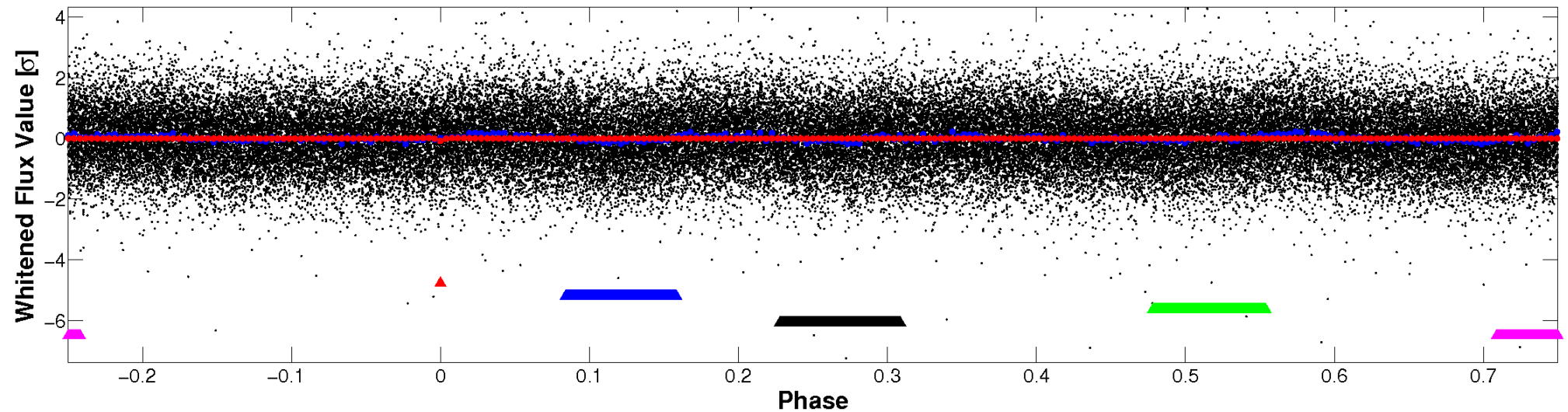


Non-Whitened Vs. Whitened Light Curve

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

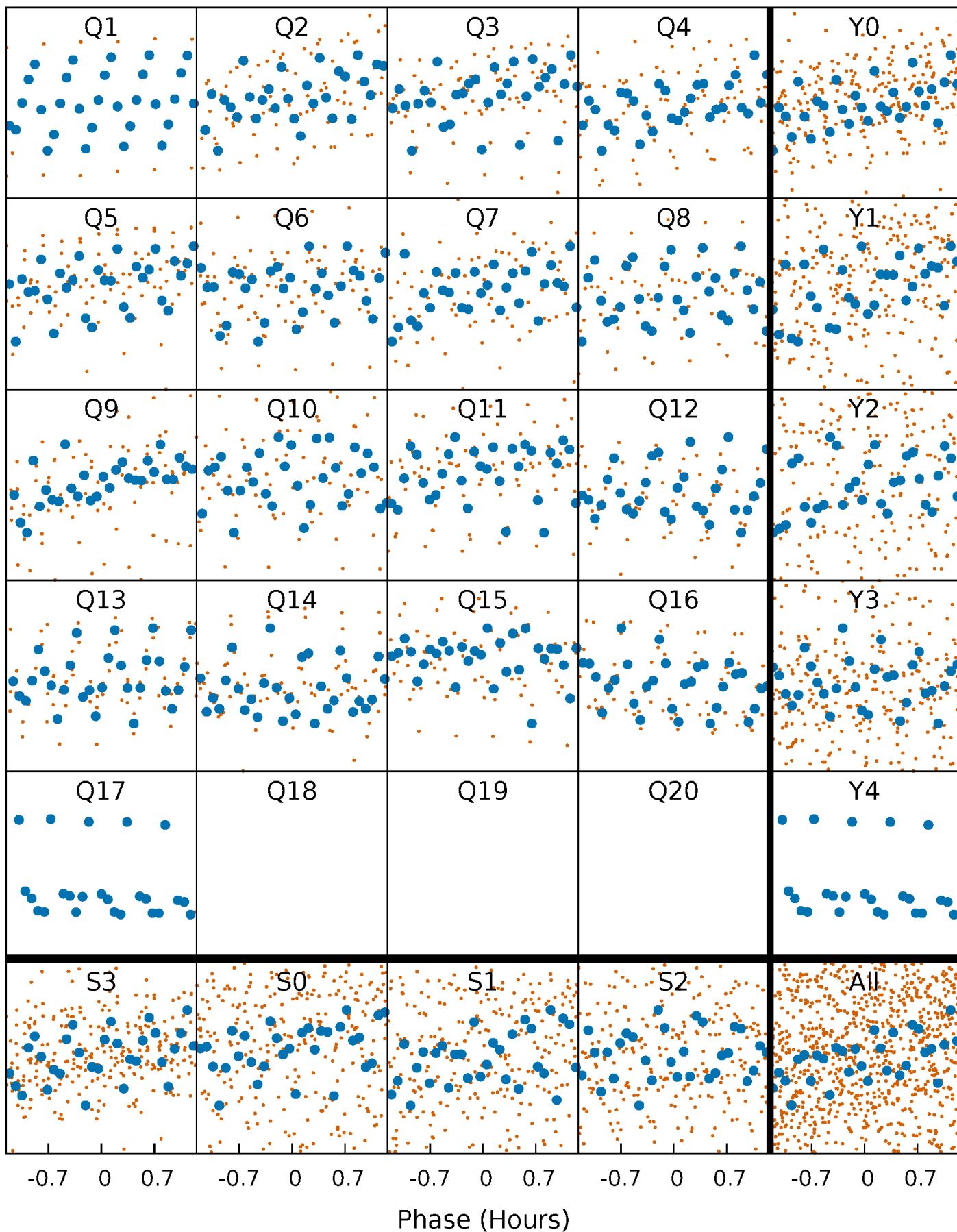


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



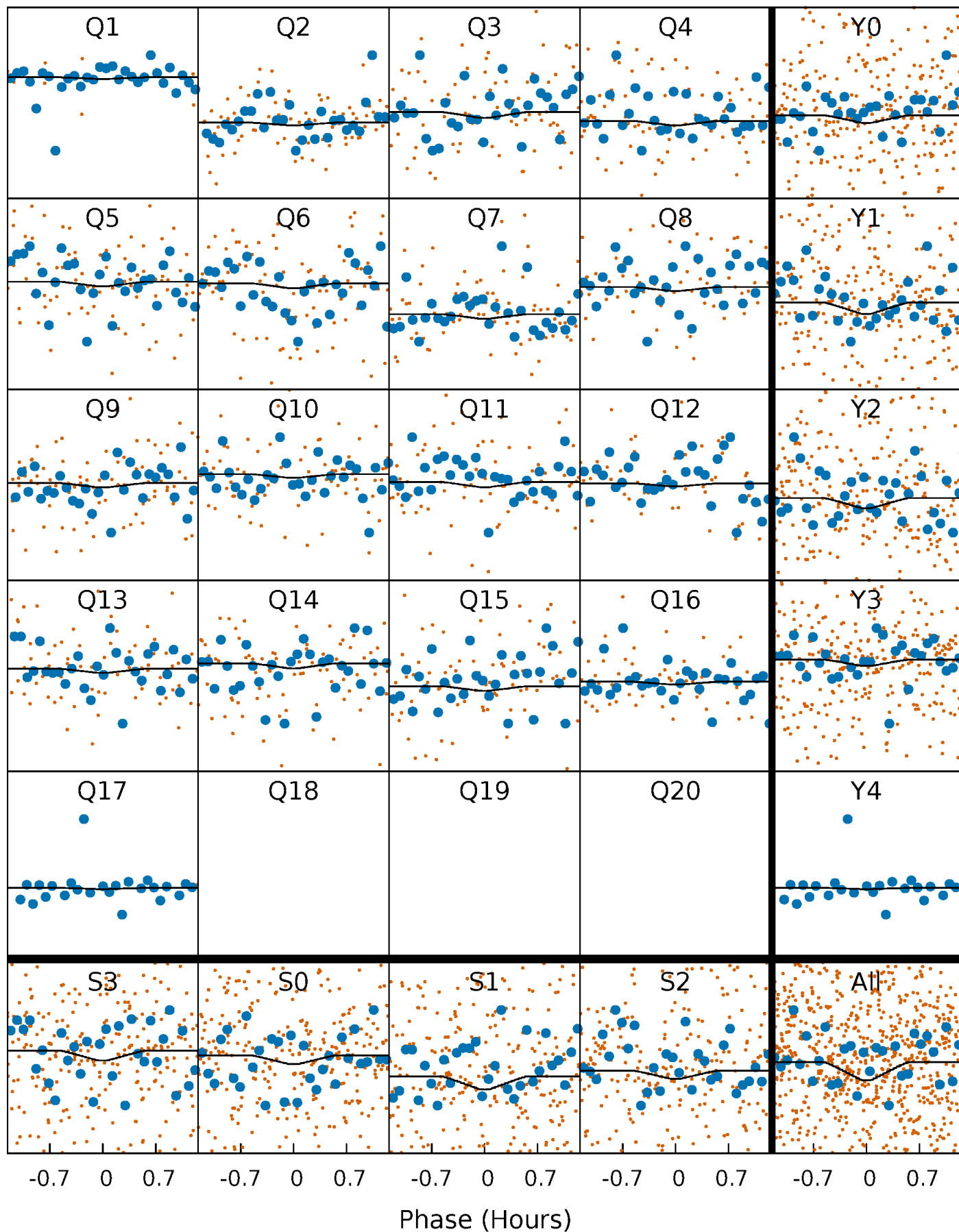
PDC Quarter-Phased Transit Curves

TCE 007685408-01 P= 5.234654 Days $T_0=131.932192$ (BKJD)



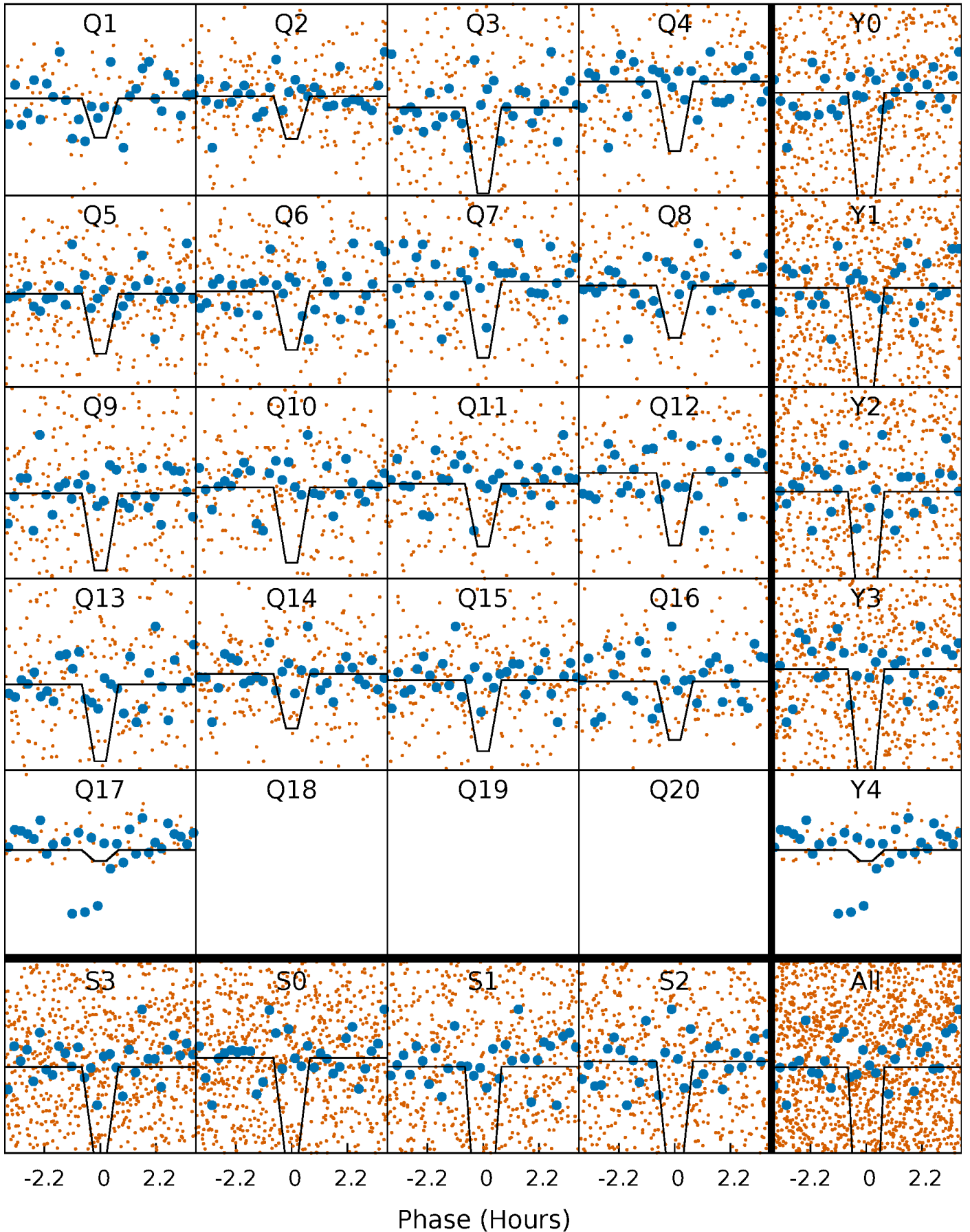
DV Quarter-Phased Transit Curves

TCE 007685408-01 P= 5.234654 Days $T_0=131.932192$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

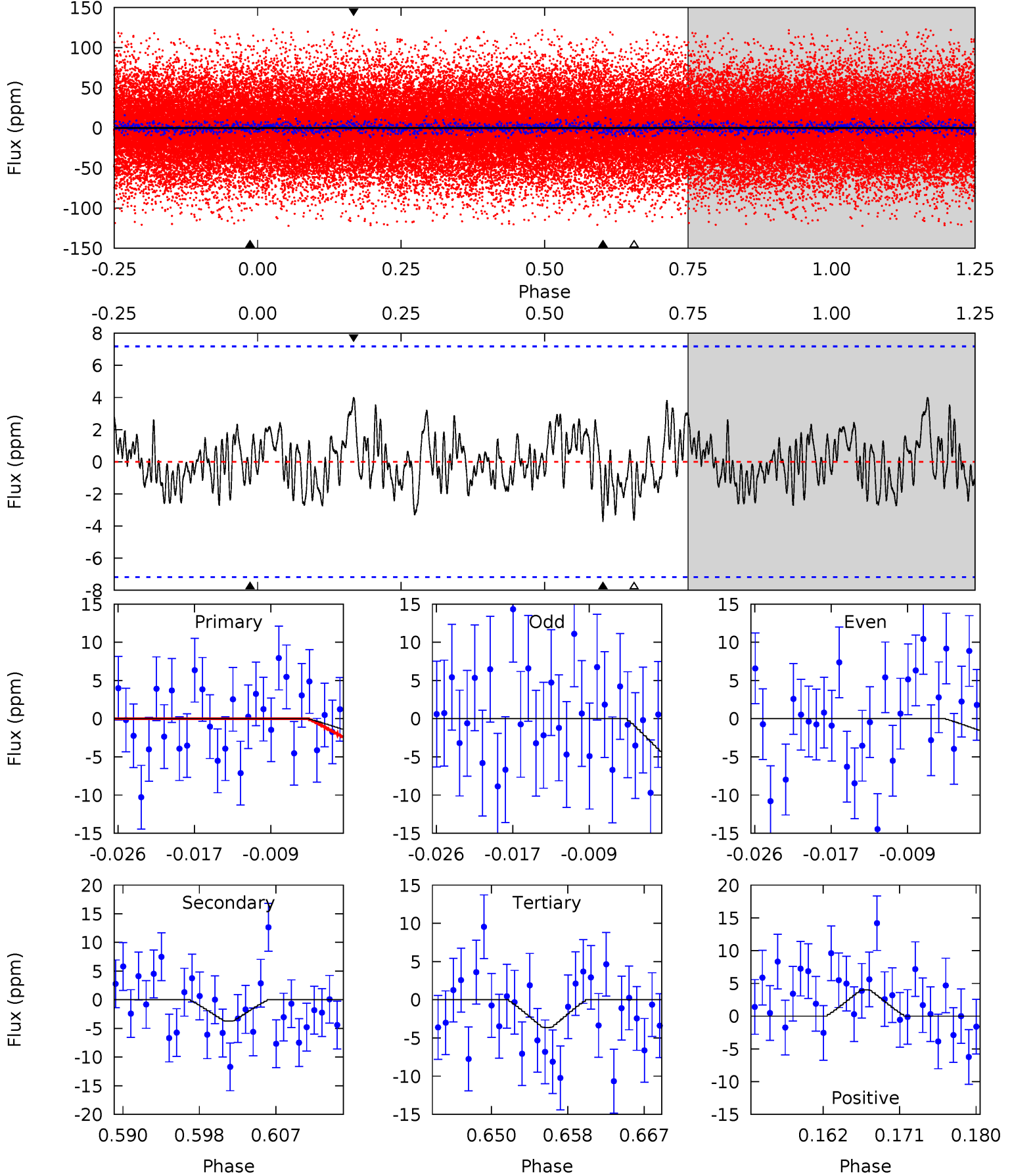
TCE 007685408-01 P= 5.233254 Days $T_0=132.029859$ (BKJD)



DV Model-Shift Uniqueness Test

007685408-01, P = 5.234654 Days, E = 126.697538 Days

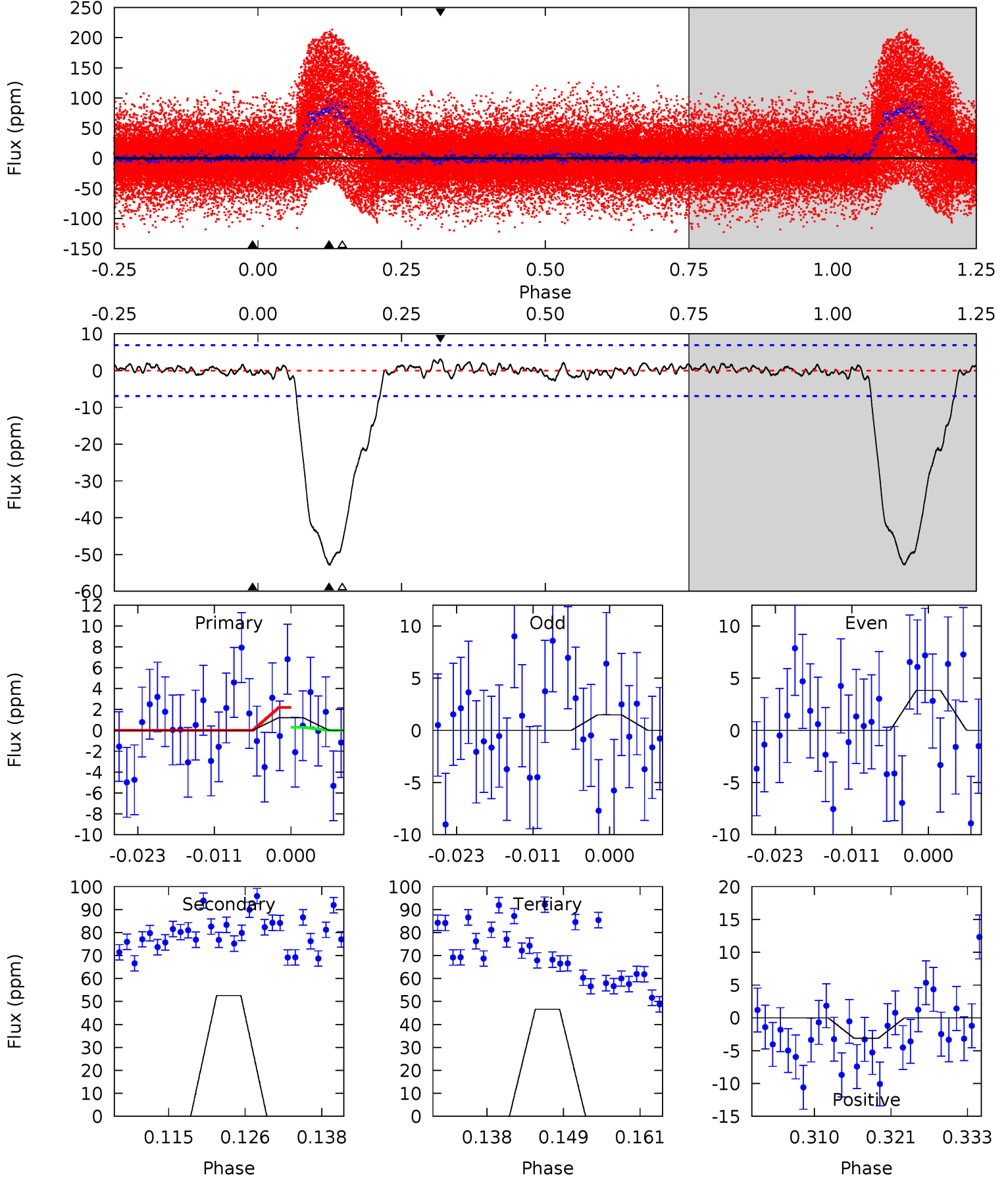
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.98	2.63	2.57	2.83	5.06	2.63	1.00	-1.59	-1.85	0.06	-0.21	1.00	-0.50	0.52	0.70



Alt Model-Shift Uniqueness Test

007685408-01, P = 5.233254 Days, E = 126.796605 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.88	38.1	33.7	2.25	5.00	2.53	7.21	-32.9	-1.37	4.32	35.8	0.83	0.38	0.06	0.65



Stellar Parameters For KIC 007685408

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7906^{+216}_{-325}	$3.867^{+0.322}_{-0.107}$	$-0.160^{+0.200}_{-0.350}$	$2.670^{+0.359}_{-1.078}$	$1.915^{+0.082}_{-0.467}$	$0.142^{+0.381}_{-0.040}$
	+3%/-4%	+8%/-3%	+125%/-219%	+13%/-40%	+4%/-24%	+269%/-28%
Source	KIC0	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 007685408-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 1	$0.58^{+0.42}_{-0.33}$	2893^{+192}_{-263}	7362^{+5893}_{-1949}	31^{+138}_{-22}
Alt.	-53 ± 1	$1.44^{+0.55}_{-0.43}$	2883^{+195}_{-292}	9478^{+2573}_{-1463}	72^{+72}_{-33}

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

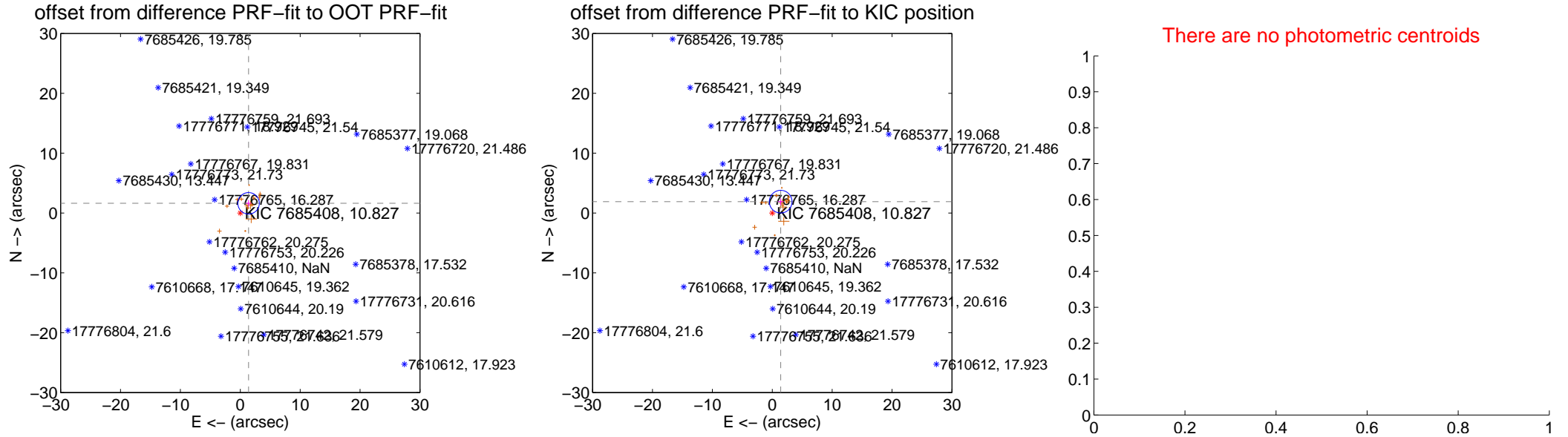
DV Centroid Data

Supplemental centroid analysis for 007685408-01. **Kepler magnitude: 10.83.** Transit SNR 1.18

There are 0 quarters with good PRF difference image offsets

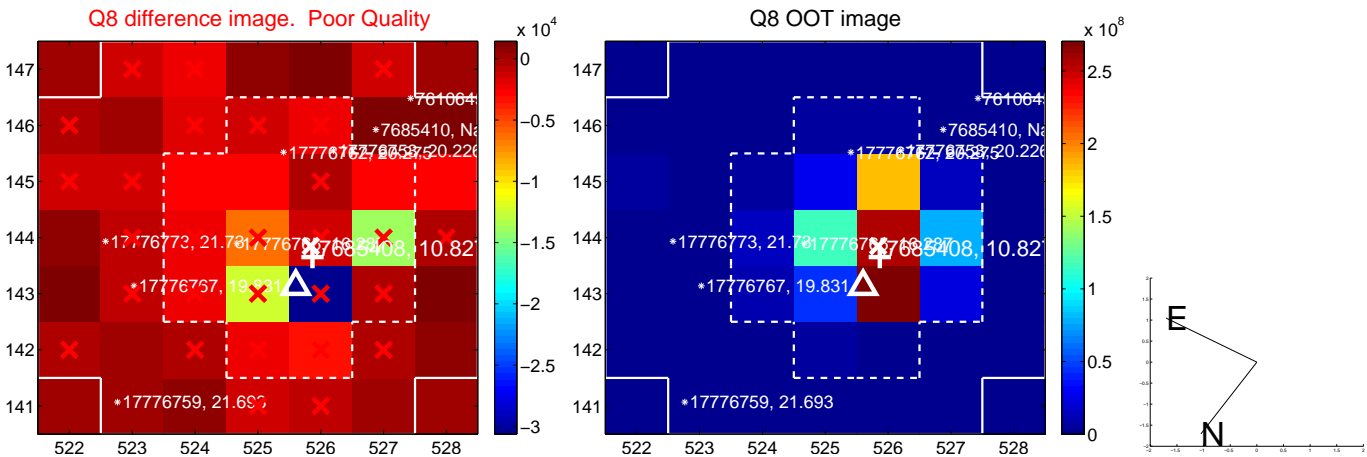
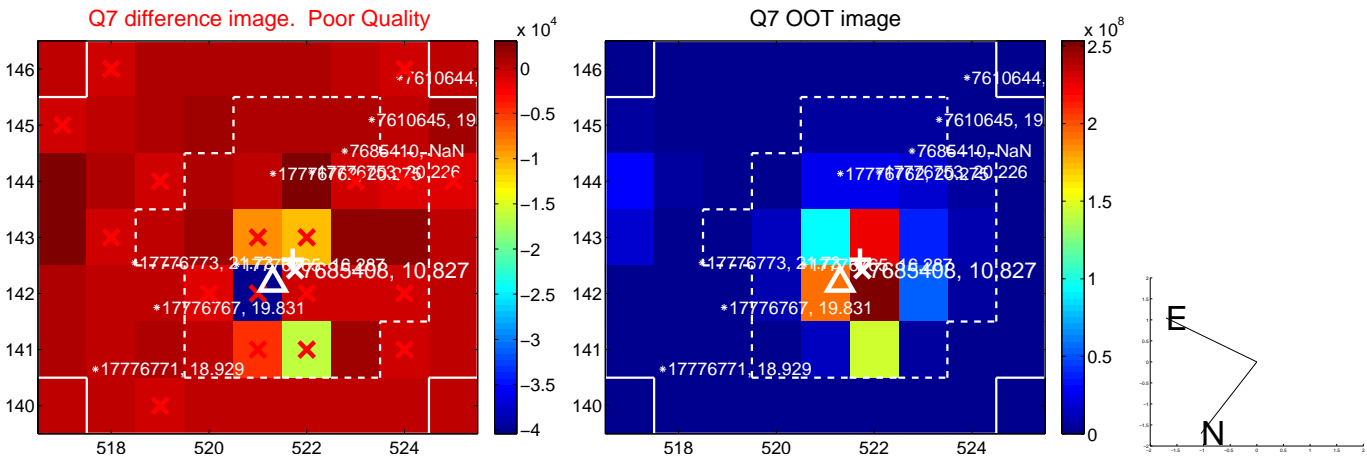
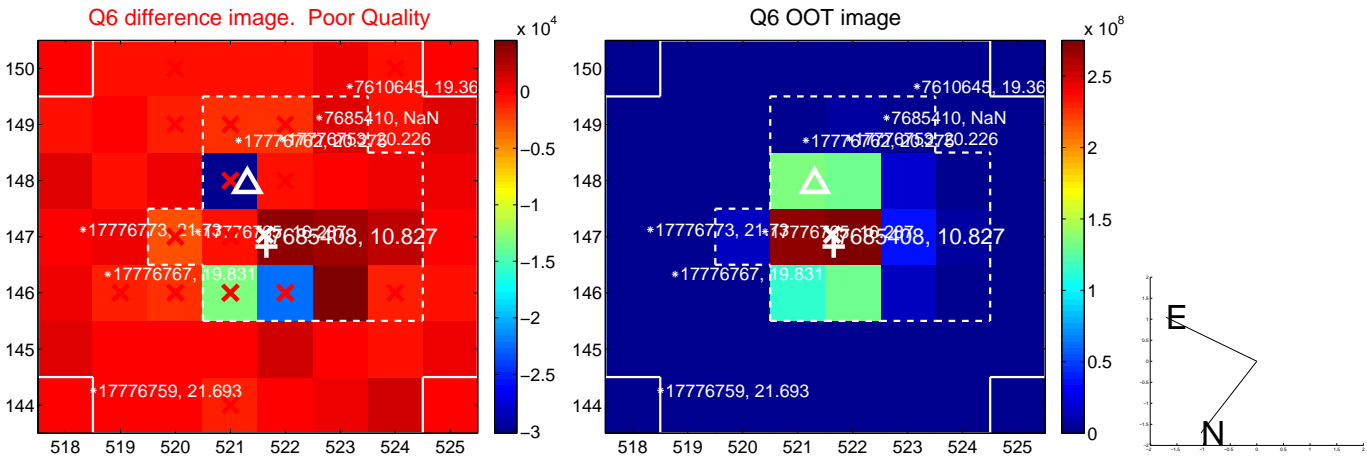
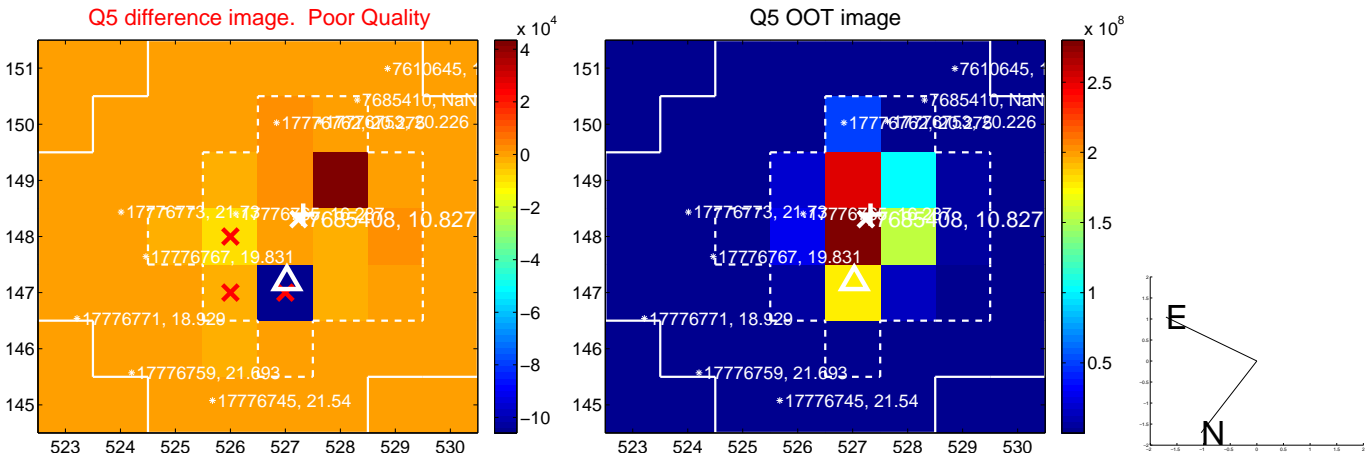
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.133 \pm 0.598	3.57	-1.386 \pm 0.441	1.622 \pm 0.537
PRF-fit source offset from KIC position	2.361 \pm 0.632	3.74	-1.406 \pm 0.467	1.896 \pm 0.571
photometric centroid source offset	—	—	—	—

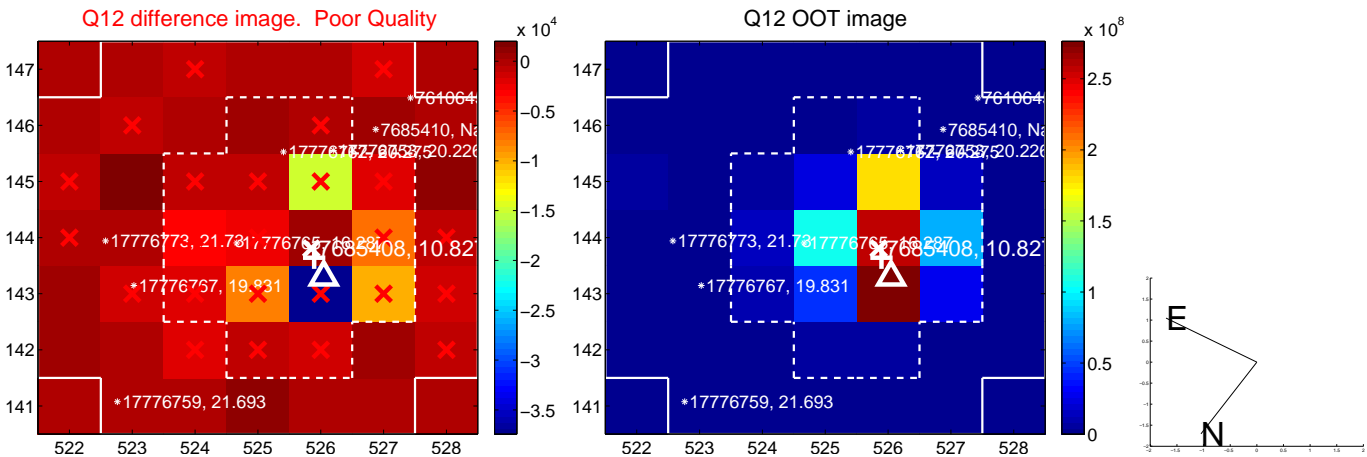
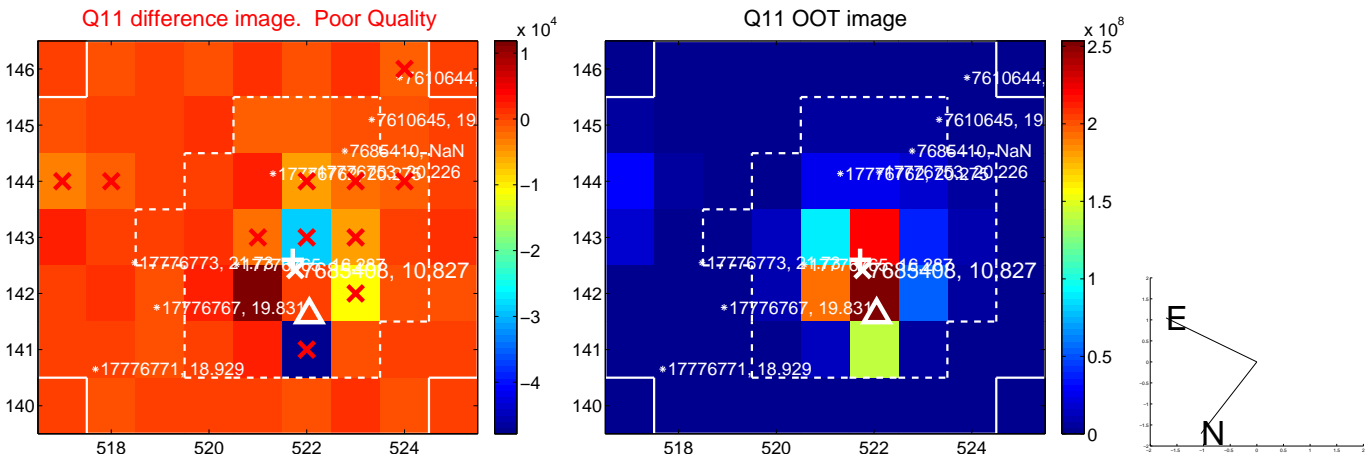
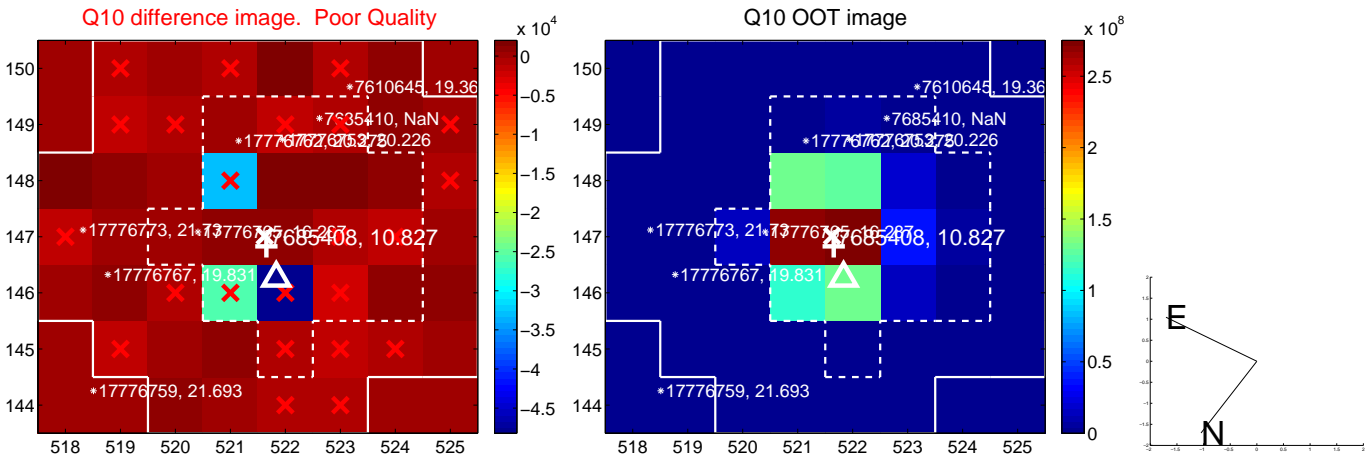
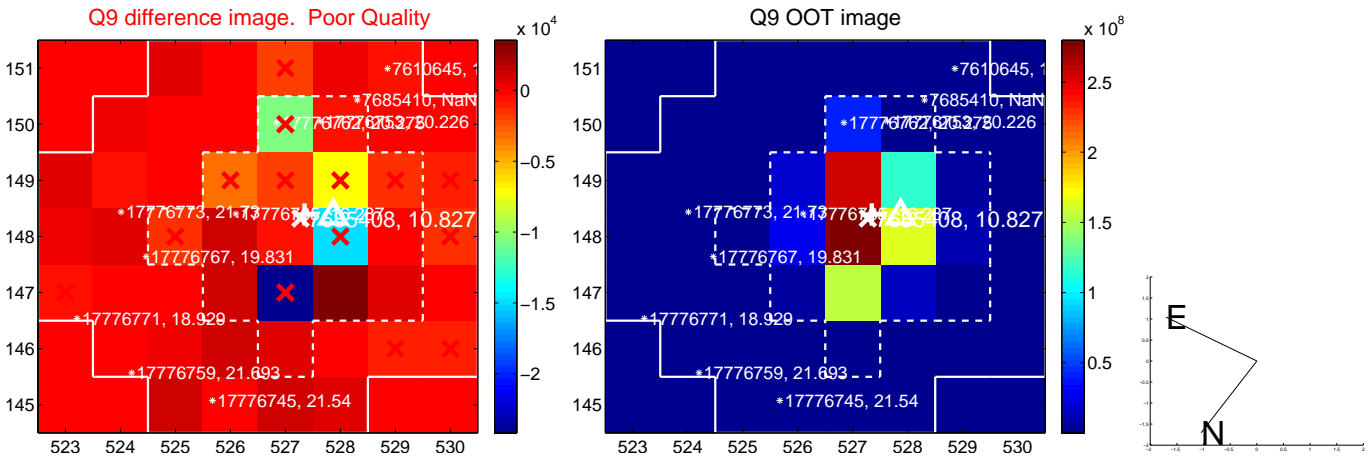


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

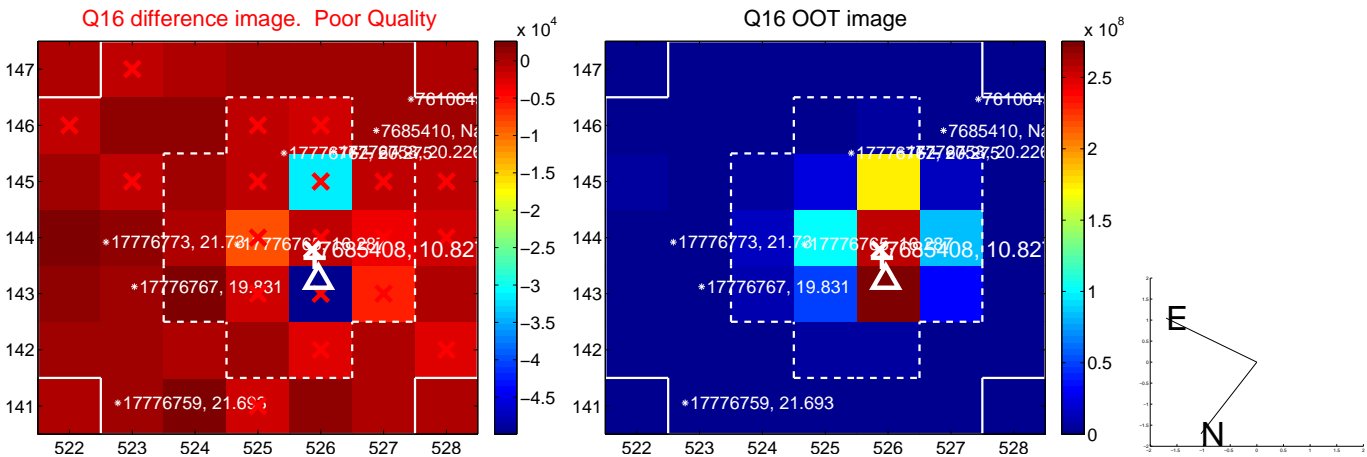
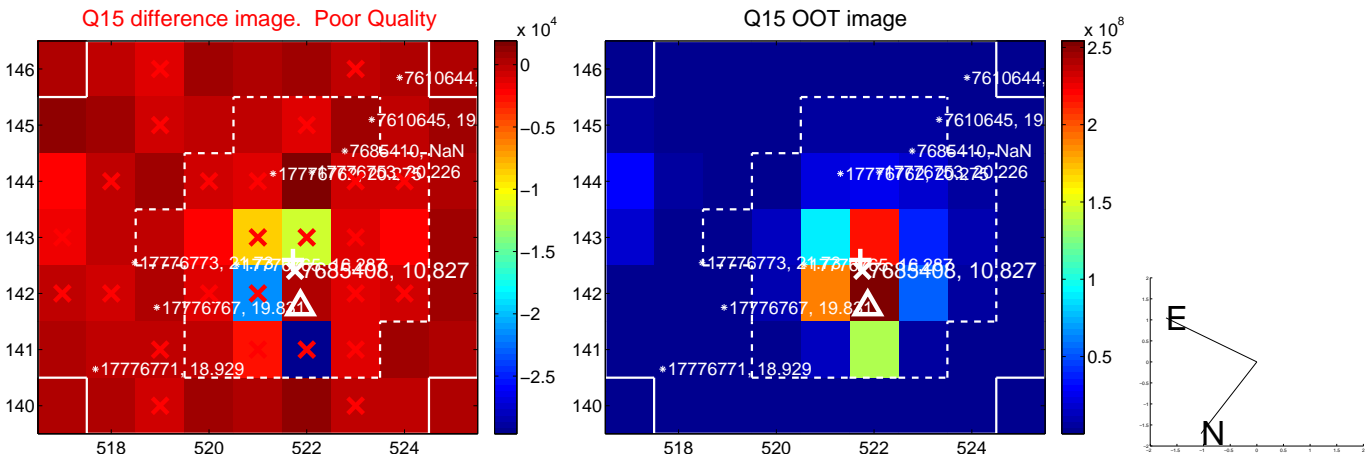
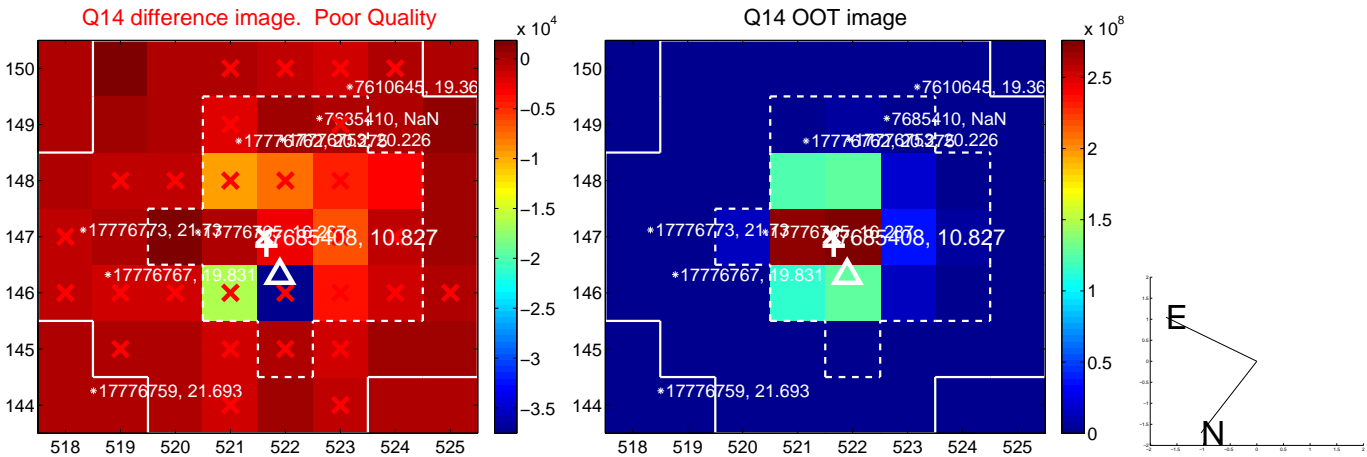
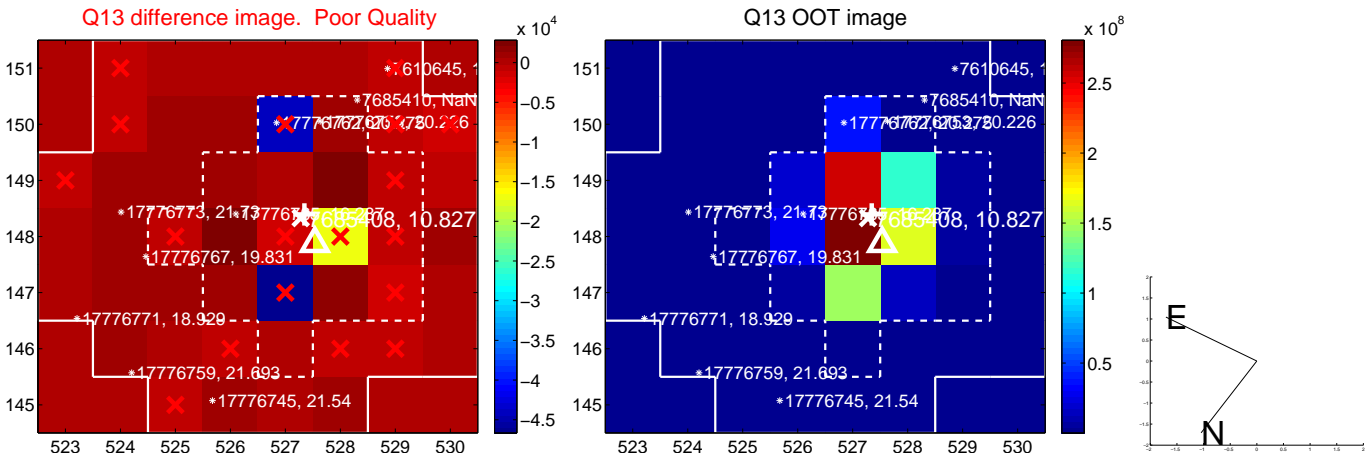
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

