

KIC 010858737

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})
010858737-01	OBS	No	0.952386	132.328621	34.5	2.917	11.8	14.1	1.38	6963	1.14	9679.75
010858737-02	OBS	No	182.638628	295.744138	206.7	12.916	14.1	6.2	1.38	6963	2.54	8.75
010858737-03	OBS	4183.01	0.952334	131.882826	20.1	2.919	12.8	10.2	1.38	6963	0.63	9680.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010858737-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—EPHEM_MATCH
010858737-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858737-03	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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 010858737-01

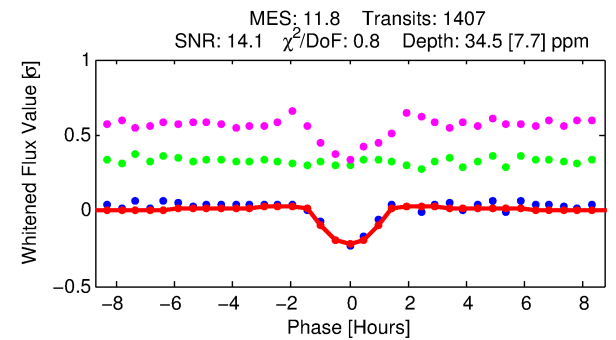
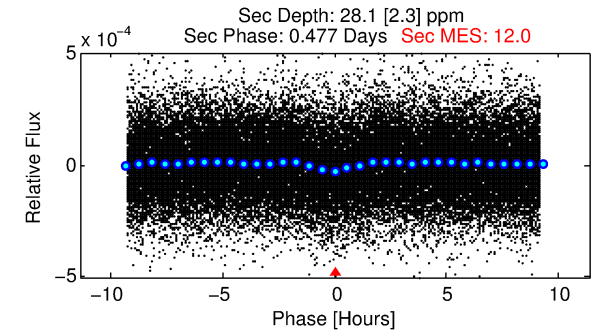
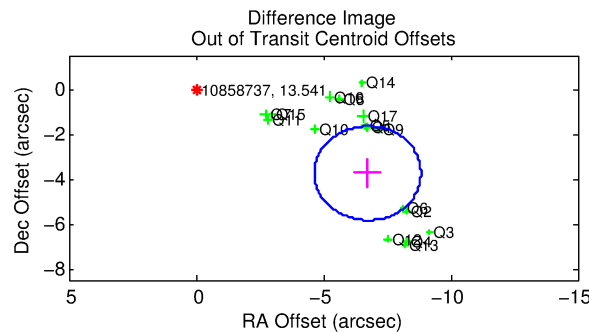
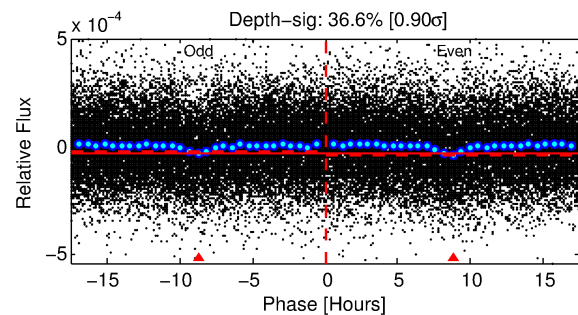
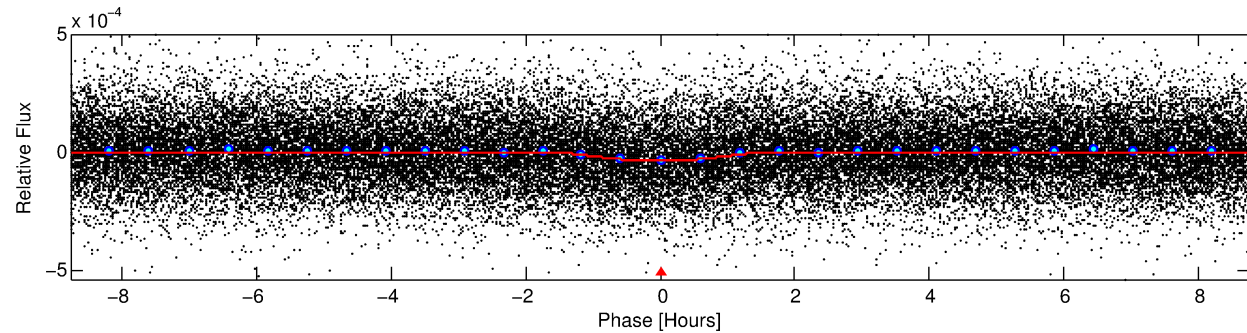
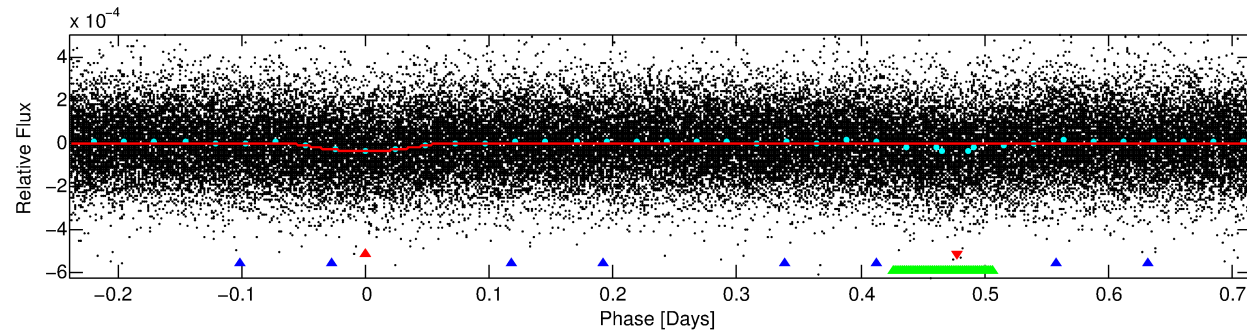
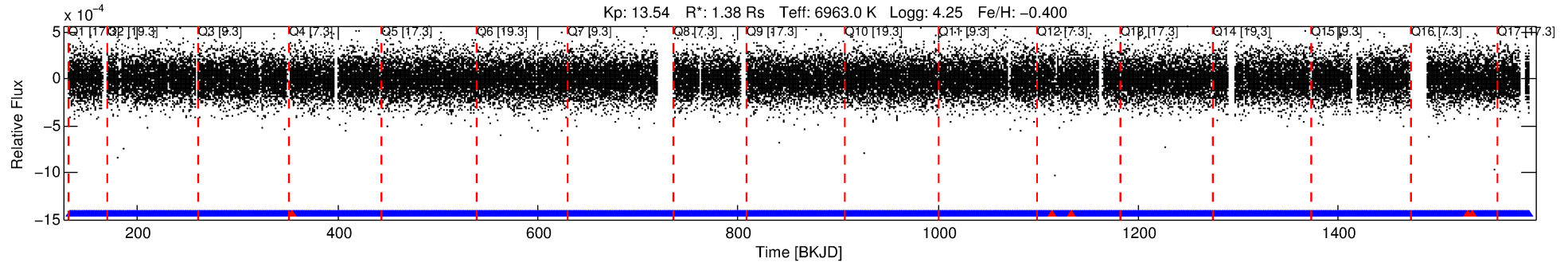
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010858737-01	10858737	010858720-pri	10858720	1:1	88.3	-14	17	10.97	13.54	14085.00	Direct-PRF	0	0.87	0.48

