

KIC 008257407

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})
008257407-01	OBS	1063.01	89.697868	176.308169	276750.7	3.500	6984.4	-1.0	1.58	6214	72.36	22.37
008257407-02	OBS	No	222.901762	314.931740	590.4	52.293	261.0	13.6	1.58	6214	4.07	6.65
008257407-03	OBS	No	443.782867	455.049172	9501.7	15.000	223.2	-1.0	1.58	6214	15.50	2.65
008257407-04	OBS	No	179.015393	267.781428	1790.7	23.561	19.6	21.0	1.58	6214	12.46	8.90
008257407-05	OBS	No	547.403904	354.640124	874.4	15.925	16.3	12.6	1.58	6214	8.88	2.01
008257407-06	OBS	No	472.103781	178.157406	415.3	9.000	11.7	-1.0	1.58	6214	3.24	2.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008257407-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS
008257407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008257407-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008257407-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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.

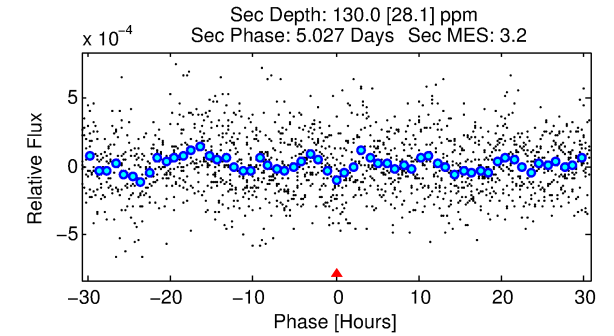
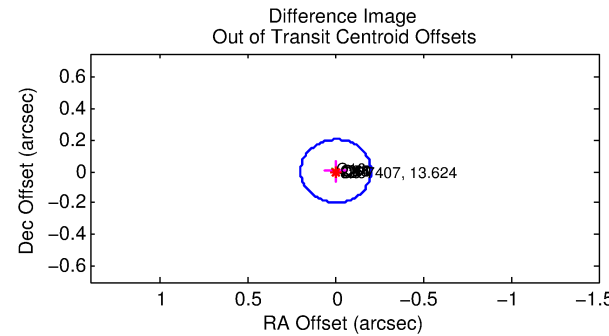
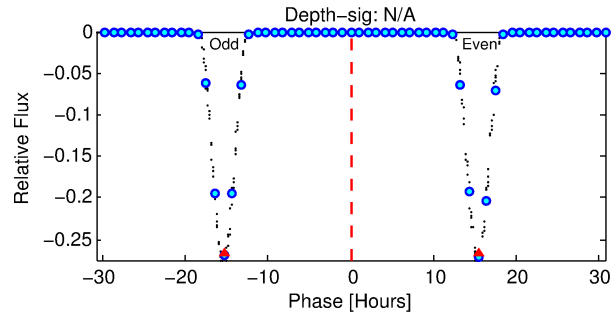
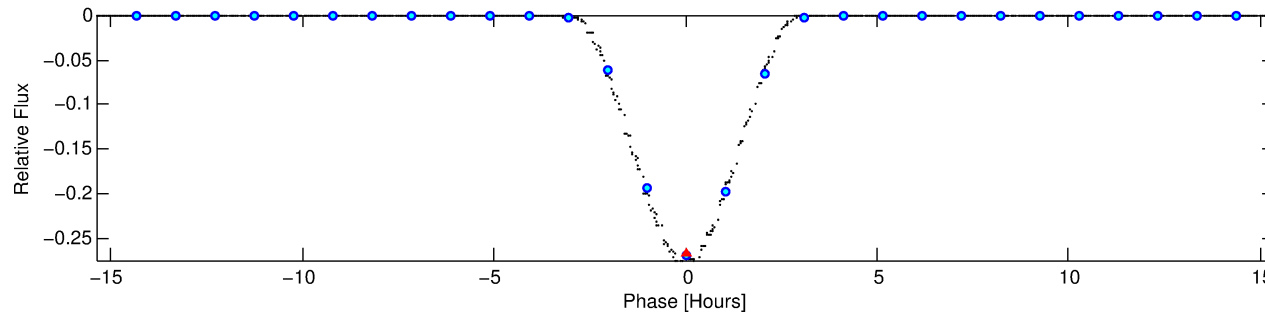
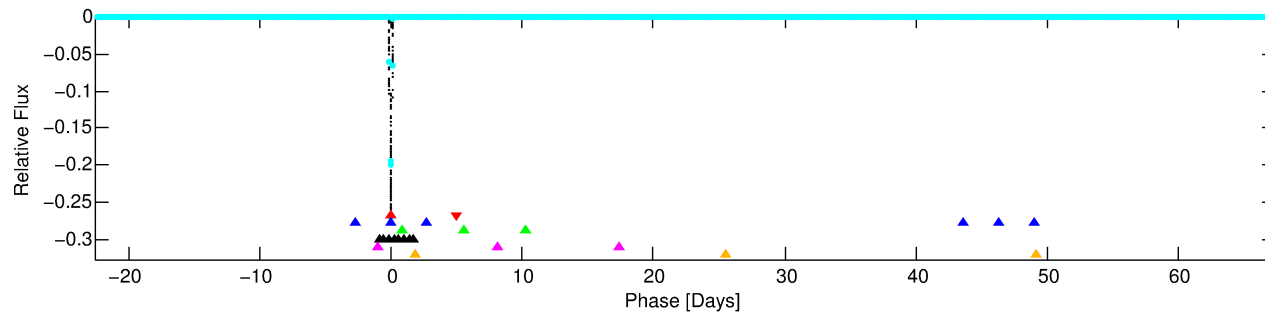
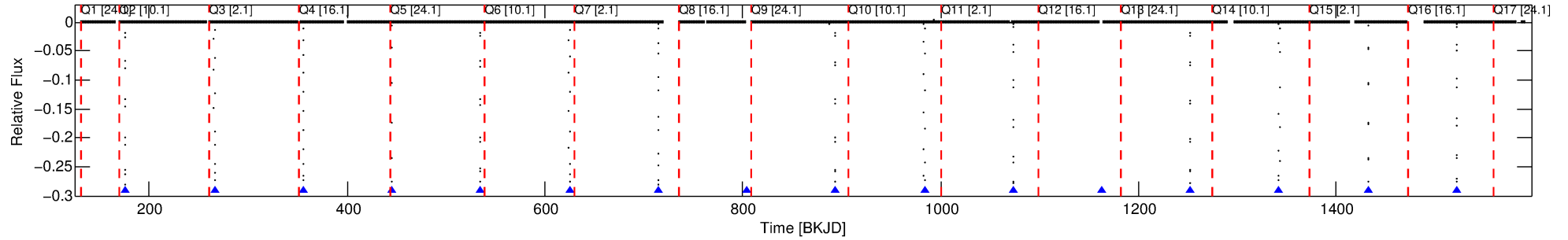
Ephemeris Match Information For 008257407-01

No Significant Match Found

DV One-Page Summary

KIC: 8257407 Candidate: 1 of 6 Period: 89.698 d
KOI: K01063.01 Corr: 0.790

Kp: 13.62 R*: 1.58 Rs Teff: 6214.0 K Logg: 4.02 Fe/H: -0.580



TPS TCE Results:

Period = 89.69787 d
Epoch = 176.3082 BKJD

DV fit results are unavailable

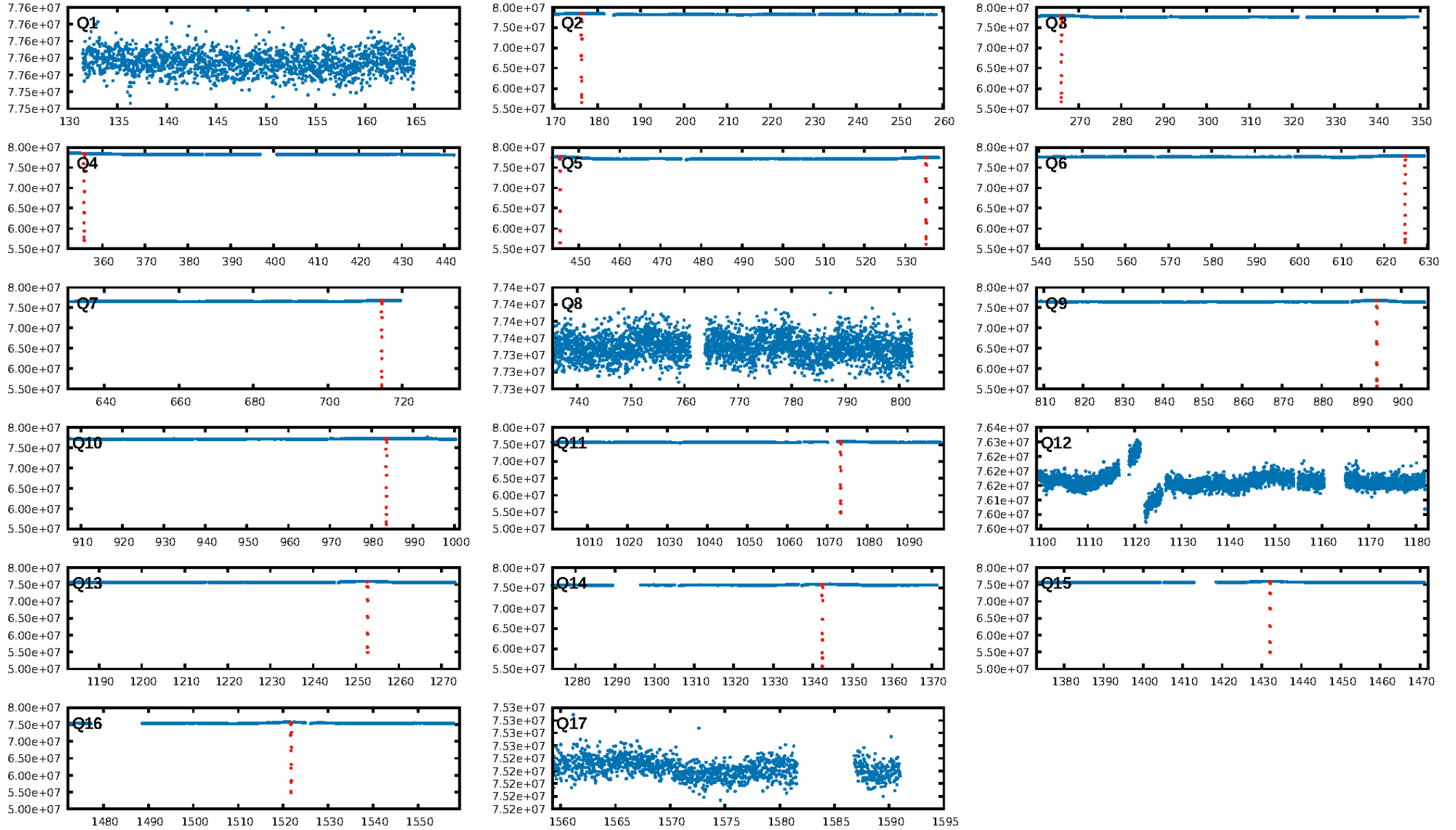
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [89.99σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: 3.236
Centroid-sig: 0.0%
Centroid-so: 0.112 arcsec [102.23σ]
OotOffset-rm: 0.005 arcsec [0.07σ]
KicOffset-rm: 0.090 arcsec [1.30σ]
OotOffset-st: 4/2/2/3 [11]
KicOffset-st: 4/2/2/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 0.73 [8/11]

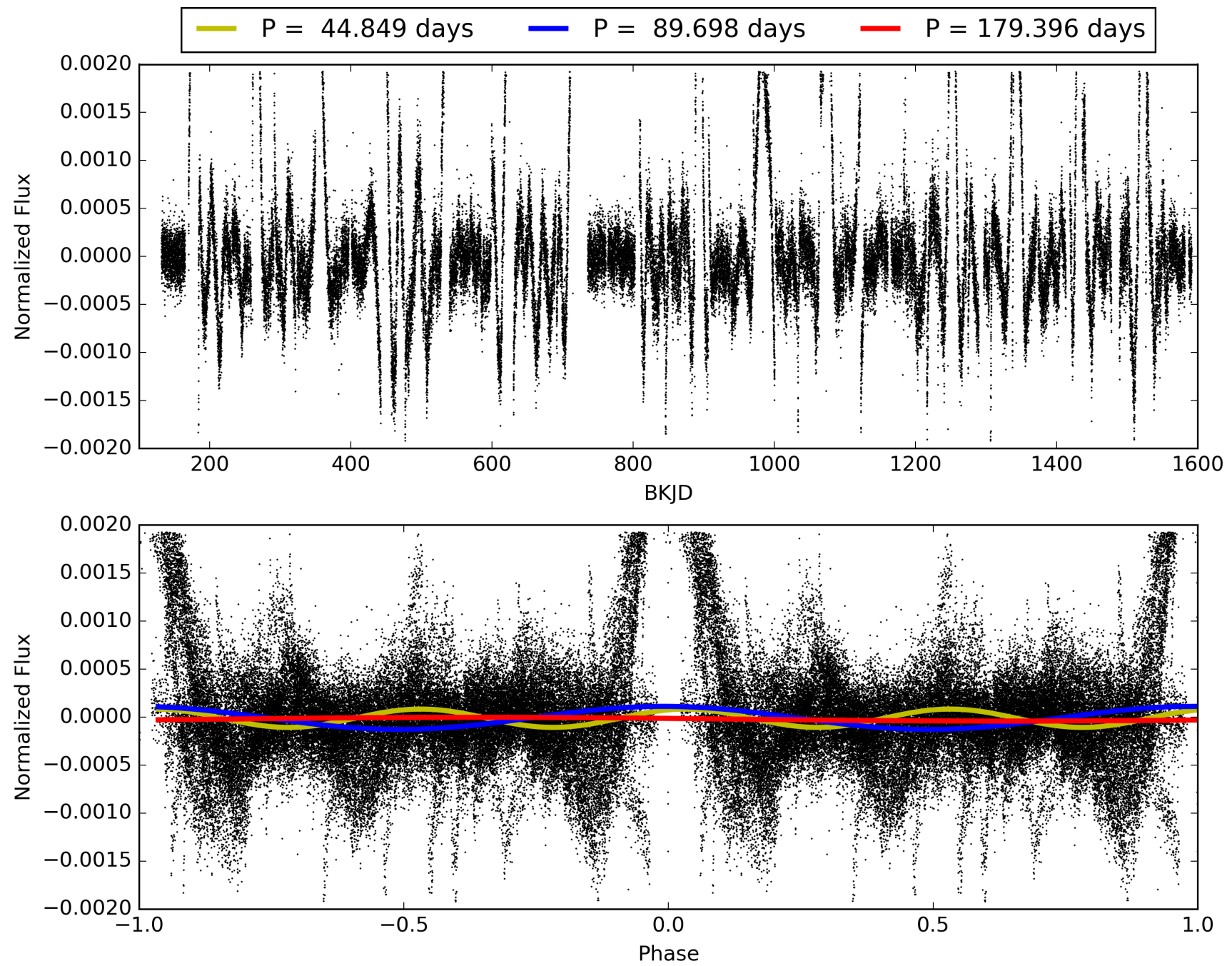
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:28:41 Z

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

TCE 008257407-01, PDC Light Curves

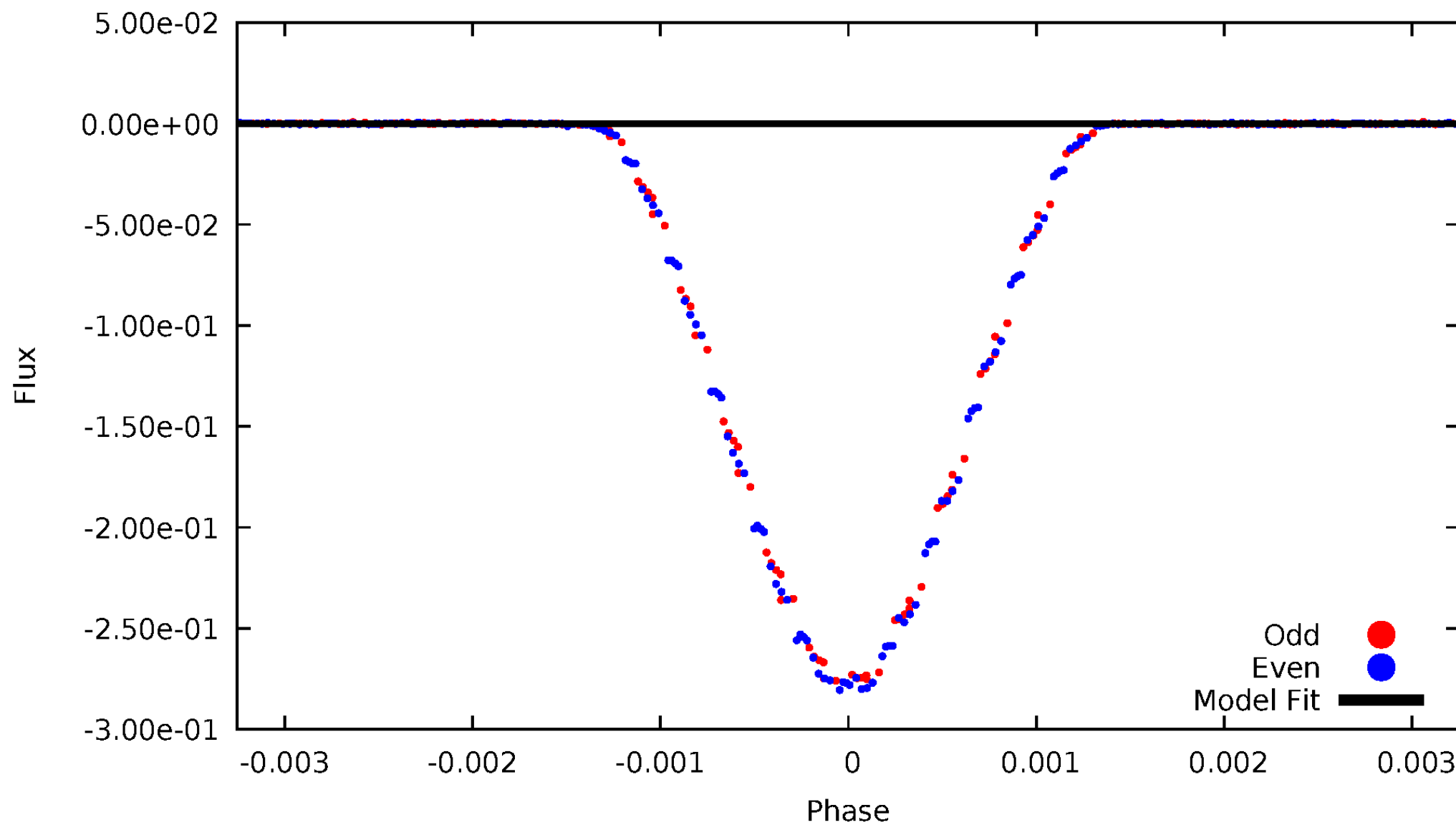


TCE 008257407-01



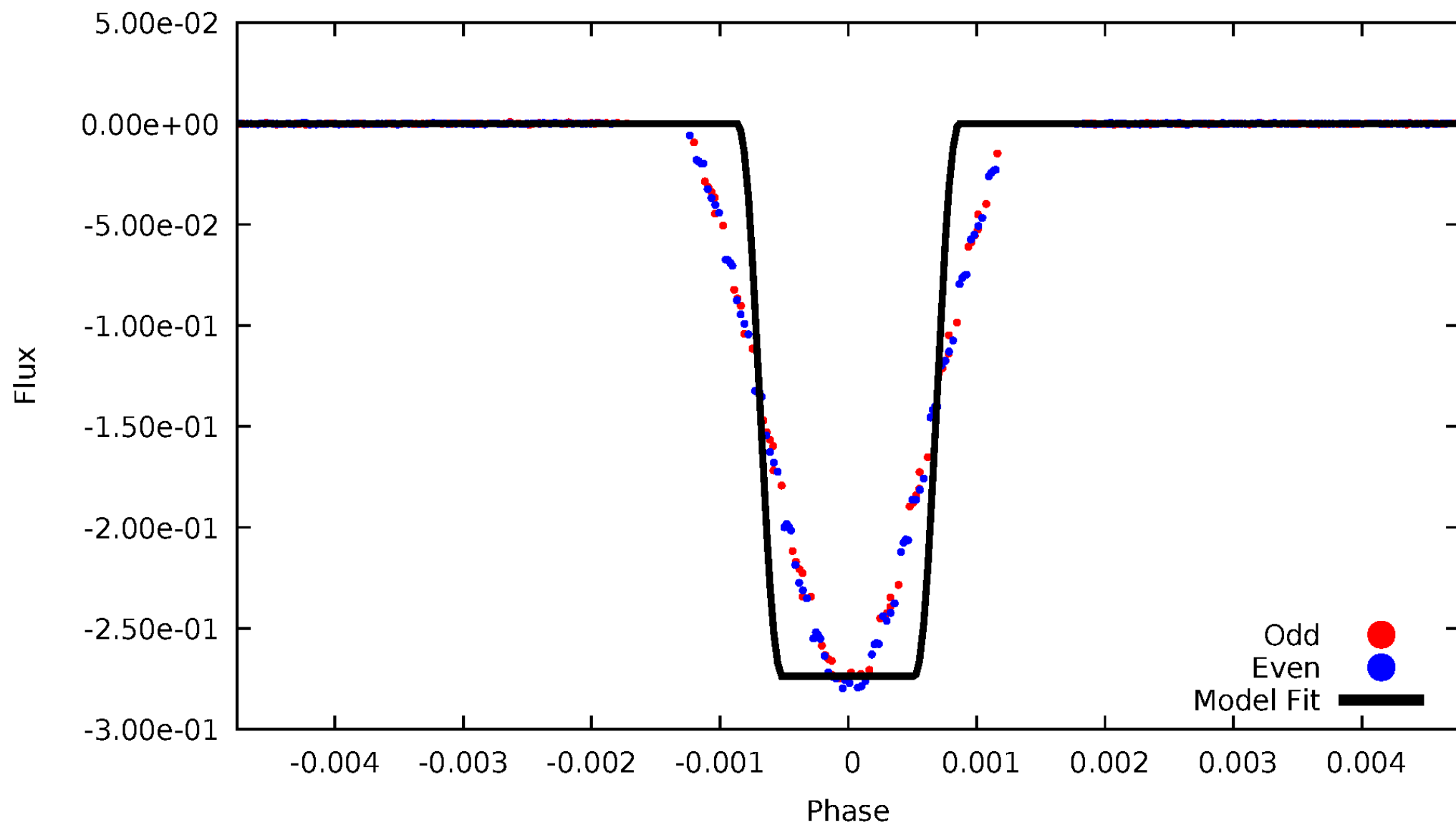
DV Odd/Even

TCE 008257407-01



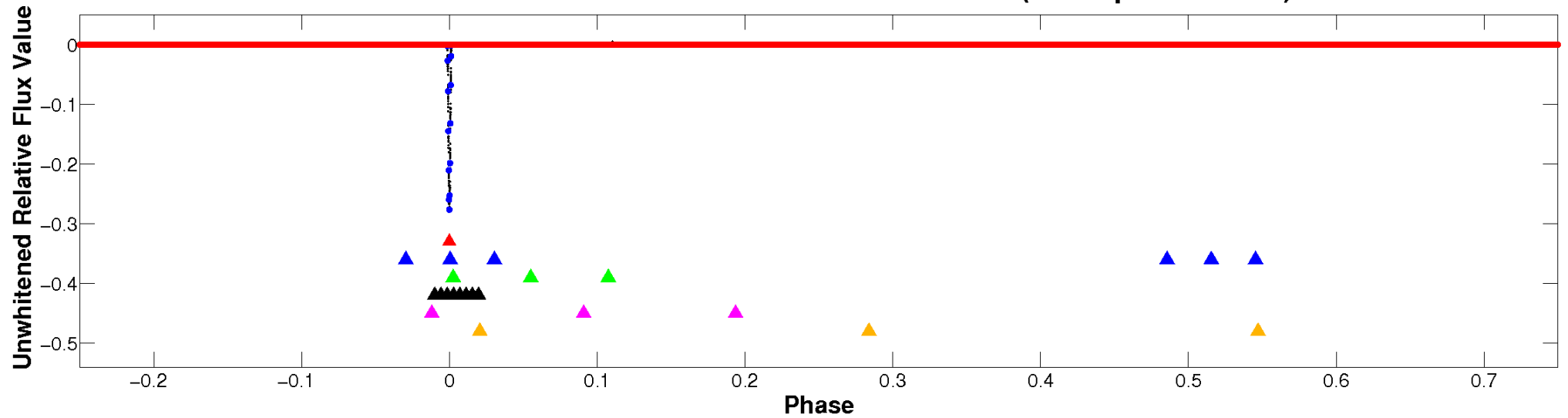
ALT Odd/Even

TCE 008257407-01

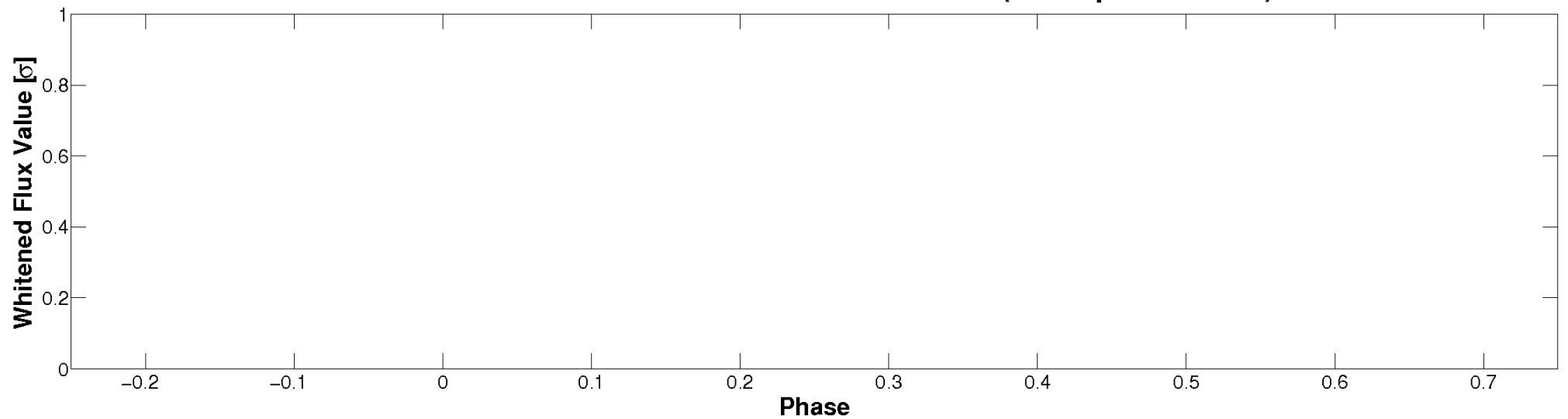


Non-Whitened Vs. Whitened Light Curve

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

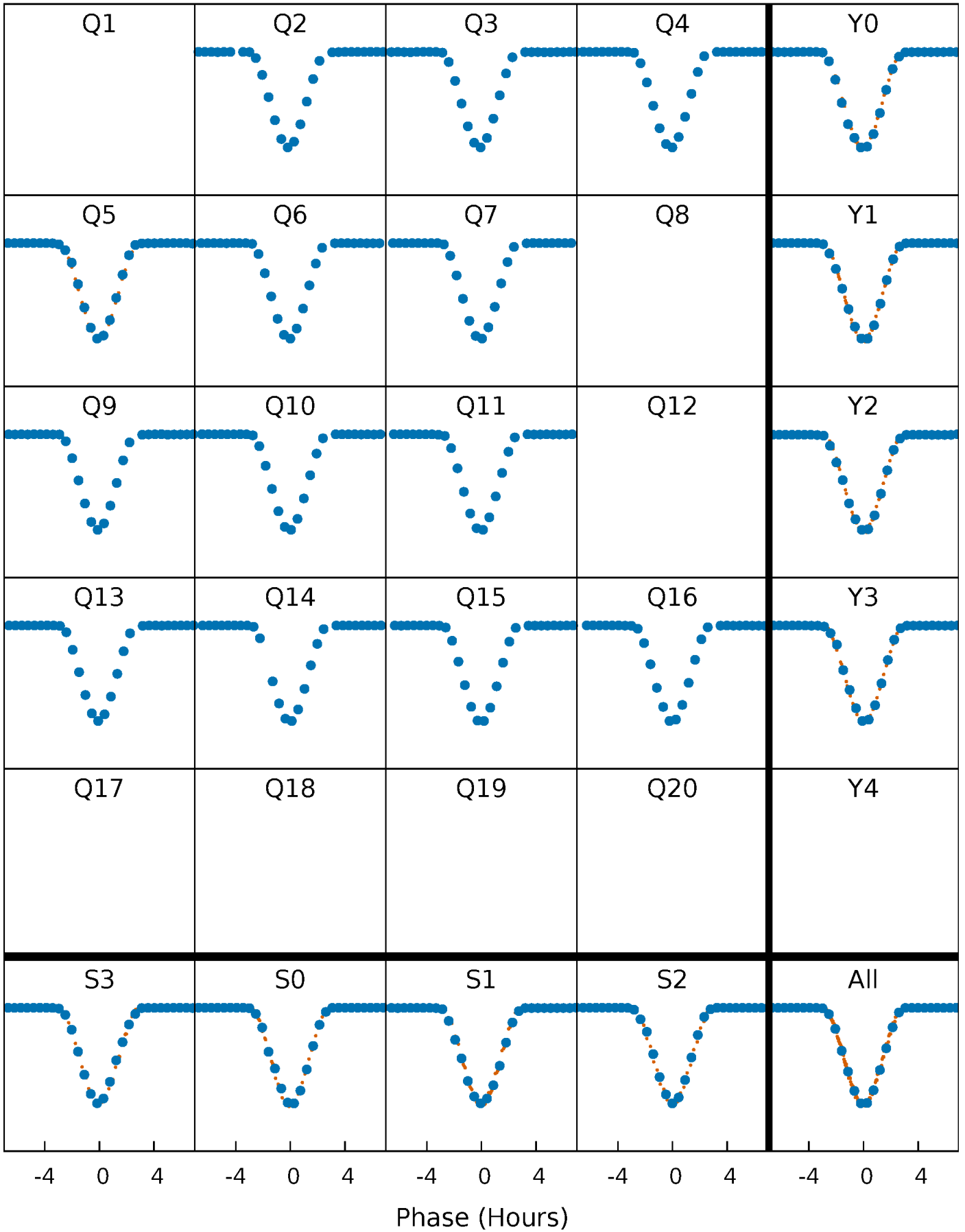


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



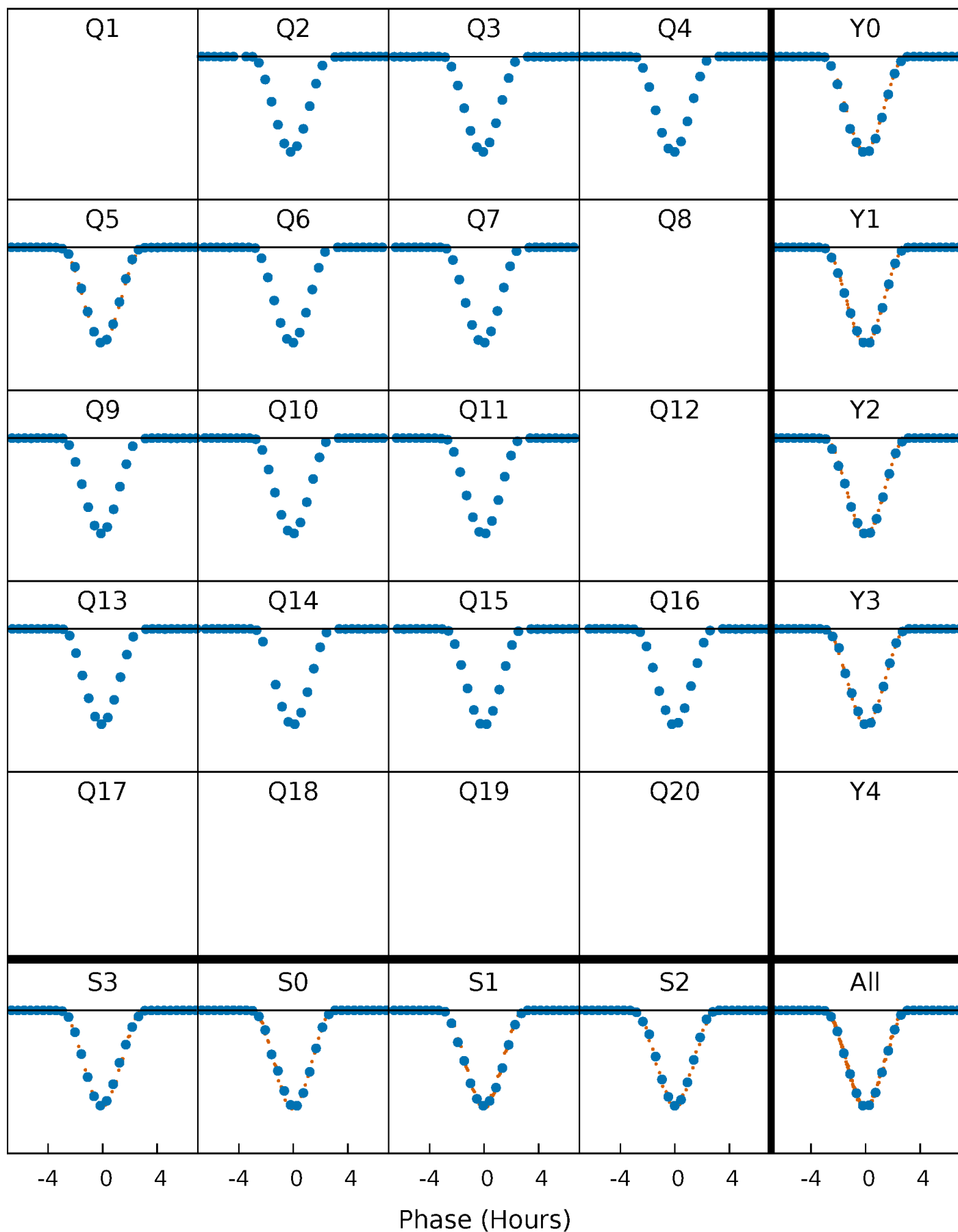
PDC Quarter-Phased Transit Curves

TCE 008257407-01 P= 89.697868 Days $T_0=176.308168$ (BKJD)



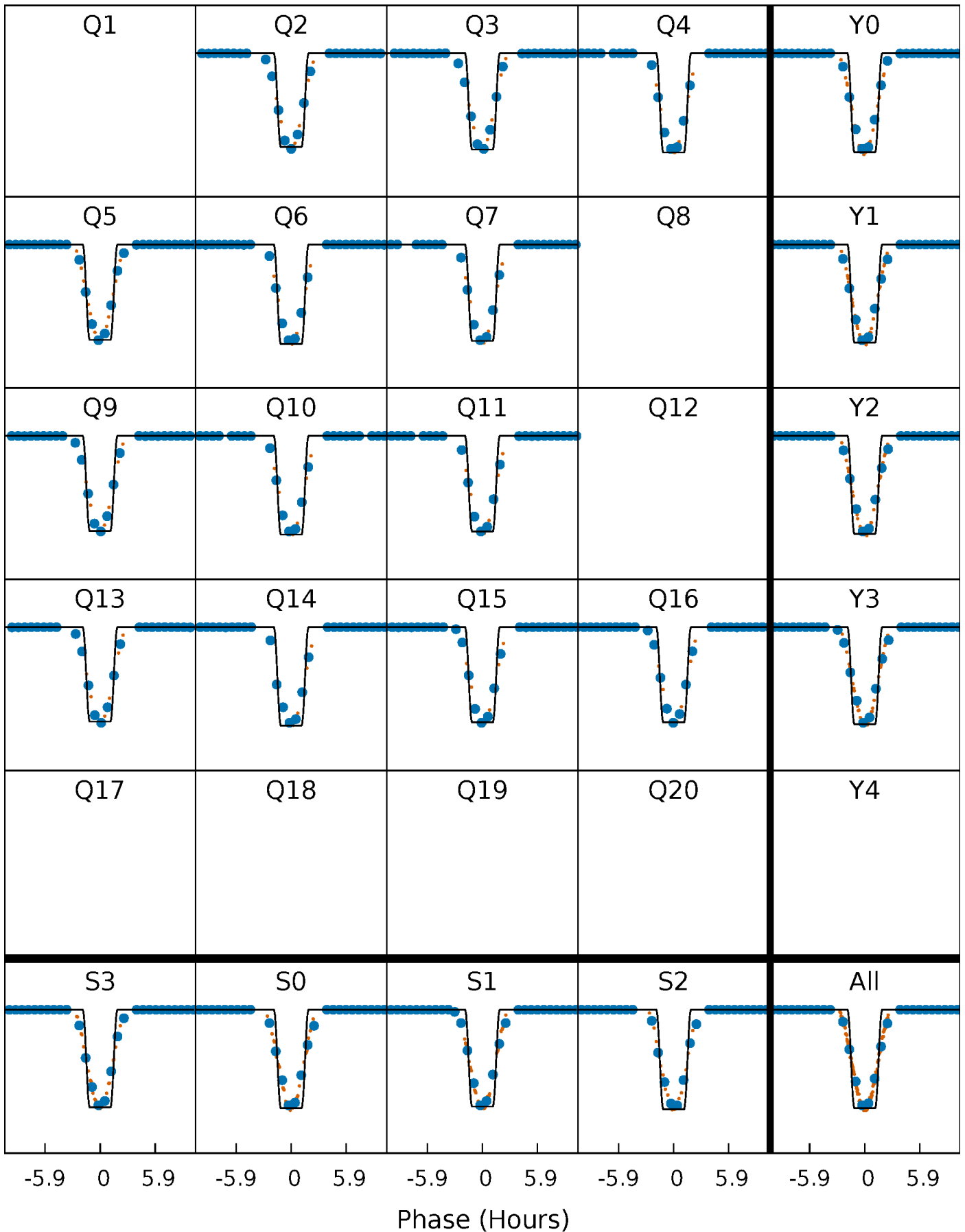
DV Quarter-Phased Transit Curves

TCE 008257407-01 P= 89.697868 Days $T_0=176.308168$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

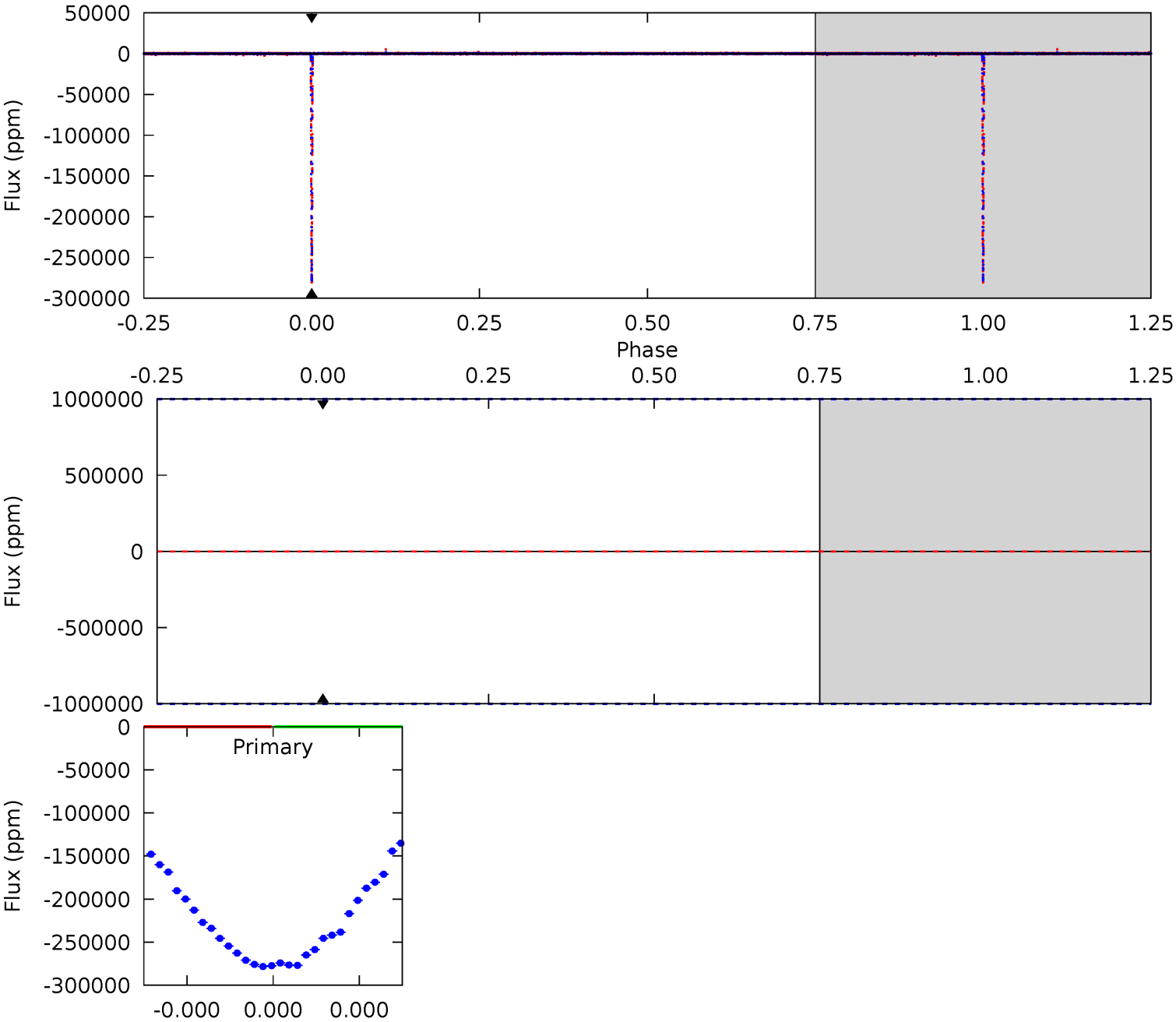
TCE 008257407-01 P= 89.697868 Days $T_0=176.307988$ (BKJD)



DV Model-Shift Uniqueness Test

008257407-01, P = 89.697868 Days, E = 86.610300 Days

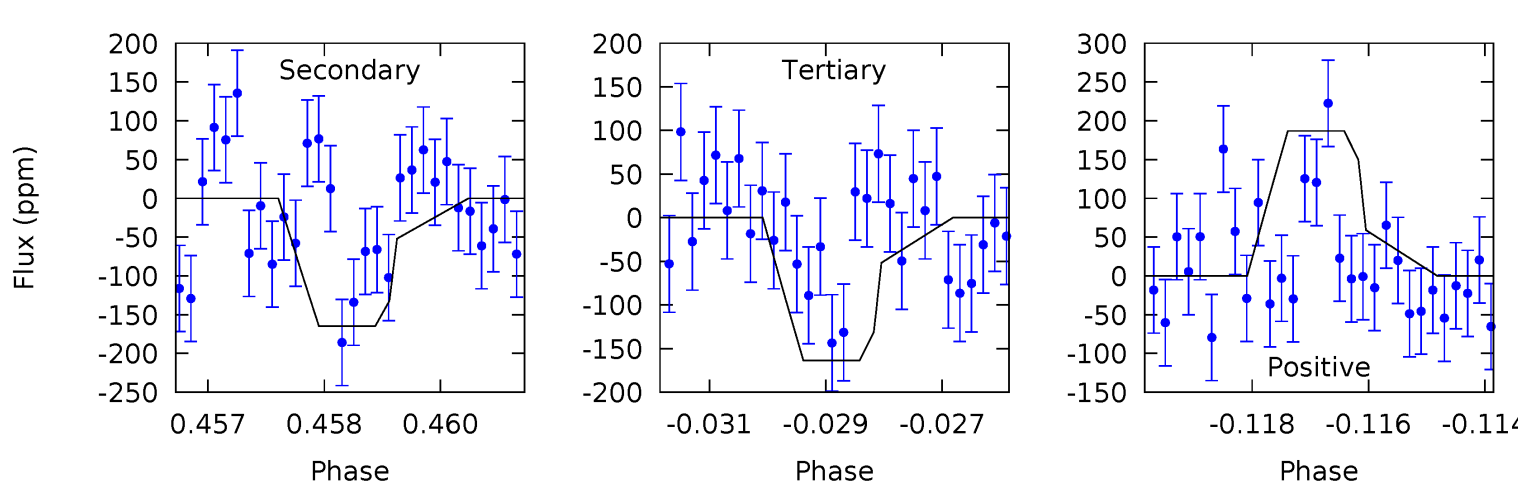
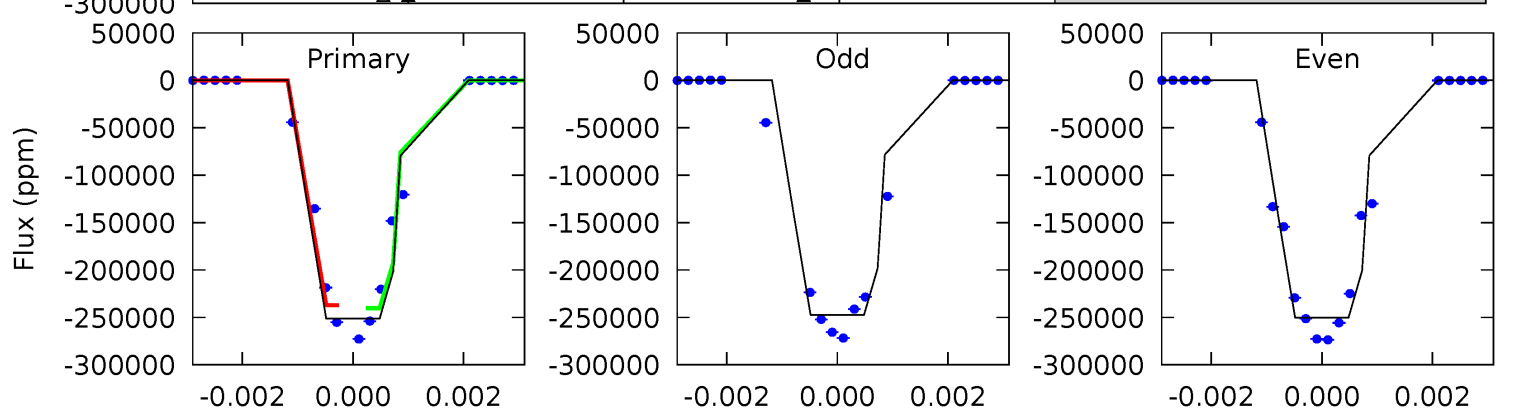
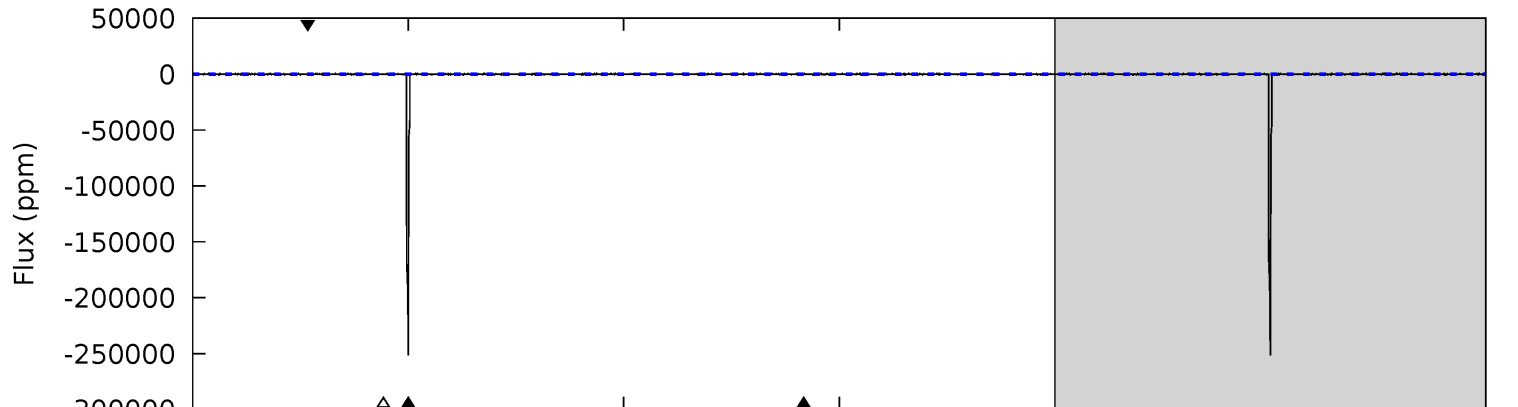
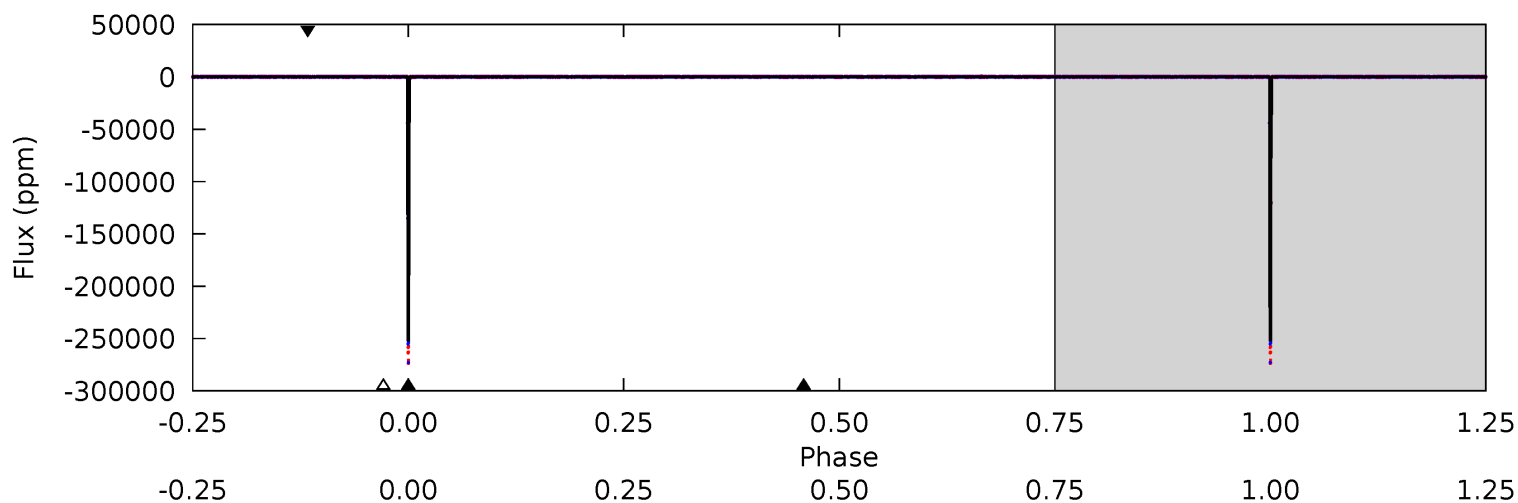
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008257407-01, P = 89.697868 Days, E = 86.610120 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6810	4.46	4.43	5.07	5.36	3.14	42.0	6806	6805	0.03	-0.60	50.8	1.00	0.00	0



Stellar Parameters For KIC 008257407

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6214^{+187}_{-206}	$4.021^{+0.392}_{-0.168}$	$-0.580^{+0.300}_{-0.300}$	$1.583^{+0.415}_{-0.622}$	$0.959^{+0.139}_{-0.126}$	$0.341^{+1.024}_{-0.151}$
	+3%/-3%	+10%/-4%	+52%/-52%	+26%/-39%	+14%/-13%	+301%/-44%
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 008257407-01 / KOI 1063.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$69.83^{+20.68}_{-19.58}$	765^{+63}_{-78}	2641^{+3005}_{-8013}	21^{+2022}_{-1659}
Alt.	-165 ± 37	$84.08^{+25.06}_{-21.23}$	762^{+64}_{-89}	1946^{+114}_{-103}	$1.860^{+1.869}_{-0.789}$

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 $A_{obs} \gg 1.0$

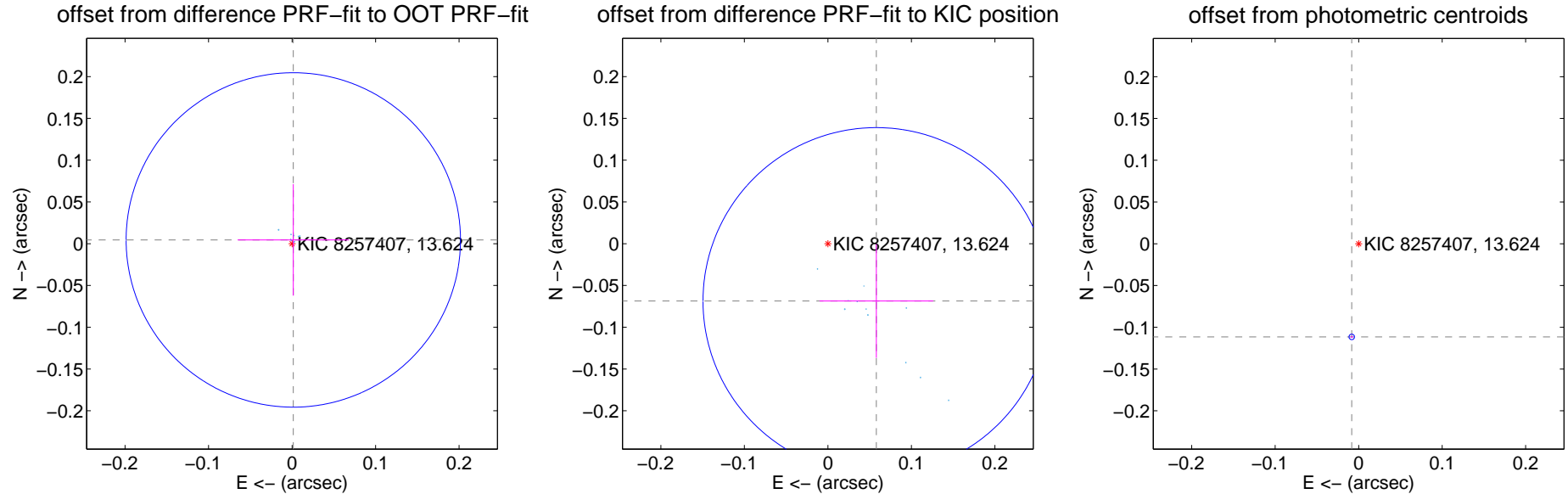
DV Centroid Data

Supplemental centroid analysis for 008257407-01. Kepler magnitude: 13.62. Transit SNR -1.00

There are 11 quarters with good PRF difference image offsets

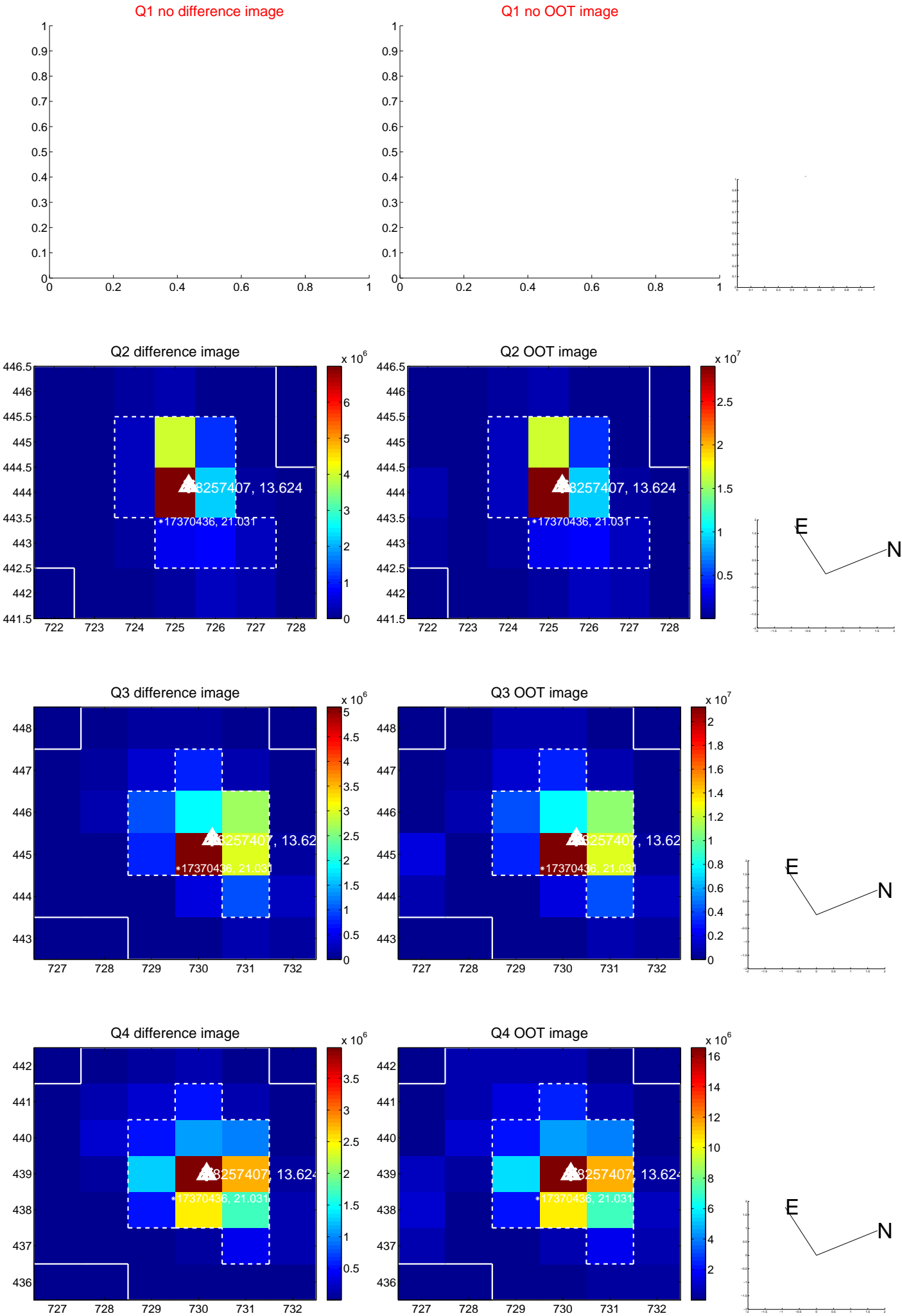
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.005 ± 0.067	0.07	-0.001 ± 0.067	0.004 ± 0.067
PRF-fit source offset from KIC position	0.090 ± 0.069	1.30	-0.058 ± 0.068	-0.069 ± 0.068
photometric centroid source offset	0.11 ± 0.00	102.23	0.01 ± 0.00	-0.11 ± 0.00