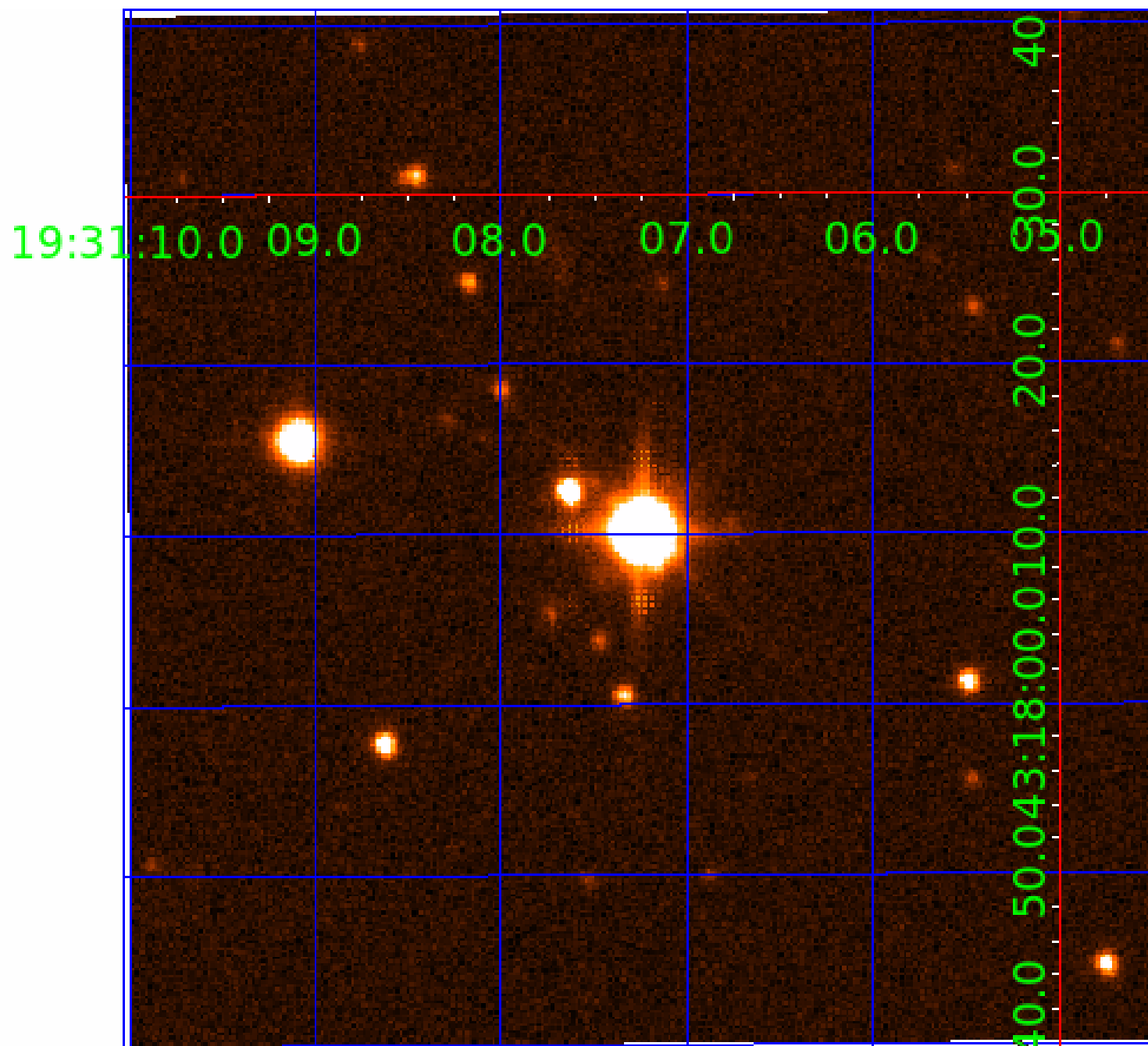


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007685408

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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007685408-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—SAME_NTL_PERIOD—CENT_SATURATED
007685408-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

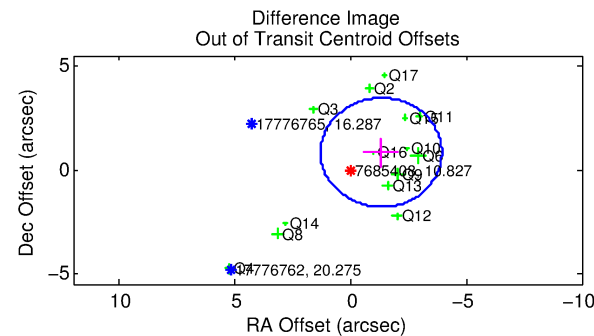
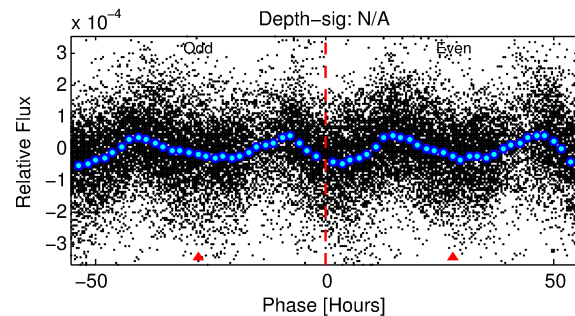
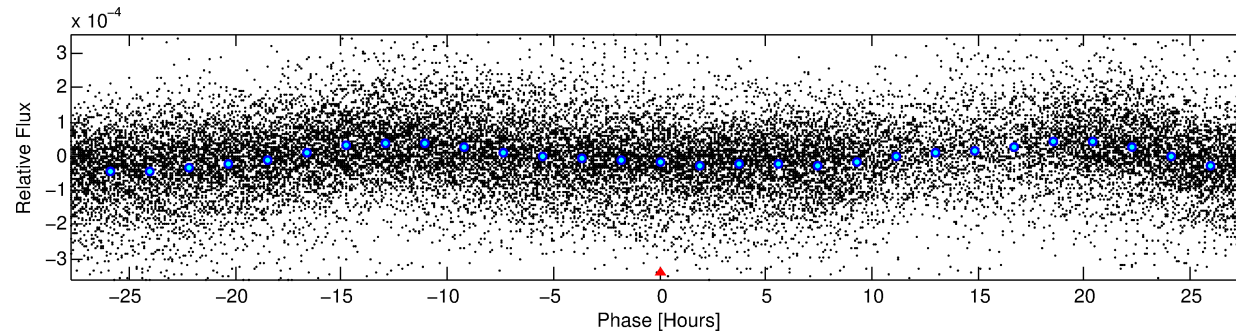
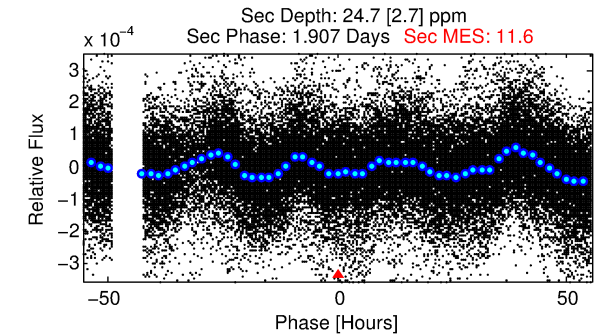
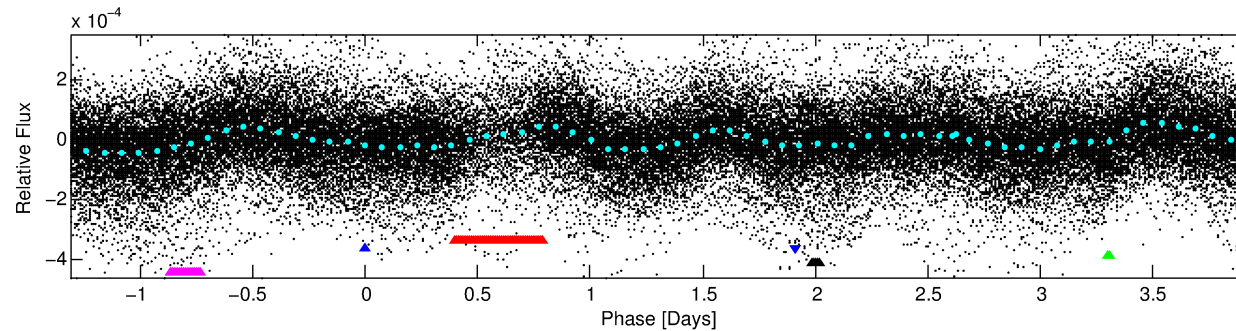
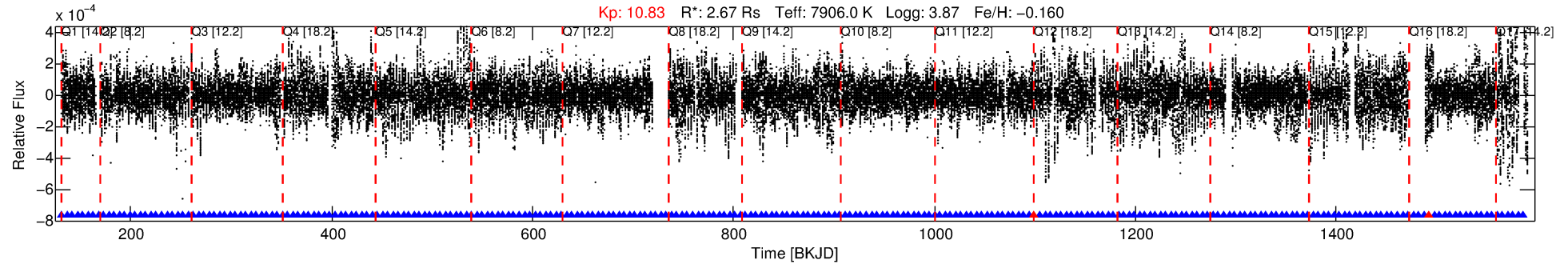
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007685408-02

No Significant Match Found

DV One-Page Summary

KIC: 7685408 Candidate: 2 of 5 Period: 5.233 d



TPS TCE Results:

Period = 5.23325 d
Epoch = 132.7608 BKJD

DV fit results are unavailable

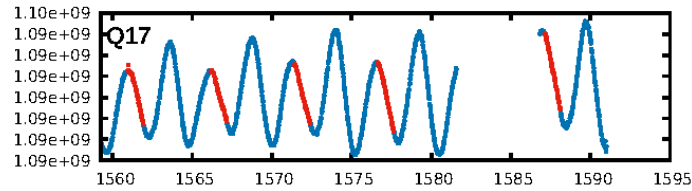
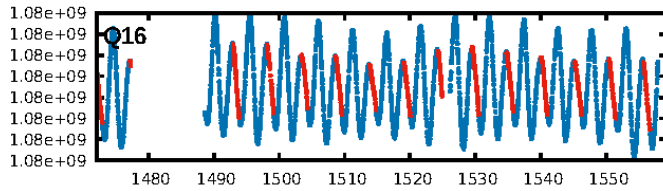
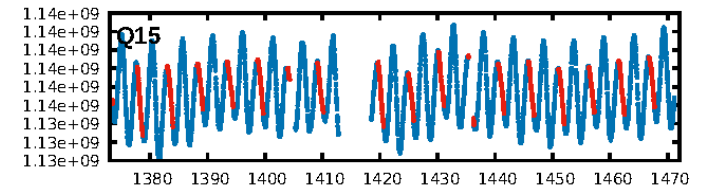
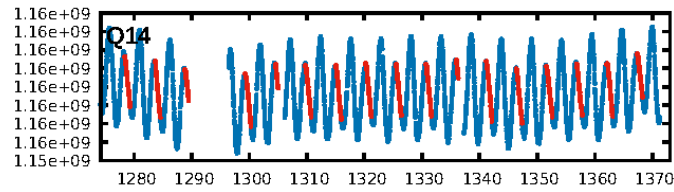
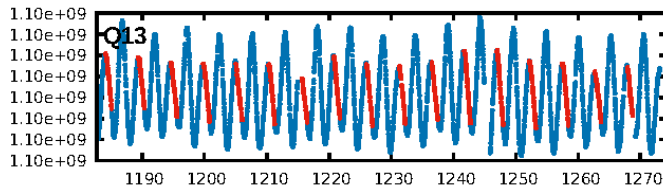
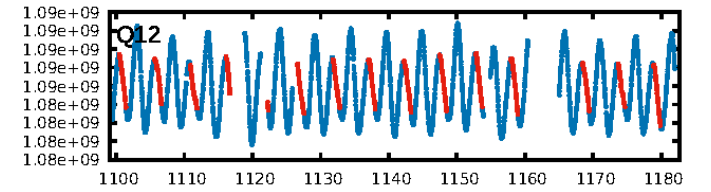
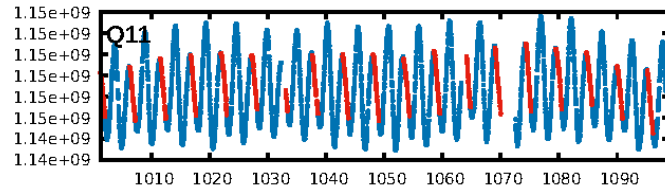
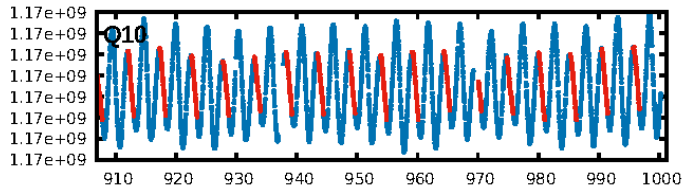
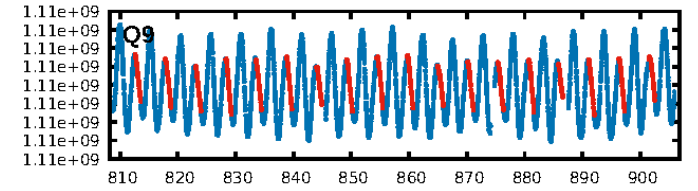
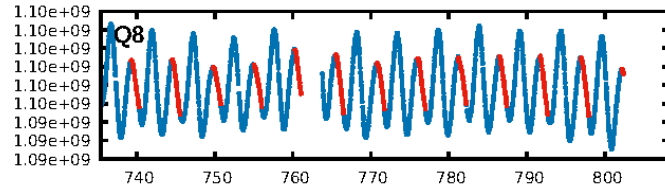
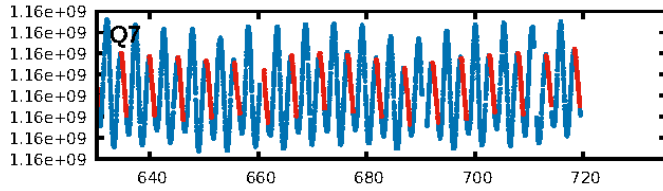
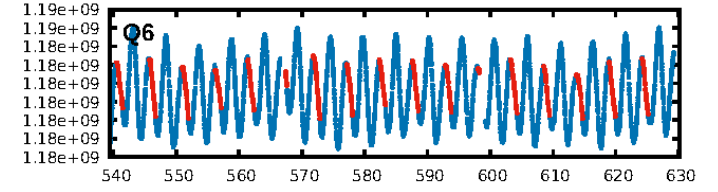
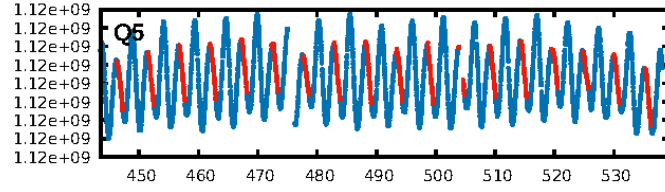
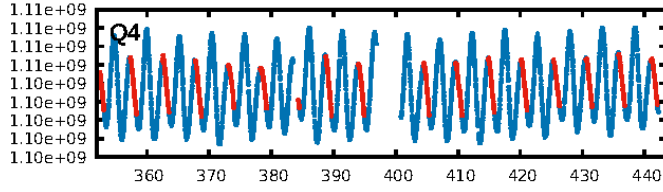
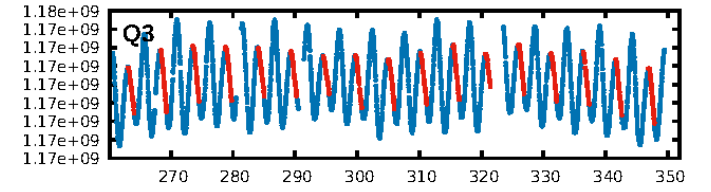
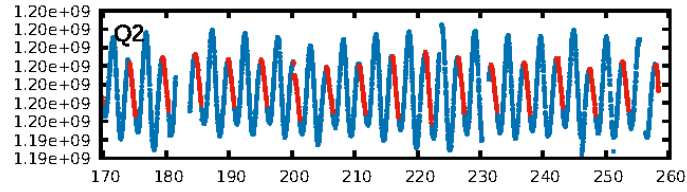
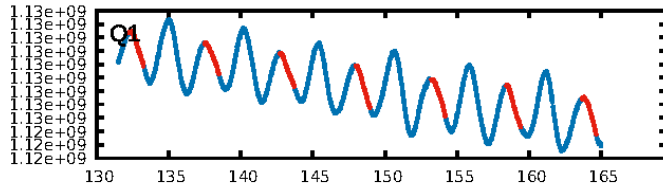
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [248/250]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.562 arcsec [1.79 σ]
KicOffset-rm: 1.987 arcsec [2.41 σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 0.00 [0/17]

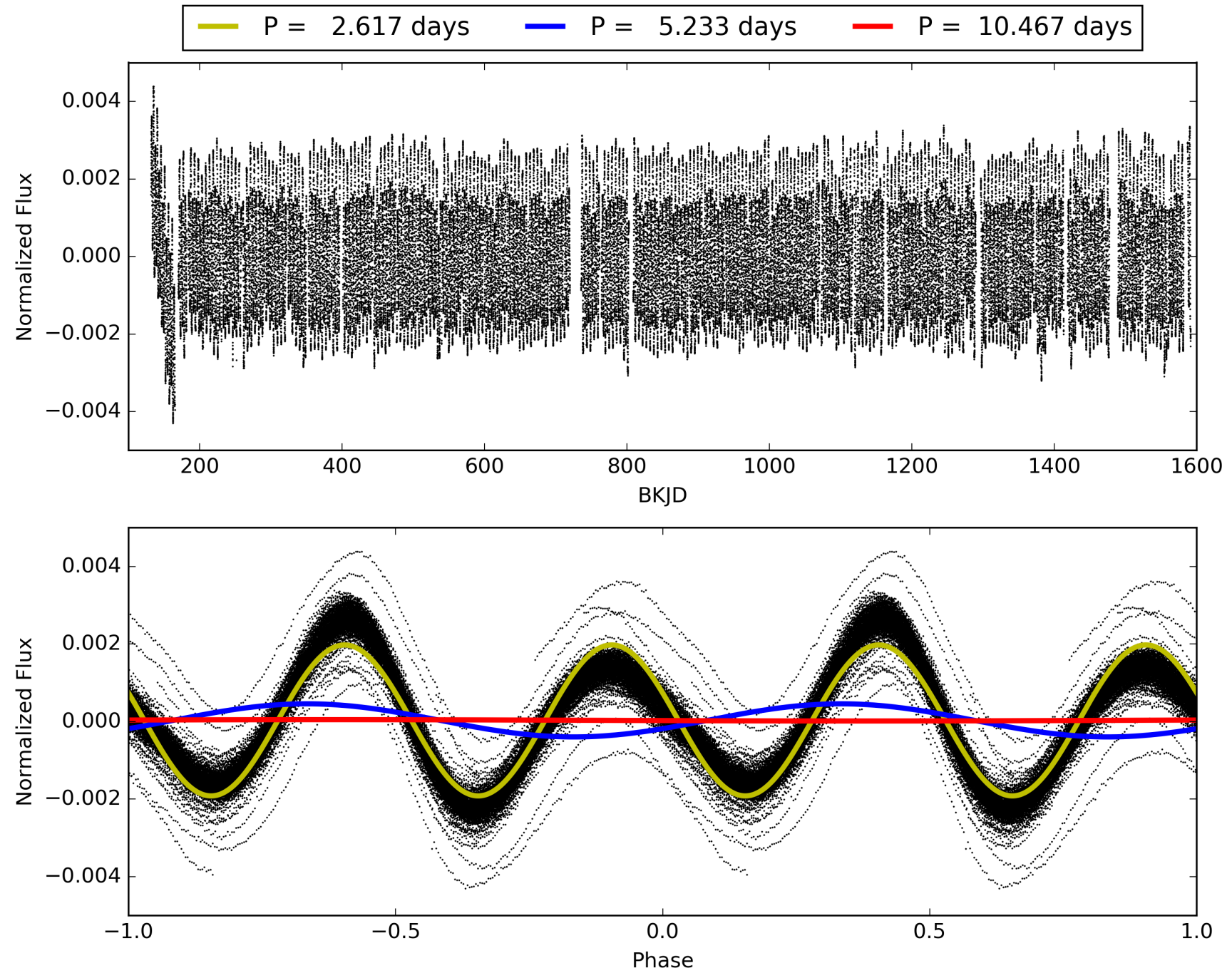
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:32:04 Z

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

TCE 007685408-02, PDC Light Curves

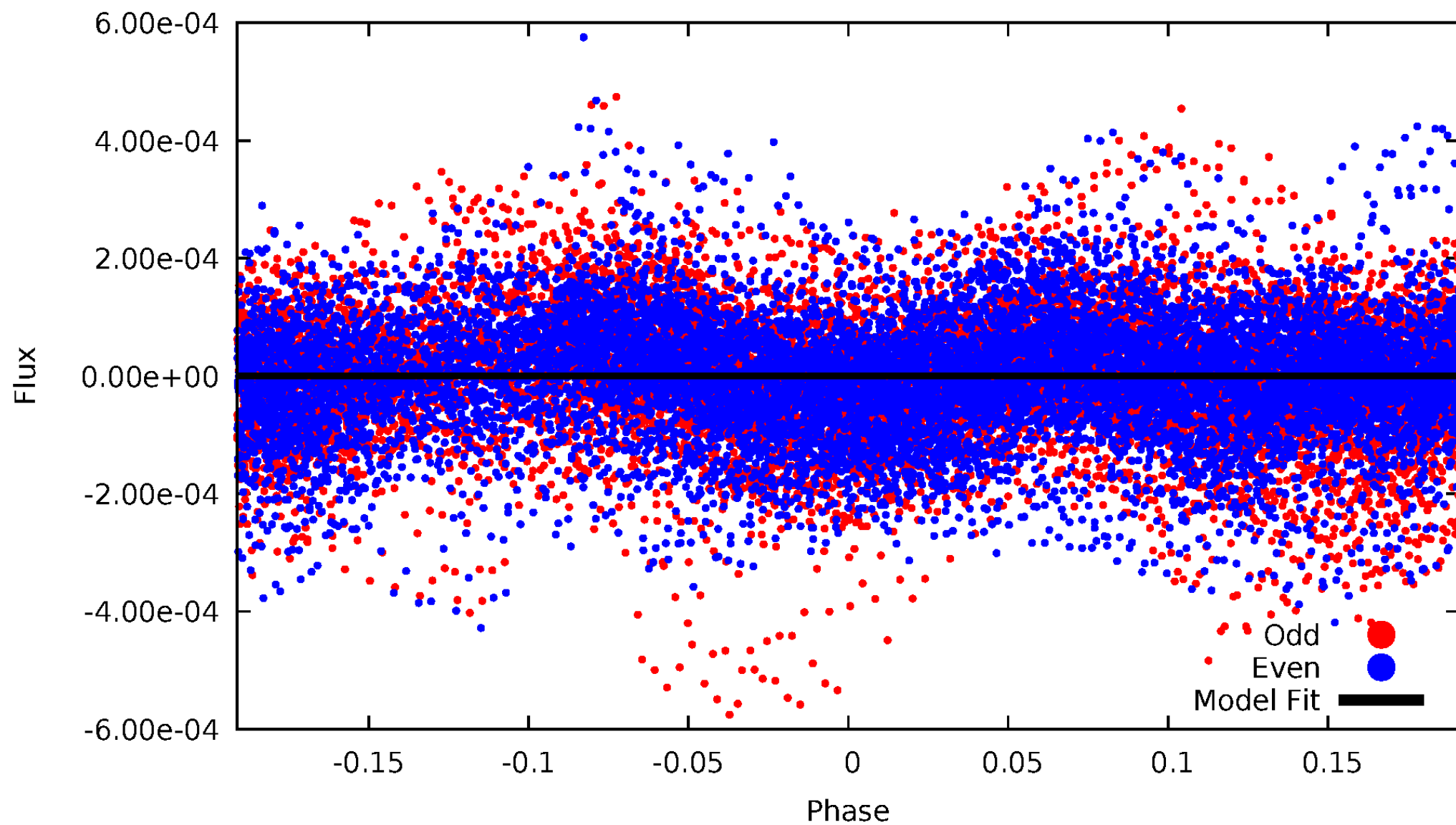


TCE 007685408-02



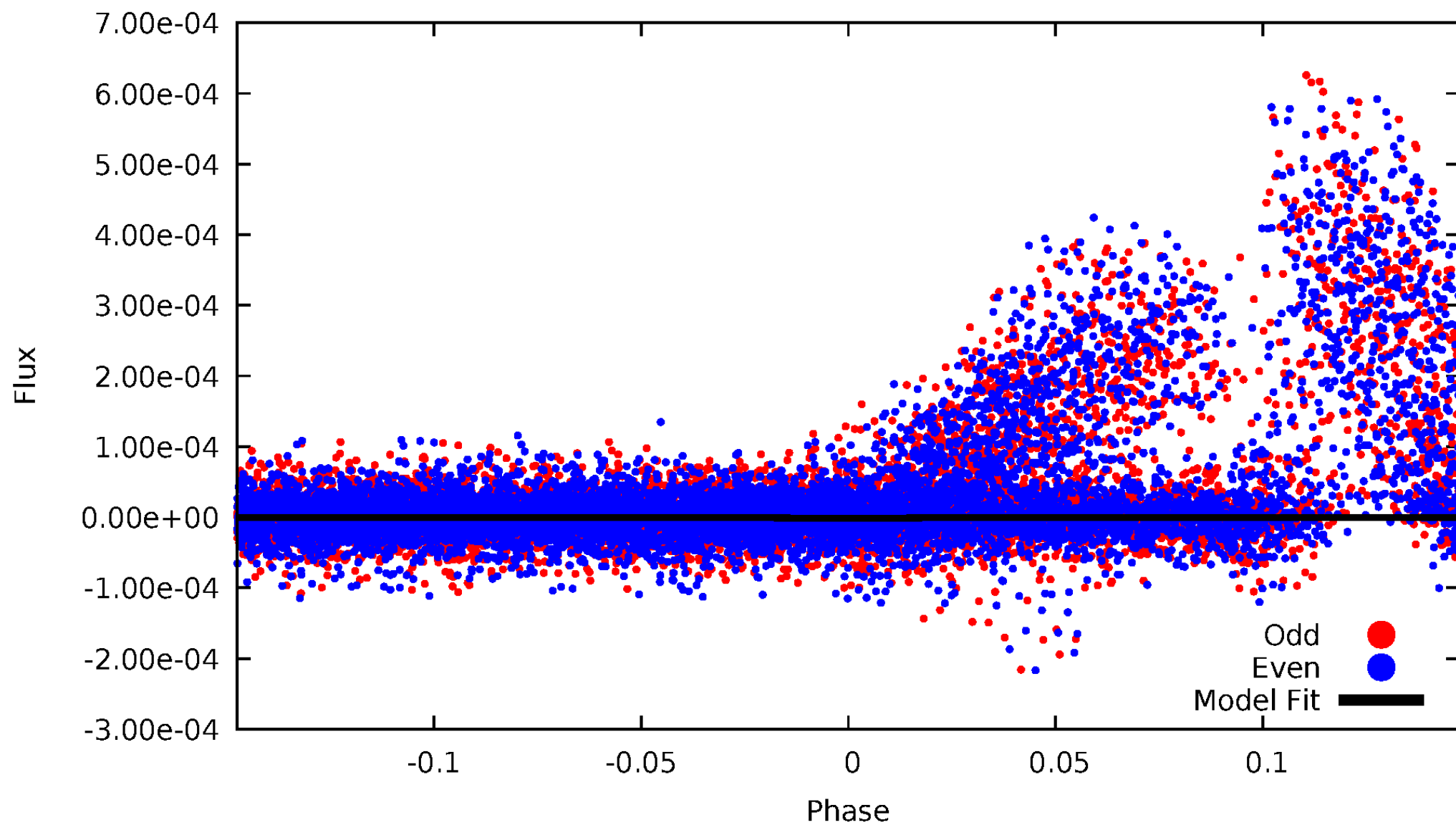
DV Odd/Even

TCE 007685408-02



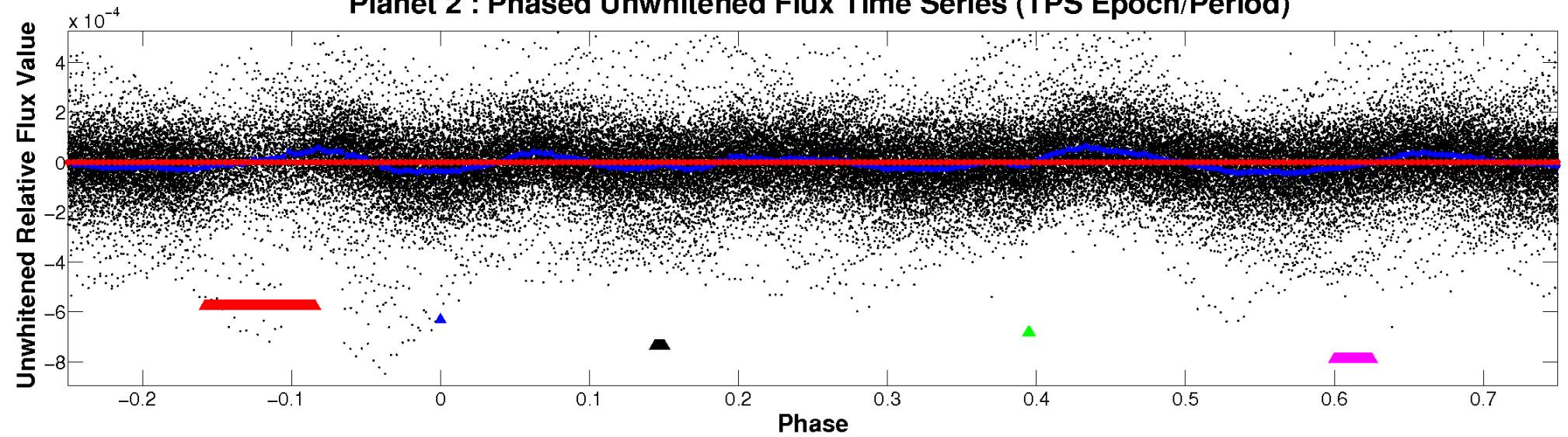
ALT Odd/Even

TCE 007685408-02

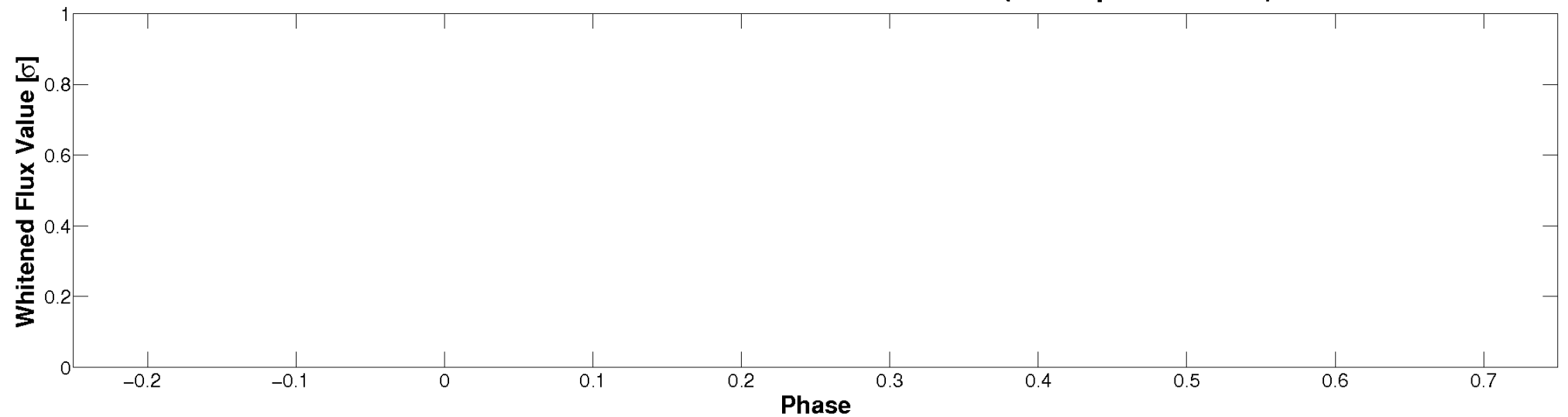


Non-Whitened Vs. Whitened Light Curve

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

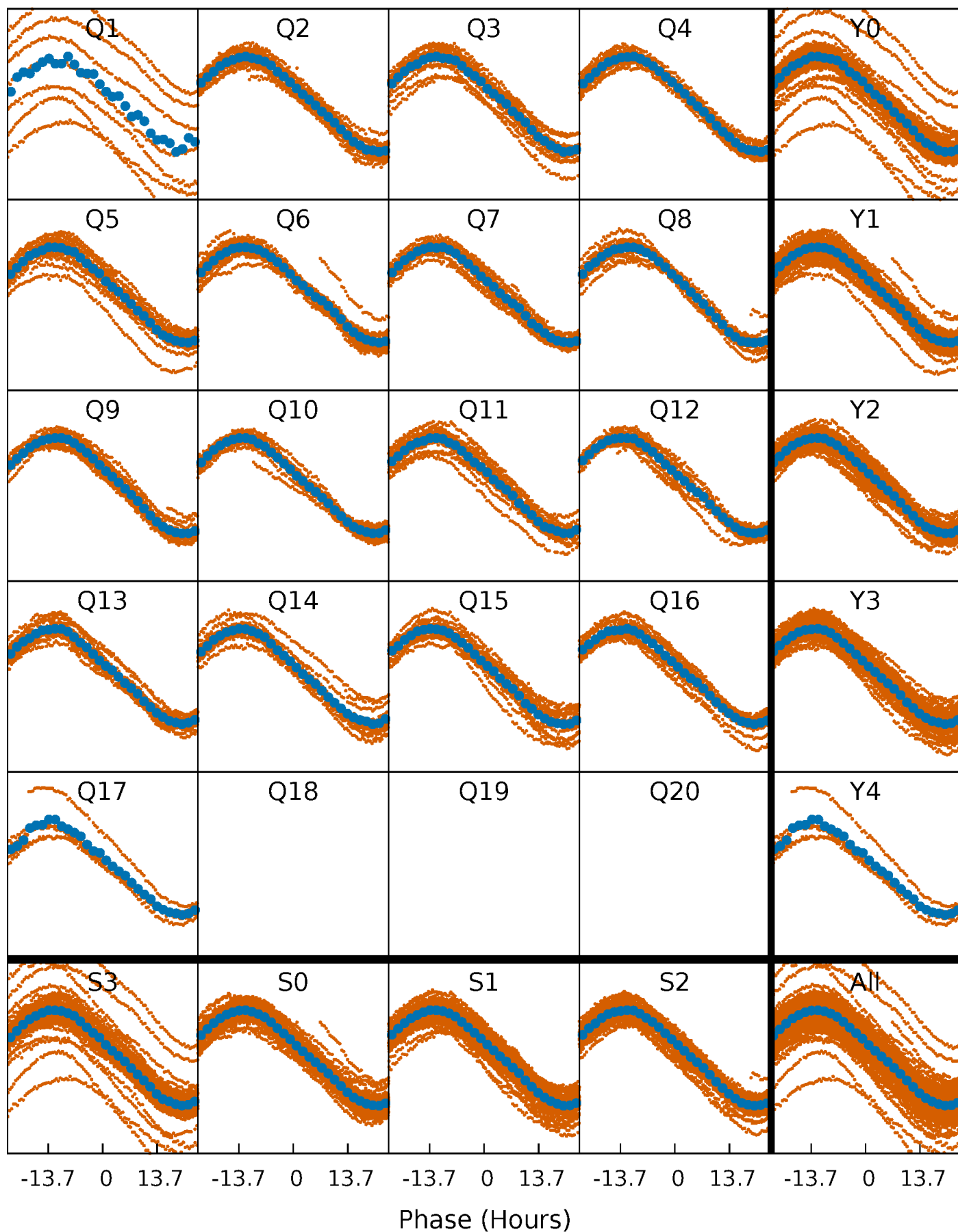


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



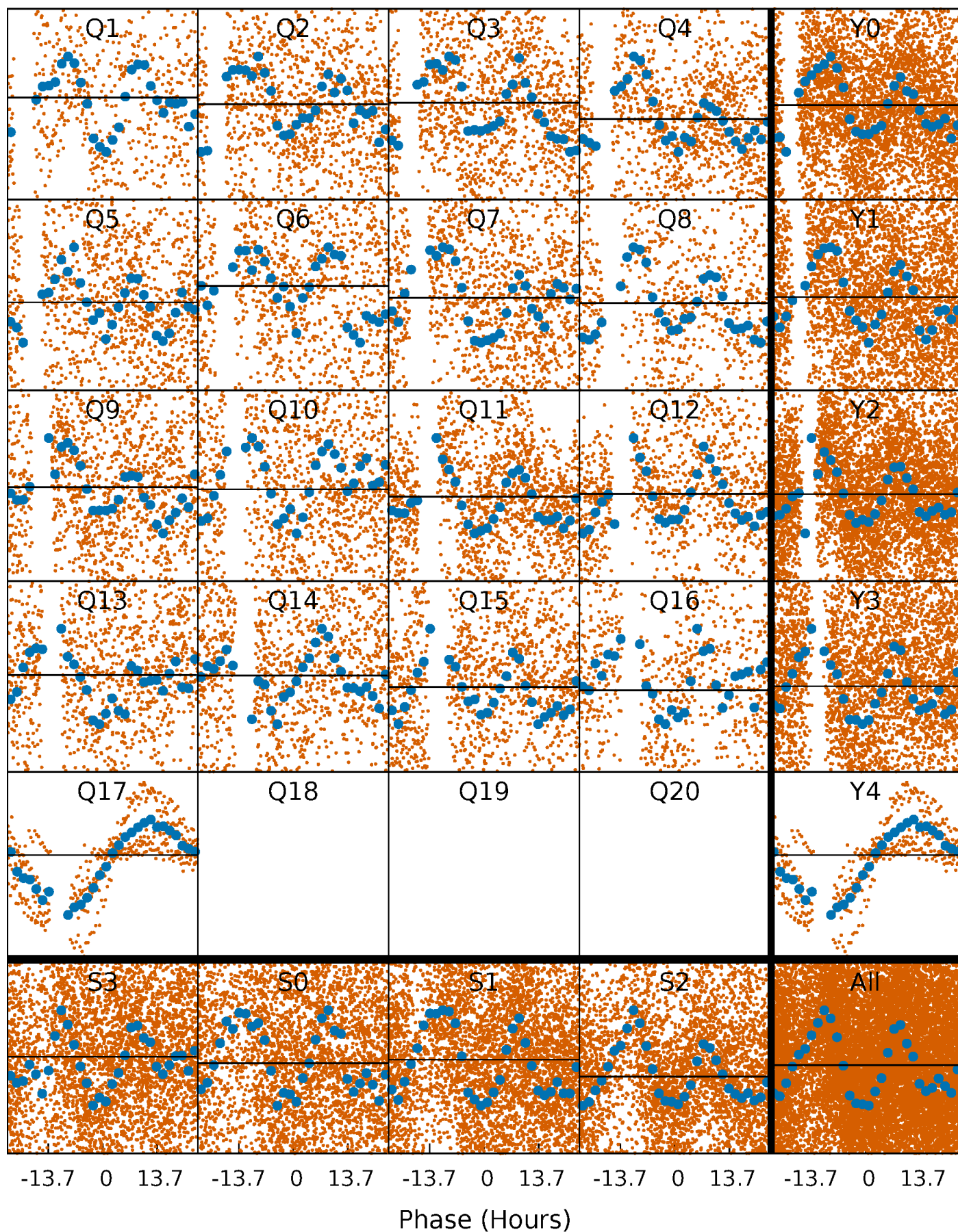
PDC Quarter-Phased Transit Curves

TCE 007685408-02 P= 5.233254 Days $T_0=132.760847$ (BKJD)



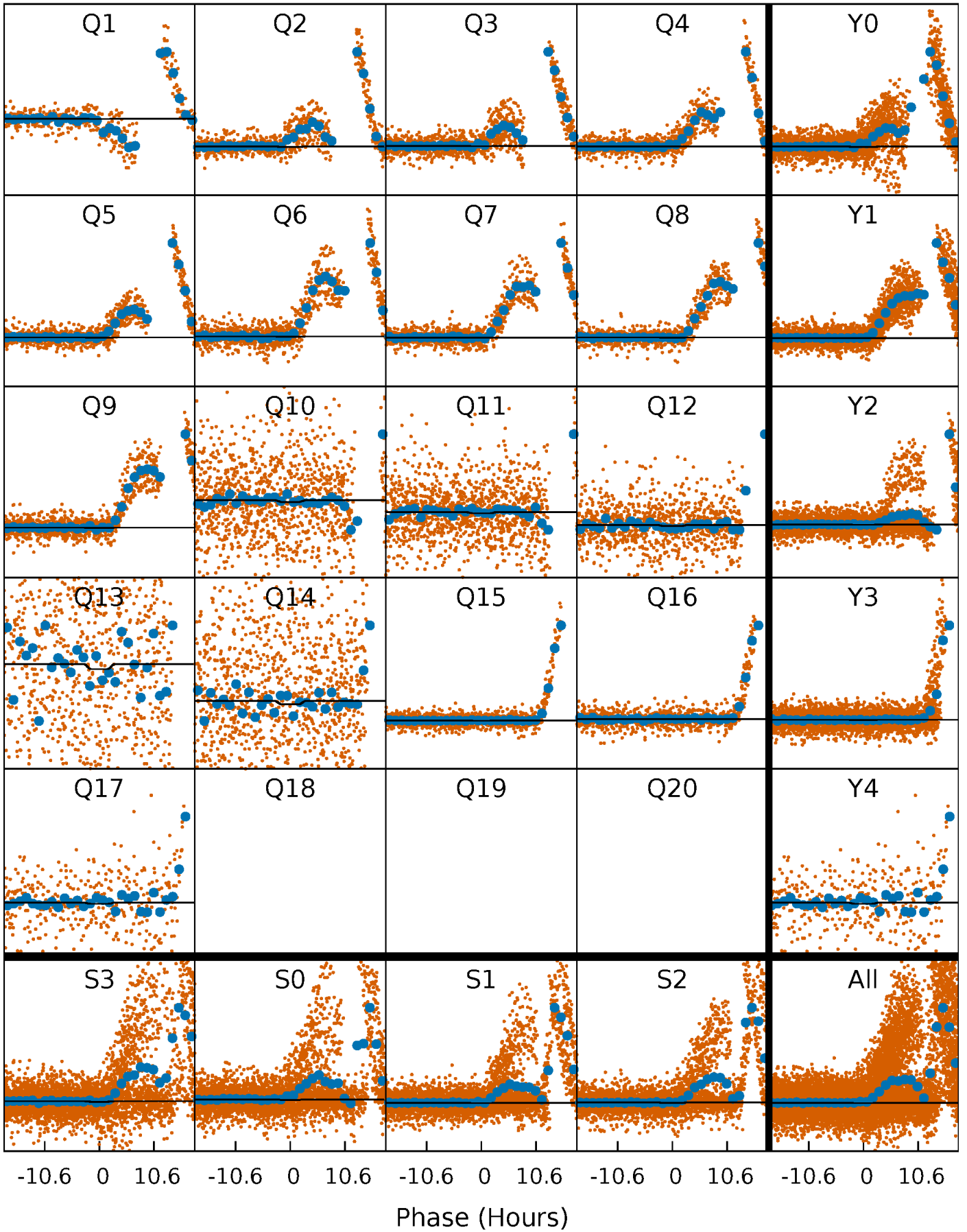
DV Quarter-Phased Transit Curves

TCE 007685408-02 P= 5.233254 Days $T_0=132.760847$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

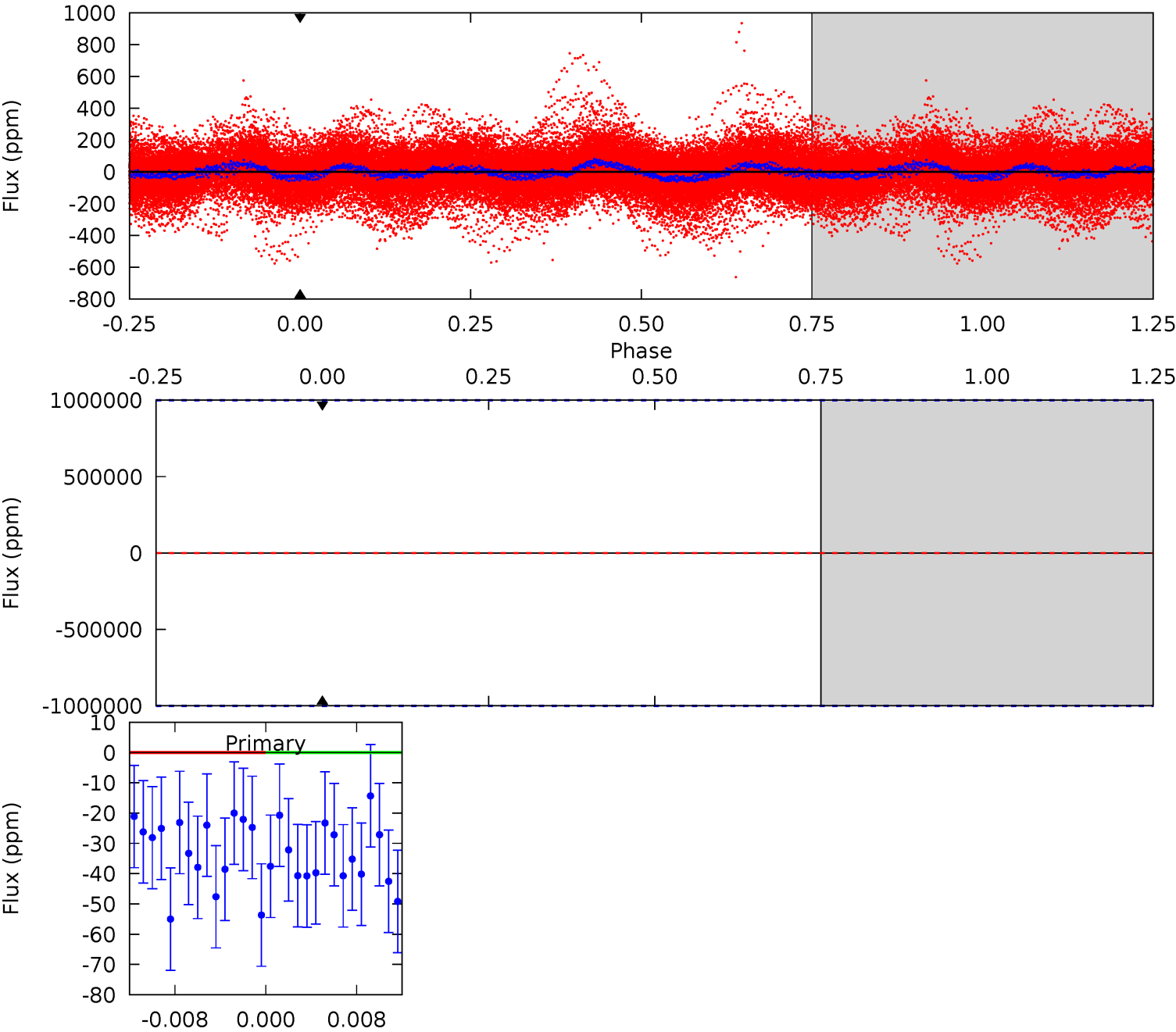
TCE 007685408-02 P= 5.233254 Days $T_0=131.529338$ (BKJD)



DV Model-Shift Uniqueness Test

007685408-02, P = 5.233254 Days, E = 127.527593 Days

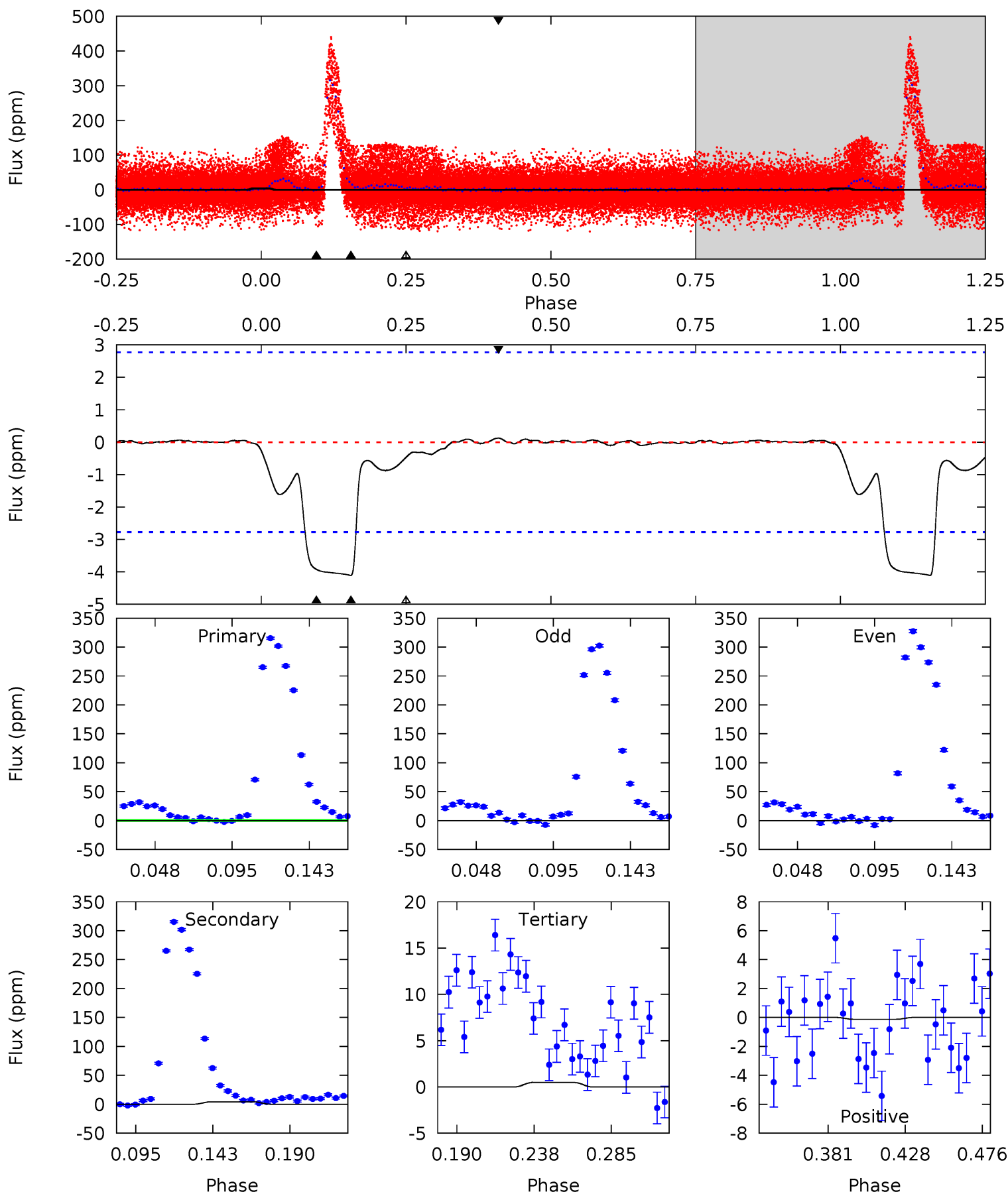
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007685408-02, P = 5.233254 Days, E = 131.529338 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.67	6.99	0.80	0.21	4.72	1.98	0.53	5.88	6.46	6.19	6.78	0.21	5.48	0.03	4.84



Stellar Parameters For KIC 007685408

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7906^{+216}_{-325}	$3.867^{+0.322}_{-0.107}$	$-0.160^{+0.200}_{-0.350}$	$2.670^{+0.359}_{-1.078}$	$1.915^{+0.082}_{-0.467}$	$0.142^{+0.381}_{-0.040}$
	+3%/-4%	+8%/-3%	+125%/-219%	+13%/-40%	+4%/-24%	+269%/-28%
Source	KIC0	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 007685408-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$18.55^{+20.80}_{-12.88}$	2887^{+187}_{-277}	-7039^{+54384}_{-39268}	$-24.027^{+1442.831}_{-1343.690}$
Alt.	-4 ± 1	$18.94^{+22.30}_{-13.70}$	2885^{+177}_{-262}	-2879^{+5487}_{-152}	$0.033^{+0.388}_{-0.026}$