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10858737 Candidate: 1 of 3 Period: 0.952 d
KOI: K04183 Corr: No Ephemeris Match

Kp: 13.54 R*: 1.38 Rs Teff: 6963.0 K Logg: 4.25 Fe/H: -0.400



DV Fit Results:

Period = 0.95239 [0.00001] d
Epoch = 132.3286 [0.0024] BKJD
Rp/R* = 0.0076 [0.0012]
a/R* = 1.09 [0.03]
b = 0.99 [0.00]
Seff = 9679.75 [3659.03]
Teq = 2529 [239] K
Rp = 1.14 [0.38] Re
a = 0.0203 [0.0049] AU
Ag = 4.88 [2.30] [1.68σ]
Teff = 5813 [516] K [5.78σ]

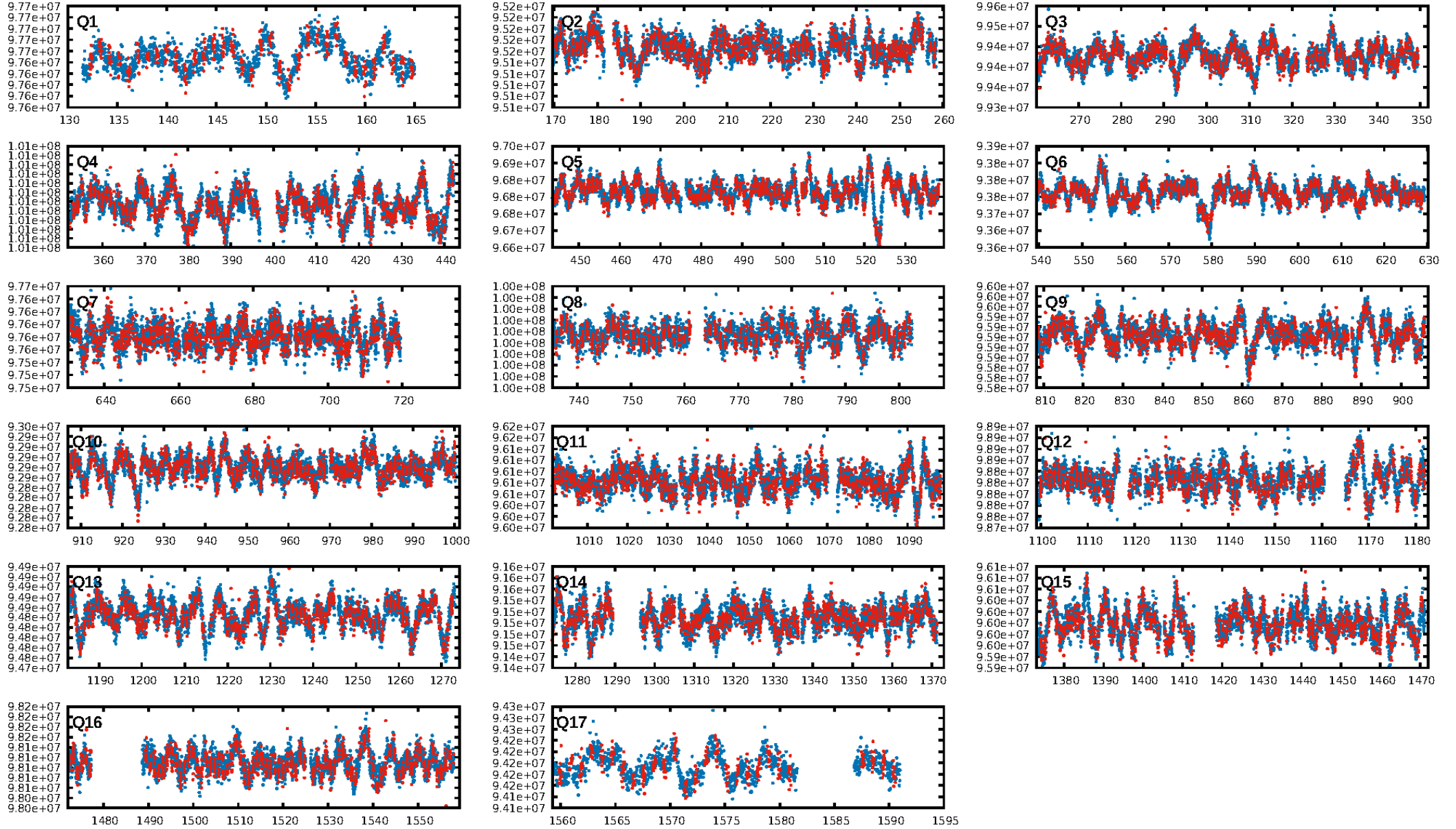
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [329.31σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.27e-31
RollingBand-fgt: 1.00 [1340/1345]
GhostDiagnostic-chr: -0.3963
Centroid-sig: 0.0%
Centroid-so: 3.381 arcsec [4.80σ]
OotOffset-rm: 7.710 arcsec [11.04σ]
KicOffset-rm: 7.582 arcsec [10.94σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