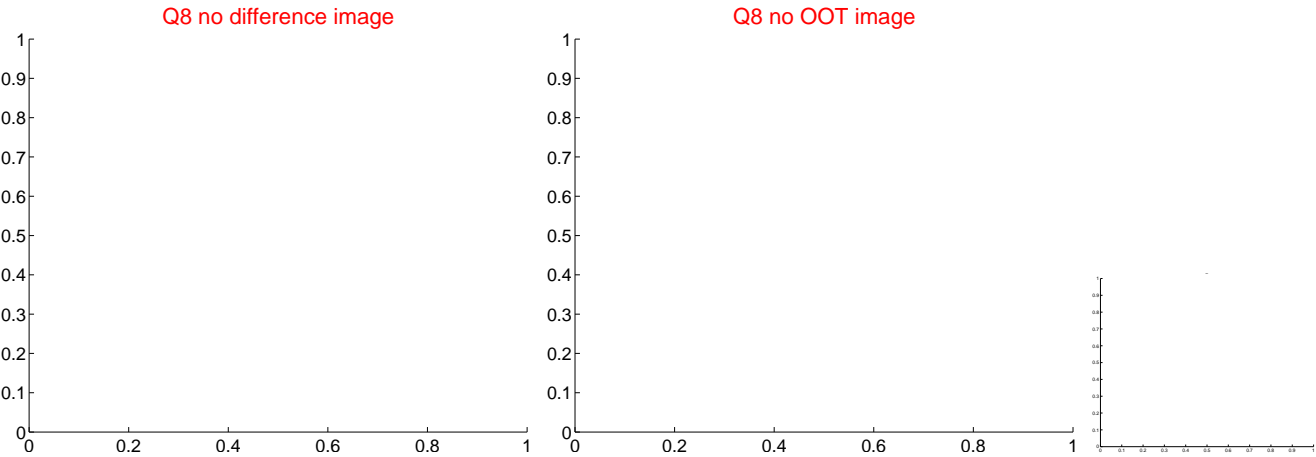
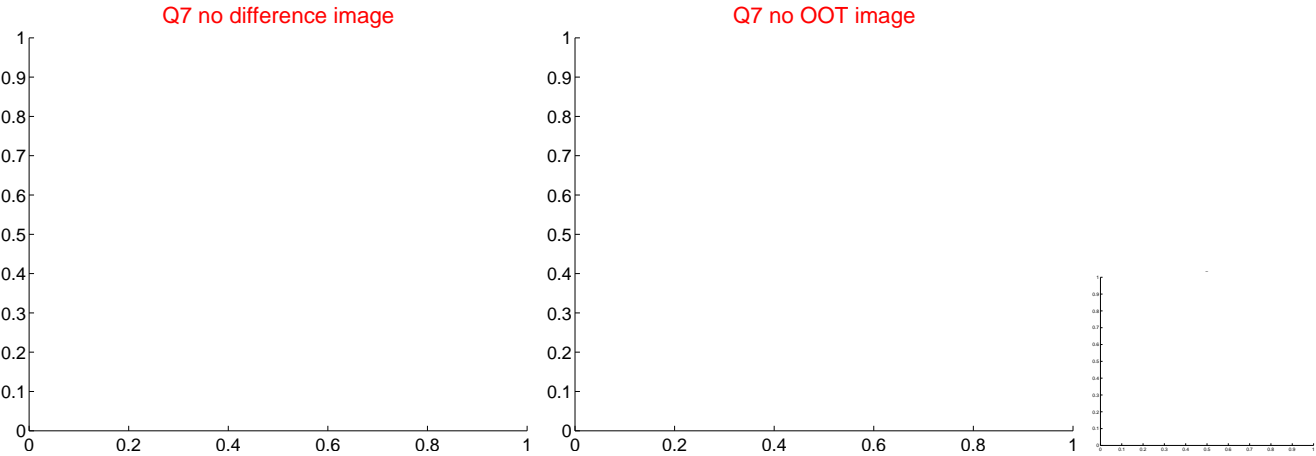
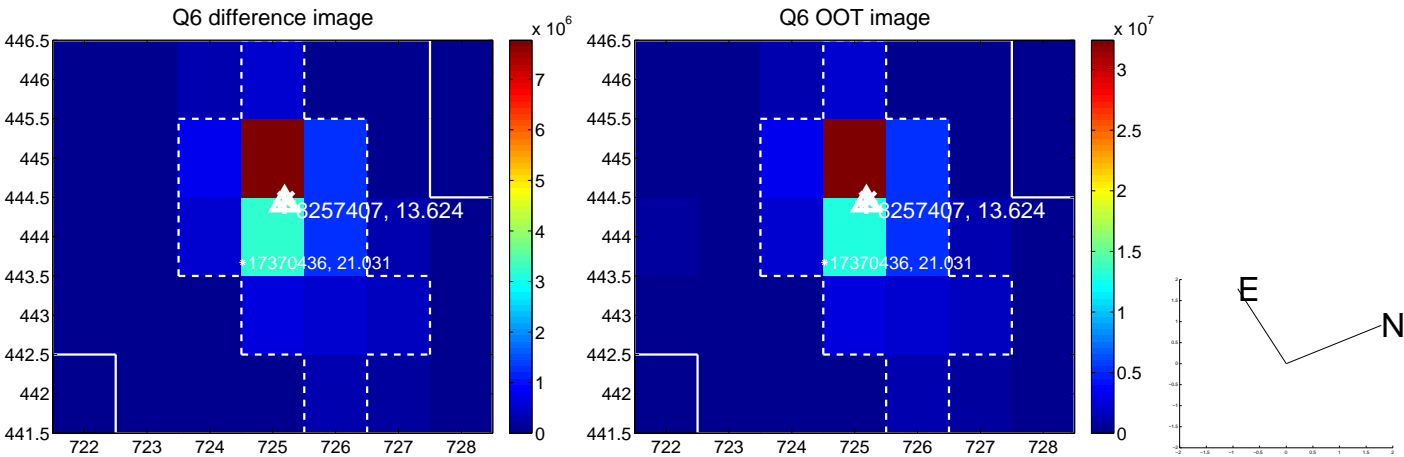
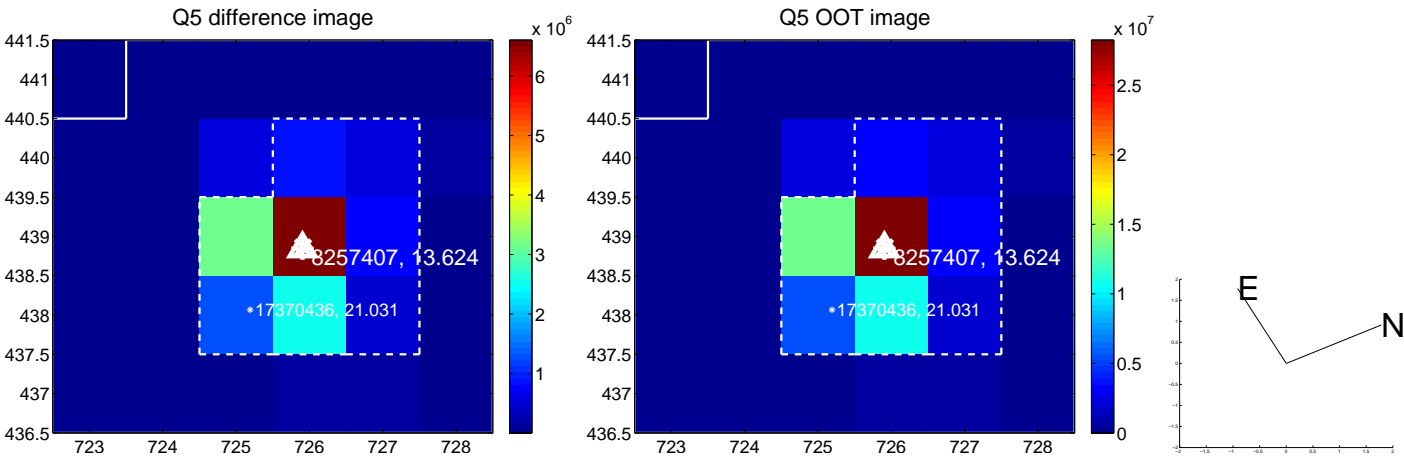


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

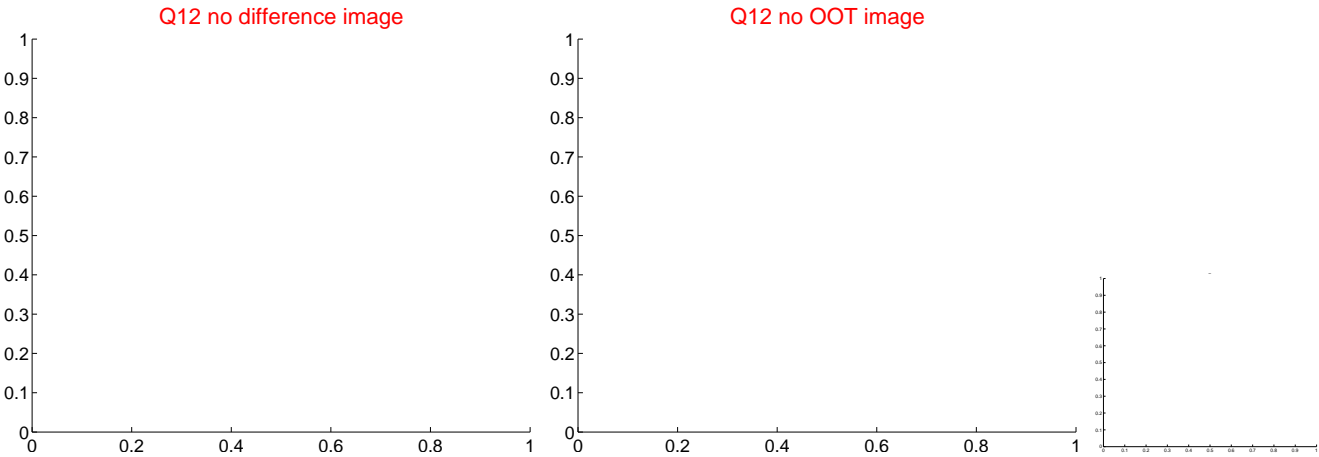
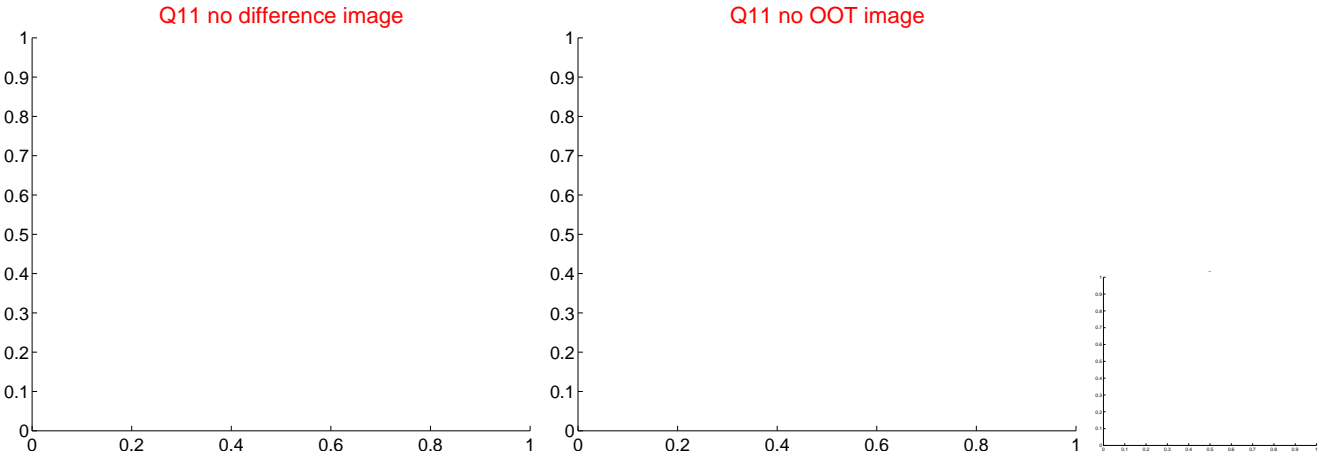
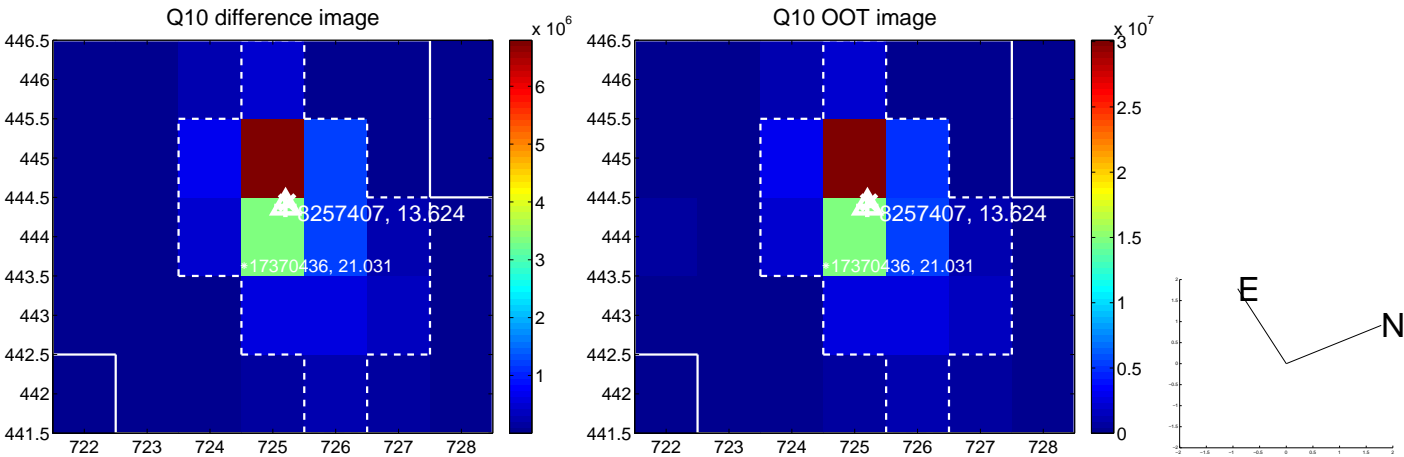
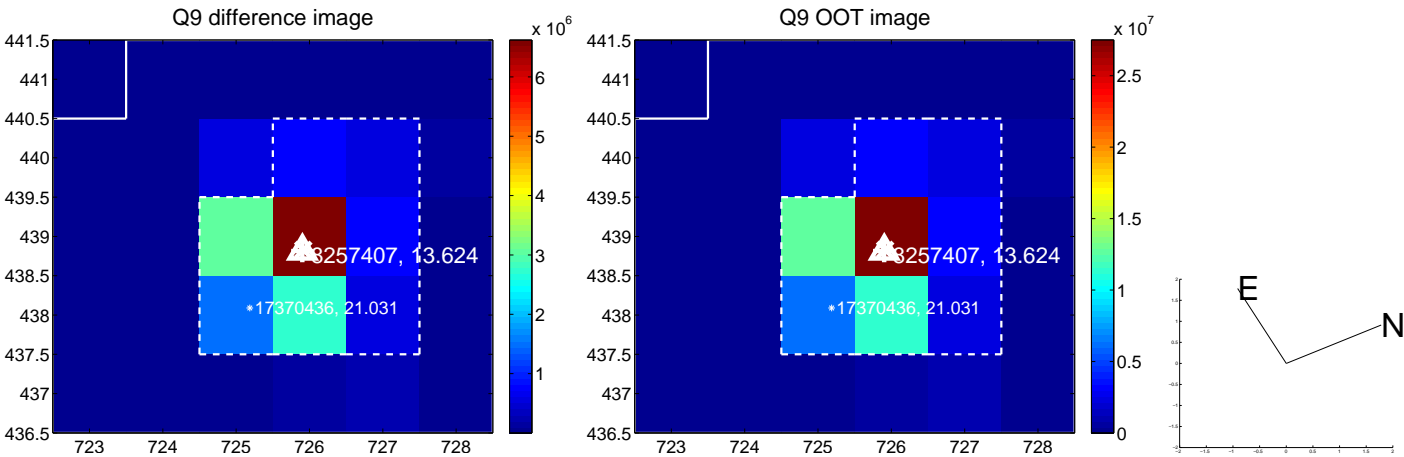
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



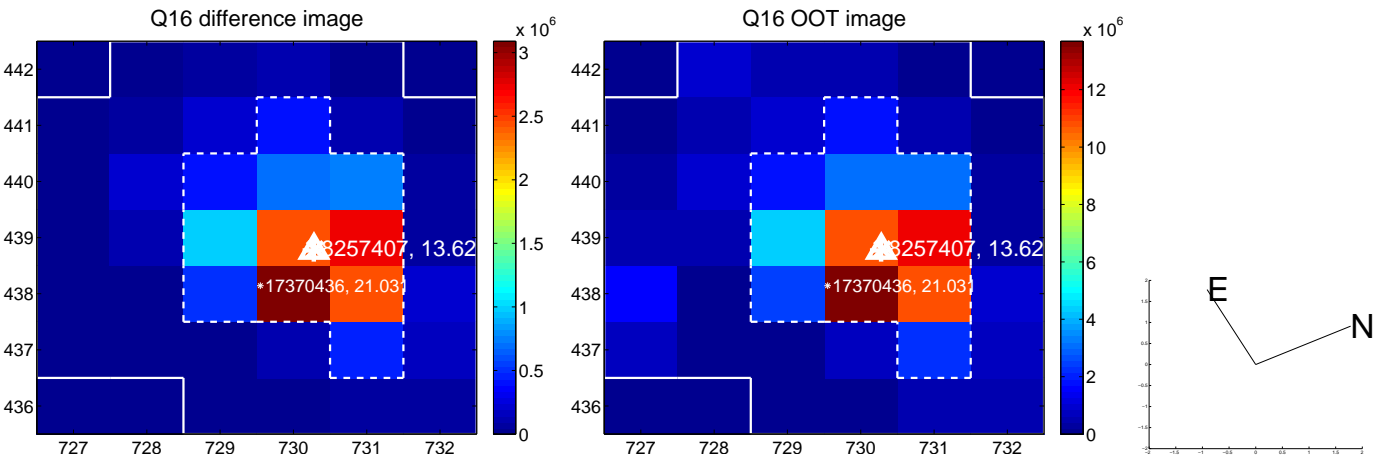
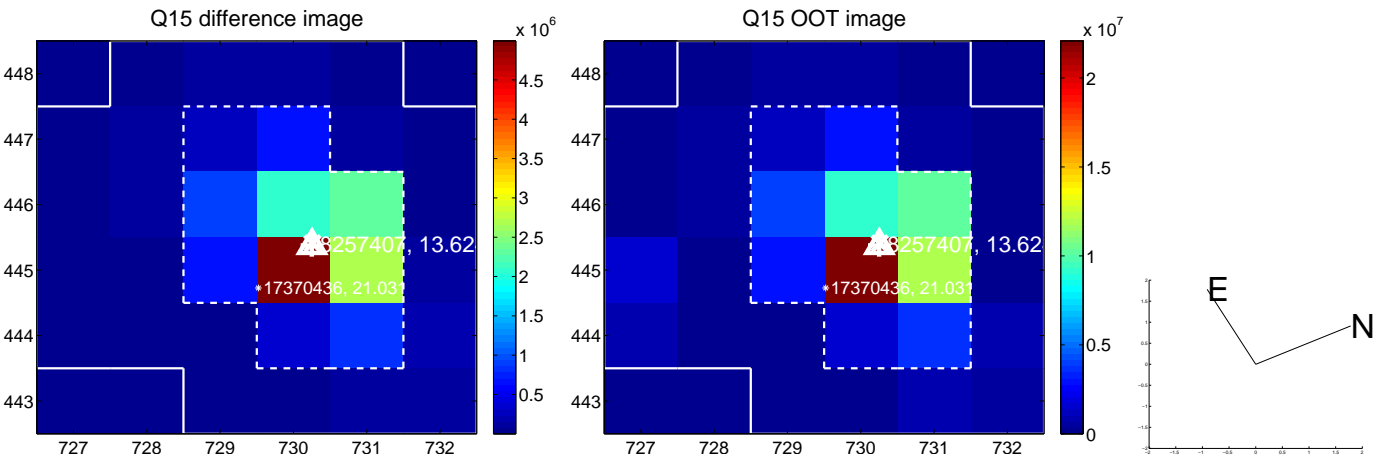
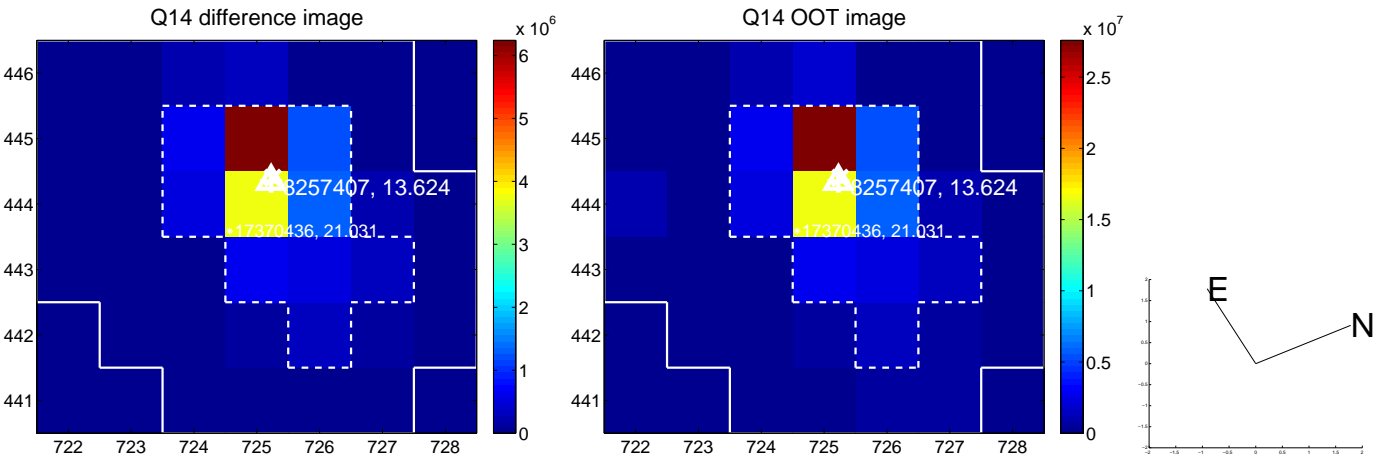
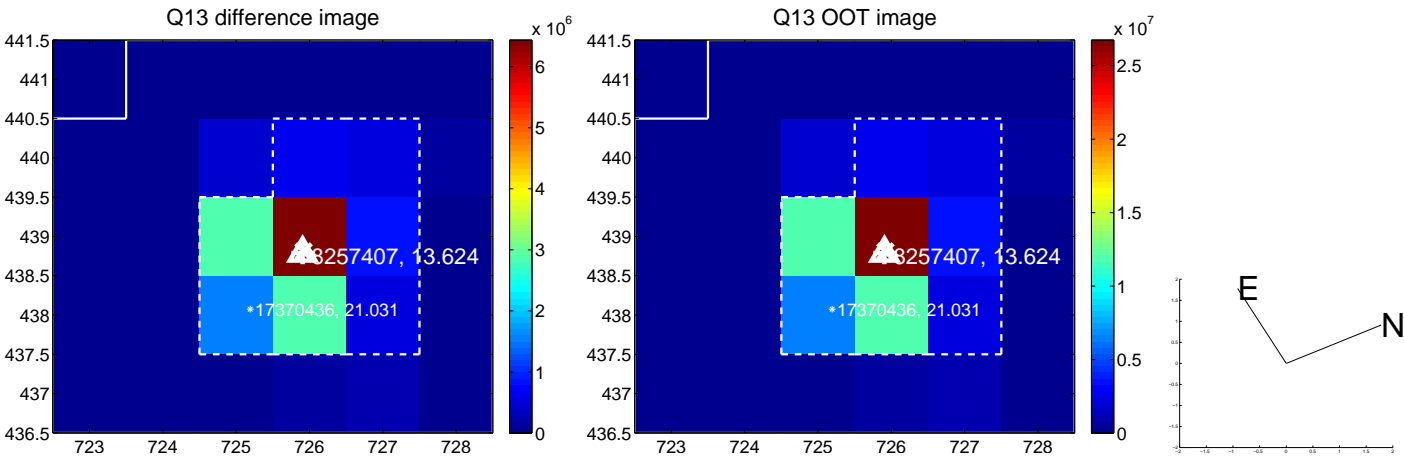
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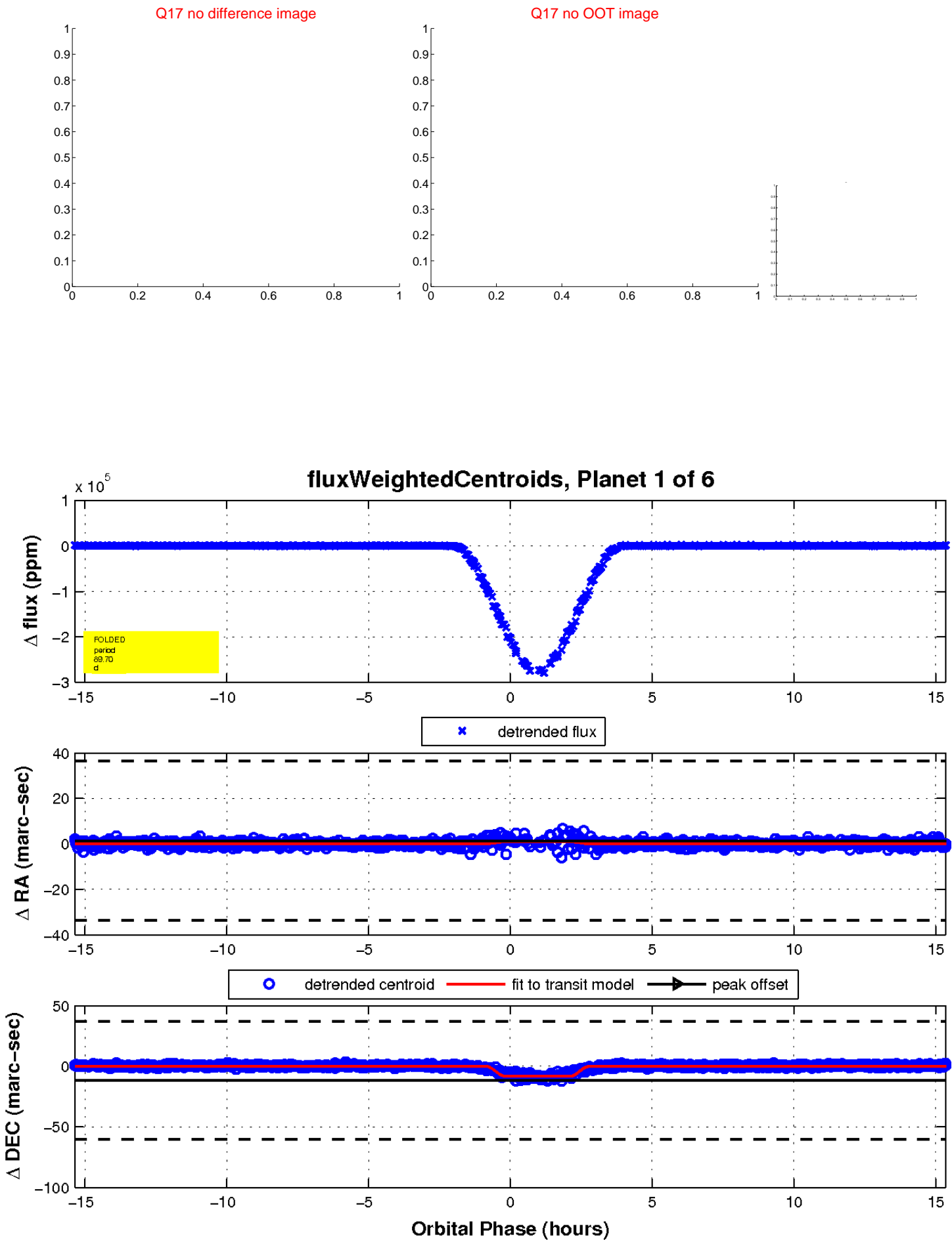
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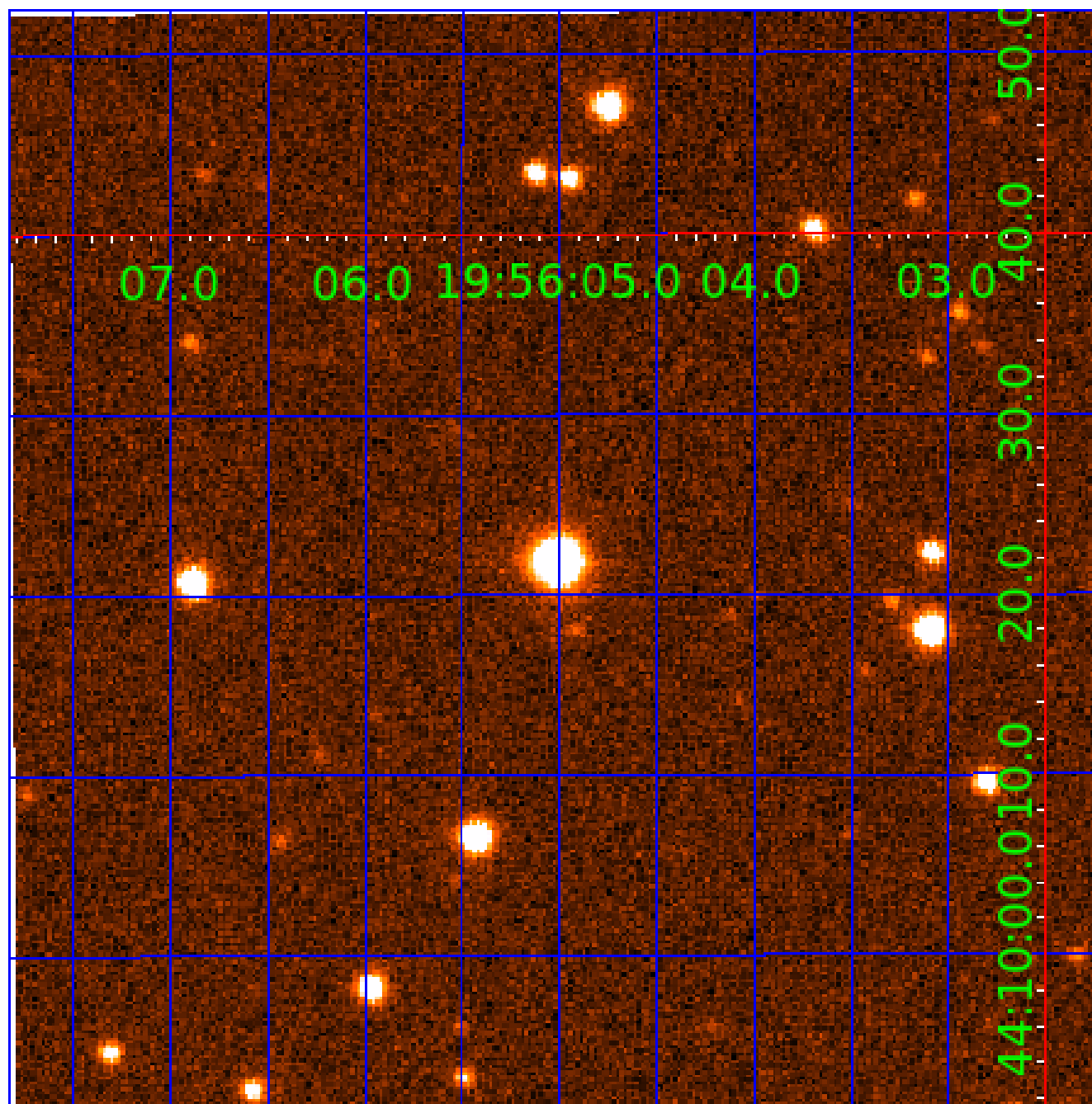


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008257407

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

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008257407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008257407-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008257407-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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.

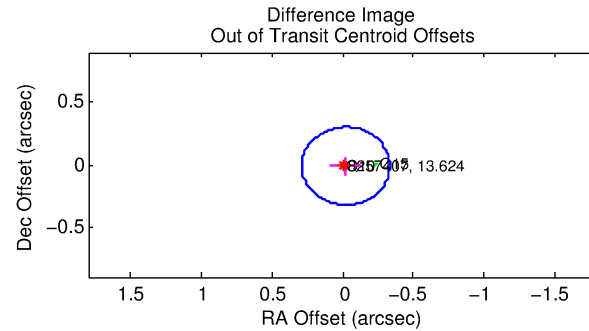
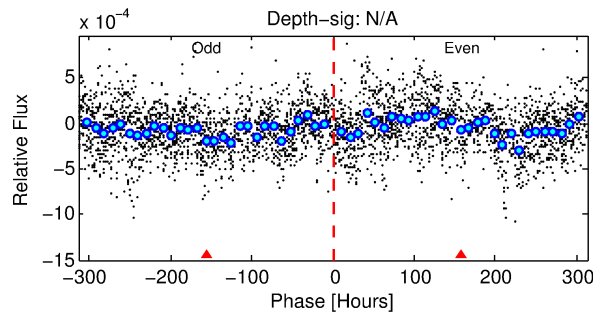
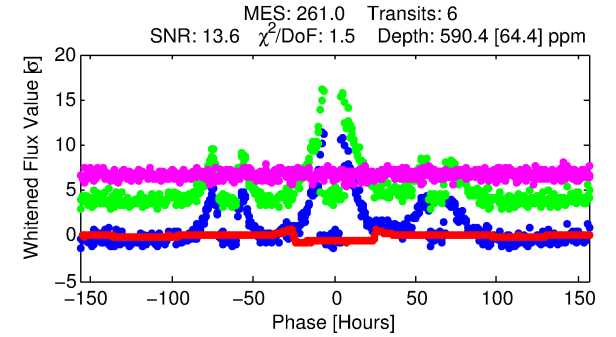
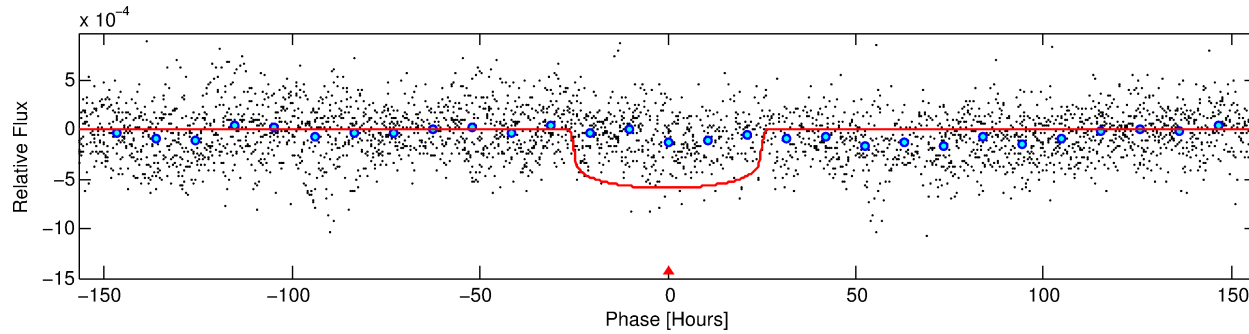
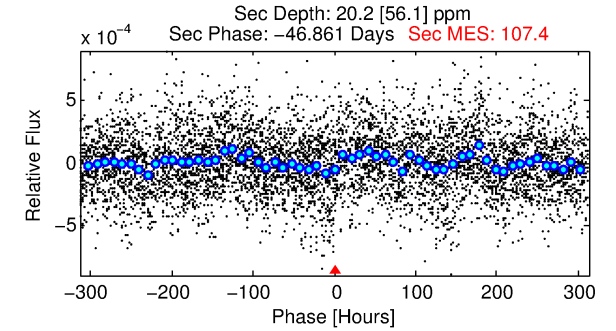
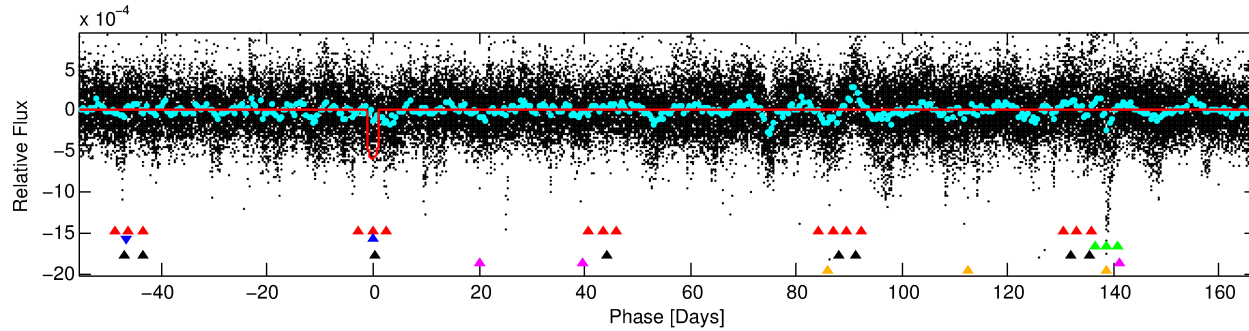
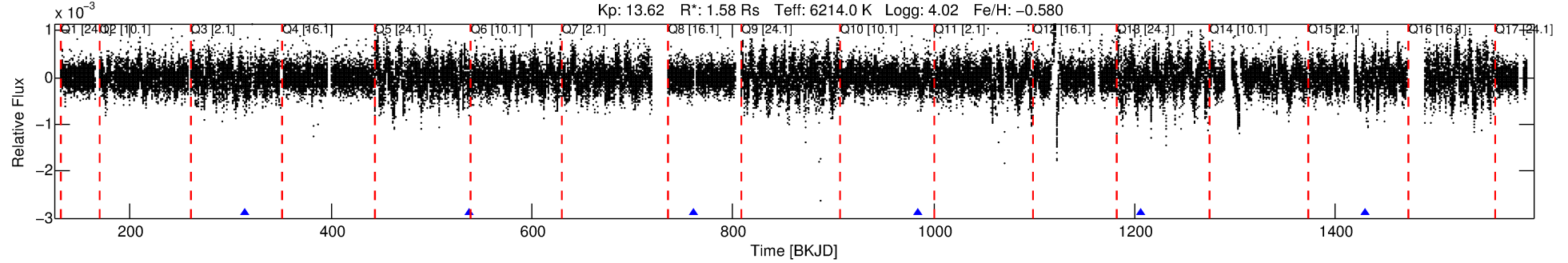
Ephemeris Match Information For 008257407-02

No Significant Match Found

DV One-Page Summary

KIC: 8257407 Candidate: 2 of 6 Period: 222.902 d
KOI: K01063 Corr: No Ephemeris Match

Kp: 13.62 R*: 1.58 Rs Teff: 6214.0 K Logg: 4.02 Fe/H: -0.580



DV Fit Results:

Period = 222.90176 [0.00914] d
Epoch = 314.9317 [0.0293] BKJD
Rp/R* = 0.0236 [0.0018]
a/R* = 25.56 [7.01]
b = 0.66 [0.24]
Seff = 6.65 [4.45]
Teq = 409 [69] K
Rp = 4.07 [1.63] Re
a = 0.7097 [0.2831] AU
Ag = 336.71 [963.41] [0.35σ]
Teffp = 2712 [1890] K [1.22σ]

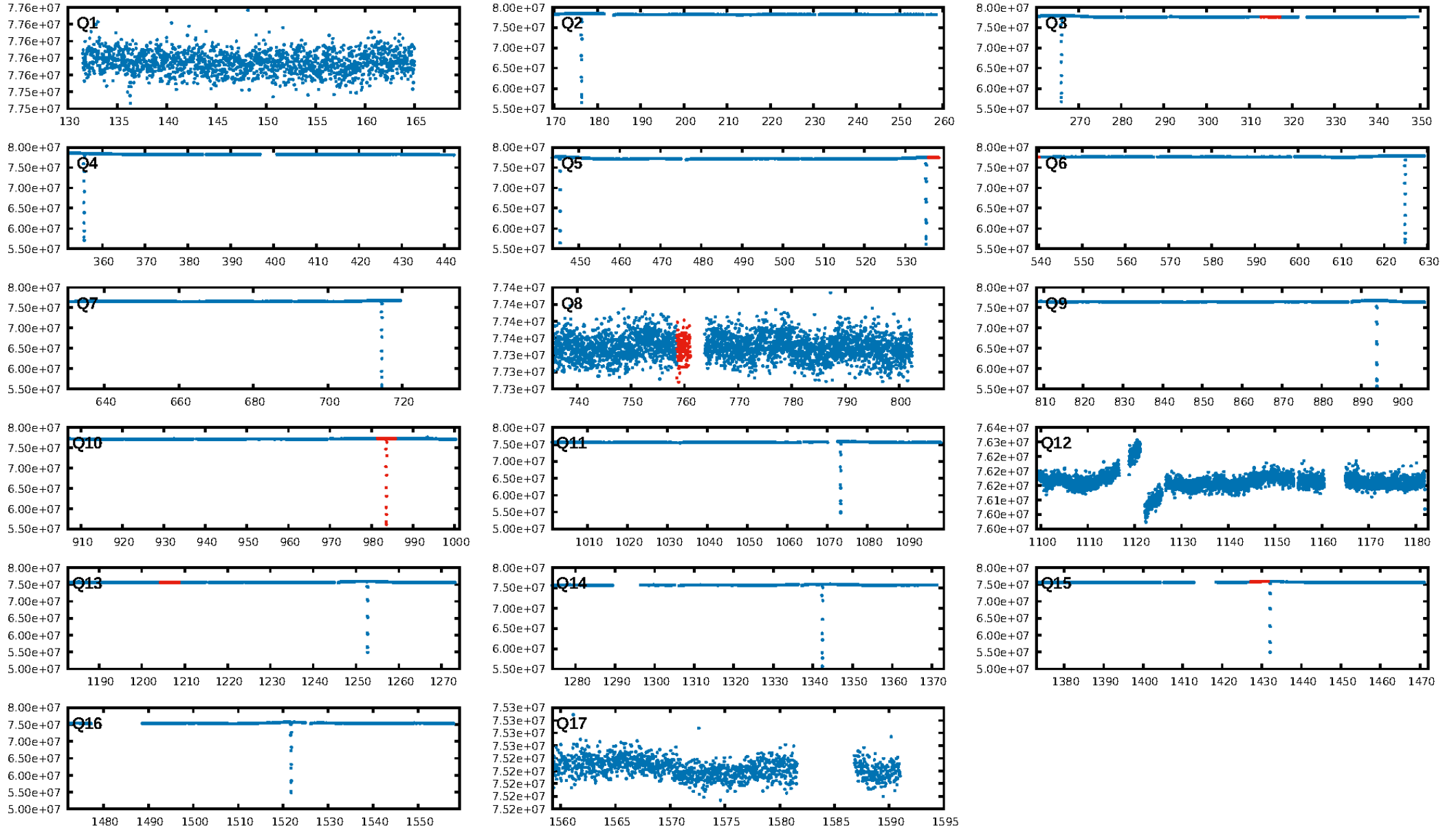
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.36σ]
LongPeriod-sig: 100.0% [97.44σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.26
Centroid-sig: 2.4%
Centroid-so: 0.564 arcsec [2.16σ]
OotOffset-rm: 0.024 arcsec [0.23σ]
KicOffset-rm: 0.204 arcsec [2.26σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.33 [1/3]

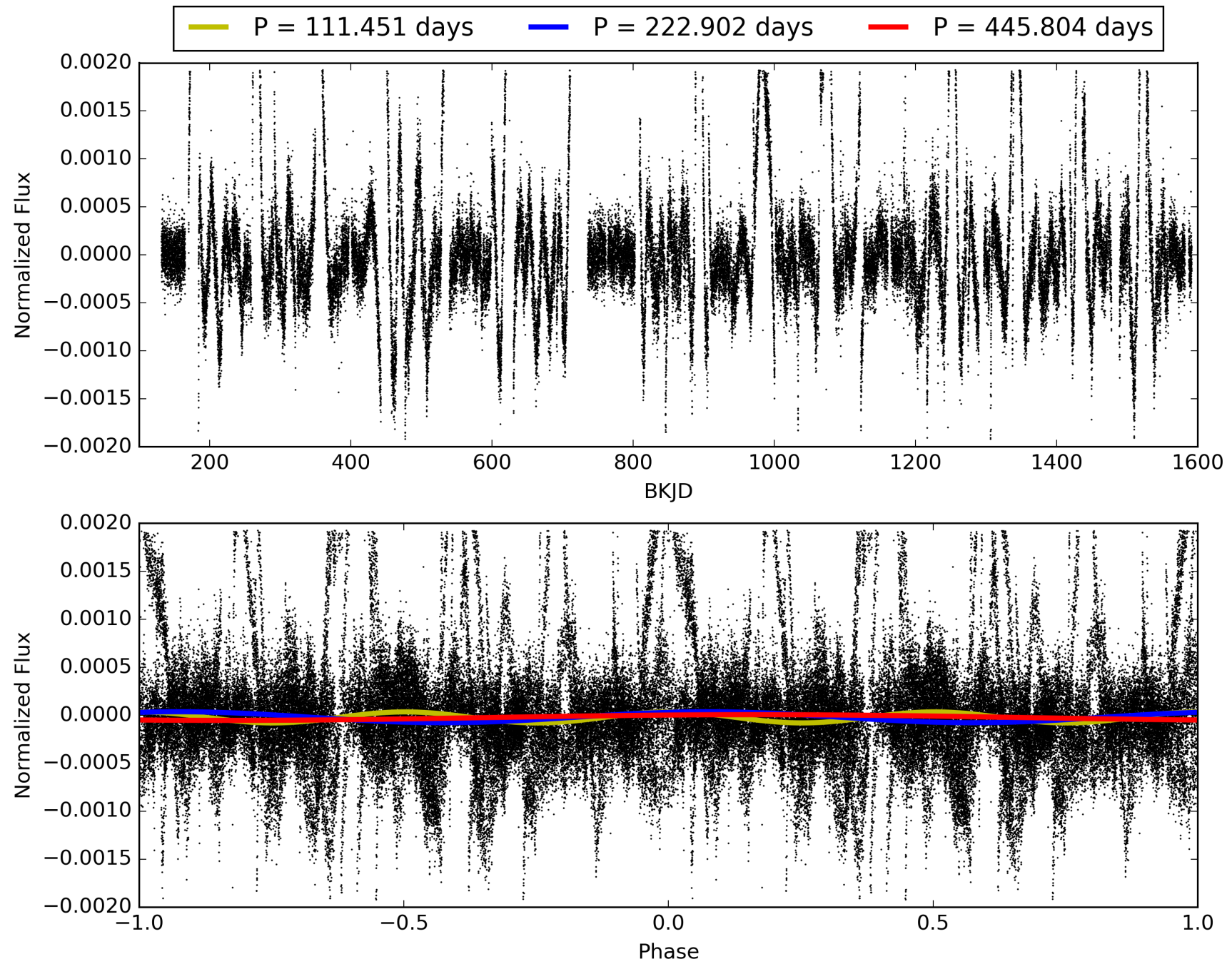
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:28:47 Z

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

TCE 008257407-02, PDC Light Curves

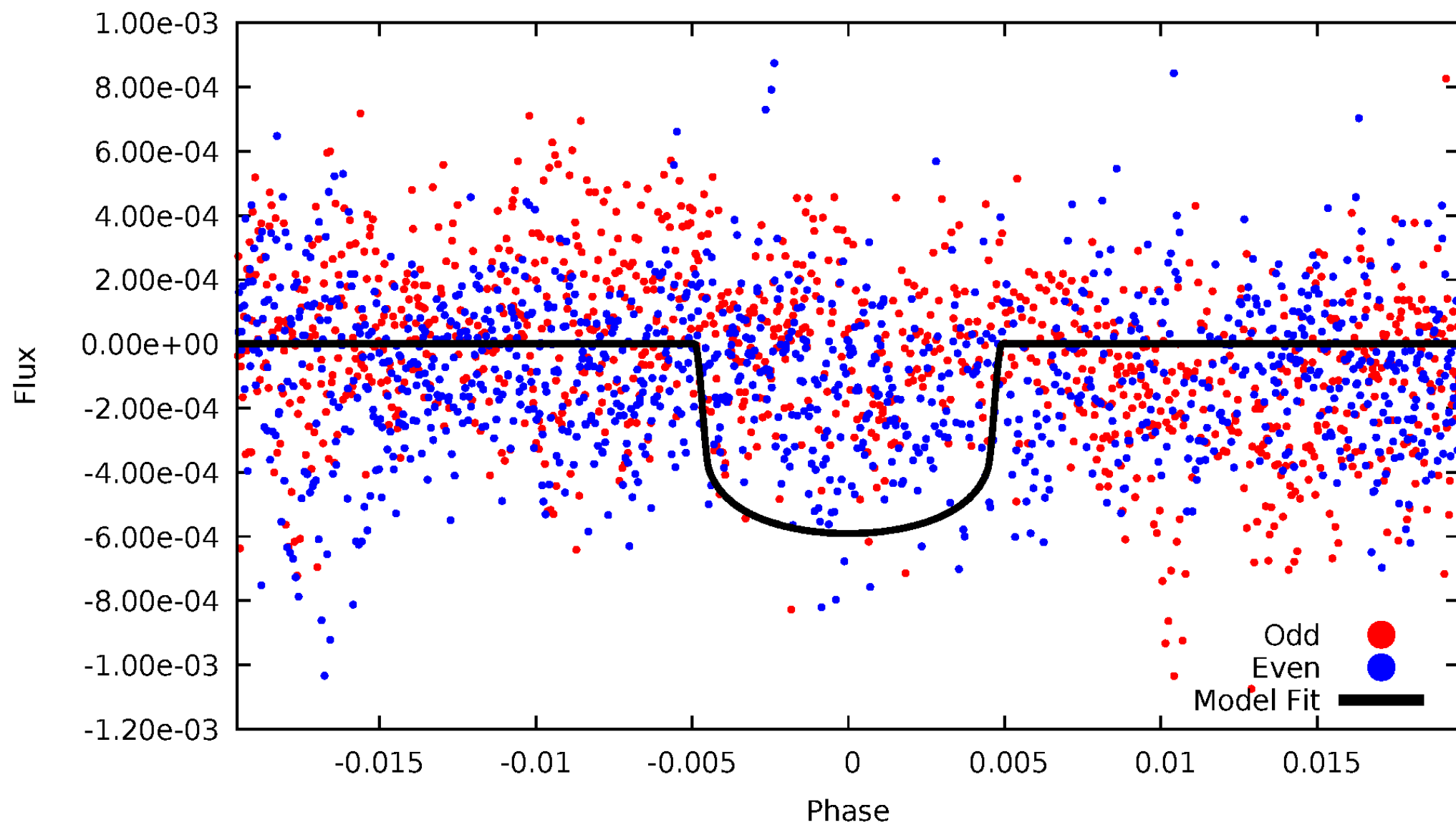


TCE 008257407-02



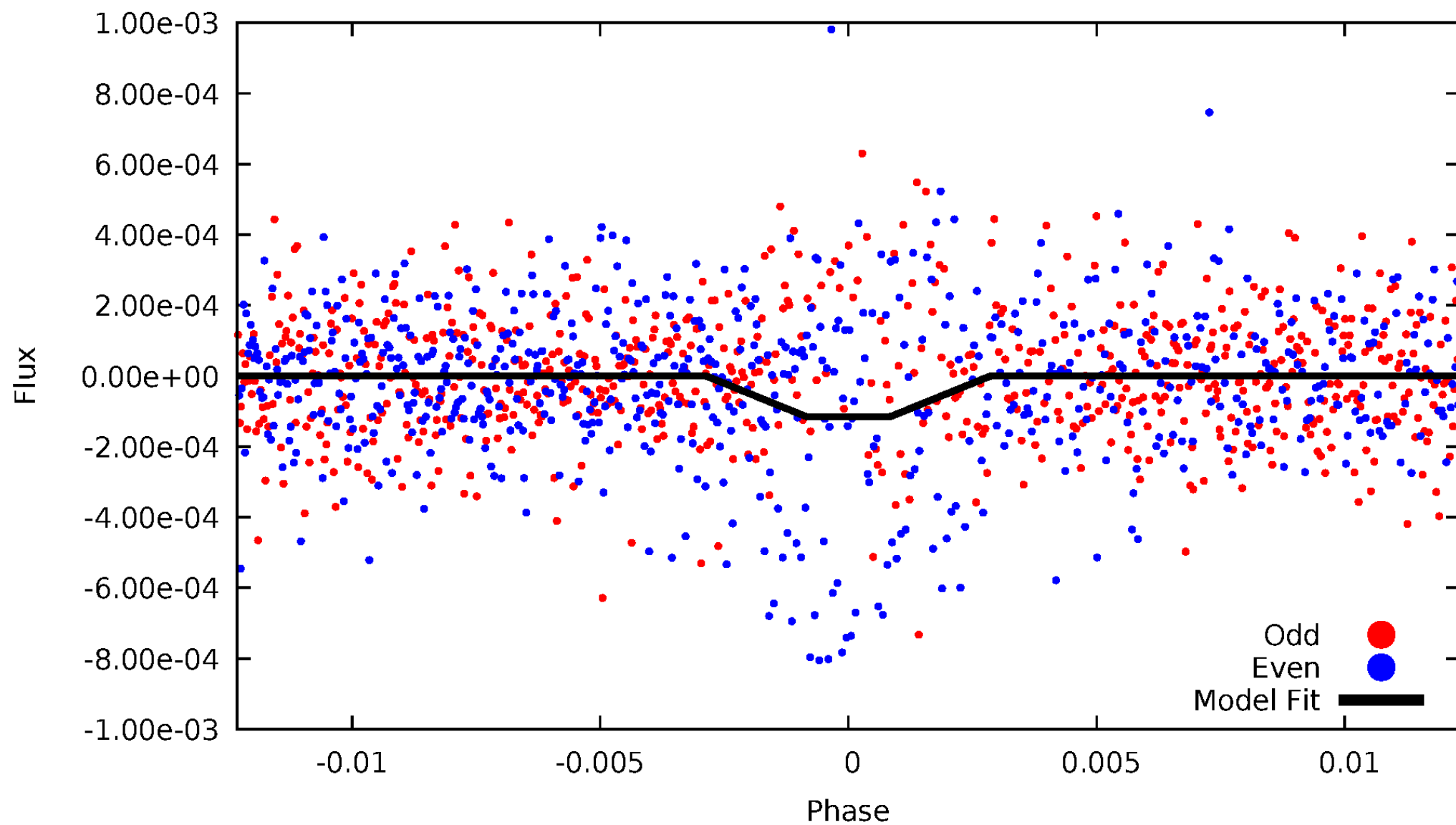
DV Odd/Even

TCE 008257407-02



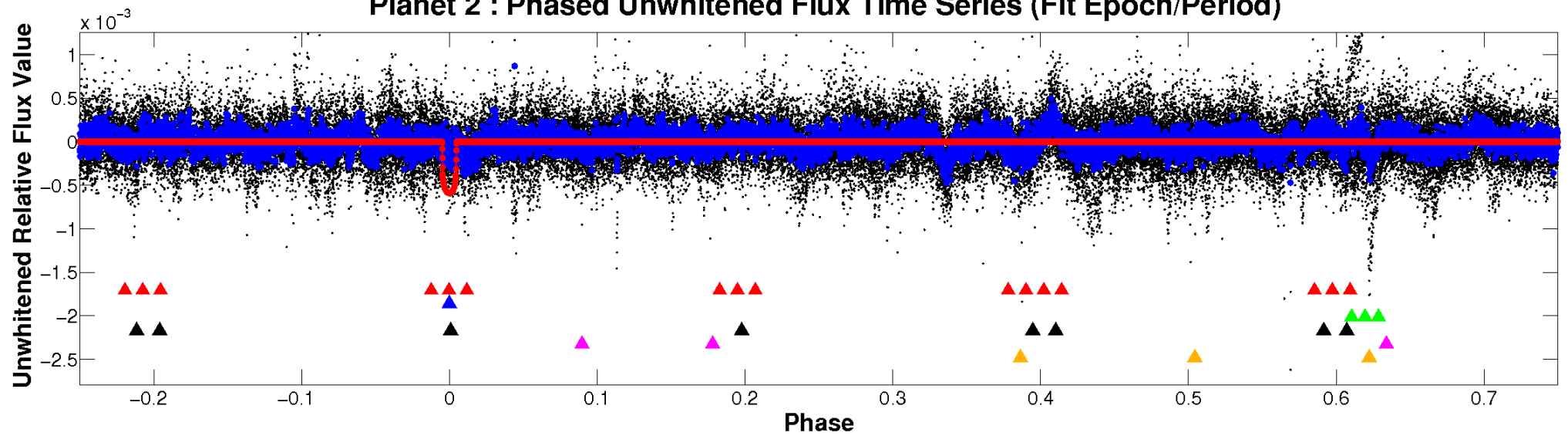
ALT Odd/Even

TCE 008257407-02

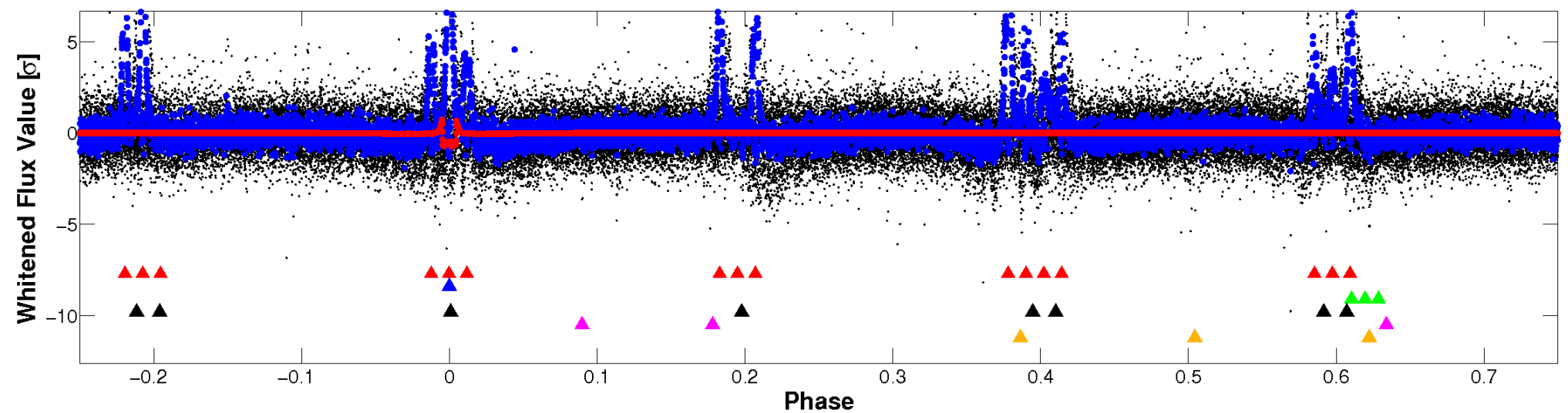


Non-Whitened Vs. Whitened Light Curve

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

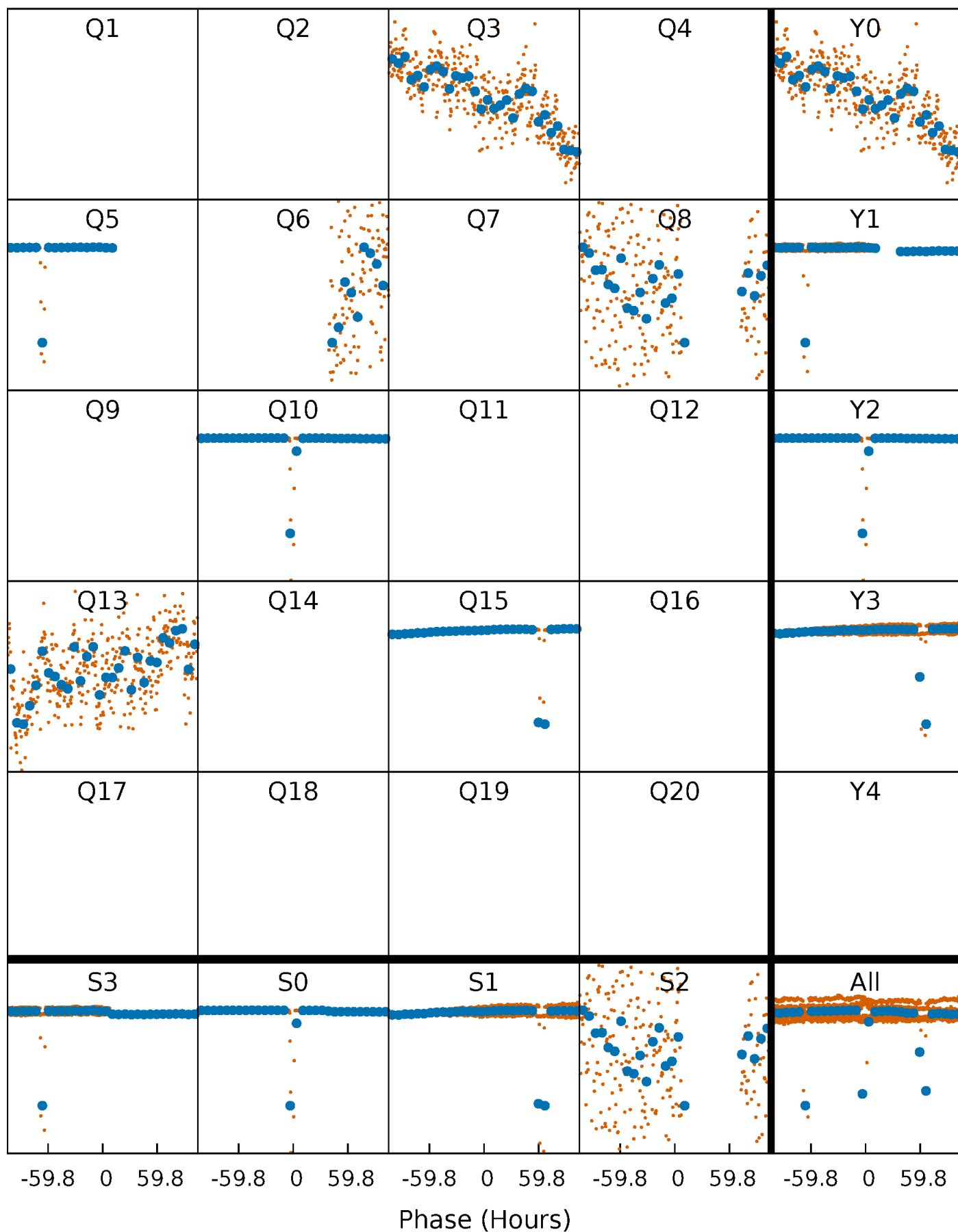


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



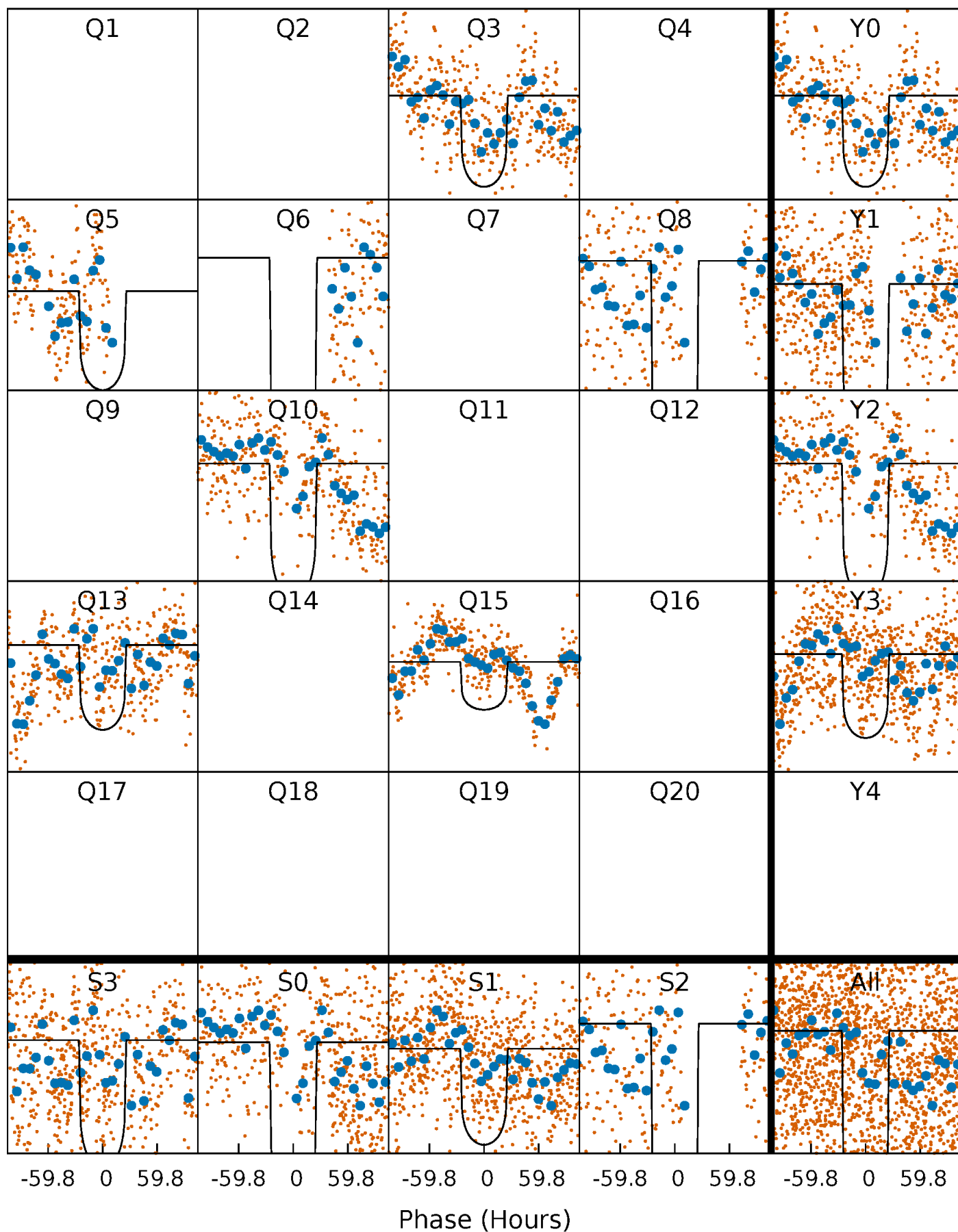
PDC Quarter-Phased Transit Curves

TCE 008257407-02 P=222.901761 Days $T_0=314.931740$ (BKJD)