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

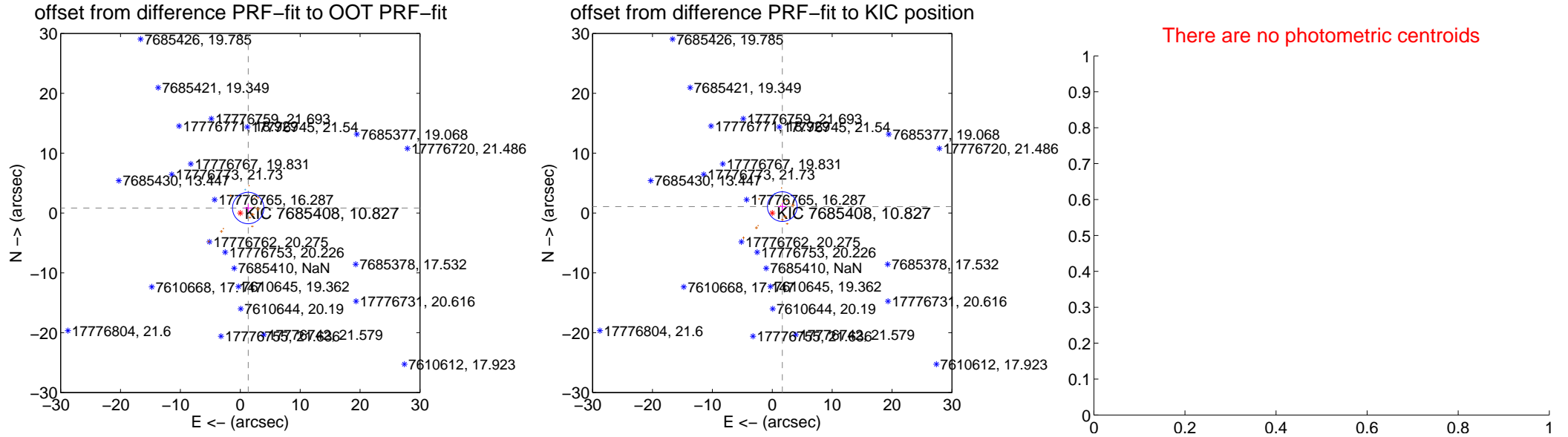
DV Centroid Data

Supplemental centroid analysis for 007685408-02. **Kepler magnitude: 10.83.** Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

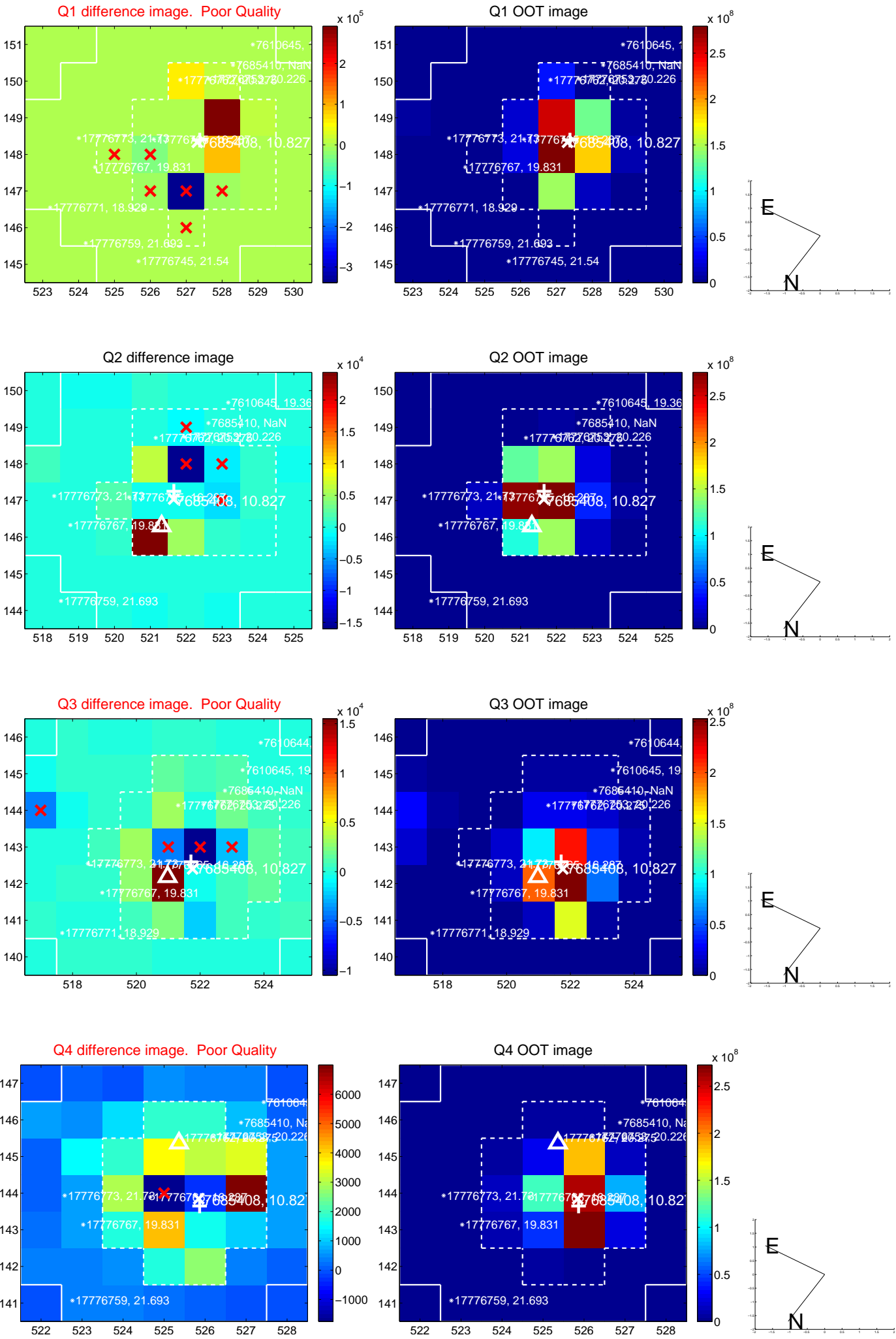
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.562 ± 0.874	1.79	-1.321 ± 0.710	0.834 ± 0.688
PRF-fit source offset from KIC position	1.987 ± 0.826	2.41	-1.678 ± 0.692	1.065 ± 0.634
photometric centroid source offset	—	—	—	—

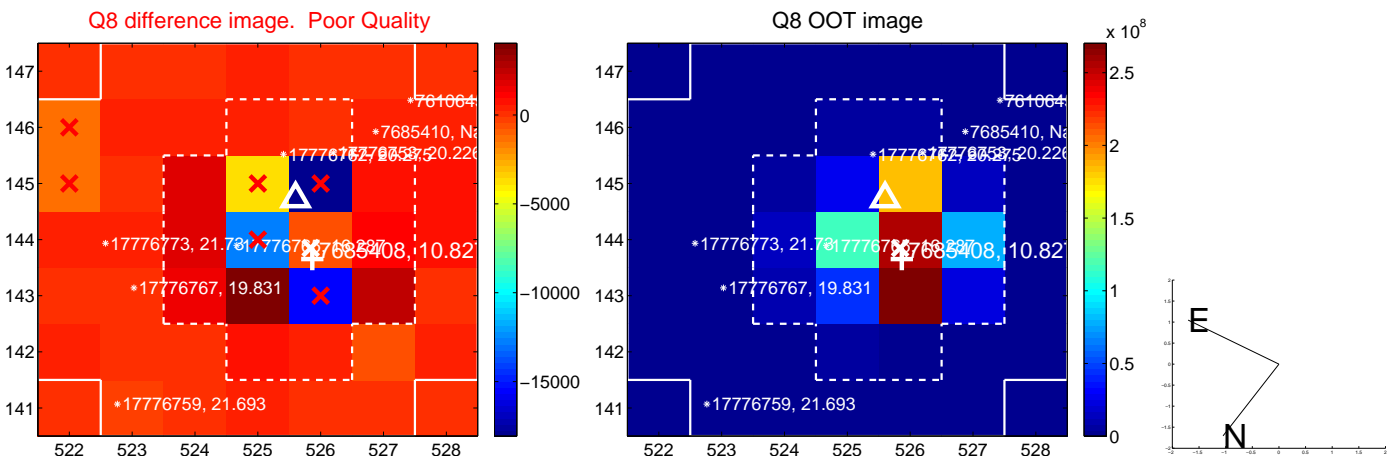
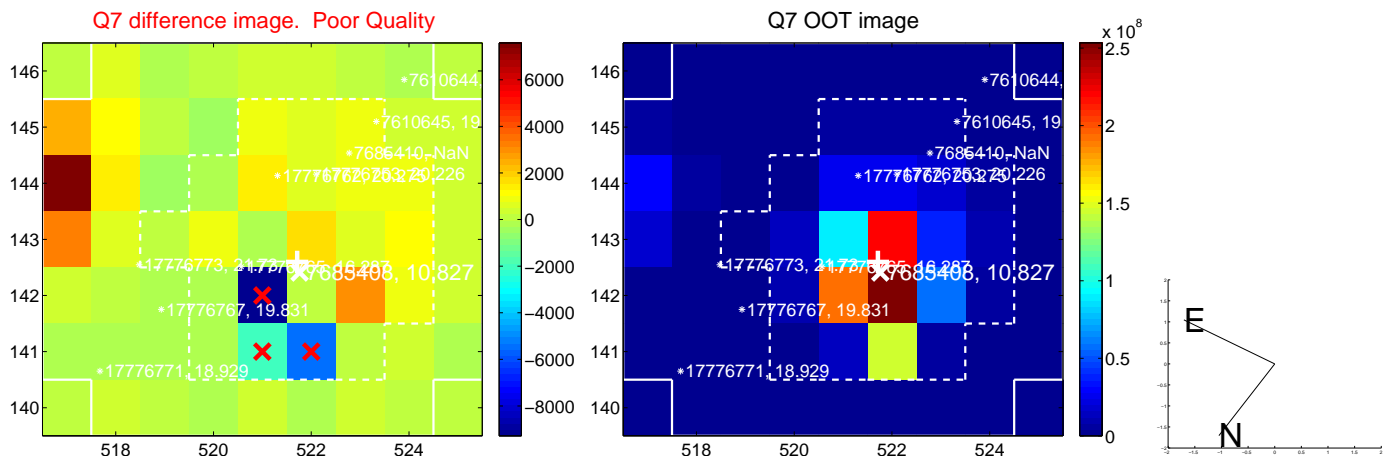
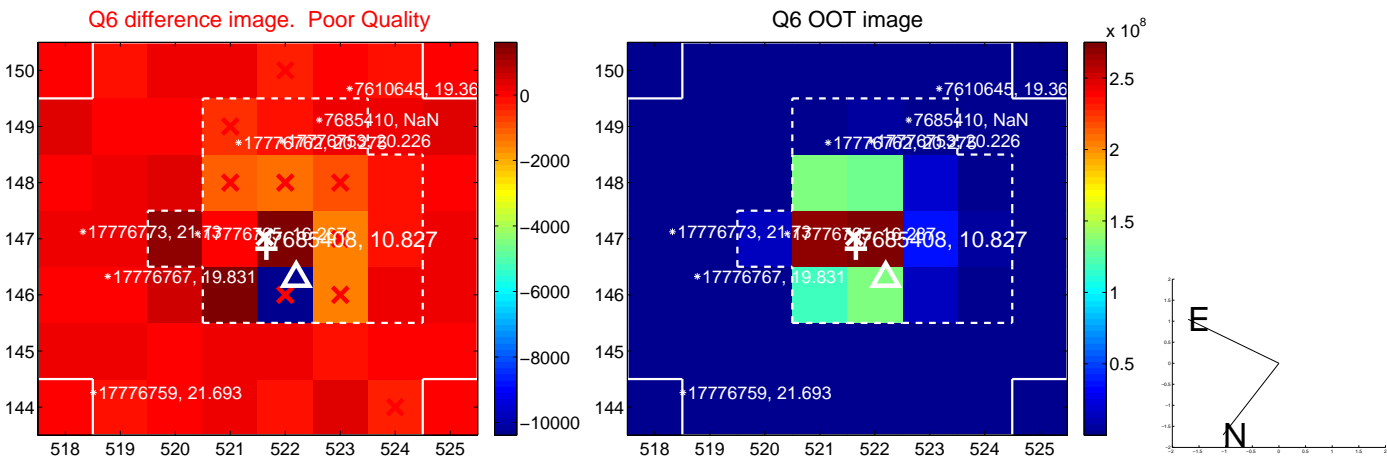
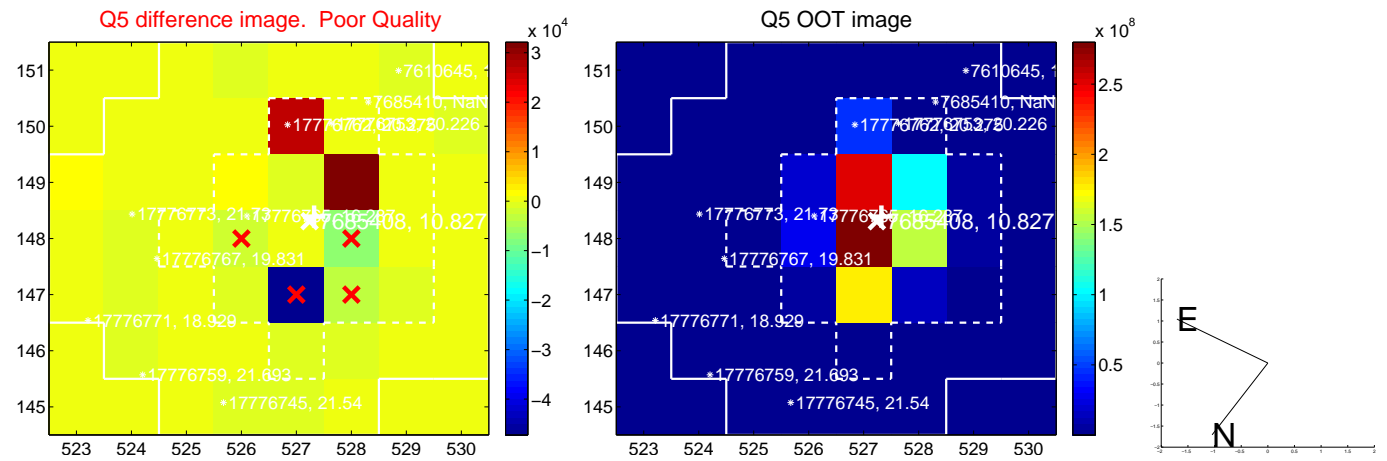


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

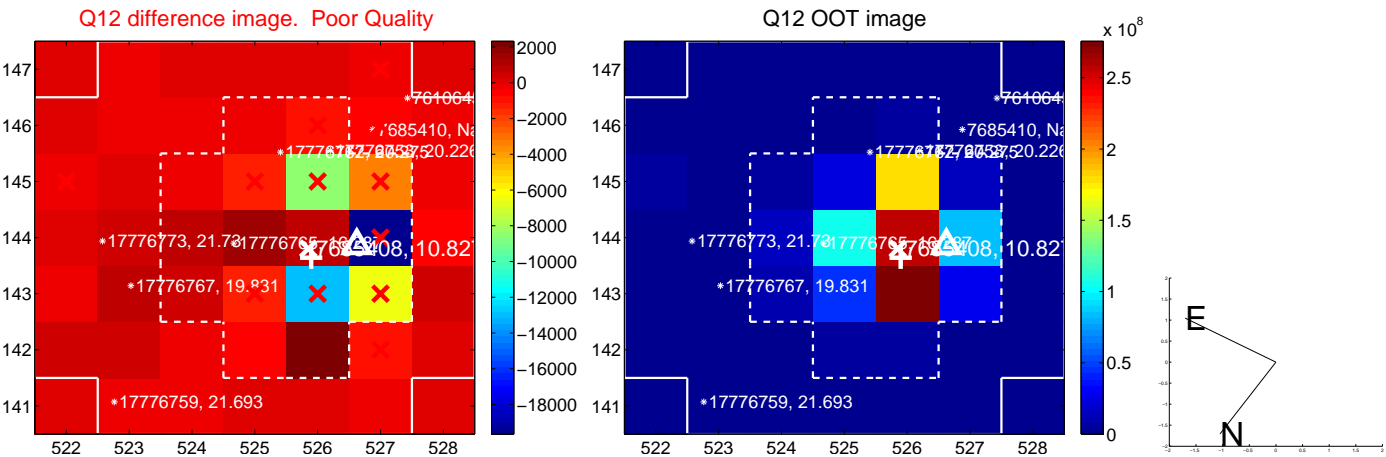
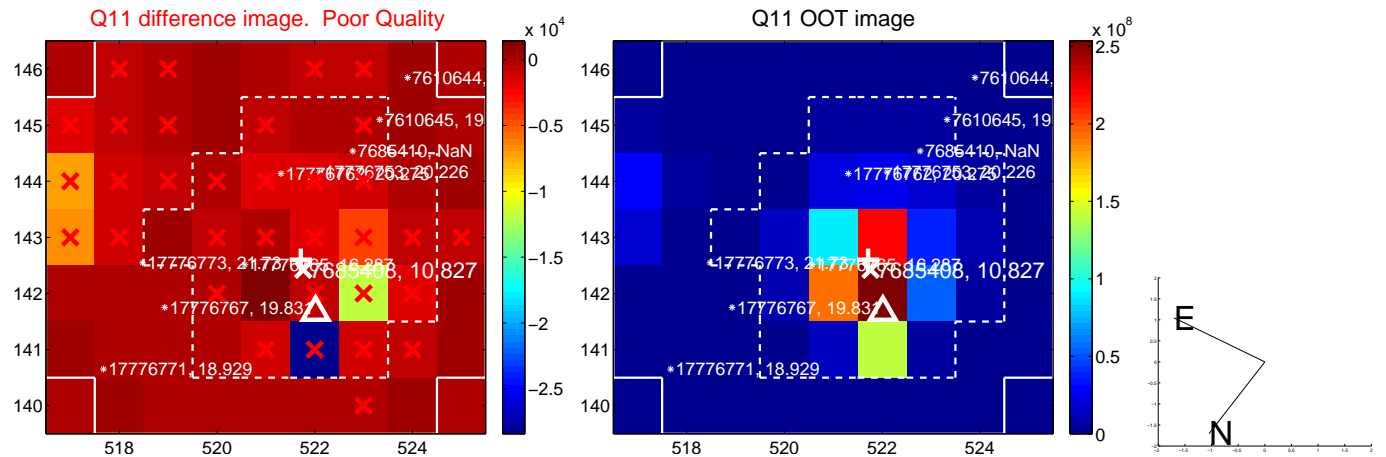
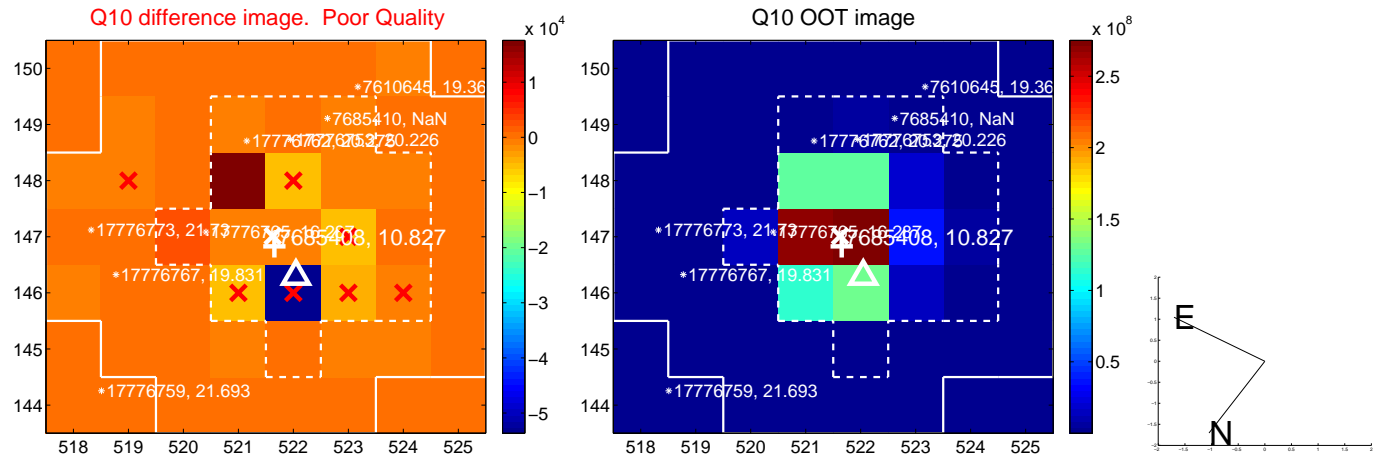
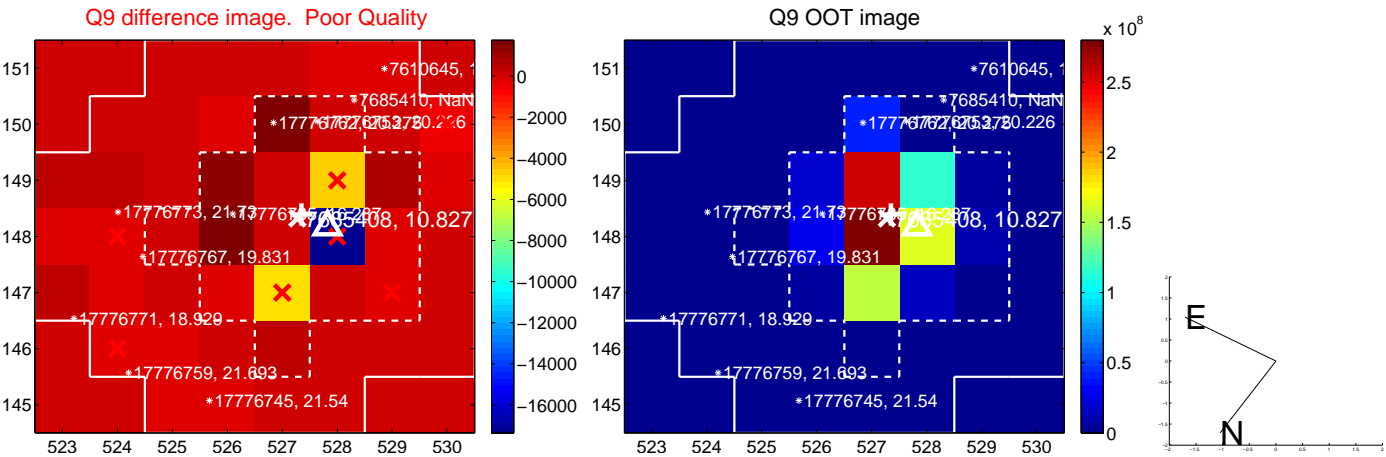
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



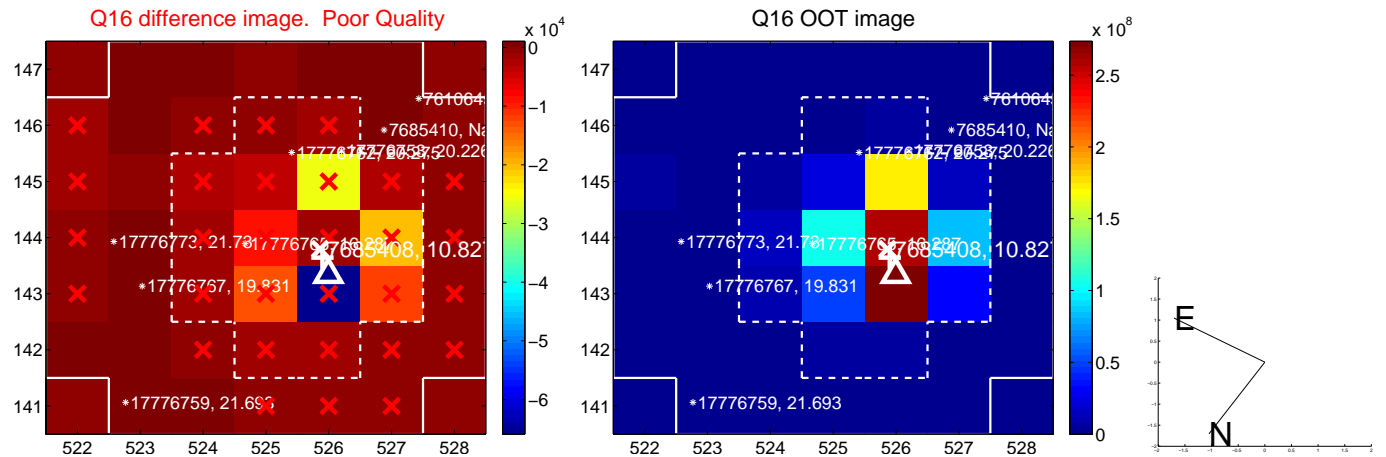
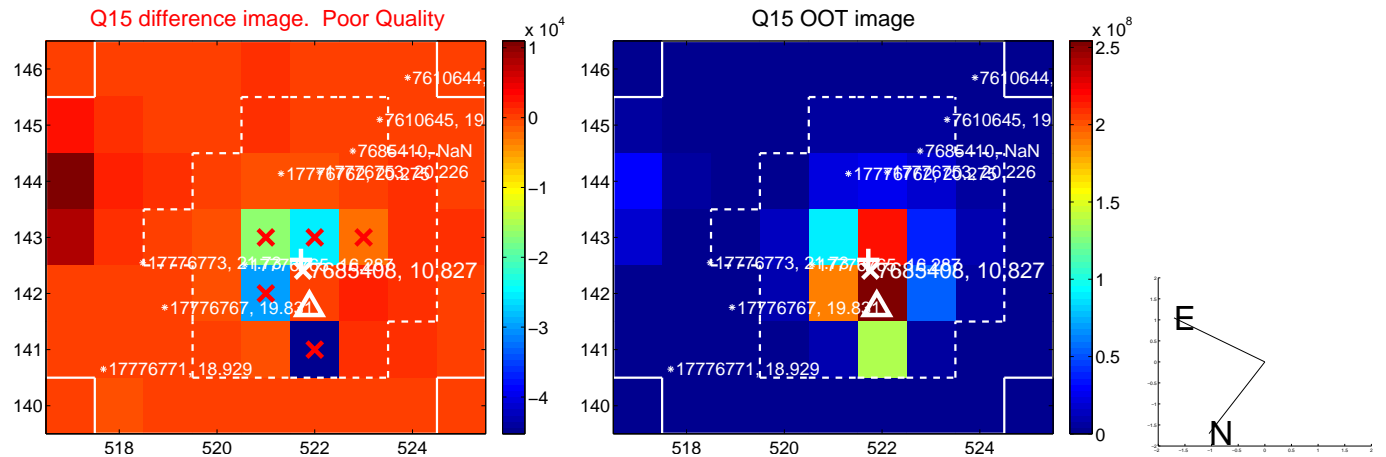
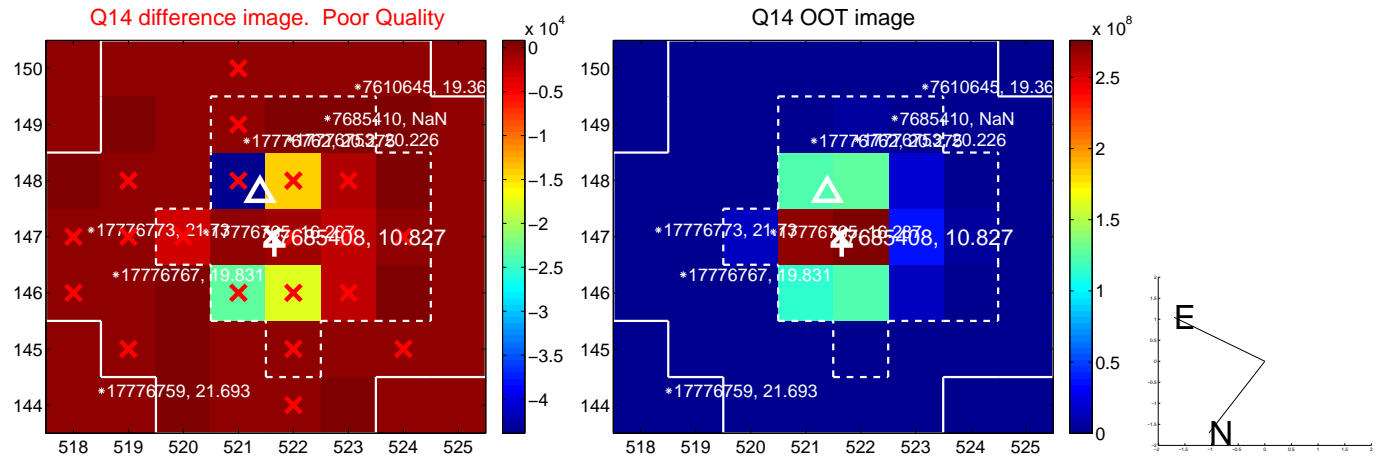
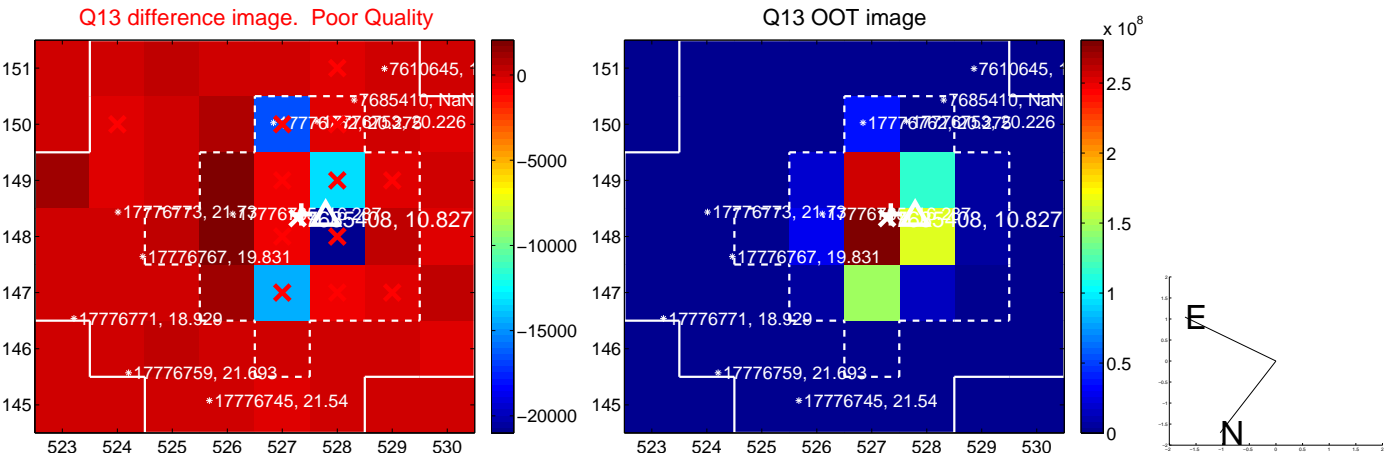
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



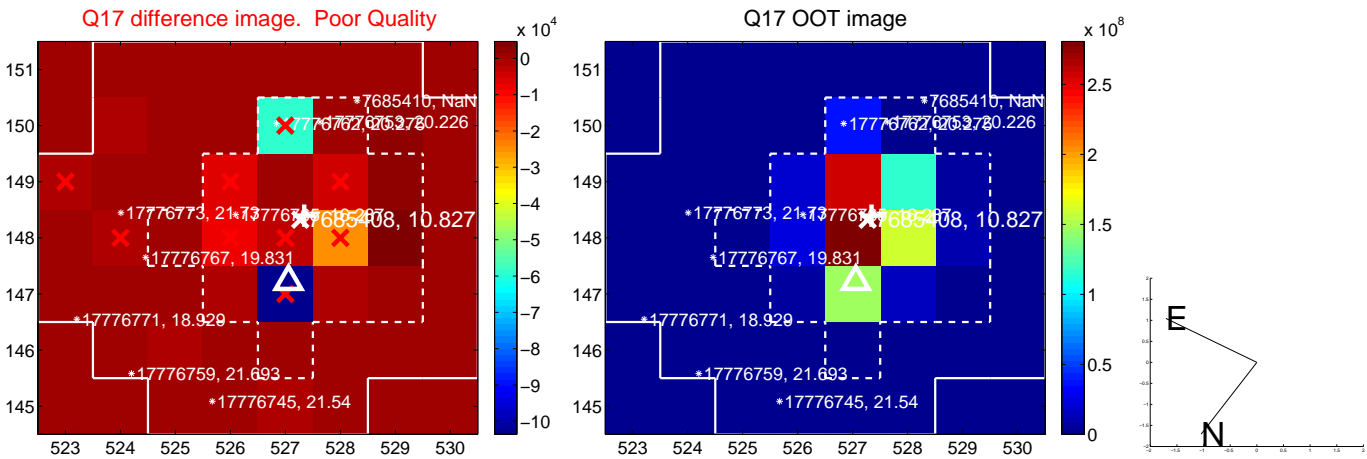
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



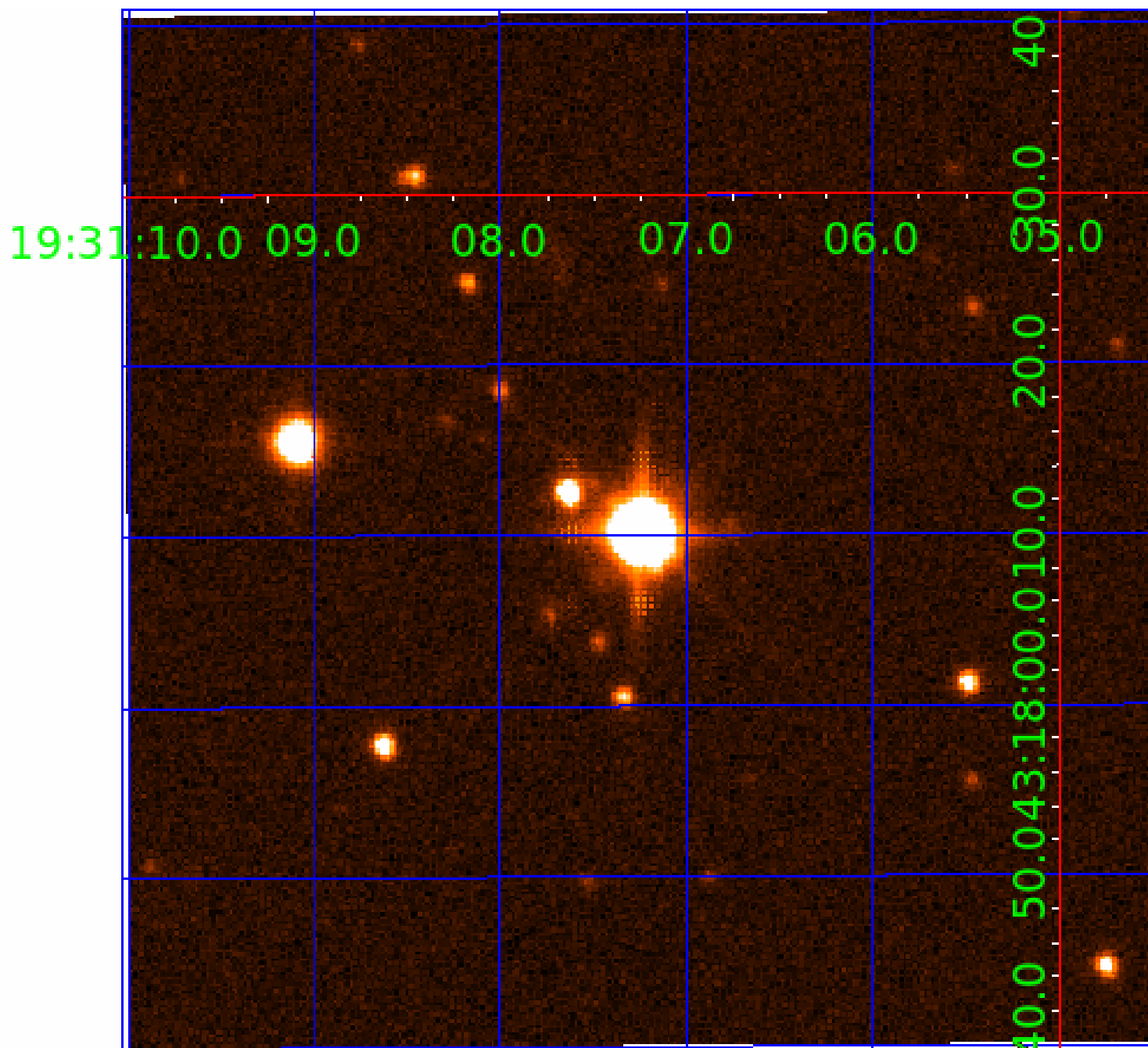
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 007685408

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})
007685408-01	OBS	No	5.234654	131.932192	4.0	0.631	17.9	1.2	2.67	7906	0.57	4647.42
007685408-02	OBS	No	5.233254	132.760847	30.7	12.000	18.2	-1.0	2.67	7906	1.50	4649.08
007685408-03	OBS	No	5.233231	134.831341	24.6	4.261	15.3	14.4	2.67	7906	1.54	4649.10
007685408-04	OBS	No	5.233136	133.547198	38.7	9.839	14.3	13.7	2.67	7906	1.93	4649.22
007685408-05	OBS	No	5.233728	135.900736	9.5	32.706	12.5	4.1	2.67	7906	0.85	4648.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007685408-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007685408-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—SAME_NTL_PERIOD—CENT_SATURATED
007685408-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

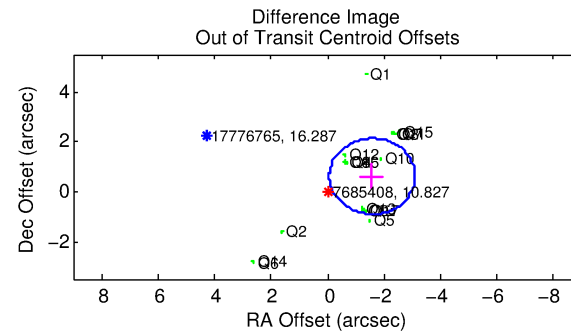
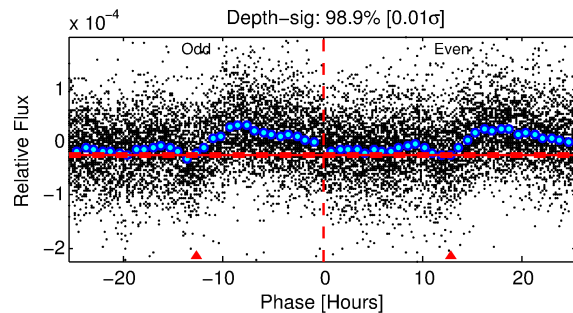
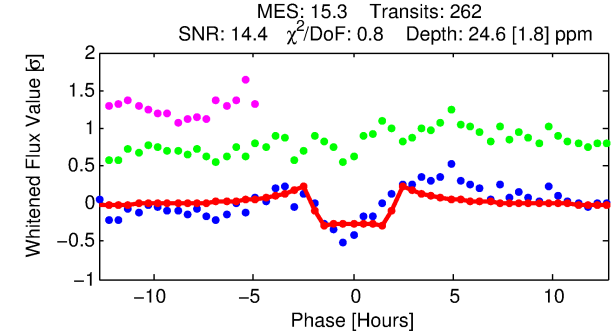
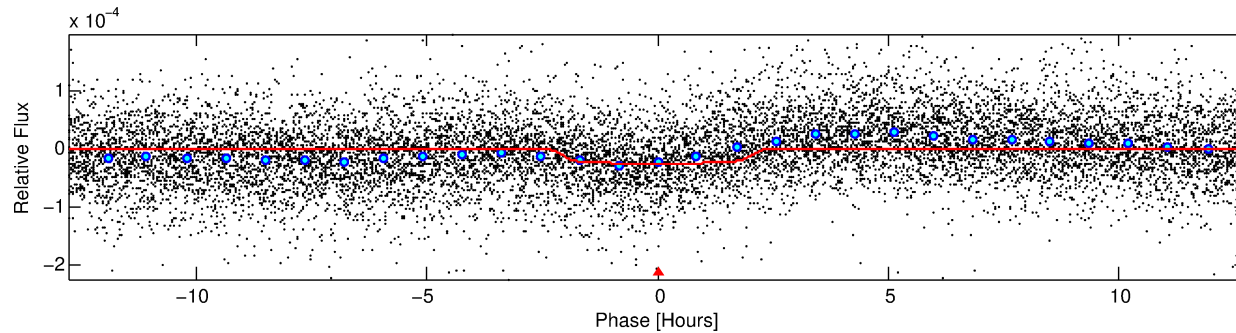
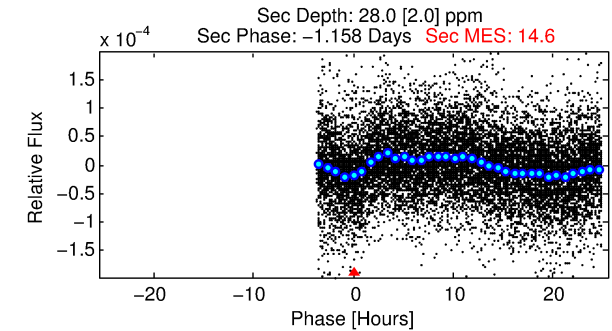
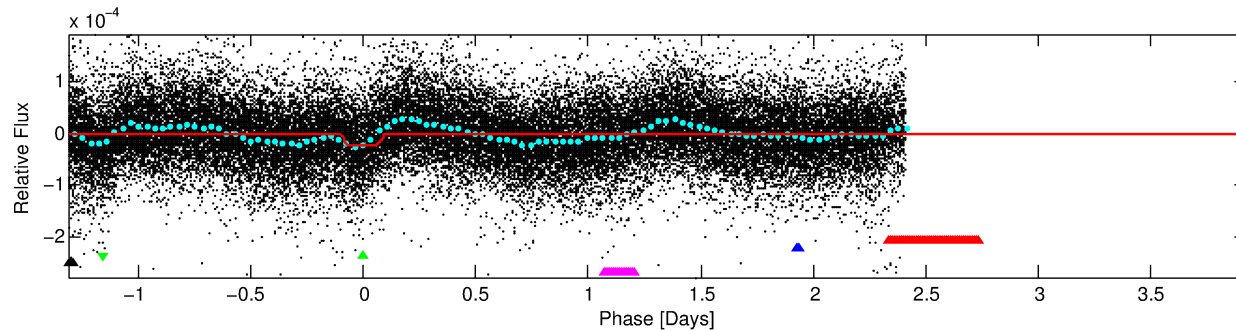
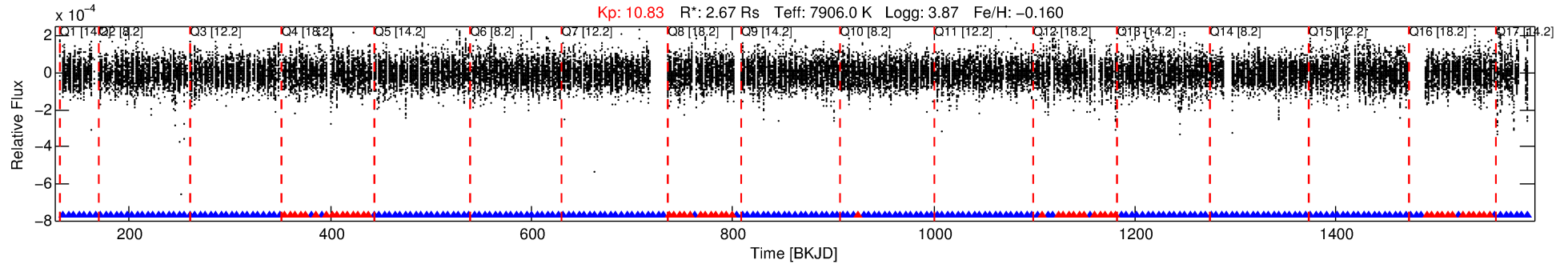
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007685408-03

No Significant Match Found

DV One-Page Summary

KIC: 7685408 Candidate: 3 of 5 Period: 5.233 d



DV Fit Results:

Period = 5.23323 [0.00002] d
Epoch = 134.8313 [0.0025] BKJD
Rp/R* = 0.0053 [0.0006]
a/R* = 4.28 [2.92]
b = 0.90 [0.15]
Seff = 4649.10 [2726.01]
Teq = 2106 [309] K
Rp = 1.54 [0.65] Re
a = 0.0733 [0.0268] AU
Ag = 34.72 [21.41] [1.57σ]
Teffp = 7902 [595] K [8.65σ]

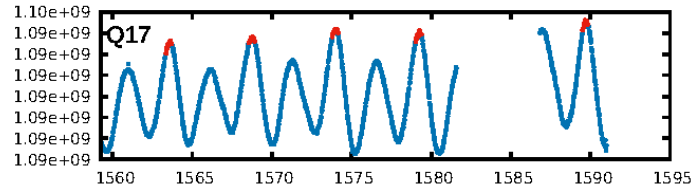
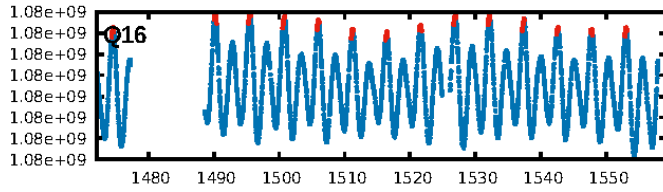
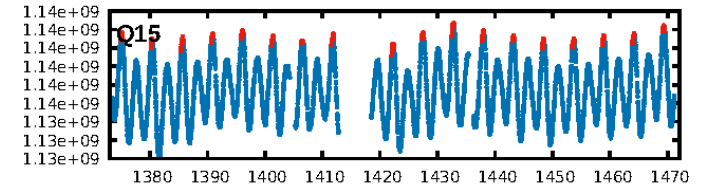
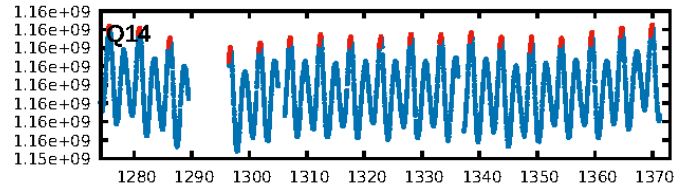
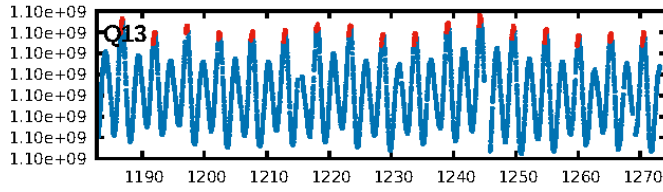
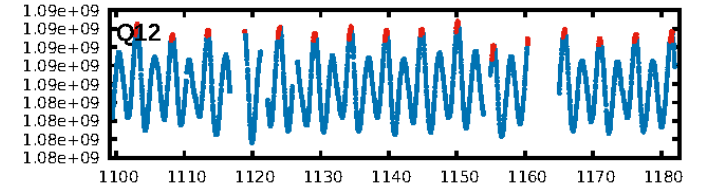
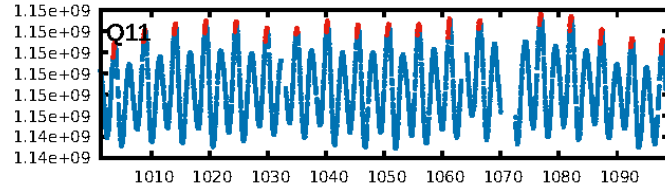
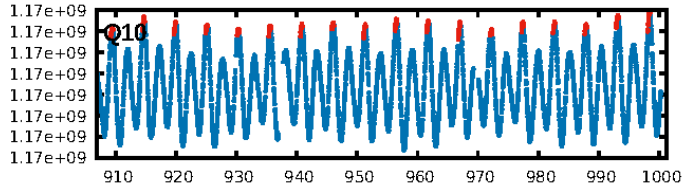
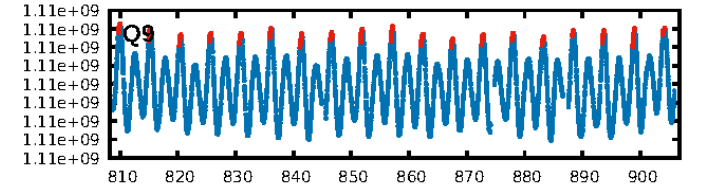
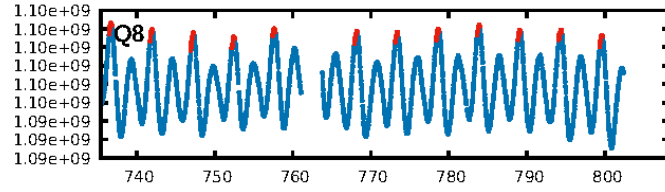
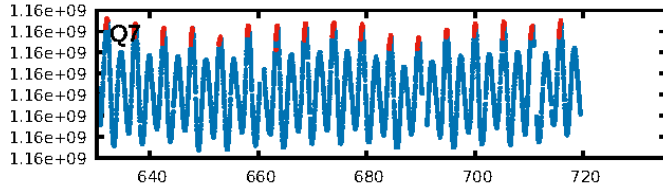
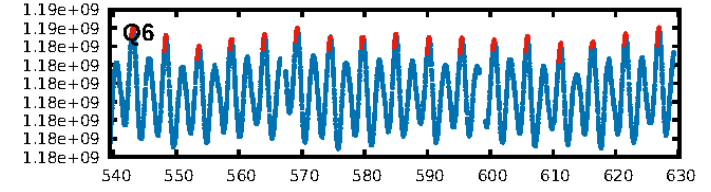
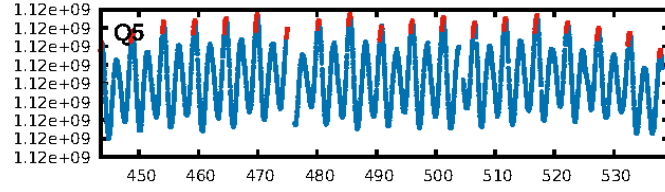
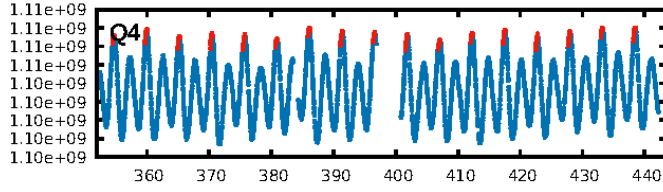
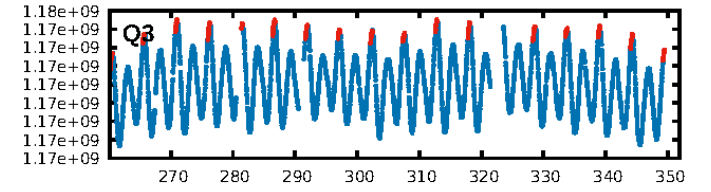
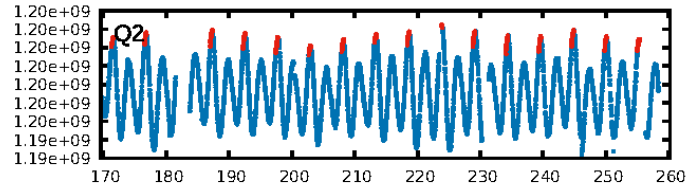
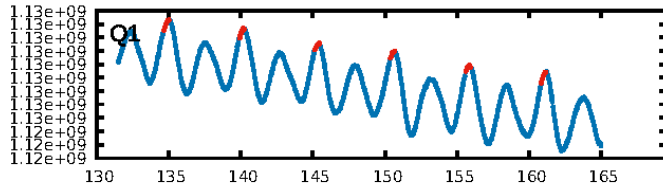
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.79 [199/251]
GhostDiagnostic-chr: -0.9532
Centroid-sig: 63.4%
Centroid-so: 0.488 arcsec [0.67σ]
OotOffset-rm: 1.694 arcsec [3.35σ]
KicOffset-rm: 1.763 arcsec [3.82σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.94 [16/17]