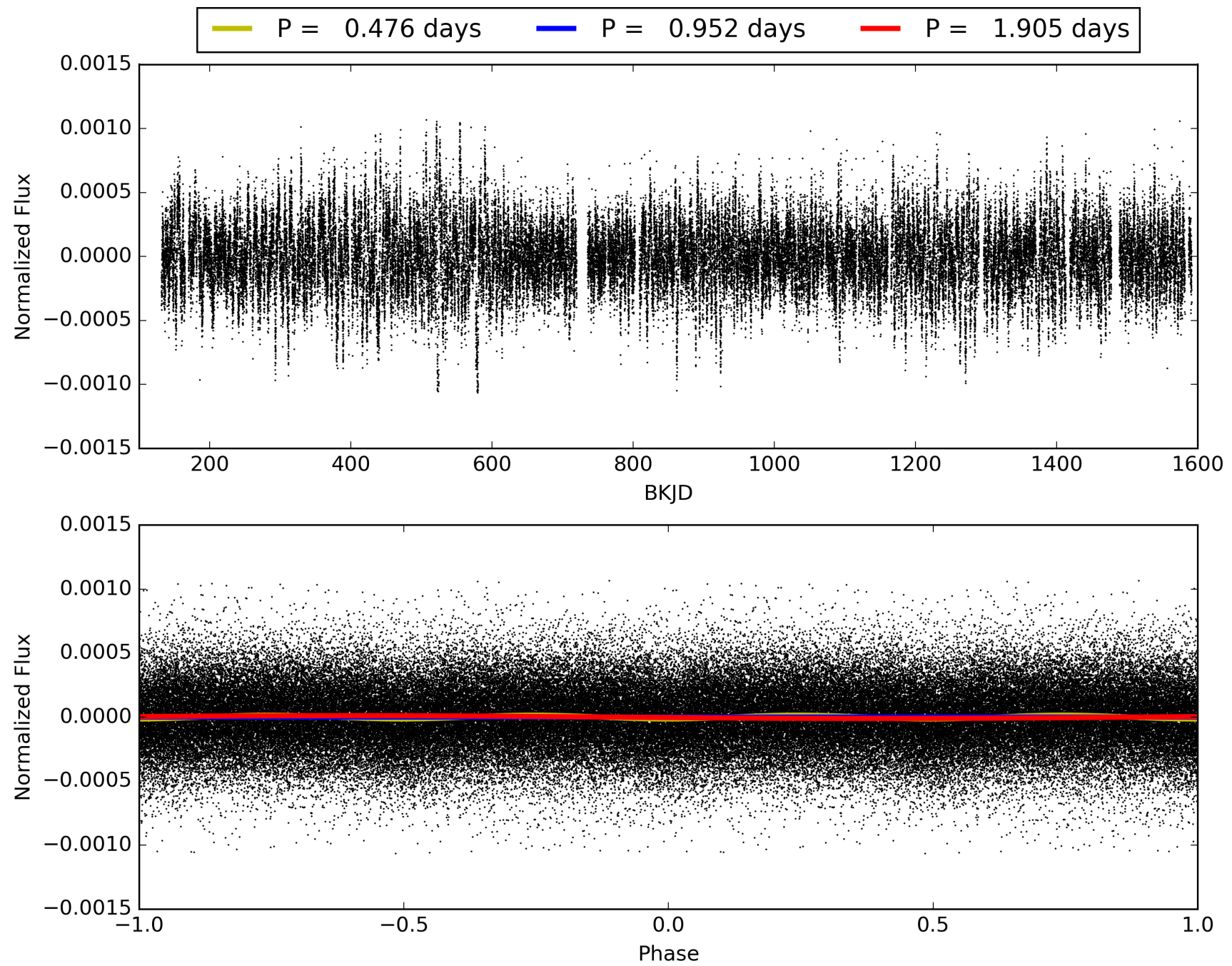
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:52:26 Z