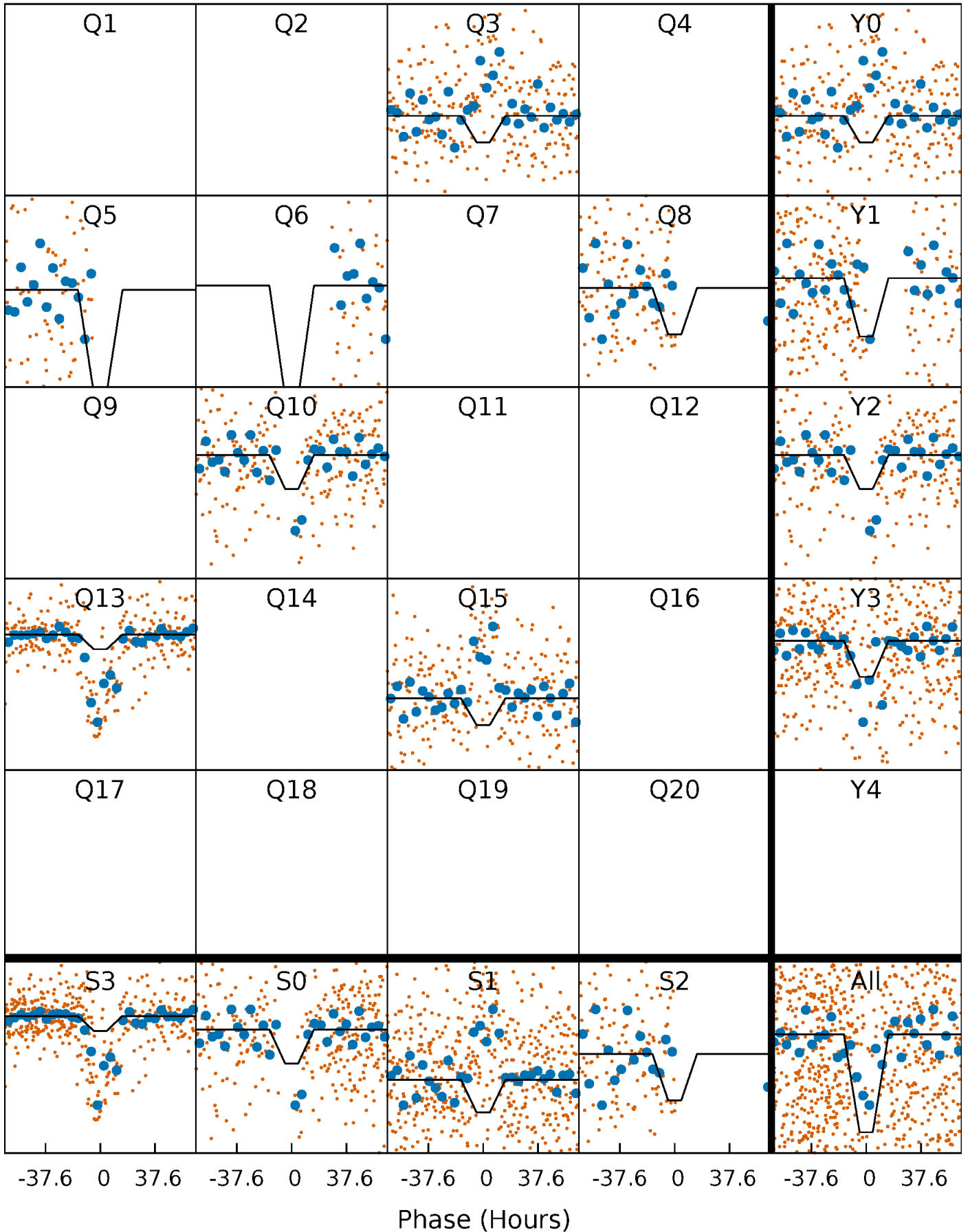
DV Quarter-Phased Transit Curves

TCE 008257407-02 P=222.901761 Days $T_0=314.931740$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

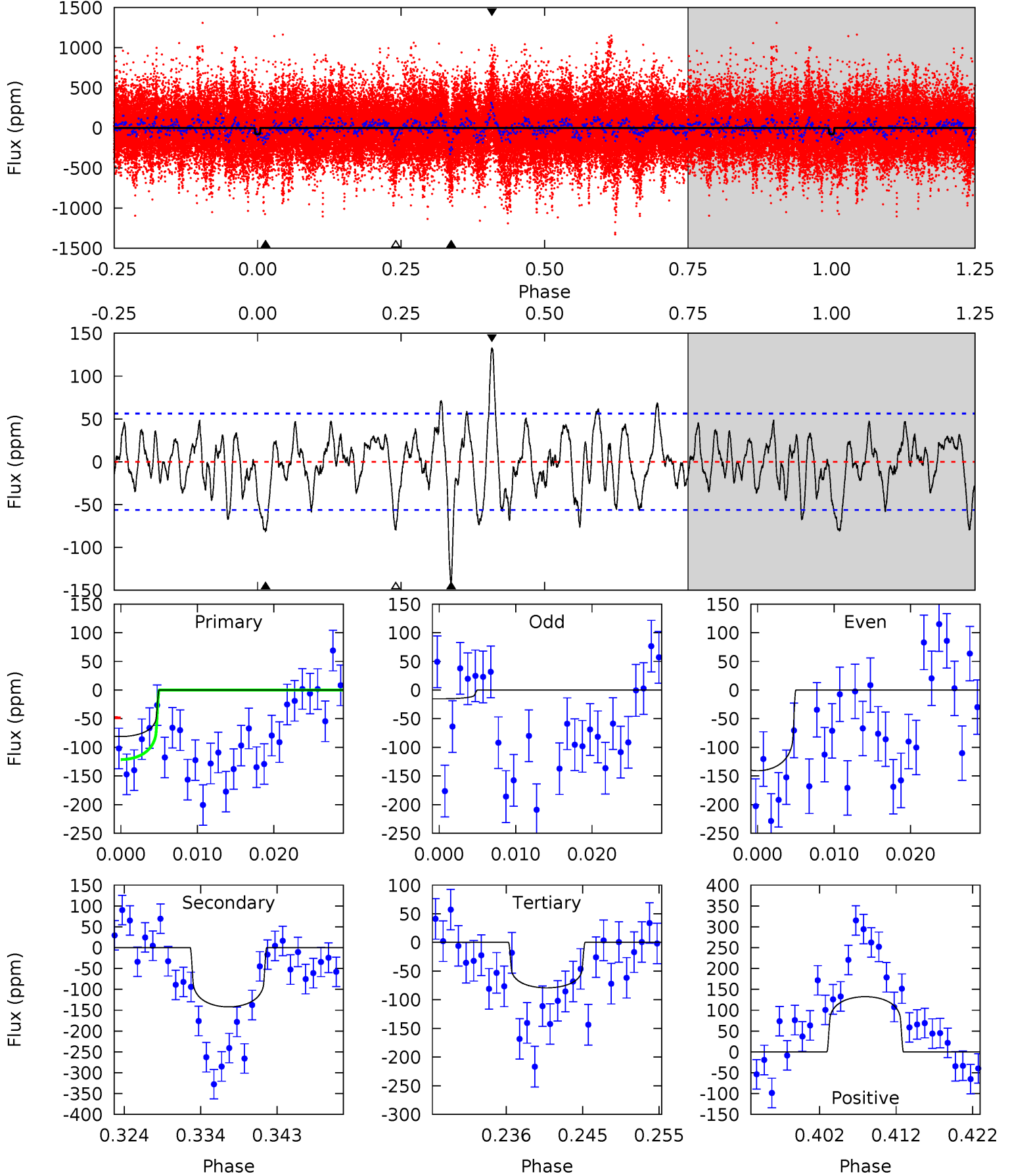
TCE 008257407-02 P=222.698559 Days $T_0=315.633629$ (BKJD)



DV Model-Shift Uniqueness Test

008257407-02, $P = 222.901761$ Days, $E = 92.029979$ Days

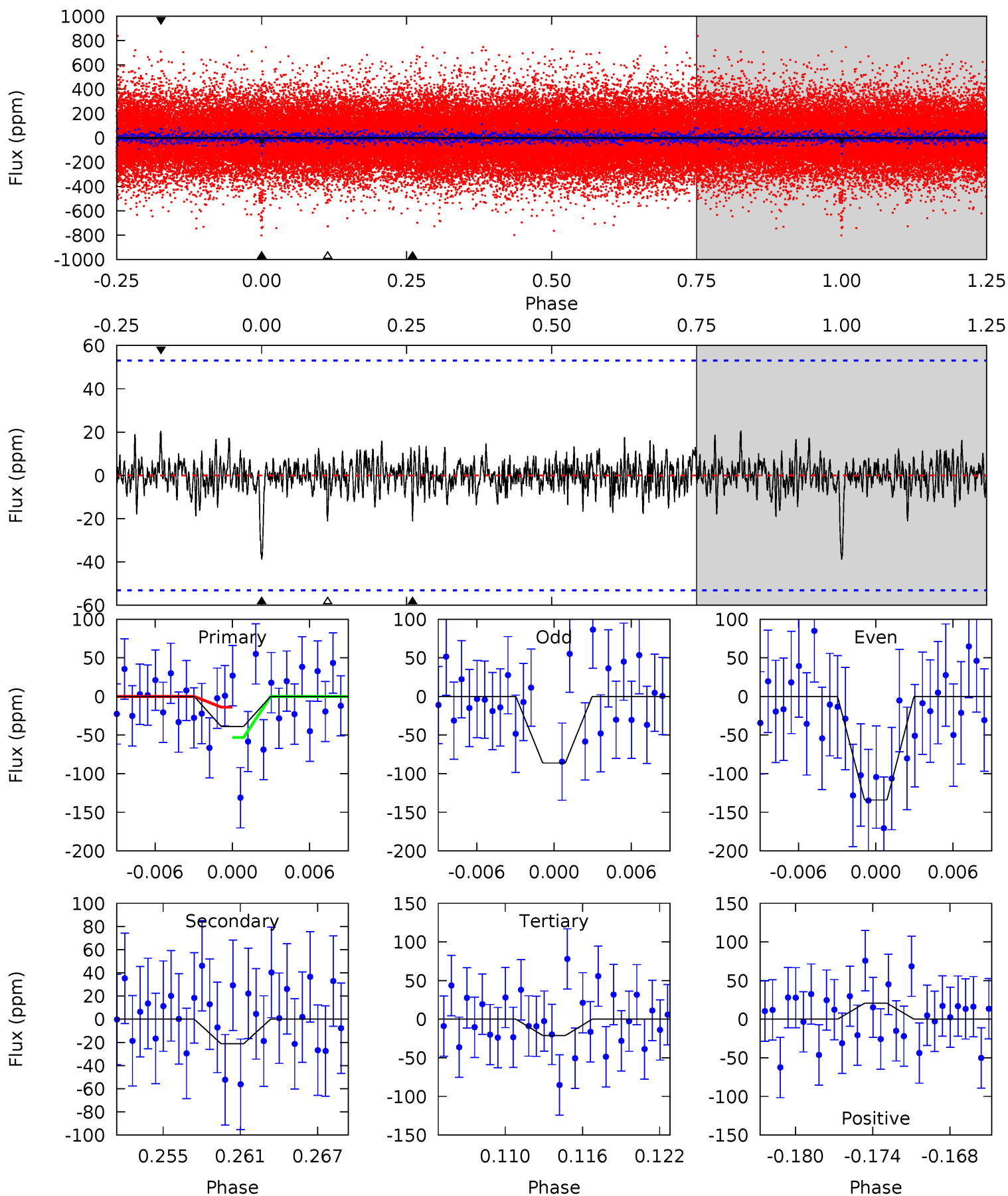
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.25	12.7	7.09	11.8	5.03	2.58	2.77	0.17	-4.59	5.62	0.87	5.63	1.51	0.48	3.25



Alt Model-Shift Uniqueness Test

008257407-02, P = 222.698559 Days, E = 92.935070 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.75	2.05	2.05	1.99	5.13	2.76	0.55	1.71	1.76	0.01	0.06	2.31	-27.8	0.35	1.90



Stellar Parameters For KIC 008257407

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6214^{+187}_{-206}	$4.021^{+0.392}_{-0.168}$	$-0.580^{+0.300}_{-0.300}$	$1.583^{+0.415}_{-0.622}$	$0.959^{+0.139}_{-0.126}$	$0.341^{+1.024}_{-0.151}$
	+3%/-3%	+10%/-4%	+52%/-52%	+26%/-39%	+14%/-13%	+301%/-44%
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 008257407-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-142 ± 11	$4.00^{+0.71}_{-0.86}$	565^{+47}_{-60}	4579^{+198}_{-198}	2507^{+1400}_{-734}
Alt.	-21 ± 10	$1.77^{+0.45}_{-0.44}$	563^{+45}_{-62}	4285^{+500}_{-543}	1794^{+1813}_{-950}

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 $A_{obs} \gg 1.0$

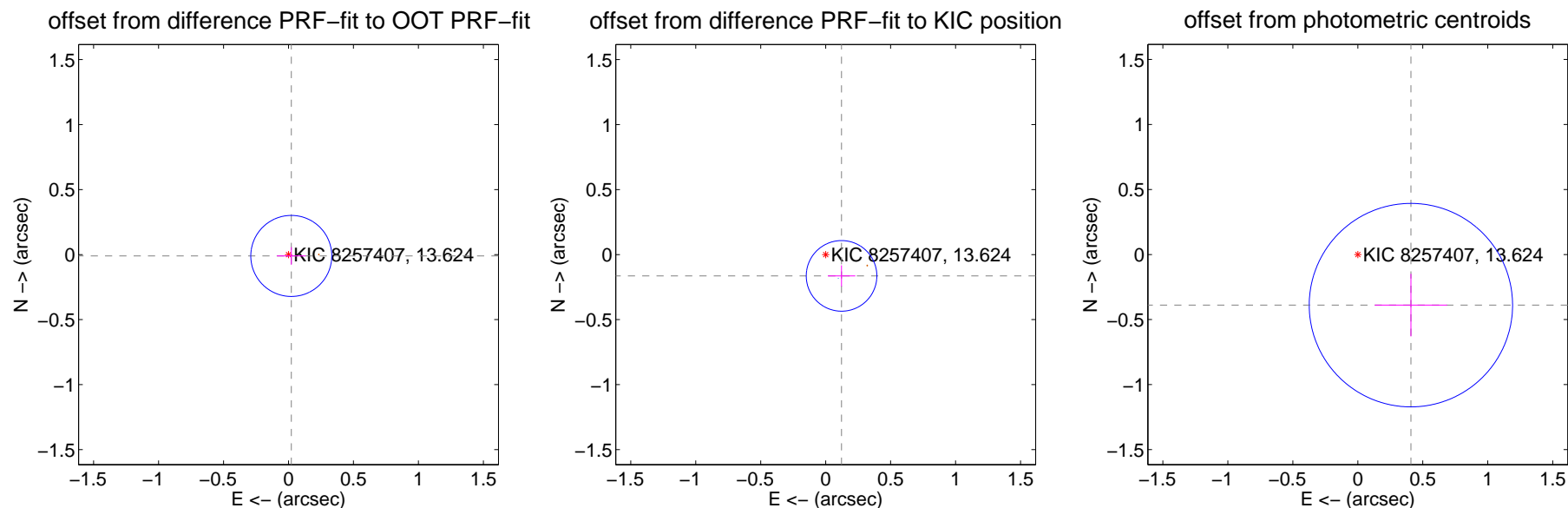
DV Centroid Data

Supplemental centroid analysis for 008257407-02. Kepler magnitude: 13.62. Transit SNR 13.57

There are 1 quarters with good PRF difference image offsets

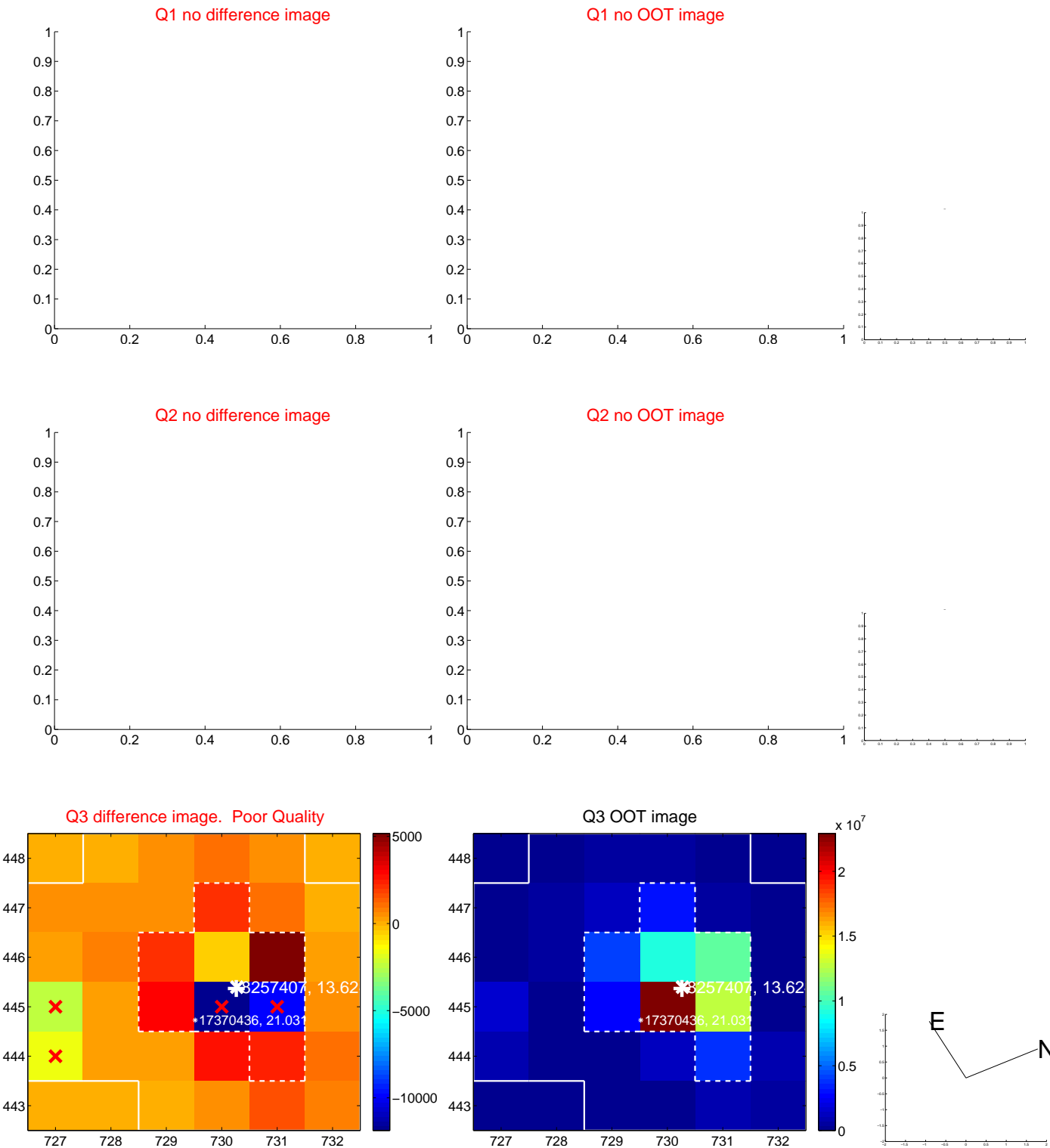
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.024 ± 0.104	0.23	-0.021 ± 0.111	-0.010 ± 0.067
PRF-fit source offset from KIC position	0.204 ± 0.091	2.26	-0.122 ± 0.106	-0.164 ± 0.081
photometric centroid source offset	0.56 ± 0.26	2.16	-0.41 ± 0.28	-0.39 ± 0.24



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.

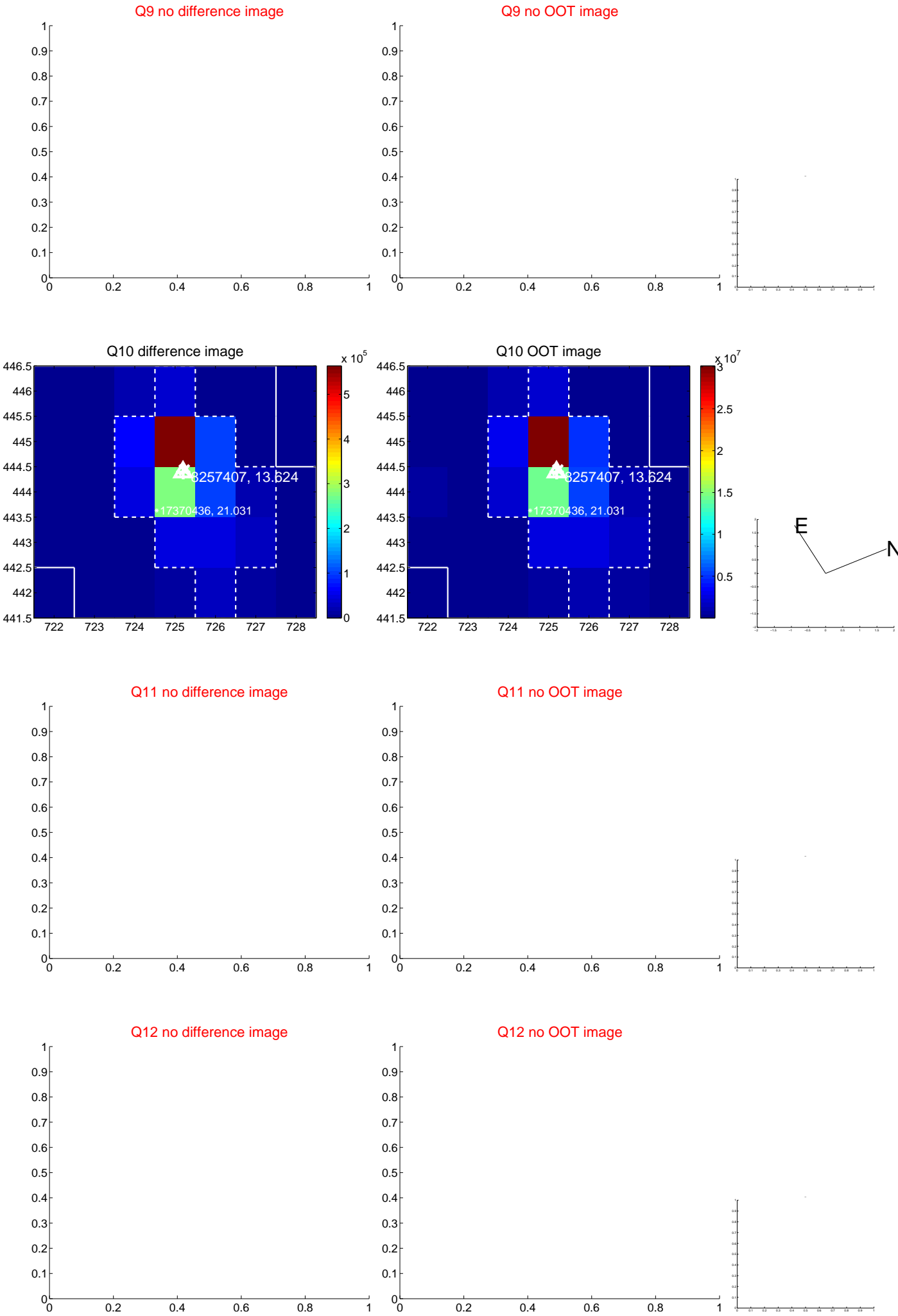
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



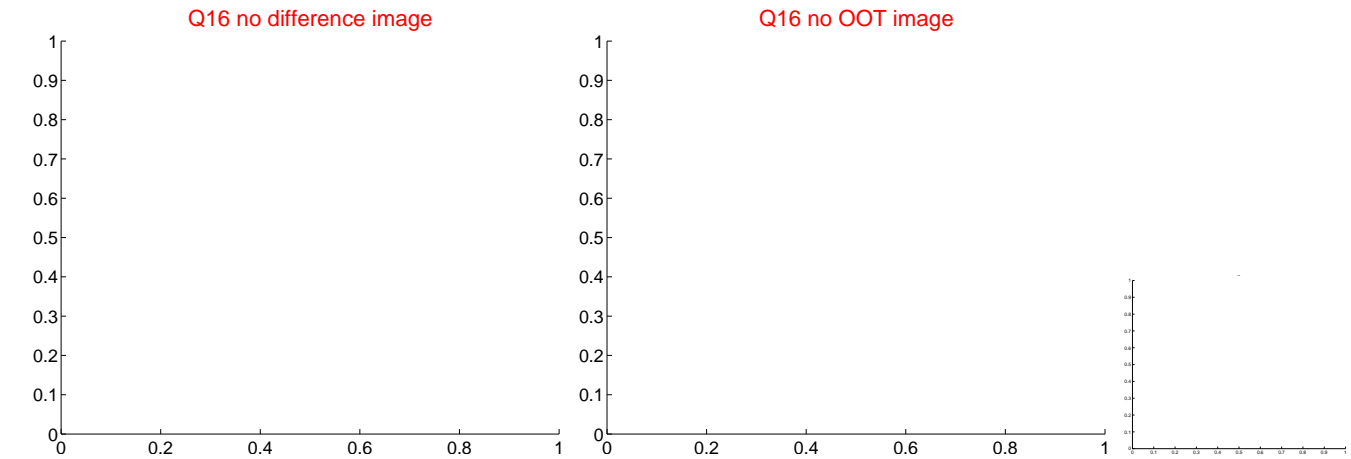
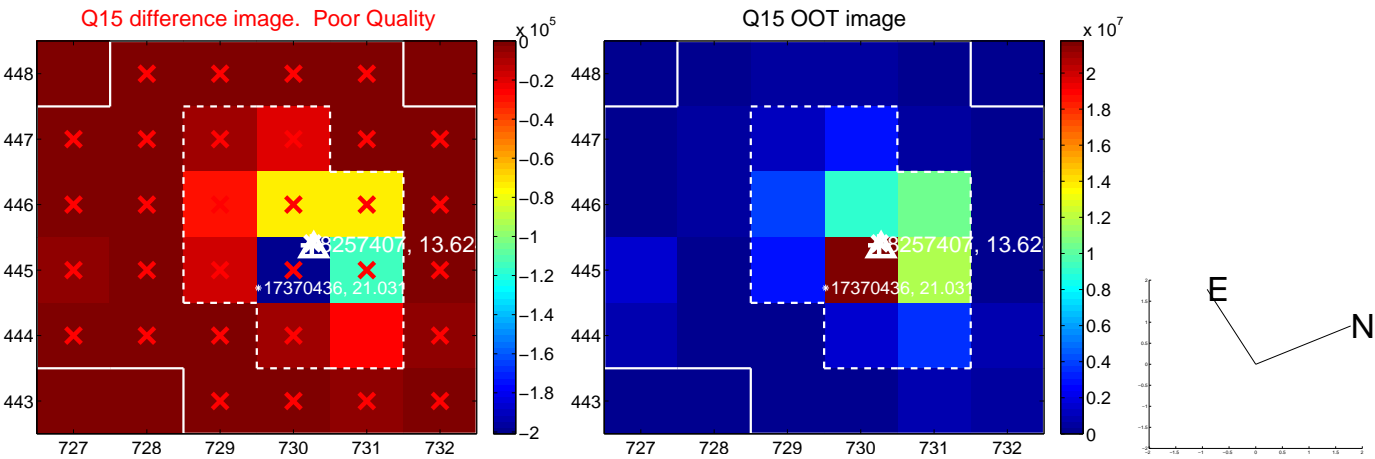
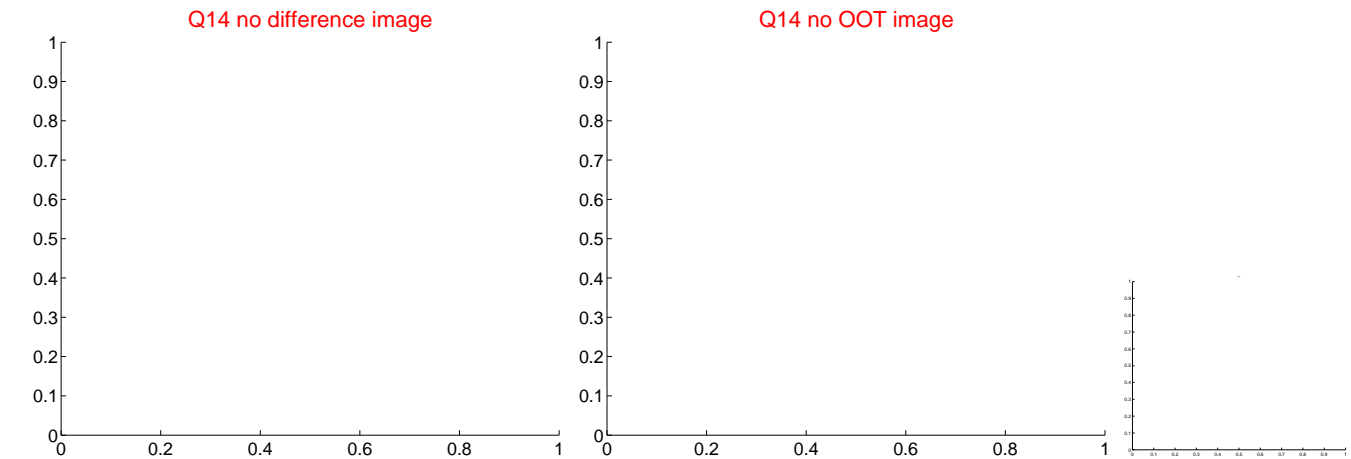
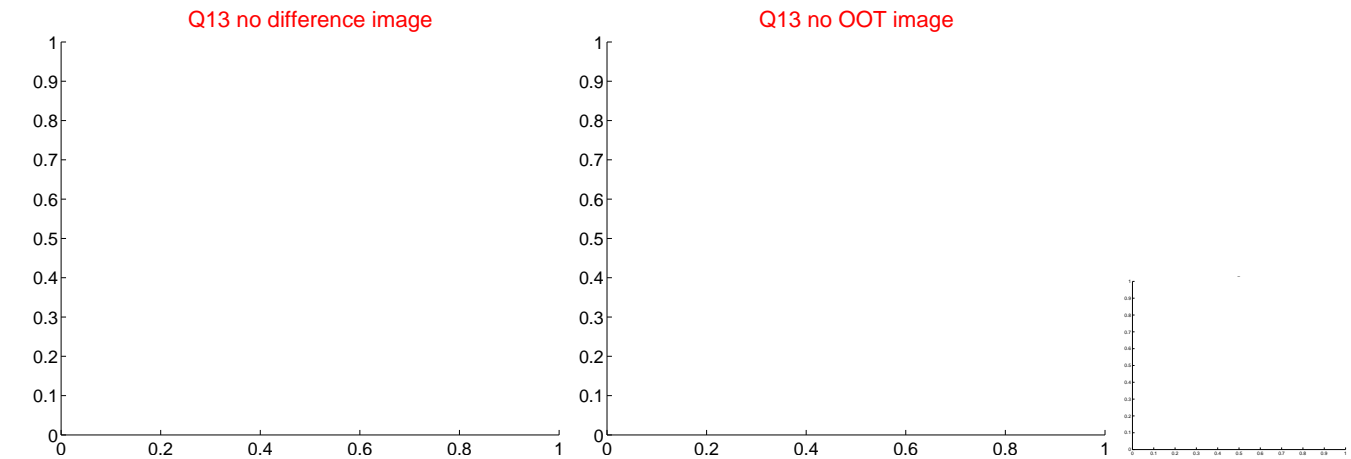
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



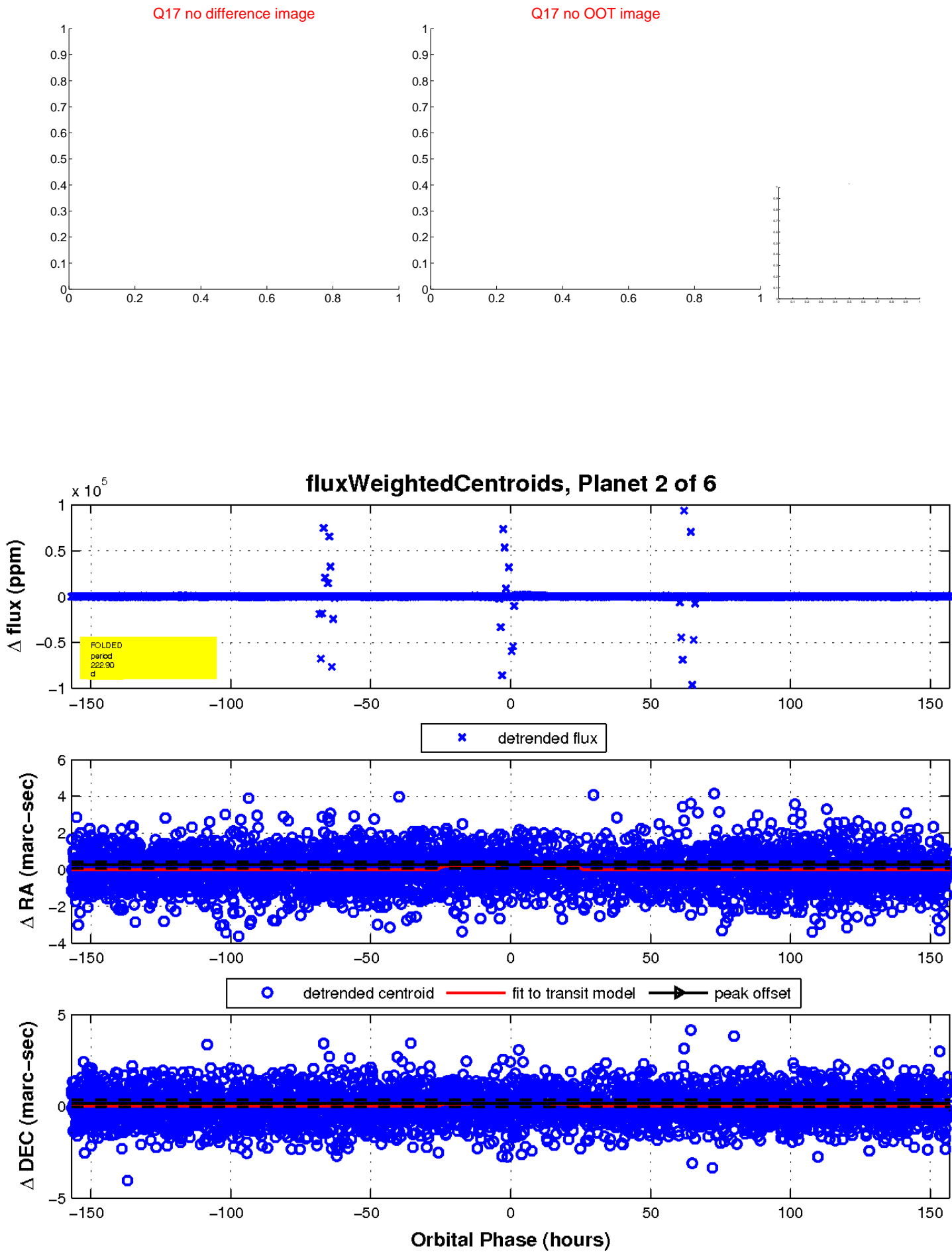
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

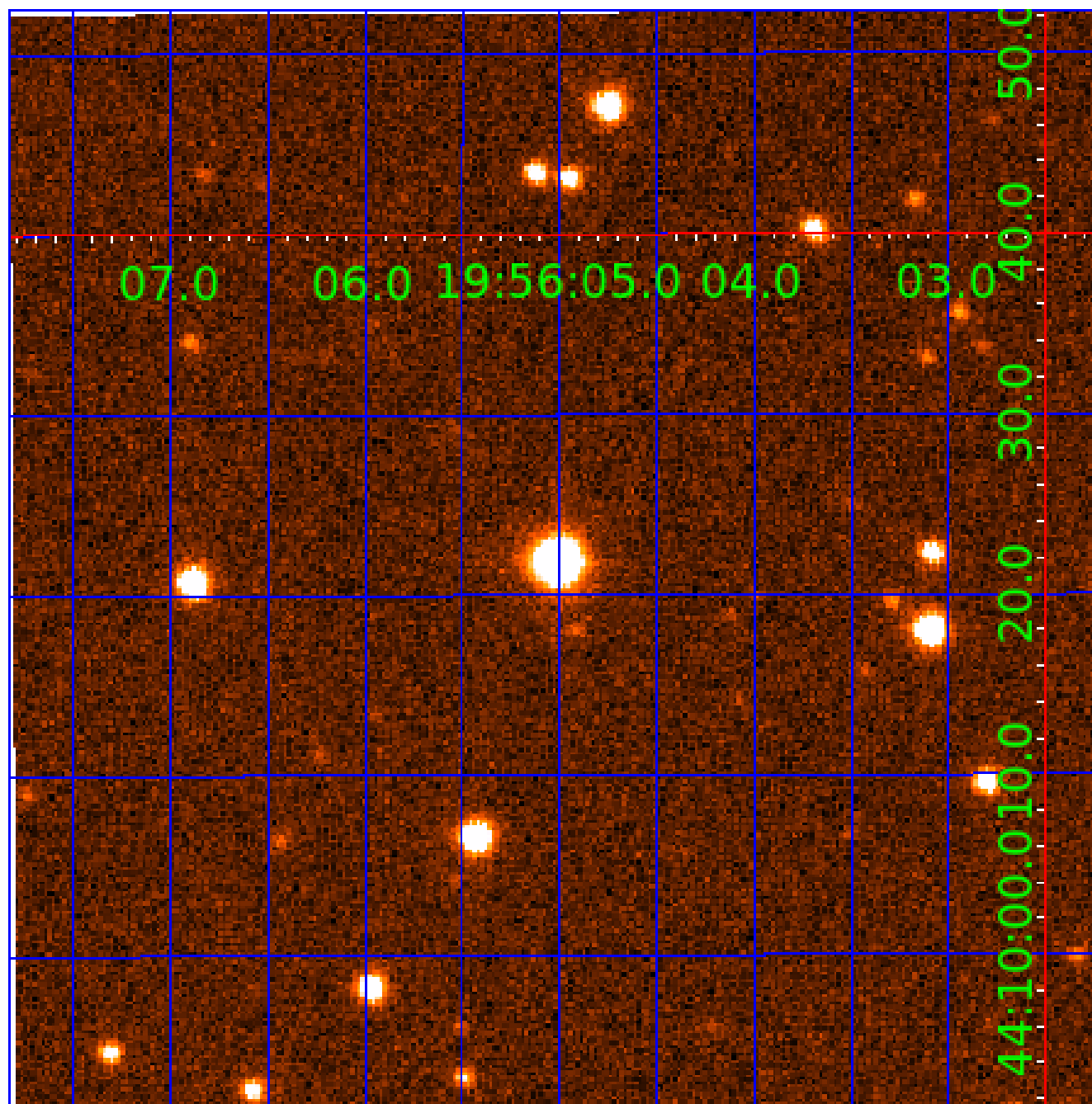


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008257407

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})
008257407-01	OBS	1063.01	89.697868	176.308169	276750.7	3.500	6984.4	-1.0	1.58	6214	72.36	22.37
008257407-02	OBS	No	222.901762	314.931740	590.4	52.293	261.0	13.6	1.58	6214	4.07	6.65
008257407-03	OBS	No	443.782867	455.049172	9501.7	15.000	223.2	-1.0	1.58	6214	15.50	2.65
008257407-04	OBS	No	179.015393	267.781428	1790.7	23.561	19.6	21.0	1.58	6214	12.46	8.90
008257407-05	OBS	No	547.403904	354.640124	874.4	15.925	16.3	12.6	1.58	6214	8.88	2.01
008257407-06	OBS	No	472.103781	178.157406	415.3	9.000	11.7	-1.0	1.58	6214	3.24	2.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008257407-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS
008257407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008257407-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008257407-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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.

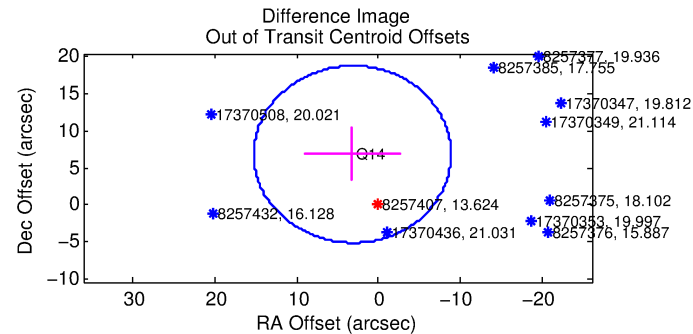
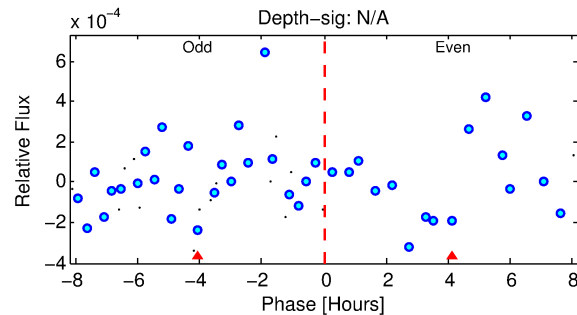
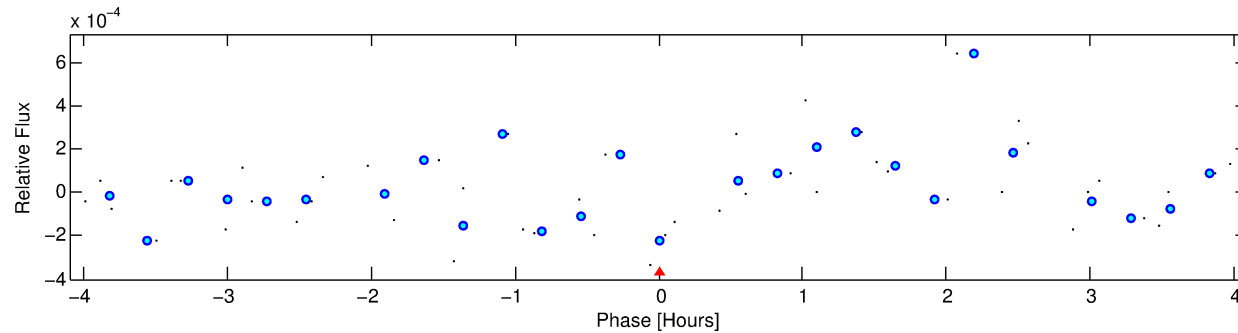
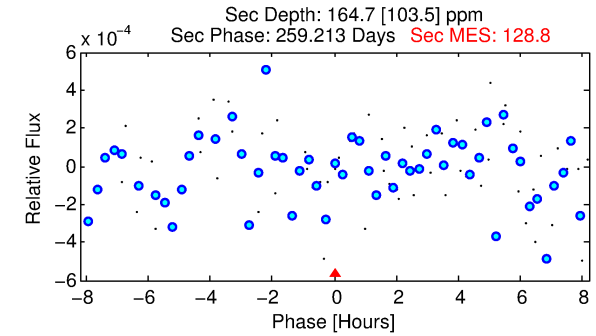
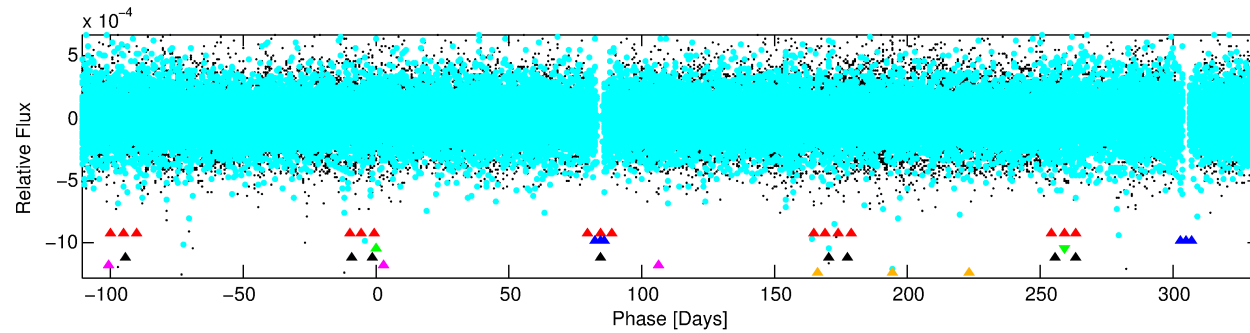
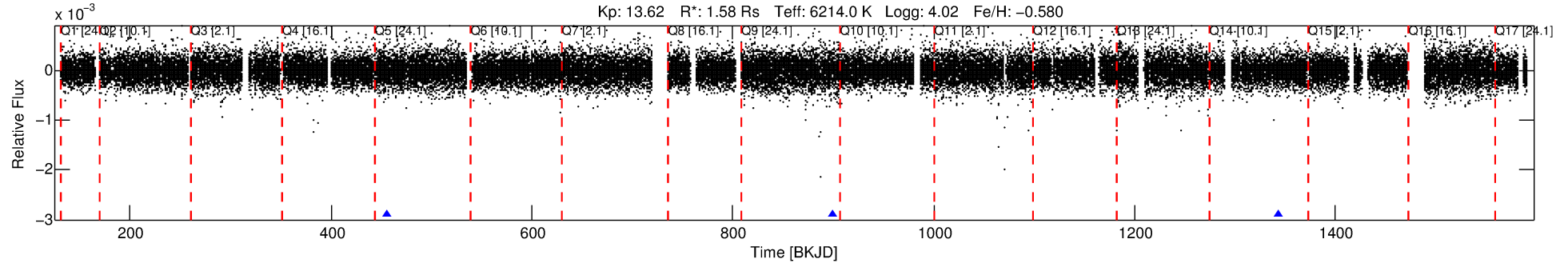
Ephemeris Match Information For 008257407-03

No Significant Match Found

DV One-Page Summary

KIC: 8257407 Candidate: 3 of 6 Period: 443.783 d
KOI: K01063 Corr: No Ephemeris Match

Kp: 13.62 R*: 1.58 Rs Teff: 6214.0 K Logg: 4.02 Fe/H: -0.580



TPS TCE Results:

Period = 443.78287 d
Epoch = 455.0492 BKJD

DV fit results are unavailable

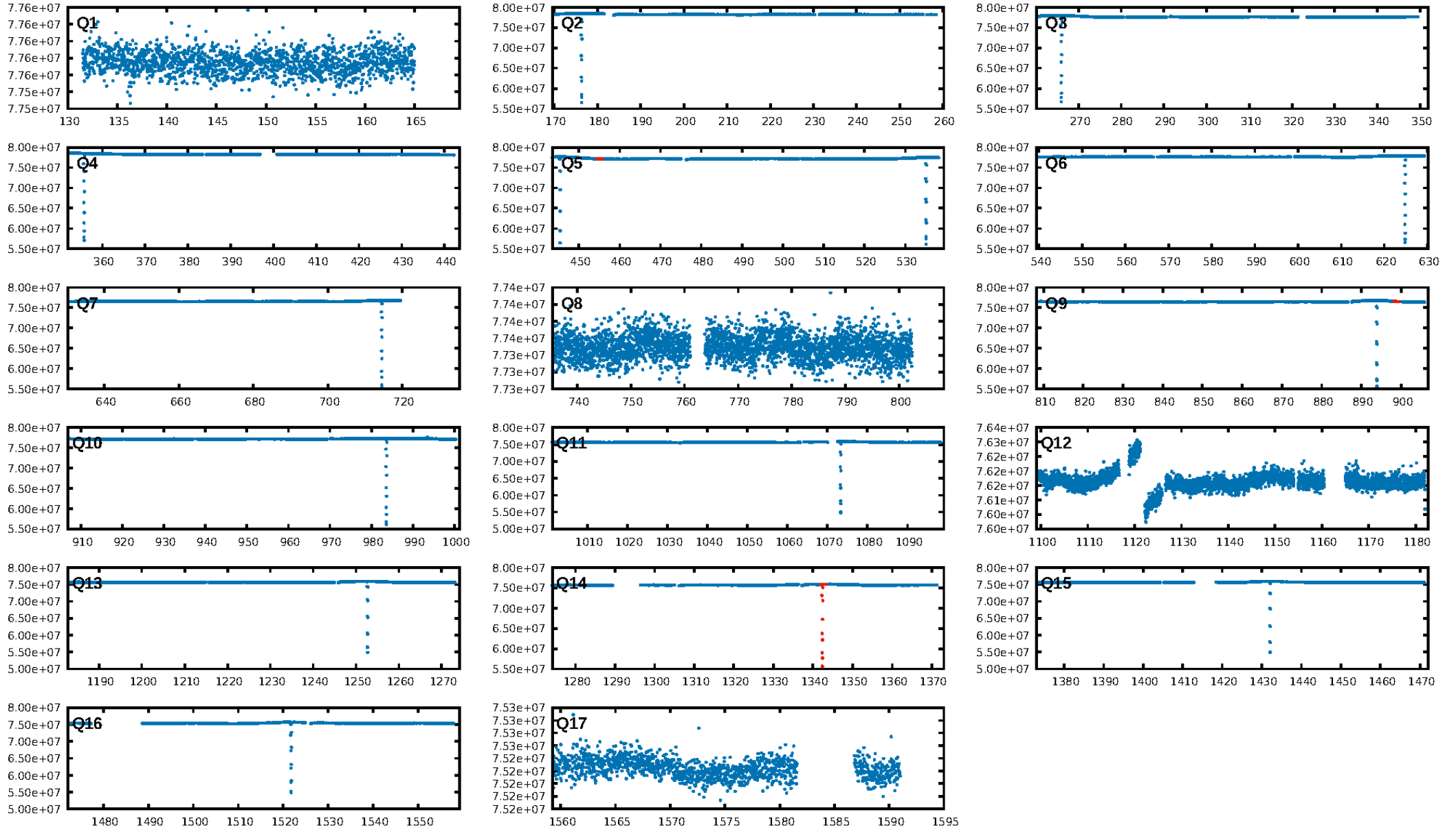
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [97.44σ]
LongPeriod-sig: 100.0% [38.86σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -6.054
Centroid-sig: 46.1%
Centroid-so: 3.619 arcsec [0.75σ]
OotOffset-rm: 7.535 arcsec [1.88σ]
KicOffset-rm: 7.297 arcsec [1.83σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

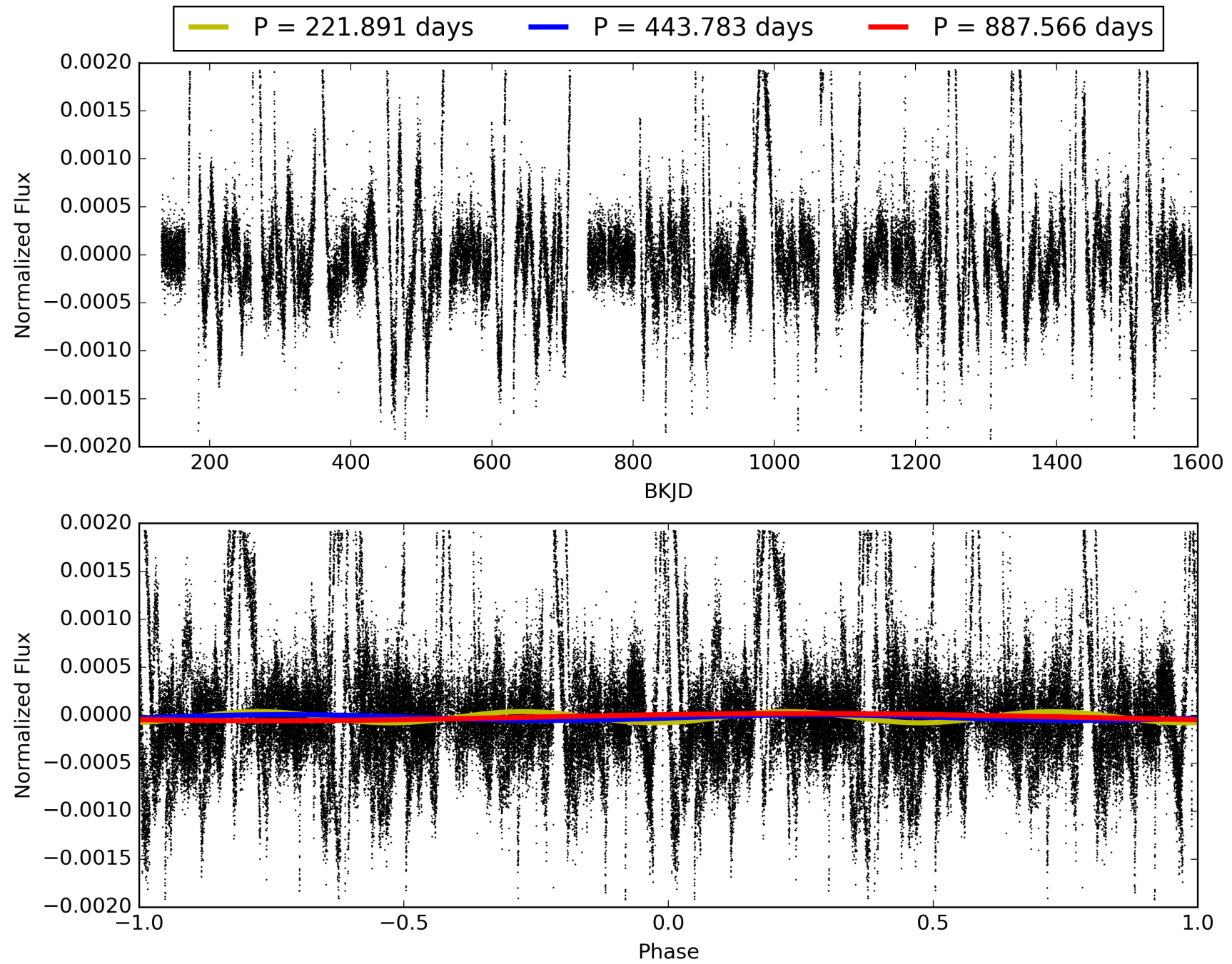
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:29:24 Z