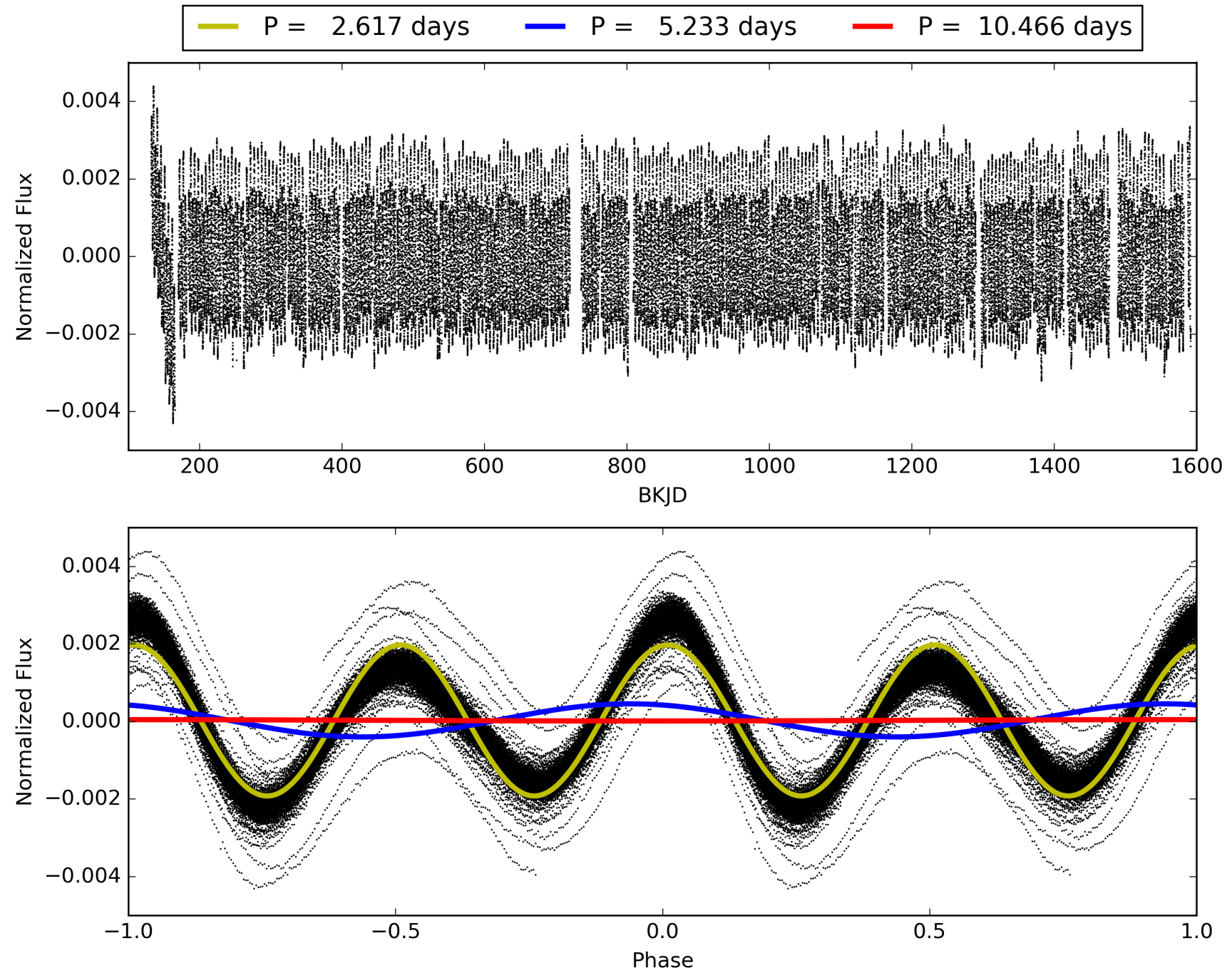
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:32:12 Z

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

TCE 007685408-03, PDC Light Curves

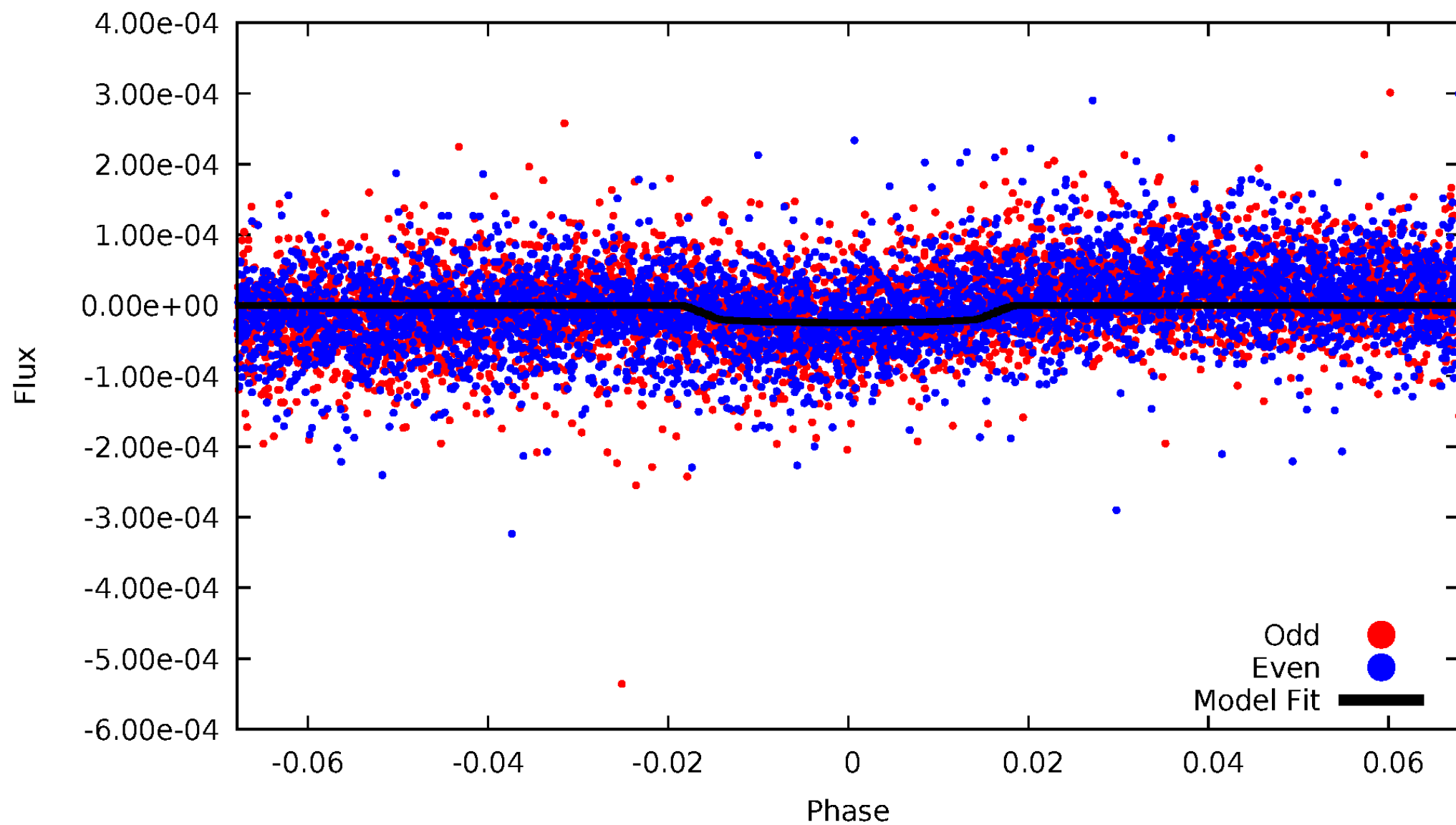


TCE 007685408-03



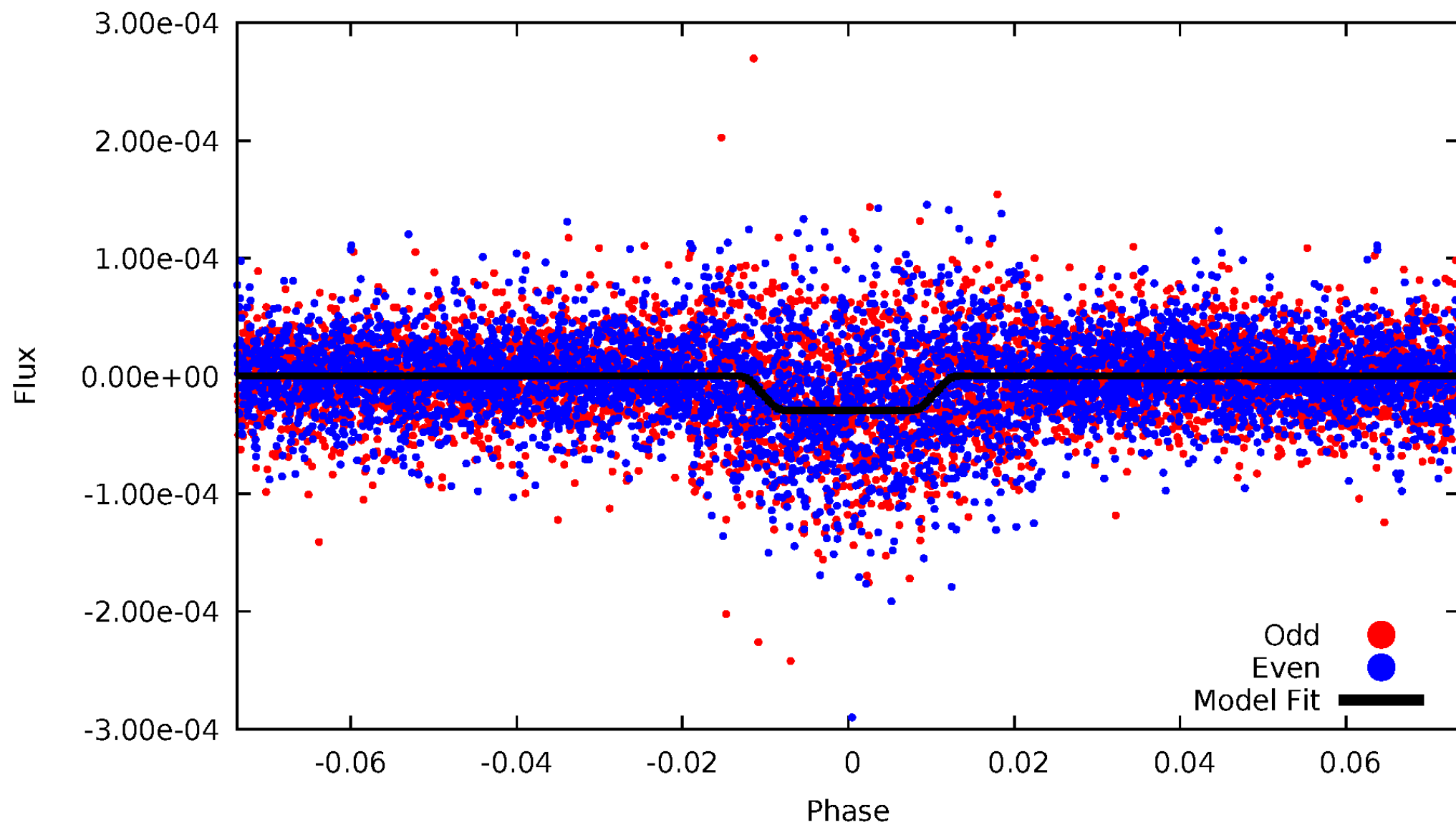
DV Odd/Even

TCE 007685408-03



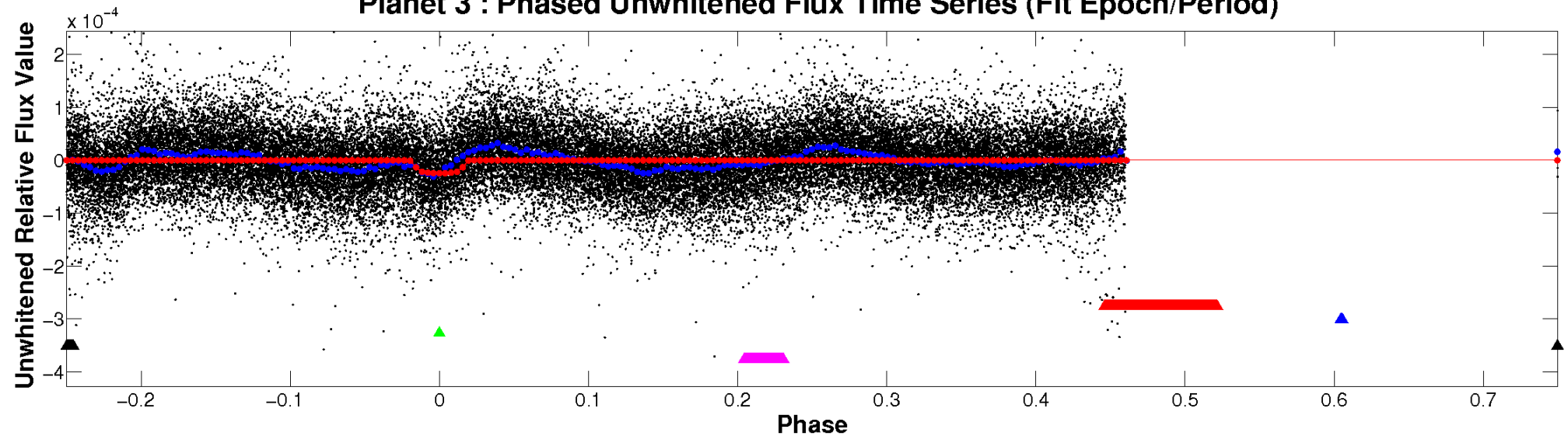
ALT Odd/Even

TCE 007685408-03

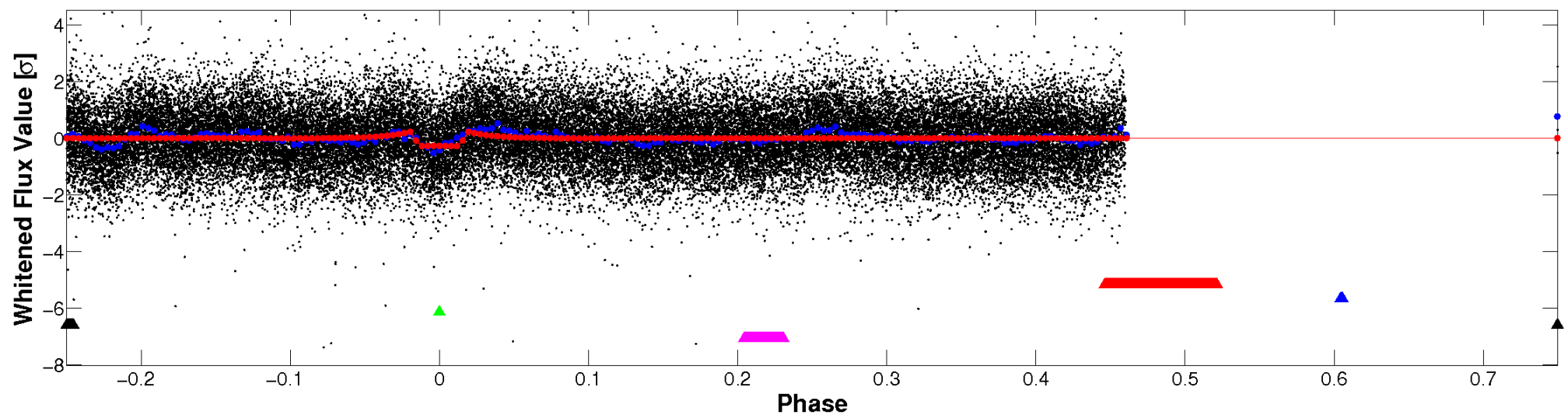


Non-Whitened Vs. Whitened Light Curve

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

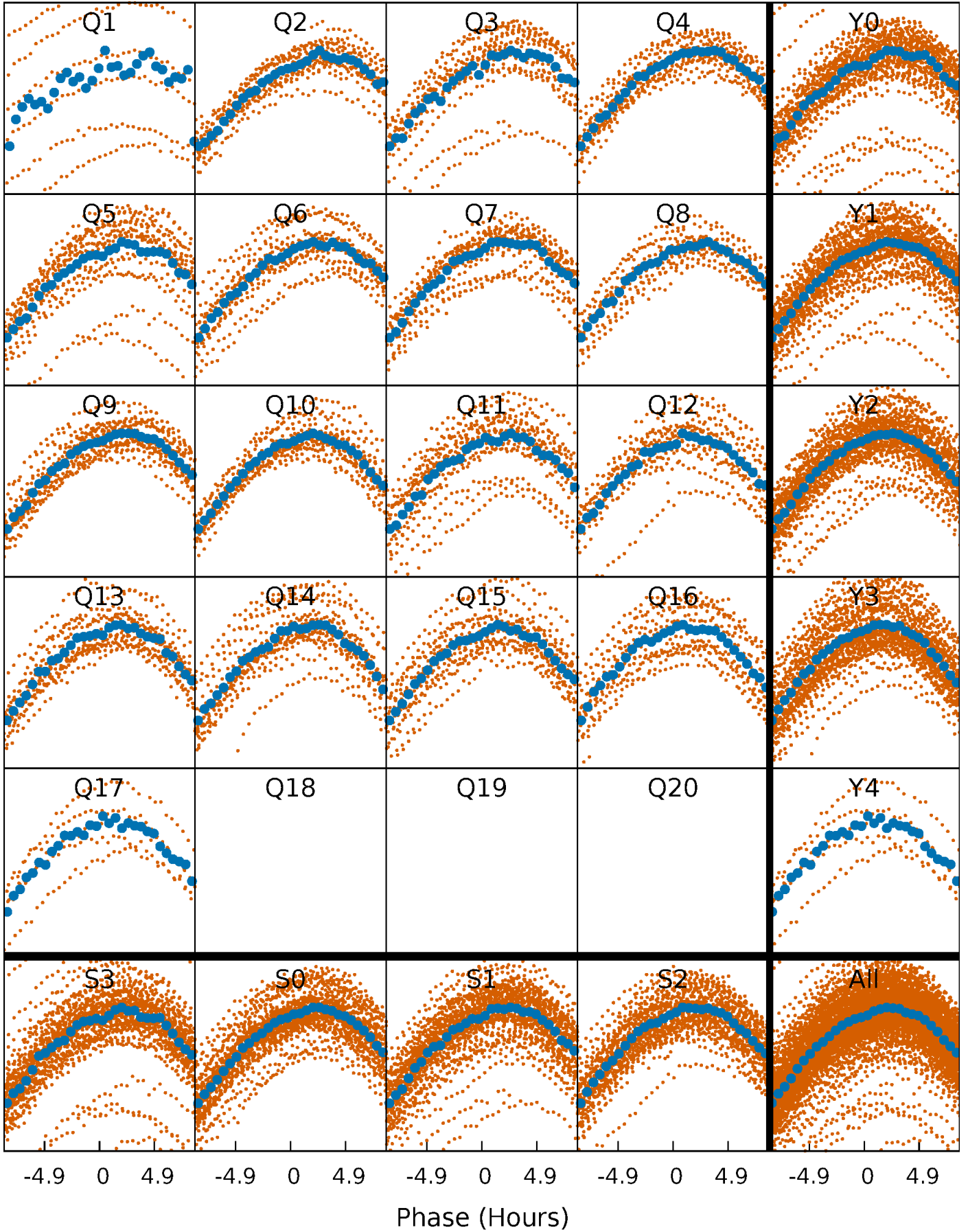


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



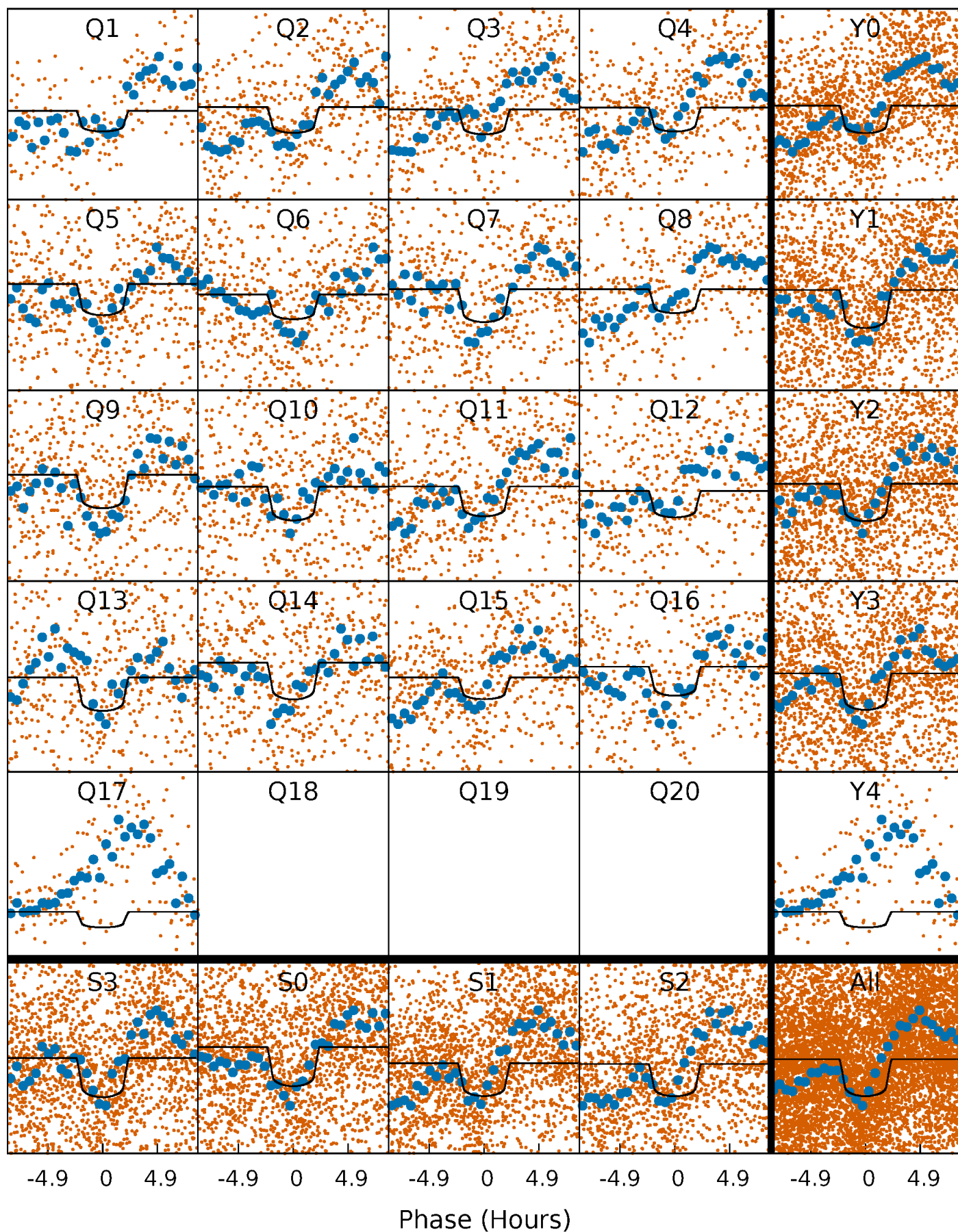
PDC Quarter-Phased Transit Curves

TCE 007685408-03 P= 5.233231 Days $T_0=134.831341$ (BKJD)



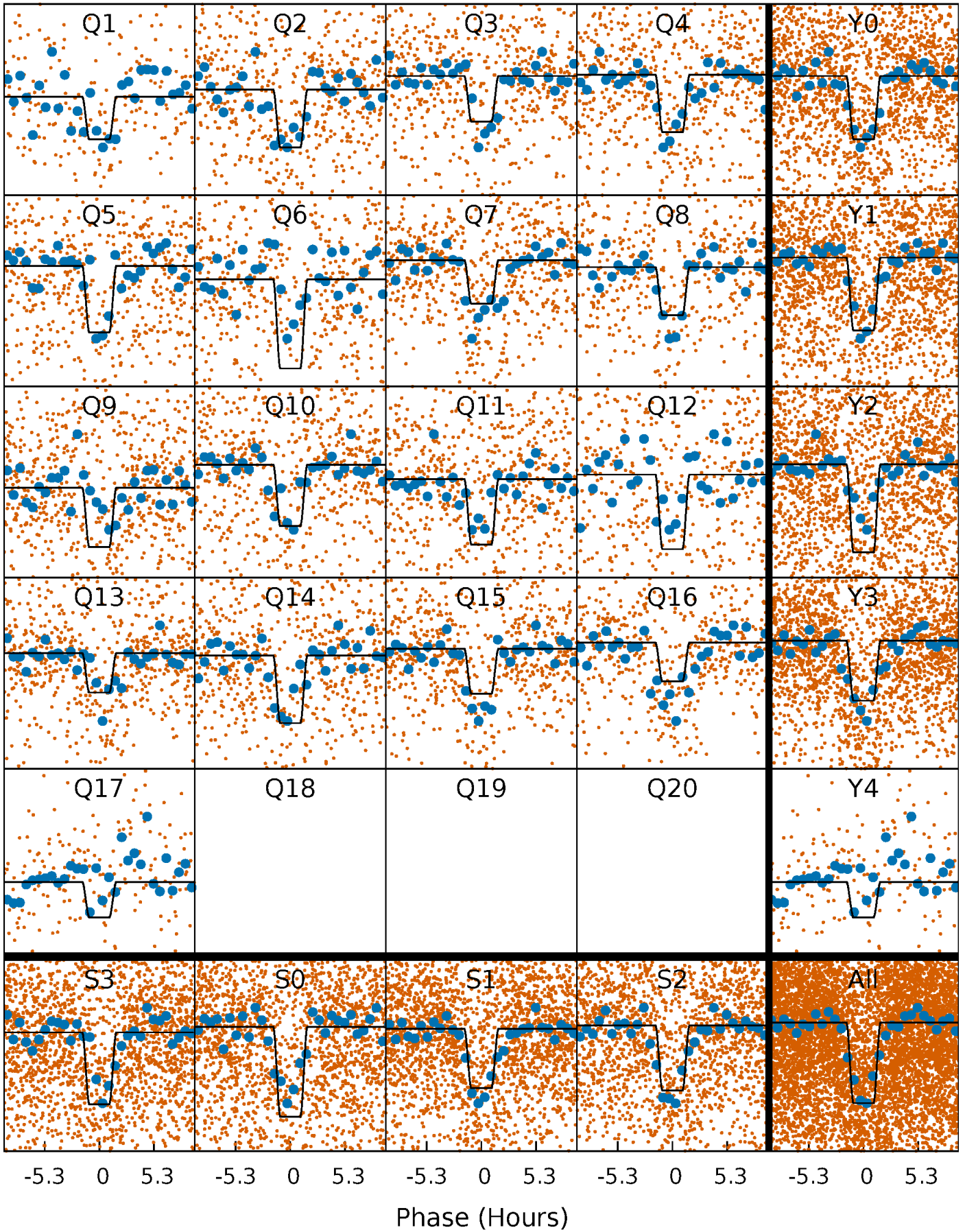
DV Quarter-Phased Transit Curves

TCE 007685408-03 P= 5.233231 Days $T_0=134.831341$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

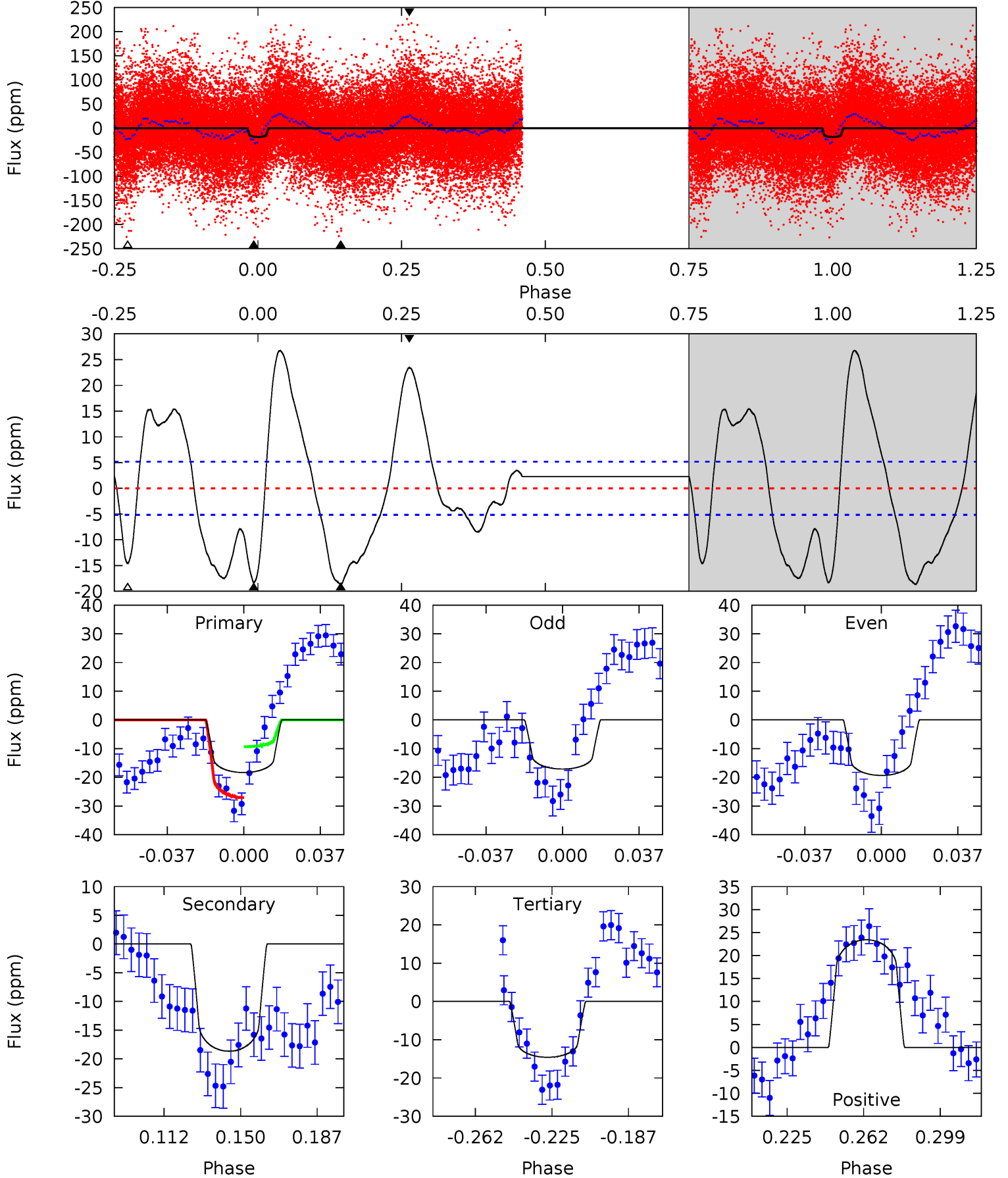
TCE 007685408-03 P= 5.233100 Days $T_0=134.834848$ (BKJD)



DV Model-Shift Uniqueness Test

007685408-03, P = 5.233231 Days, E = 129.598110 Days

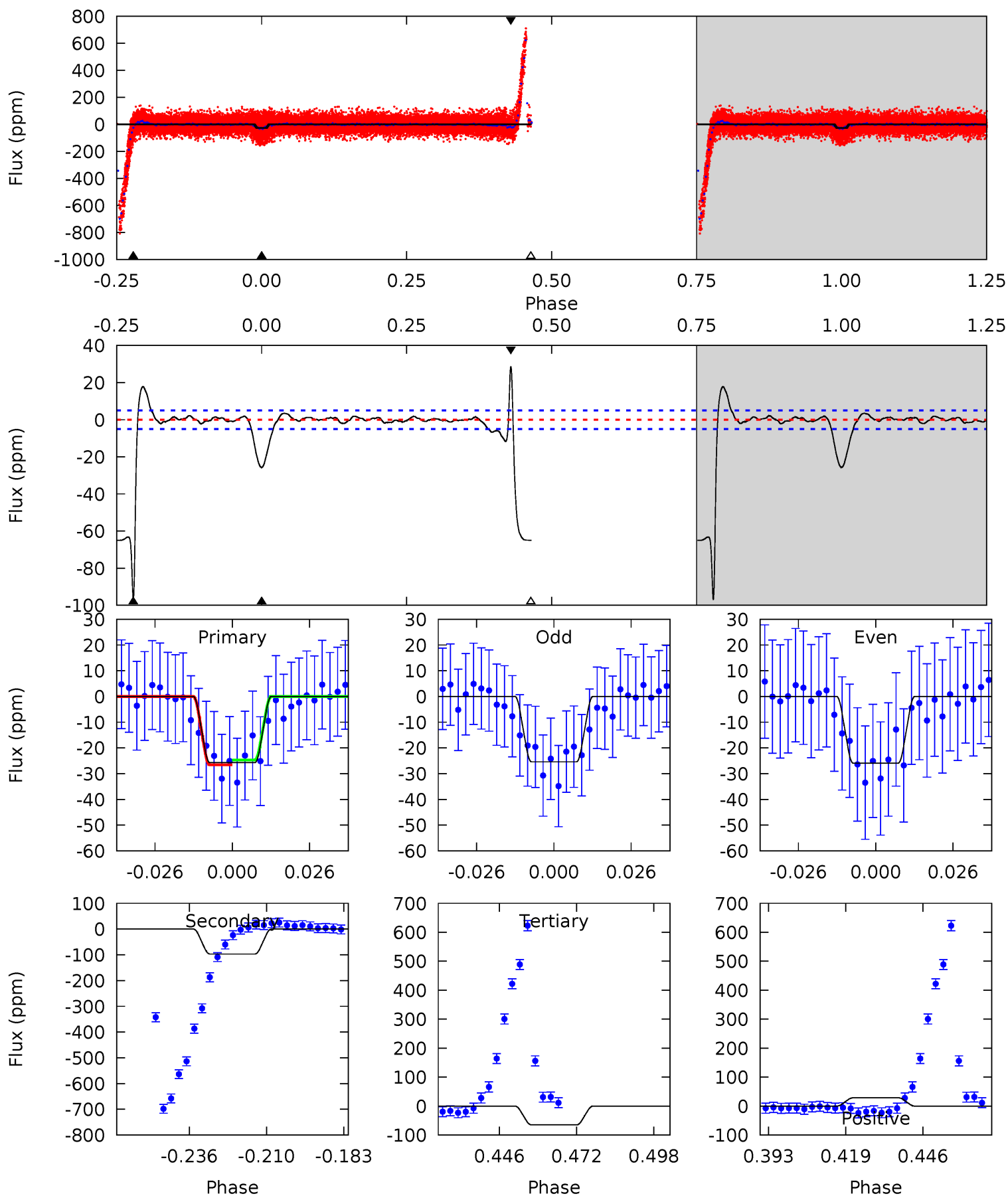
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	17.2	13.5	21.6	4.77	2.08	10.8	3.47	-4.70	3.77	-4.40	1.03	1.16	0.59	8.25



Alt Model-Shift Uniqueness Test

007685408-03, P = 5.233100 Days, E = 129.601748 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	93.2	62.5	27.6	4.84	2.22	6.67	-37.7	-2.85	30.7	65.6	0.26	1.02	0.23	1.27



Stellar Parameters For KIC 007685408

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7906^{+216}_{-325}	$3.867^{+0.322}_{-0.107}$	$-0.160^{+0.200}_{-0.350}$	$2.670^{+0.359}_{-1.078}$	$1.915^{+0.082}_{-0.467}$	$0.142^{+0.381}_{-0.040}$
	+3%/-4%	+8%/-3%	+125%/-219%	+13%/-40%	+4%/-24%	+269%/-28%
Source	KIC0	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 007685408-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19 ± 1	$1.48^{+0.28}_{-0.36}$	2903^{+188}_{-293}	6974^{+614}_{-494}	25^{+16}_{-7}
Alt.	-97 ± 1	$1.50^{+0.27}_{-0.30}$	2910^{+166}_{-291}	12037^{+1583}_{-1128}	123^{+63}_{-34}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

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

DV Centroid Data

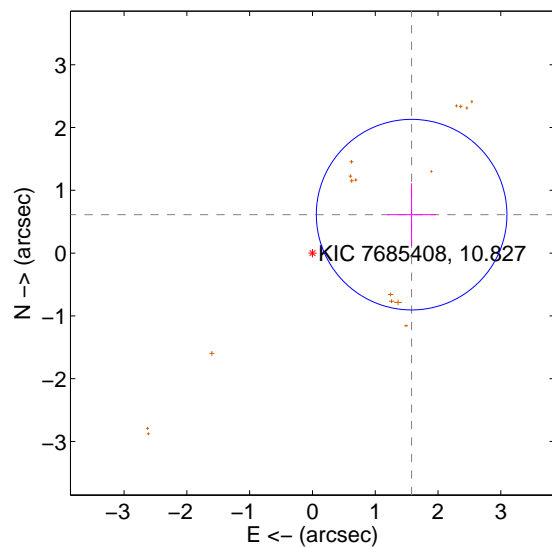
Supplemental centroid analysis for 007685408-03. **Kepler magnitude: 10.83.** Transit SNR 14.36

There are 0 quarters with good PRF difference image offsets

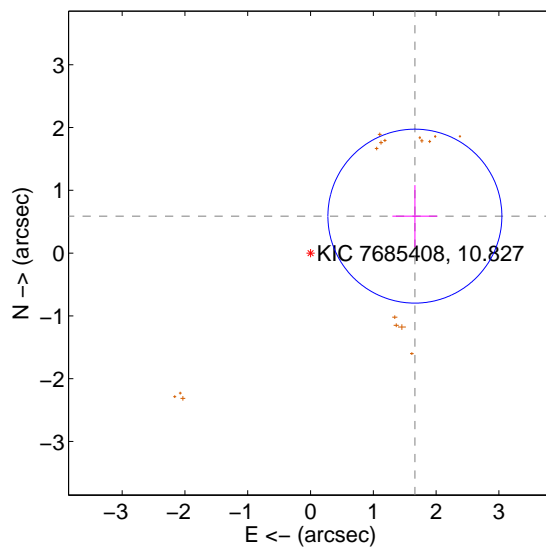
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.694 ± 0.506	3.35	-1.580 ± 0.390	0.612 ± 0.499
PRF-fit source offset from KIC position	1.763 ± 0.462	3.82	-1.662 ± 0.358	0.589 ± 0.494
photometric centroid source offset	0.49 ± 0.73	0.67	0.44 ± 0.72	0.20 ± 0.79

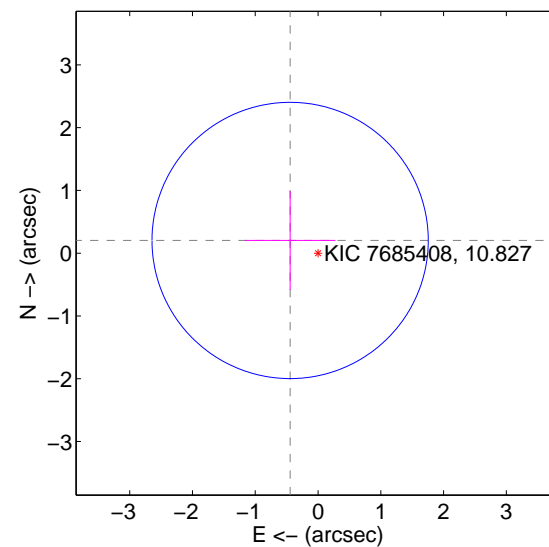
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

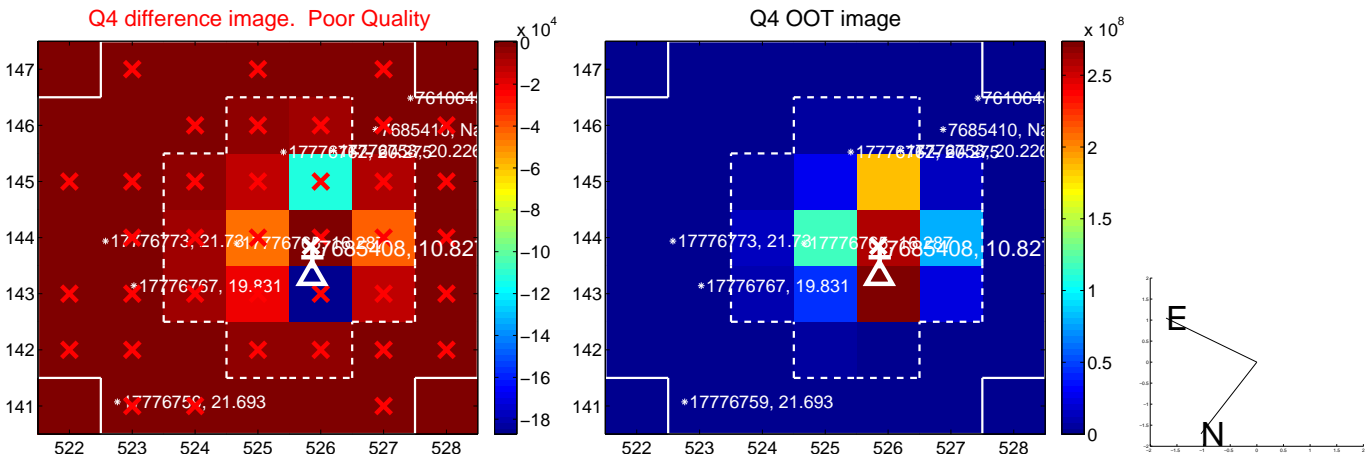
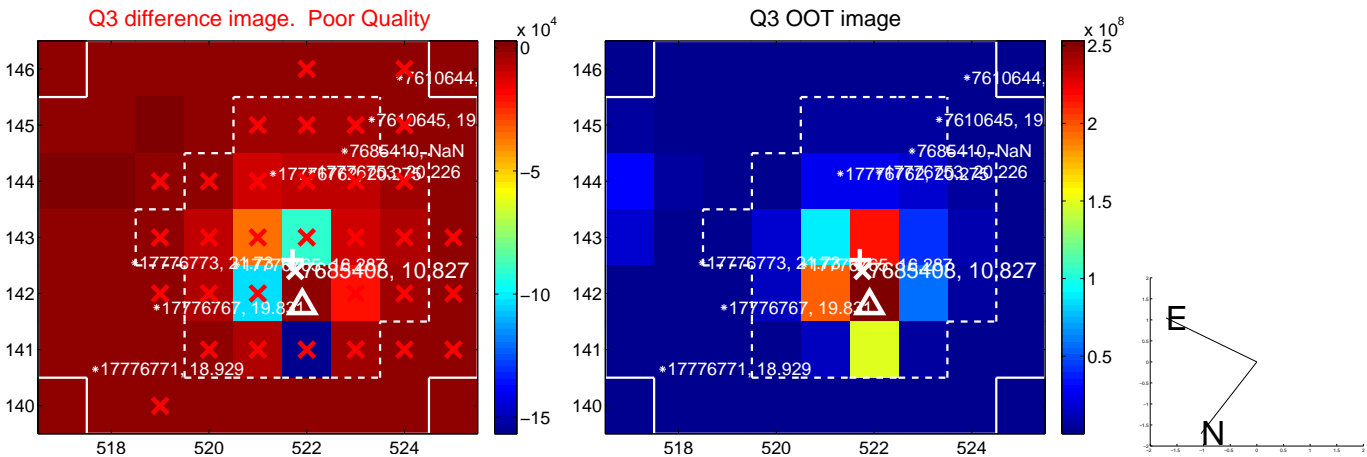
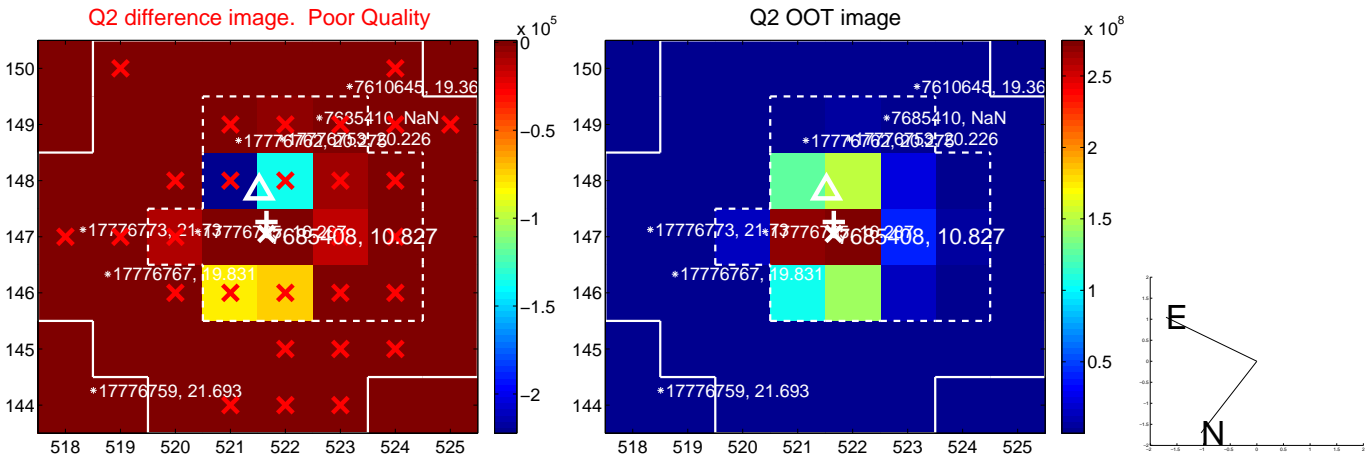
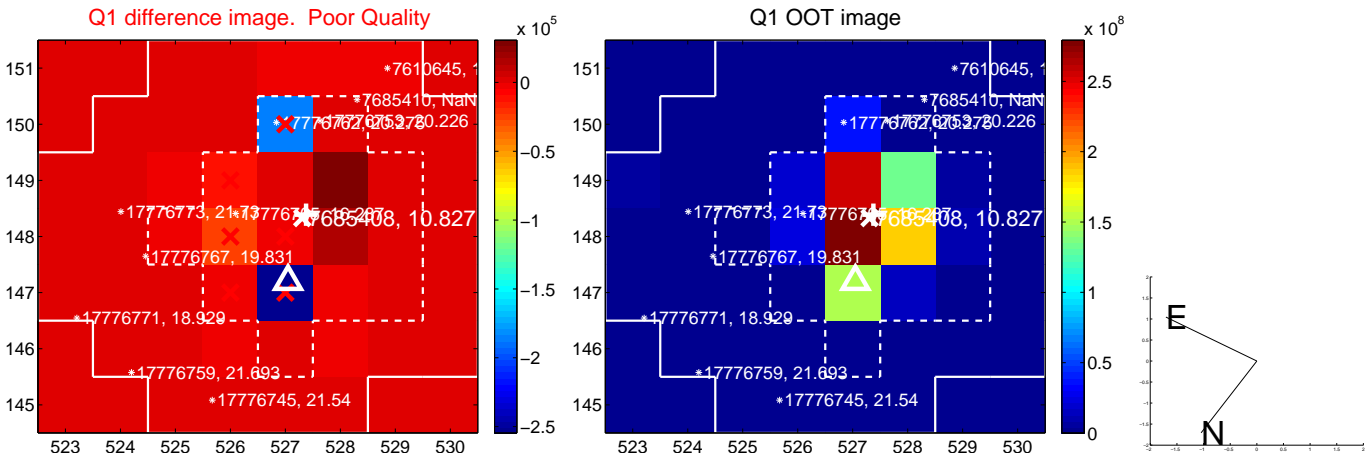


offset from photometric centroids

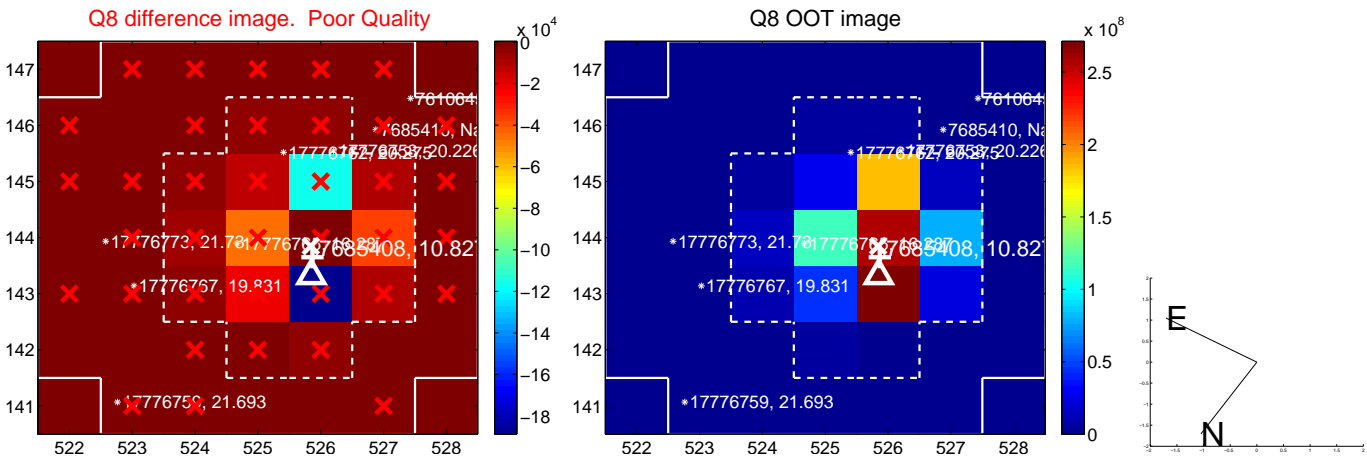
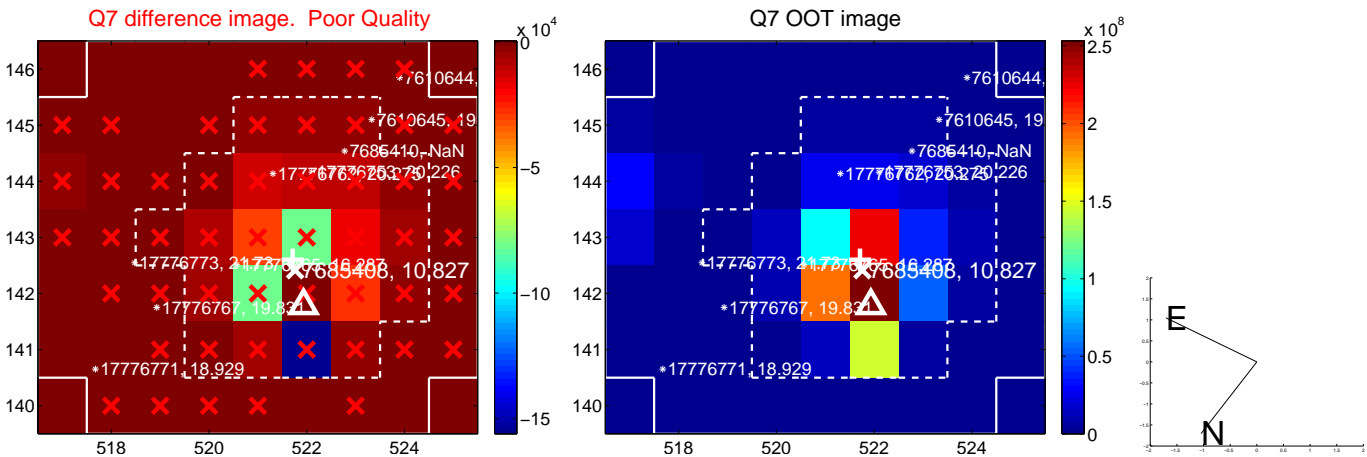
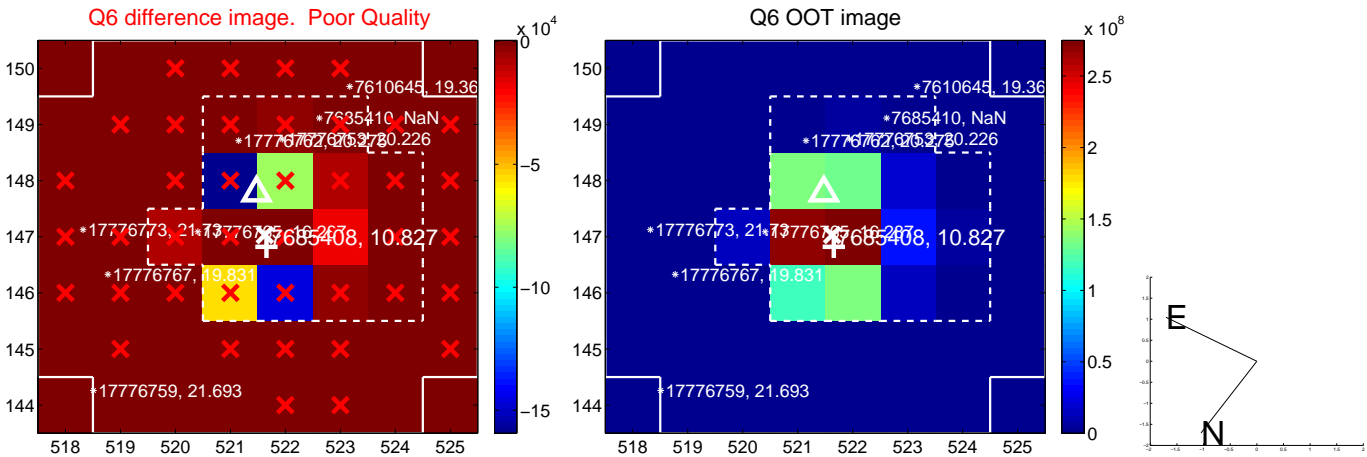
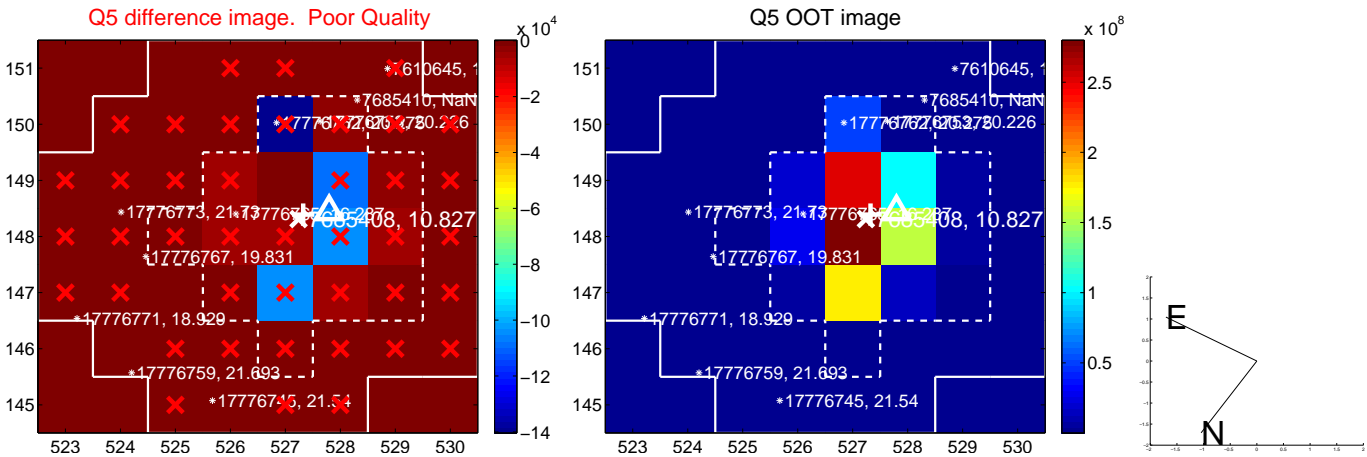