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

TCE 010858737-01, PDC Light Curves

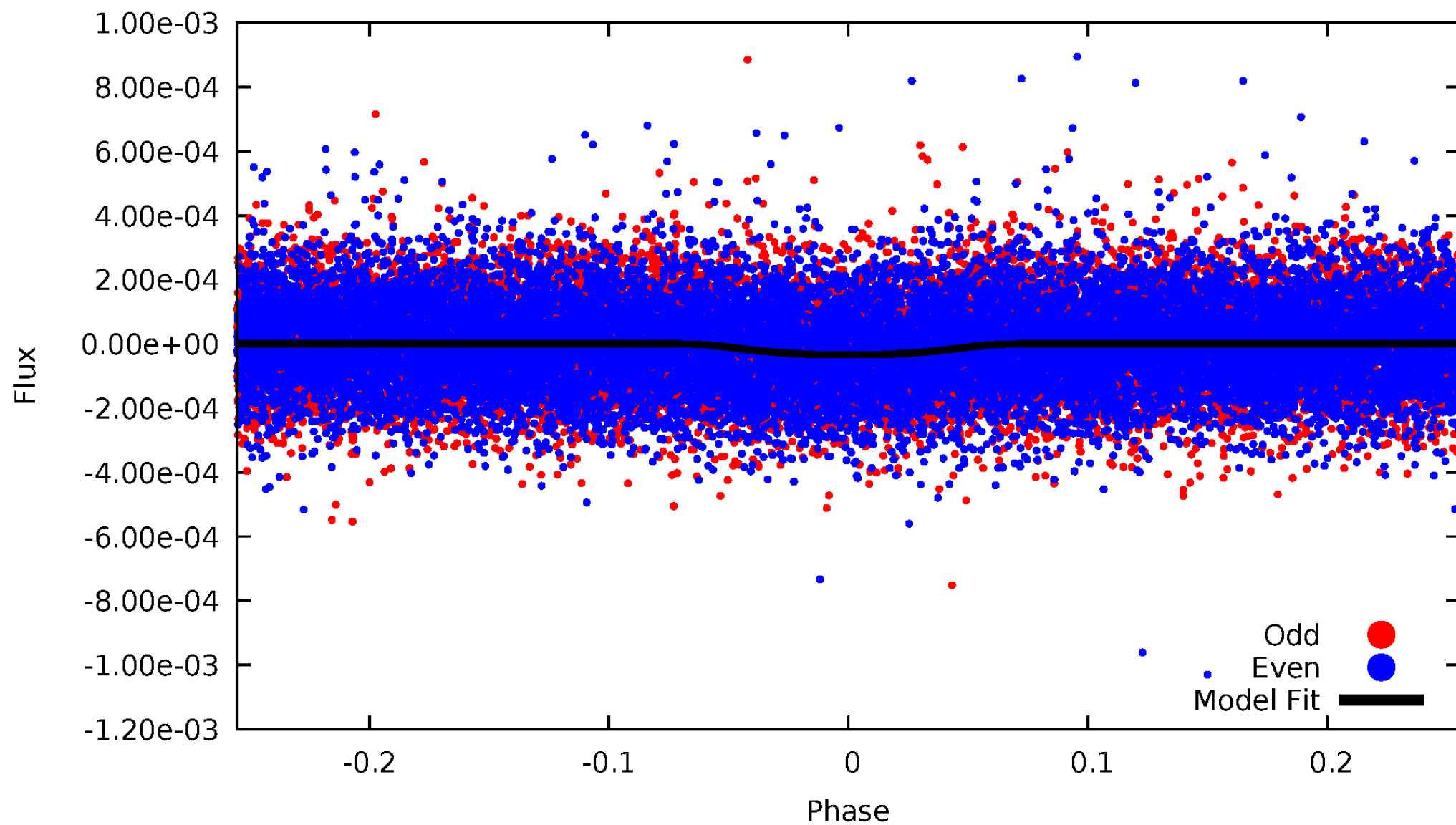


TCE 010858737-01



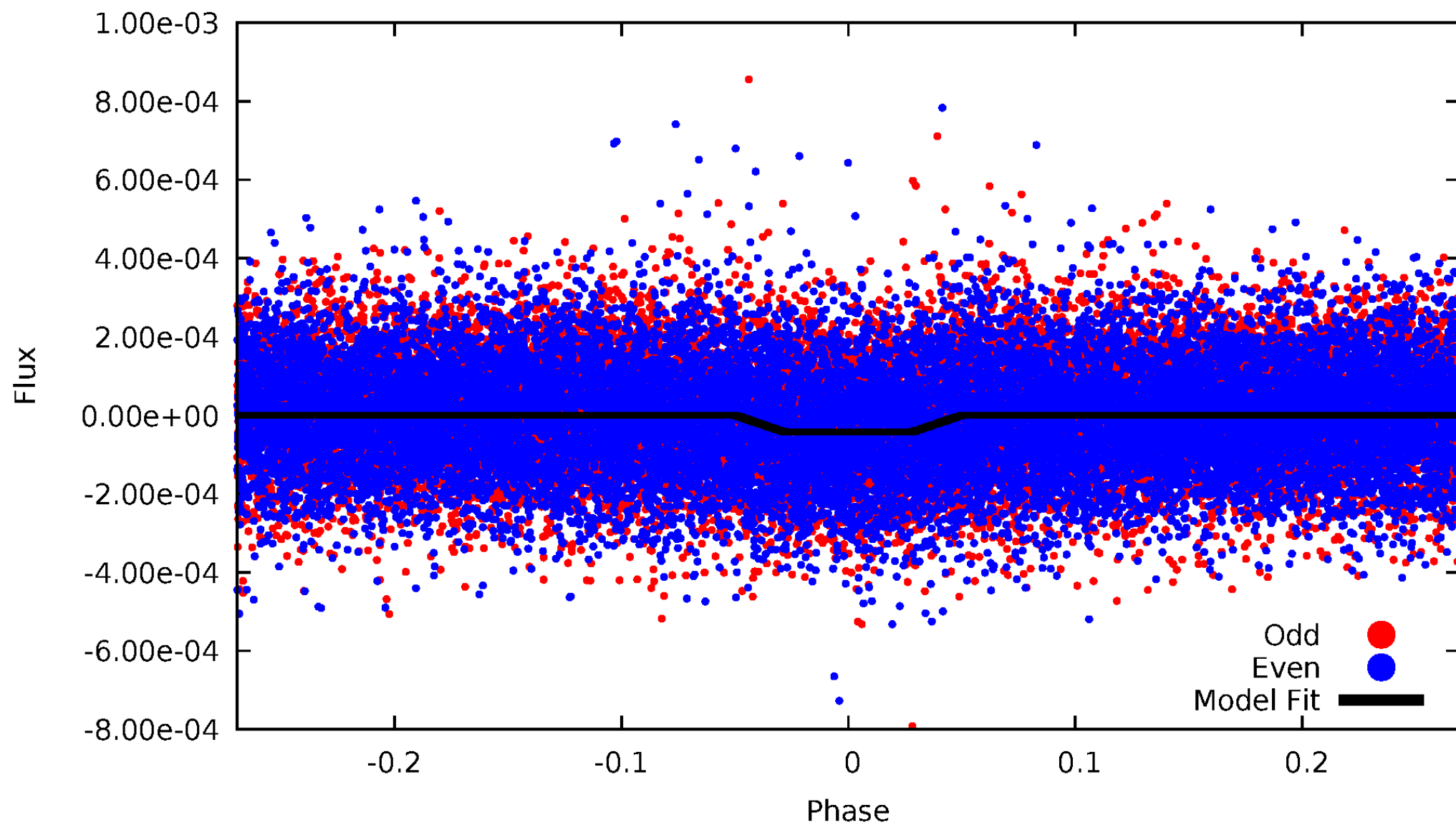
DV Odd/Even

TCE 010858737-01