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

TCE 008257407-03, PDC Light Curves

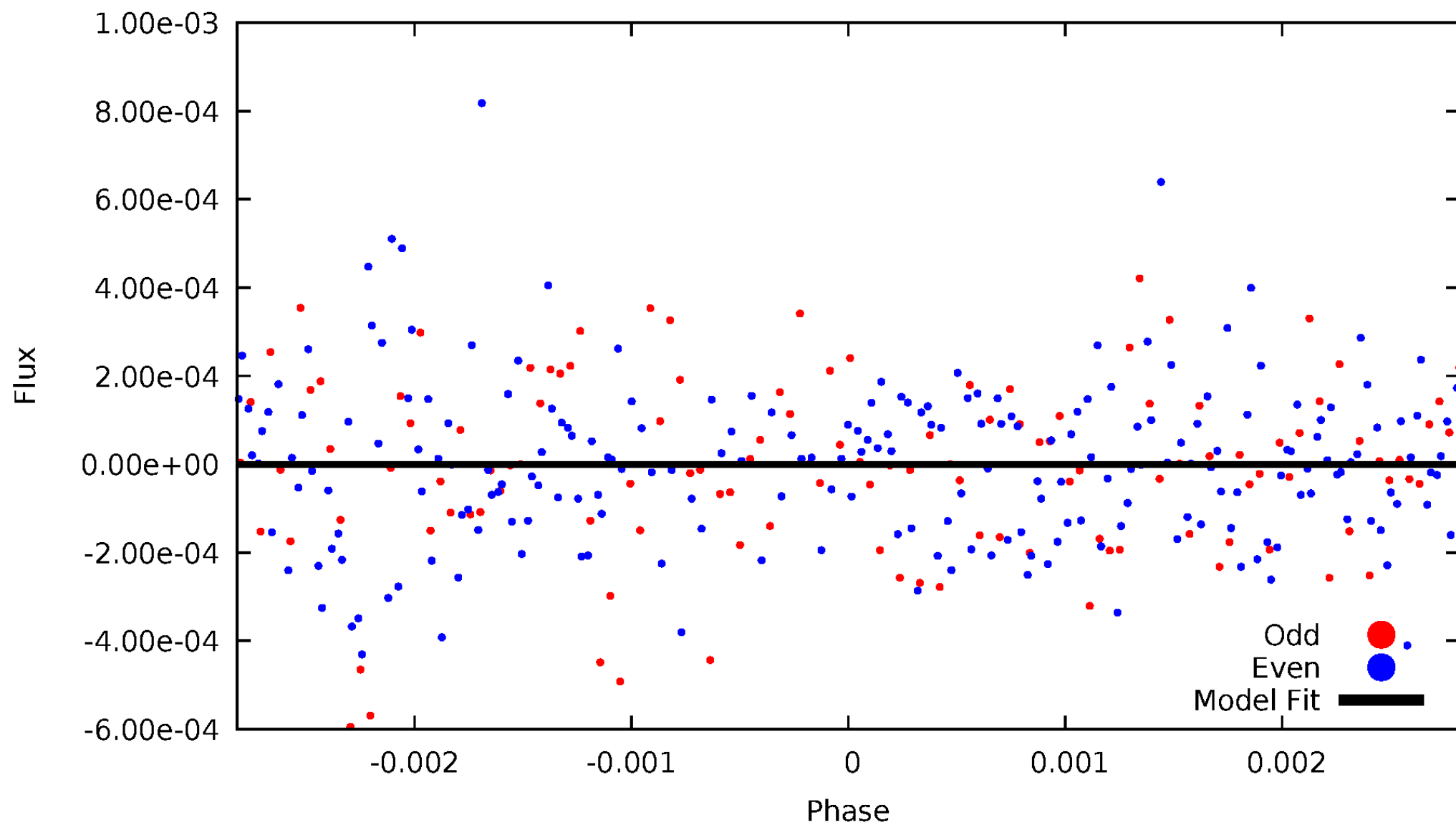


TCE 008257407-03



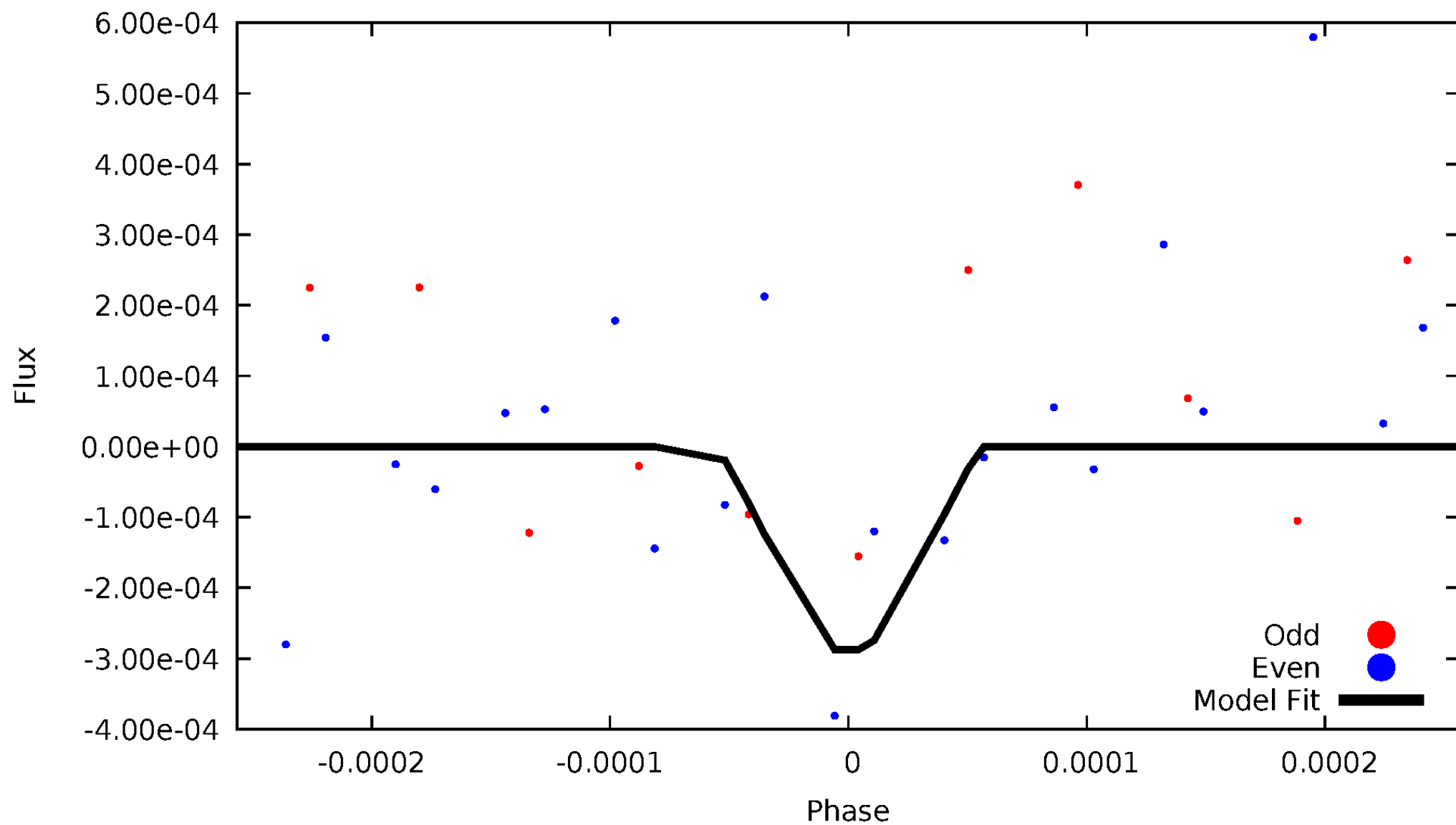
DV Odd/Even

TCE 008257407-03



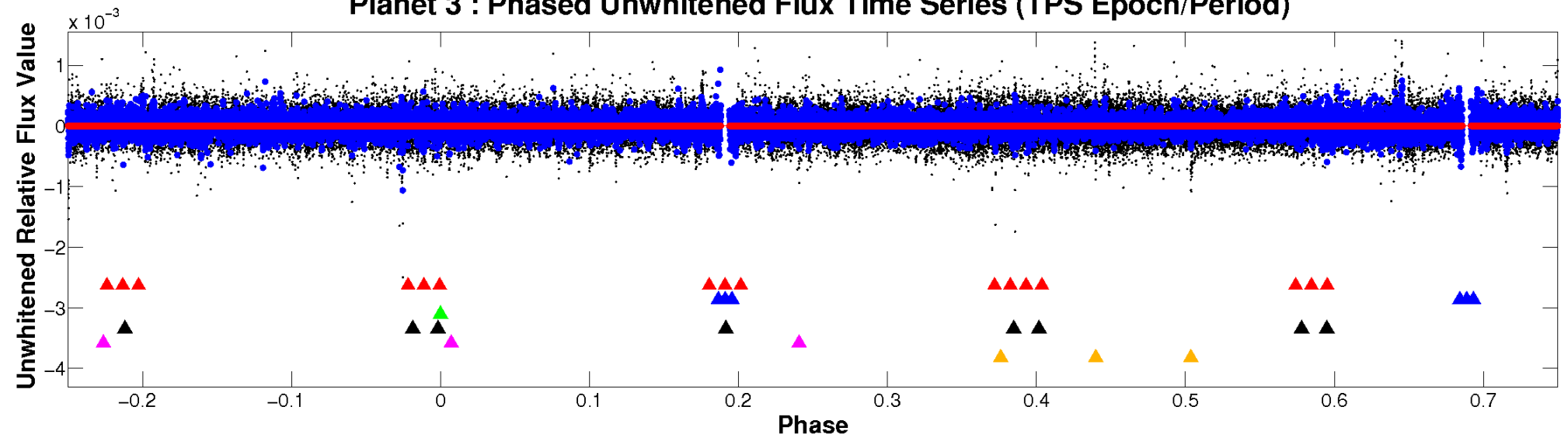
ALT Odd/Even

TCE 008257407-03

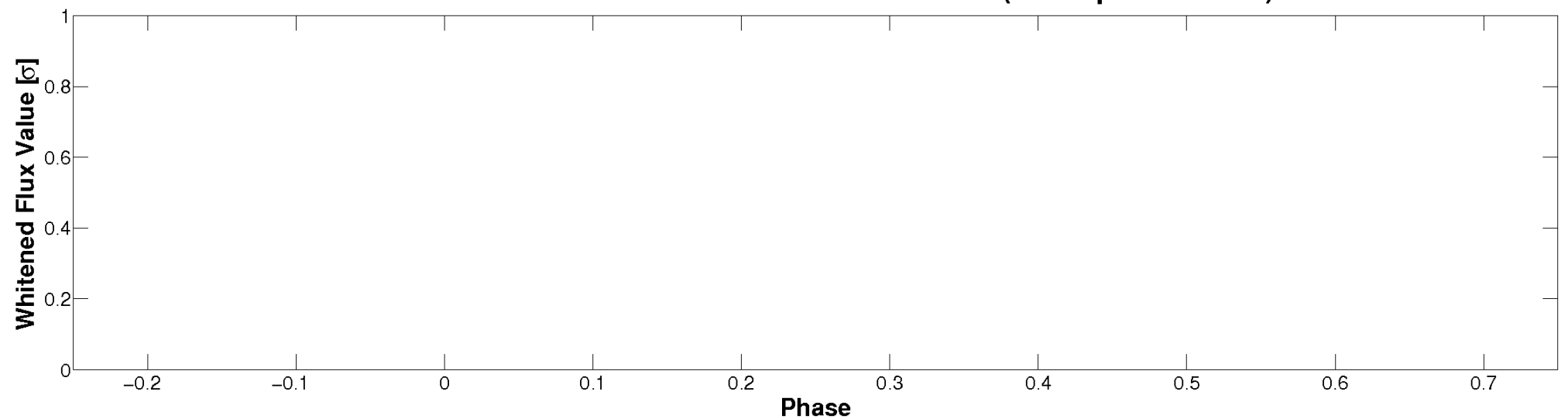


Non-Whitened Vs. Whitened Light Curve

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

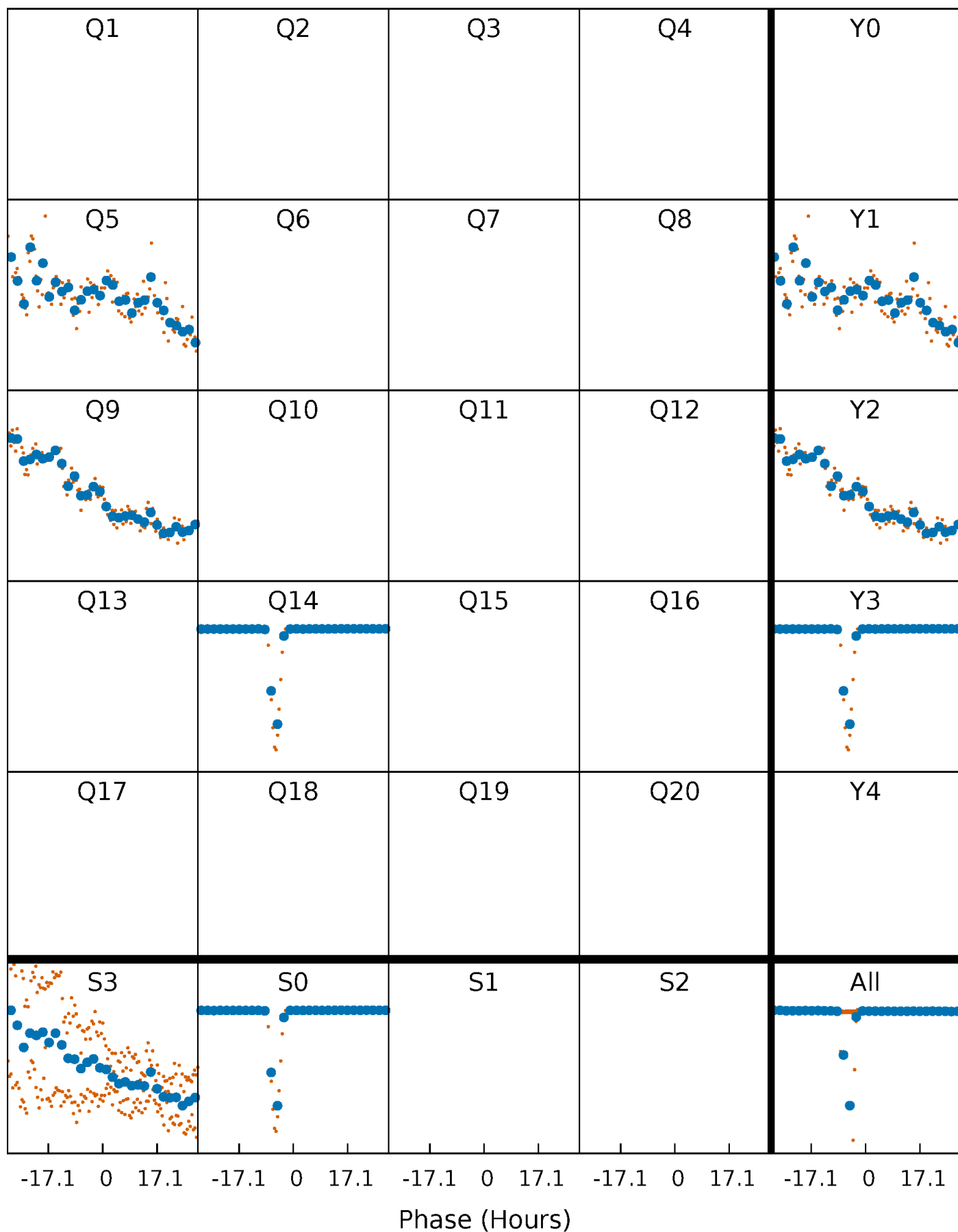


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



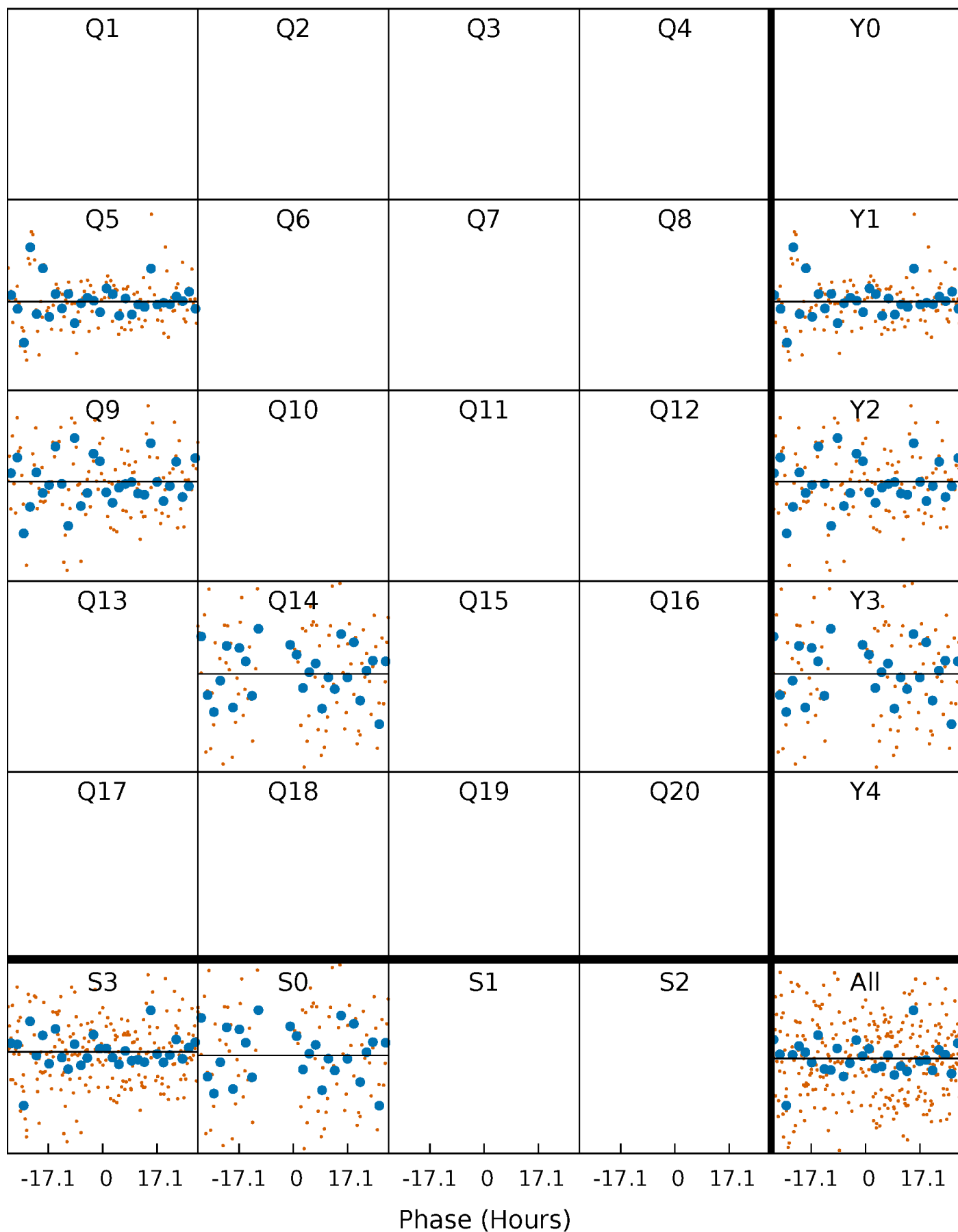
PDC Quarter-Phased Transit Curves

TCE 008257407-03 P=443.782867 Days $T_0=455.049172$ (BKJD)



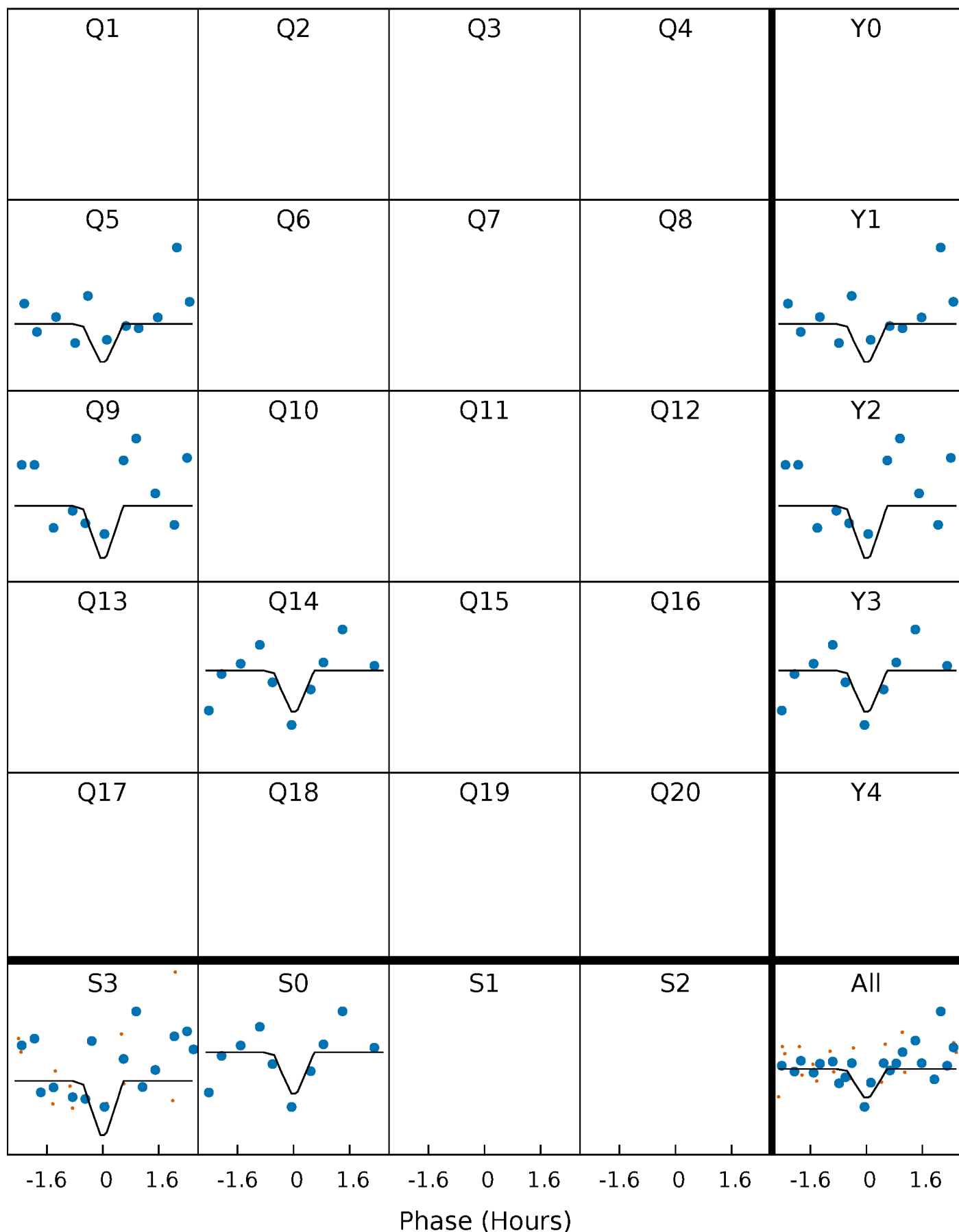
DV Quarter-Phased Transit Curves

TCE 008257407-03 $P=443.782867$ Days $T_0=455.049172$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

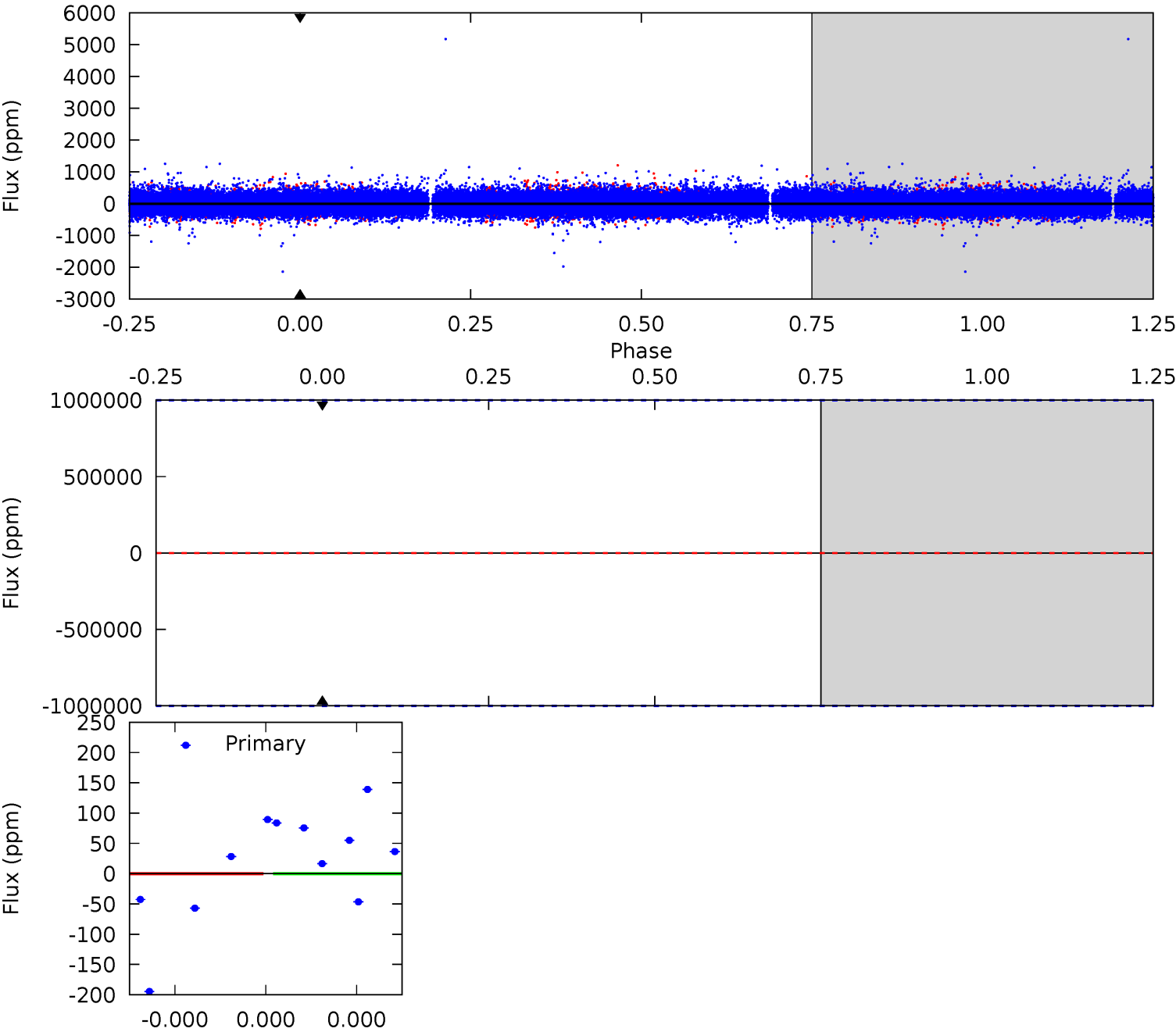
TCE 008257407-03 P=443.782867 Days $T_0=455.602387$ (BKJD)



DV Model-Shift Uniqueness Test

008257407-03, P = 443.782867 Days, E = 11.266305 Days

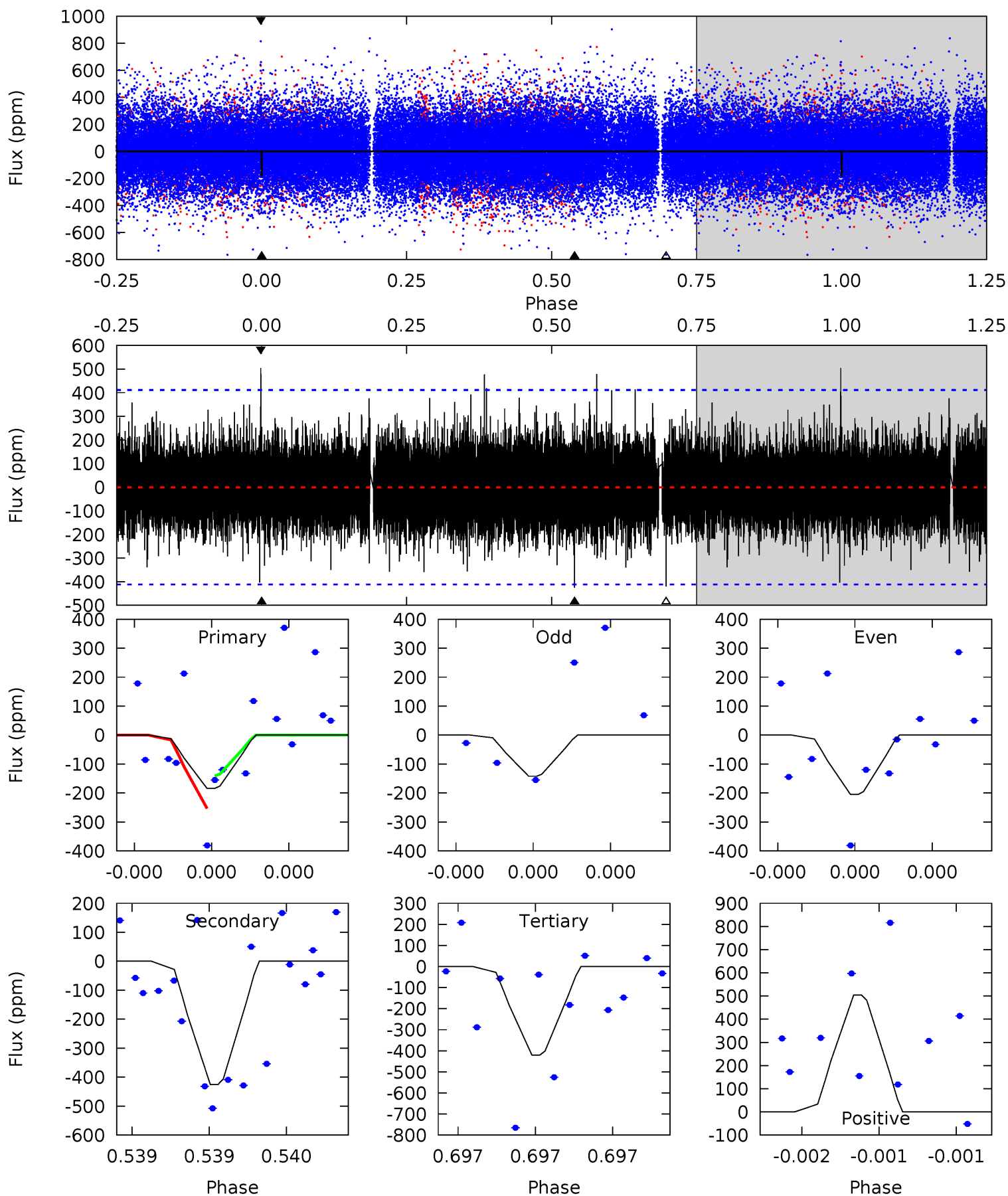
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008257407-03, $P = 443.782867$ Days, $E = 11.819520$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.62	6.04	5.98	7.17	5.85	3.89	1.29	-3.36	-4.55	0.07	-1.13	0.42	1.29	0.54	0.76



Stellar Parameters For KIC 008257407

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6214^{+187}_{-206}	$4.021^{+0.392}_{-0.168}$	$-0.580^{+0.300}_{-0.300}$	$1.583^{+0.415}_{-0.622}$	$0.959^{+0.139}_{-0.126}$	$0.341^{+1.024}_{-0.151}$
	+3%/-3%	+10%/-4%	+52%/-52%	+26%/-39%	+14%/-13%	+301%/-44%
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 008257407-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$18.41^{+15.66}_{-11.43}$	450^{+35}_{-46}	4709^{+11607}_{-18151}	$7257^{+365786}_{-256181}$
Alt.	-425 ± 70	$12.09^{+12.79}_{-8.56}$	448^{+38}_{-48}	3681^{+2202}_{-701}	1989^{+20232}_{-1543}

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 $A_{obs} \gg 1.0$

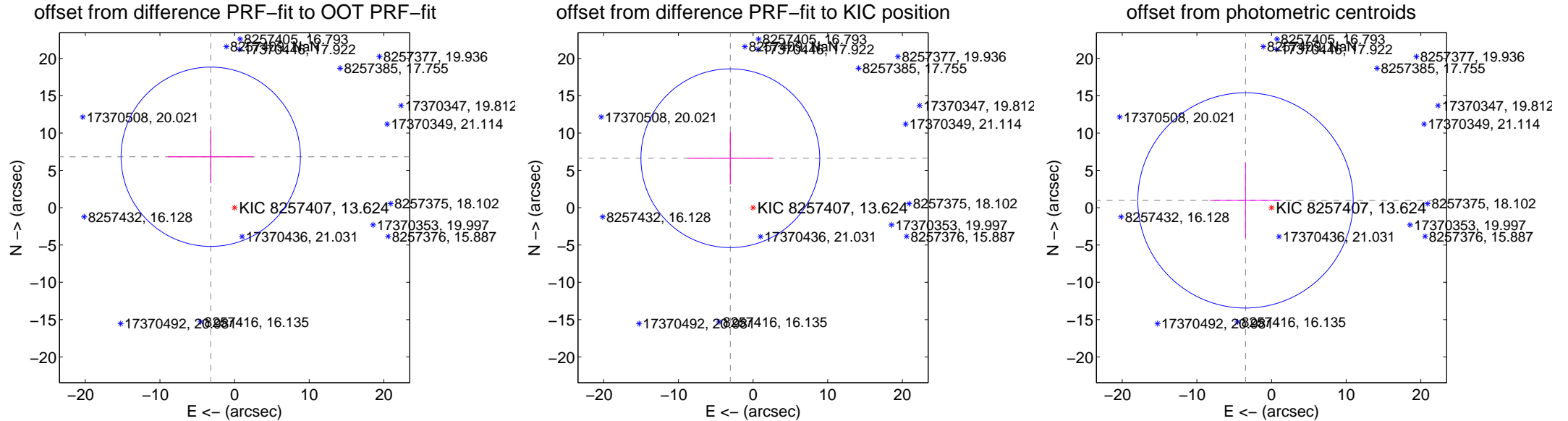
DV Centroid Data

Supplemental centroid analysis for 008257407-03. Kepler magnitude: 13.62. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

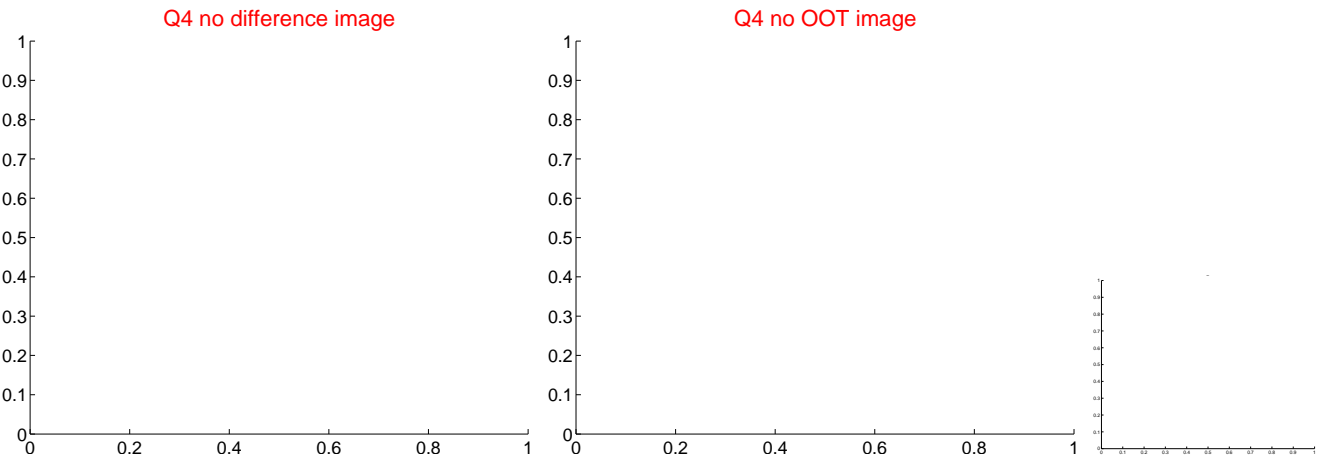
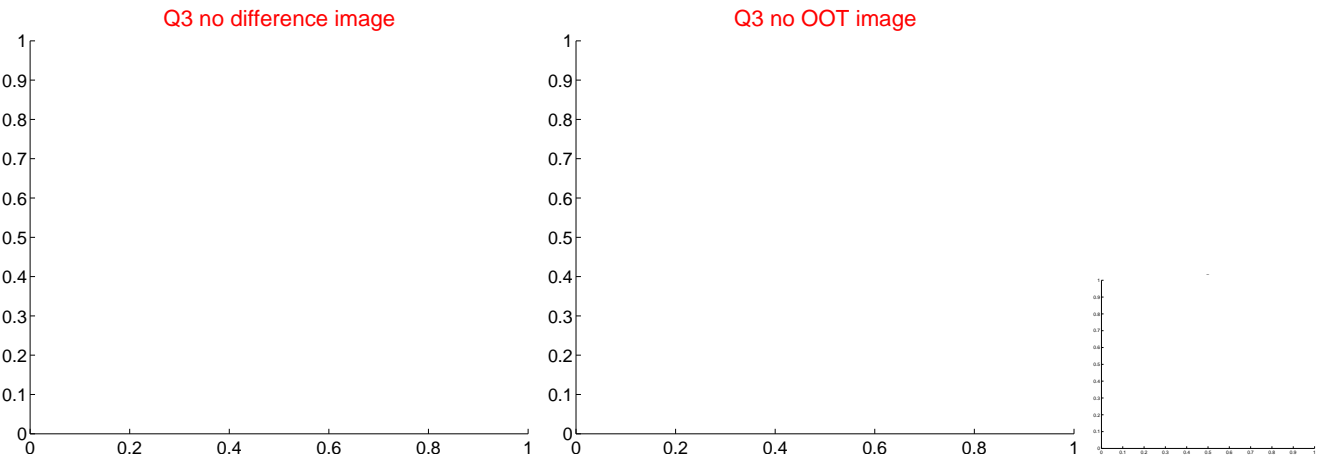
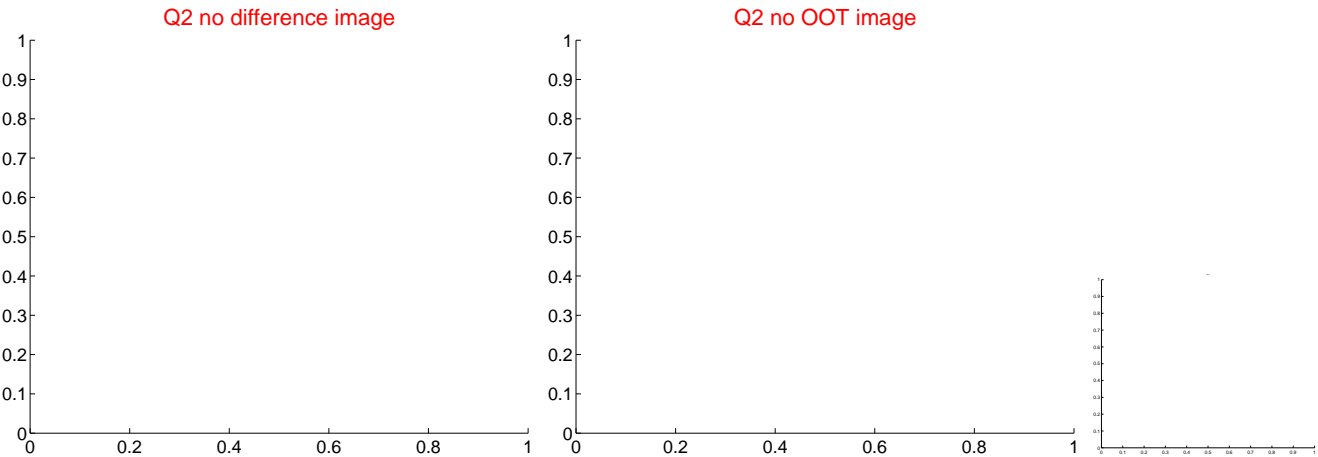
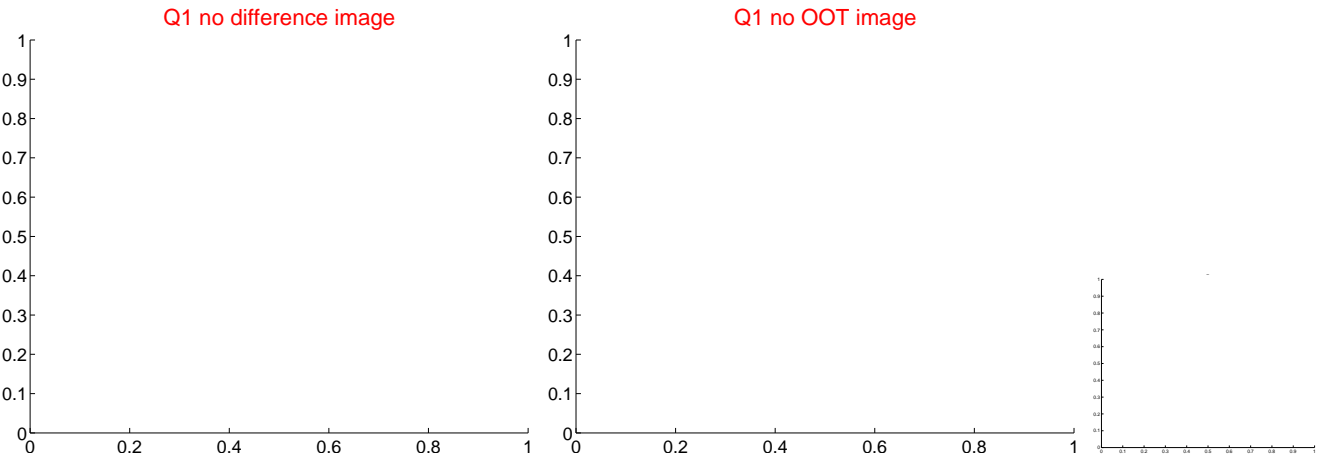
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.535 ± 4.005	1.88	3.193 ± 5.721	6.825 ± 3.519
PRF-fit source offset from KIC position	7.297 ± 3.992	1.83	3.048 ± 5.721	6.630 ± 3.519
photometric centroid source offset	3.62 ± 4.81	0.75	3.49 ± 4.79	0.97 ± 5.03

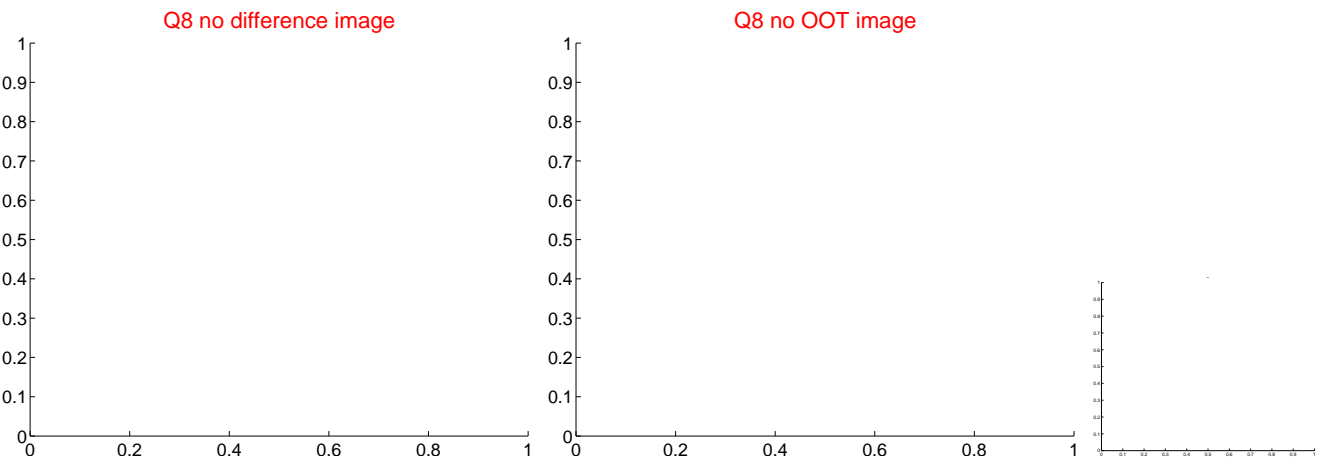
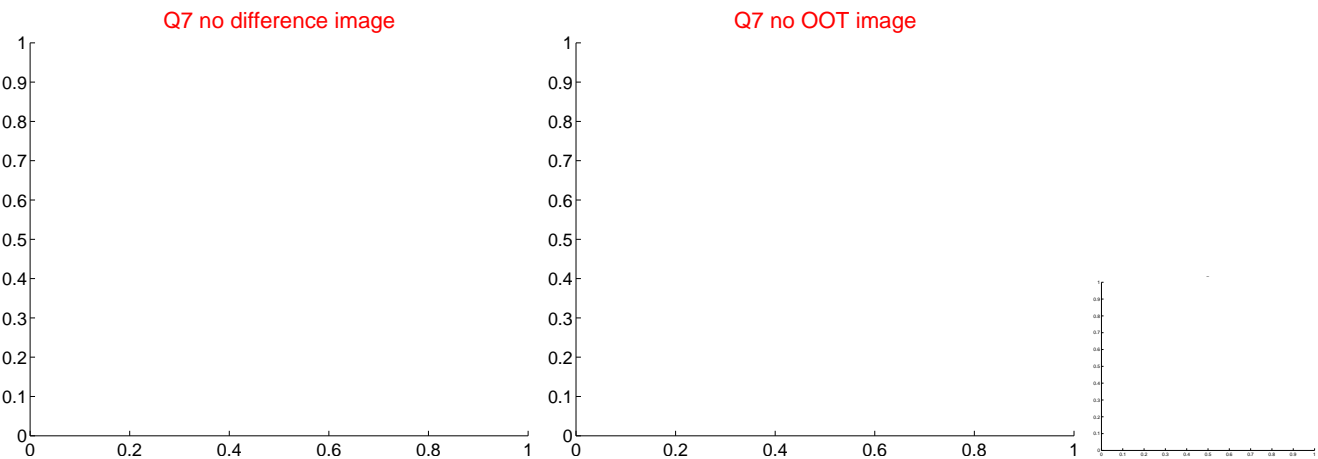
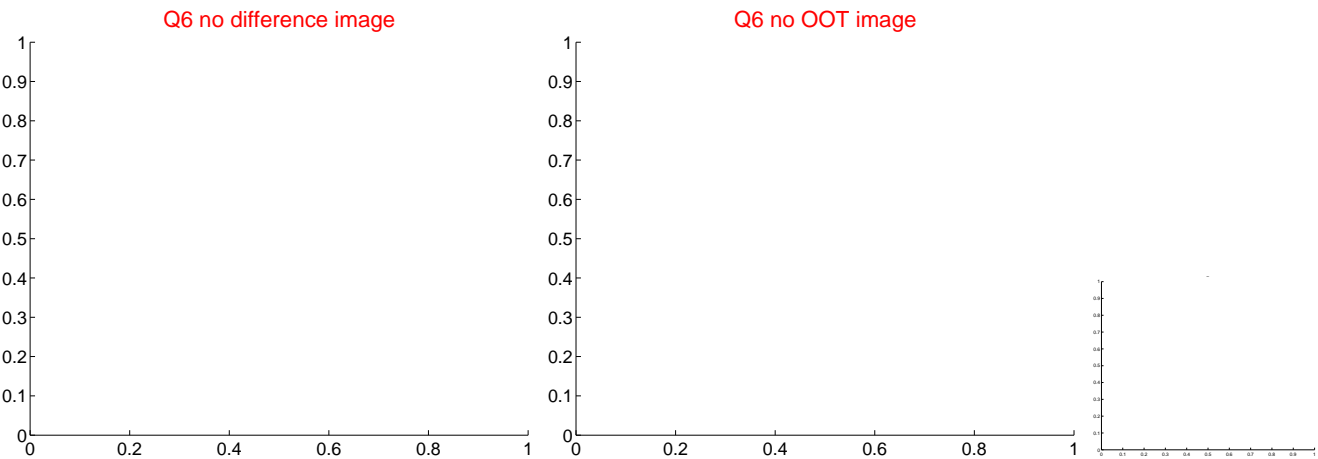
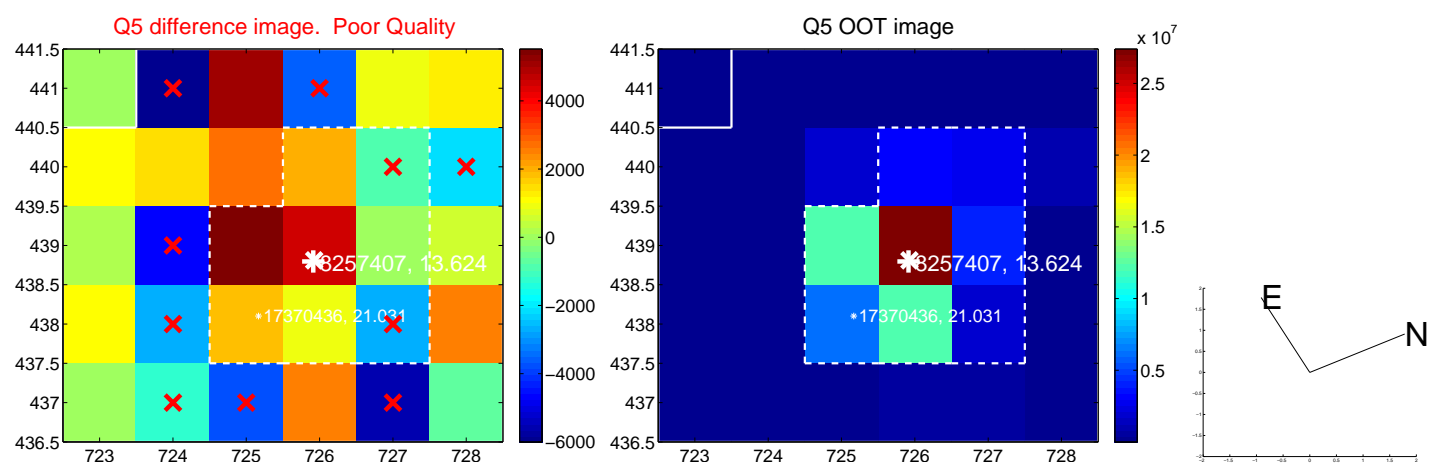


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

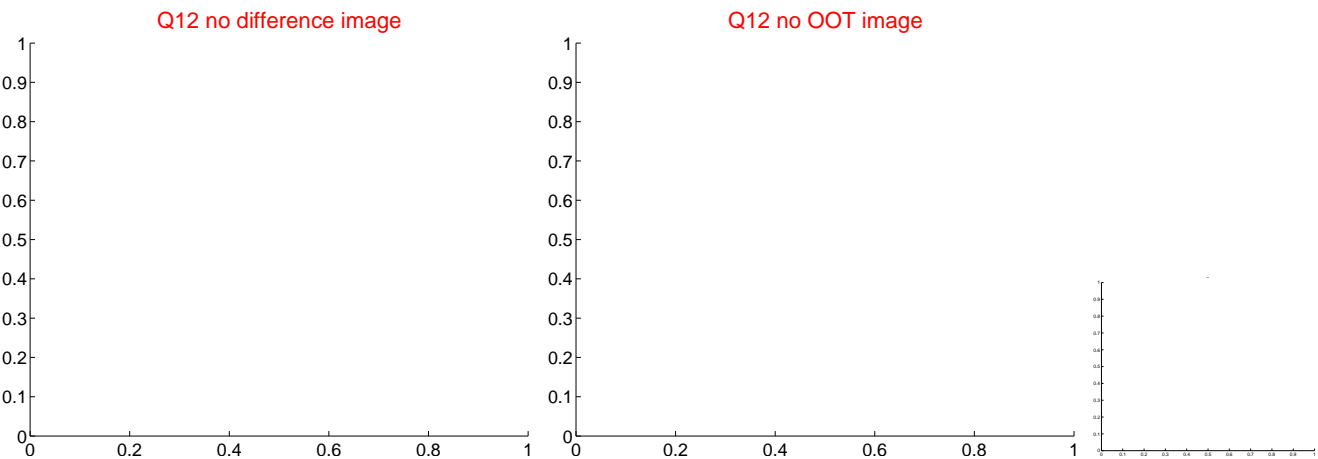
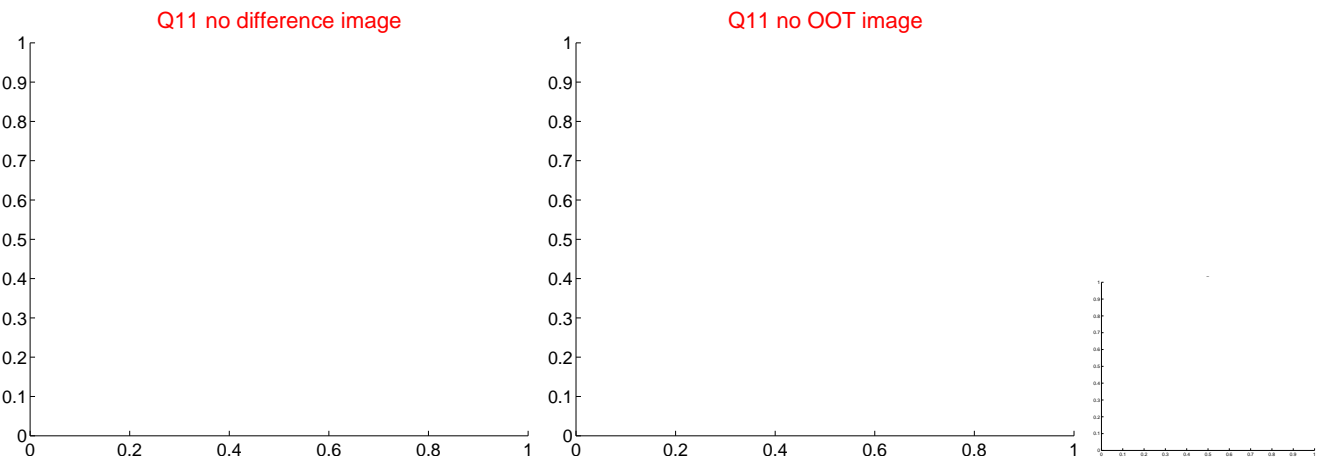
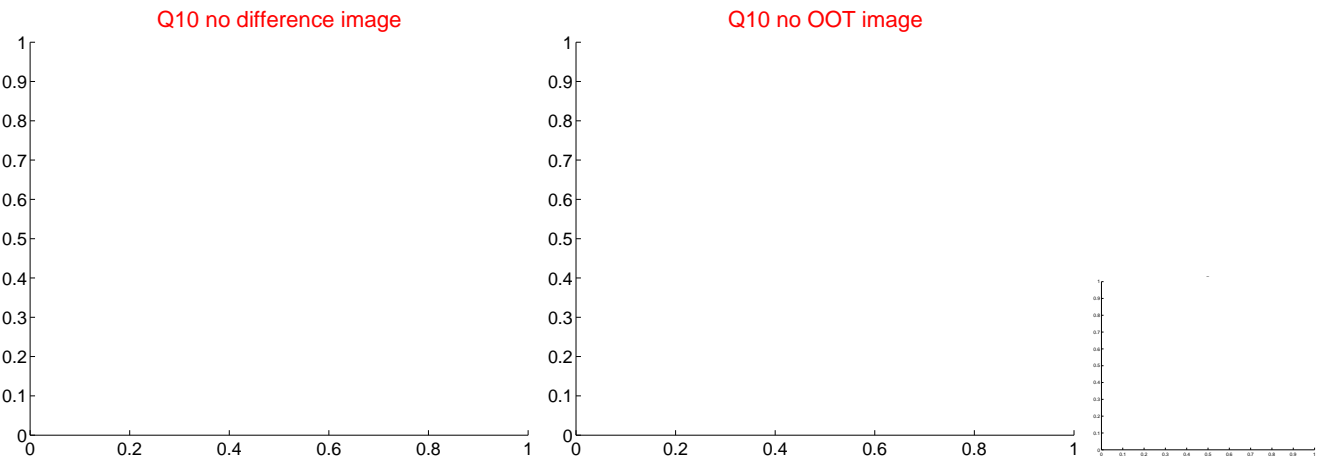
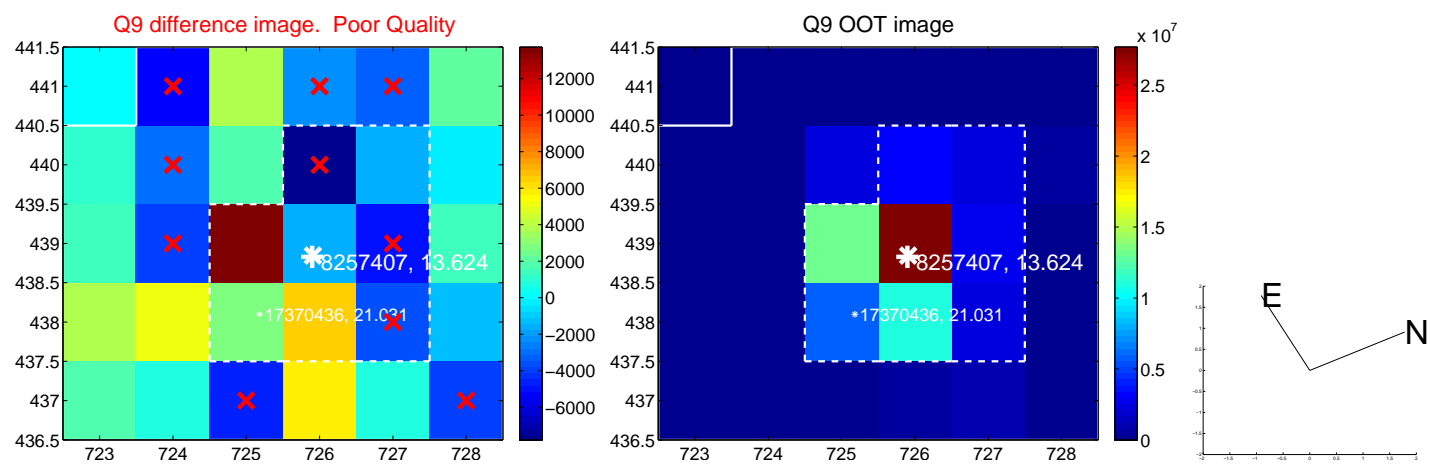
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