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

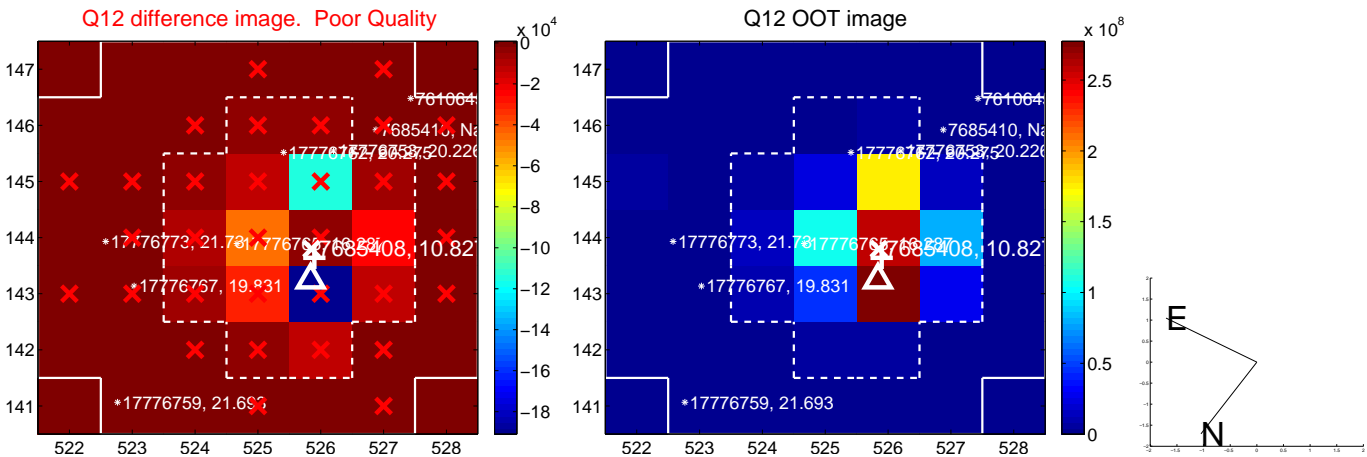
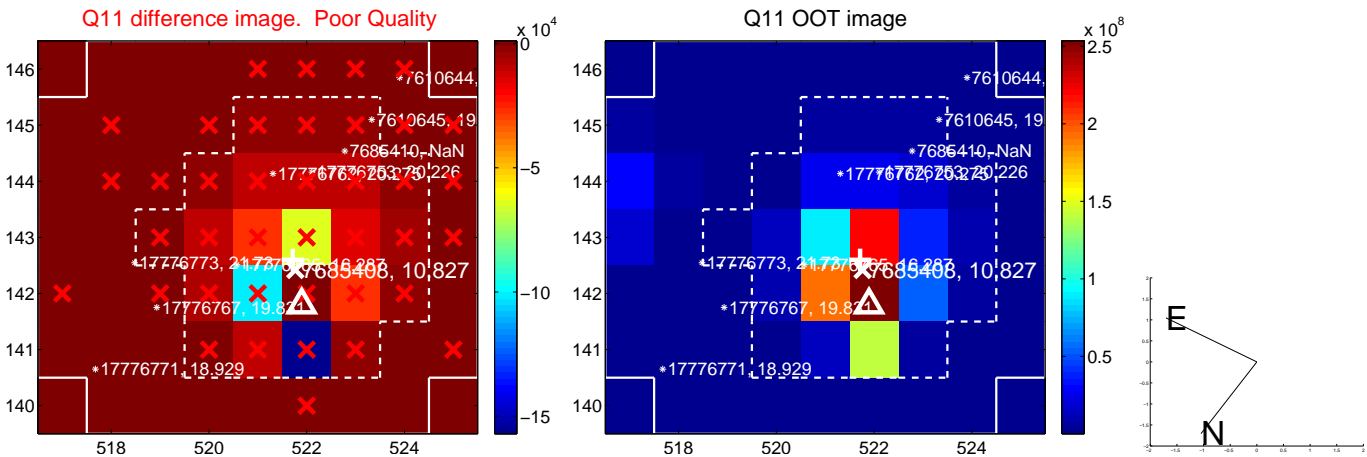
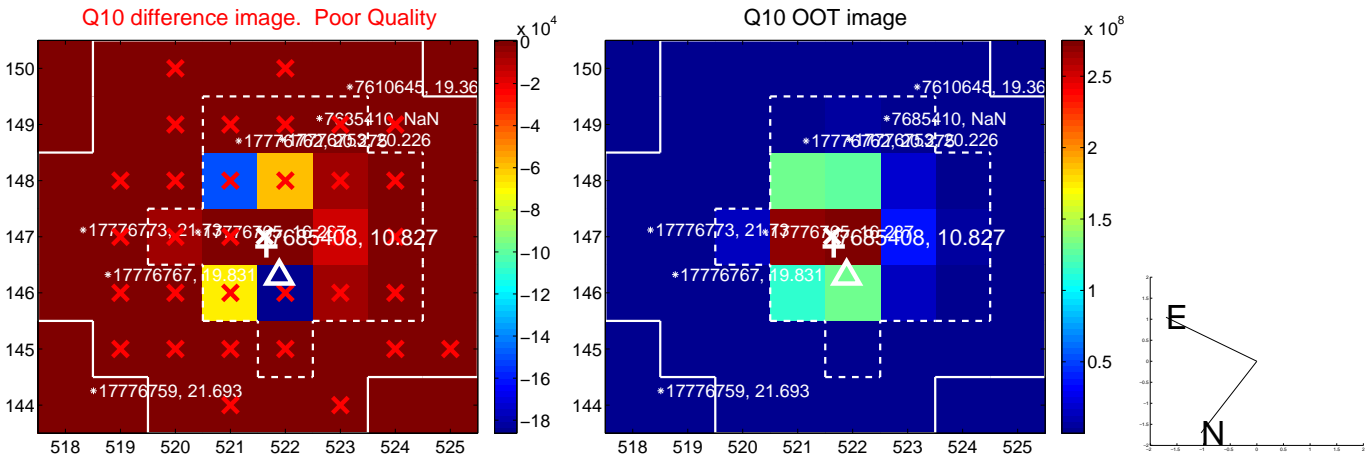
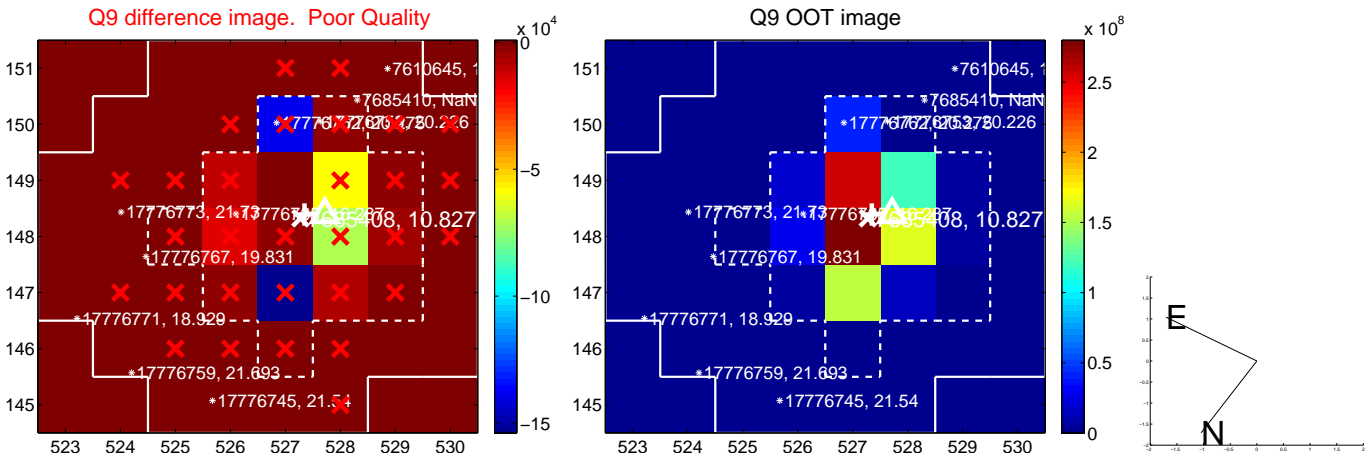
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



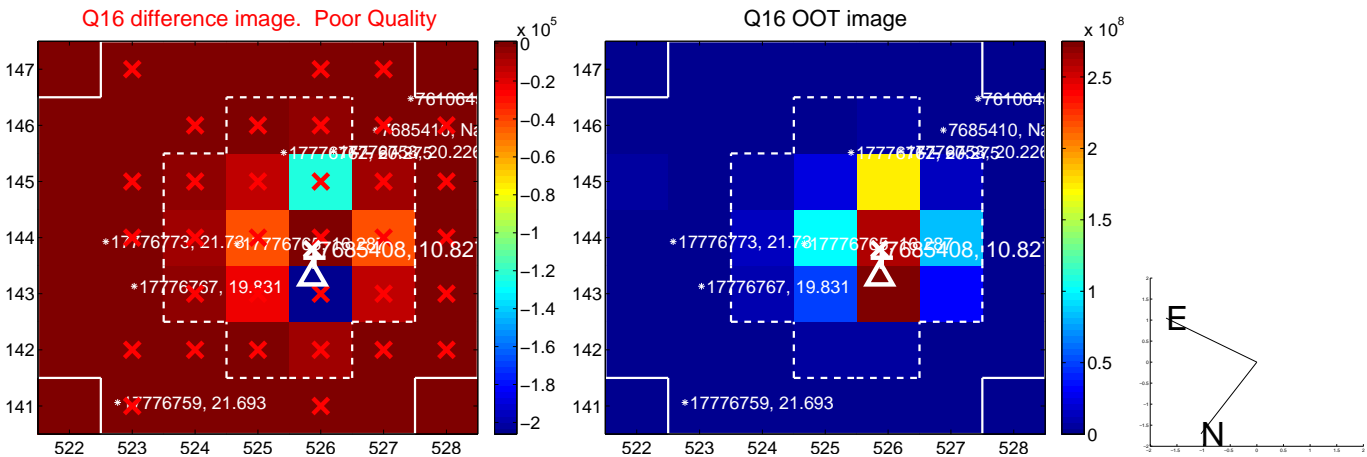
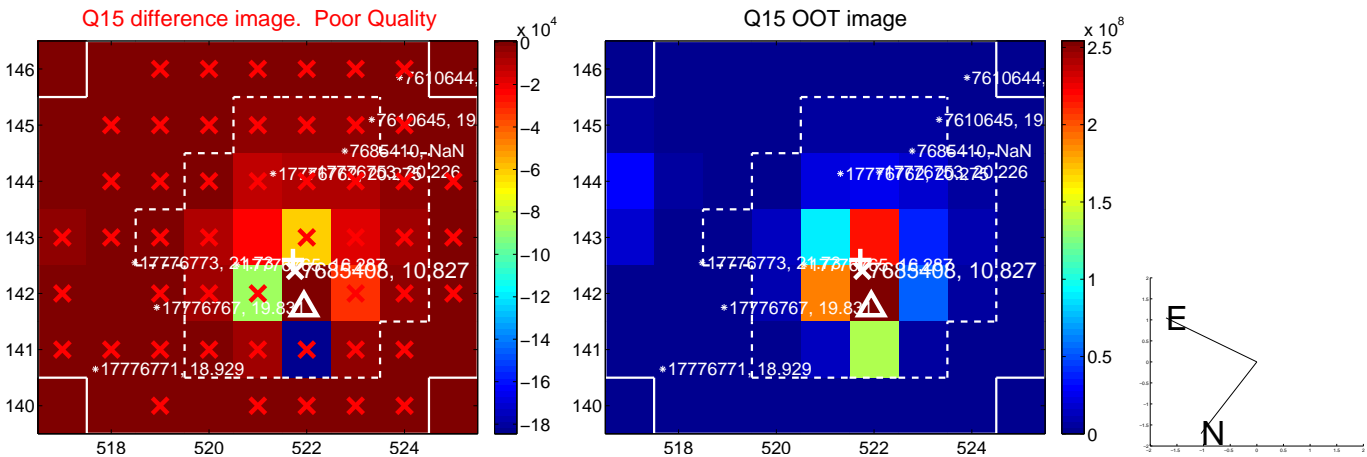
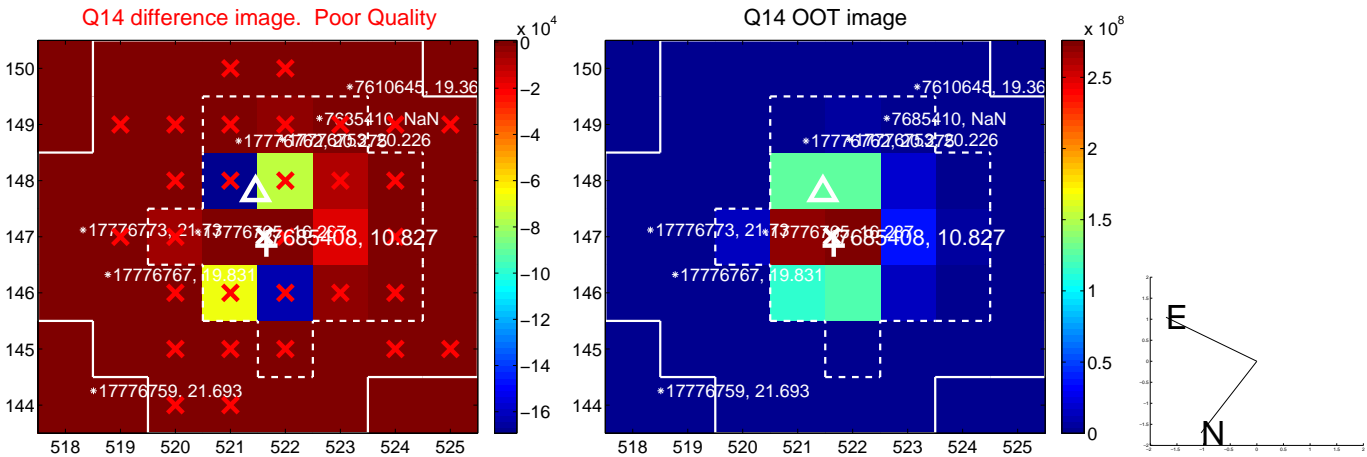
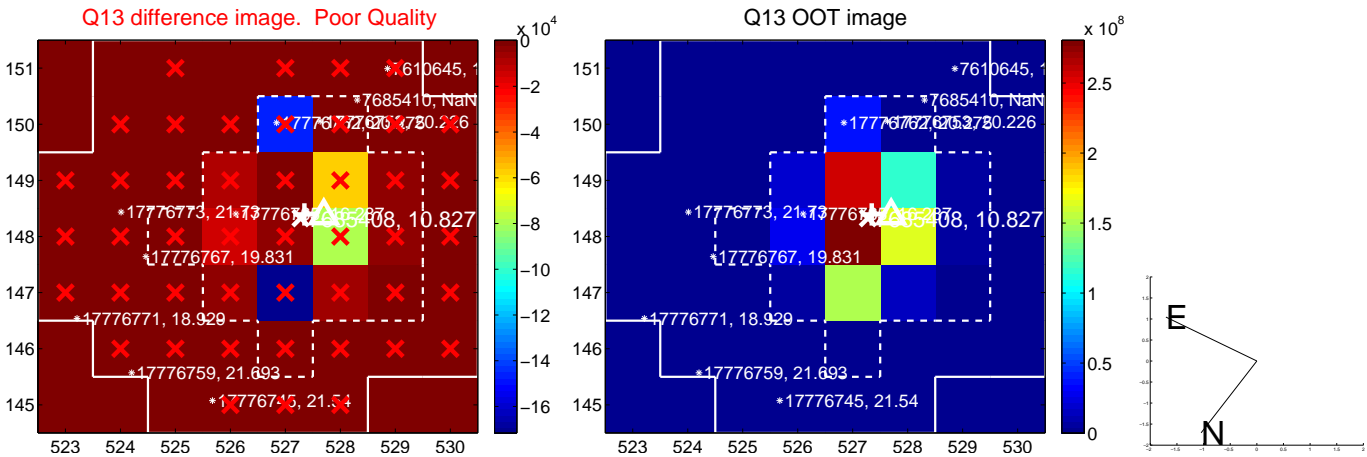
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



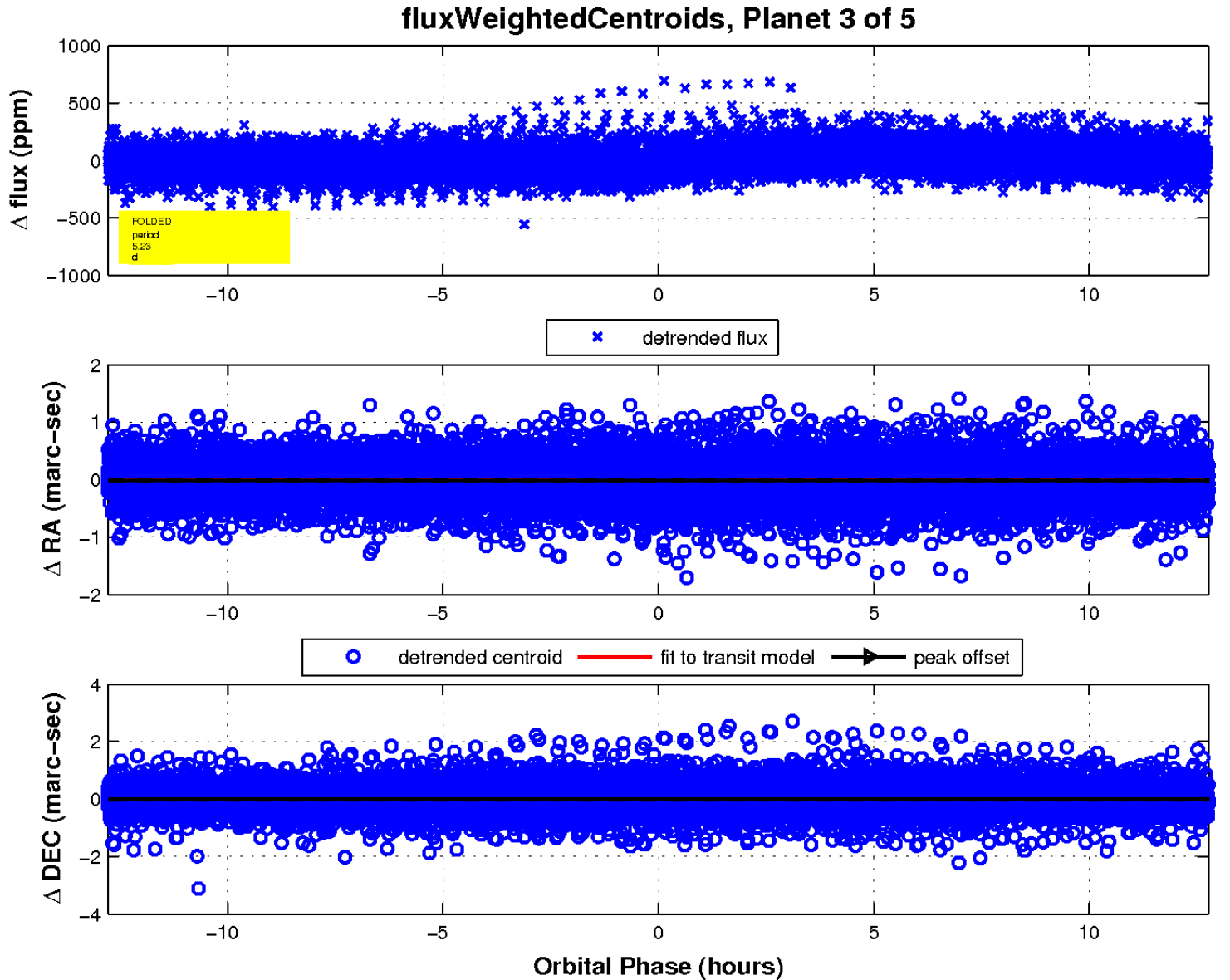
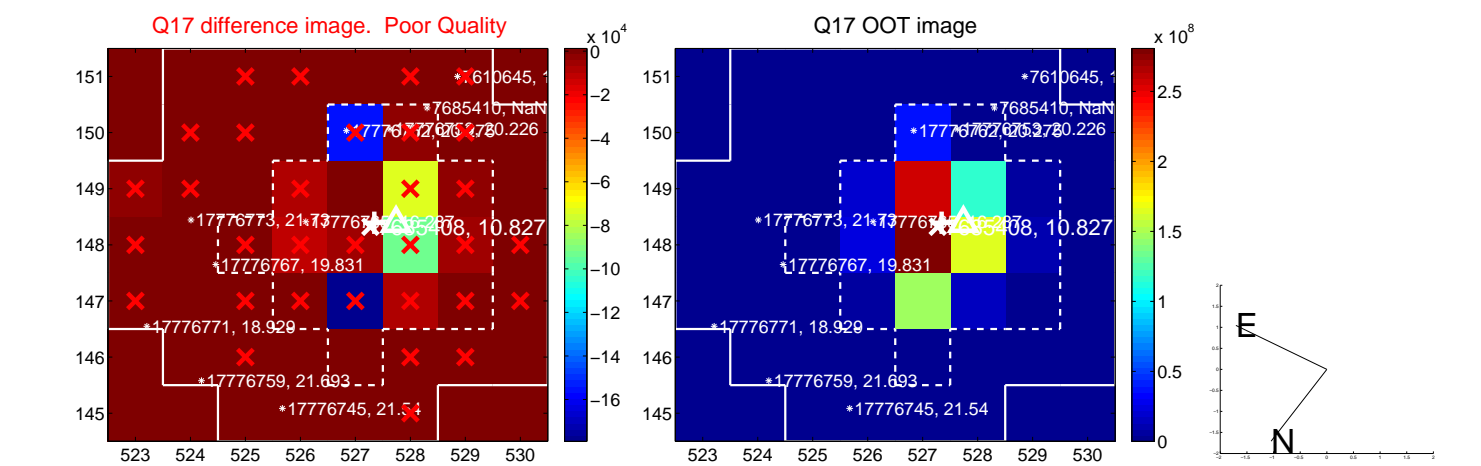
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

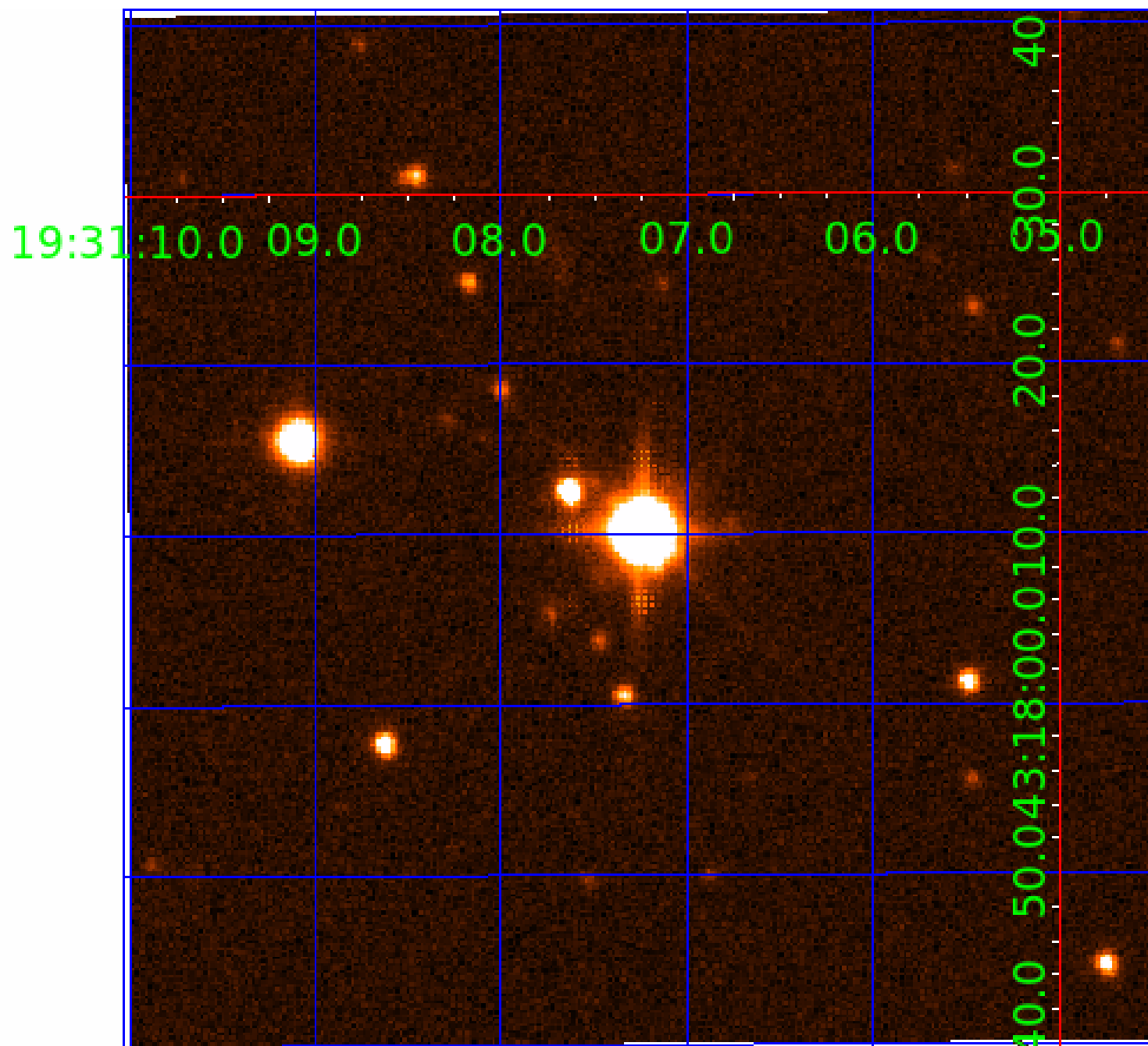


white \times : KIC target position; +: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007685408

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})
007685408-01	OBS	No	5.234654	131.932192	4.0	0.631	17.9	1.2	2.67	7906	0.57	4647.42
007685408-02	OBS	No	5.233254	132.760847	30.7	12.000	18.2	-1.0	2.67	7906	1.50	4649.08
007685408-03	OBS	No	5.233231	134.831341	24.6	4.261	15.3	14.4	2.67	7906	1.54	4649.10
007685408-04	OBS	No	5.233136	133.547198	38.7	9.839	14.3	13.7	2.67	7906	1.93	4649.22
007685408-05	OBS	No	5.233728	135.900736	9.5	32.706	12.5	4.1	2.67	7906	0.85	4648.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007685408-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007685408-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—SAME_NTL_PERIOD—CENT_SATURATED
007685408-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

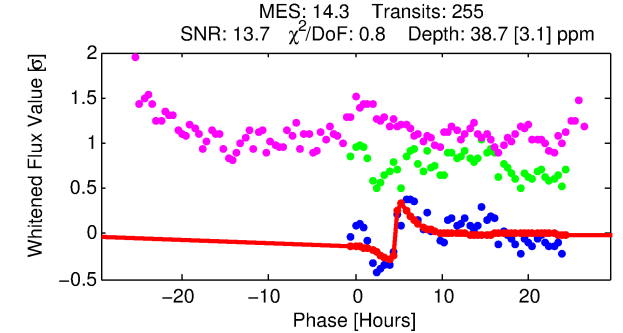
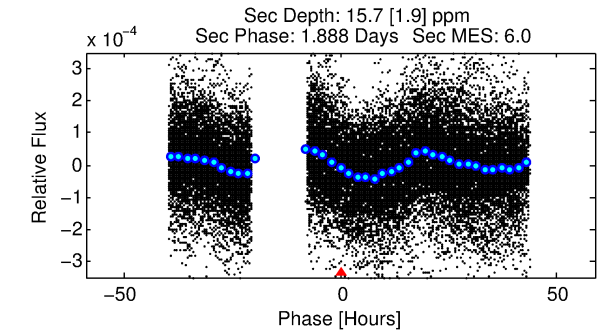
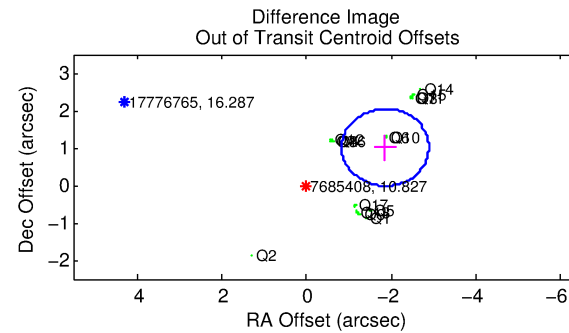
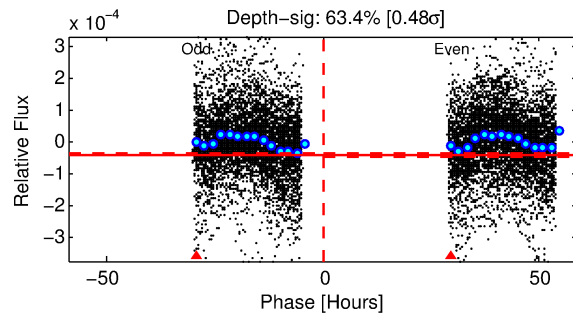
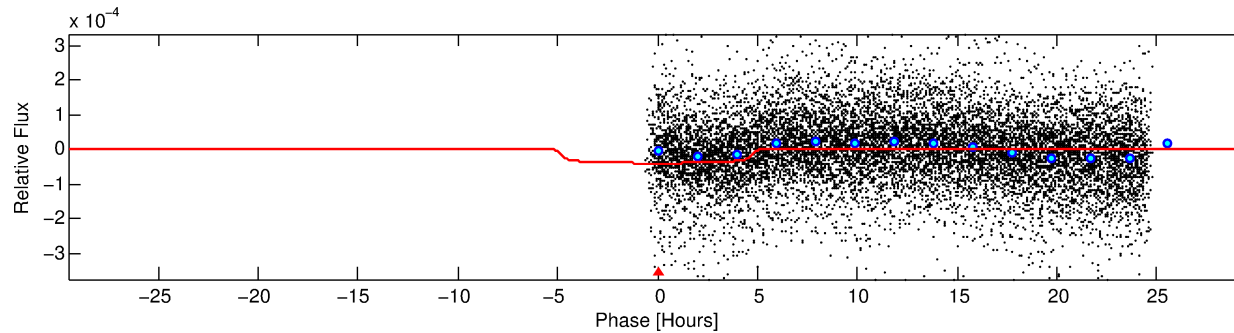
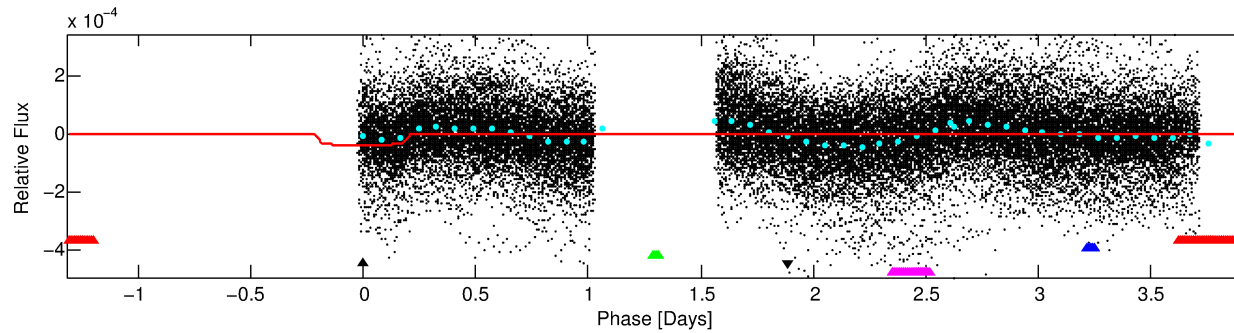
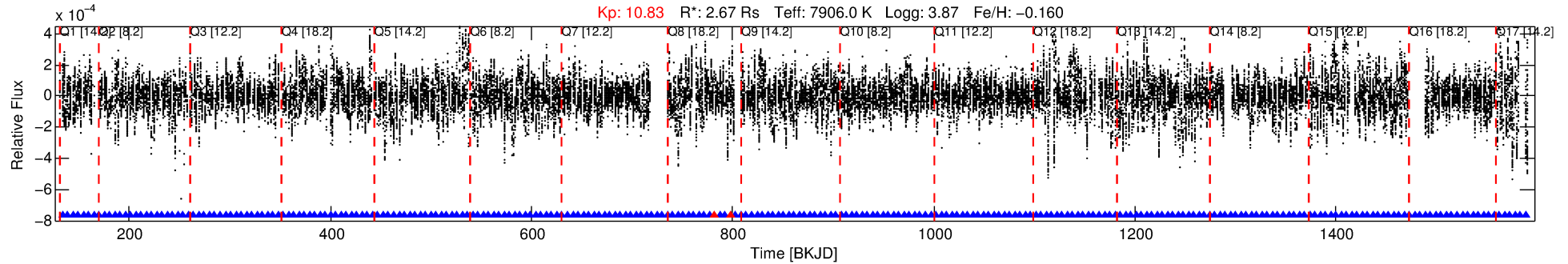
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007685408-04

No Significant Match Found

DV One-Page Summary

KIC: 7685408 Candidate: 4 of 5 Period: 5.233 d



DV Fit Results:

Period = 5.23314 [0.00002] d
Epoch = 133.5472 [0.0199] BKJD
Rp/R* = 0.0066 [0.0007]
a/R* = 2.06 [1.06]
b = 0.90 [0.13]
Seff = 4649.22 [2726.07]
Teq = 2106 [309] K
Rp = 1.93 [0.81] Re
a = 0.0733 [0.0268] AU
Ag = 12.43 [7.68] [1.49 σ]
Teffp = 6113 [463] K [7.20 σ]

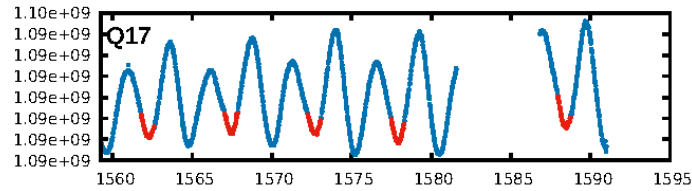
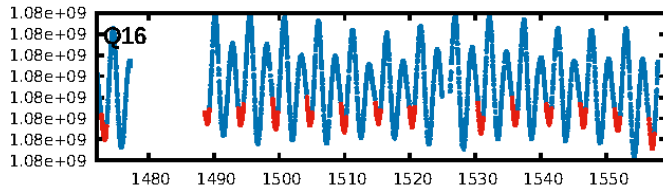
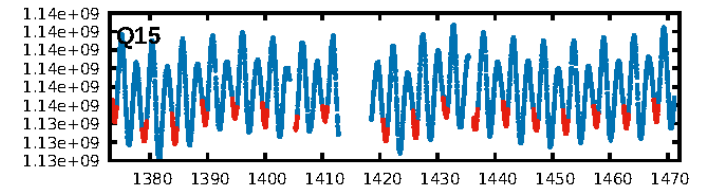
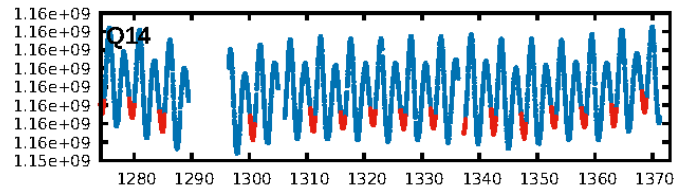
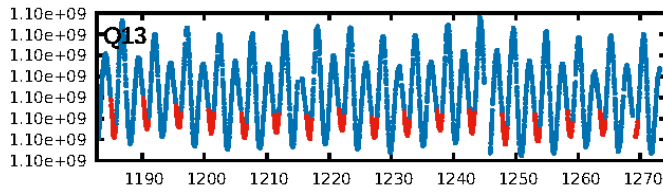
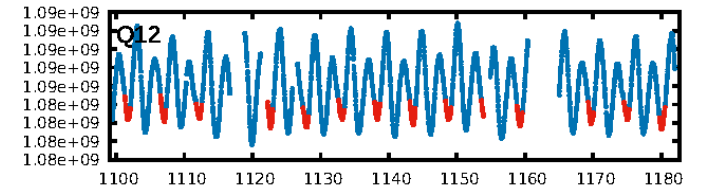
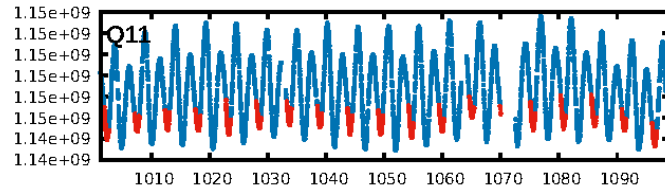
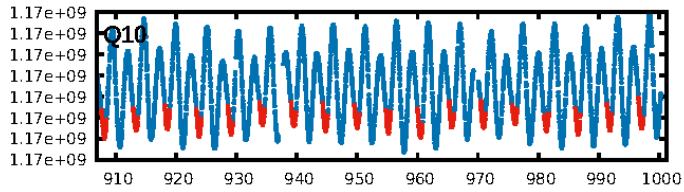
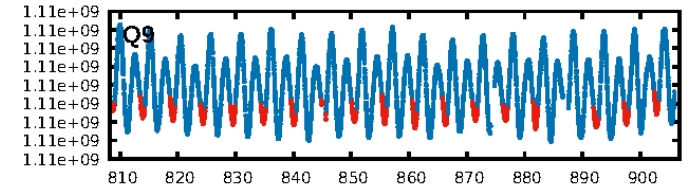
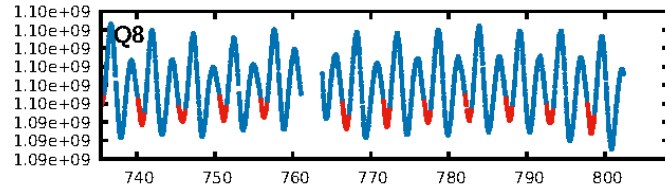
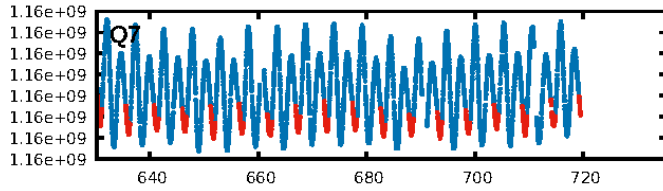
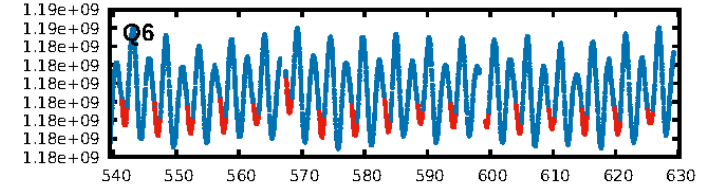
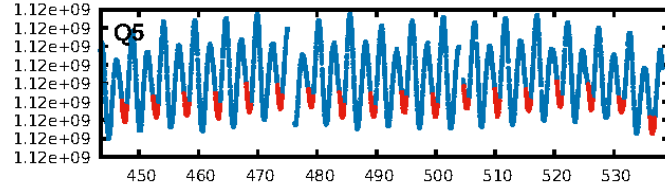
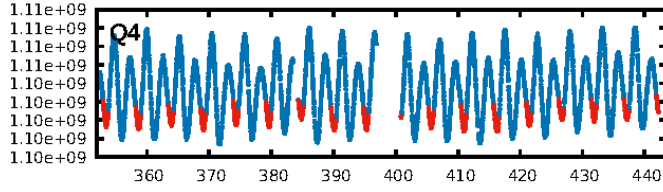
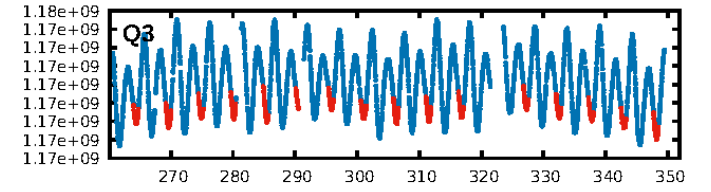
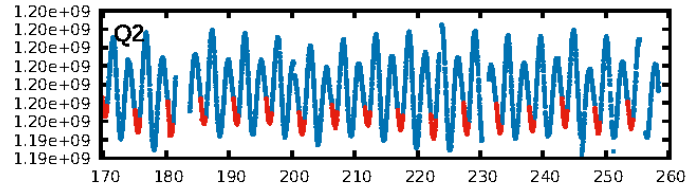
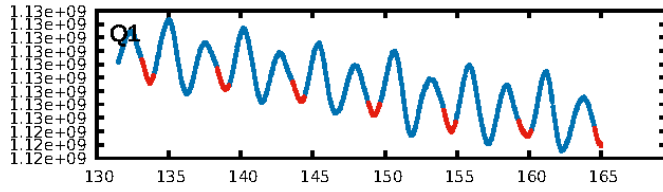
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [241/243]
GhostDiagnostic-chr: 6.138
Centroid-sig: 81.7%
Centroid-so: 0.188 arcsec [0.41 σ]
OotOffset-rm: 2.118 arcsec [6.17 σ]
KicOffset-rm: 2.576 arcsec [6.89 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 1.00 [17/17]

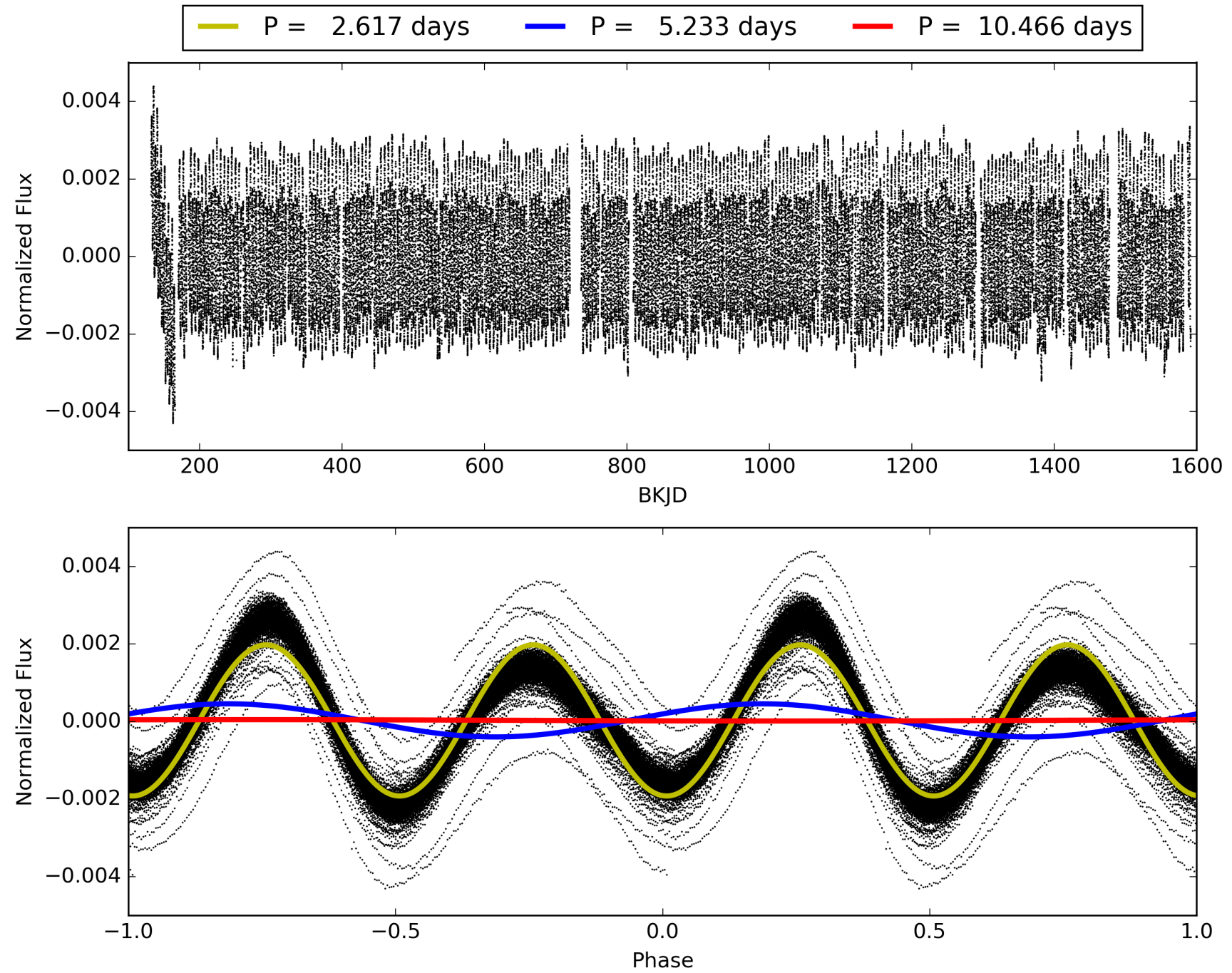
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:32:19 Z