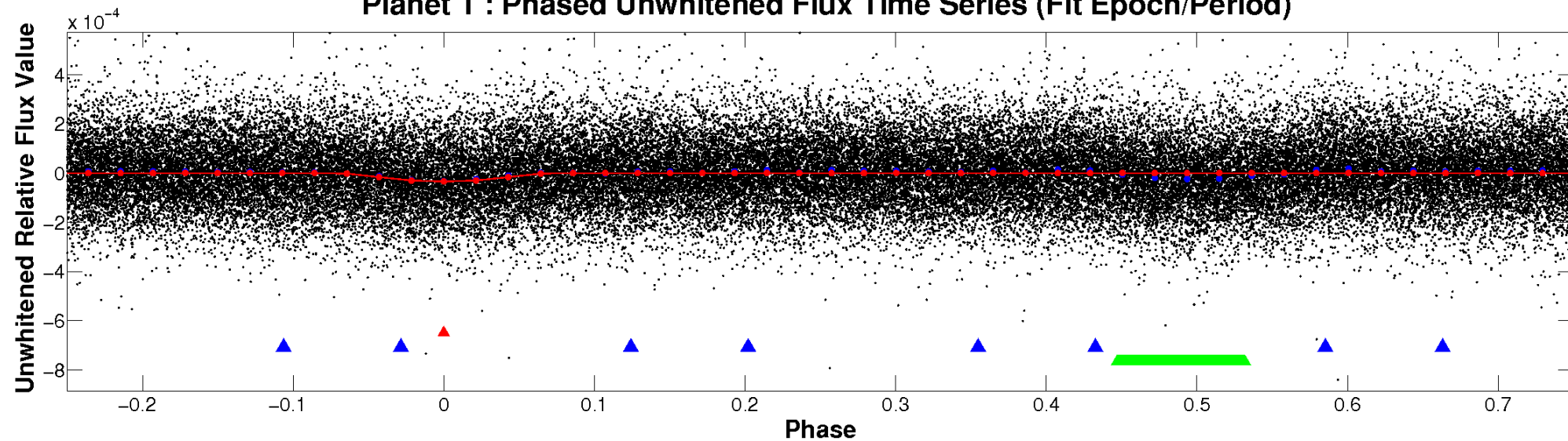
ALT Odd/Even

TCE 010858737-01

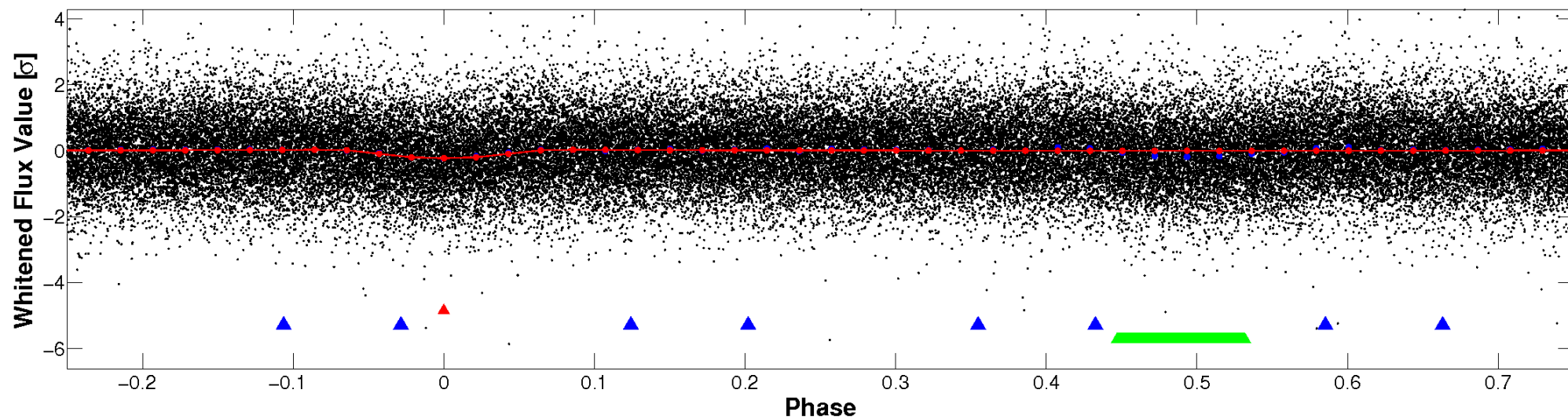


Non-Whitened Vs. Whitened Light Curve

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