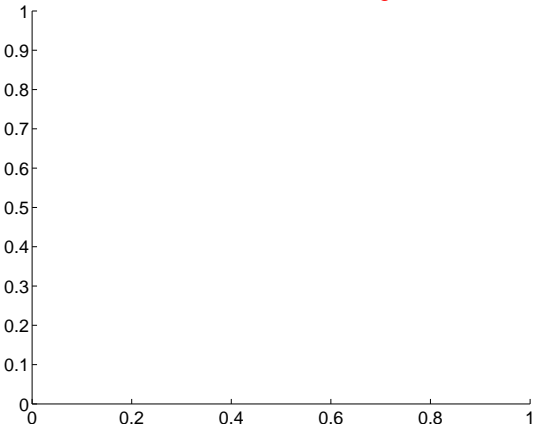


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

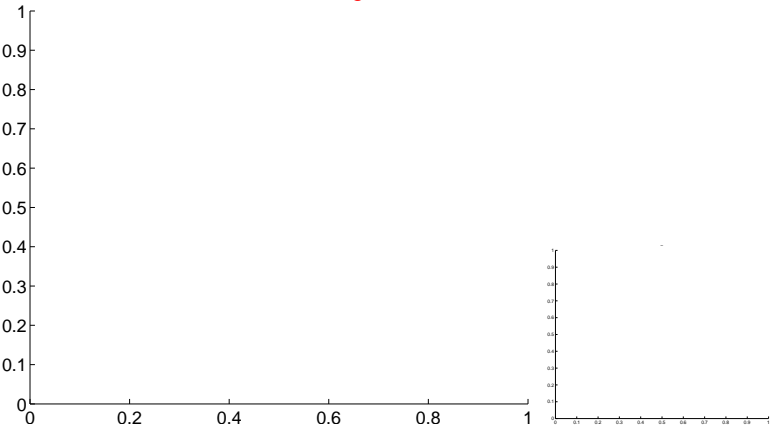


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

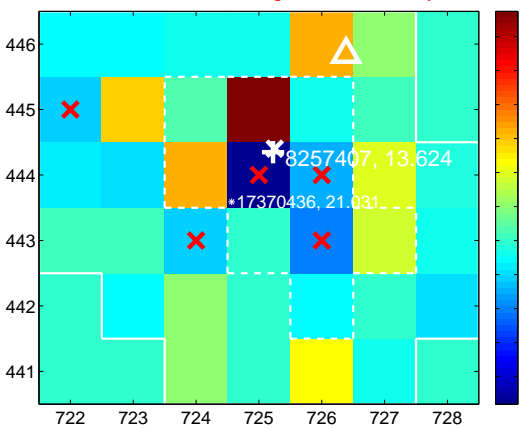
Q13 no difference image



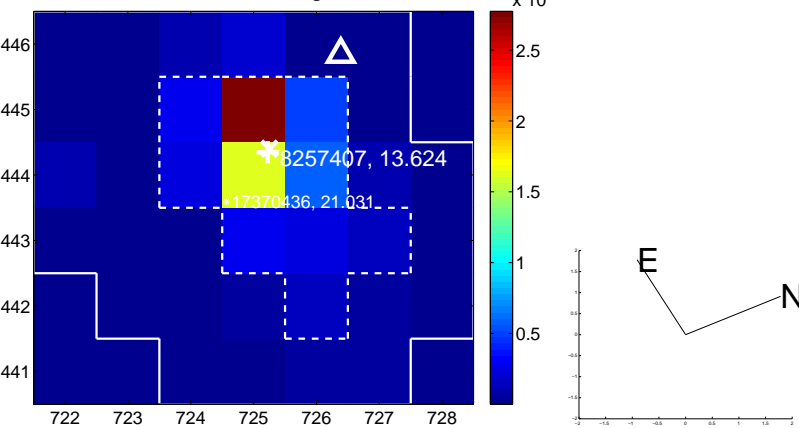
Q13 no OOT image



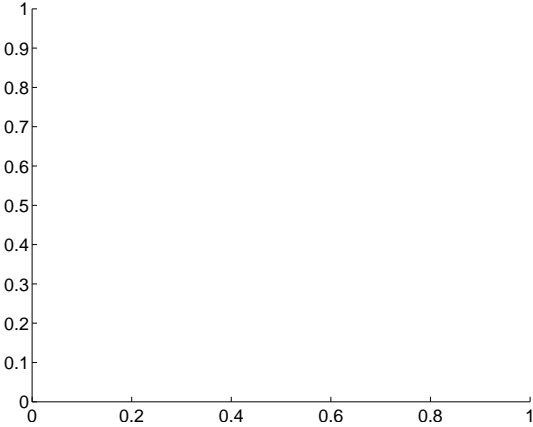
Q14 difference image. Poor Quality



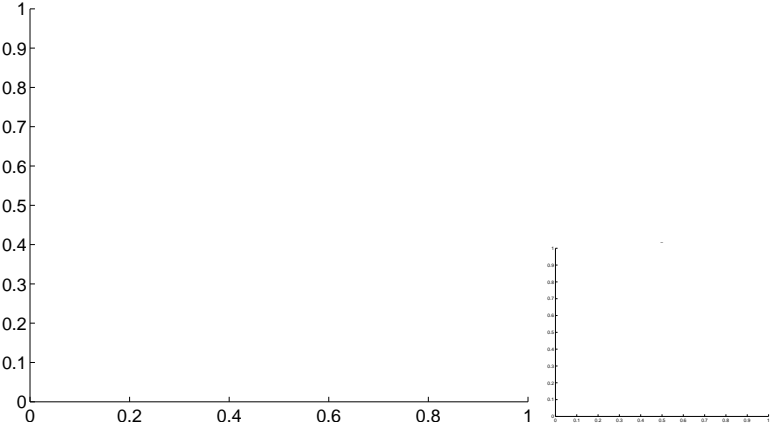
Q14 OOT image



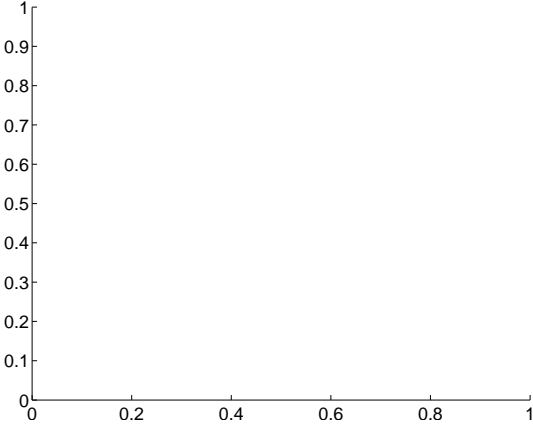
Q15 no difference image



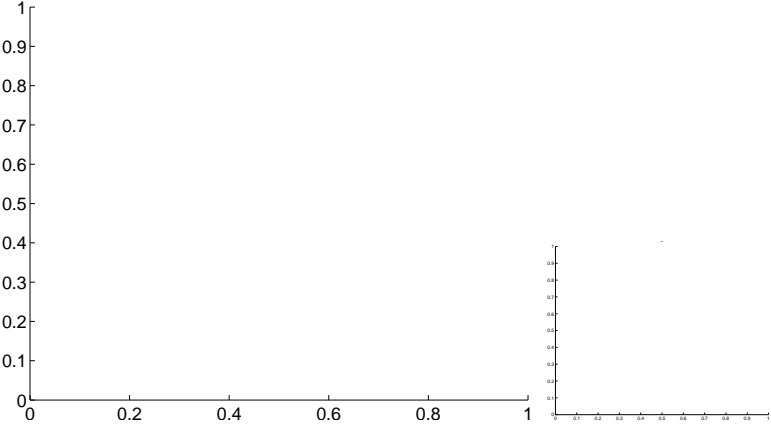
Q15 no OOT image



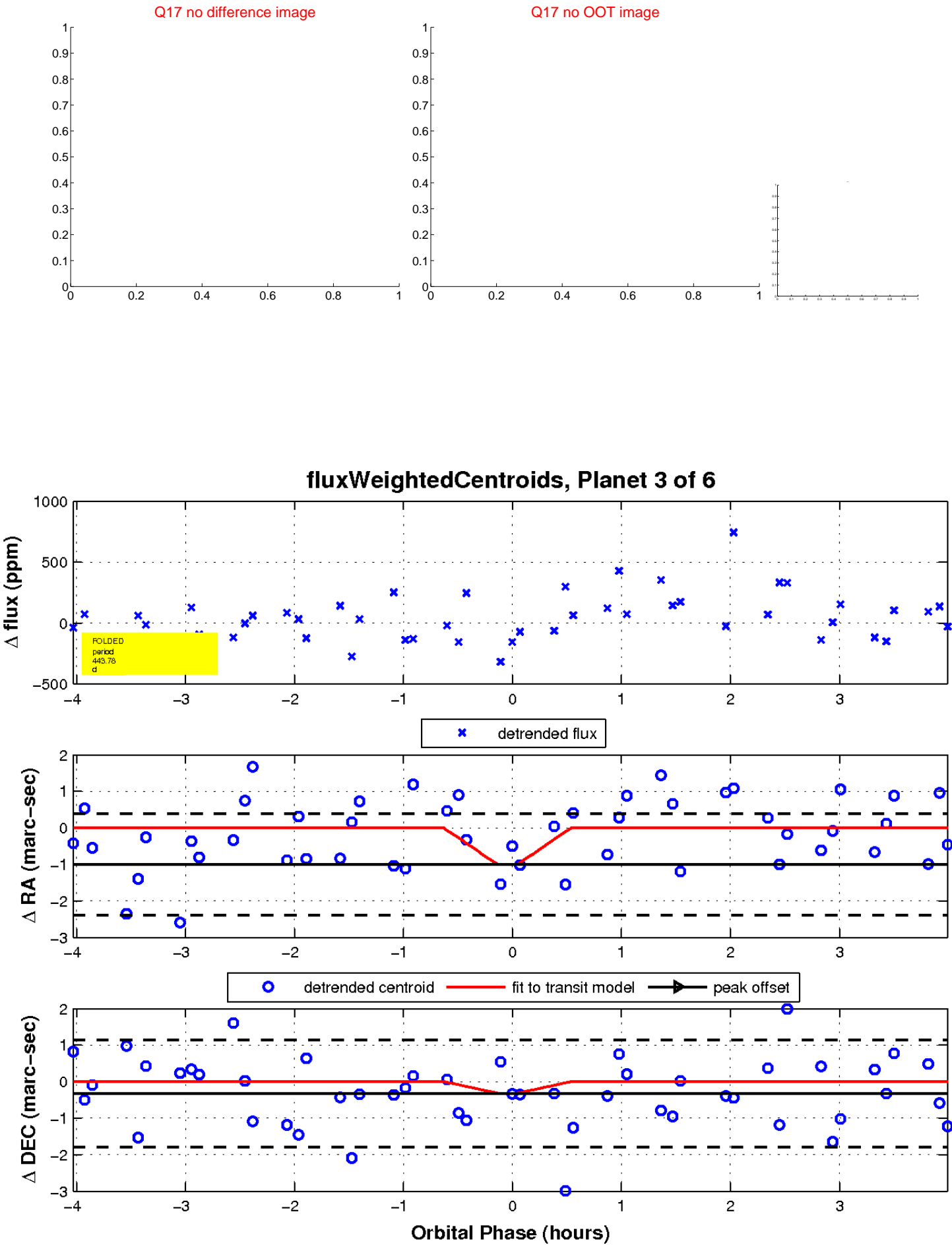
Q16 no difference image



Q16 no OOT image

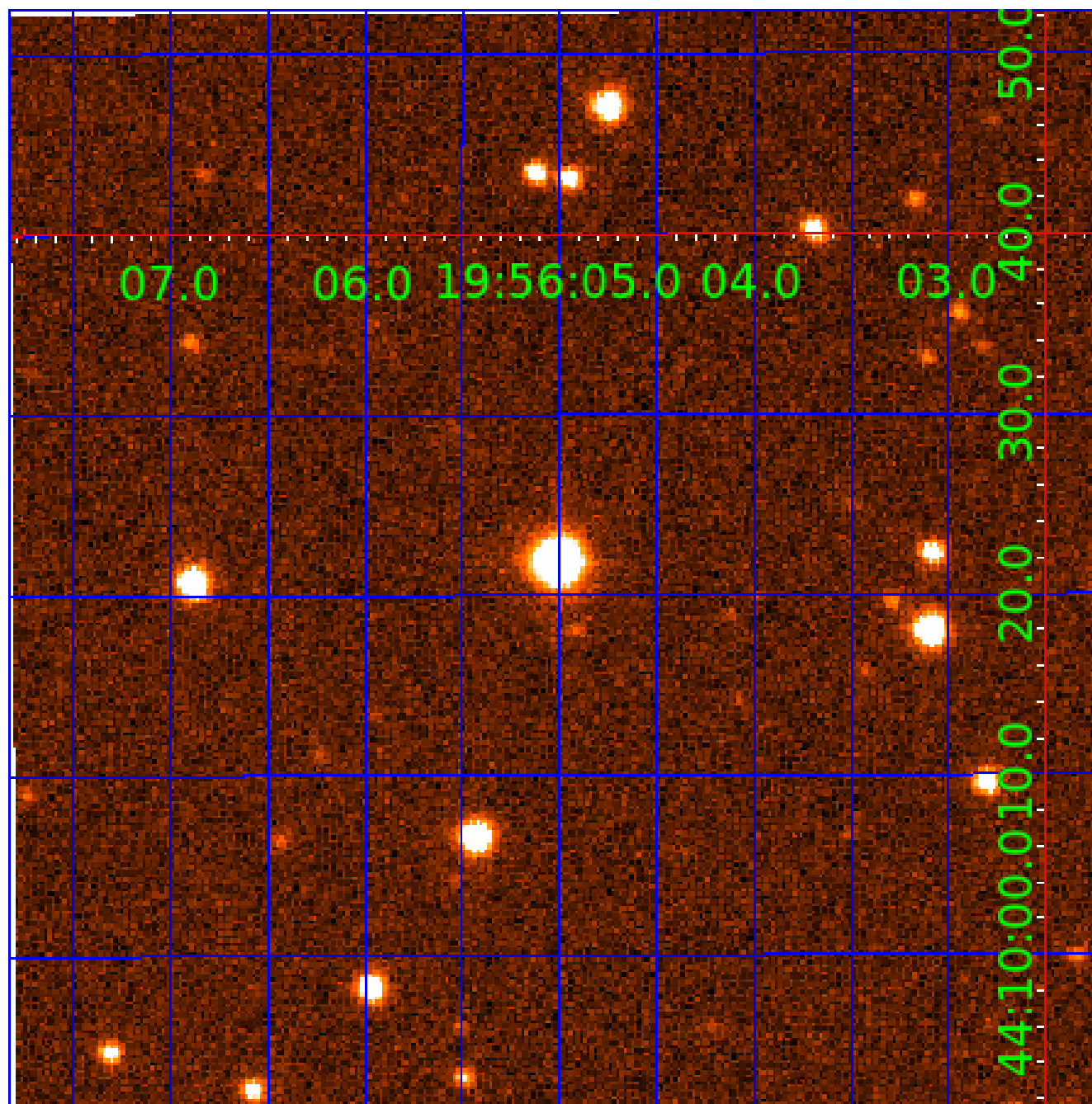


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008257407

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})
008257407-01	OBS	1063.01	89.697868	176.308169	276750.7	3.500	6984.4	-1.0	1.58	6214	72.36	22.37
008257407-02	OBS	No	222.901762	314.931740	590.4	52.293	261.0	13.6	1.58	6214	4.07	6.65
008257407-03	OBS	No	443.782867	455.049172	9501.7	15.000	223.2	-1.0	1.58	6214	15.50	2.65
008257407-04	OBS	No	179.015393	267.781428	1790.7	23.561	19.6	21.0	1.58	6214	12.46	8.90
008257407-05	OBS	No	547.403904	354.640124	874.4	15.925	16.3	12.6	1.58	6214	8.88	2.01
008257407-06	OBS	No	472.103781	178.157406	415.3	9.000	11.7	-1.0	1.58	6214	3.24	2.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008257407-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS
008257407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008257407-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008257407-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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 008257407-04

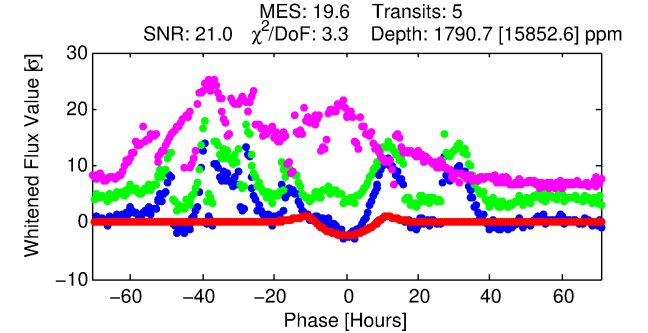
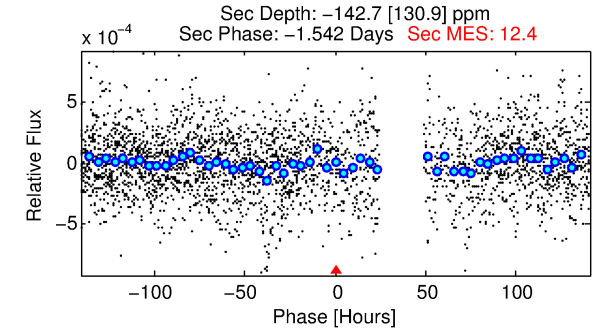
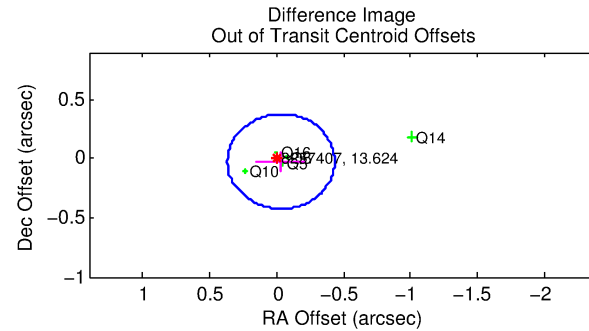
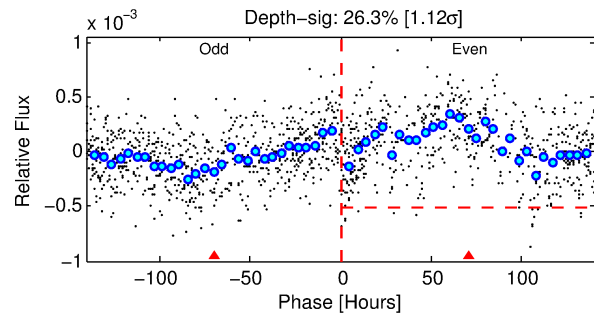
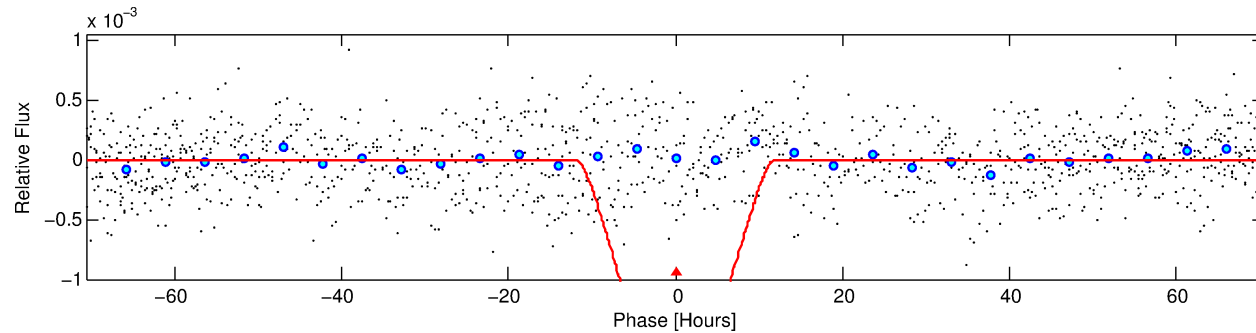
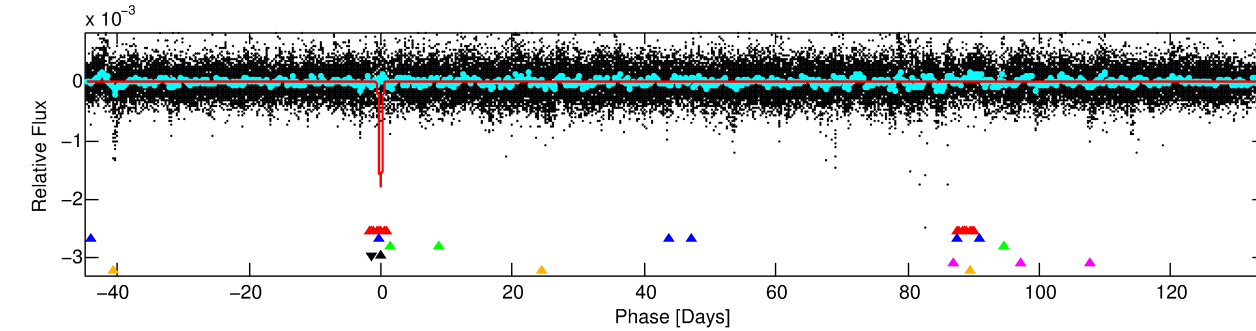
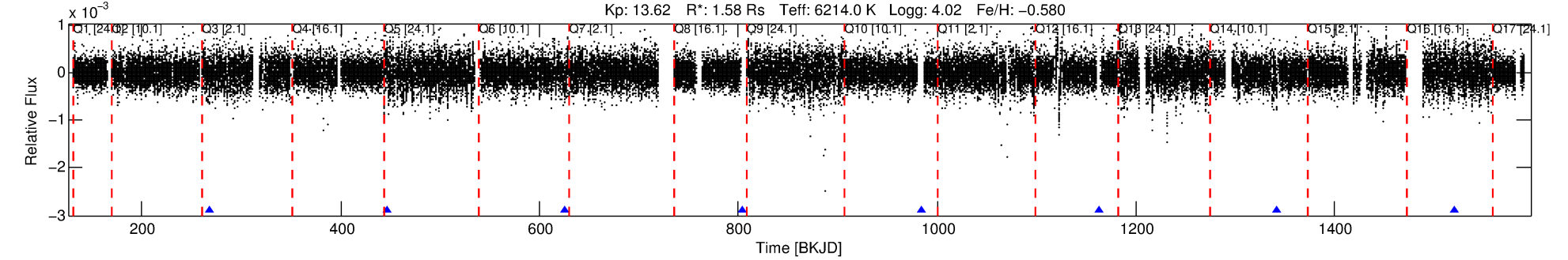
No Significant Match Found

DV One-Page Summary

KIC: 8257407 Candidate: 4 of 6 Period: 179.015 d

KOI: K01063 Corr: No Ephemeris Match

Kp: 13.62 R*: 1.58 Rs Teff: 6214.0 K Logg: 4.02 Fe/H: -0.580



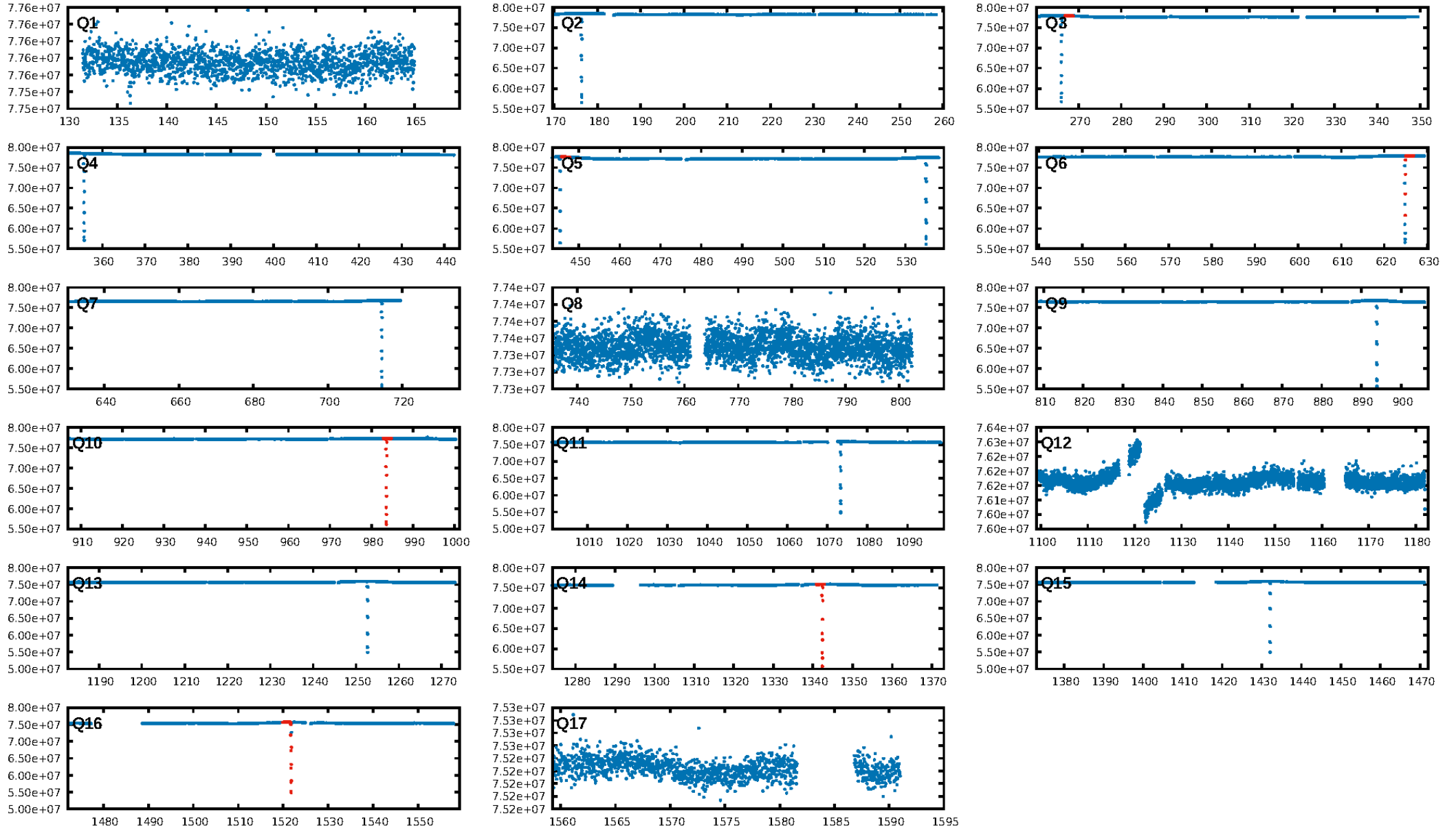
DV Fit Results:

Period = 179.01539 [0.00860] d
Epoch = 267.7814 [0.0387] BKJD
Rp/R* = 0.0721 [0.1551]
a/R* = 22.46 [10.48]
b = 1.00 [0.21]
Seff = 8.90 [5.96]
Teq = 440 [74] K
Rp = 12.46 [27.24] Re
a = 0.6132 [0.2446] AU
Ag = N/A
Teffp = N/A

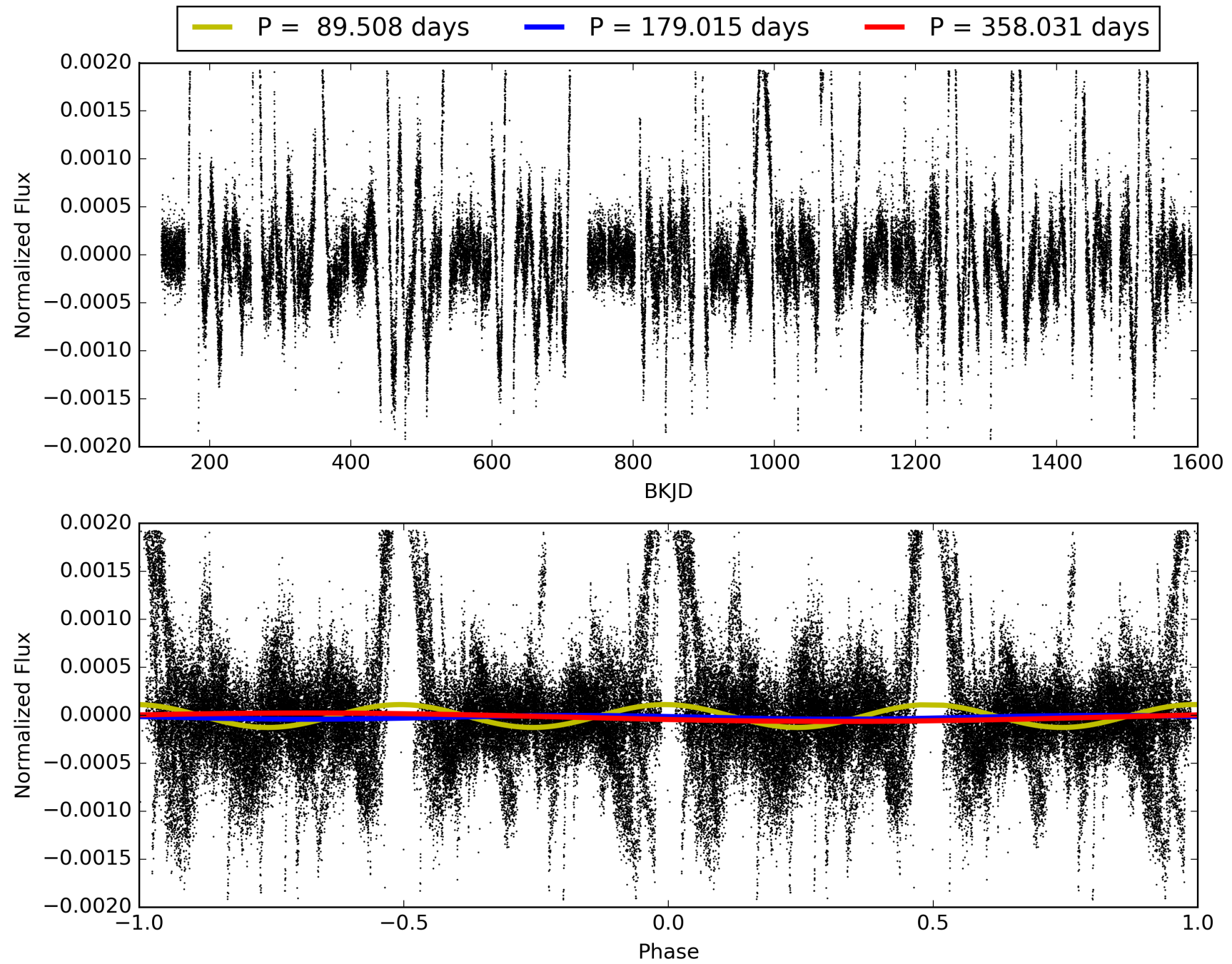
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [89.99σ]
LongPeriod-sig: 100.0% [18.36σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.2212
Centroid-sig: 82.0%
Centroid-so: 0.195 arcsec [1.29σ]
OotOffset-rm: 0.040 arcsec [0.30σ]
KicOffset-rm: 0.143 arcsec [1.18σ]
OotOffset-st: 3/0/1/1 [5]
KicOffset-st: 3/0/1/1 [5]
DiffImageQuality-fgm: 0.20 [1/5]
DiffImageOverlap-fno: 0.00 [0/5]

TCE 008257407-04, PDC Light Curves

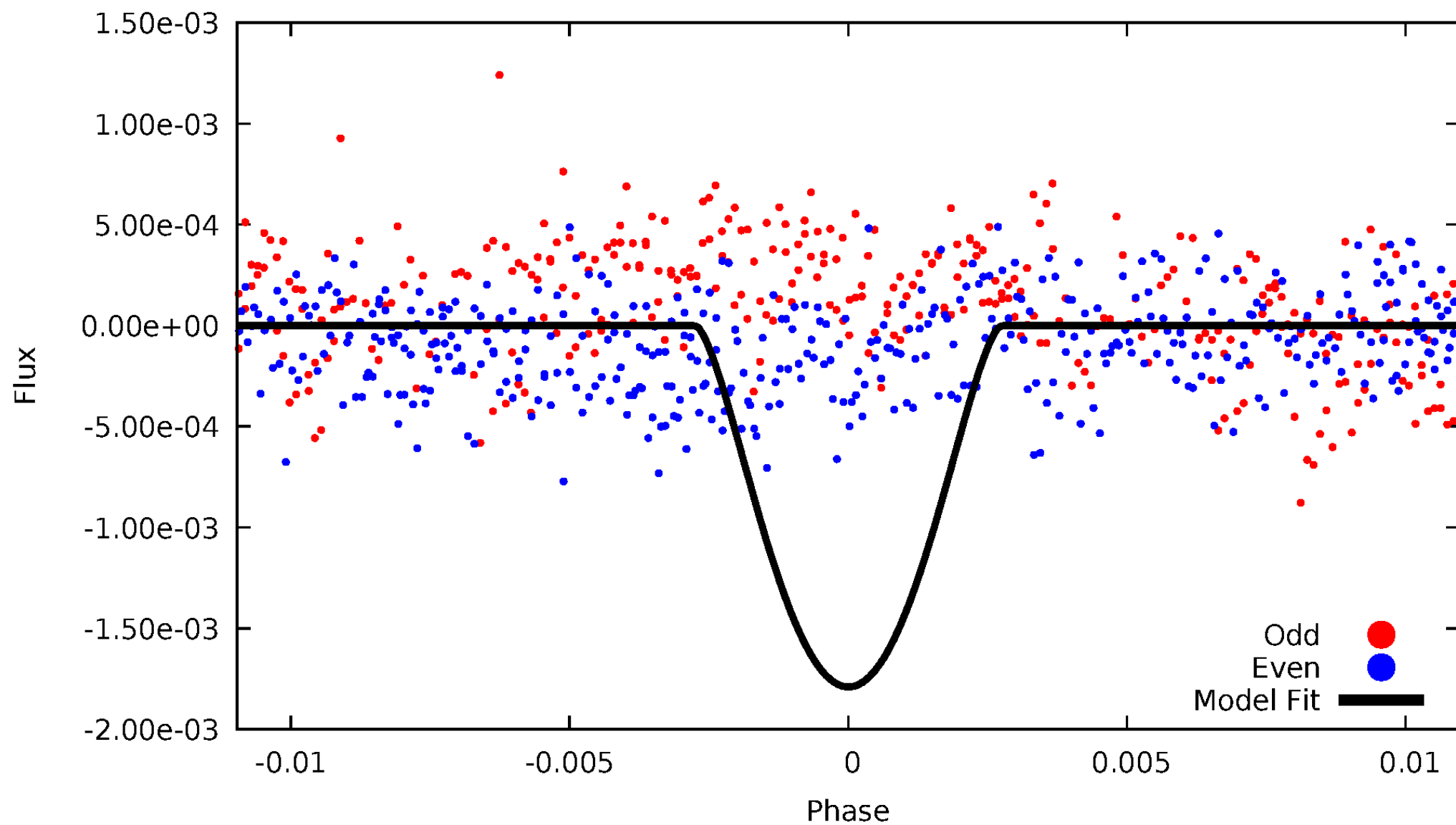


TCE 008257407-04



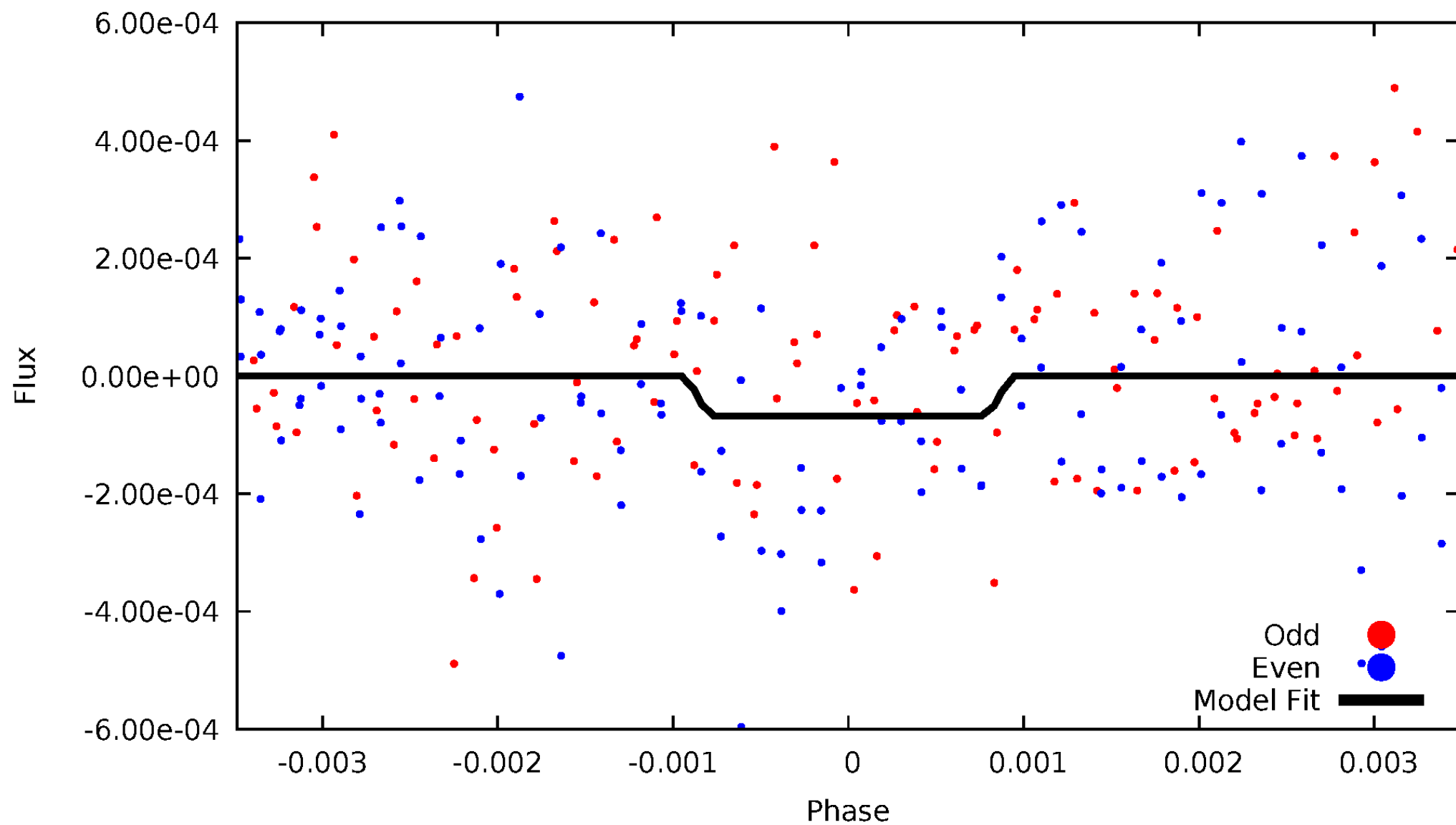
DV Odd/Even

TCE 008257407-04



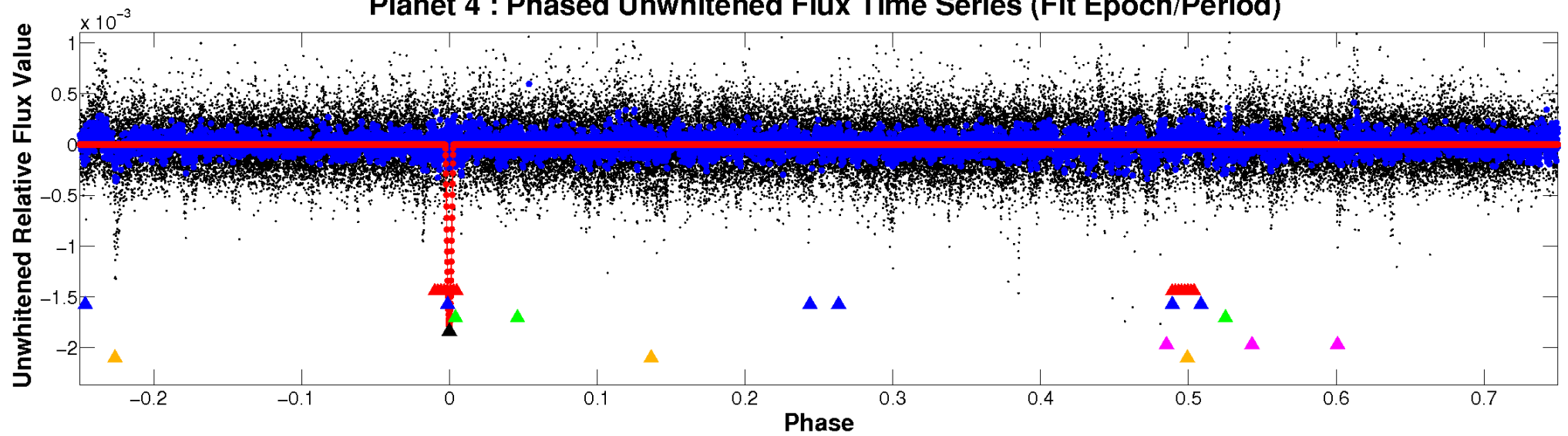
ALT Odd/Even

TCE 008257407-04

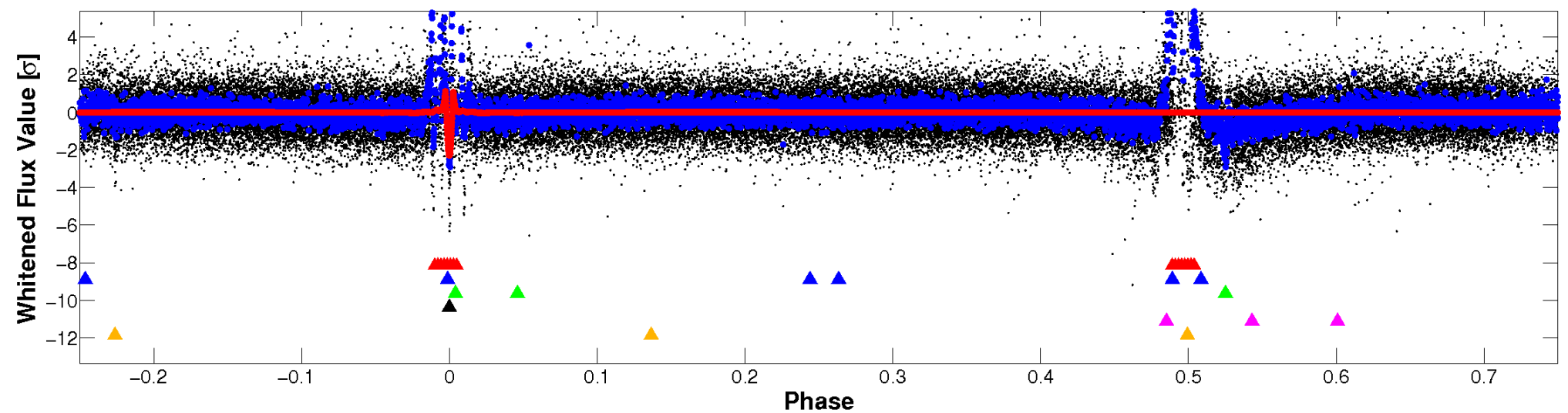


Non-Whitened Vs. Whitened Light Curve

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

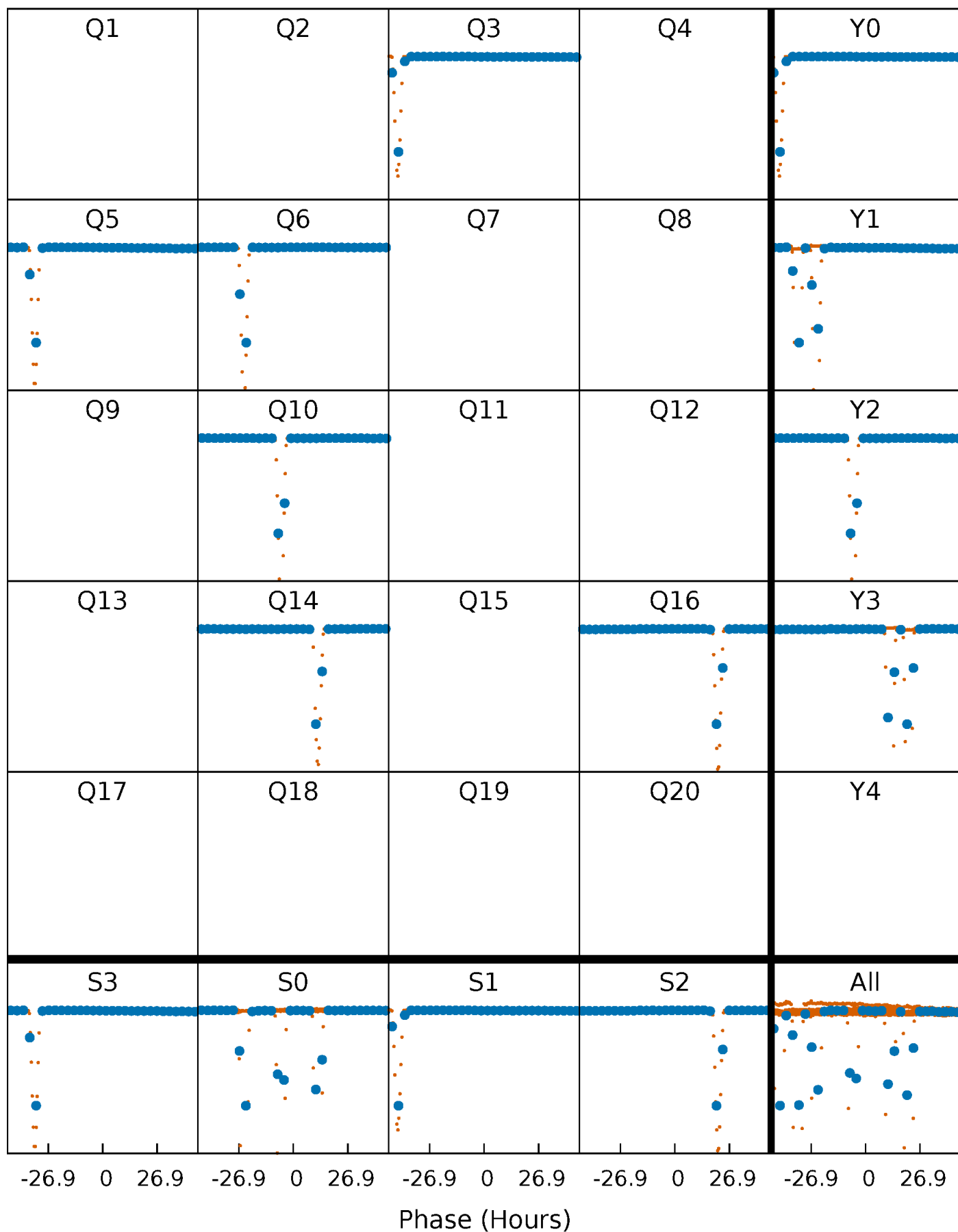


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



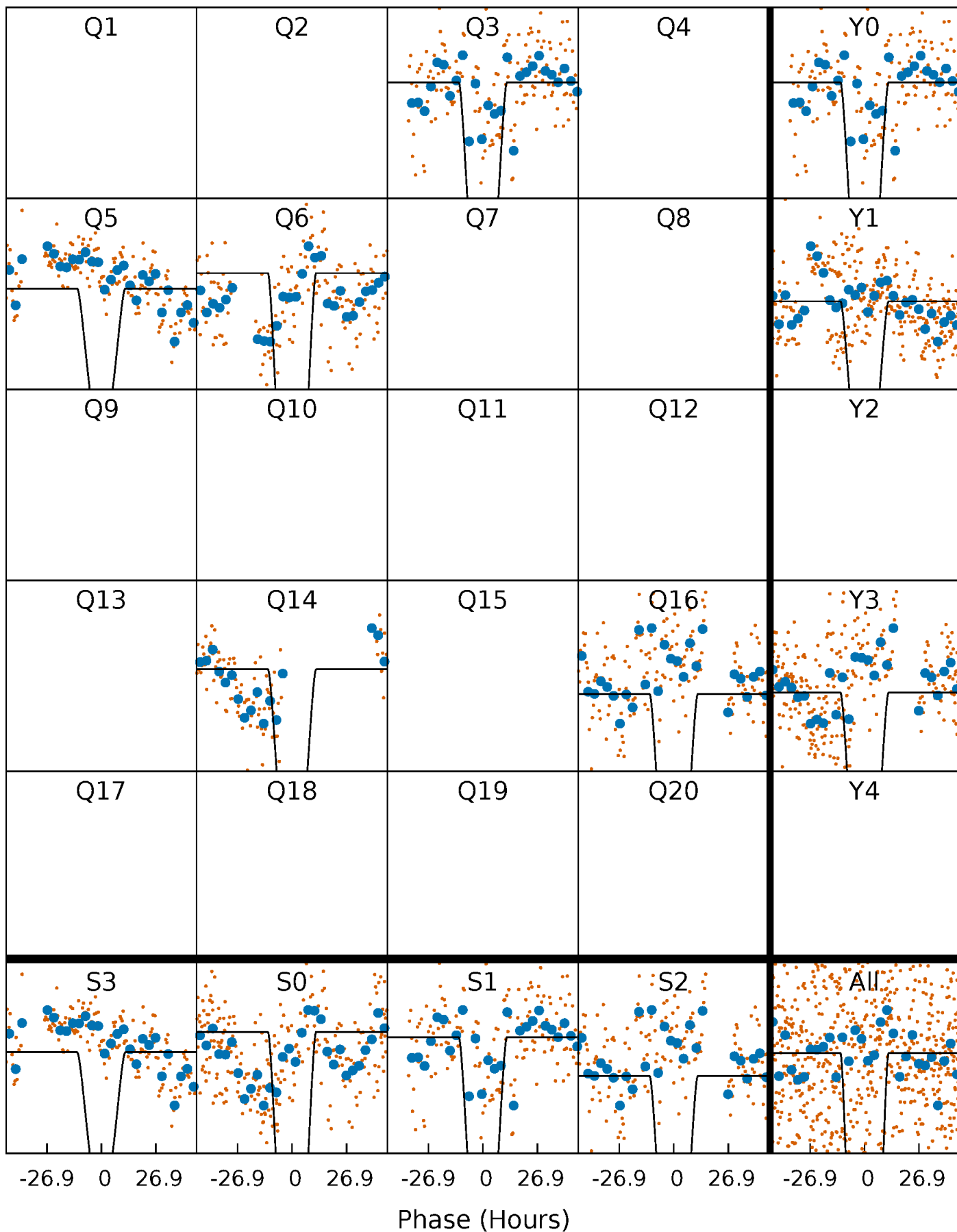
PDC Quarter-Phased Transit Curves

TCE 008257407-04 P=179.015393 Days $T_0=267.781428$ (BKJD)



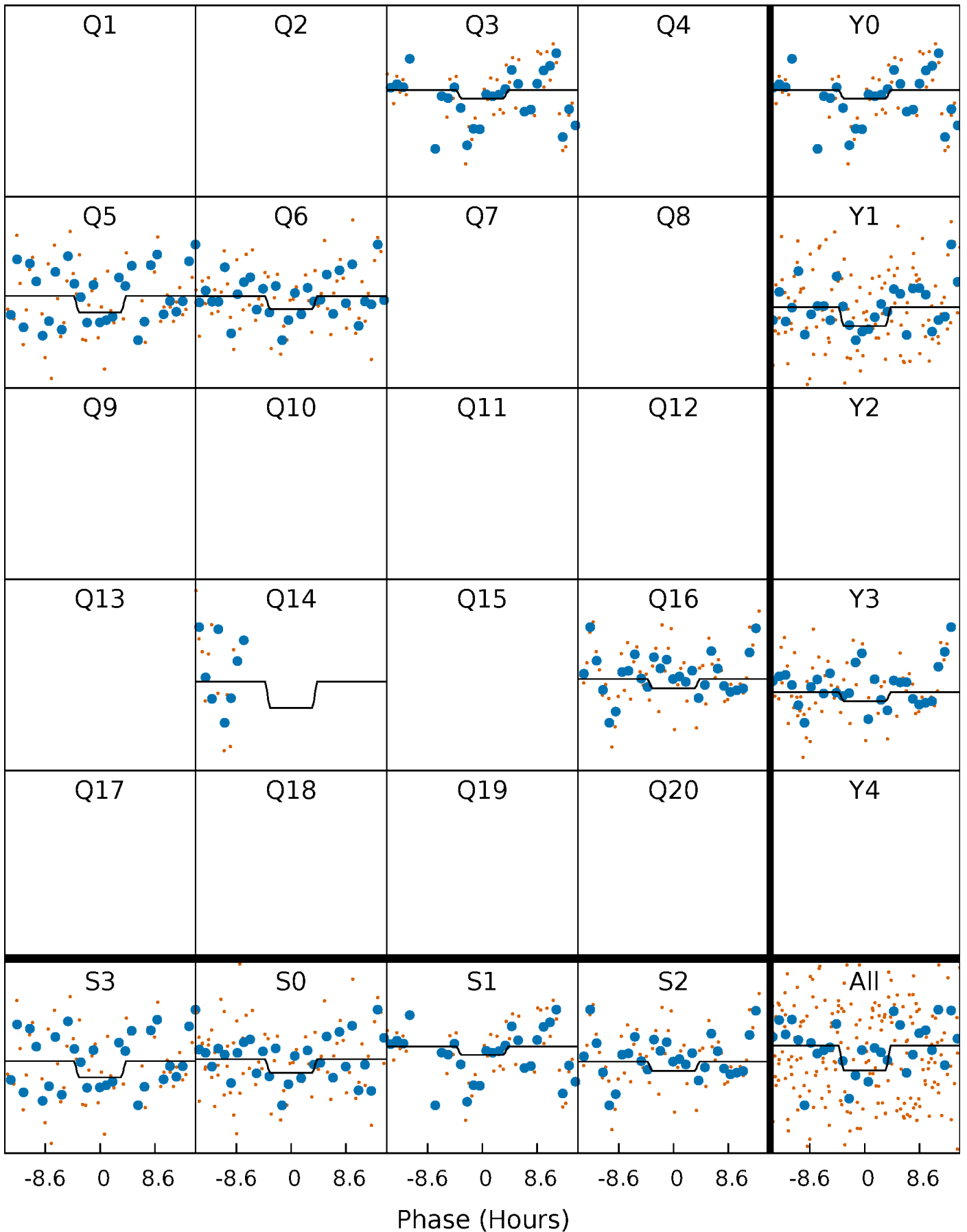
DV Quarter-Phased Transit Curves

TCE 008257407-04 P=179.015393 Days $T_0=267.781428$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

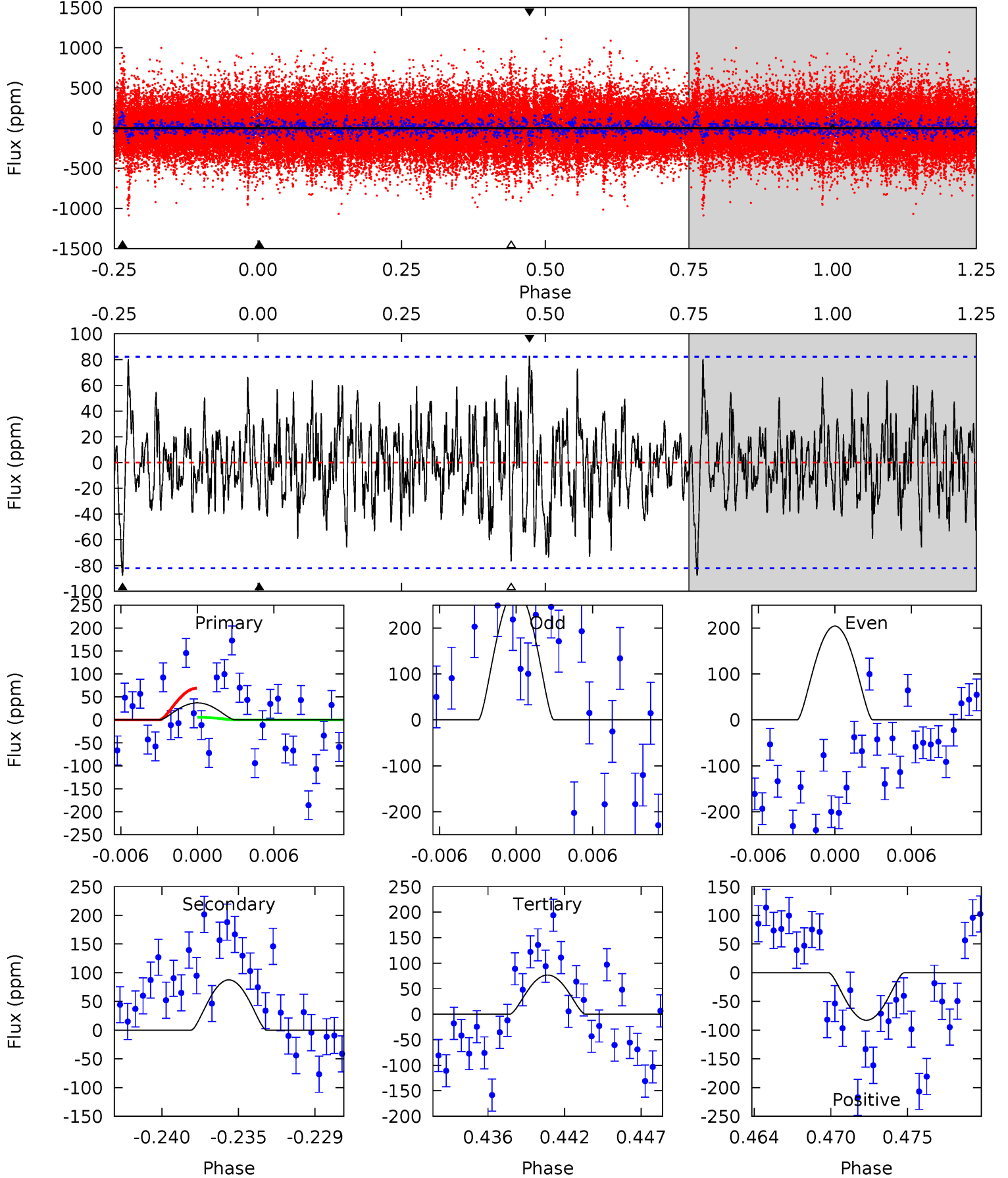
TCE 008257407-04 P=179.019128 Days $T_0=267.853841$ (BKJD)