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

TCE 007685408-04, PDC Light Curves

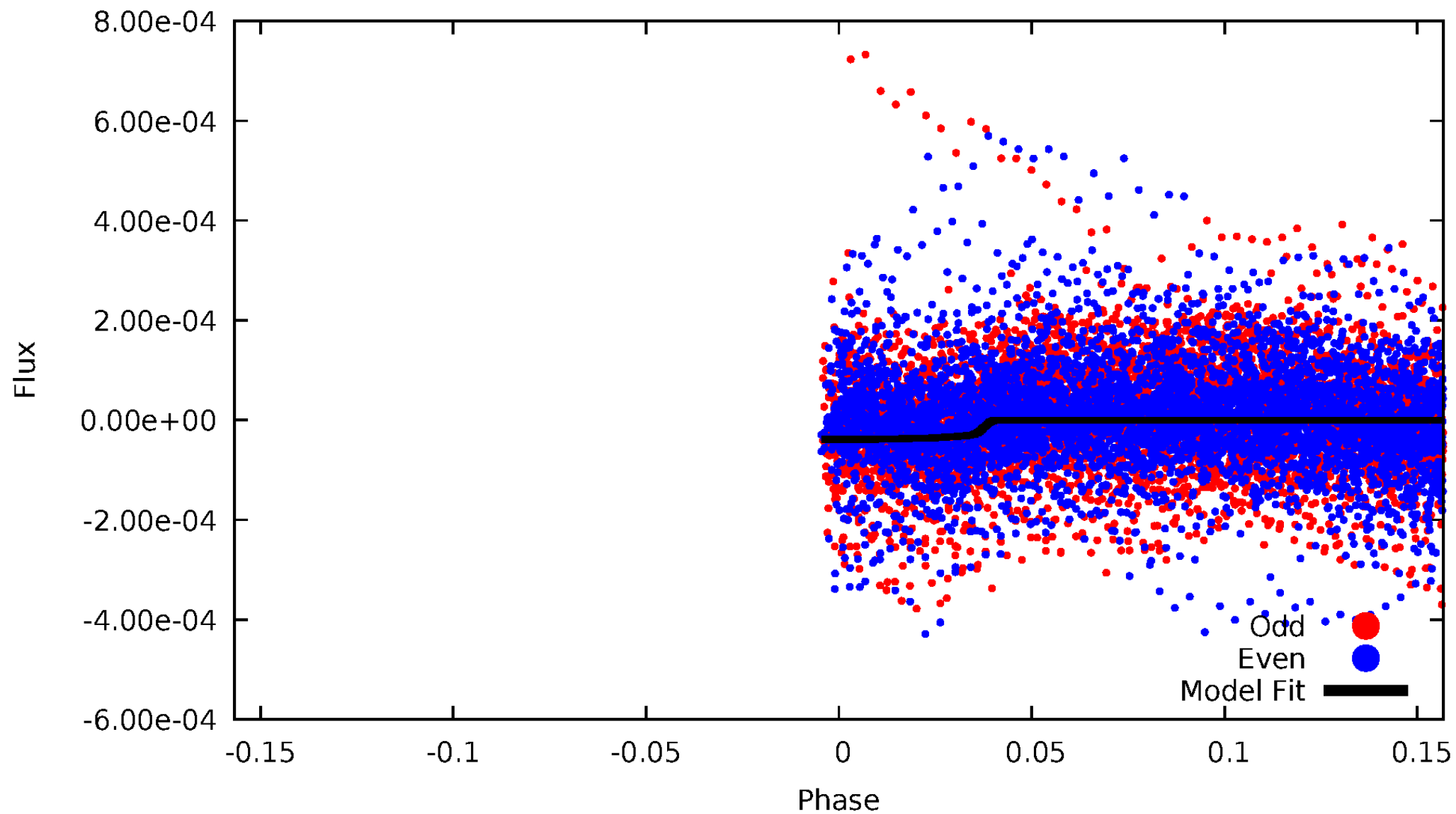


TCE 007685408-04



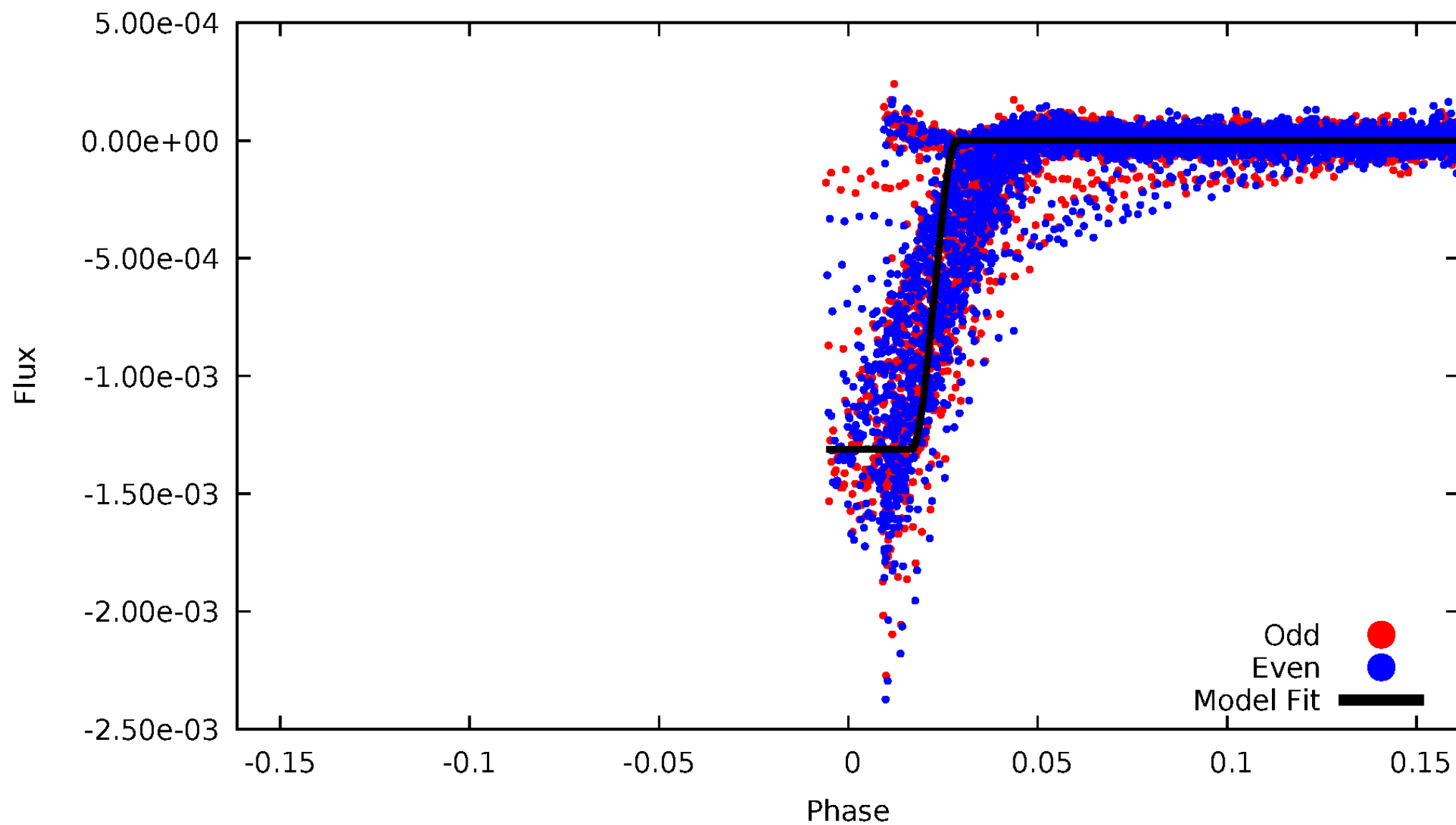
DV Odd/Even

TCE 007685408-04



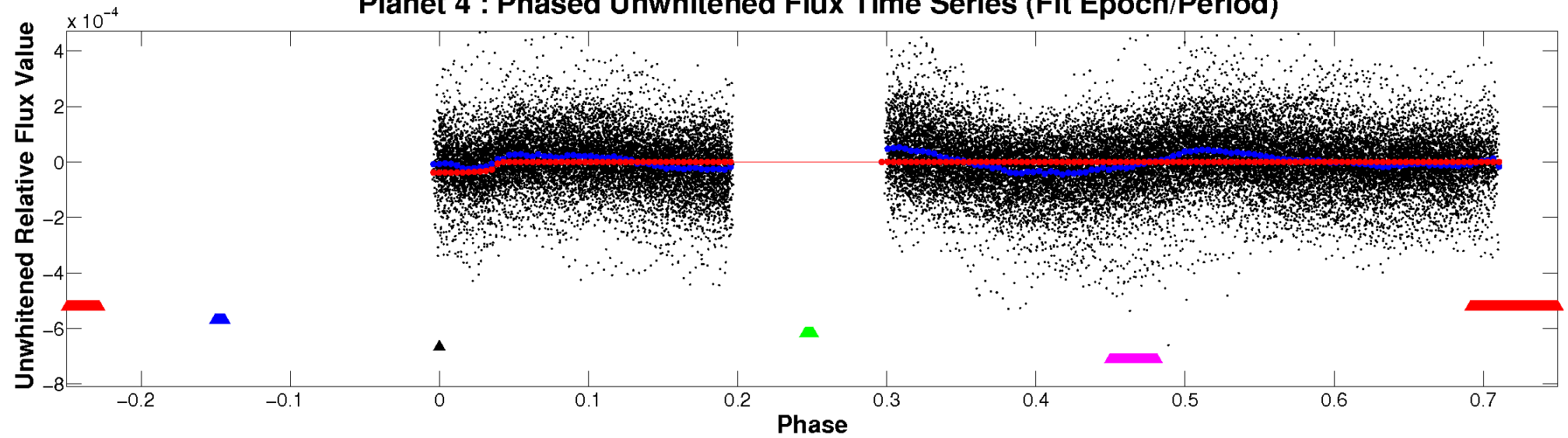
ALT Odd/Even

TCE 007685408-04

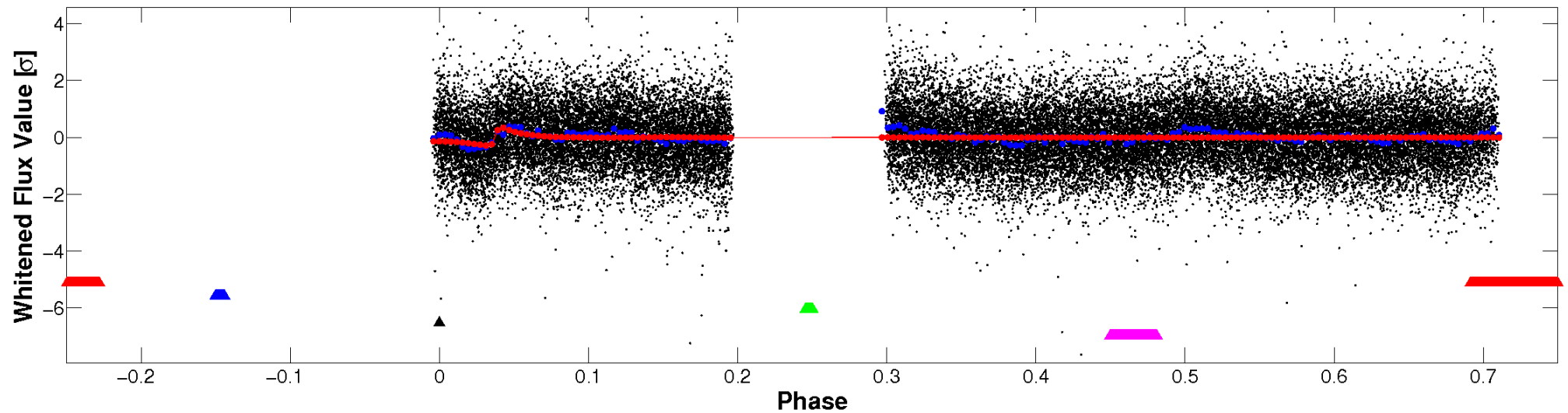


Non-Whitened Vs. Whitened Light Curve

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

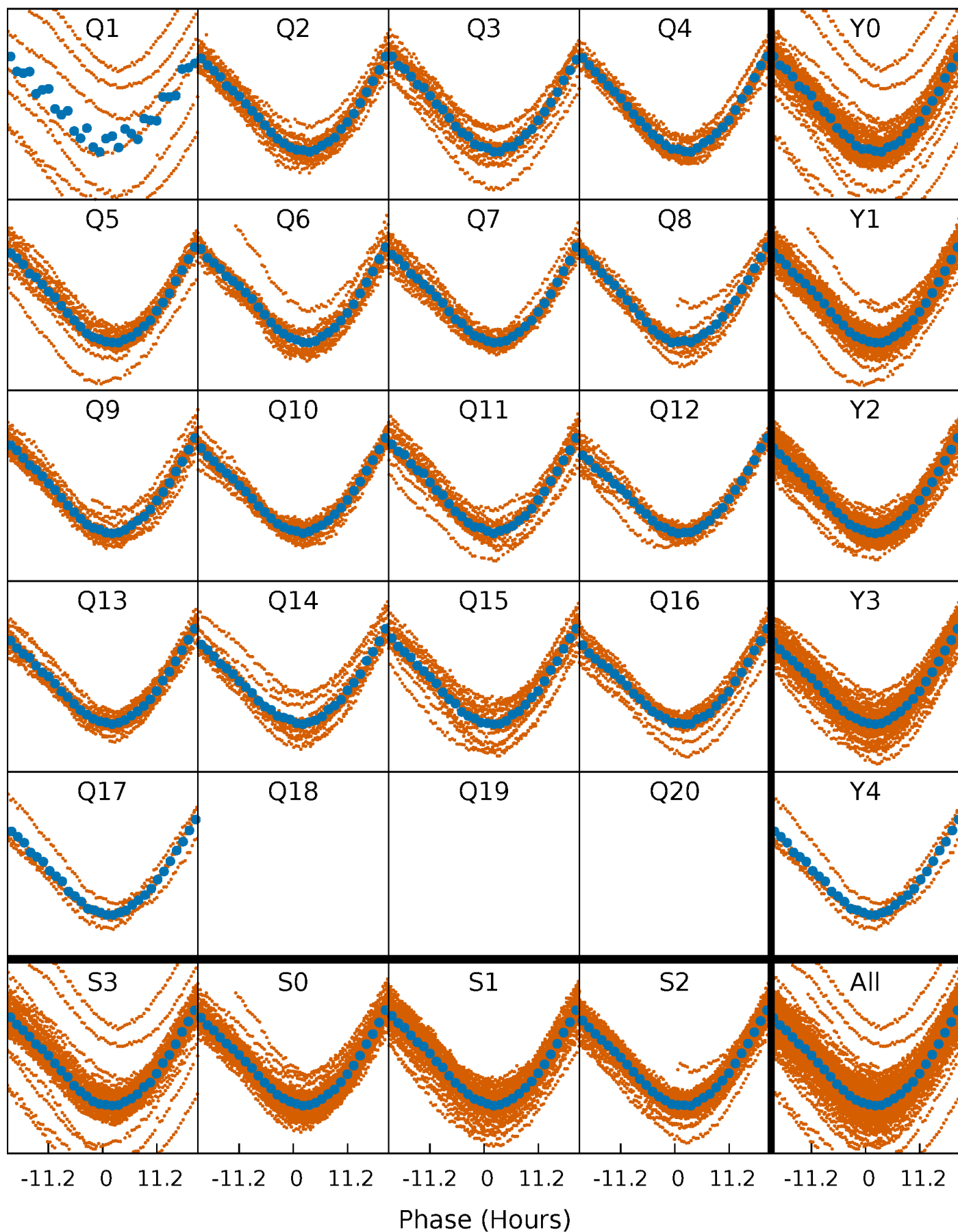


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



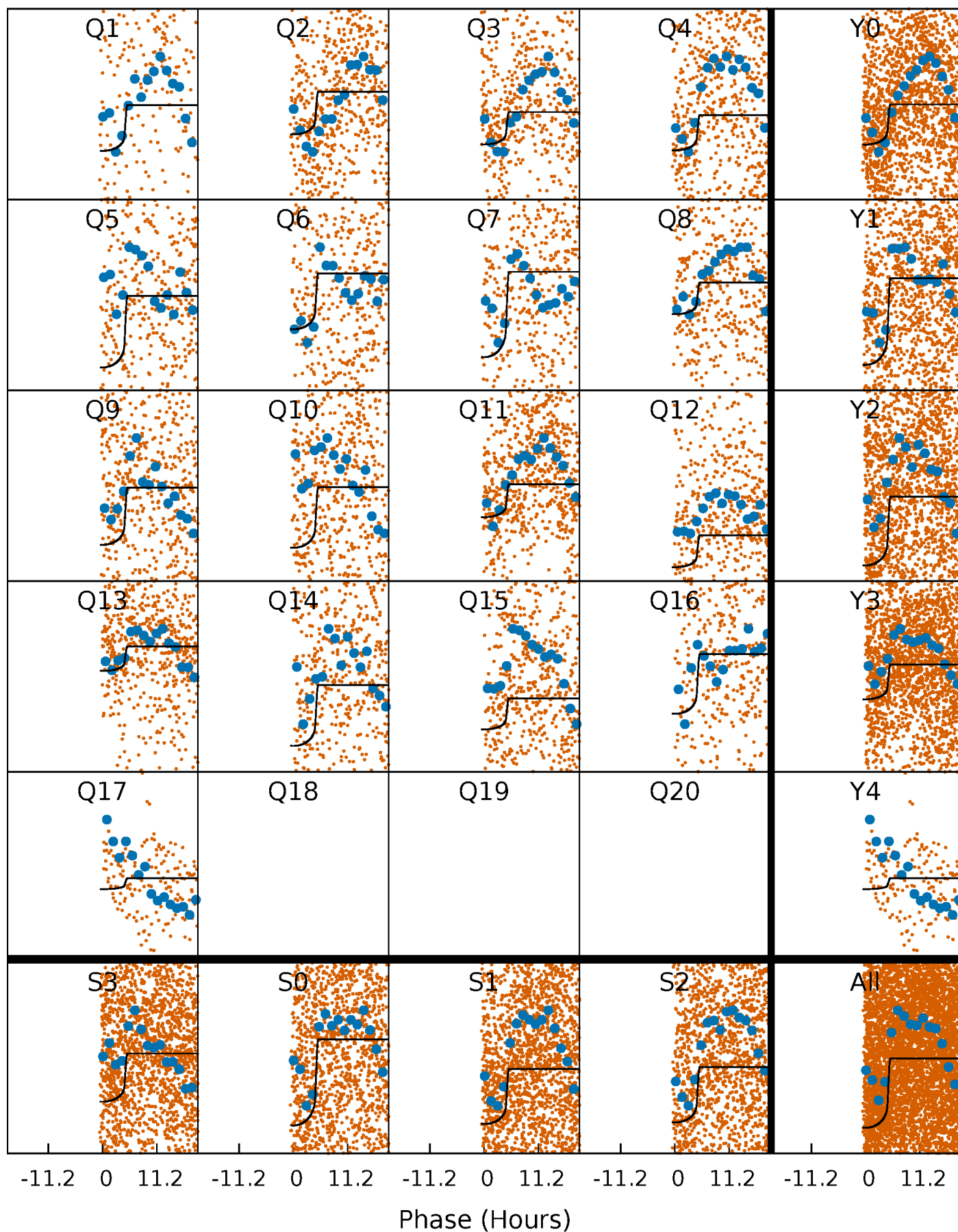
PDC Quarter-Phased Transit Curves

TCE 007685408-04 P= 5.233136 Days $T_0=133.547198$ (BKJD)



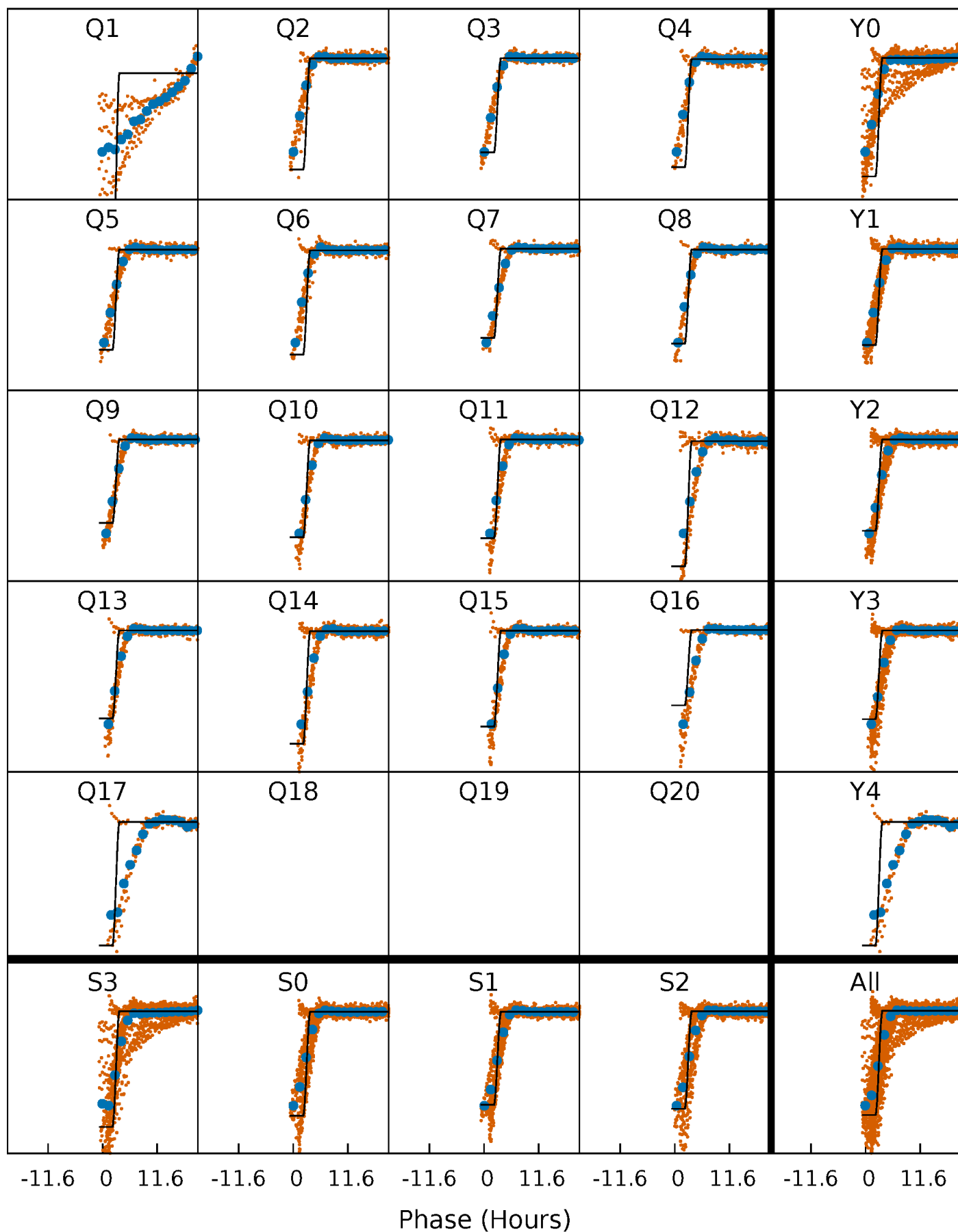
DV Quarter-Phased Transit Curves

TCE 007685408-04 P= 5.233136 Days $T_0=133.547198$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

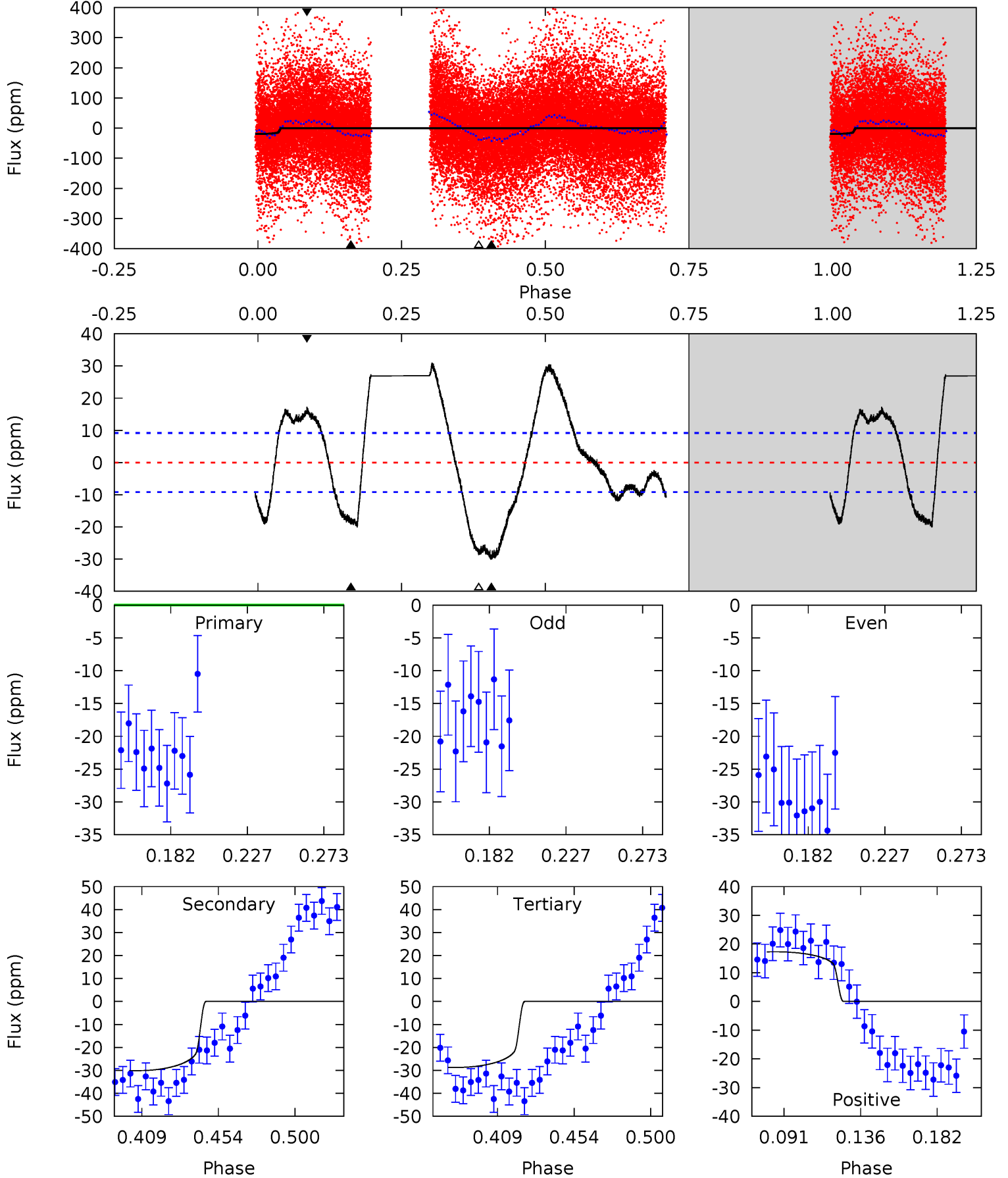
TCE 007685408-04 P= 5.232975 Days $T_0=133.557335$ (BKJD)



DV Model-Shift Uniqueness Test

007685408-04, P = 5.233136 Days, E = 128.314062 Days

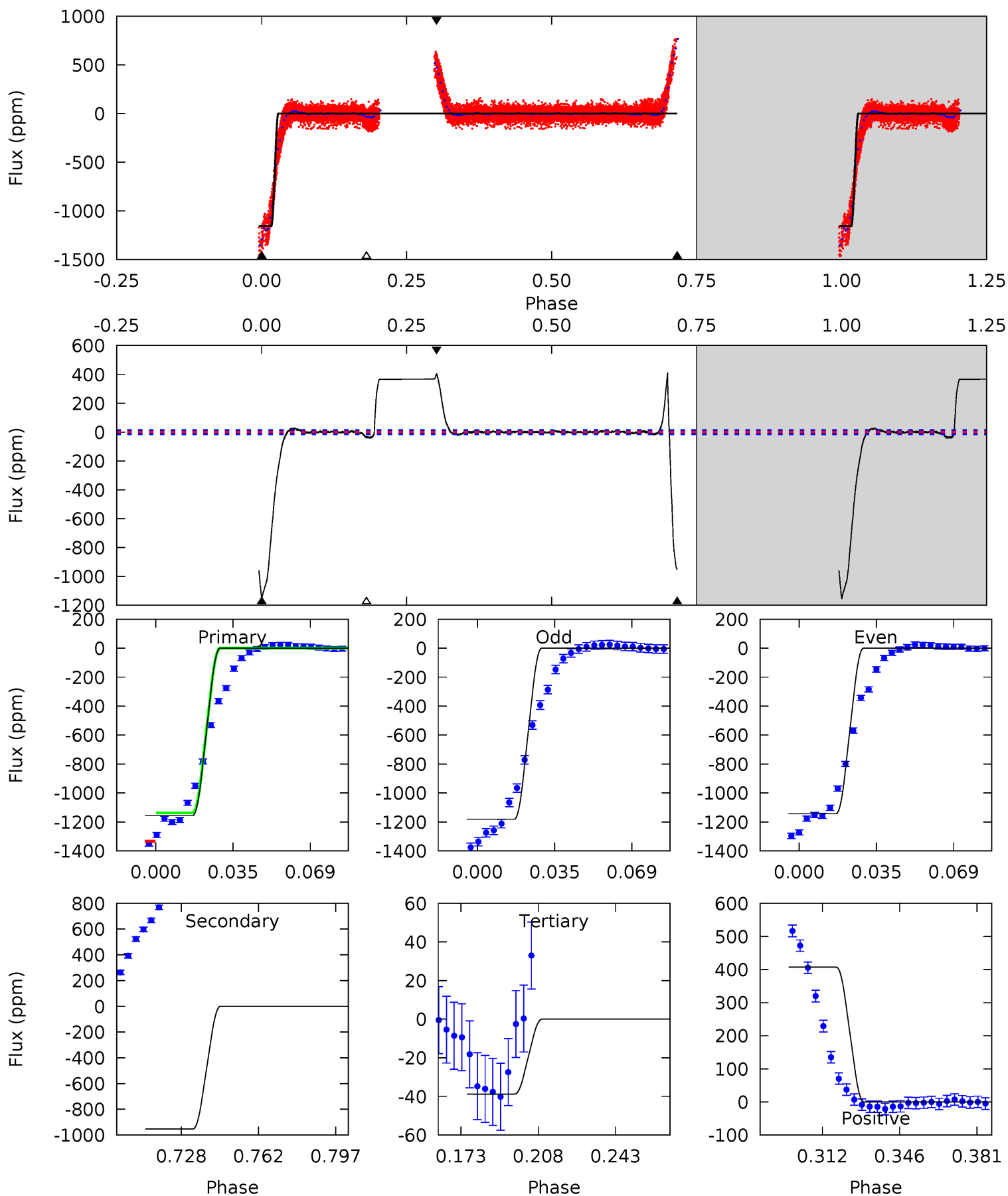
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.92	15.5	14.8	8.92	4.73	2.00	7.69	-4.89	0.99	0.73	6.61	3.93	0.81	0.51	1.01



Alt Model-Shift Uniqueness Test

007685408-04, P = 5.232975 Days, E = 128.324360 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
402.6	331.4	13.5	141.6	4.78	2.11	15.8	389.1	261.0	317.9	189.8	6.60	0.90	0.26	0



Stellar Parameters For KIC 007685408

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7906^{+216}_{-325}	$3.867^{+0.322}_{-0.107}$	$-0.160^{+0.200}_{-0.350}$	$2.670^{+0.359}_{-1.078}$	$1.915^{+0.082}_{-0.467}$	$0.142^{+0.381}_{-0.040}$
	+3%/-4%	+8%/-3%	+125%/-219%	+13%/-40%	+4%/-24%	+269%/-28%
Source	KIC0	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 007685408-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-30 ± 2	$1.81^{+0.33}_{-0.38}$	2874^{+192}_{-260}	7036^{+618}_{-469}	26^{+14}_{-7}
Alt.	-952 ± 3	$10.42^{+0.96}_{-2.15}$	2894^{+186}_{-271}	7159^{+226}_{-260}	26^{+13}_{-4}

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

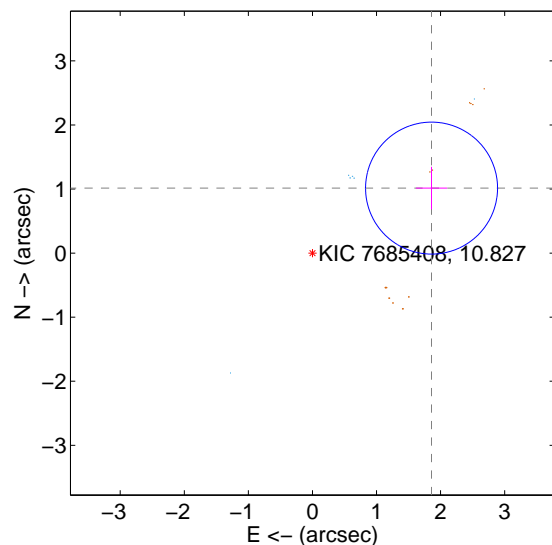
Supplemental centroid analysis for 007685408-04. **Kepler magnitude: 10.83.** Transit SNR 13.67

There are 6 quarters with good PRF difference image offsets

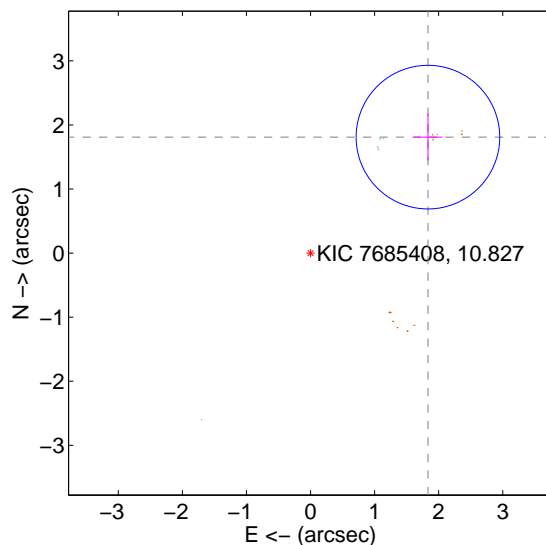
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.118 ± 0.343	6.17	-1.859 ± 0.244	1.014 ± 0.333
PRF-fit source offset from KIC position	2.576 ± 0.374	6.89	-1.833 ± 0.225	1.810 ± 0.366
photometric centroid source offset	0.19 ± 0.46	0.41	0.16 ± 0.44	-0.10 ± 0.50

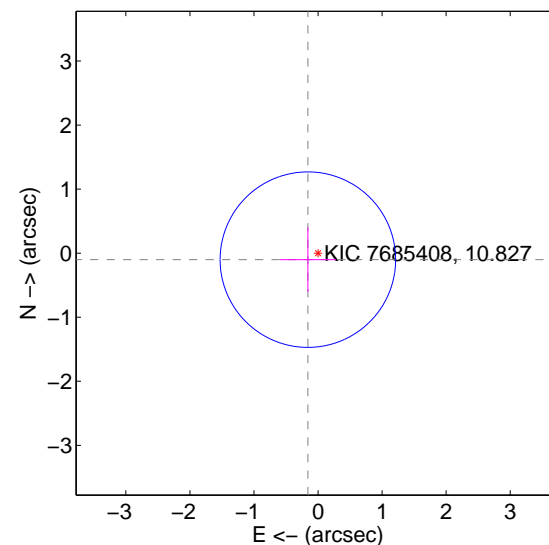
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

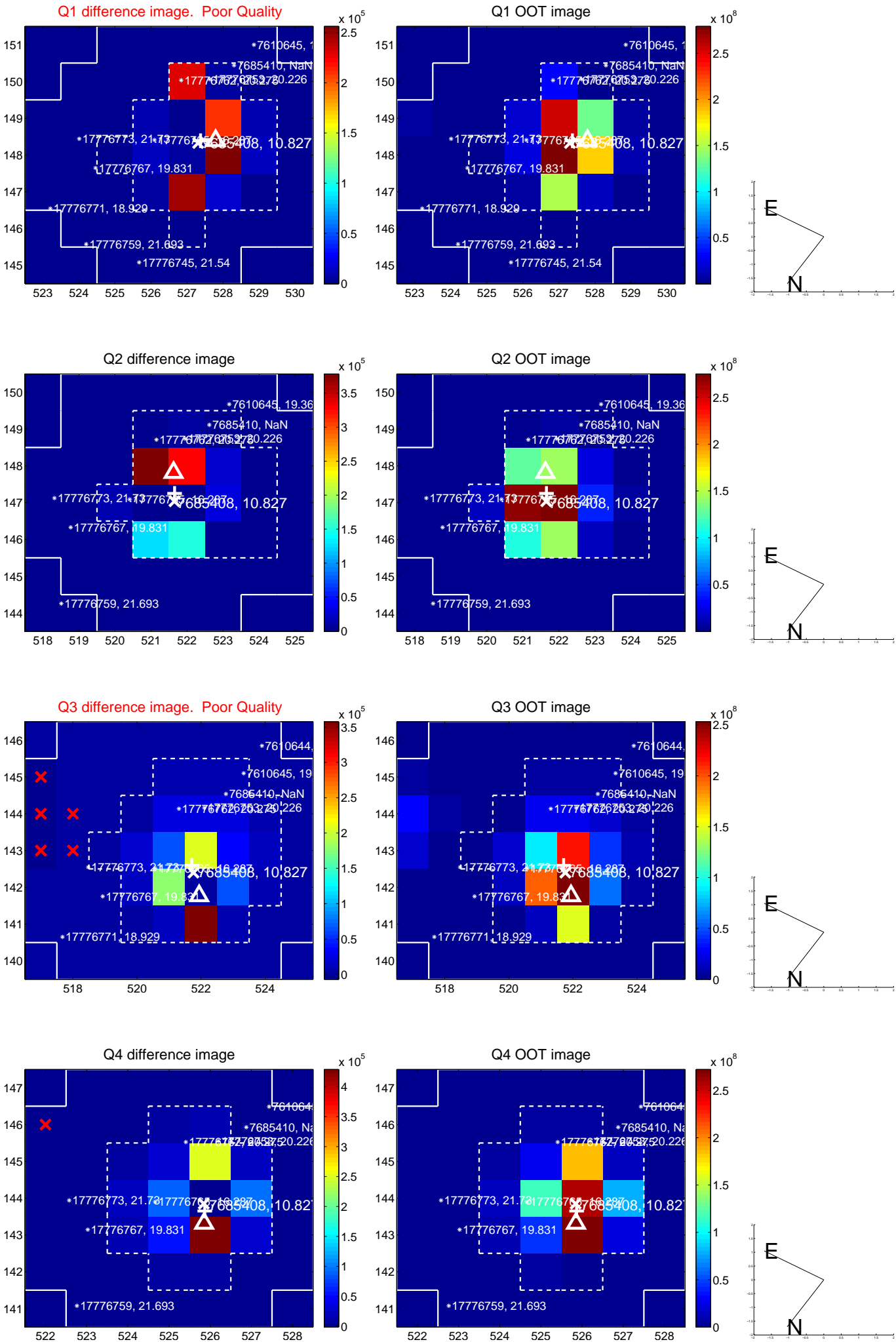


offset from photometric centroids

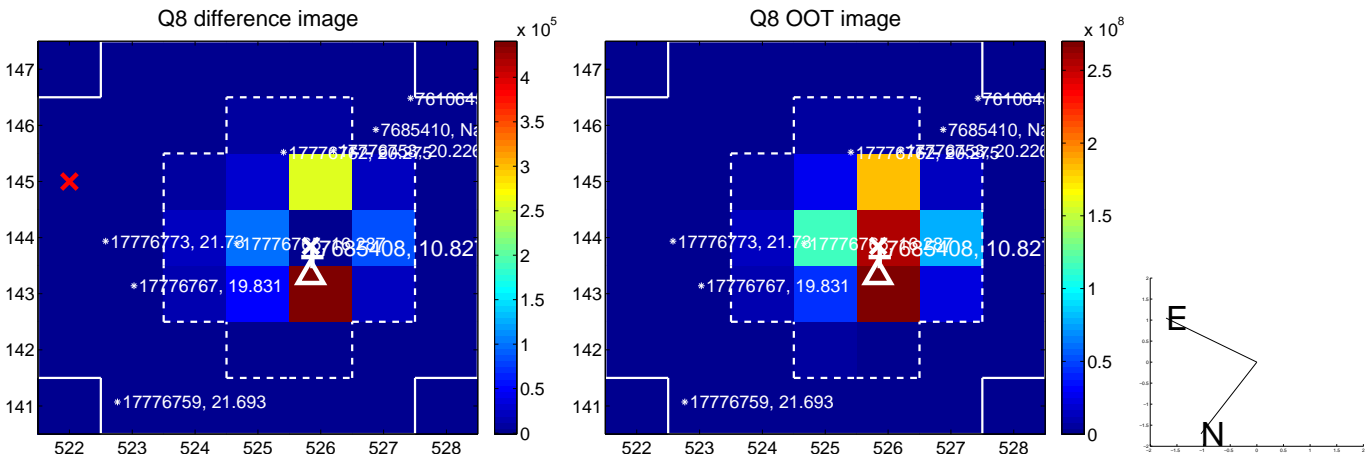
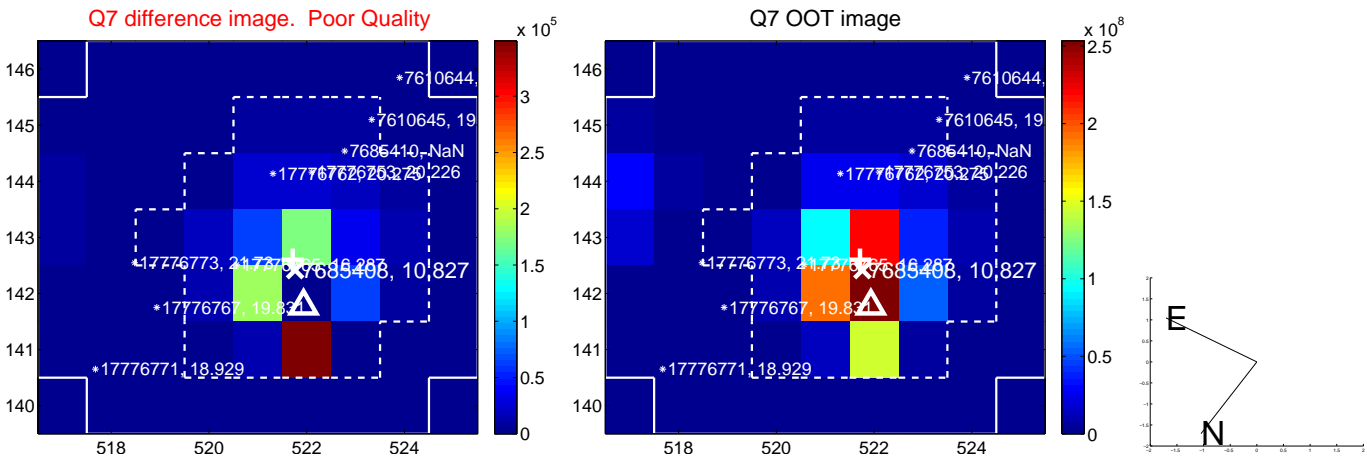
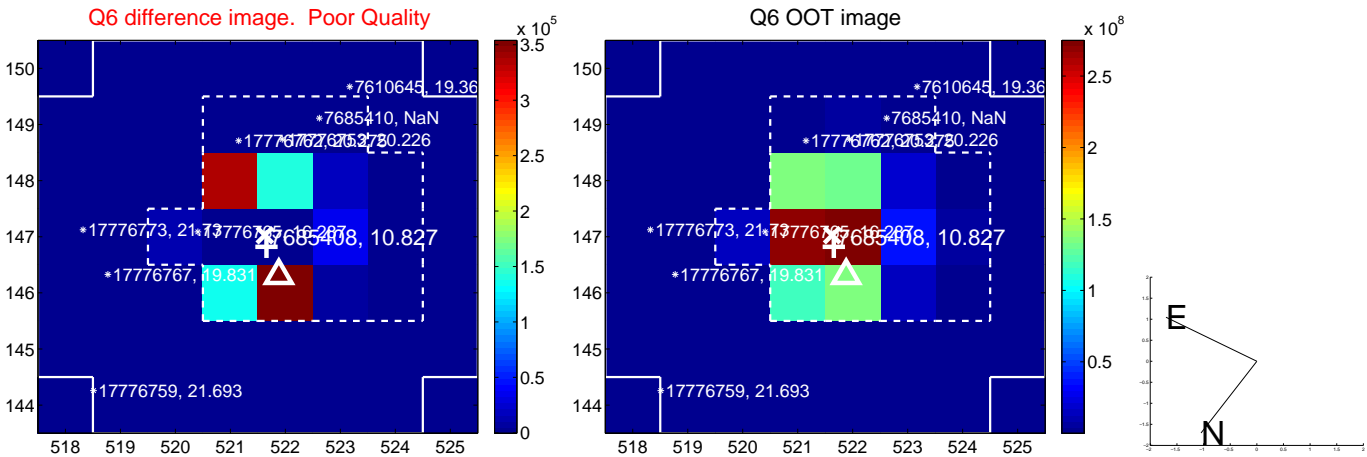
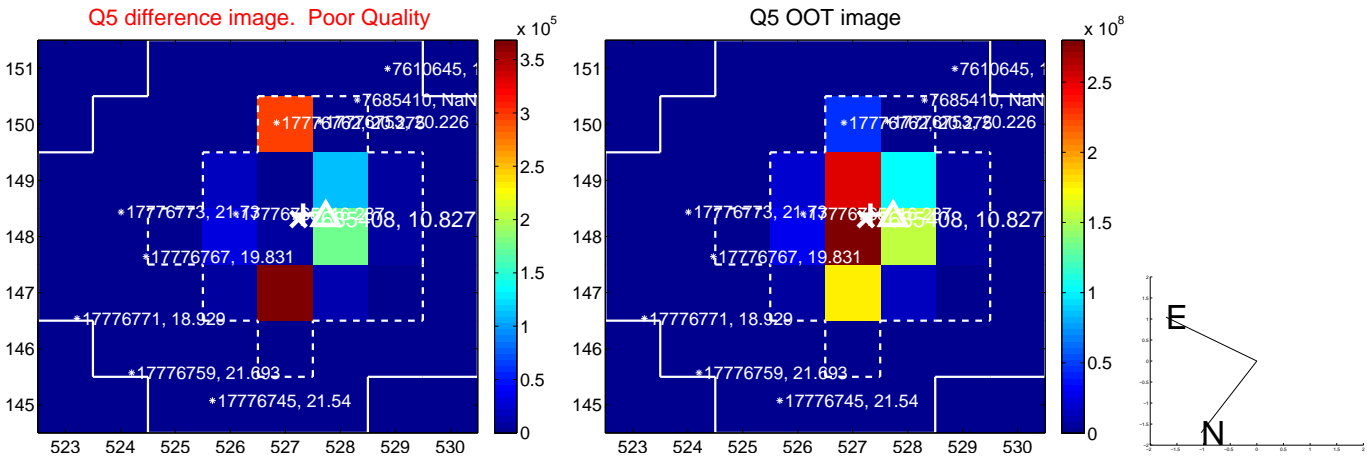