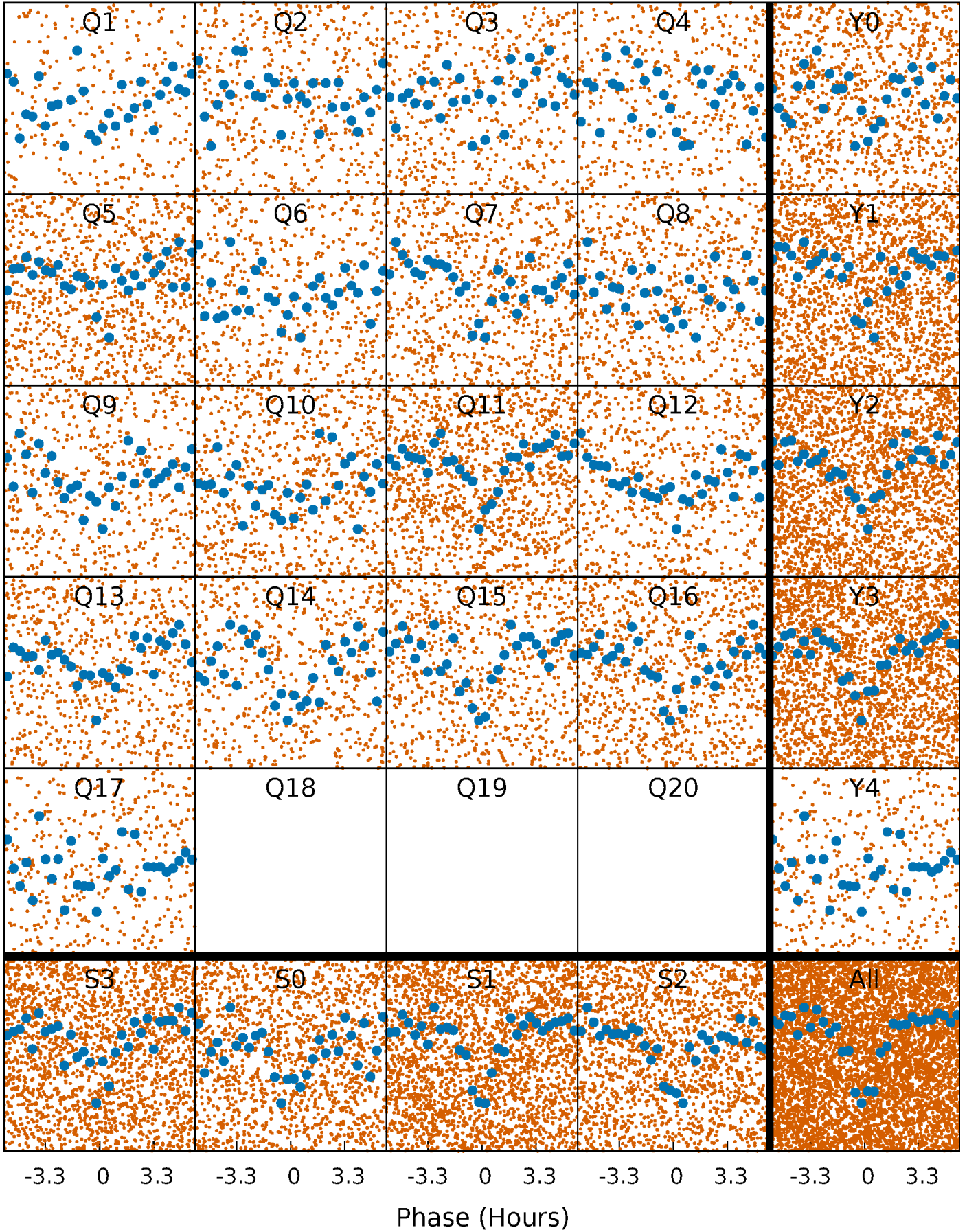


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



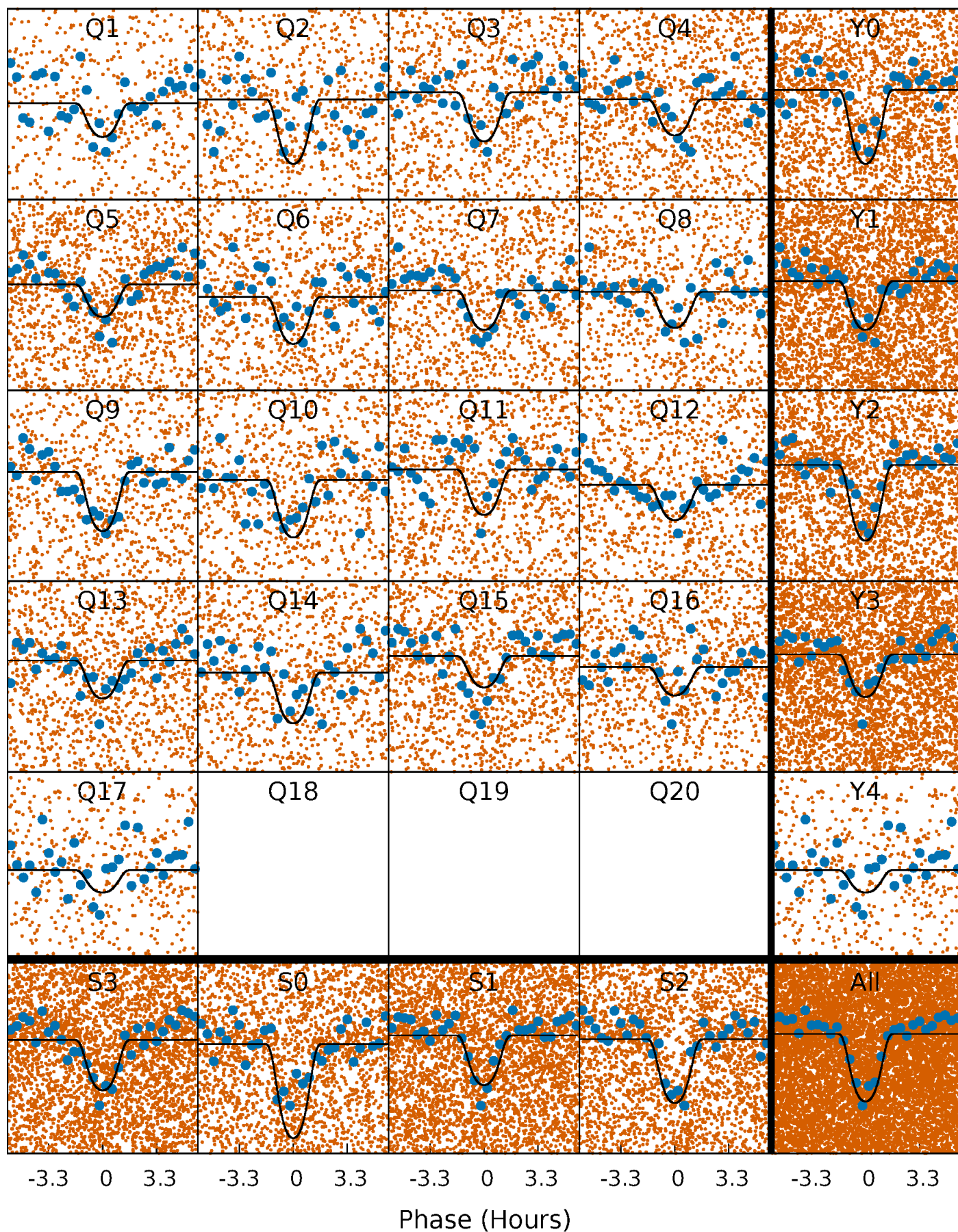
PDC Quarter-Phased Transit Curves

TCE 010858737-01 P= 0.952386 Days $T_0=132.328621$ (BKJD)