DV Model-Shift Uniqueness Test

008257407-04, P = 179.015393 Days, E = 88.766035 Days

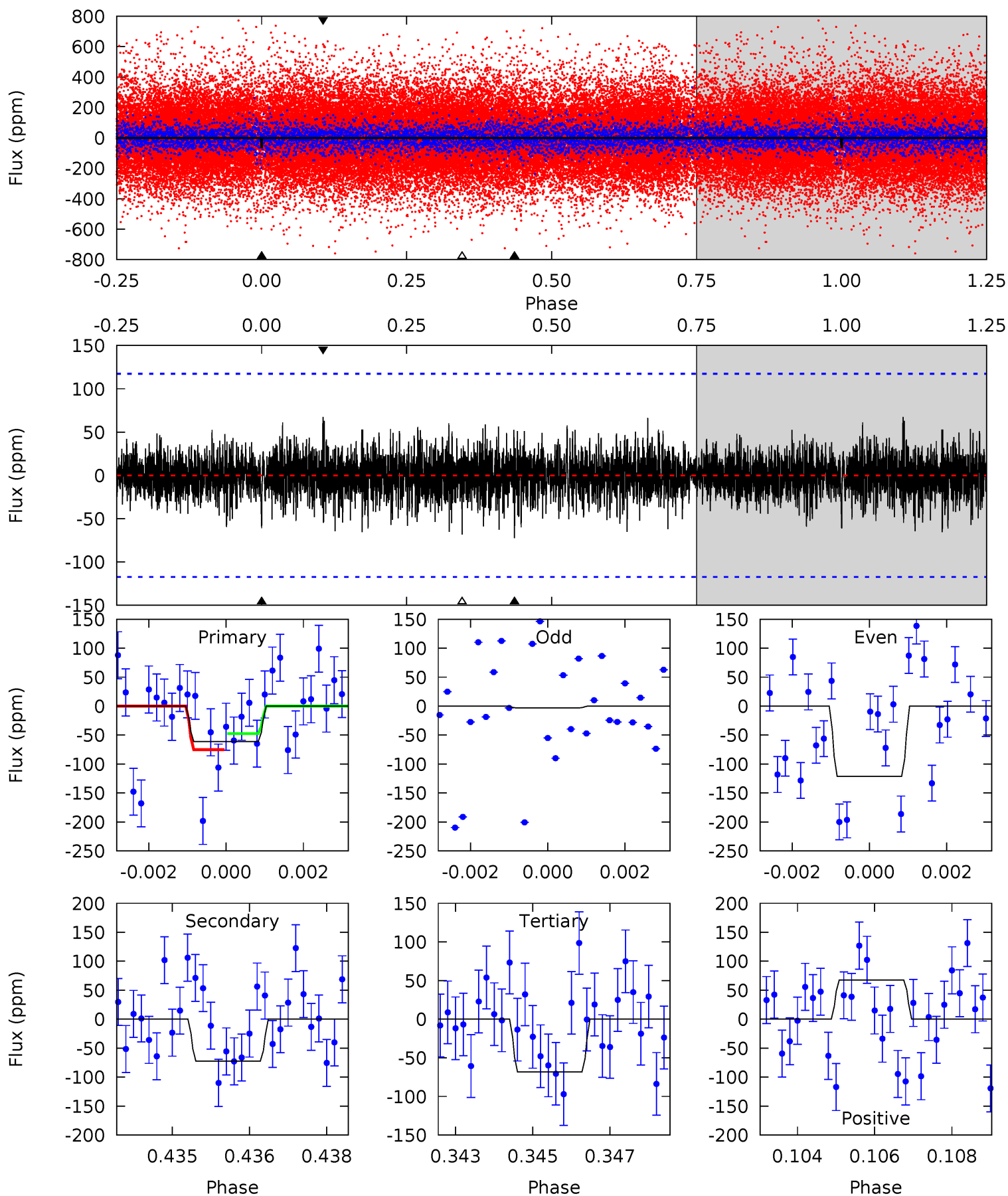
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.32	5.48	4.80	5.18	5.14	2.77	1.60	-2.48	-2.86	0.68	0.30	2.43	0.60	0.49	1.99



Alt Model-Shift Uniqueness Test

008257407-04, $P = 179.019128$ Days, $E = 88.834713$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.79	3.29	3.11	3.08	5.34	3.12	0.84	-0.32	-0.29	0.19	0.21	2.70	1.12	0.48	0.64



Stellar Parameters For KIC 008257407

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6214^{+187}_{-206}	$4.021^{+0.392}_{-0.168}$	$-0.580^{+0.300}_{-0.300}$	$1.583^{+0.415}_{-0.622}$	$0.959^{+0.139}_{-0.126}$	$0.341^{+1.024}_{-0.151}$
	+3%/-3%	+10%/-4%	+52%/-52%	+26%/-39%	+14%/-13%	+301%/-44%
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 008257407-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-88 ± 16	$20.50^{+21.21}_{-13.42}$	607^{+53}_{-65}	2538^{+818}_{-403}	42^{+307}_{-32}
Alt.	-72 ± 22	$16.67^{+21.11}_{-11.64}$	607^{+54}_{-64}	2596^{+1050}_{-438}	51^{+551}_{-40}

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 $A_{obs} \gg 1.0$

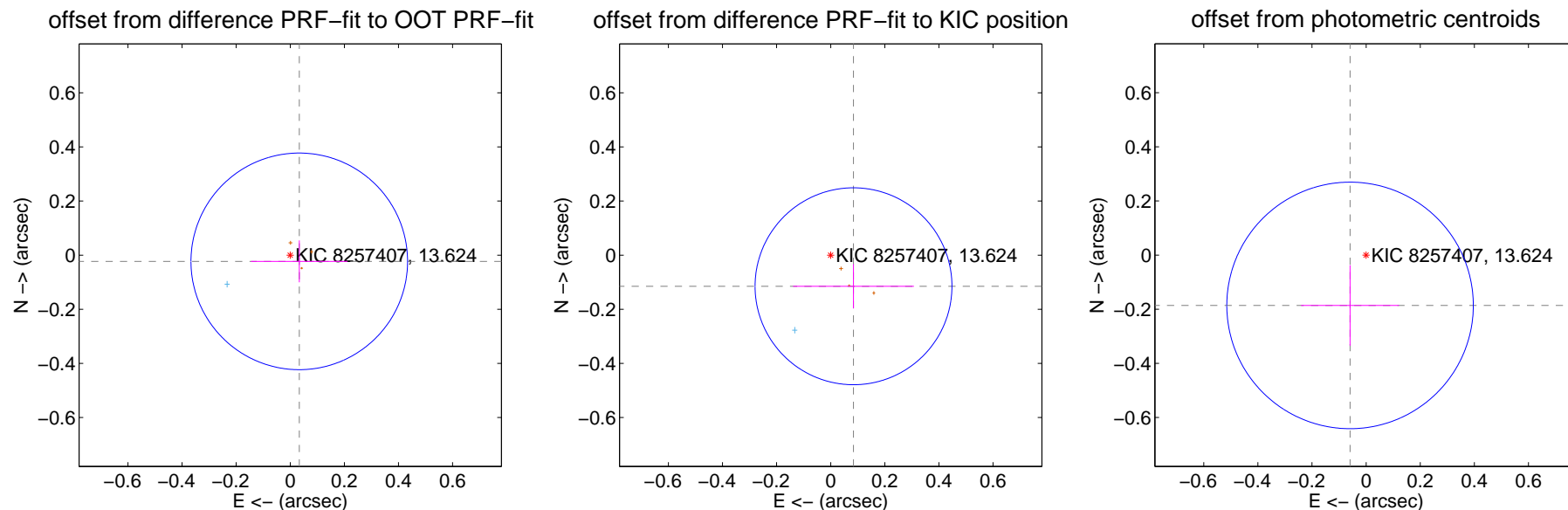
DV Centroid Data

Supplemental centroid analysis for 008257407-04. Kepler magnitude: 13.62. Transit SNR 20.99

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.040 ± 0.133	0.30	-0.033 ± 0.178	-0.023 ± 0.078
PRF-fit source offset from KIC position	0.143 ± 0.121	1.18	-0.084 ± 0.224	-0.115 ± 0.082
photometric centroid source offset	0.20 ± 0.15	1.29	0.06 ± 0.18	-0.19 ± 0.15

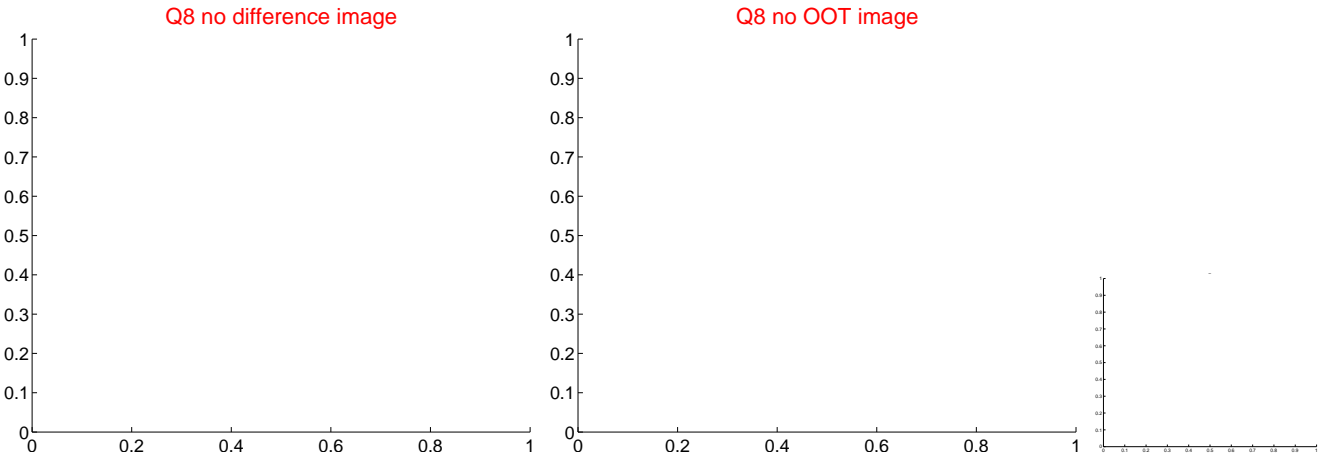
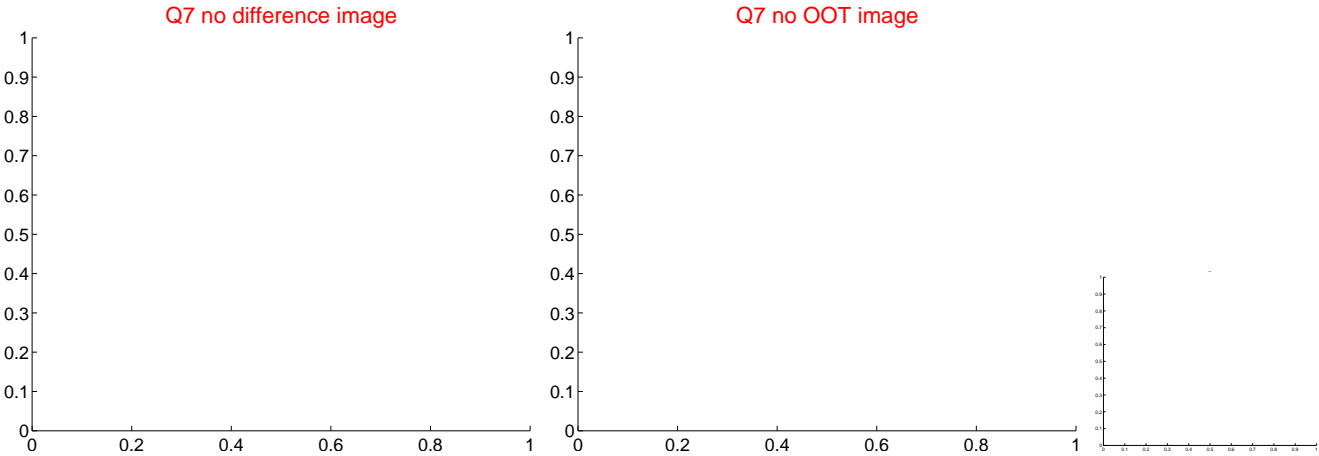
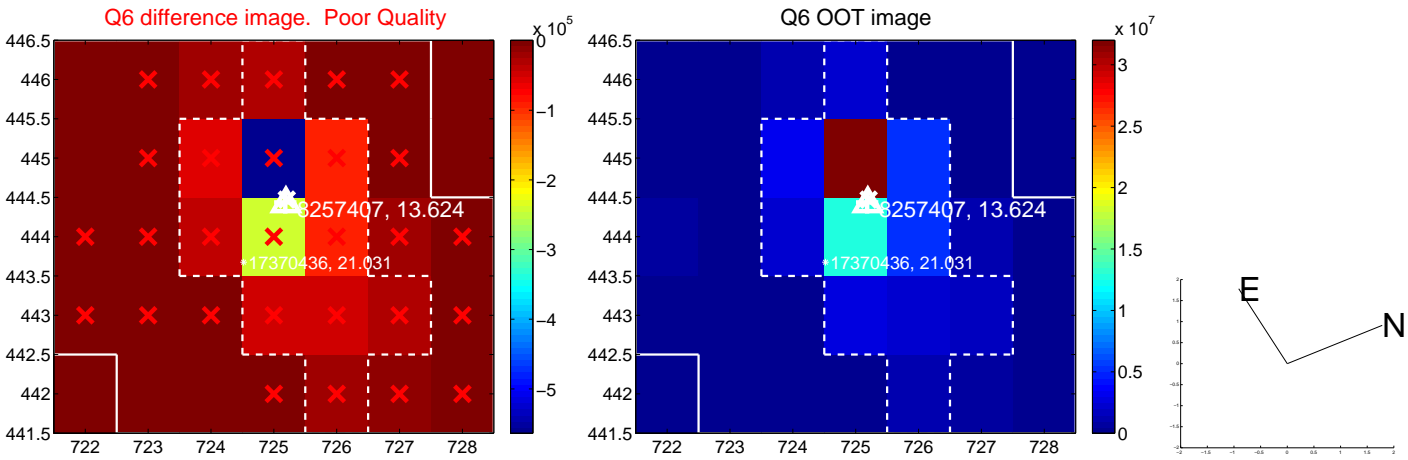
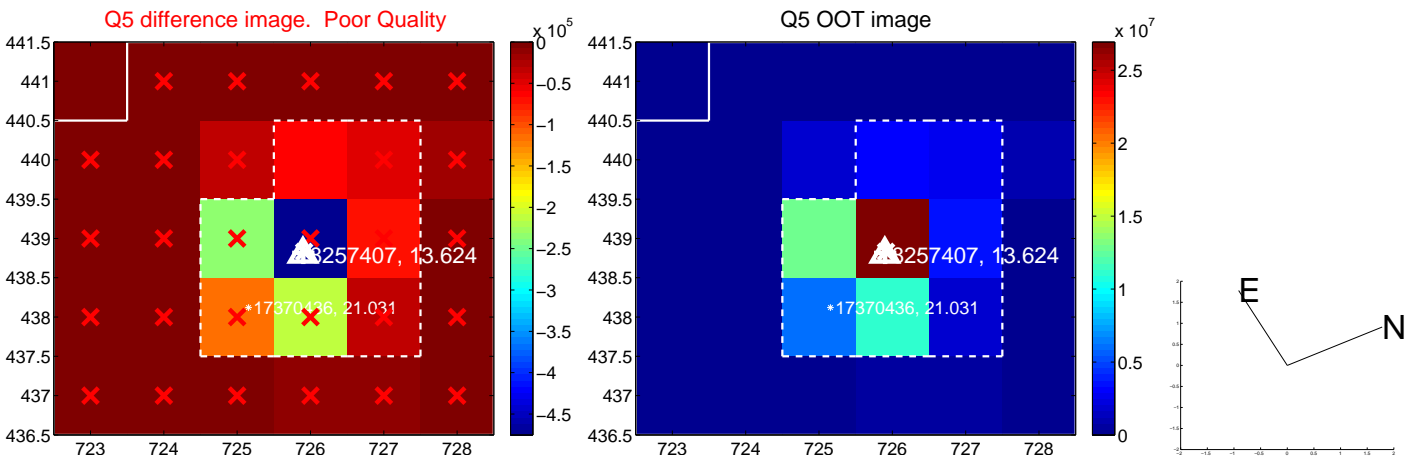


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

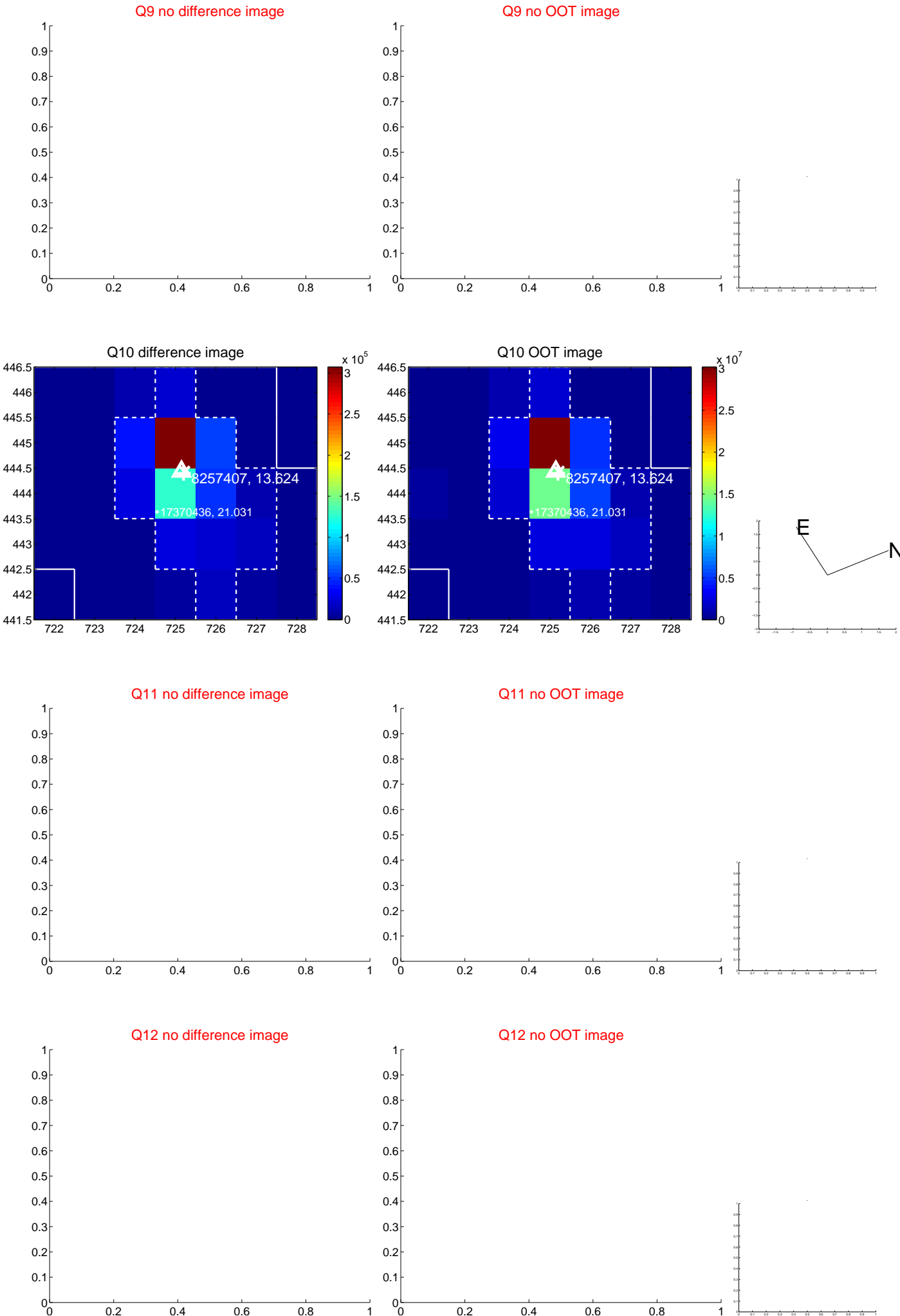
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



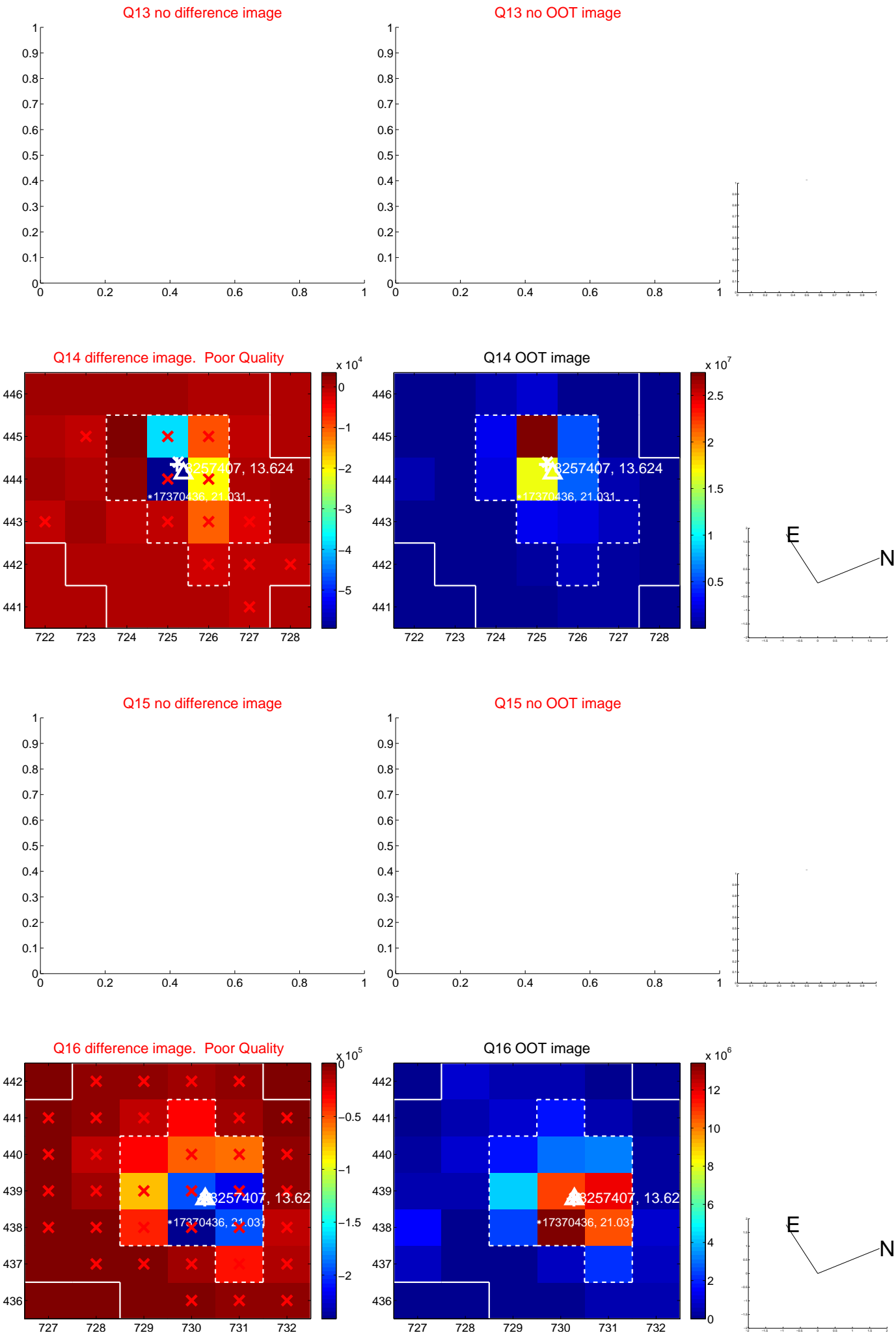
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



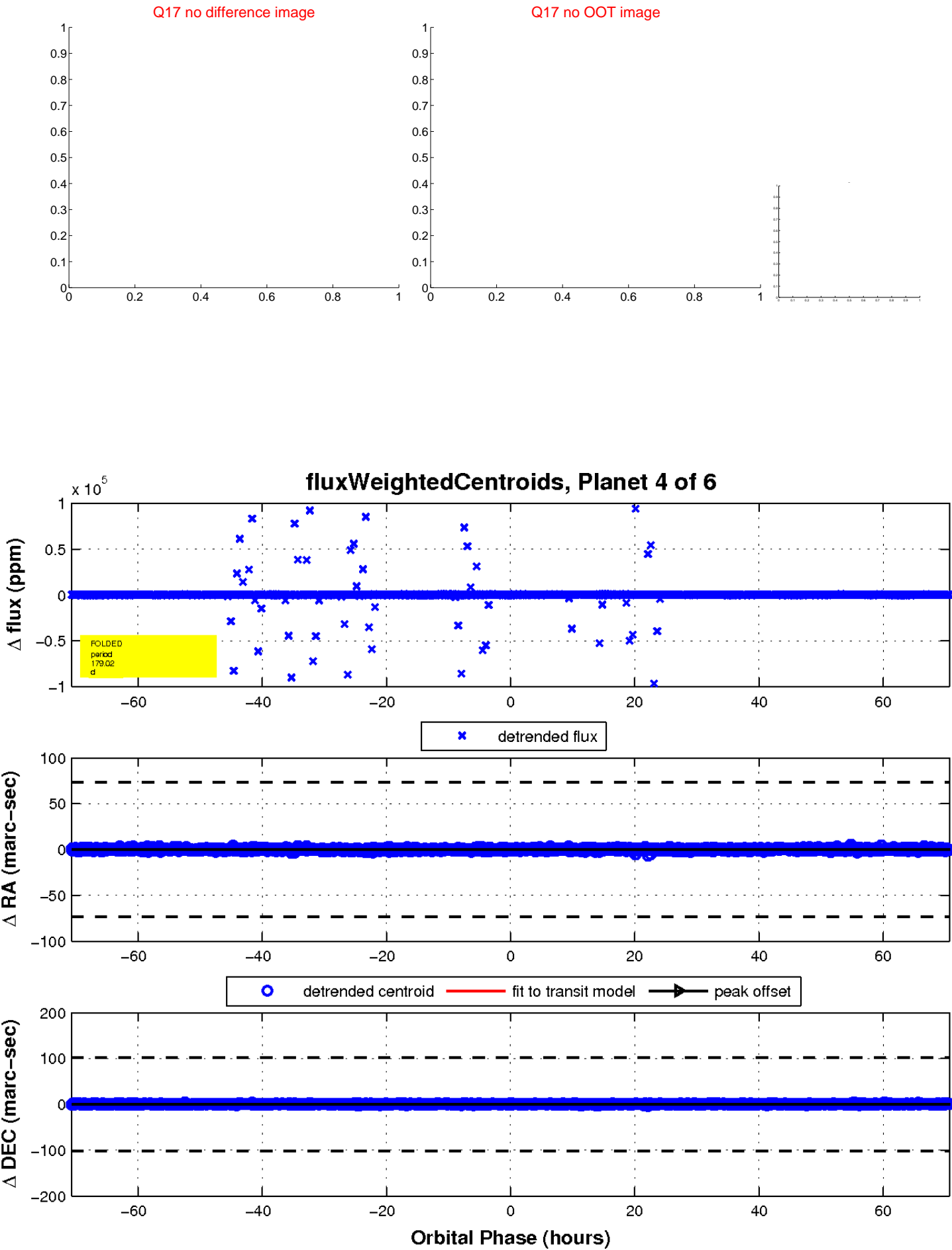
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

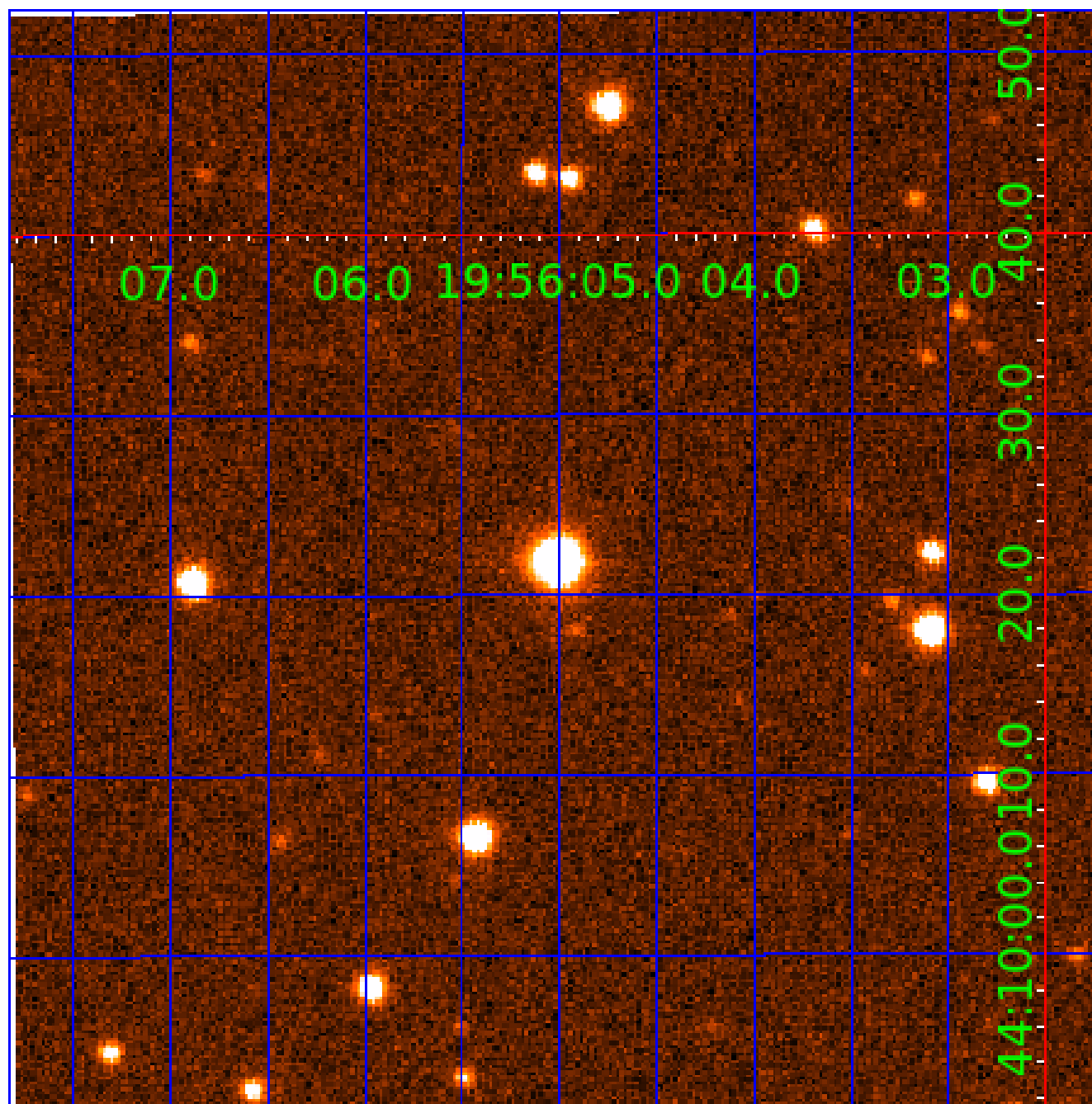


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008257407

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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008257407-04	OBS	No	179.015393	267.781428	1790.7	23.561	19.6	21.0	1.58	6214	12.46	8.90
008257407-05	OBS	No	547.403904	354.640124	874.4	15.925	16.3	12.6	1.58	6214	8.88	2.01
008257407-06	OBS	No	472.103781	178.157406	415.3	9.000	11.7	-1.0	1.58	6214	3.24	2.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008257407-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS
008257407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008257407-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008257407-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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.

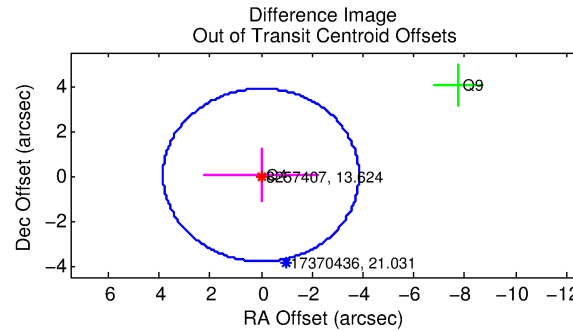
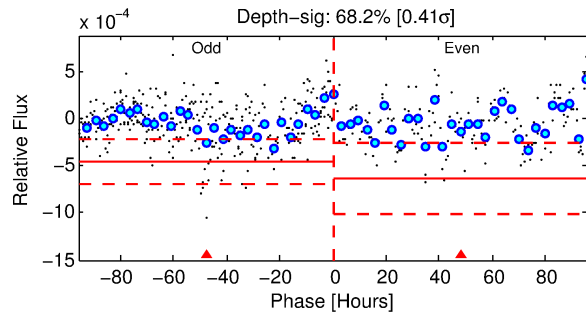
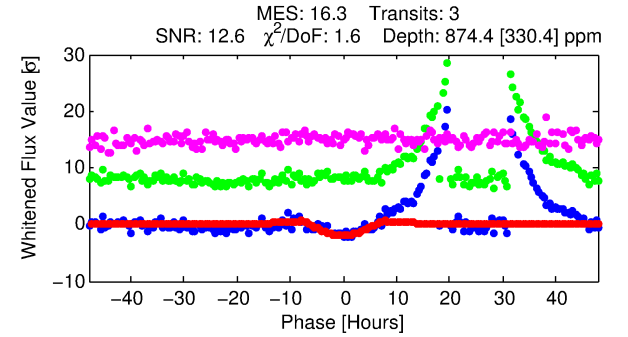
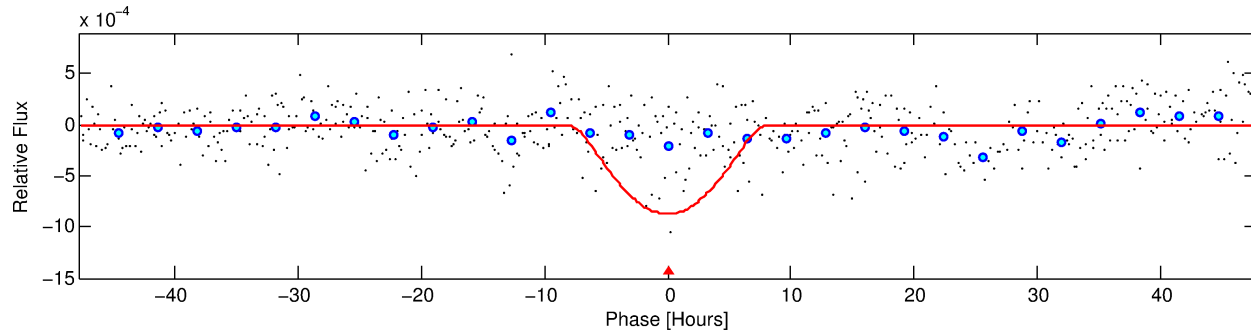
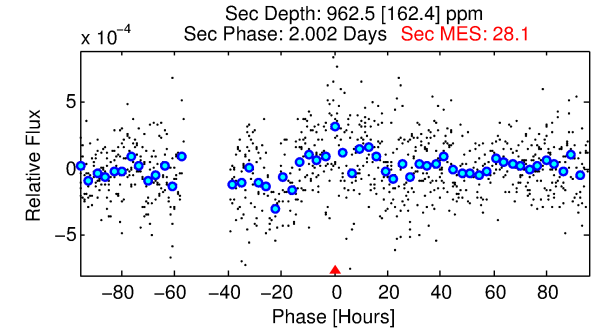
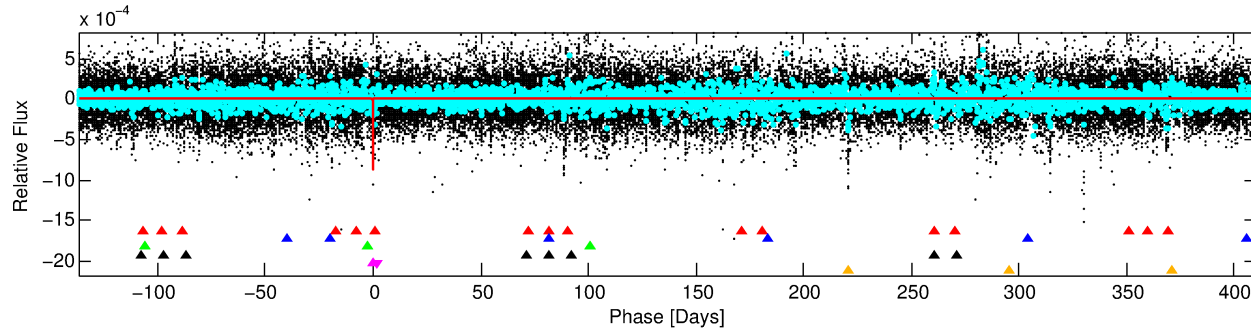
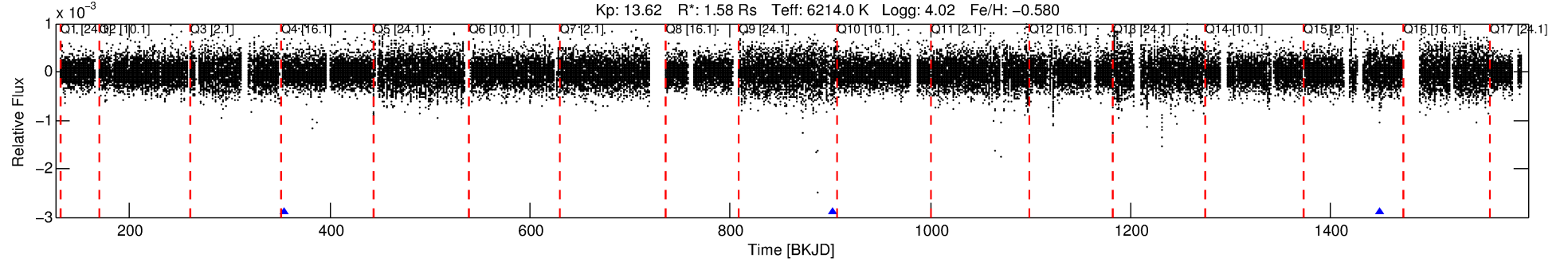
Ephemeris Match Information For 008257407-05

No Significant Match Found

DV One-Page Summary

KIC: 8257407 Candidate: 5 of 6 Period: 547.404 d
KOI: K01063 Corr: No Ephemeris Match

Kp: 13.62 R*: 1.58 Rs Teff: 6214.0 K Logg: 4.02 Fe/H: -0.580



DV Fit Results:

Period = 547.40390 [0.03650] d
Epoch = 354.6401 [0.0295] BKJD
Rp/R* = 0.0514 [0.1902]
a/R* = 85.37 [76.96]
b = 1.00 [0.26]
Seff = 2.01 [1.34]
Teq = 303 [51] K
Rp = 8.88 [33.04] Re
a = 1.2919 [0.5154] AU
Ag = 11200.50 [83210.25] [0.13σ]
Teffp = 4827 [8931] K [0.51σ]

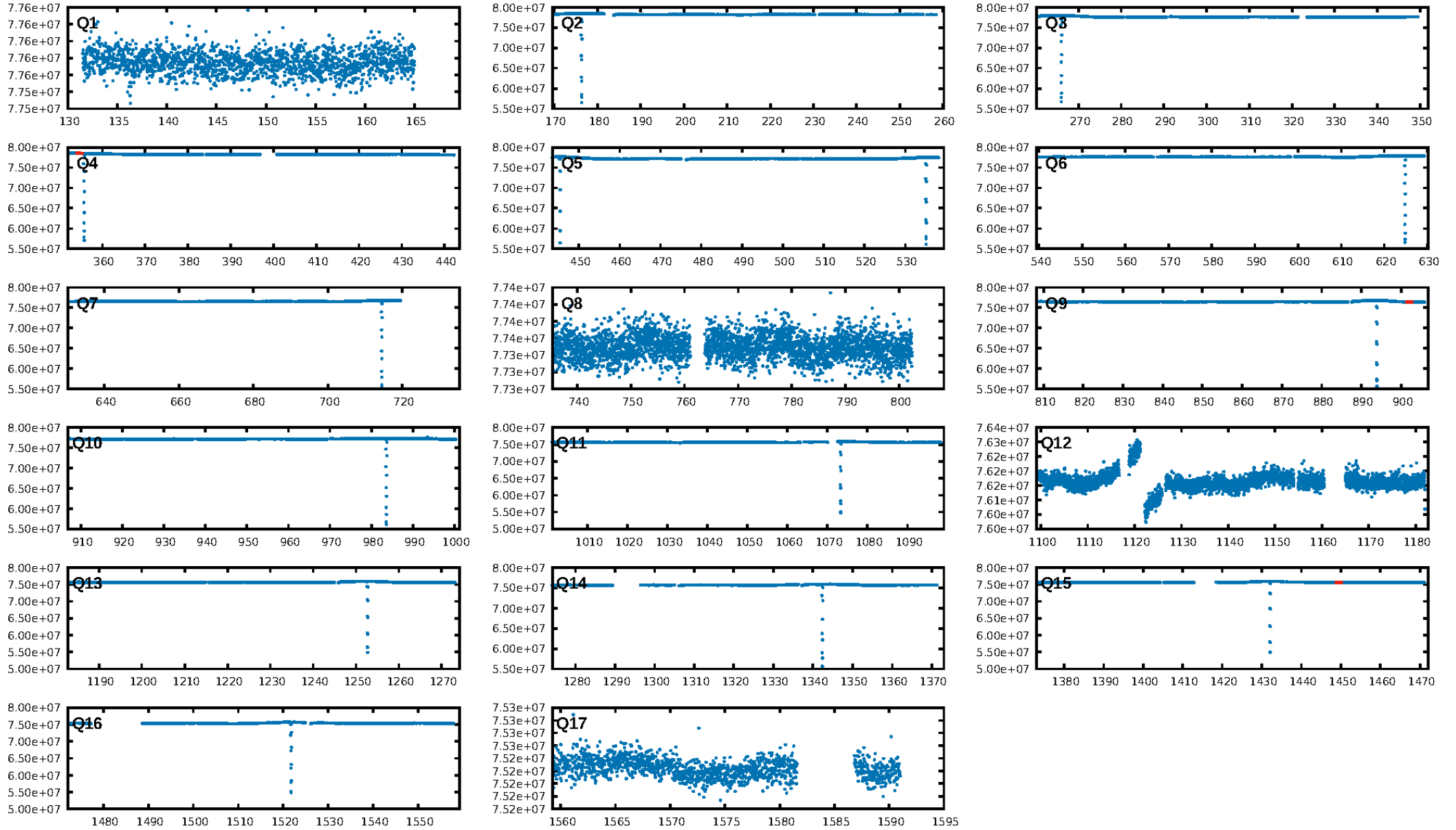
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [98.79σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.359
Centroid-sig: 7.9%
Centroid-so: 0.760 arcsec [1.56σ]
OotOffset-rm: 0.033 arcsec [0.03σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 0.076 arcsec [0.08σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.50 [1/2]

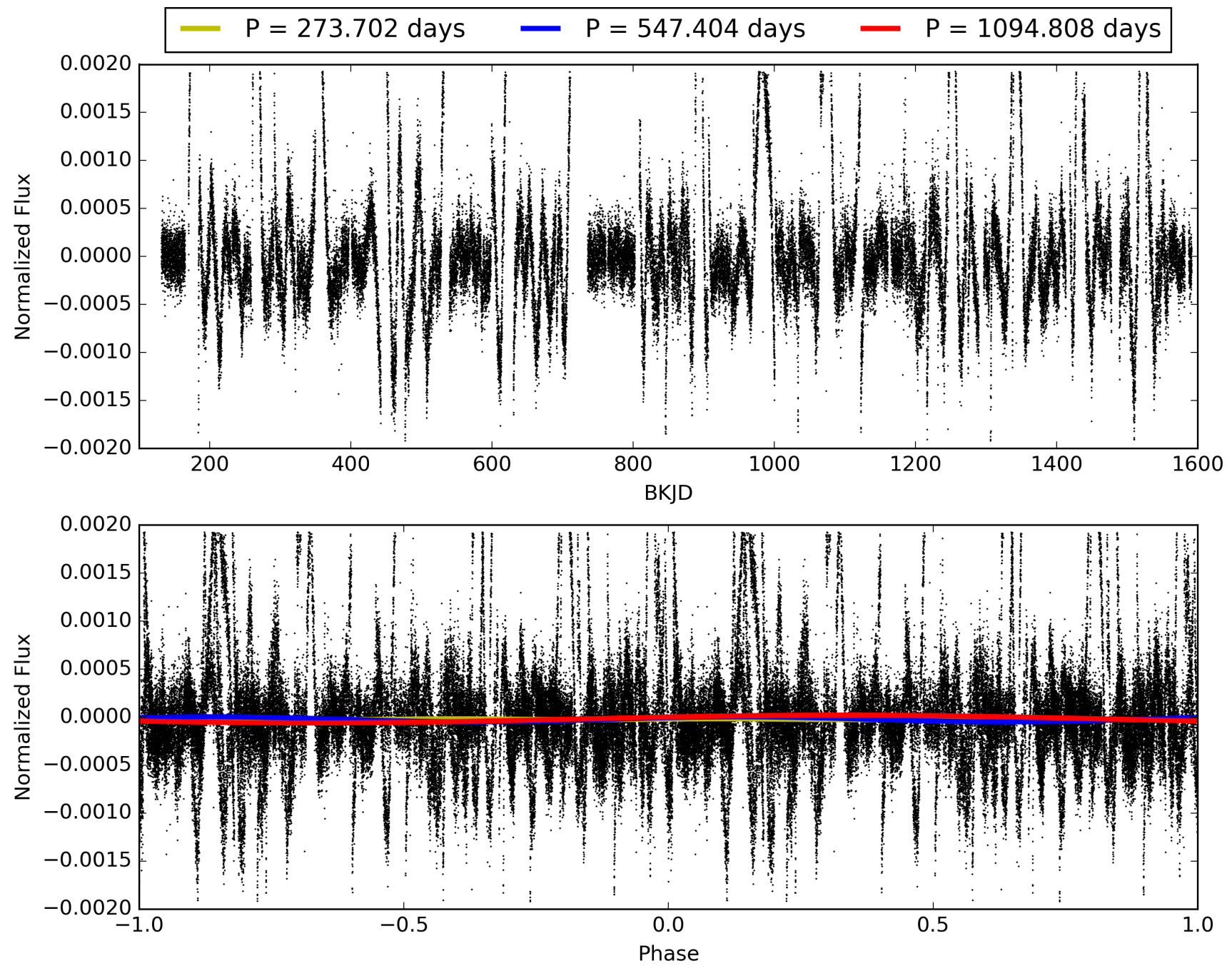
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:29:42 Z

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

TCE 008257407-05, PDC Light Curves

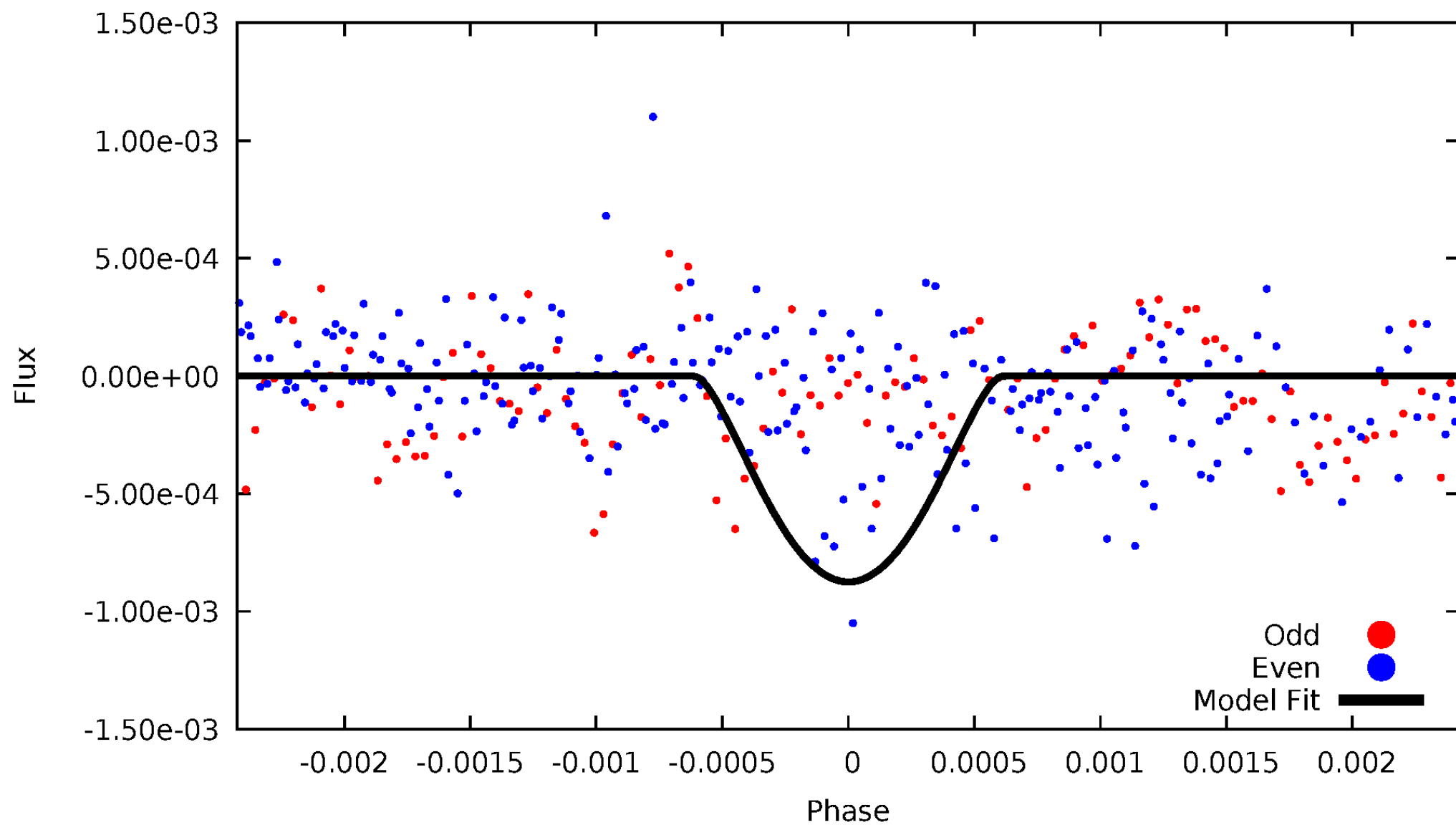


TCE 008257407-05



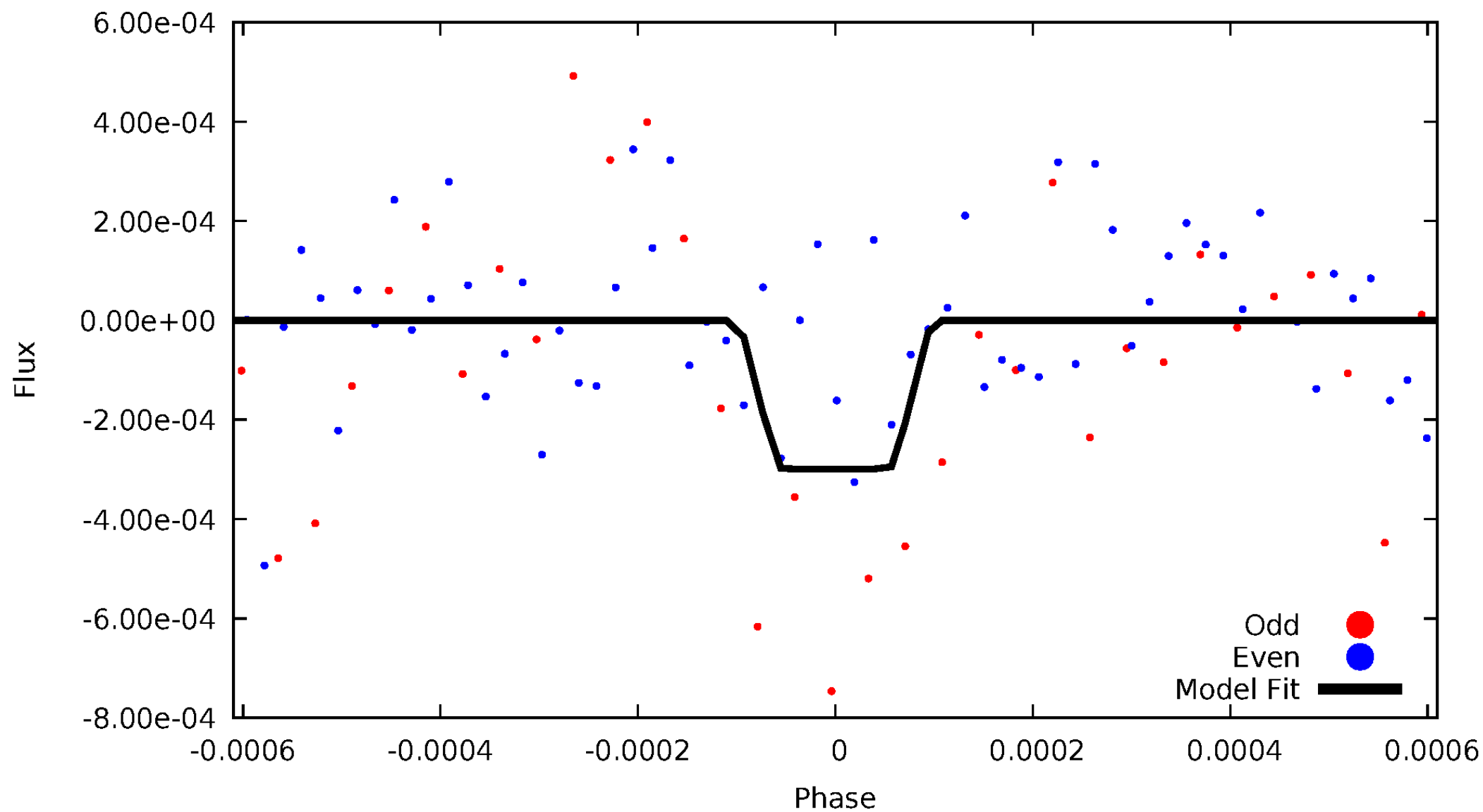
DV Odd/Even

TCE 008257407-05



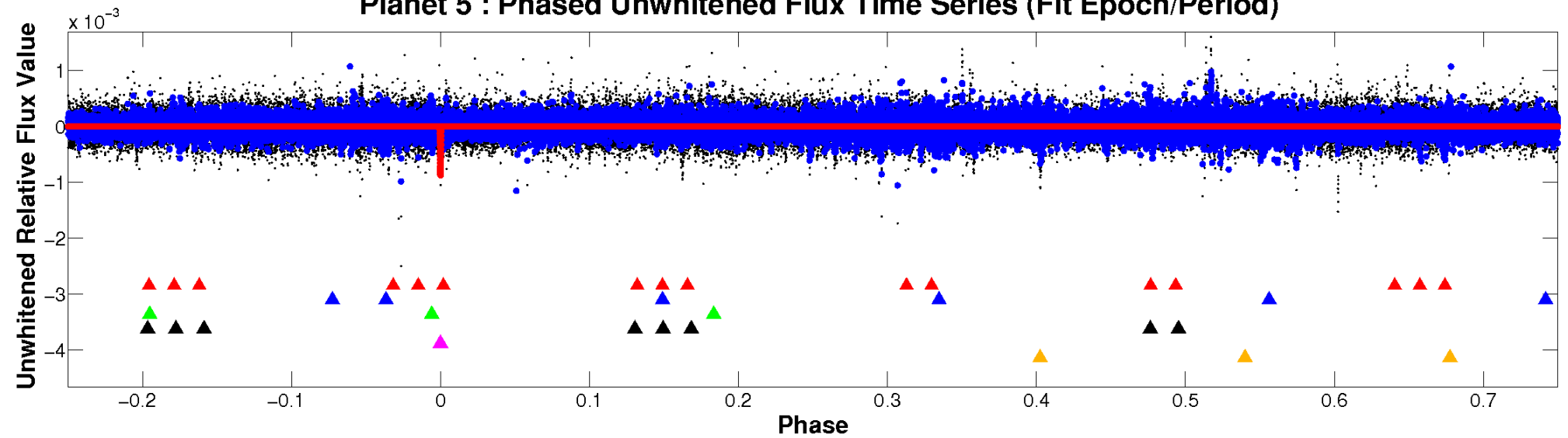
ALT Odd/Even

TCE 008257407-05

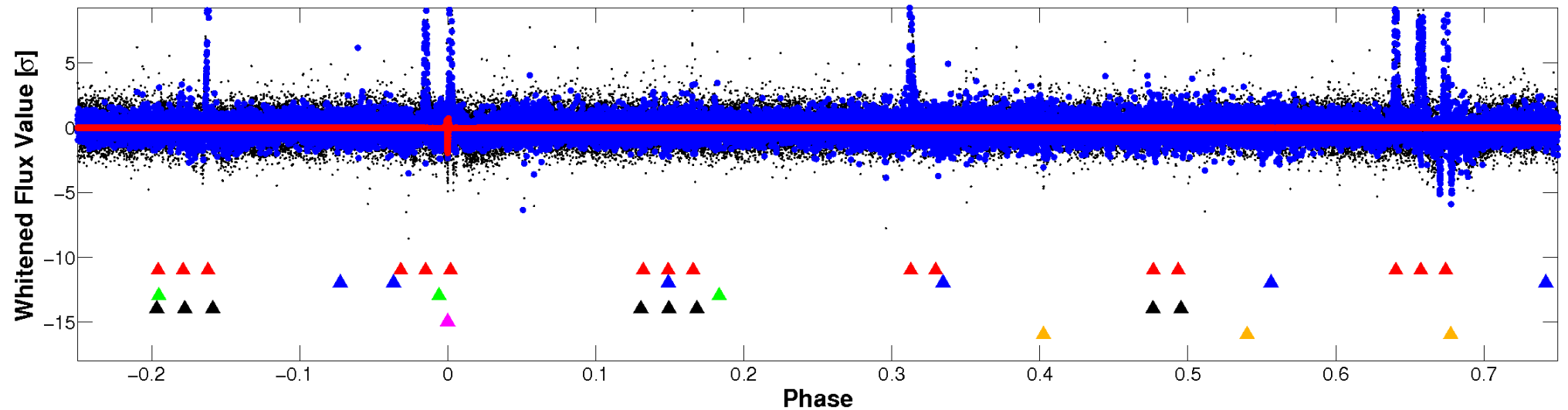


Non-Whitened Vs. Whitened Light Curve

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

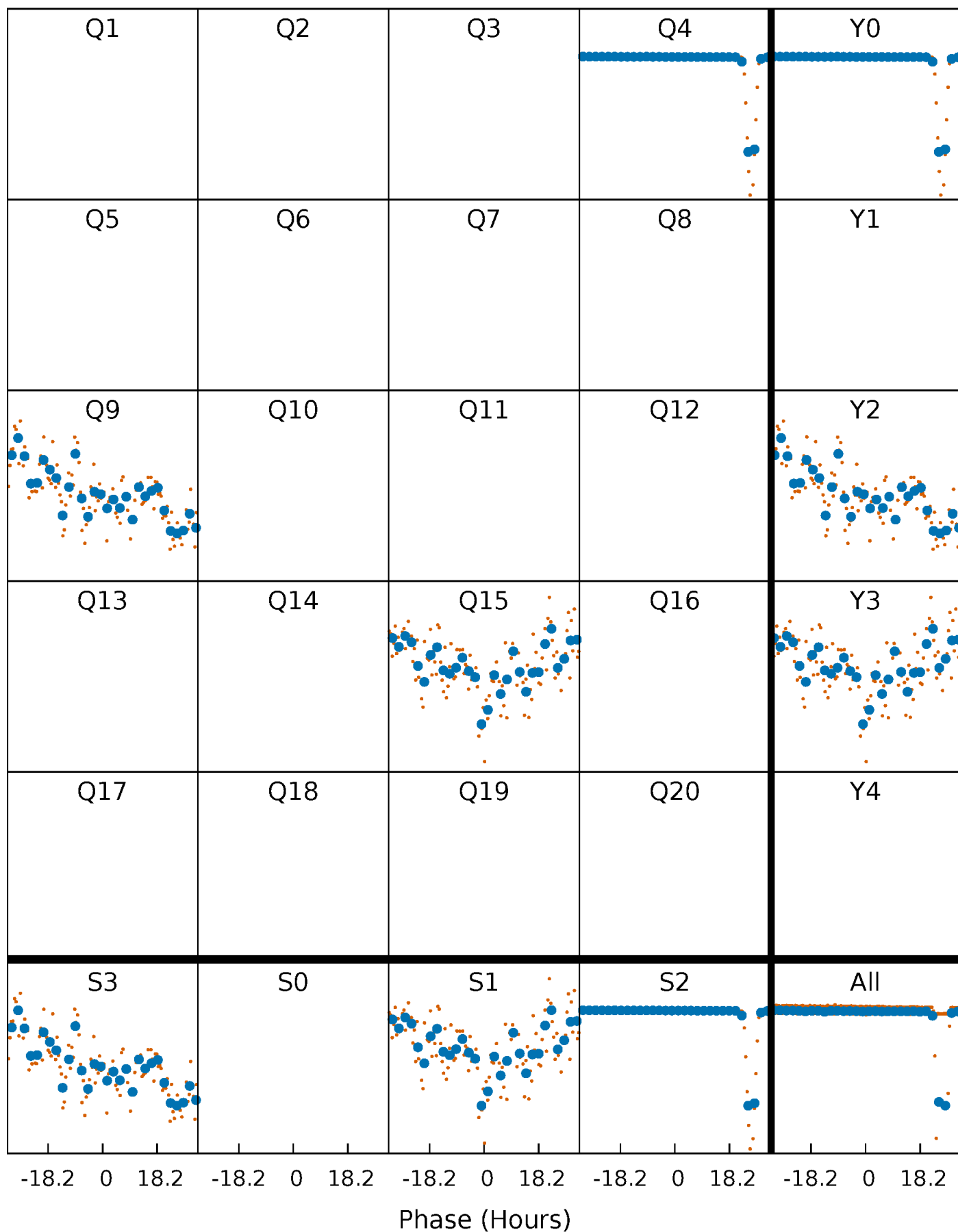


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



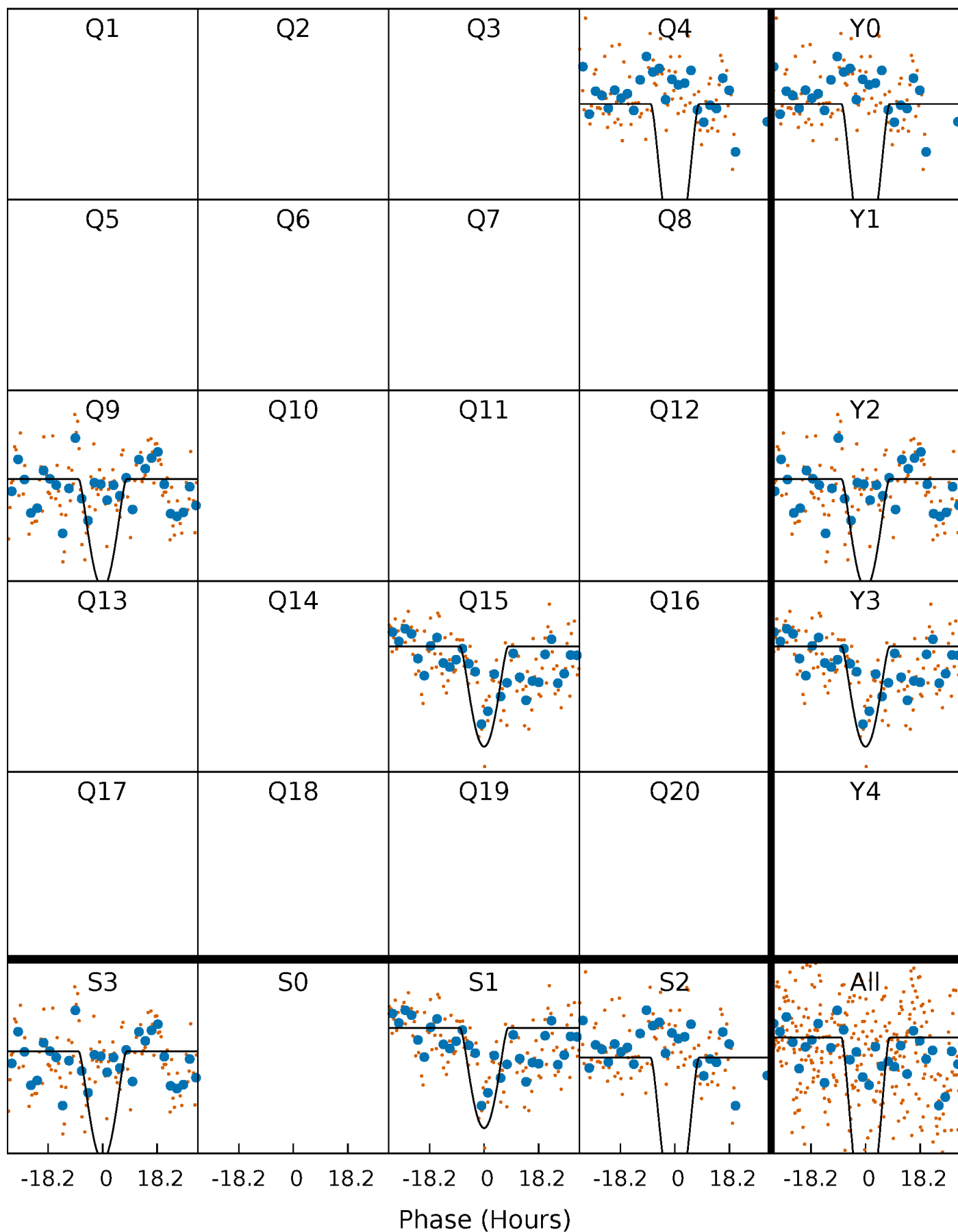
PDC Quarter-Phased Transit Curves

TCE 008257407-05 $P=547.403904$ Days $T_0=354.640124$ (BKJD)