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

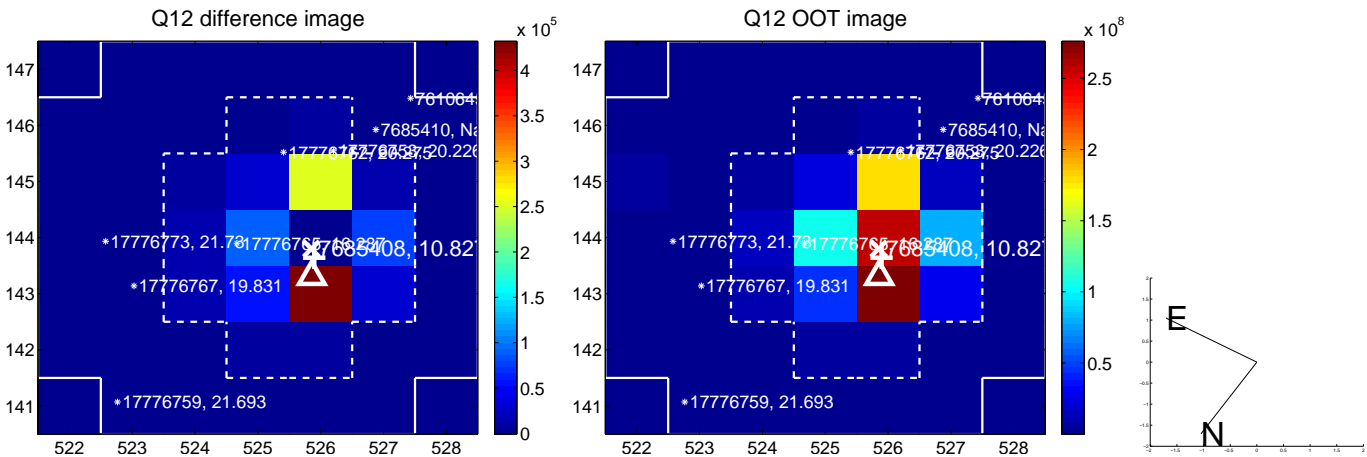
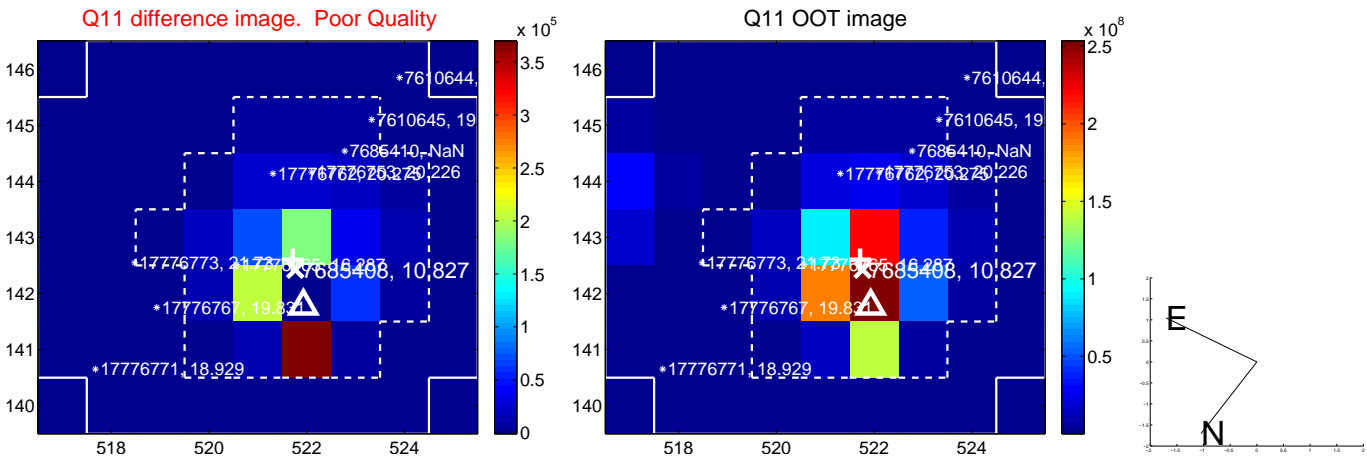
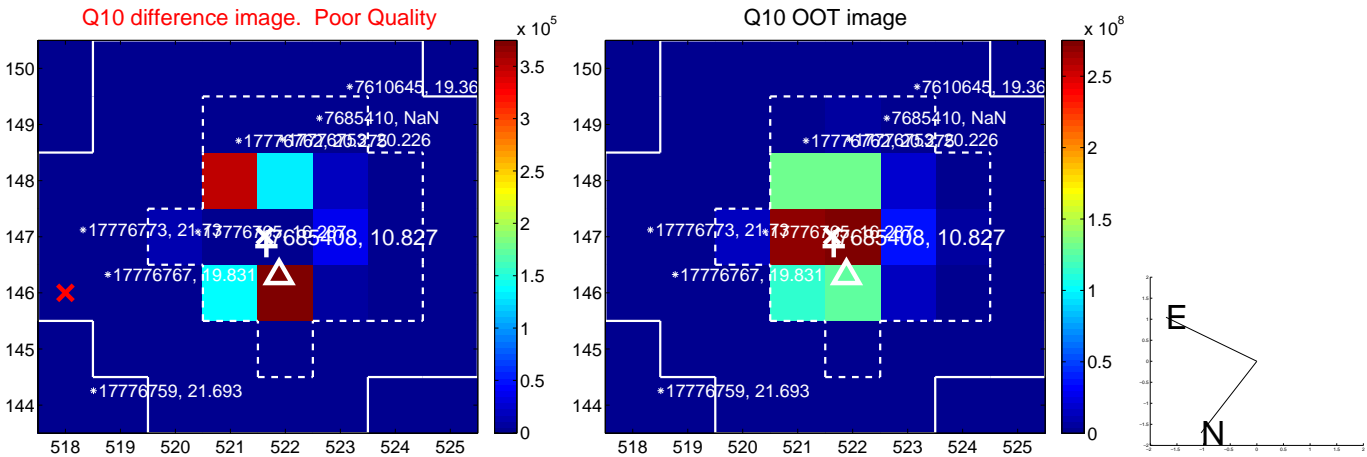
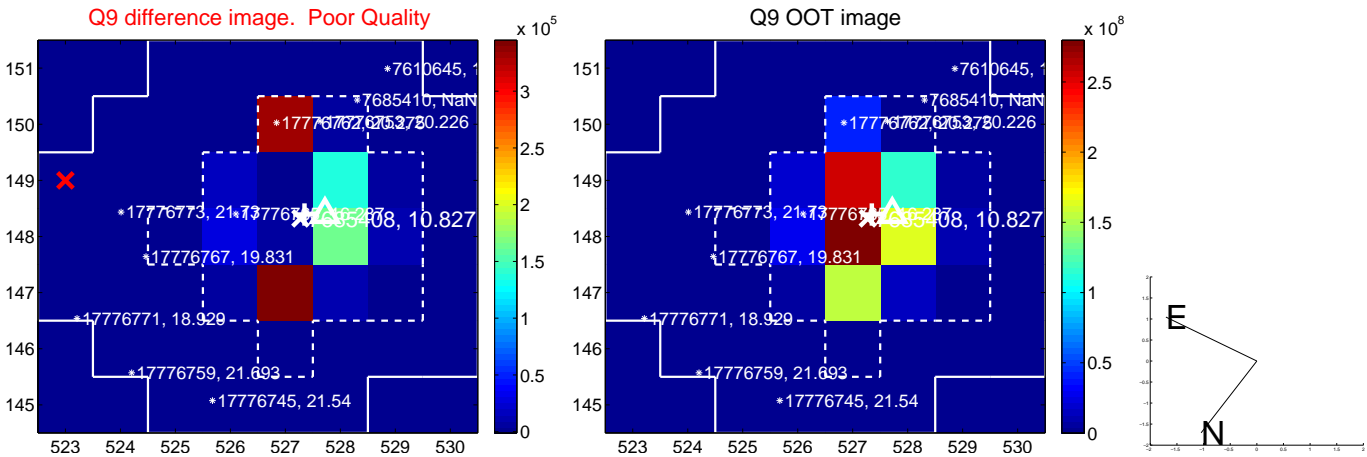
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



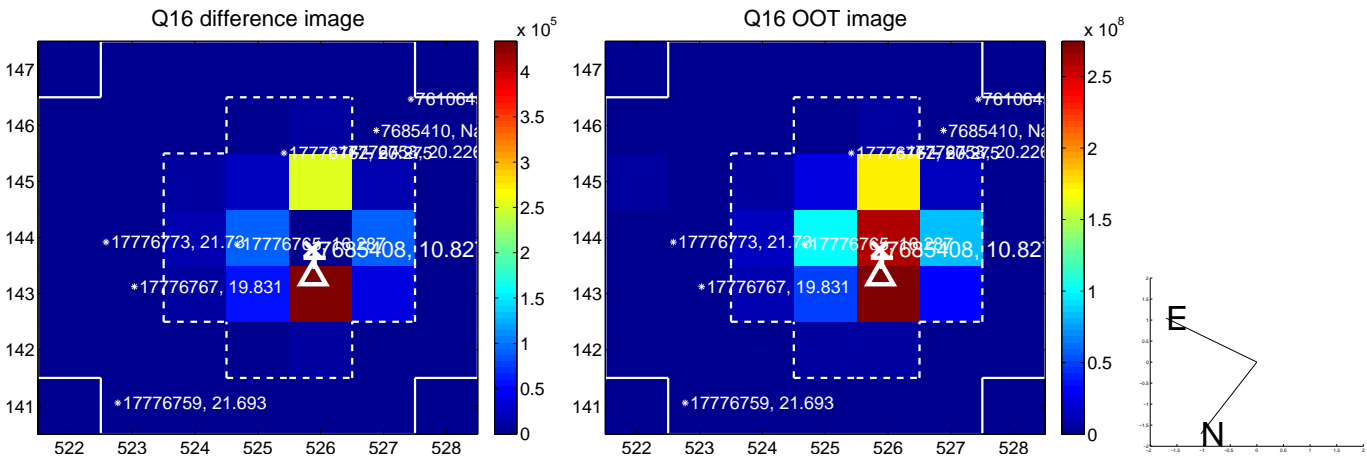
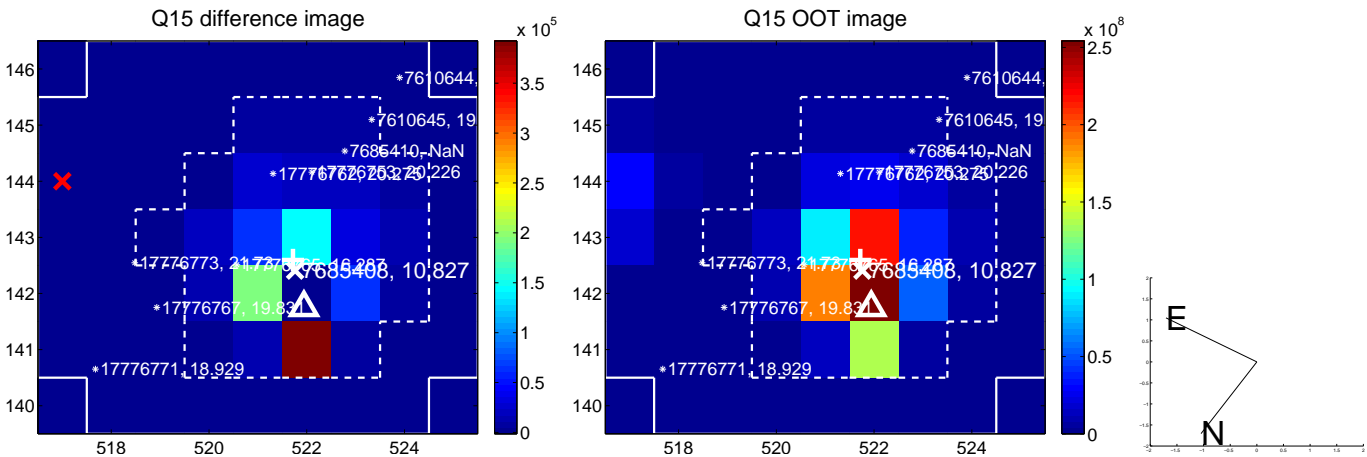
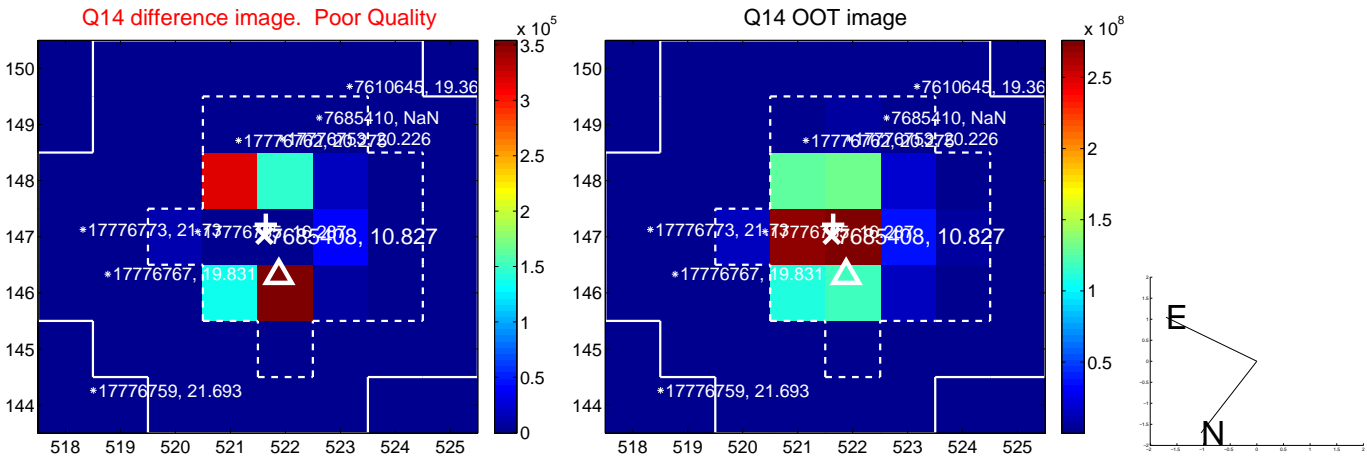
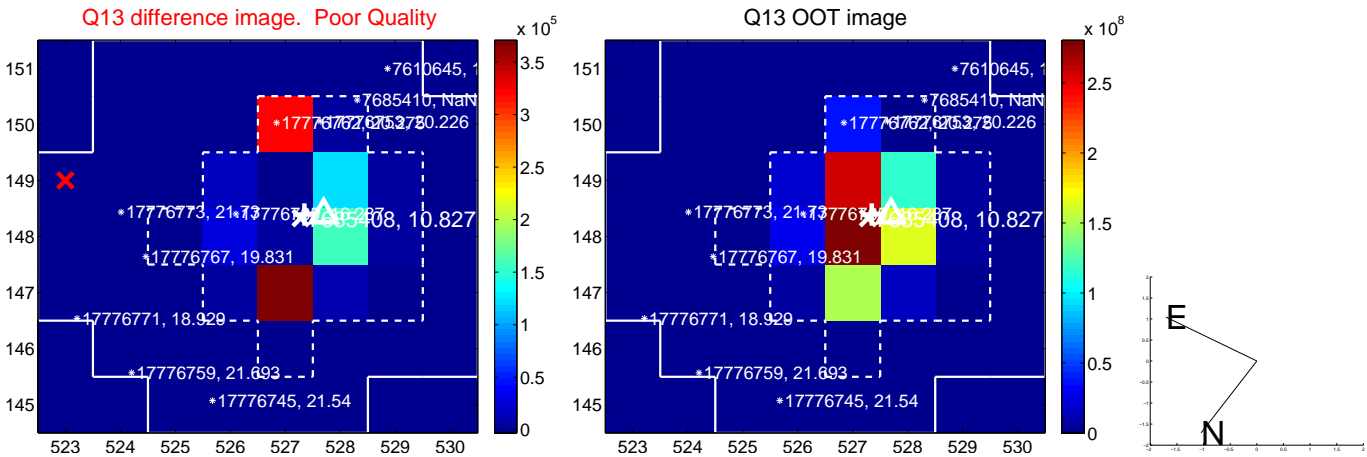
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



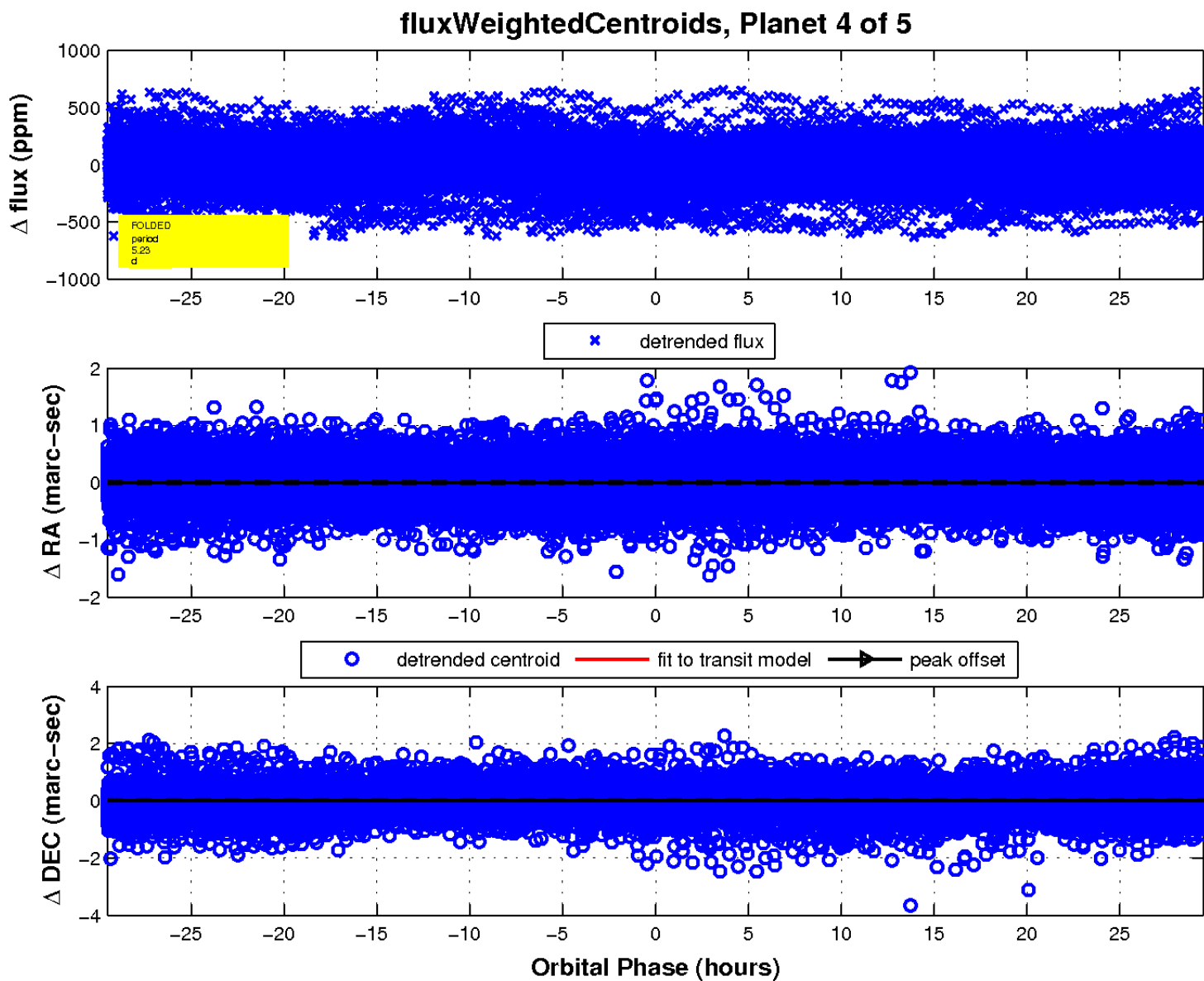
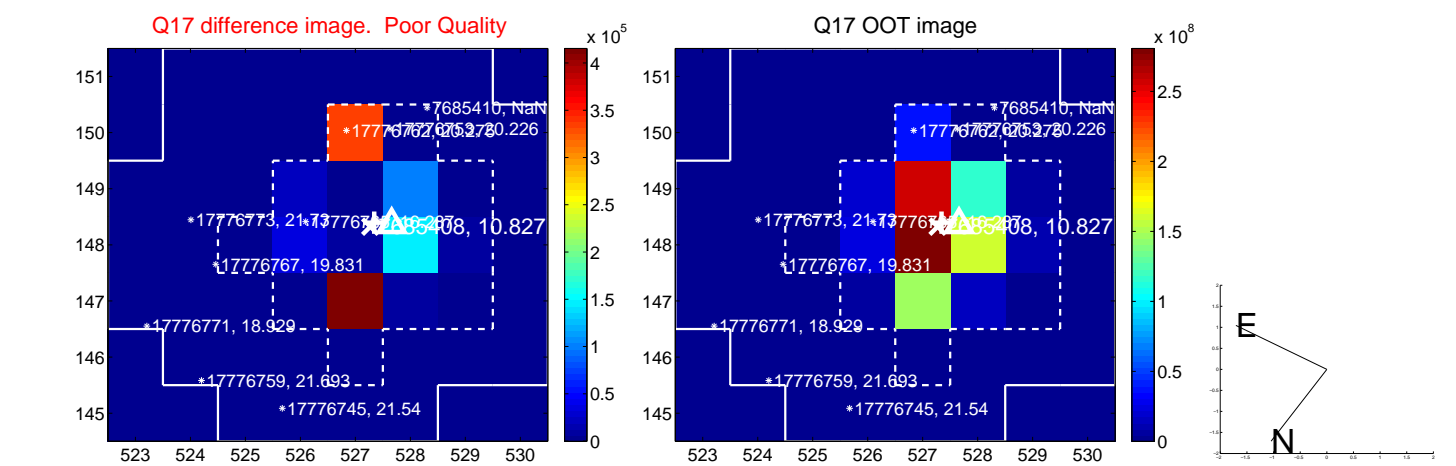
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

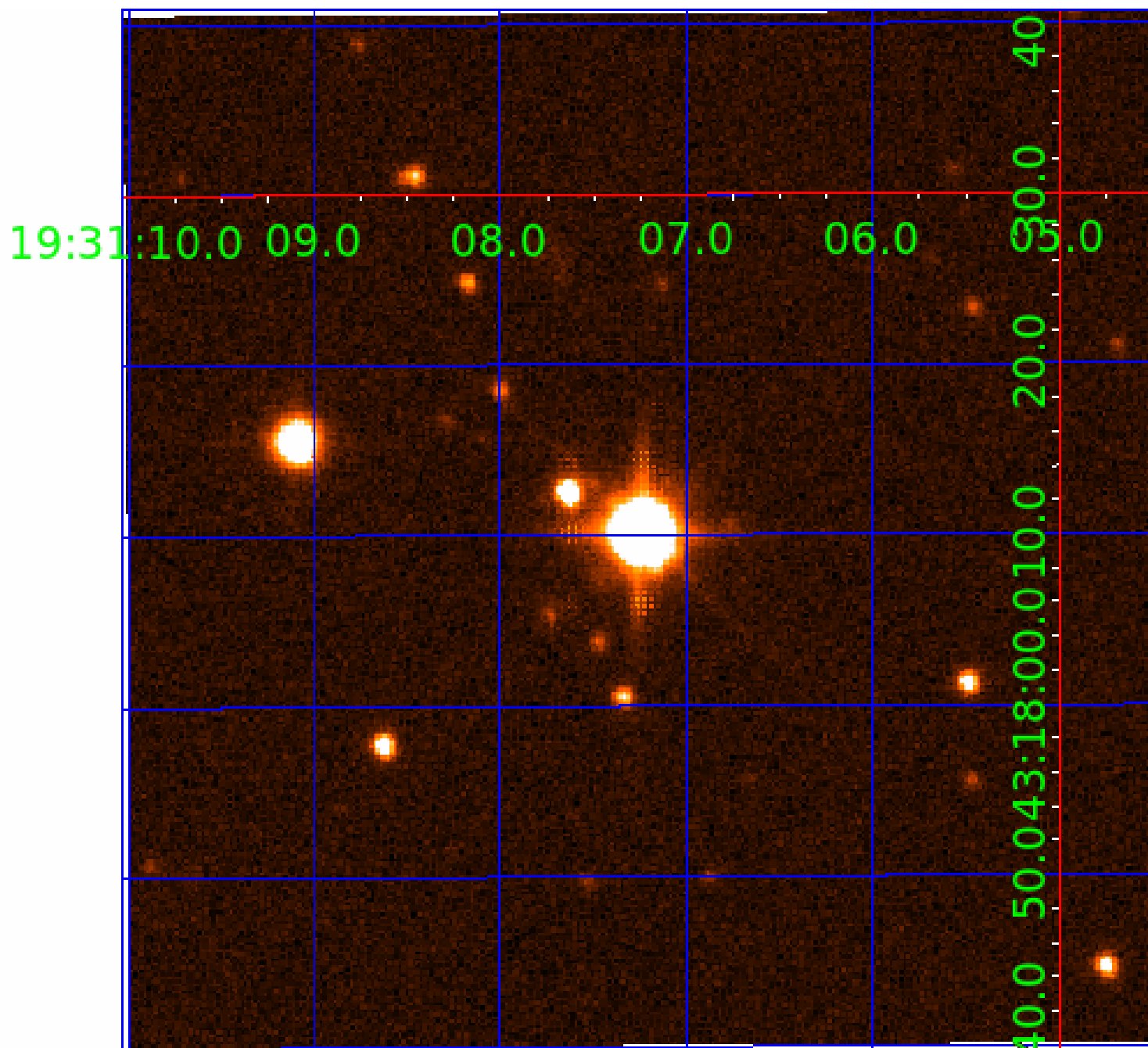


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007685408

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})
007685408-01	OBS	No	5.234654	131.932192	4.0	0.631	17.9	1.2	2.67	7906	0.57	4647.42
007685408-02	OBS	No	5.233254	132.760847	30.7	12.000	18.2	-1.0	2.67	7906	1.50	4649.08
007685408-03	OBS	No	5.233231	134.831341	24.6	4.261	15.3	14.4	2.67	7906	1.54	4649.10
007685408-04	OBS	No	5.233136	133.547198	38.7	9.839	14.3	13.7	2.67	7906	1.93	4649.22
007685408-05	OBS	No	5.233728	135.900736	9.5	32.706	12.5	4.1	2.67	7906	0.85	4648.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007685408-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007685408-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007685408-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—SAME_NTL_PERIOD—CENT_SATURATED
007685408-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

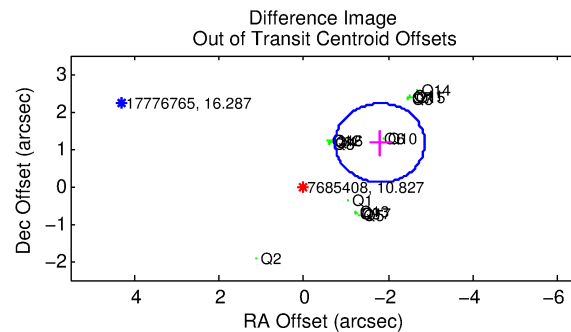
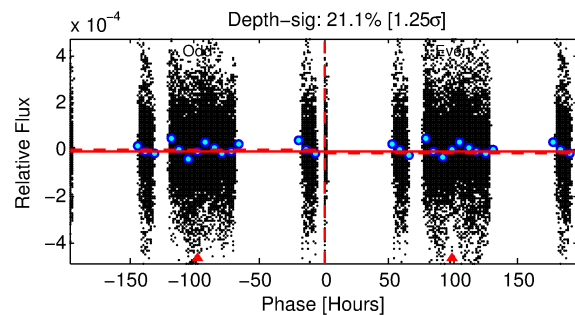
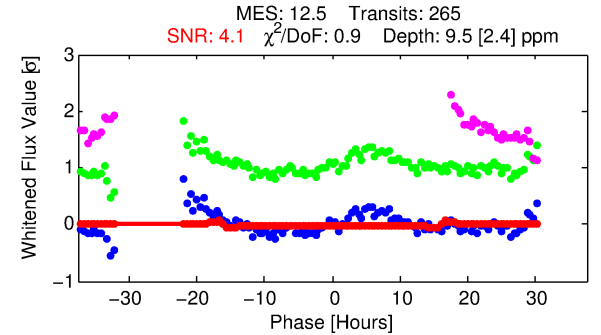
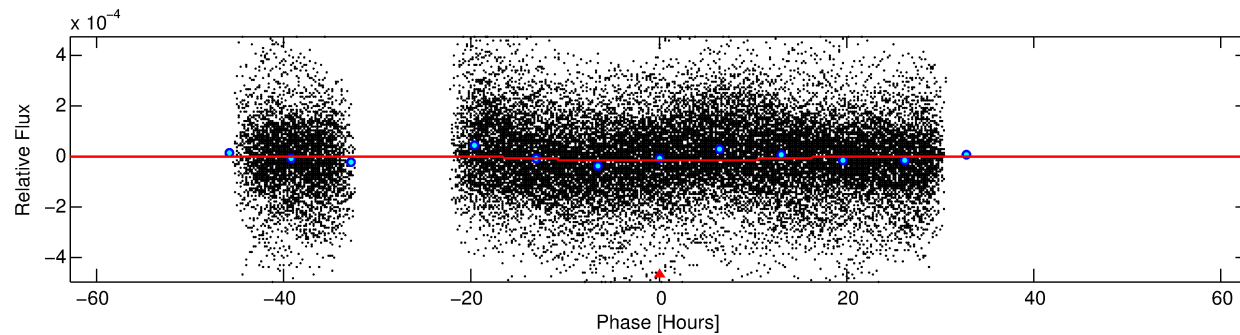
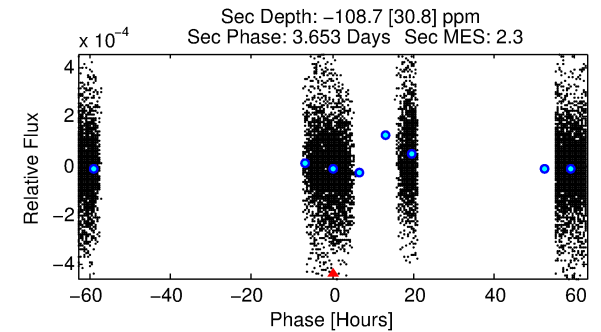
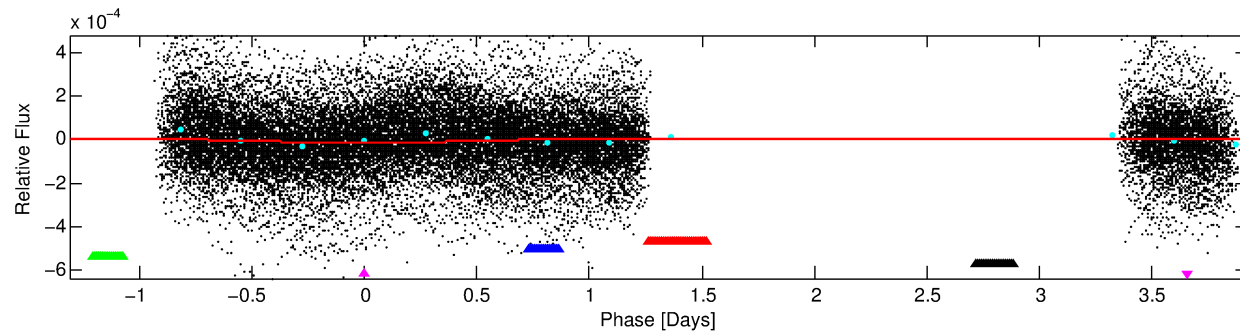
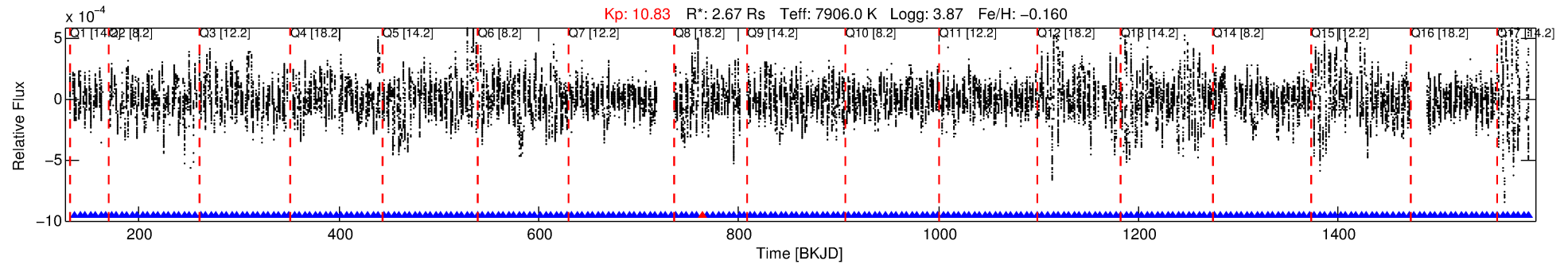
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007685408-05

No Significant Match Found

DV One-Page Summary

KIC: 7685408 Candidate: 5 of 5 Period: 5.234 d



DV Fit Results:

Period = 5.23373 [0.00008] d
Epoch = 135.9007 [0.0103] BKJD
 R_p/R^* = 0.0029 [0.0008]
 a/R^* = 1.30 [0.81]
 b = 0.46 [2.57]
 Seff = 4648.52 [2725.66]
 T_{eq} = 2105 [309] K
 R_p = 0.85 [0.41] R_e
 a = 0.0733 [0.0268] AU
 A_g = N/A
 T_{effp} = N/A

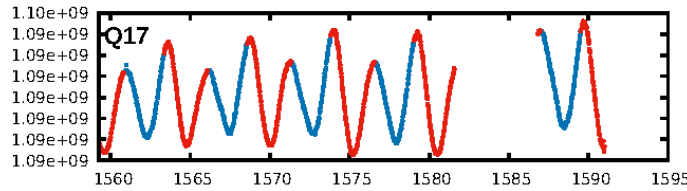
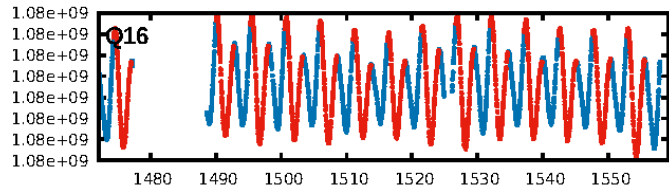
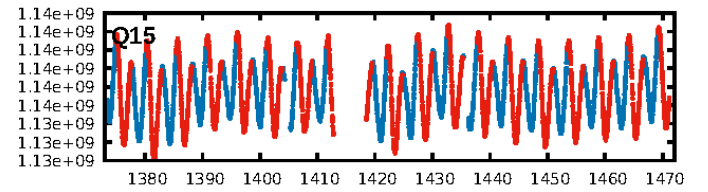
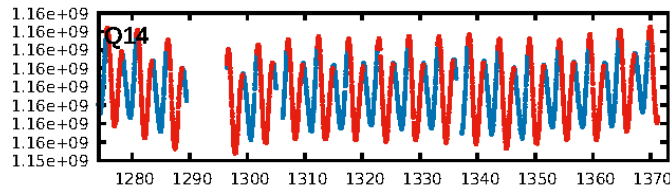
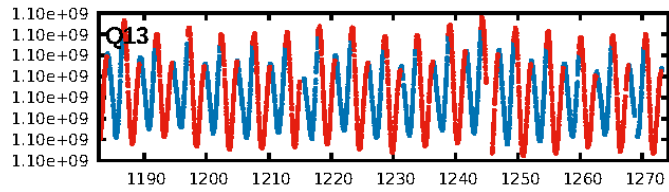
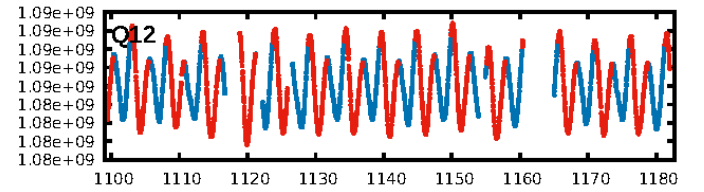
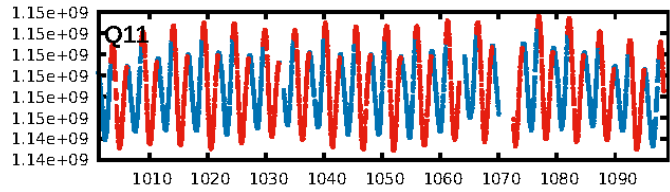
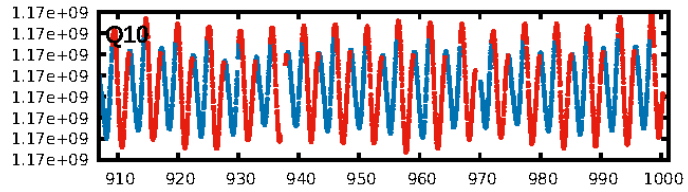
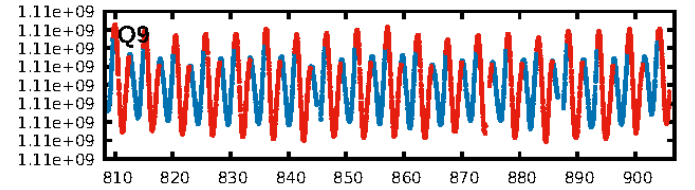
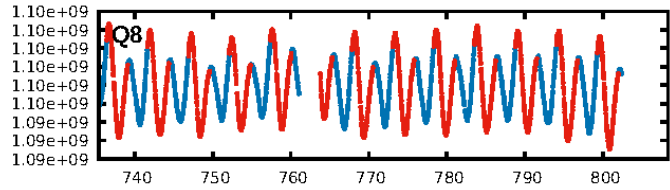
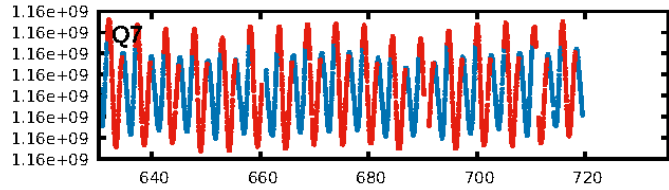
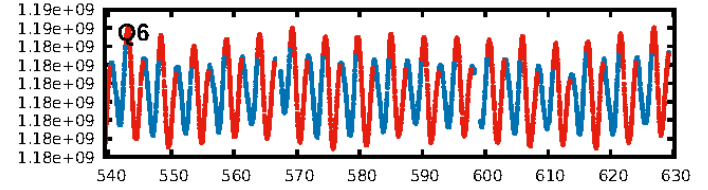
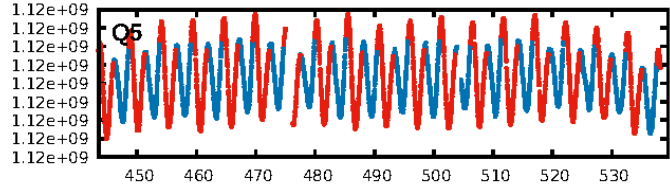
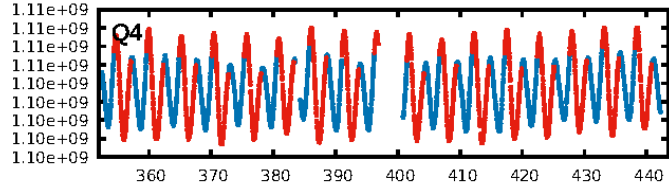
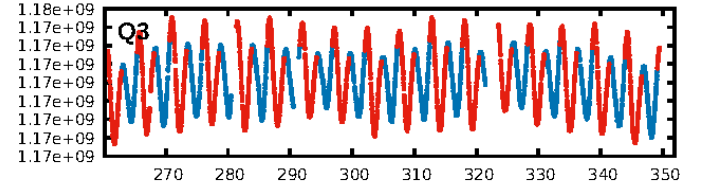
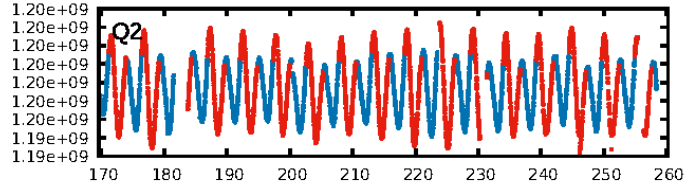
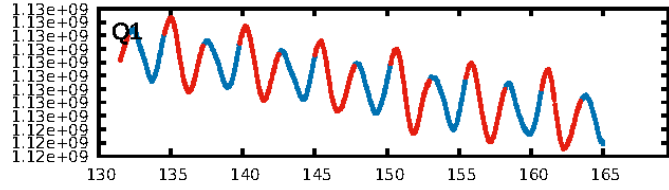
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [252/253]
GhostDiagnostic-chr: 0.8163
Centroid-sig: 0.1%
Centroid-so: 3.483 arcsec [2.14σ]
OotOffset-rm: 2.143 arcsec [6.08σ]
KicOffset-rm: 2.617 arcsec [7.09σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 0.00 [0/17]

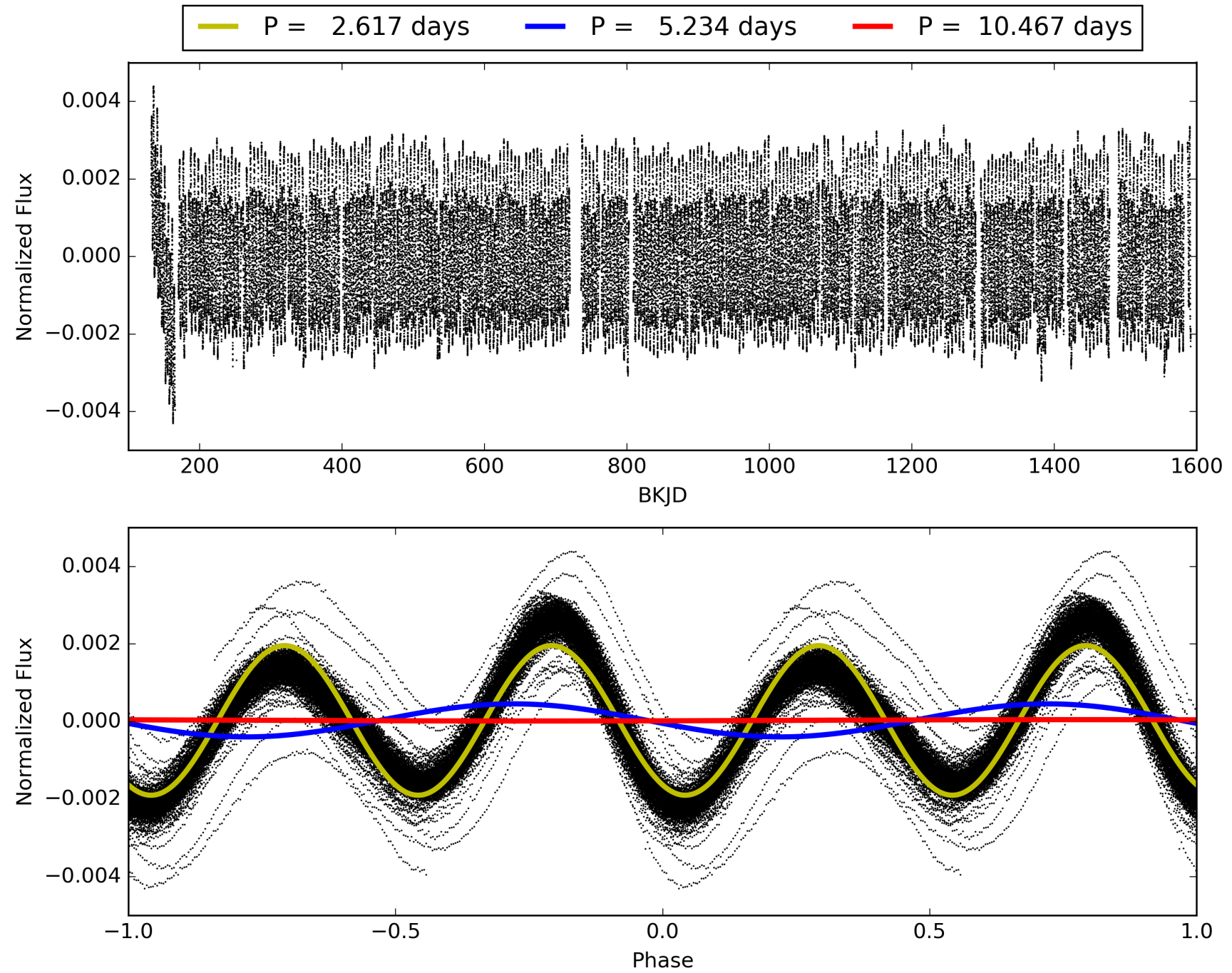
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:32:30 Z