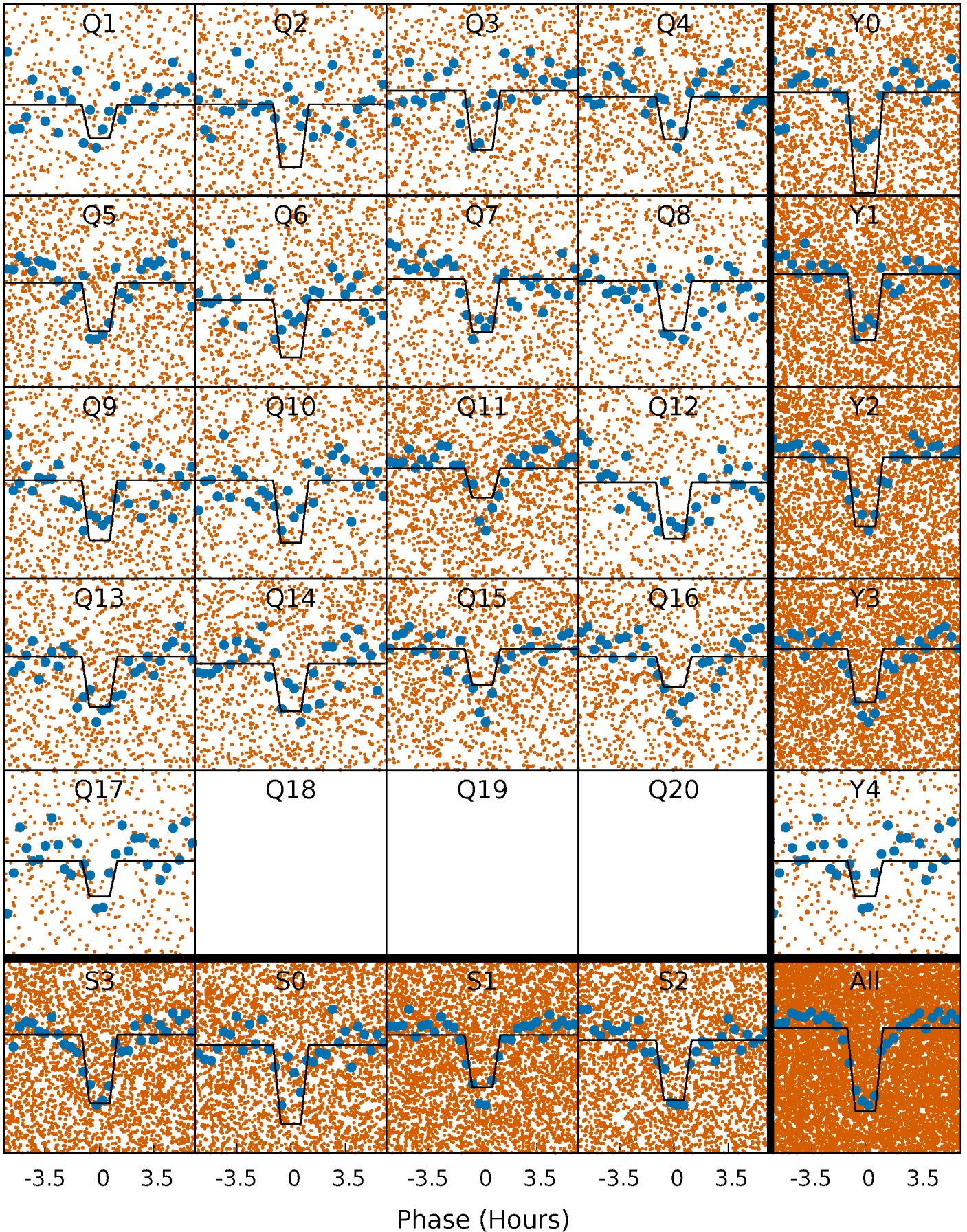
DV Quarter-Phased Transit Curves

TCE 010858737-01 P= 0.952386 Days $T_0=132.328621$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

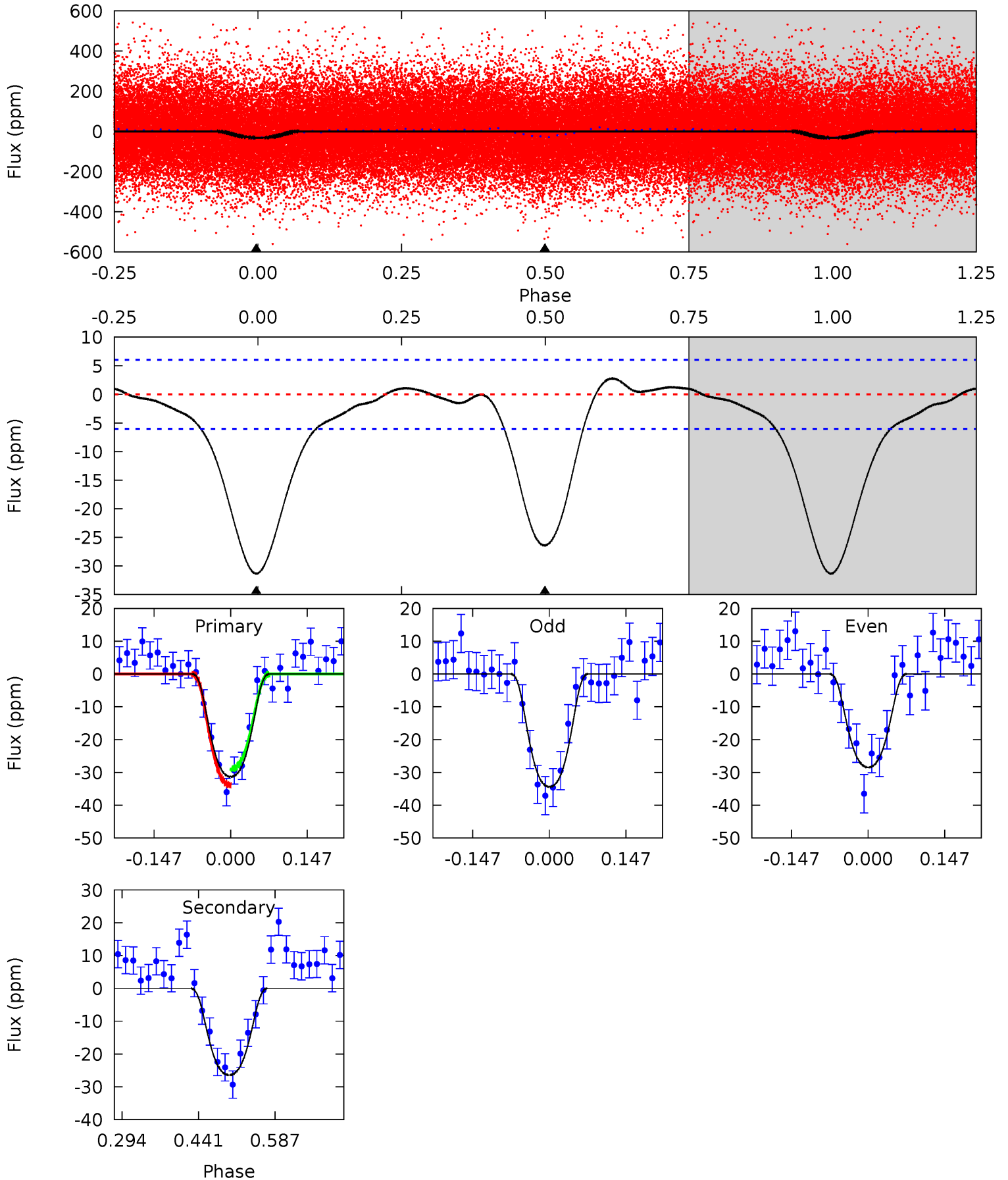
TCE 010858737-01 P= 0.952366 Days $T_0=132.344217$ (BKJD)