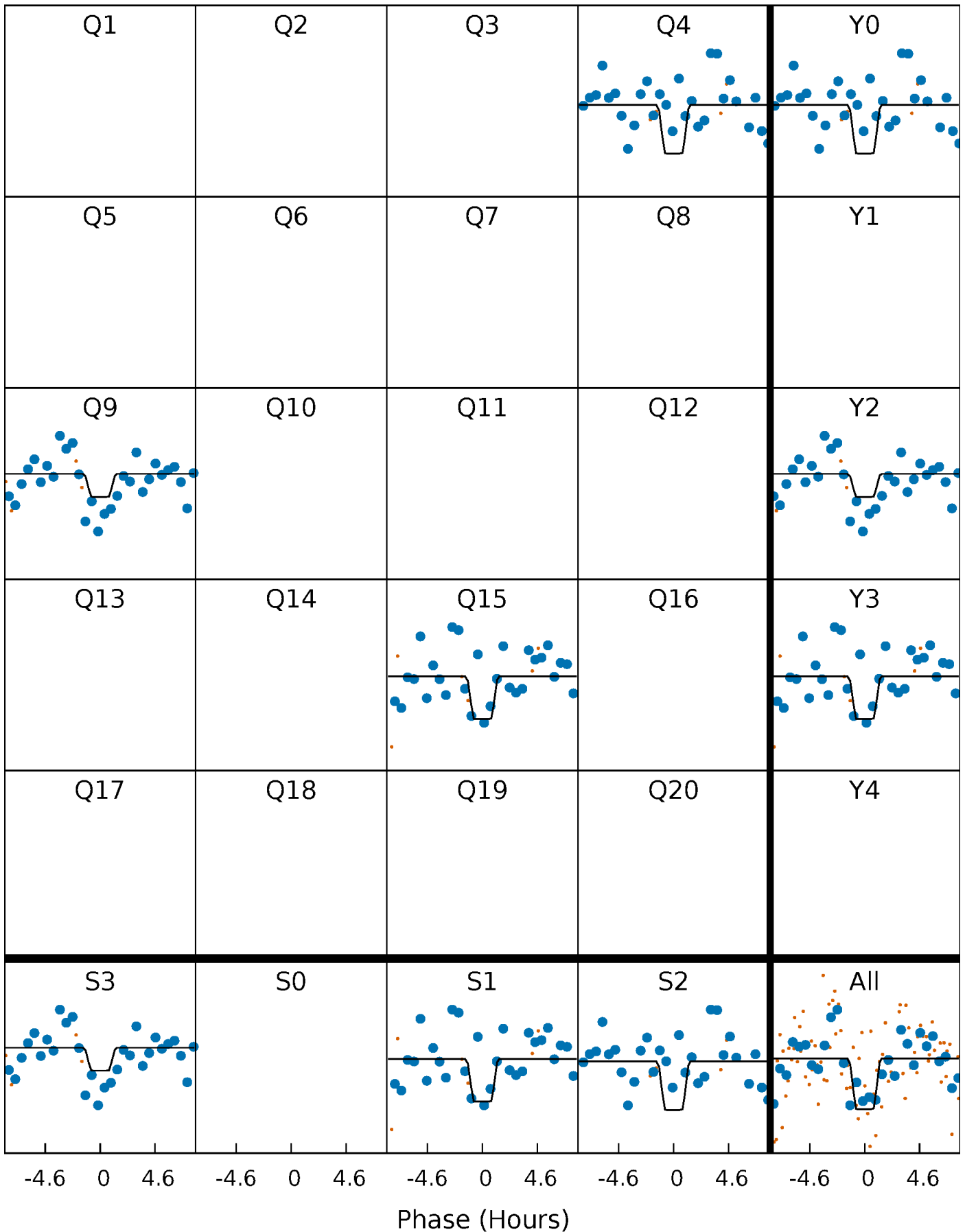
DV Quarter-Phased Transit Curves

TCE 008257407-05 $P=547.403904$ Days $T_0=354.640124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

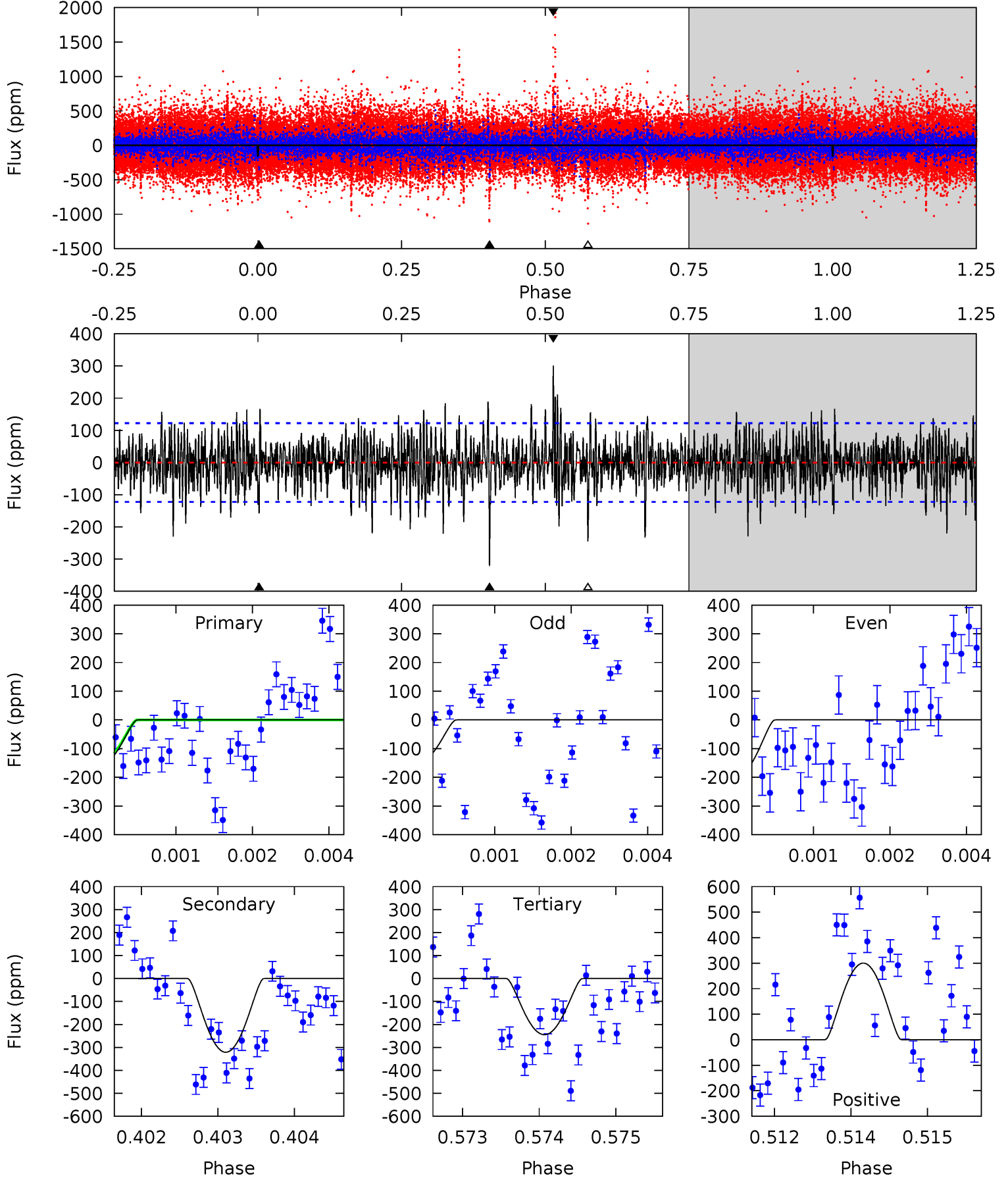
TCE 008257407-05 $P=547.115380$ Days $T_0=354.685100$ (BKJD)



DV Model-Shift Uniqueness Test

008257407-05, P = 547.403904 Days, E = 354.640124 Days

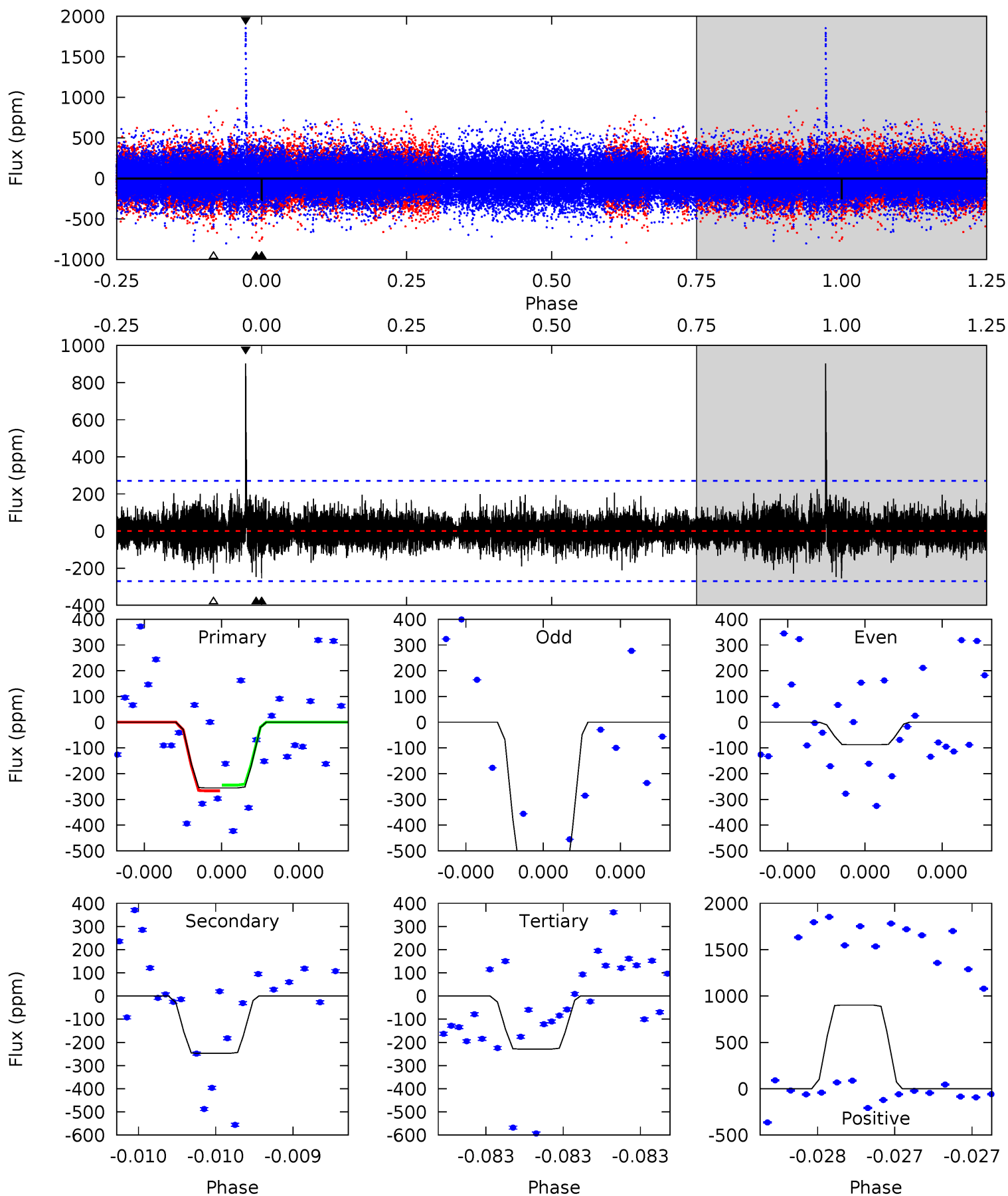
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.00	14.2	10.8	13.3	5.41	3.23	2.57	-3.83	-6.30	3.38	0.92	0.97	1.21	0.48	0.32



Alt Model-Shift Uniqueness Test

008257407-05, P = 547.115380 Days, E = 354.685100 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.42	5.25	4.86	19.2	5.74	3.74	1.18	0.56	-13.7	0.39	-13.9	4.78	1.51	0.78	0.23



Stellar Parameters For KIC 008257407

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6214^{+187}_{-206}	$4.021^{+0.392}_{-0.168}$	$-0.580^{+0.300}_{-0.300}$	$1.583^{+0.415}_{-0.622}$	$0.959^{+0.139}_{-0.126}$	$0.341^{+1.024}_{-0.151}$
	+3%/-3%	+10%/-4%	+52%/-52%	+26%/-39%	+14%/-13%	+301%/-44%
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 008257407-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-321 ± 23	$25.04^{+26.80}_{-17.21}$	414^{+36}_{-40}	2848^{+1203}_{-465}	491^{+4247}_{-382}
Alt.	-247 ± 47	$22.36^{+26.80}_{-15.55}$	419^{+33}_{-44}	2839^{+1177}_{-502}	451^{+4252}_{-362}

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 $A_{obs} \gg 1.0$

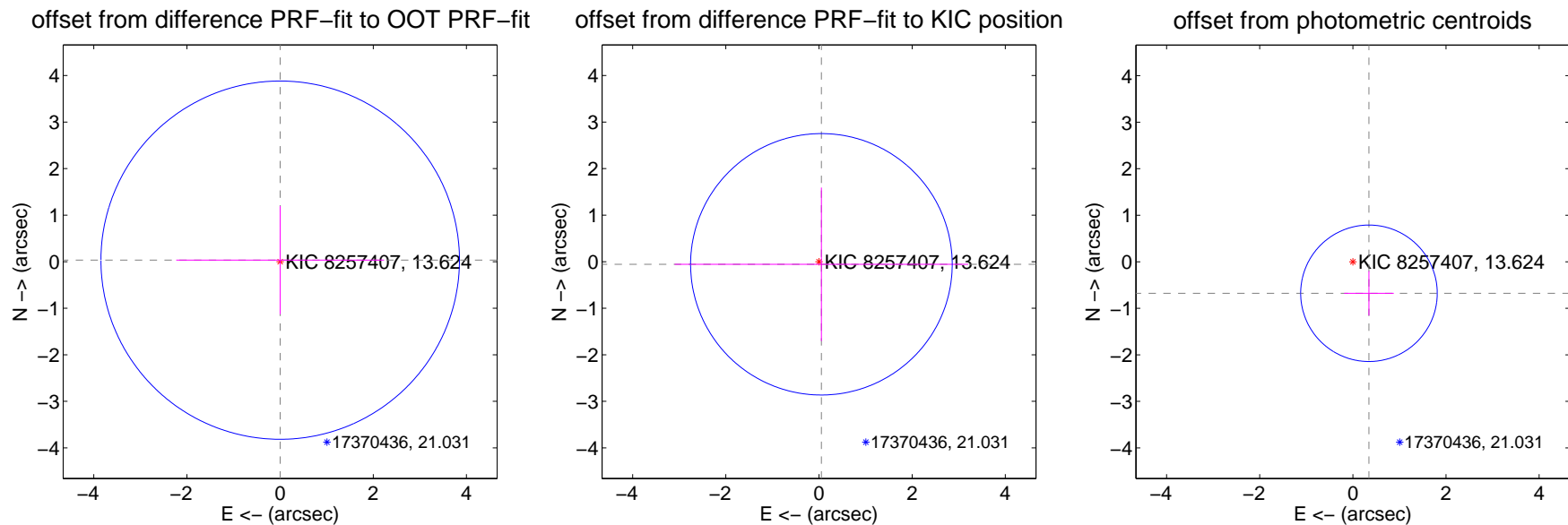
DV Centroid Data

Supplemental centroid analysis for 008257407-05. Kepler magnitude: 13.62. Transit SNR 12.55

There are 0 quarters with good PRF difference image offsets

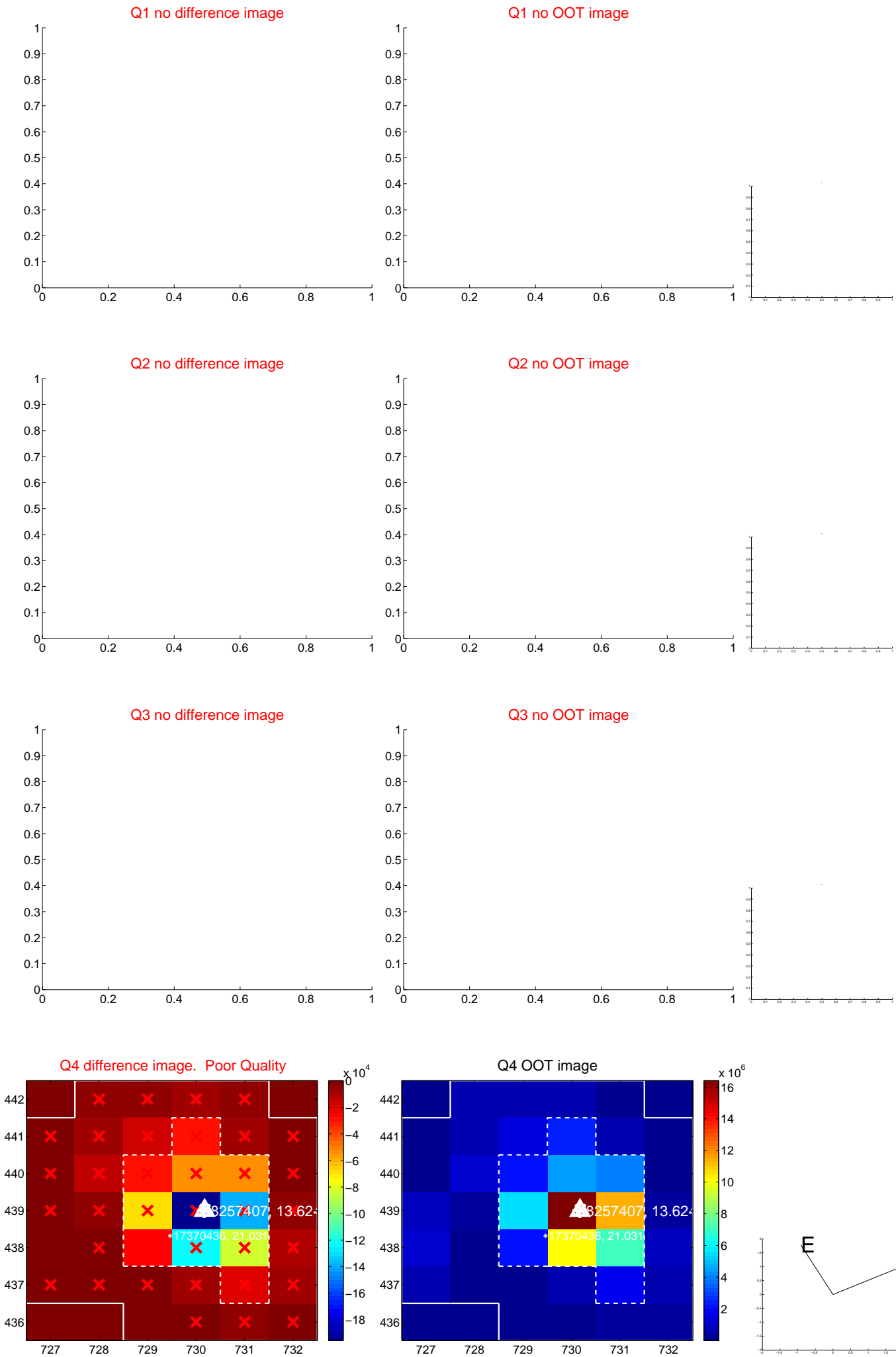
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.033 ± 1.283	0.03	-0.002 ± 2.231	0.033 ± 1.160
PRF-fit source offset from KIC position	0.076 ± 0.936	0.08	-0.052 ± 3.152	-0.056 ± 1.649
photometric centroid source offset	0.76 ± 0.49	1.56	-0.35 ± 0.53	-0.68 ± 0.48

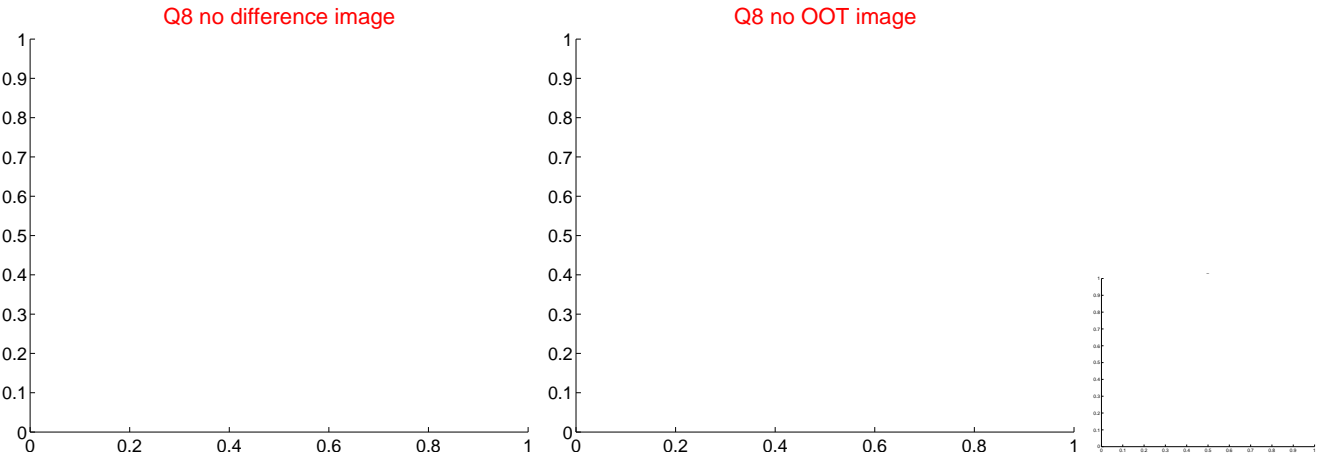
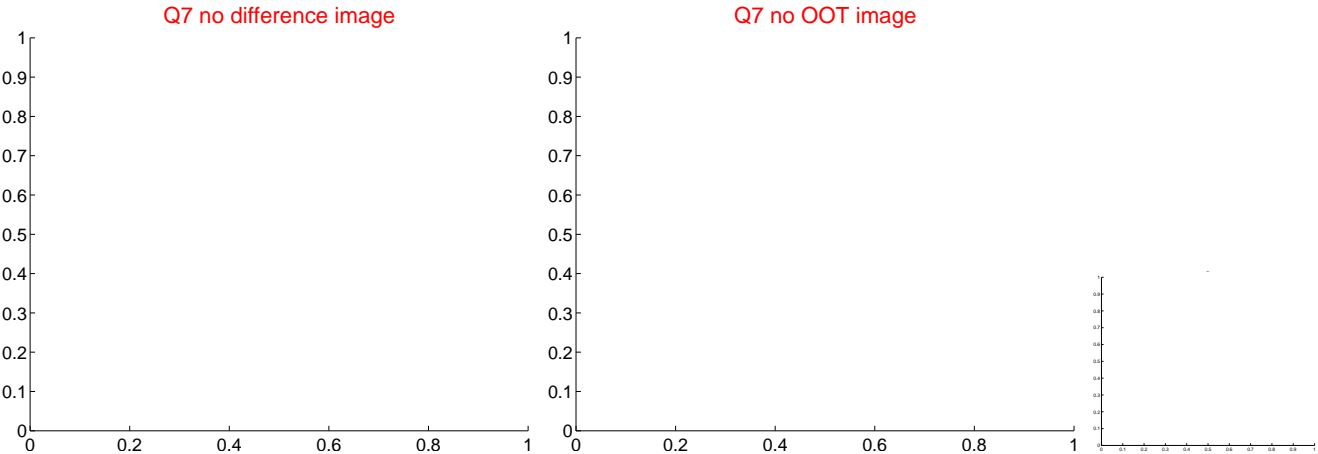
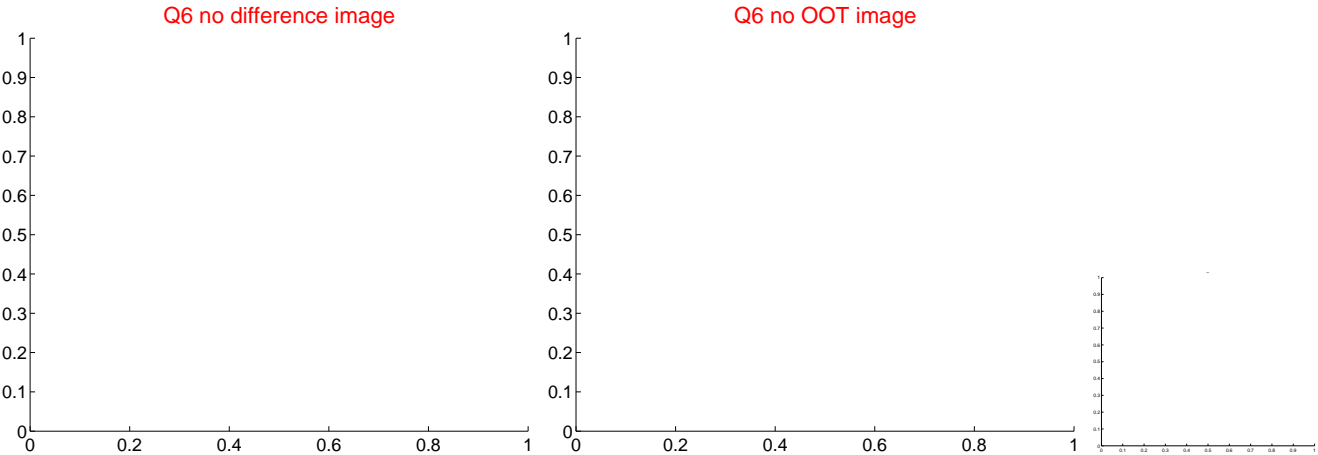
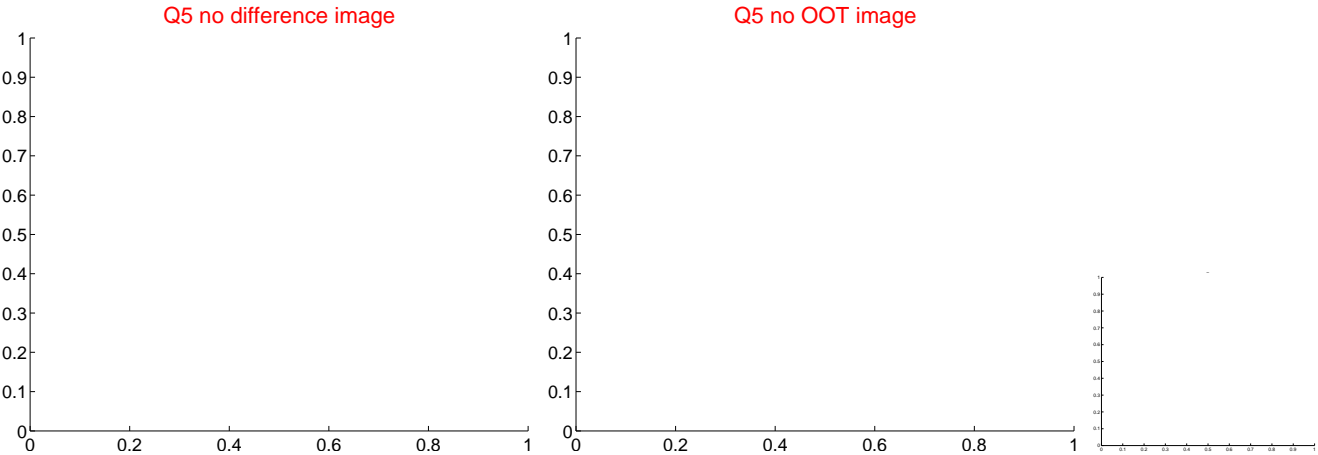


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

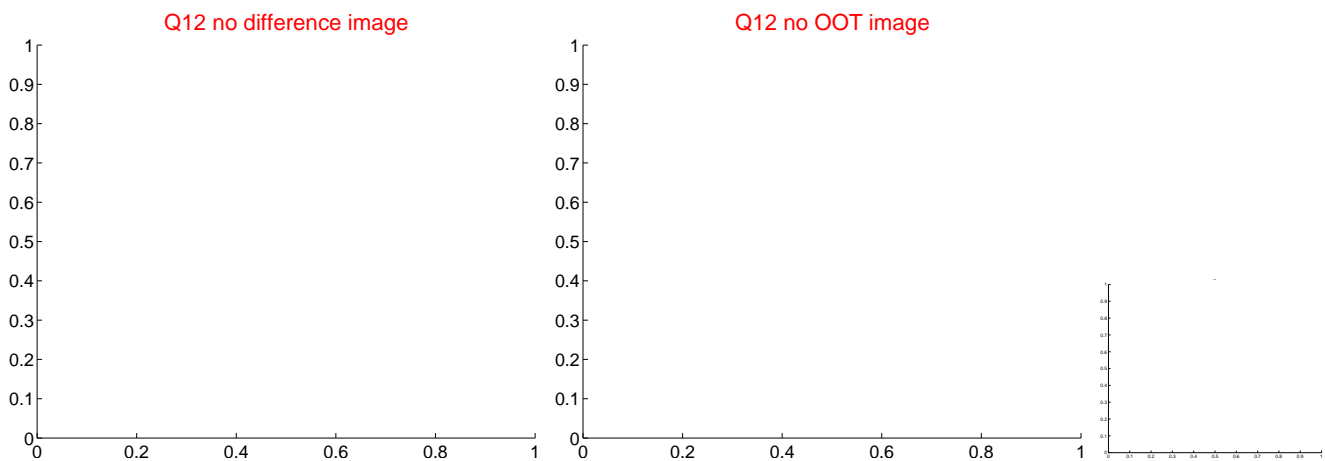
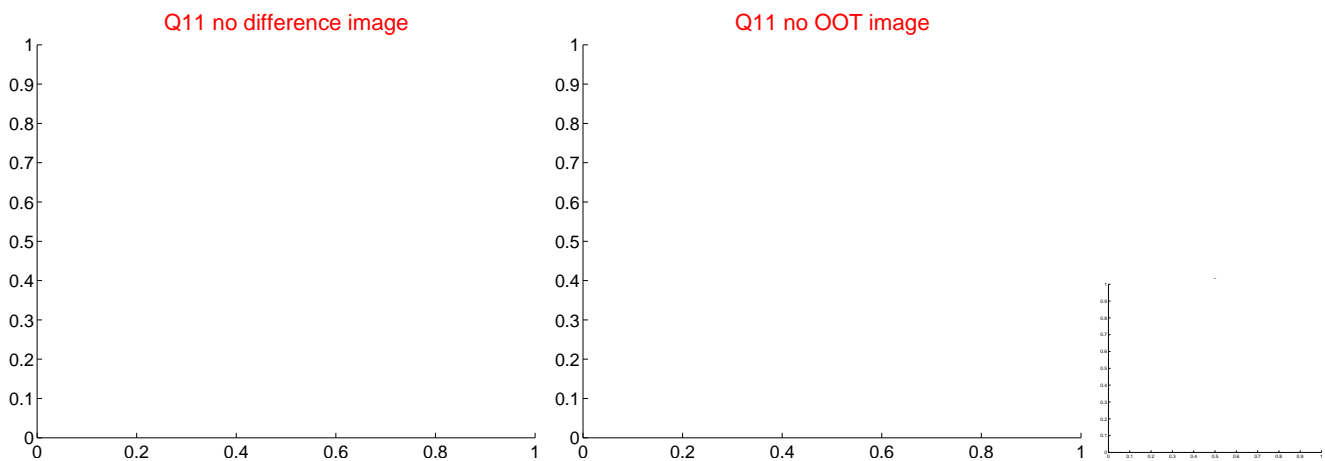
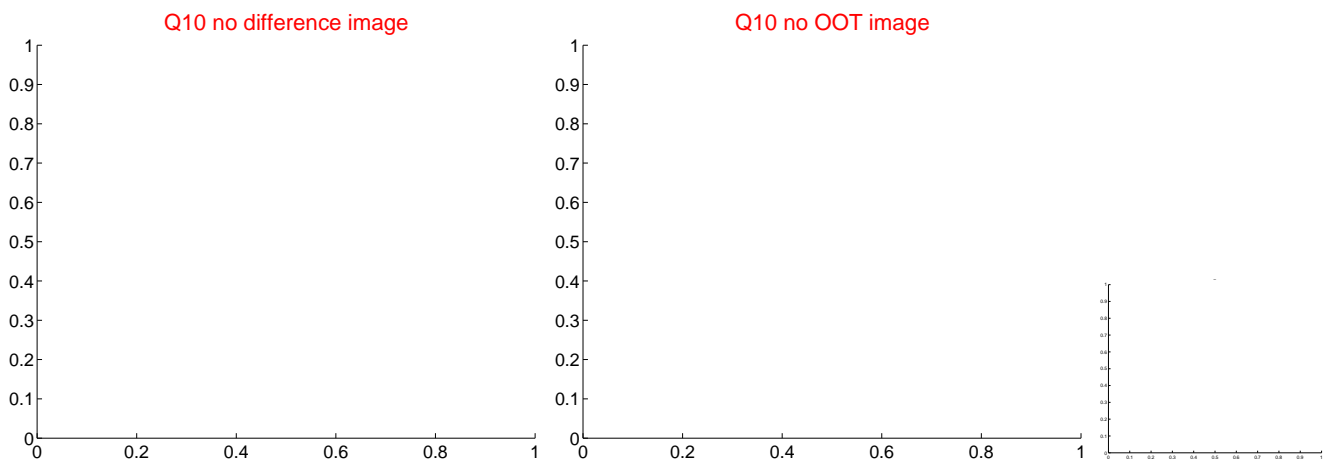
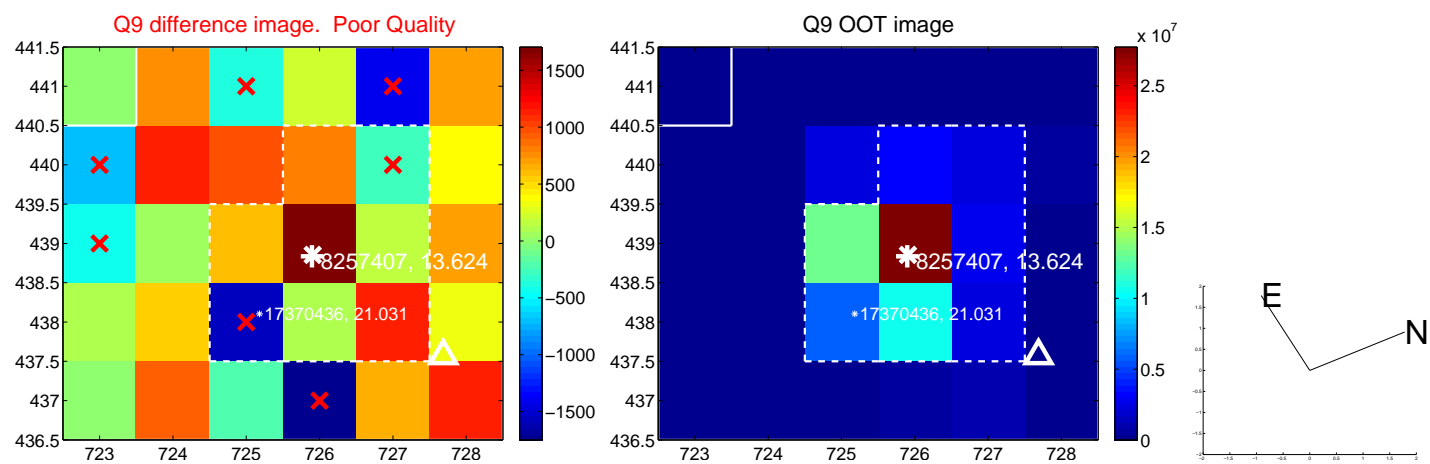
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



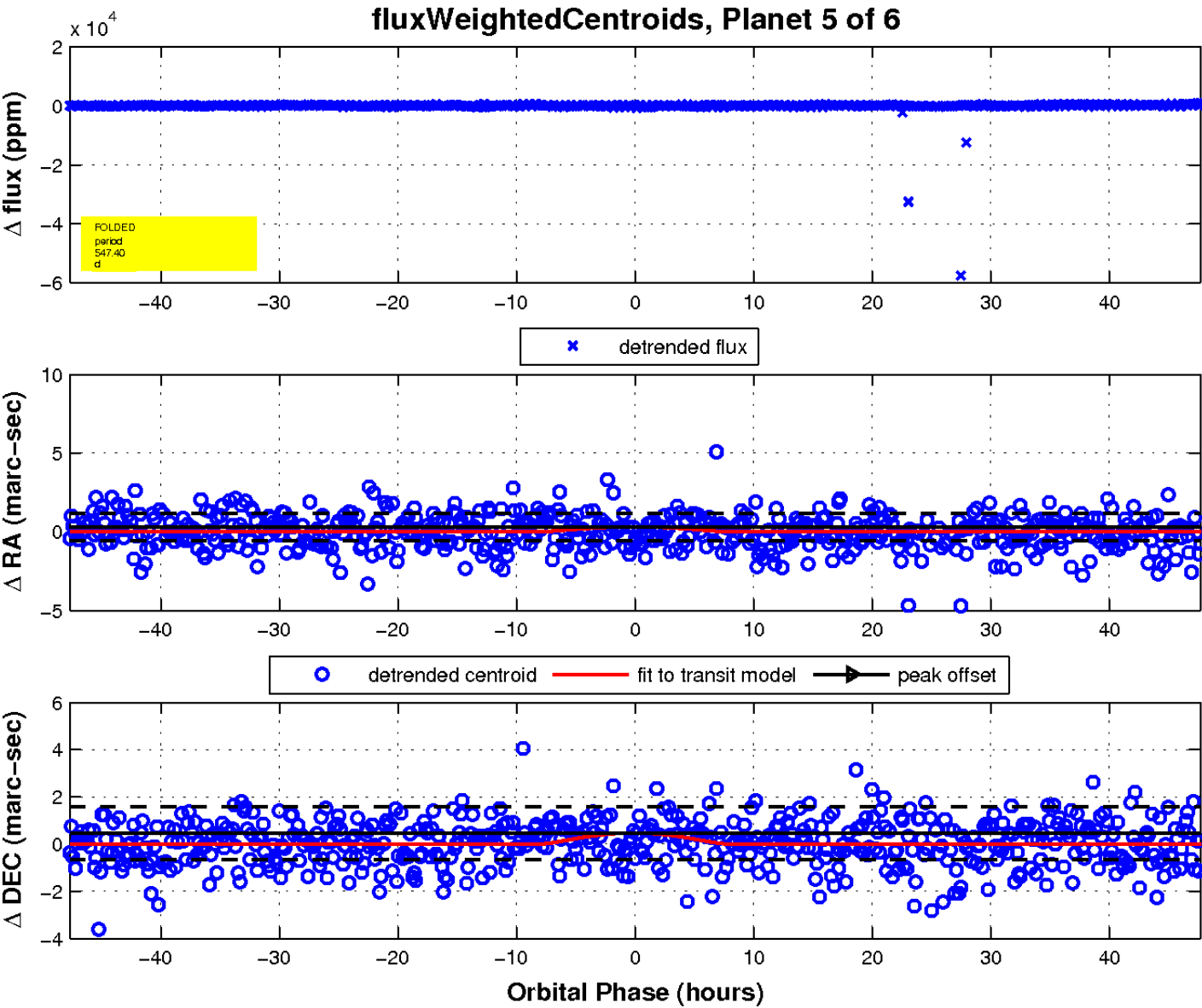
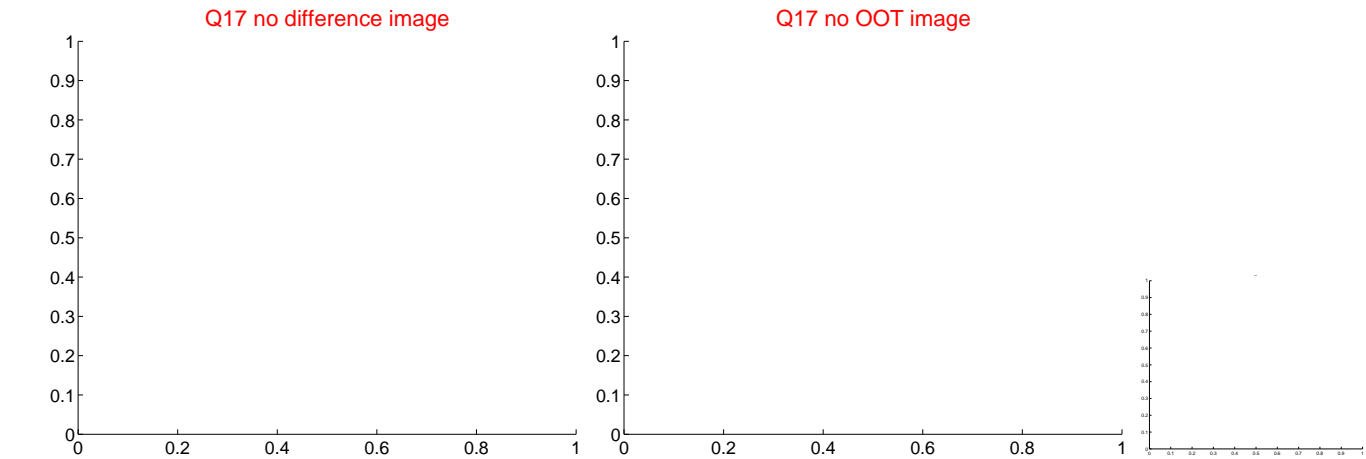
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

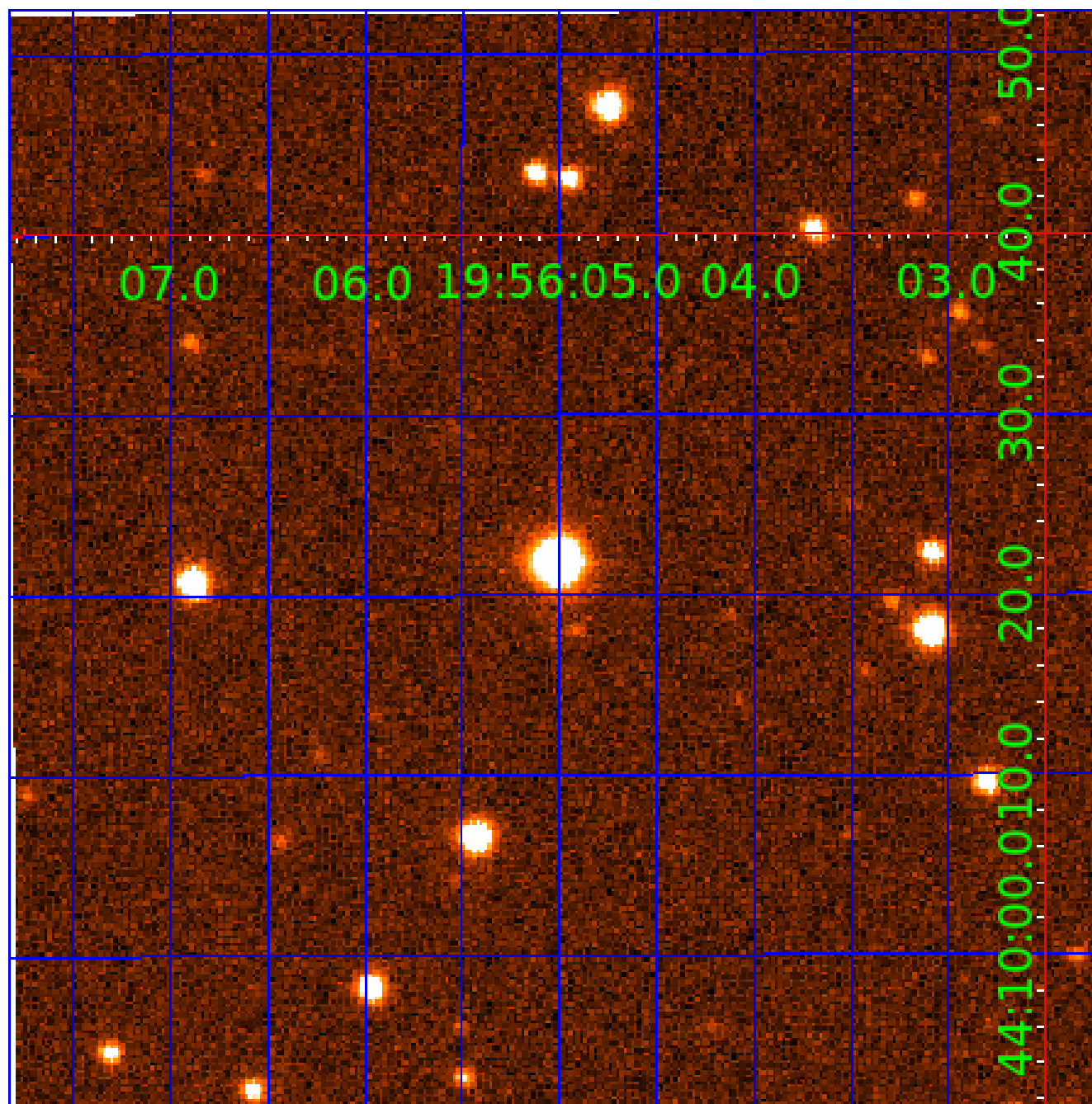


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008257407

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})
008257407-01	OBS	1063.01	89.697868	176.308169	276750.7	3.500	6984.4	-1.0	1.58	6214	72.36	22.37
008257407-02	OBS	No	222.901762	314.931740	590.4	52.293	261.0	13.6	1.58	6214	4.07	6.65
008257407-03	OBS	No	443.782867	455.049172	9501.7	15.000	223.2	-1.0	1.58	6214	15.50	2.65
008257407-04	OBS	No	179.015393	267.781428	1790.7	23.561	19.6	21.0	1.58	6214	12.46	8.90
008257407-05	OBS	No	547.403904	354.640124	874.4	15.925	16.3	12.6	1.58	6214	8.88	2.01
008257407-06	OBS	No	472.103781	178.157406	415.3	9.000	11.7	-1.0	1.58	6214	3.24	2.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008257407-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS
008257407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008257407-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008257407-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008257407-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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.