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

TCE 007685408-05, PDC Light Curves

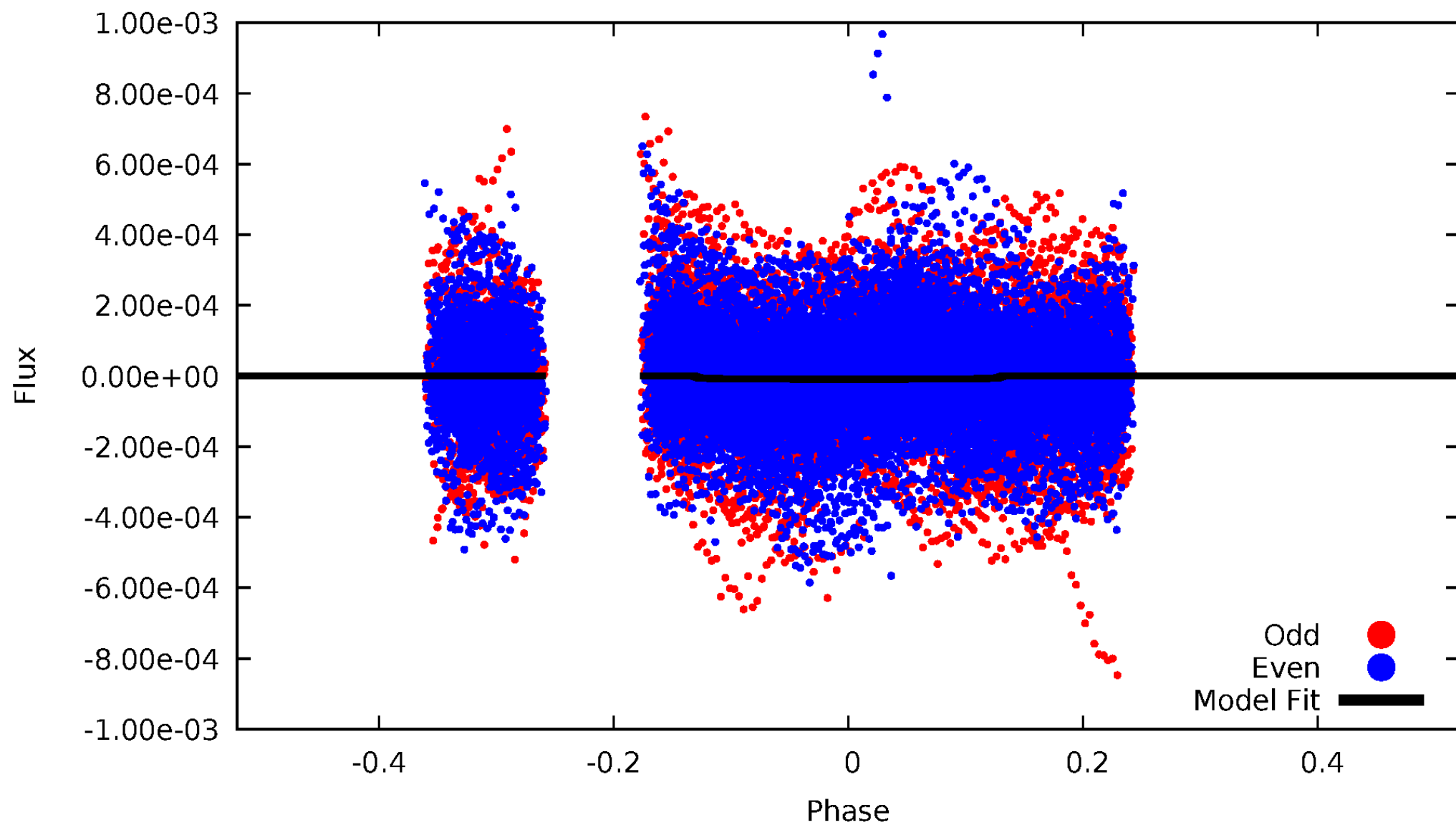


TCE 007685408-05



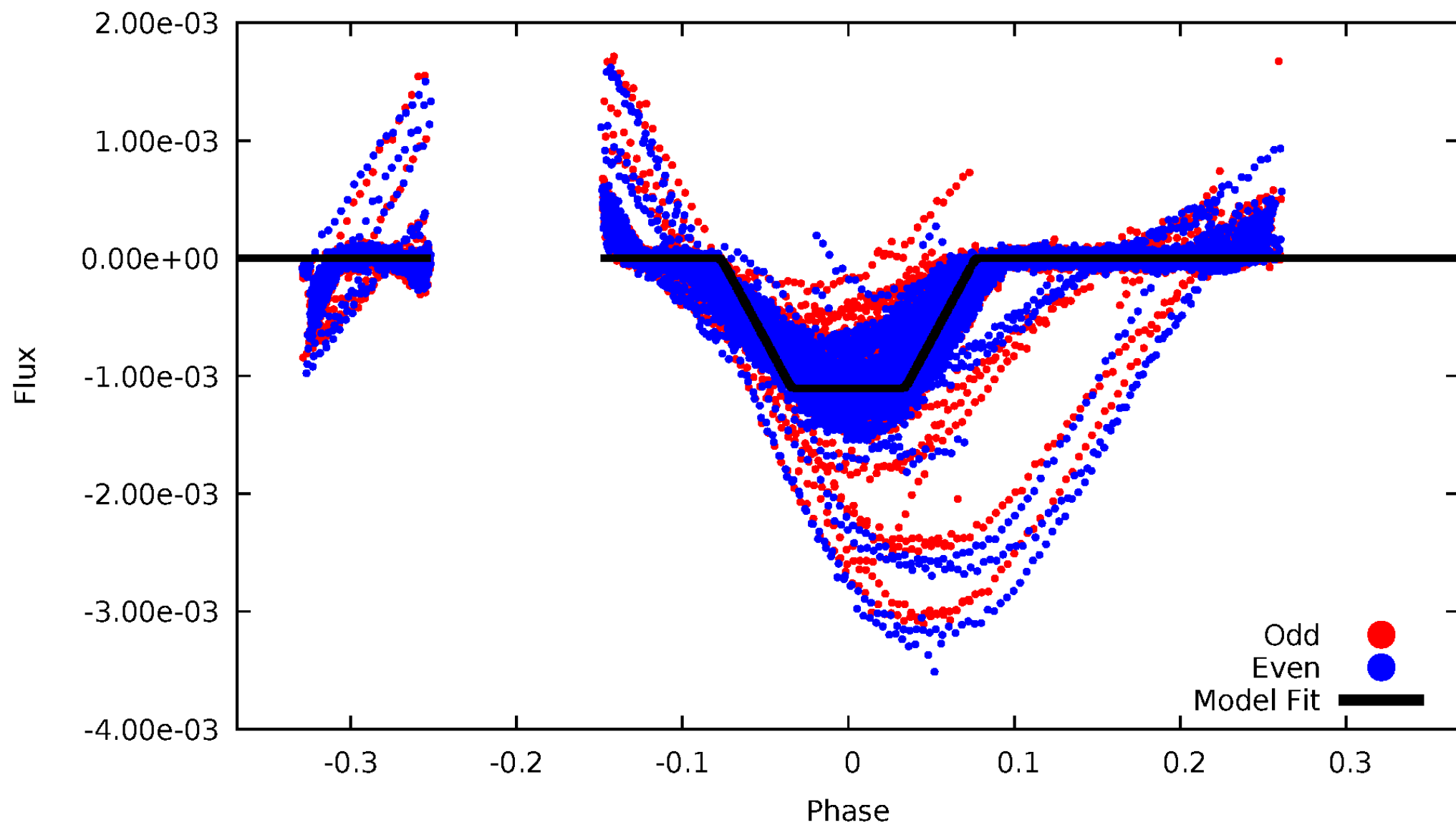
DV Odd/Even

TCE 007685408-05



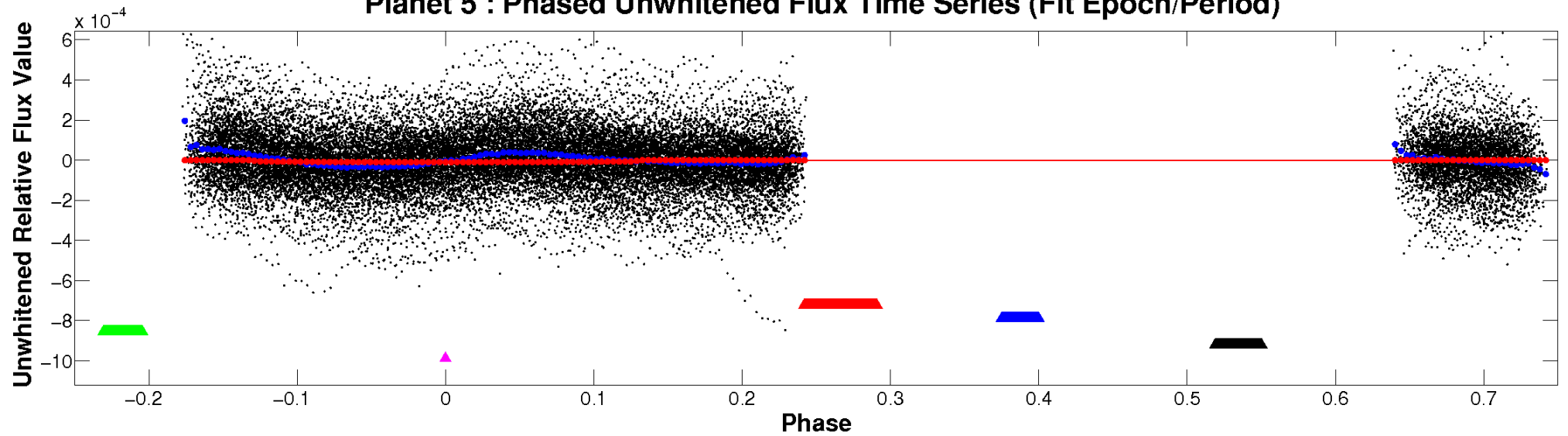
ALT Odd/Even

TCE 007685408-05

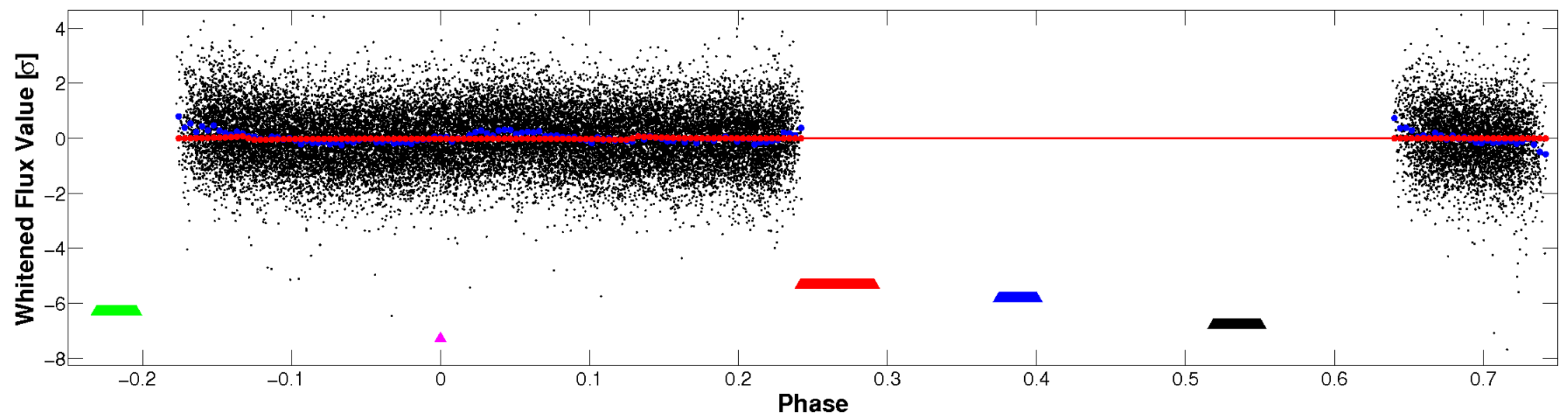


Non-Whitened Vs. Whitened Light Curve

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

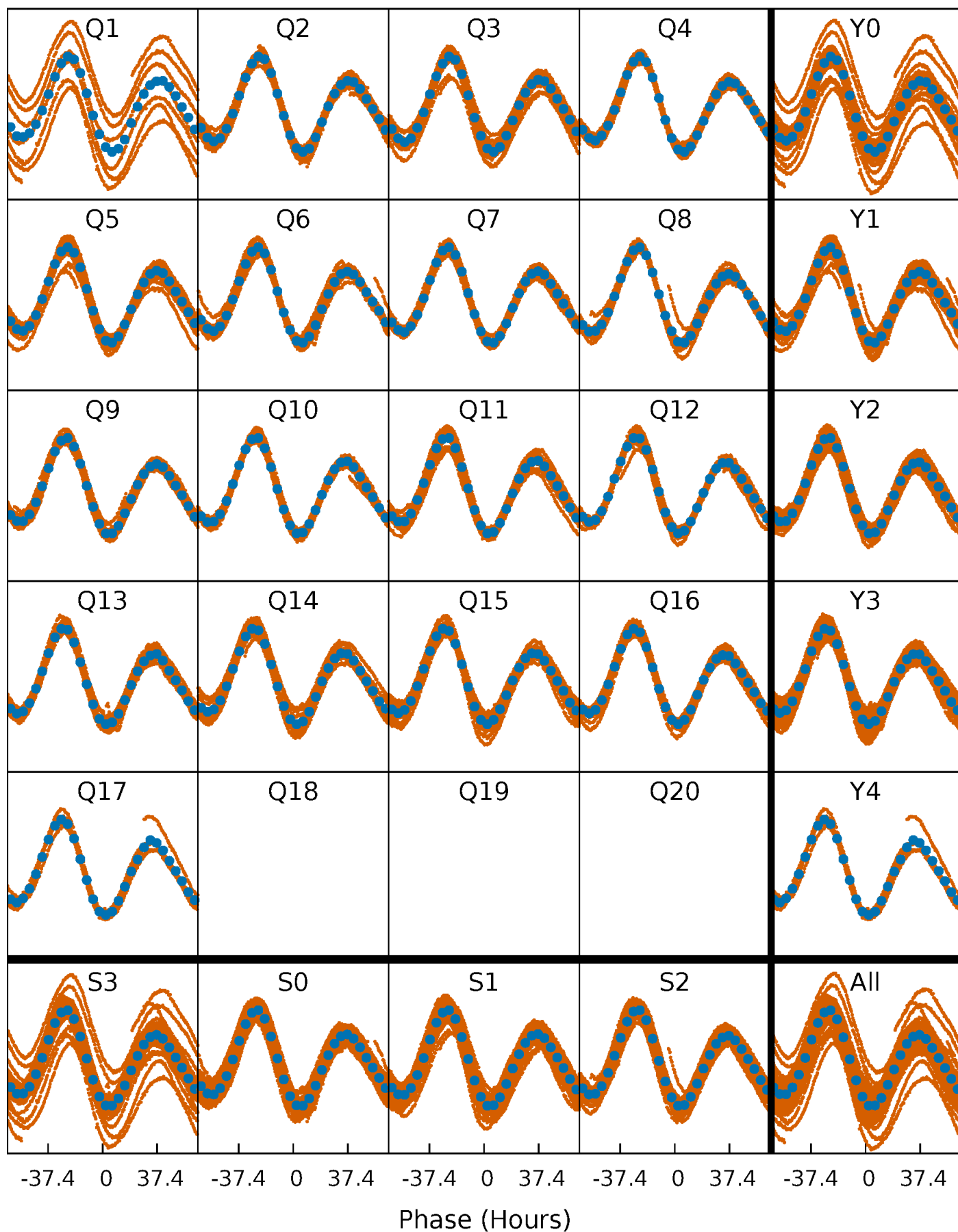


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



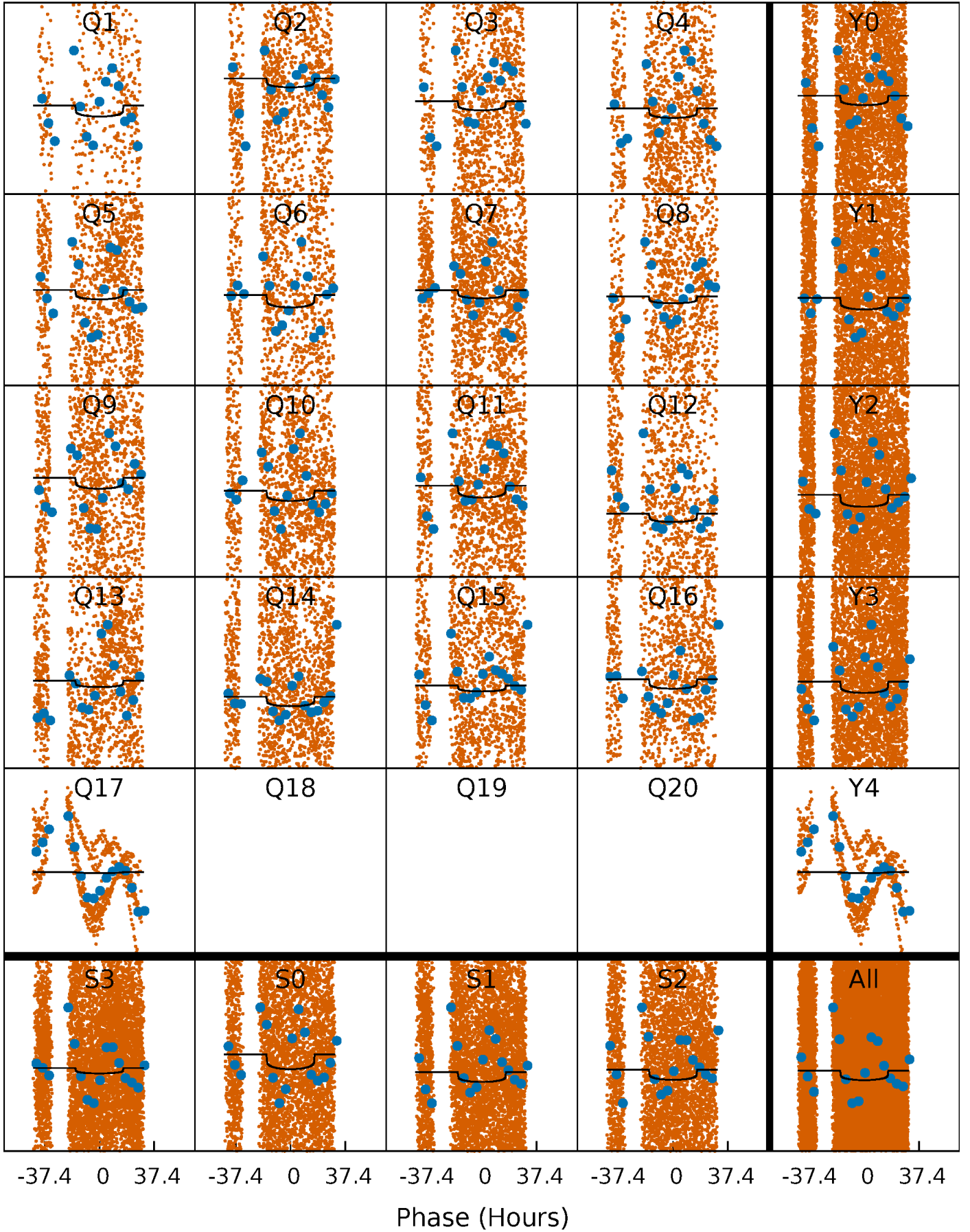
PDC Quarter-Phased Transit Curves

TCE 007685408-05 $P = 5.233728$ Days $T_0 = 135.900736$ (BKJD)



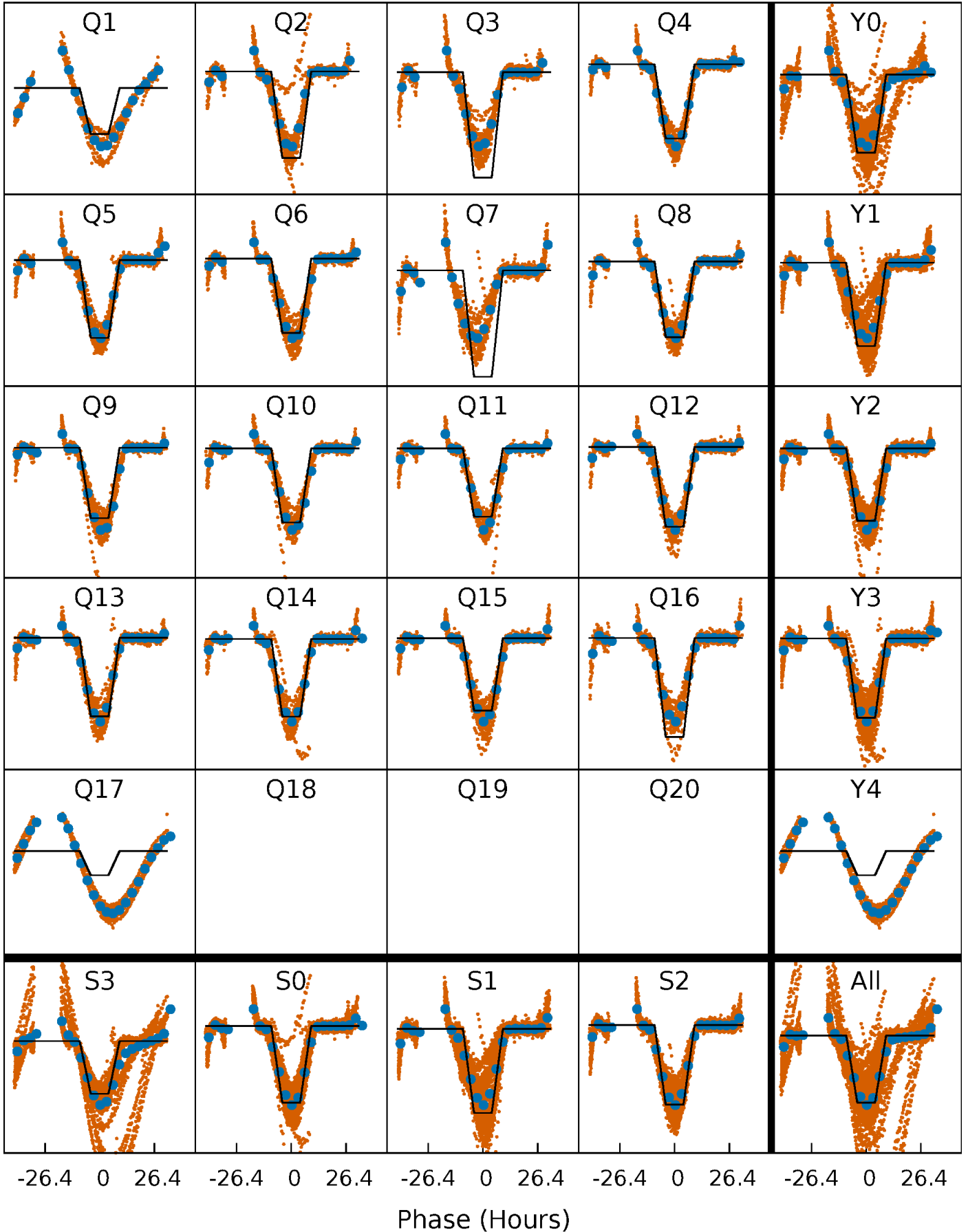
DV Quarter-Phased Transit Curves

TCE 007685408-05 P= 5.233728 Days $T_0=135.900736$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

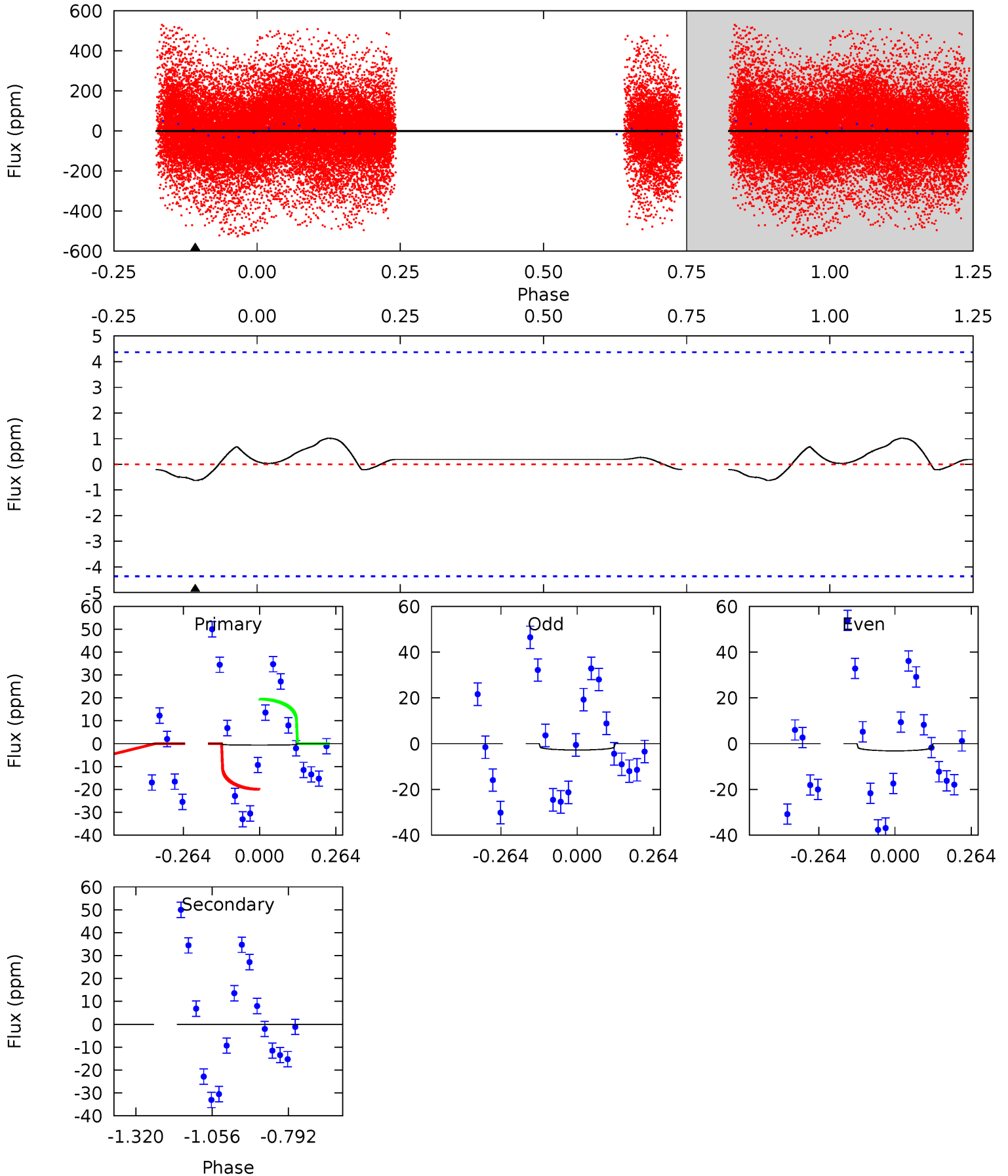
TCE 007685408-05 $P = 5.233165$ Days $T_0 = 135.888625$ (BKJD)



DV Model-Shift Uniqueness Test

007685408-05, P = 5.233728 Days, E = 130.667008 Days

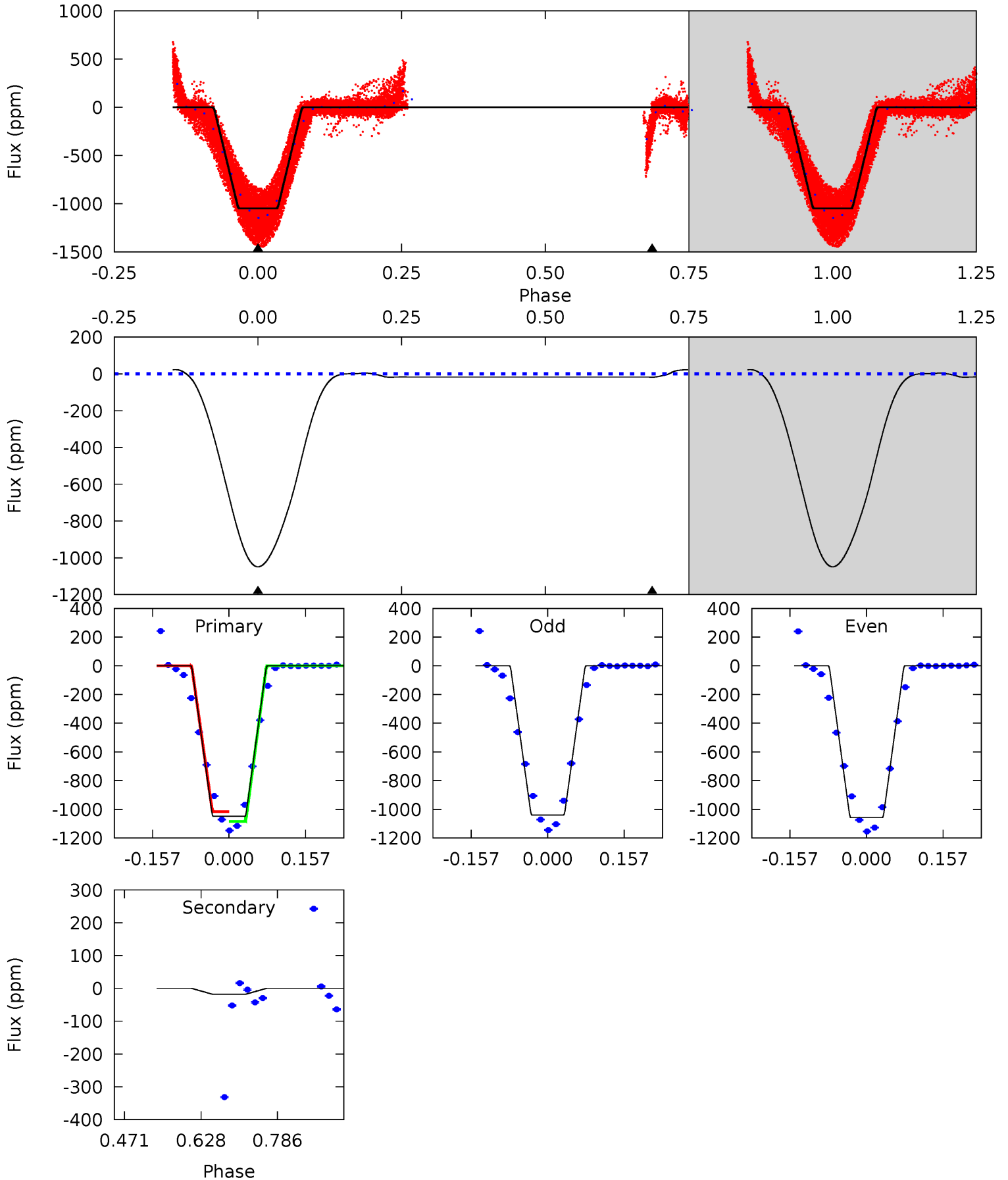
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.63	0	0	0	4.36	1.12	0.23	0.63	0.63	0	0	0.17	0.13	0.62	0.23



Alt Model-Shift Uniqueness Test

007685408-05, P = 5.233165 Days, E = 130.655460 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1338	22.8	0	0	4.47	1.41	11.1	1338	1338	22.8	22.8	11.1	1.04	0.02	20.1



Stellar Parameters For KIC 007685408

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7906^{+216}_{-325}	$3.867^{+0.322}_{-0.107}$	$-0.160^{+0.200}_{-0.350}$	$2.670^{+0.359}_{-1.078}$	$1.915^{+0.082}_{-0.467}$	$0.142^{+0.381}_{-0.040}$
	+3%/-4%	+8%/-3%	+125%/-219%	+13%/-40%	+4%/-24%	+269%/-28%
Source	KIC0	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 007685408-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1	$0.79^{+0.30}_{-0.25}$	2894^{+199}_{-293}	-3004^{+7666}_{-1800}	$-0.034^{+4.926}_{-5.242}$
Alt.	-18 ± 1	$9.37^{+1.10}_{-1.82}$	2885^{+199}_{-285}	2982^{+131}_{-145}	$0.589^{+0.271}_{-0.117}$

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

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

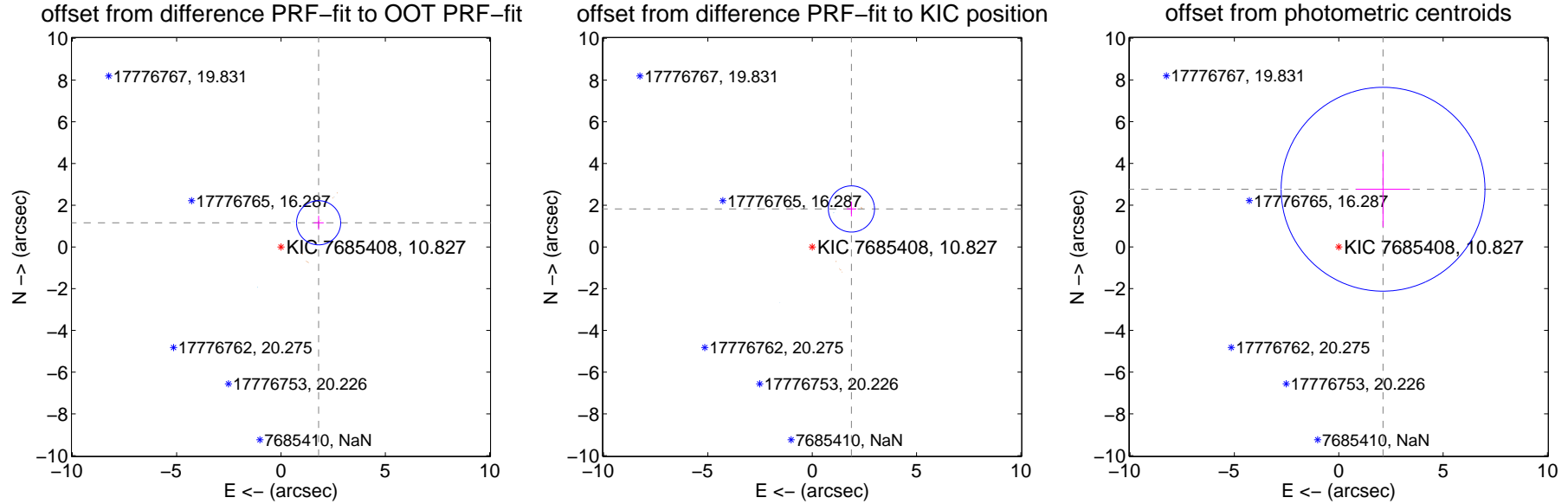
DV Centroid Data

Supplemental centroid analysis for 007685408-05. **Kepler magnitude: 10.83.** Transit SNR 4.08

There are 6 quarters with good PRF difference image offsets

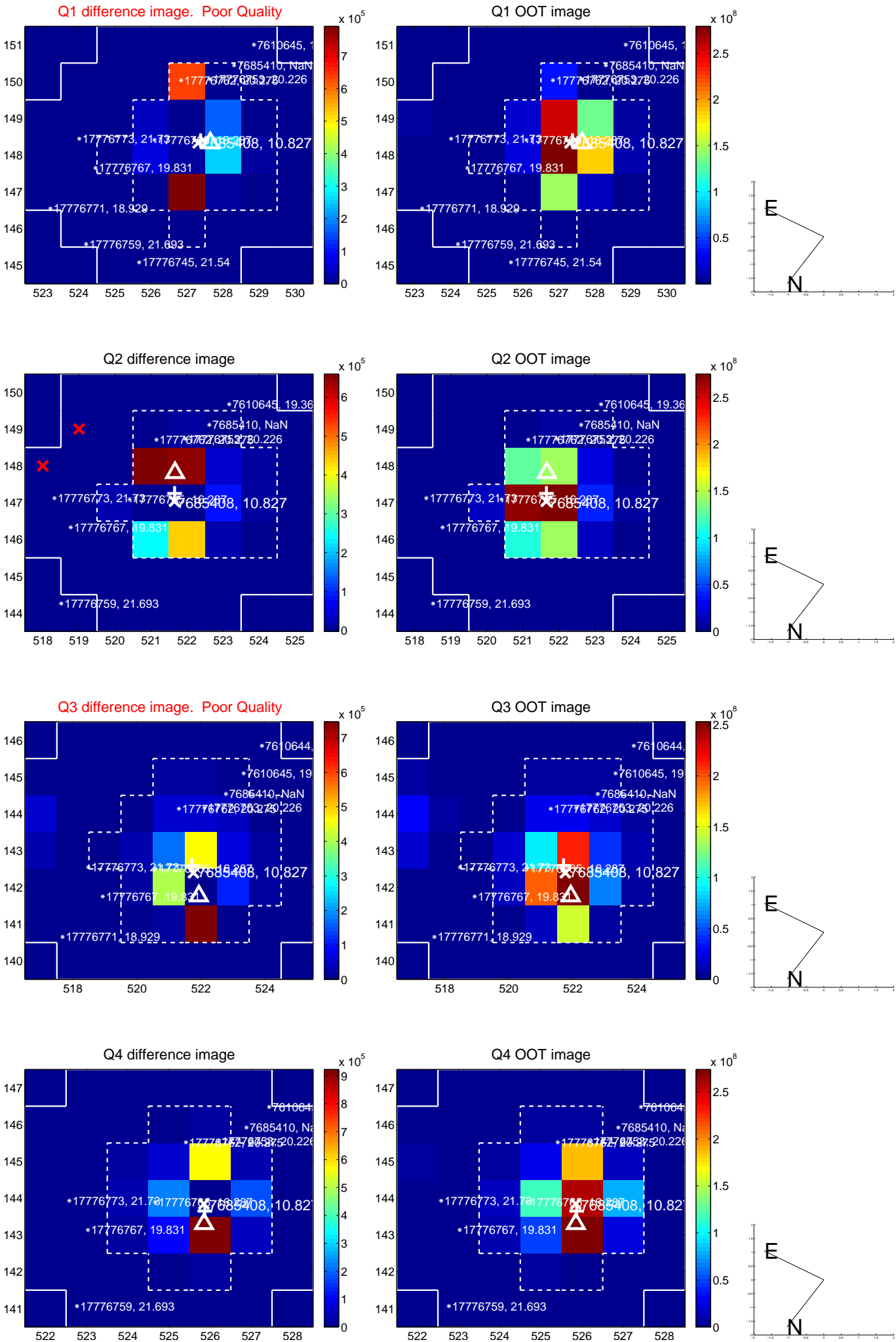
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.143 \pm 0.353	6.08	-1.803 \pm 0.243	1.159 \pm 0.329
PRF-fit source offset from KIC position	2.617 \pm 0.369	7.09	-1.880 \pm 0.226	1.820 \pm 0.354
photometric centroid source offset	3.48 \pm 1.63	2.14	-2.12 \pm 1.29	2.76 \pm 1.80

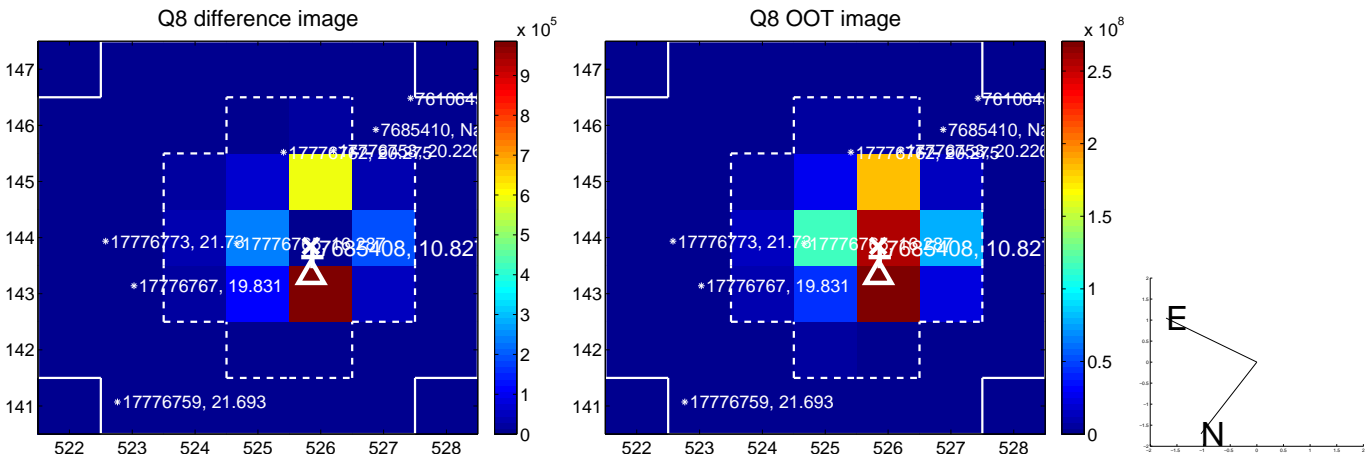
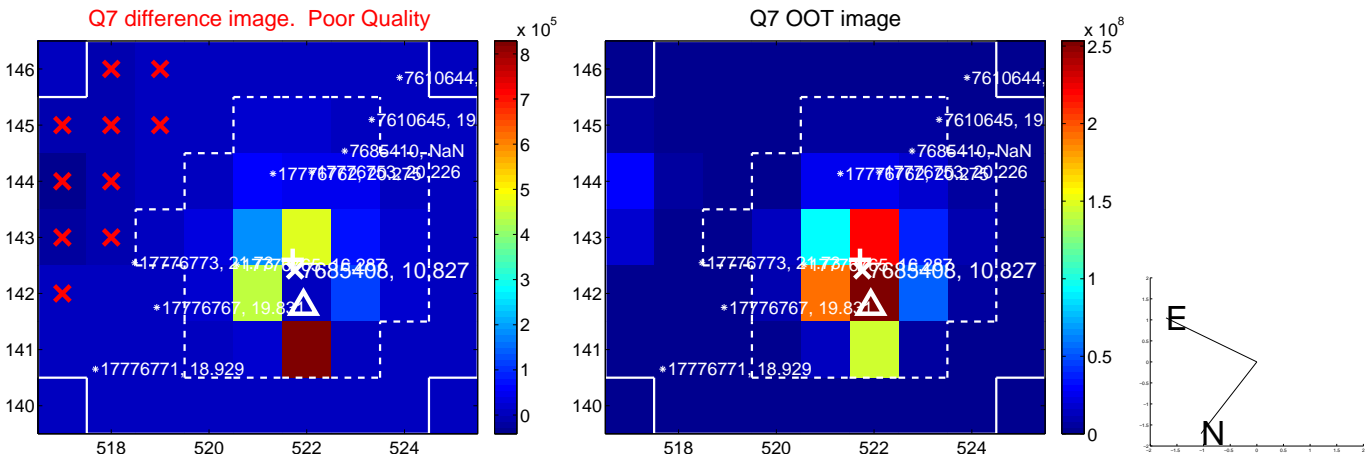
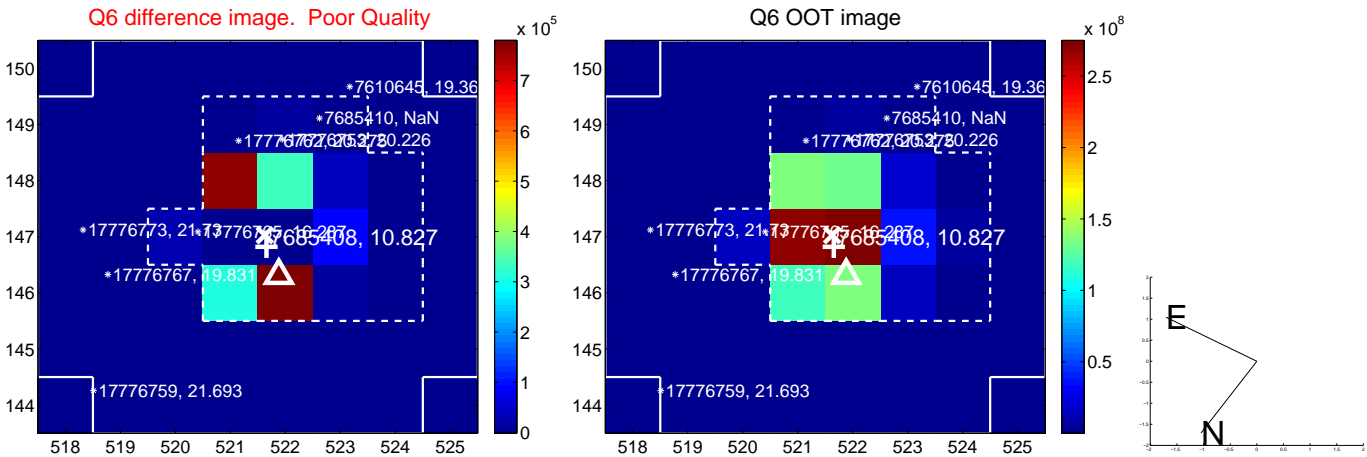
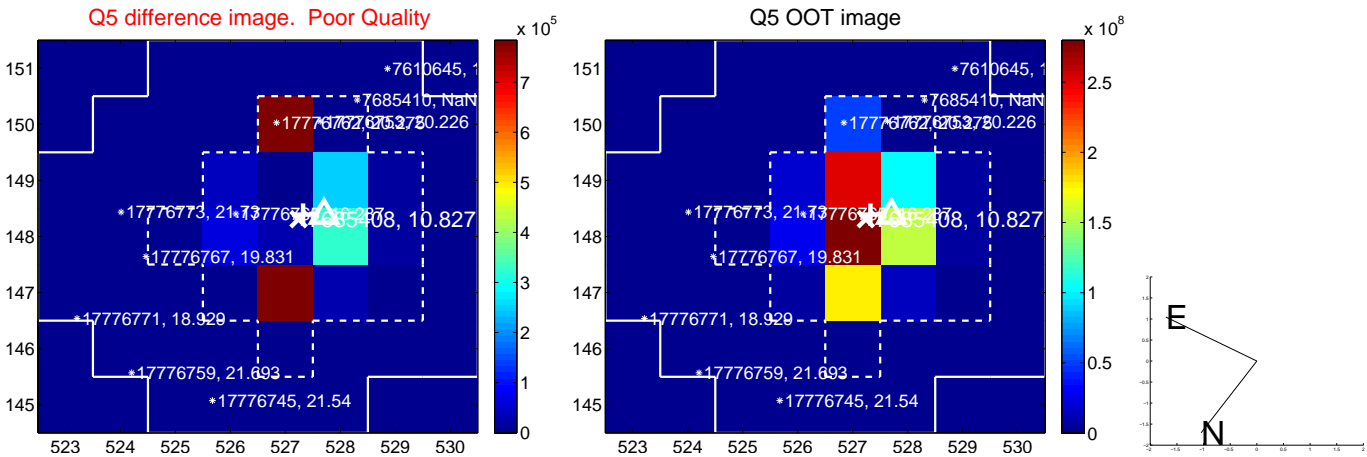


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

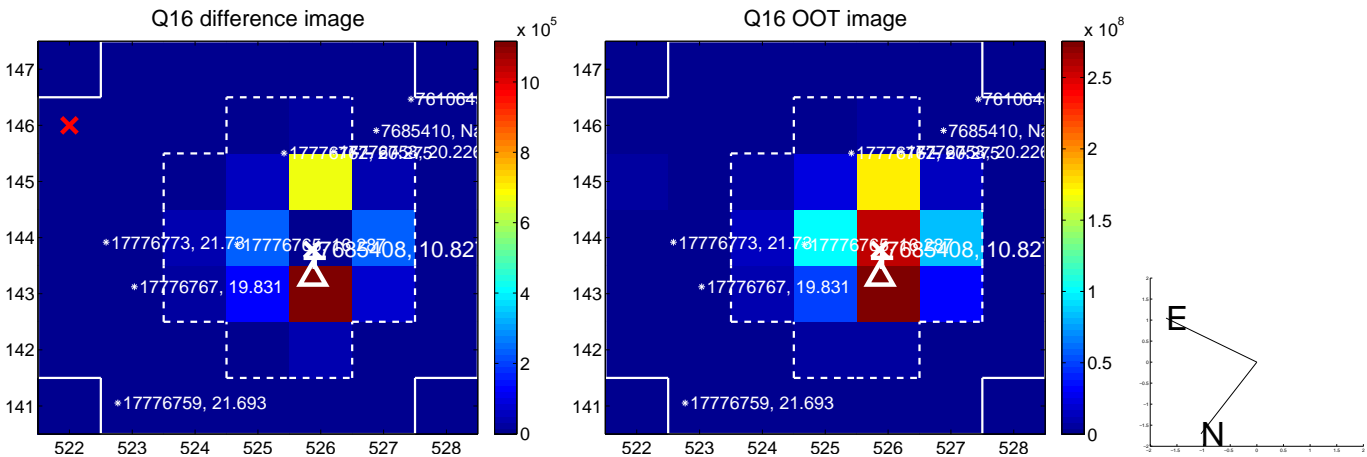
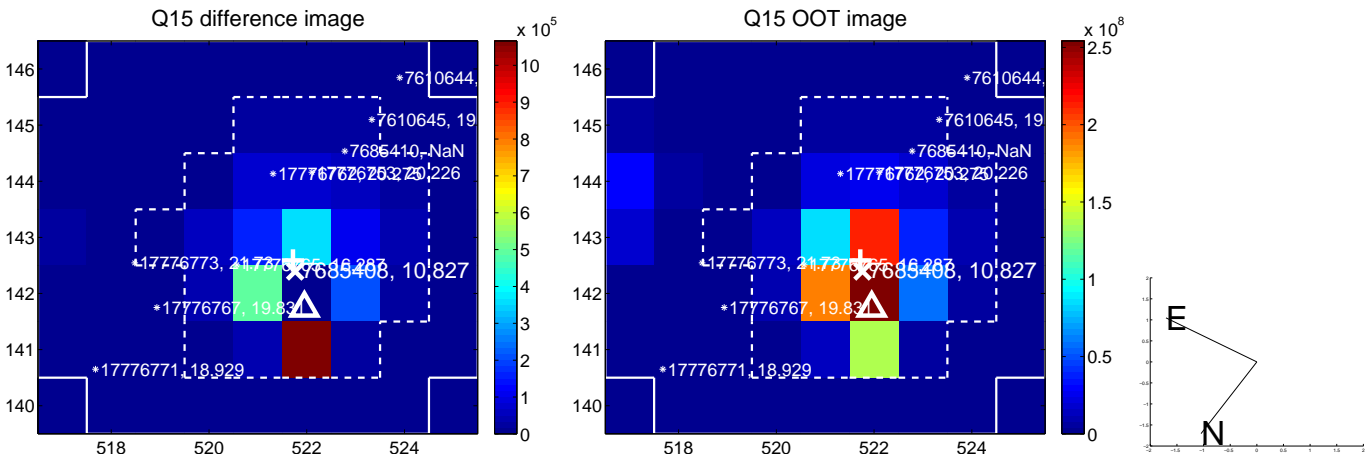
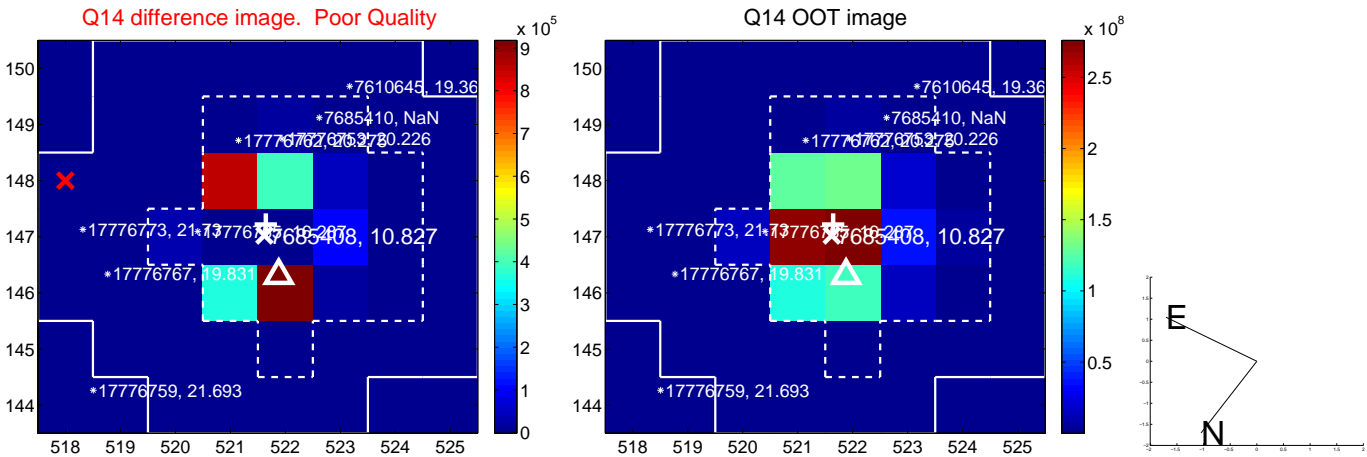
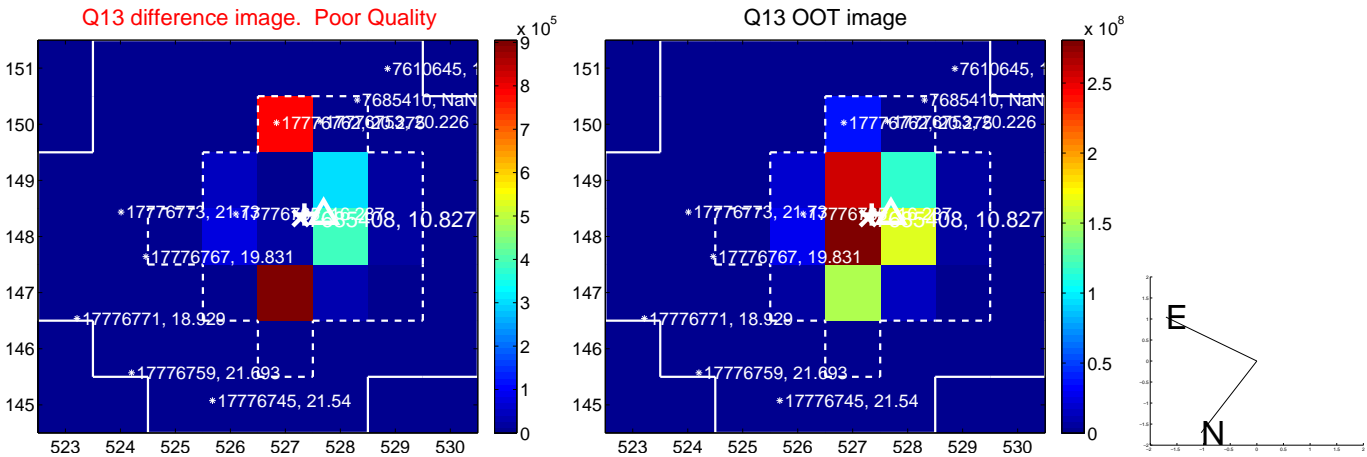
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



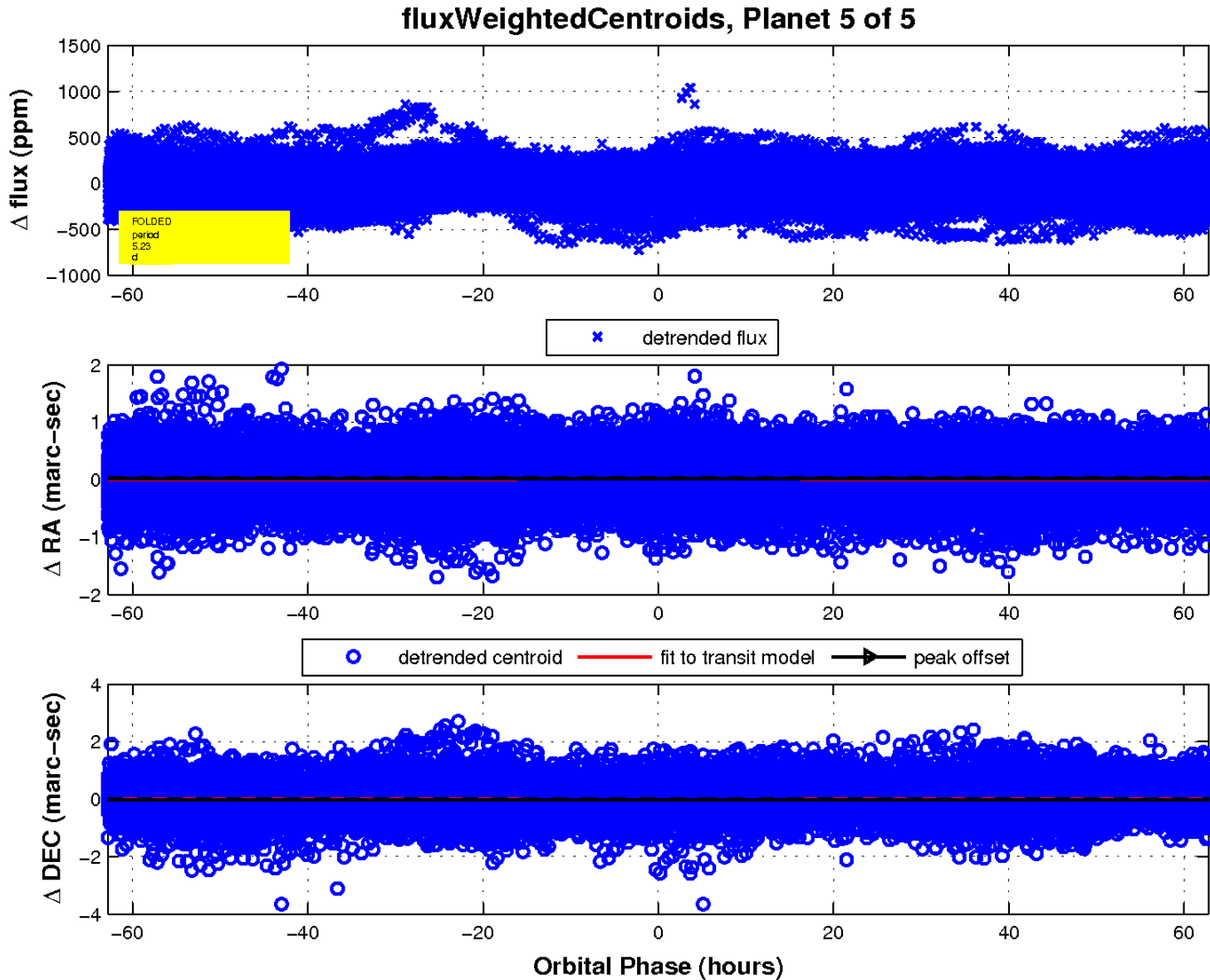
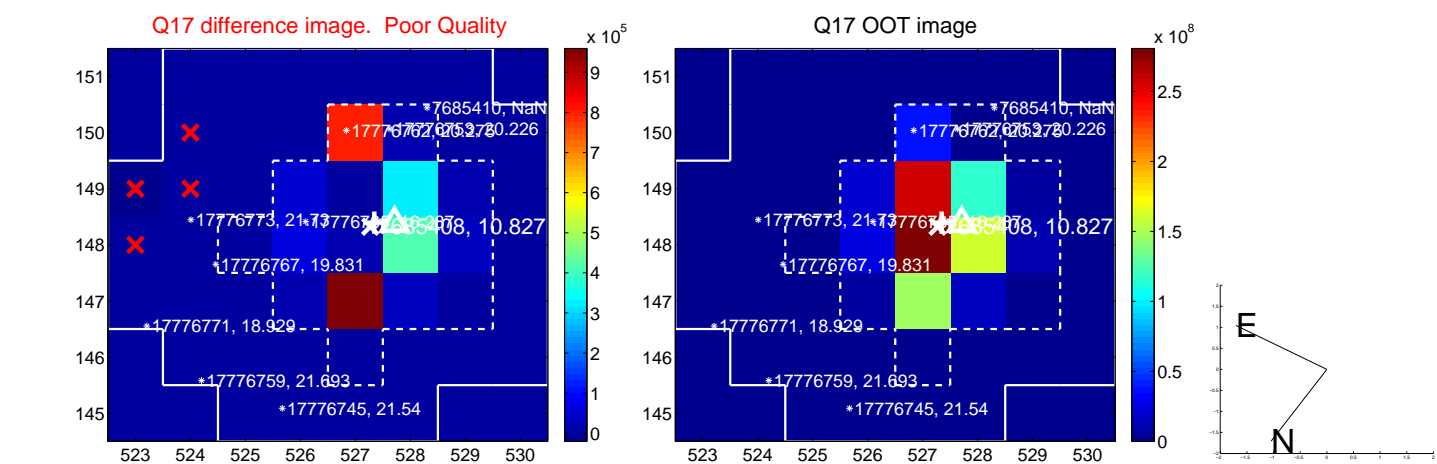
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