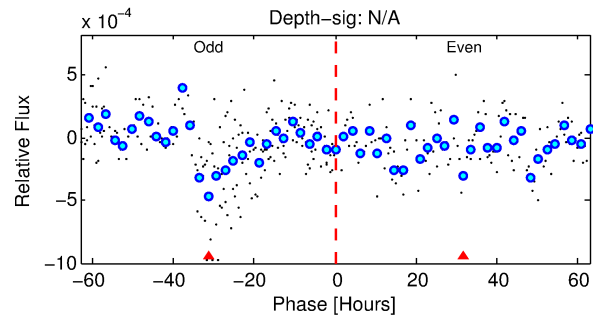
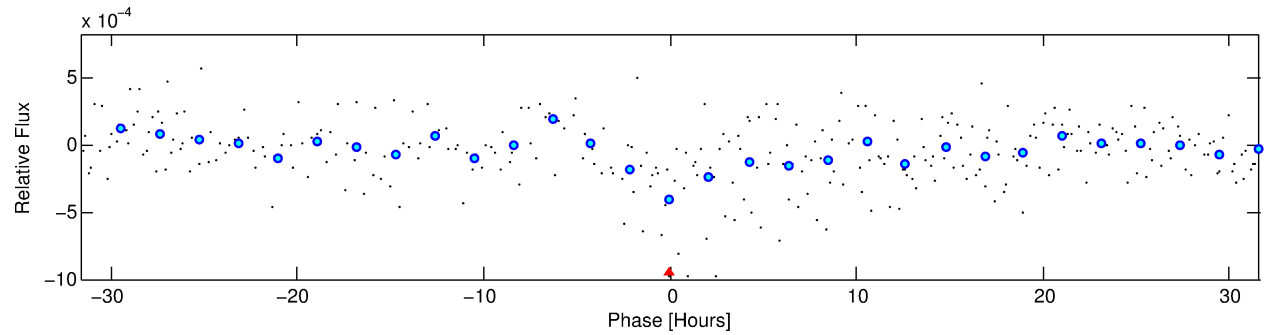
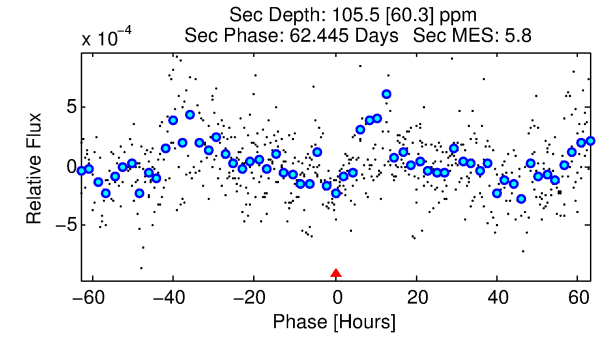
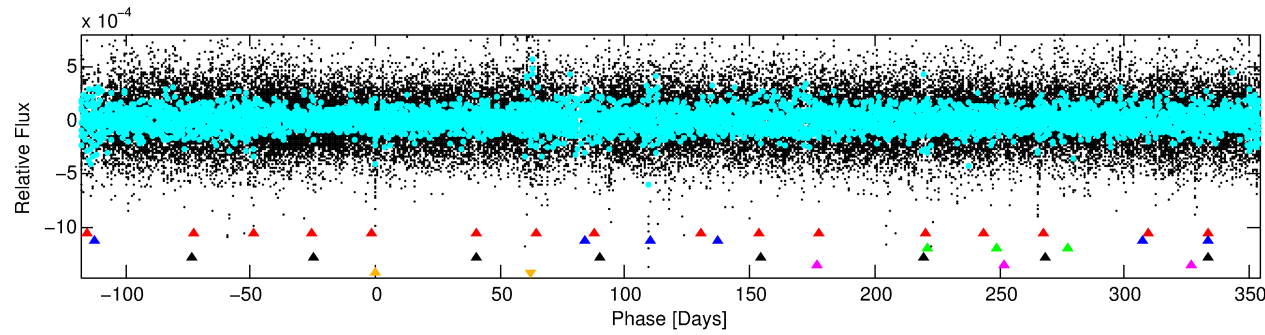
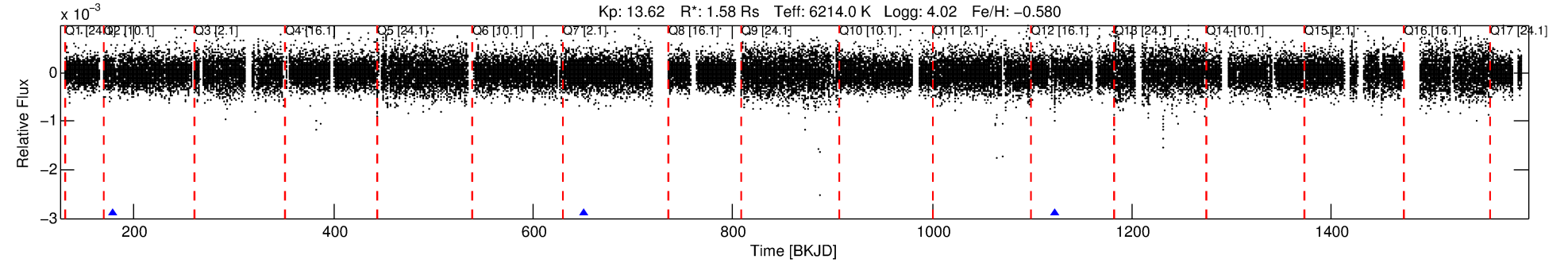
Ephemeris Match Information For 008257407-06

No Significant Match Found

DV One-Page Summary

KIC: 8257407 Candidate: 6 of 6 Period: 472.104 d
KOI: K01063 Corr: No Ephemeris Match

Kp: 13.62 R*: 1.58 Rs Teff: 6214.0 K Logg: 4.02 Fe/H: -0.580



TPS TCE Results:

Period = 472.10378 d
Epoch = 178.1574 BKJD

DV fit results are unavailable

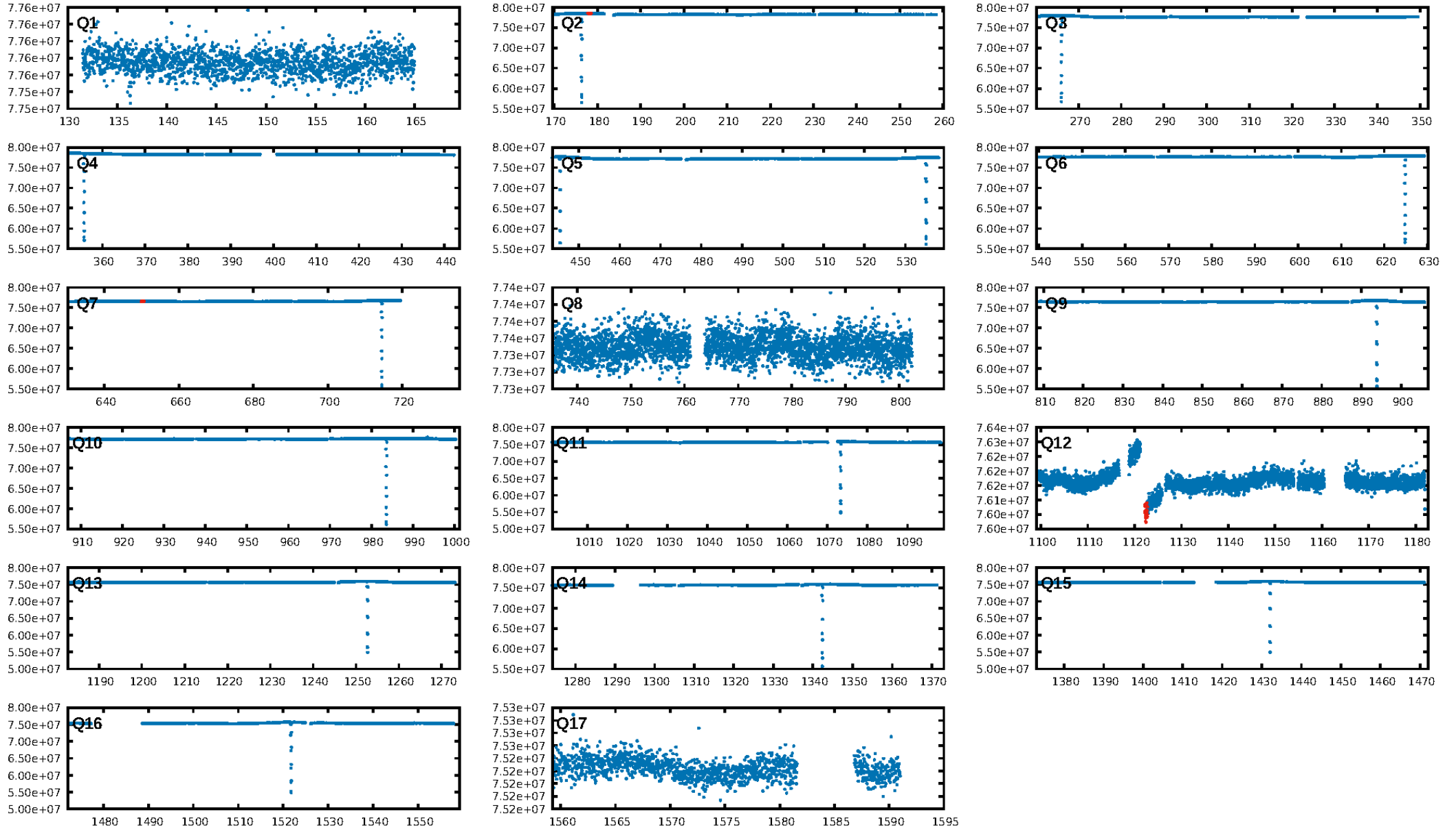
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [38.86σ]
LongPeriod-sig: 100.0% [98.79σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.08921
Centroid-sig: 29.3%
Centroid-so: 1.504 arcsec [0.88σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [2/2]

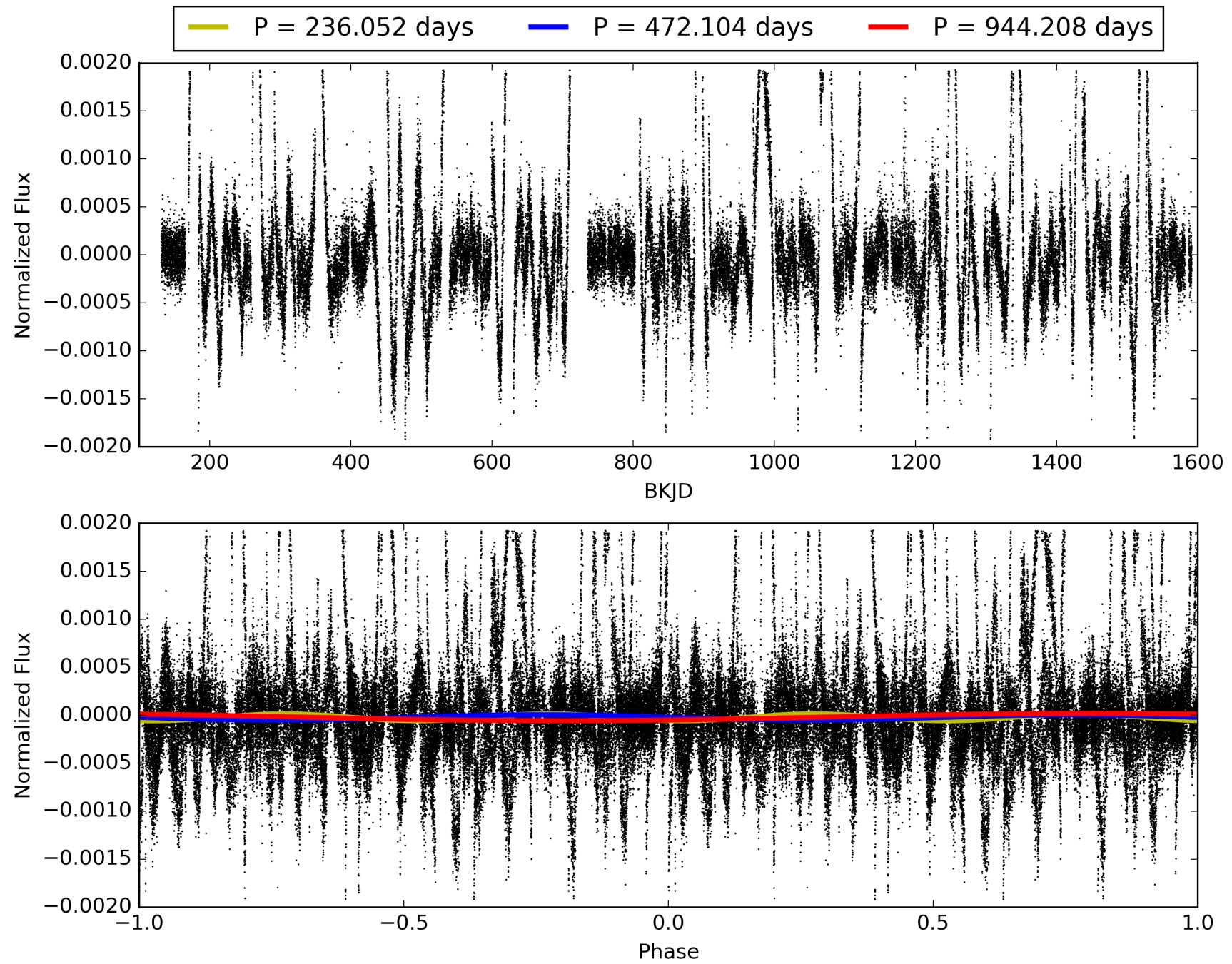
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:29:52 Z

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

TCE 008257407-06, PDC Light Curves

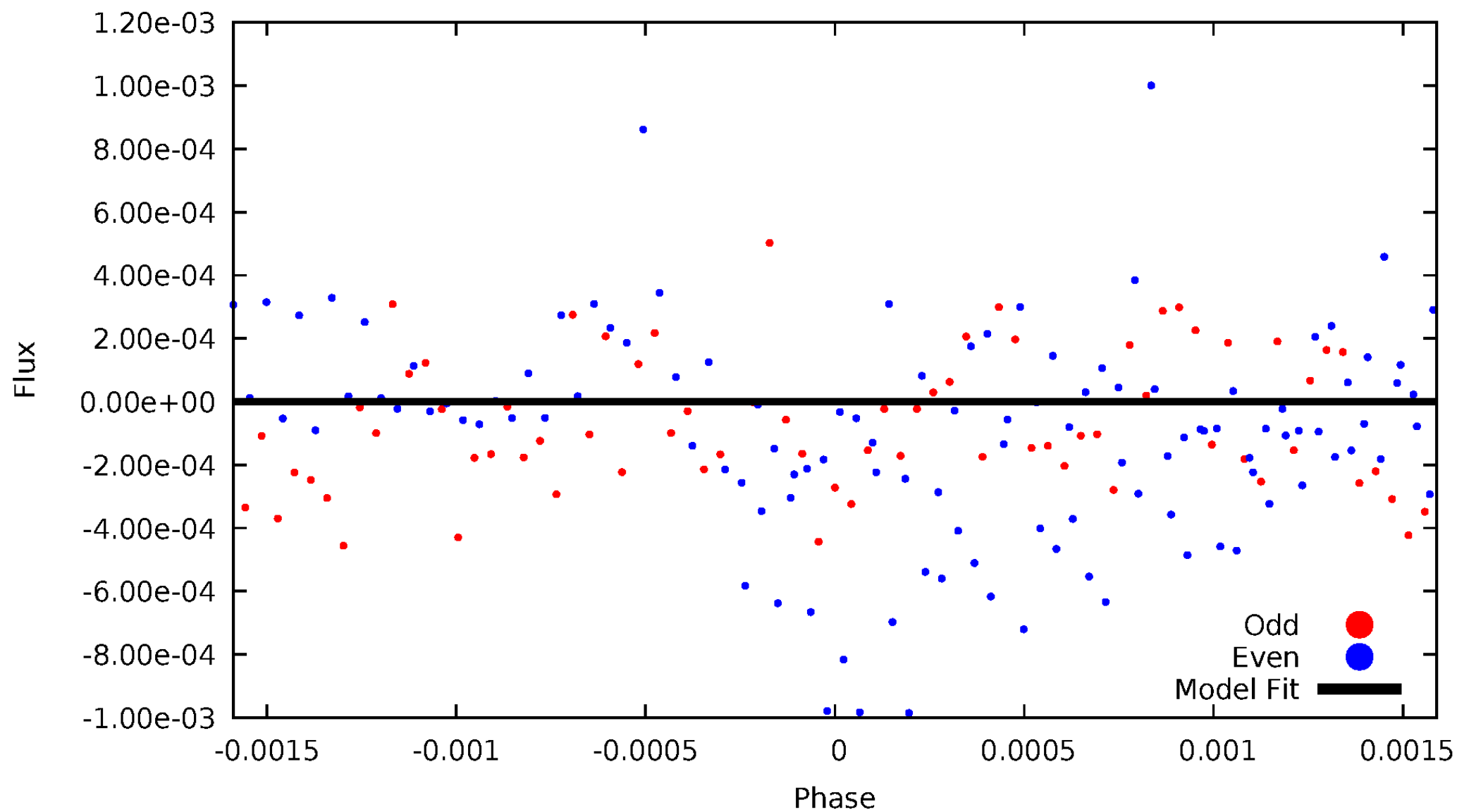


TCE 008257407-06



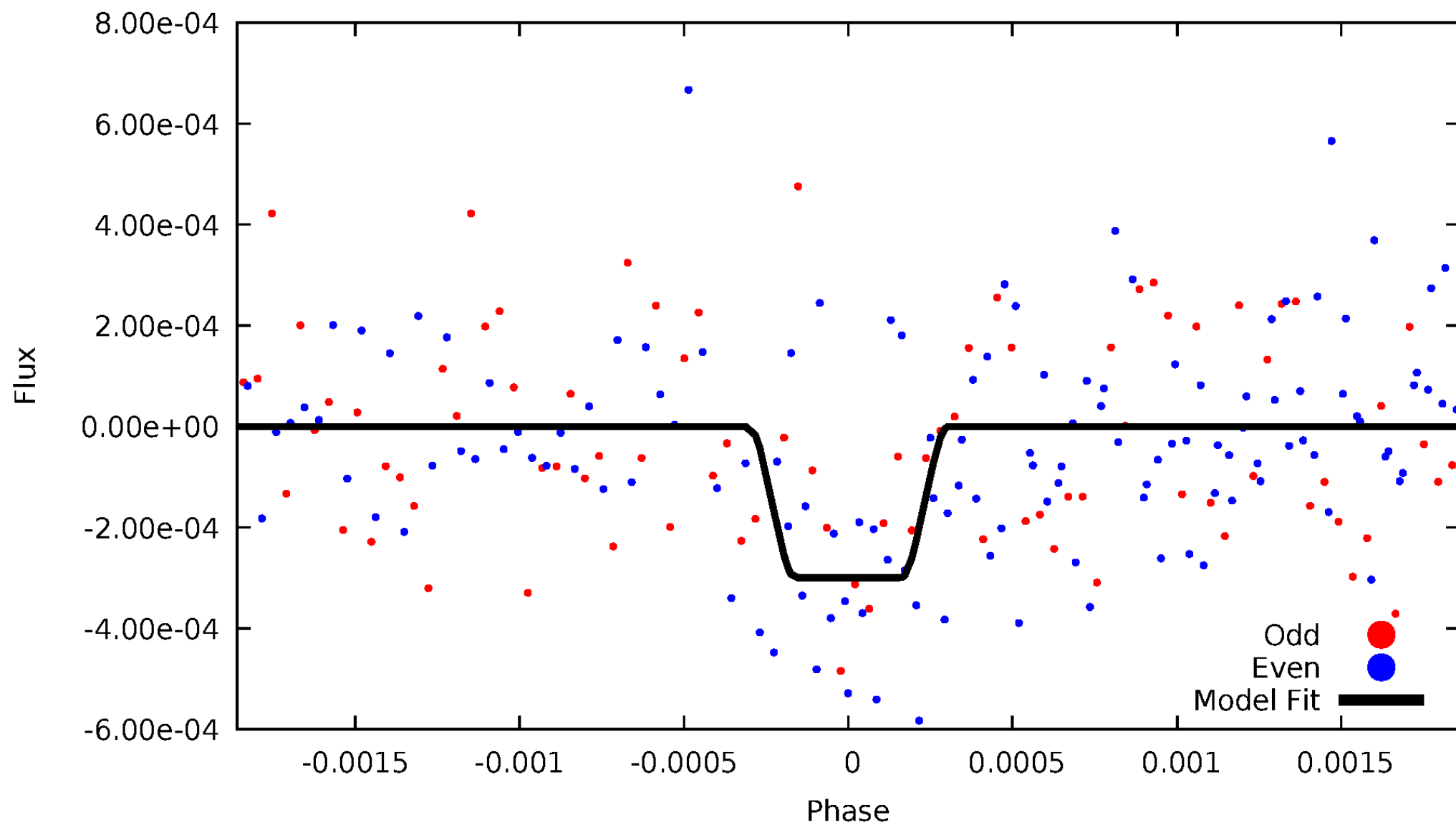
DV Odd/Even

TCE 008257407-06

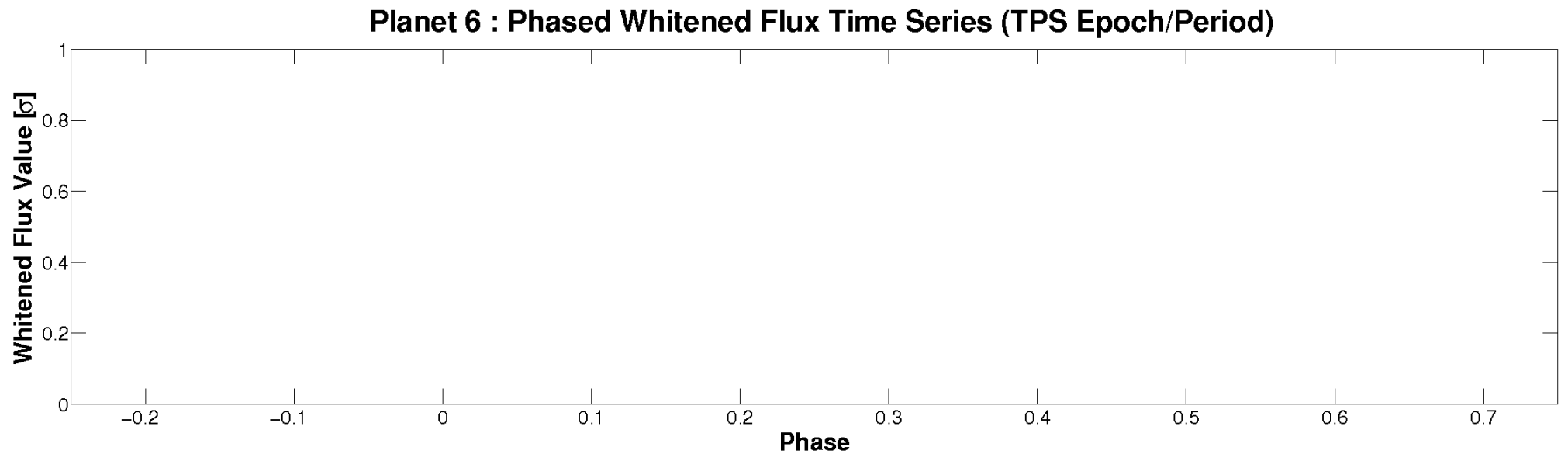
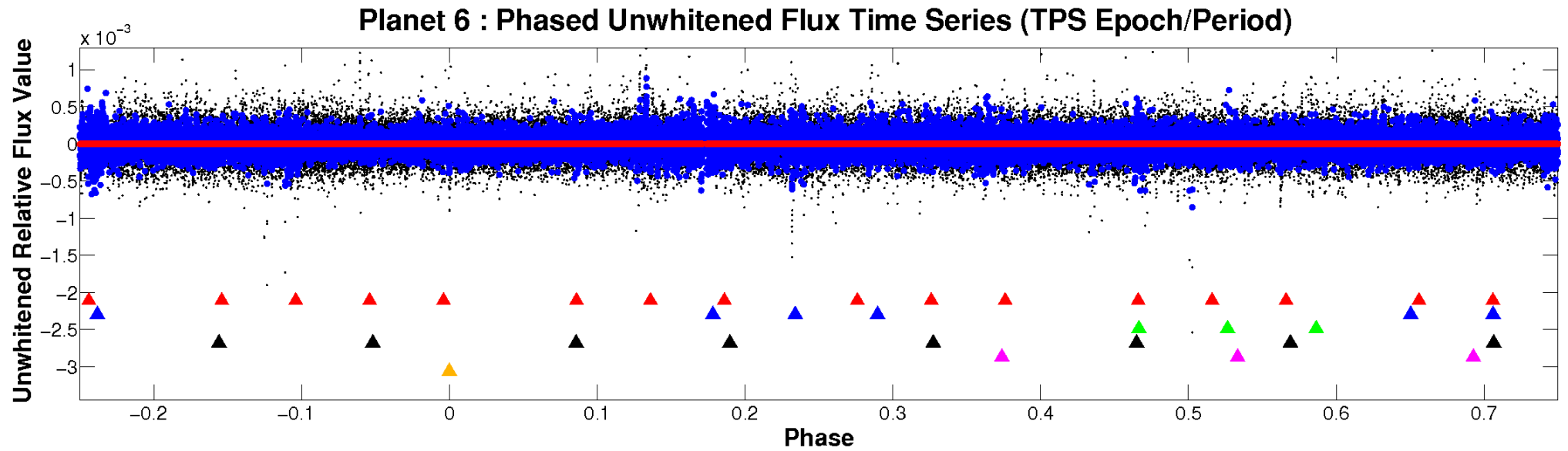


ALT Odd/Even

TCE 008257407-06

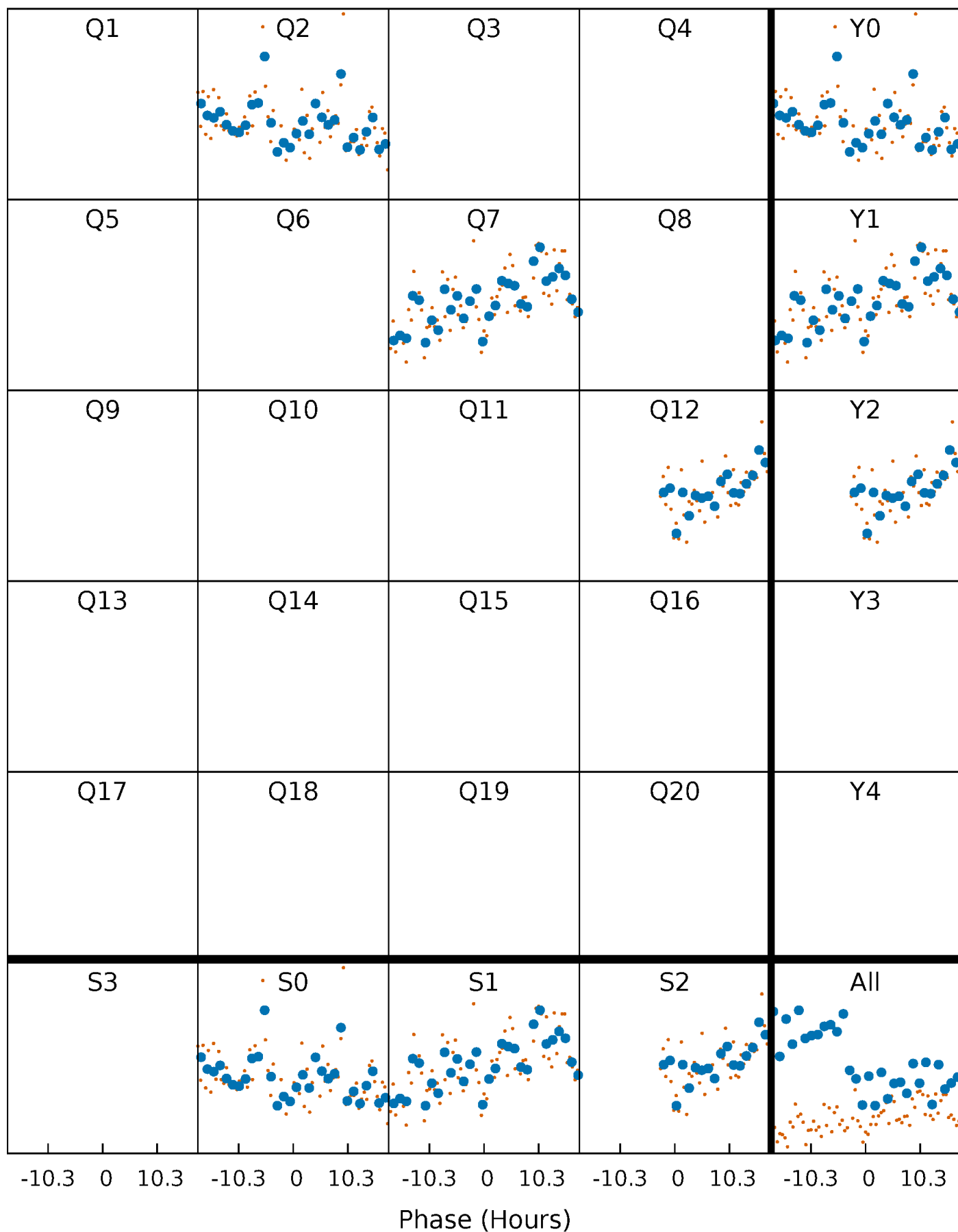


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 008257407-06 P=472.103781 Days $T_0=178.157406$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008257407-06 $P=472.103781$ Days $T_0=178.157406$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

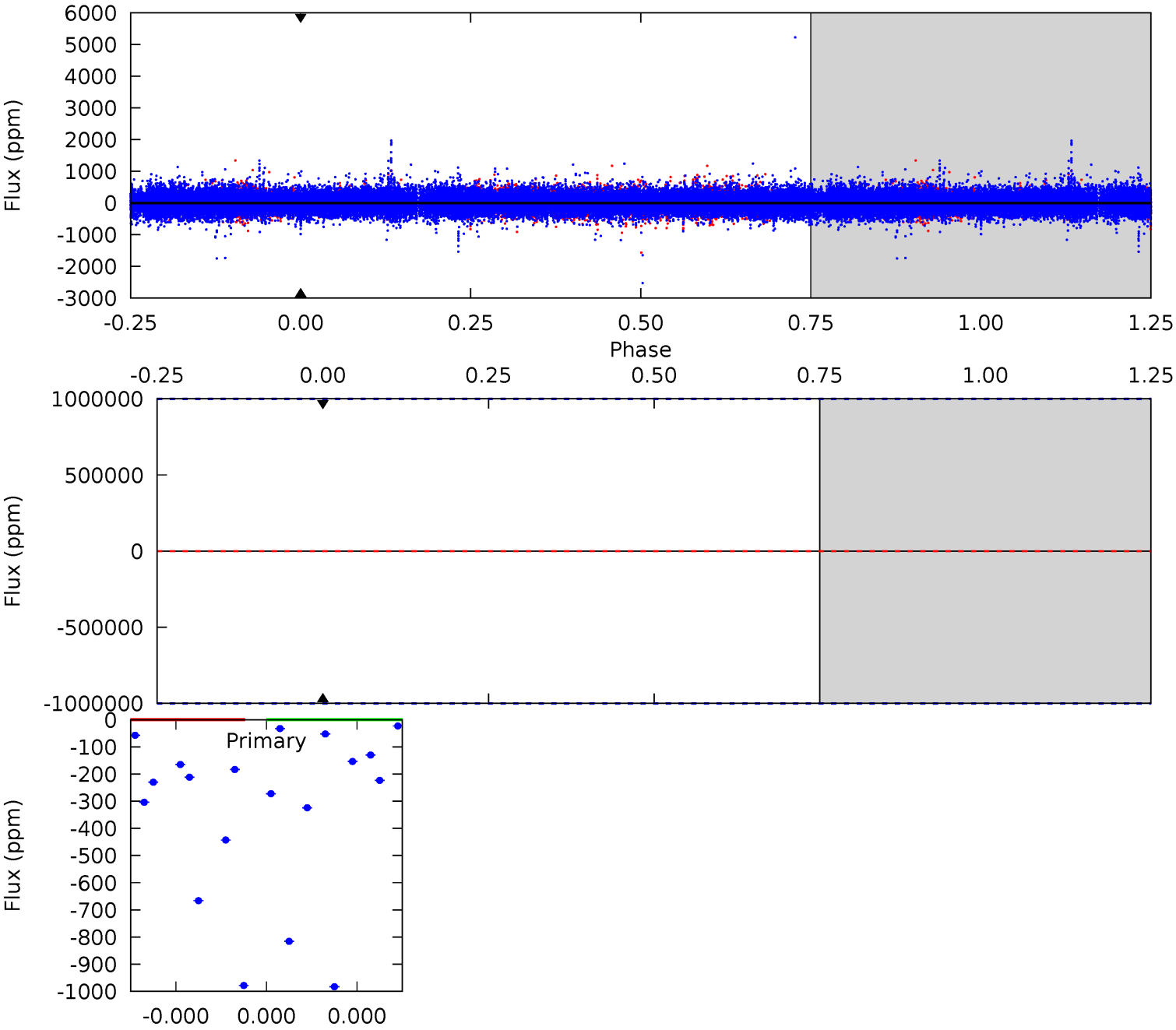
TCE 008257407-06 P=472.103781 Days $T_0=178.147829$ (BKJD)



DV Model-Shift Uniqueness Test

008257407-06, P = 472.103781 Days, E = 178.157406 Days

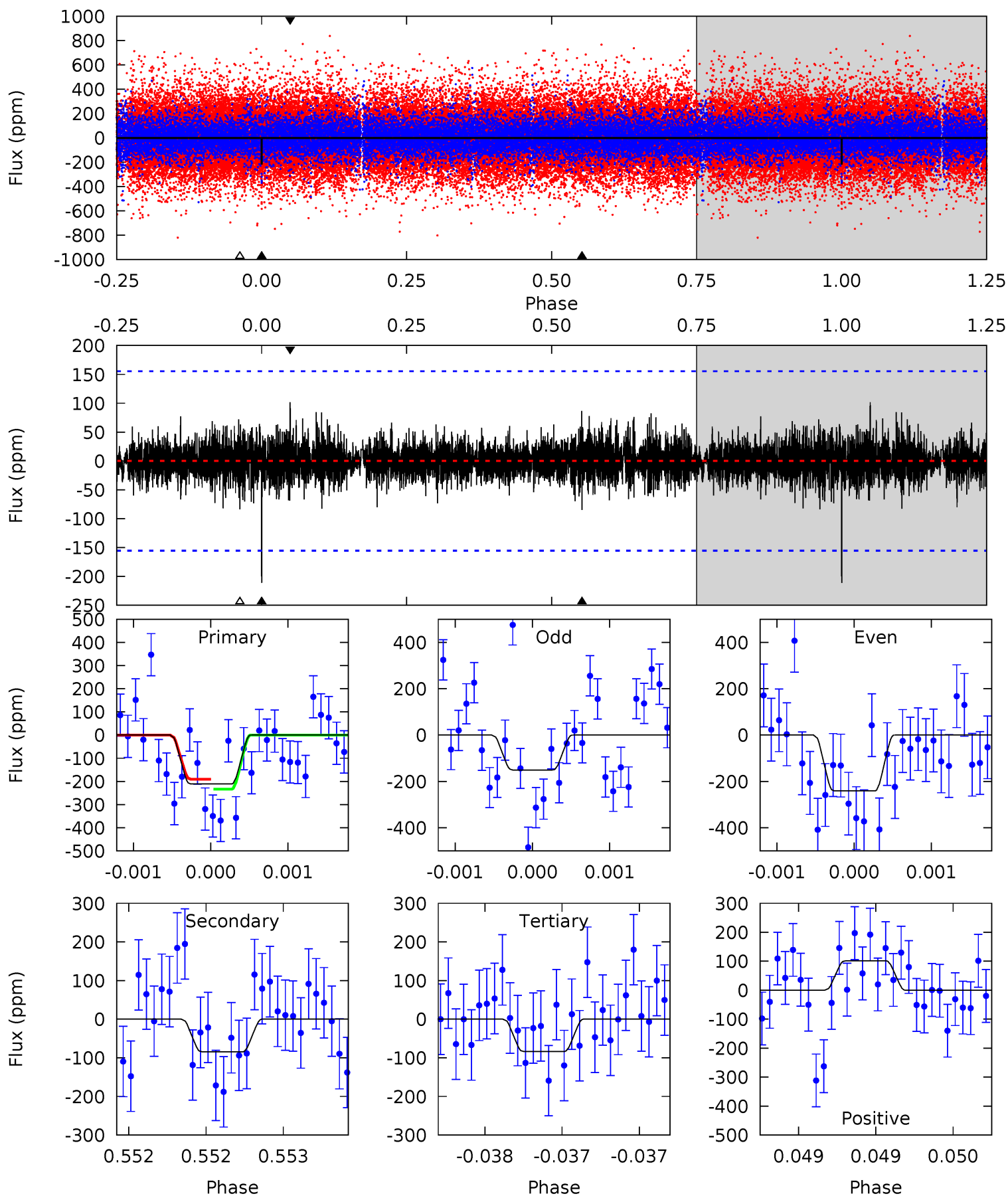
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008257407-06, P = 472.103781 Days, E = 178.147829 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.53	3.01	2.98	3.62	5.54	3.43	0.76	4.55	3.92	0.03	-0.60	1.49	1.06	0.32	0.76



Stellar Parameters For KIC 008257407

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6214^{+187}_{-206}	$4.021^{+0.392}_{-0.168}$	$-0.580^{+0.300}_{-0.300}$	$1.583^{+0.415}_{-0.622}$	$0.959^{+0.139}_{-0.126}$	$0.341^{+1.024}_{-0.151}$
	+3%/-3%	+10%/-4%	+52%/-52%	+26%/-39%	+14%/-13%	+301%/-44%
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 008257407-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$12.12^{+14.57}_{-8.14}$	442^{+35}_{-48}	5551^{+27642}_{-27215}	$15190^{+1378666}_{-719839}$
Alt.	-84 ± 28	$12.33^{+14.01}_{-8.42}$	439^{+37}_{-45}	2840^{+1335}_{-469}	377^{+3944}_{-294}

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

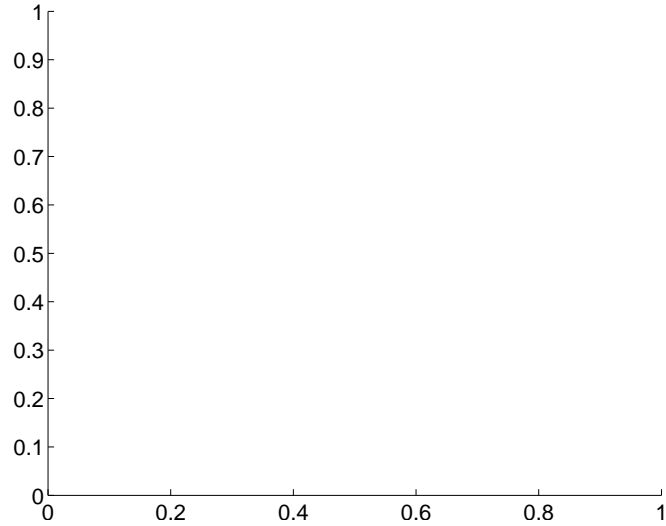
Supplemental centroid analysis for 008257407-06. Kepler magnitude: 13.62. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

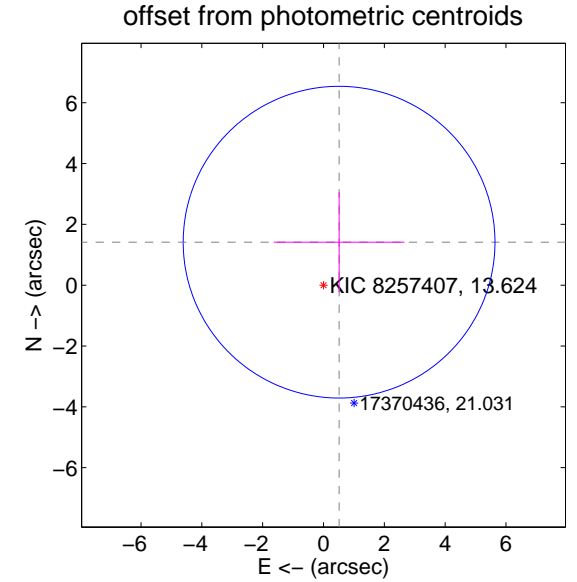
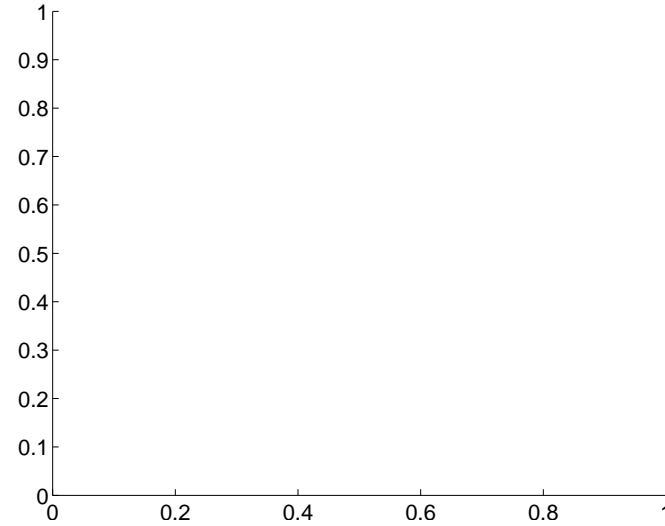
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.50 ± 1.71	0.88	-0.51 ± 2.15	1.41 ± 1.64

There is no PRF-fit offset from OOT-fit



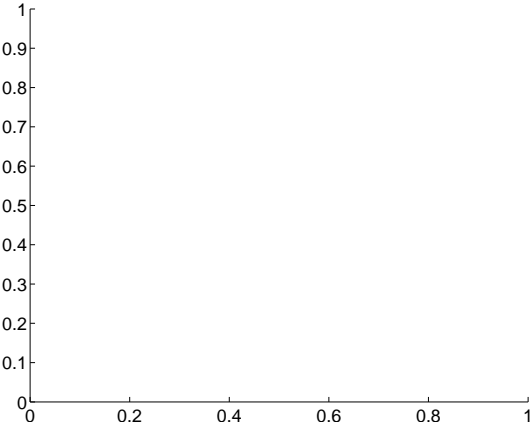
There is no PRF-fit offset from KIC



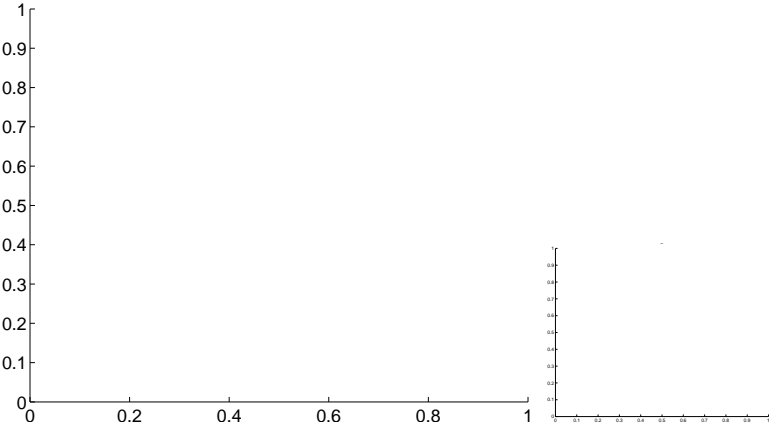
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

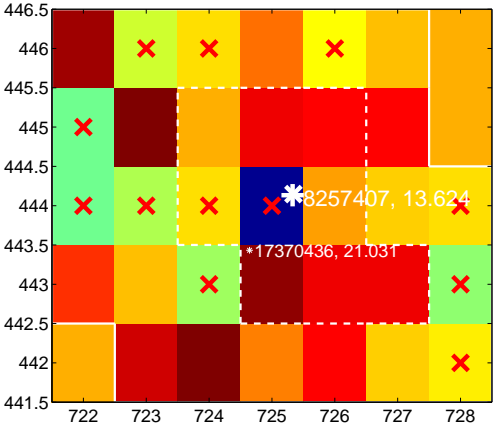
Q1 no difference image



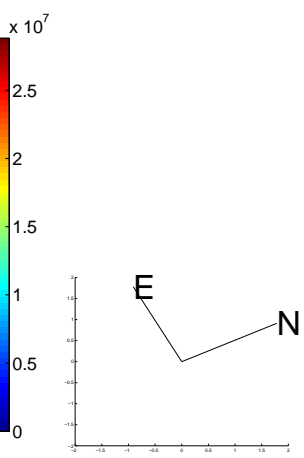
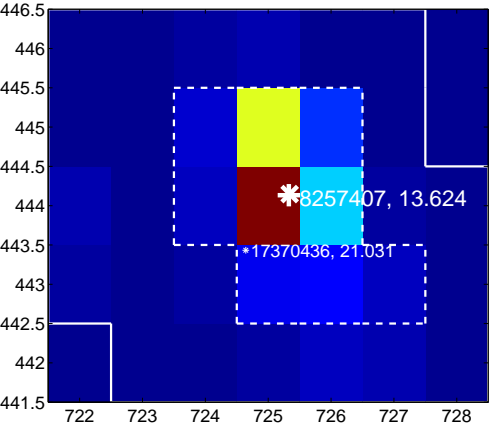
Q1 no OOT image



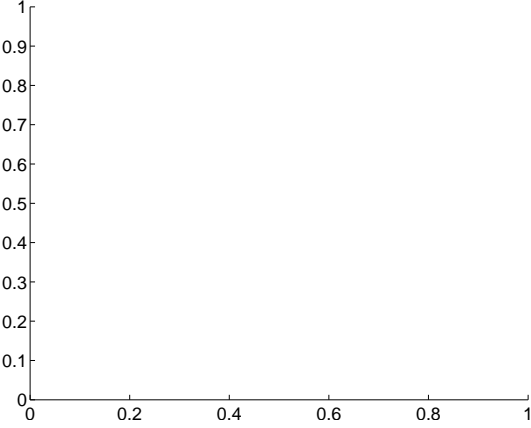
Q2 difference image. Poor Quality



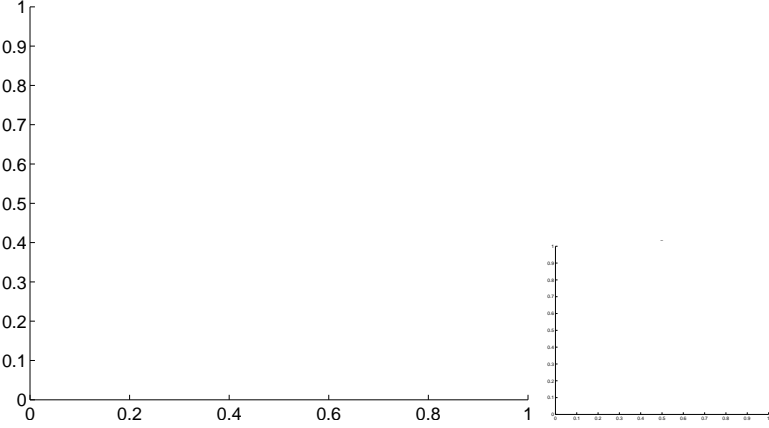
Q2 OOT image



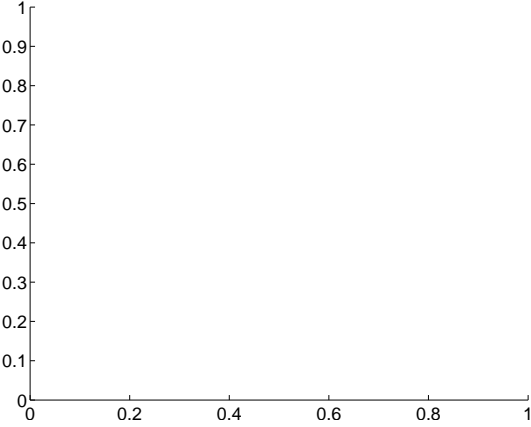
Q3 no difference image



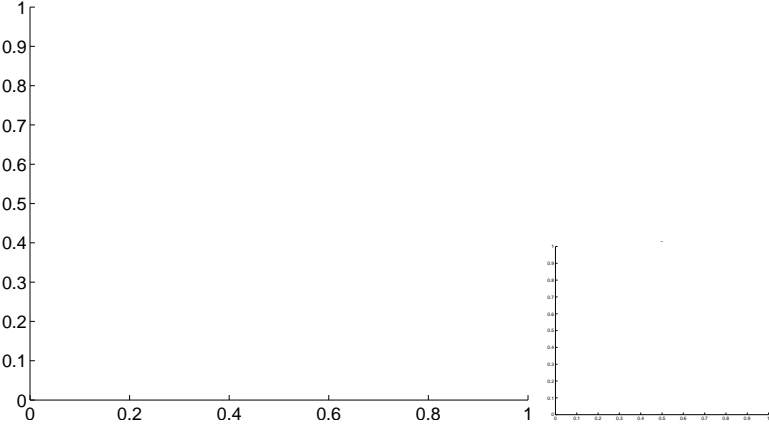
Q3 no OOT image



Q4 no difference image

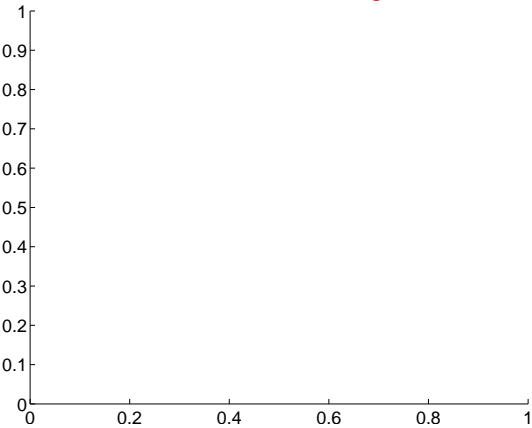


Q4 no OOT image

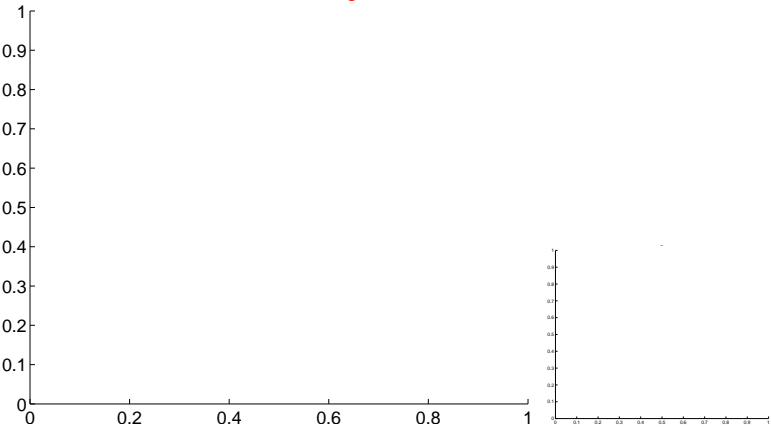


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

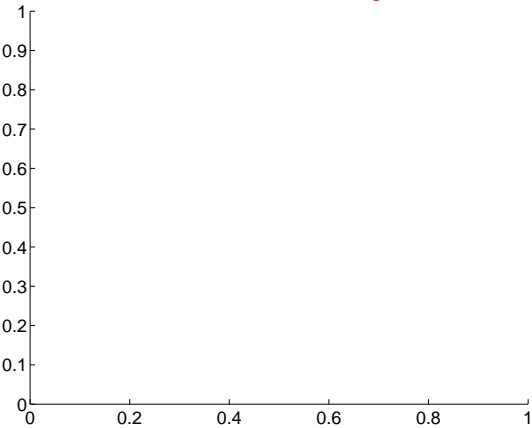
Q5 no difference image



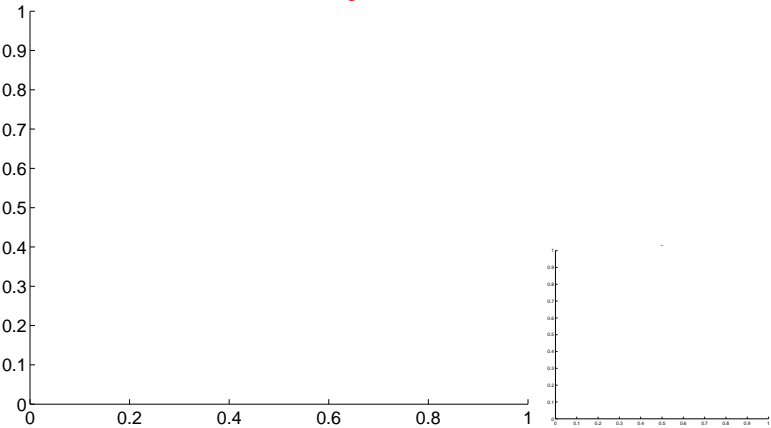
Q5 no OOT image



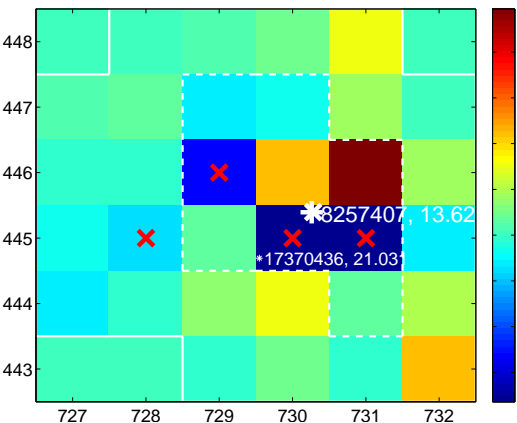
Q6 no difference image



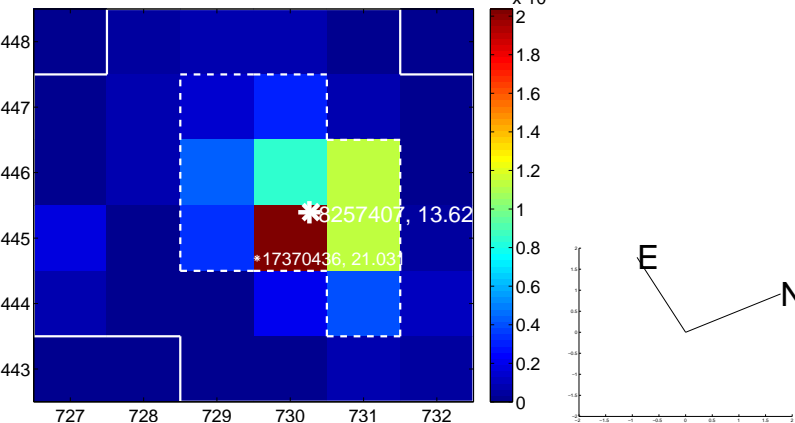
Q6 no OOT image



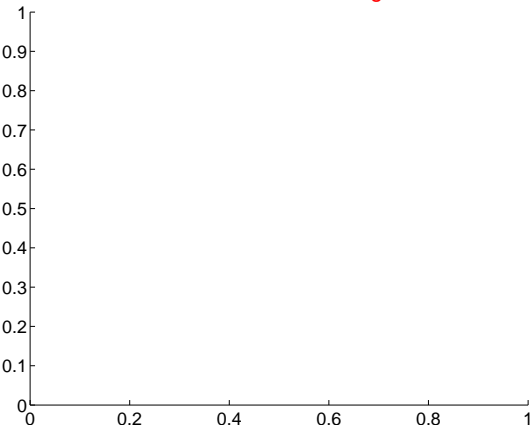
Q7 difference image. Poor Quality



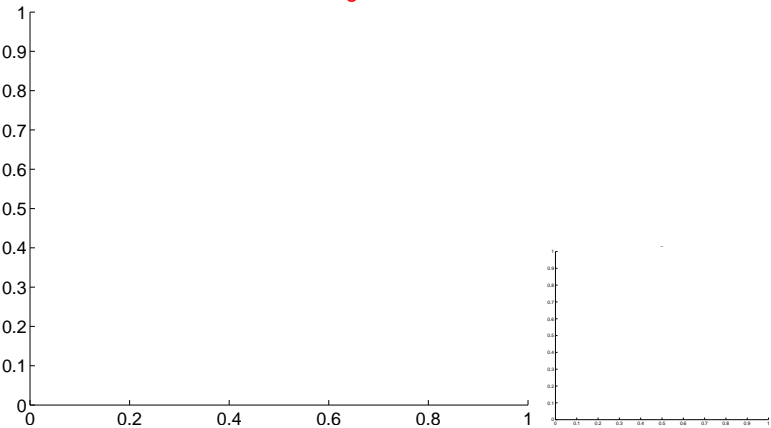
Q7 OOT image



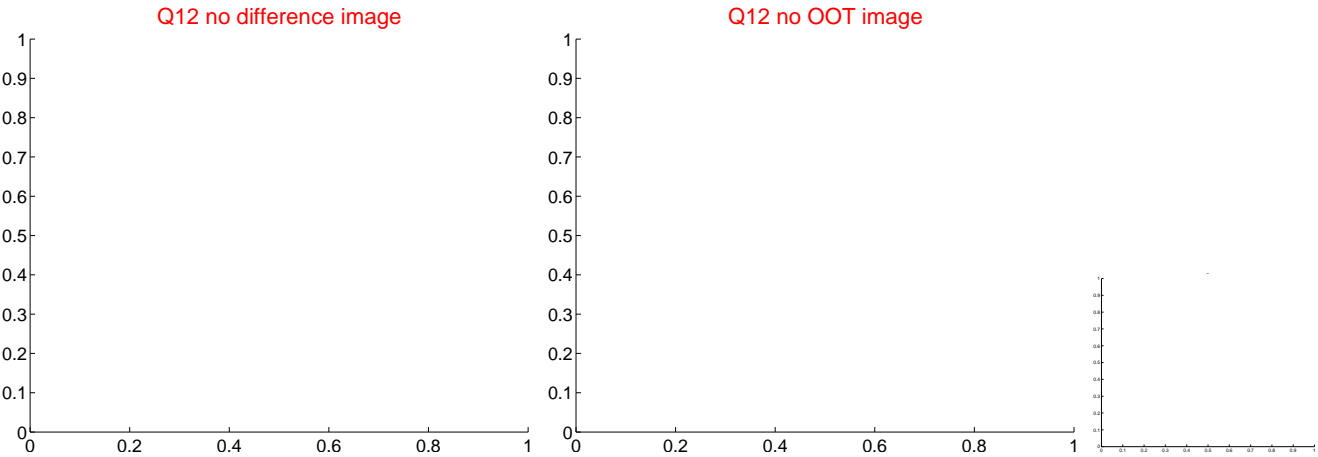
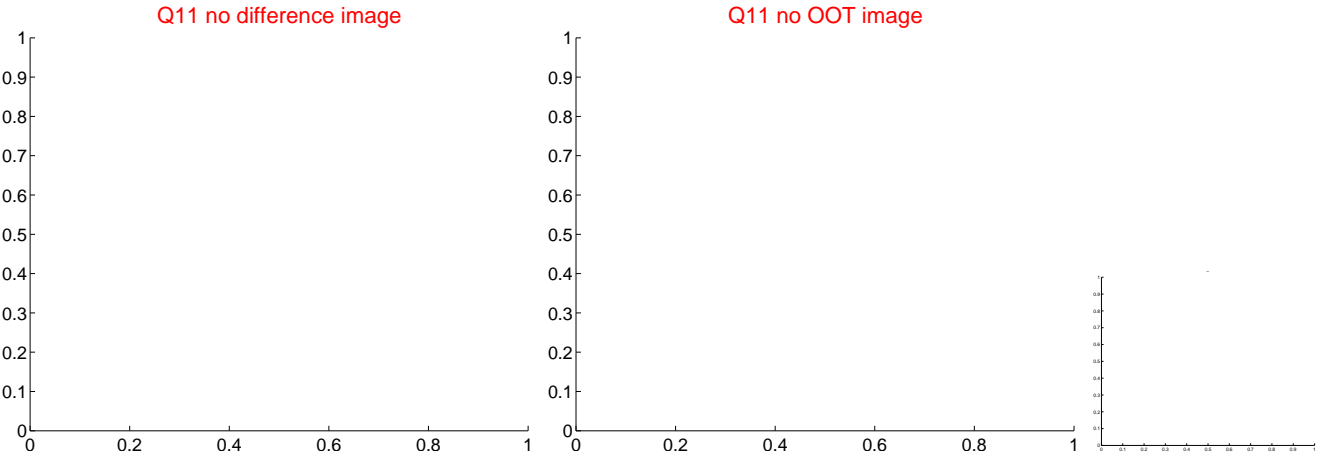
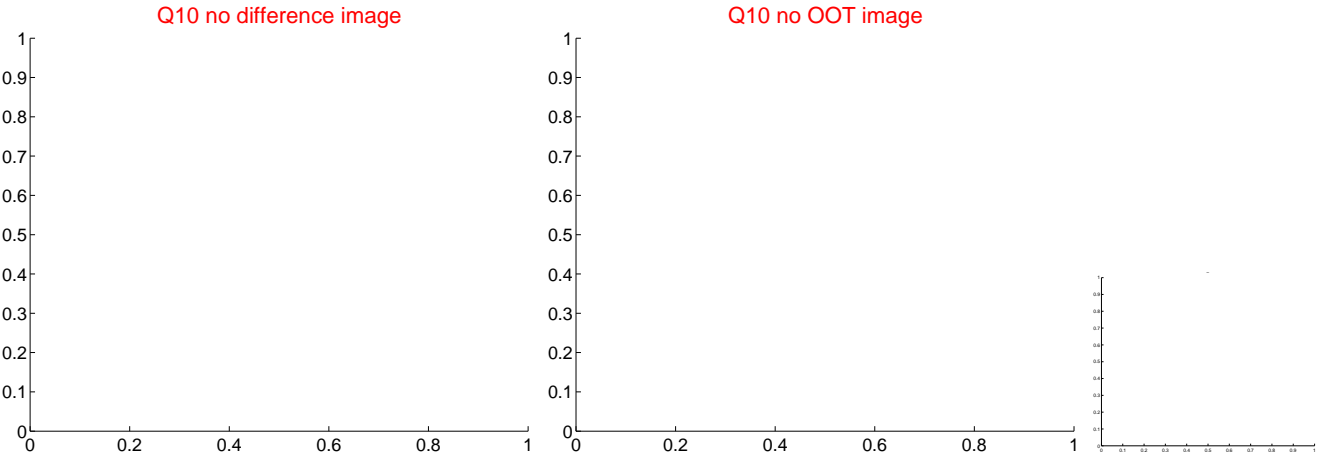
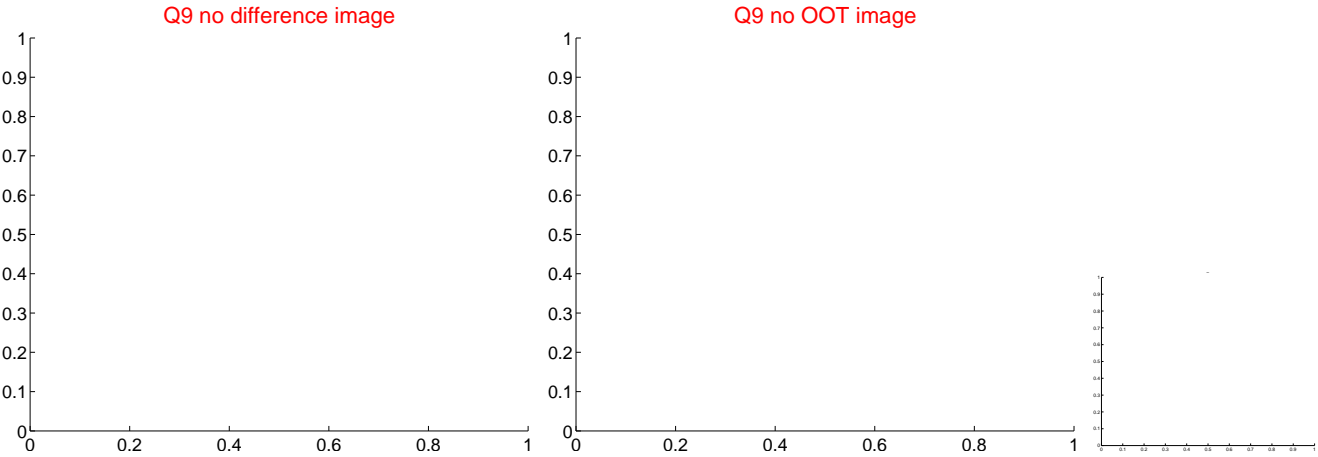
Q8 no difference image



Q8 no OOT image



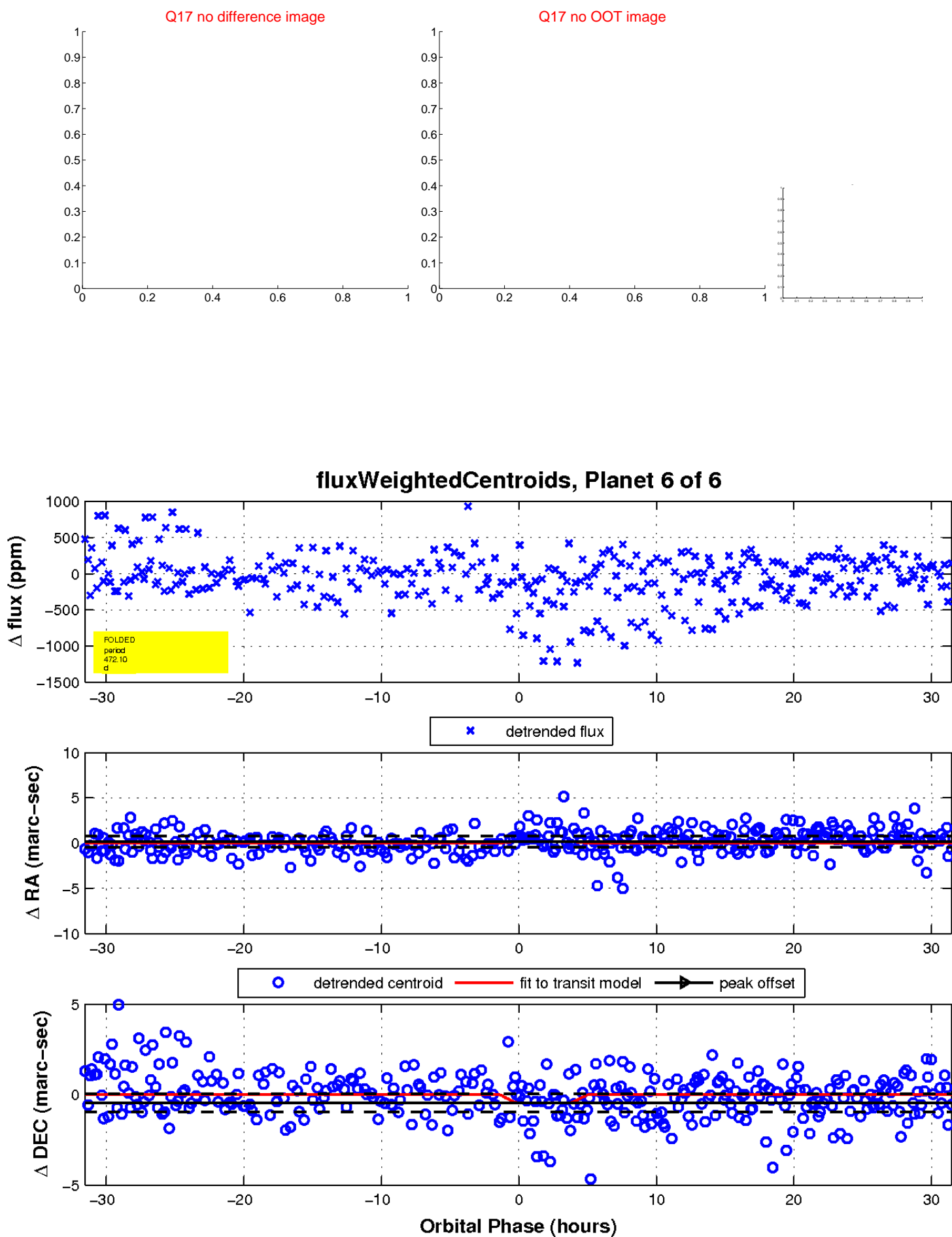
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