DV Model-Shift Uniqueness Test

010858737-01, P = 0.952386 Days, E = 131.376235 Days

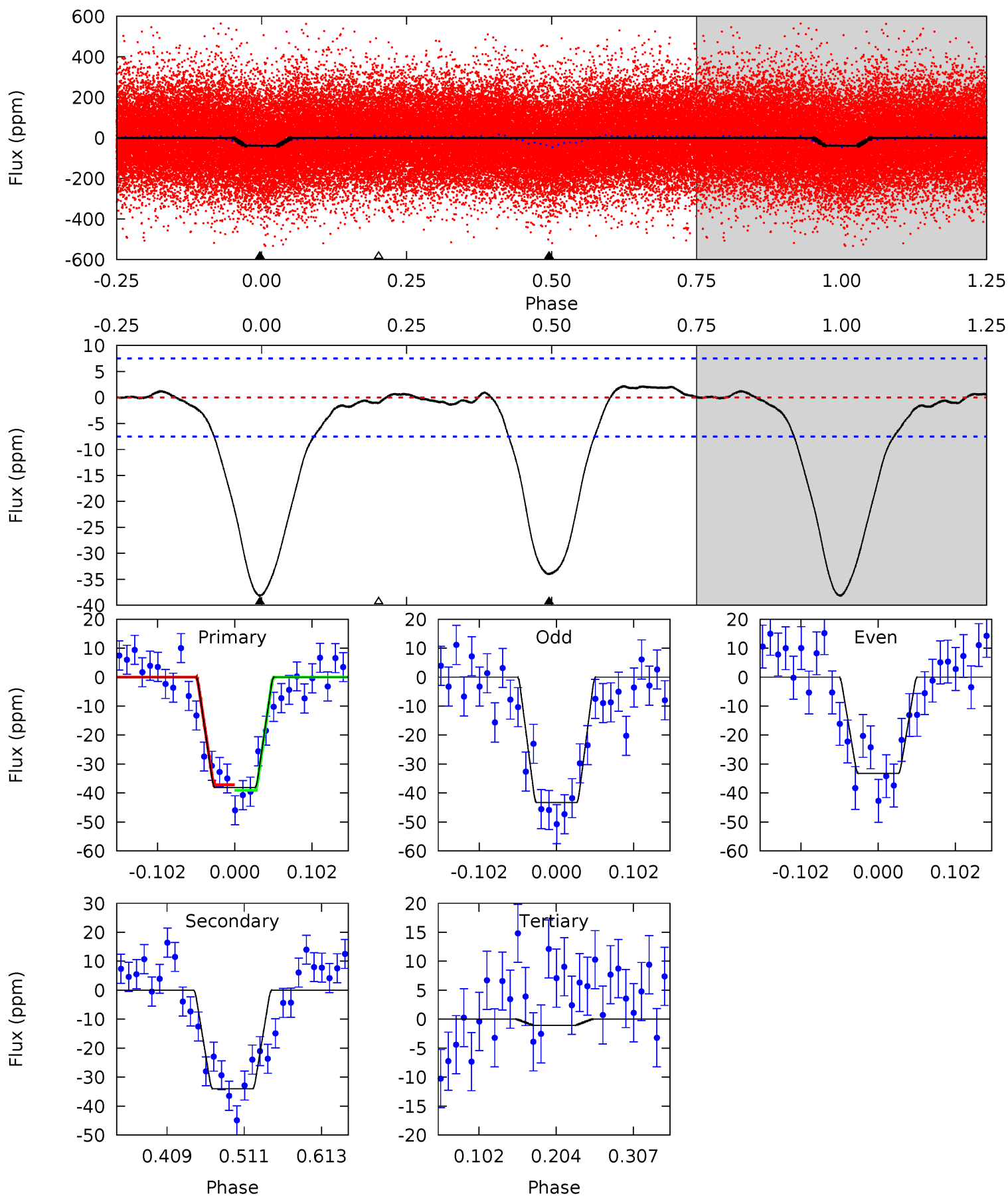
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	19.6	0	0	4.48	1.45	0.89	23.3	23.3	19.6	19.6	2.22	0.93	0.08	1.83



Alt Model-Shift Uniqueness Test

010858737-01, P = 0.952366 Days, E = 131.391851 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	20.6	0.64	0	4.56	1.63	0.88	22.5	23.2	20.0	20.6	3.05	0.96	0.05	0.58



Stellar Parameters For KIC 010858737

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6963^{+192}_{-264}	$4.250^{+0.124}_{-0.186}$	$-0.400^{+0.250}_{-0.300}$	$1.375^{+0.404}_{-0.235}$	$1.233^{+0.189}_{-0.171}$	$0.668^{+0.395}_{-0.337}$
	+3%/-4%	+3%/-4%	+62%/-75%	+29%/-17%	+15%/-14%	+59%/-50%
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 010858737-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-26 ± 1	$1.17^{+0.23}_{-0.21}$	3539^{+249}_{-205}	5554^{+502}_{-389}	$4.456^{+1.911}_{-1.411}$
Alt.	-34 ± 2	$0.99^{+0.24}_{-0.22}$	3557^{+258}_{-209}	6481^{+823}_{-608}	$7.854^{+4.520}_{-2.741}$

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

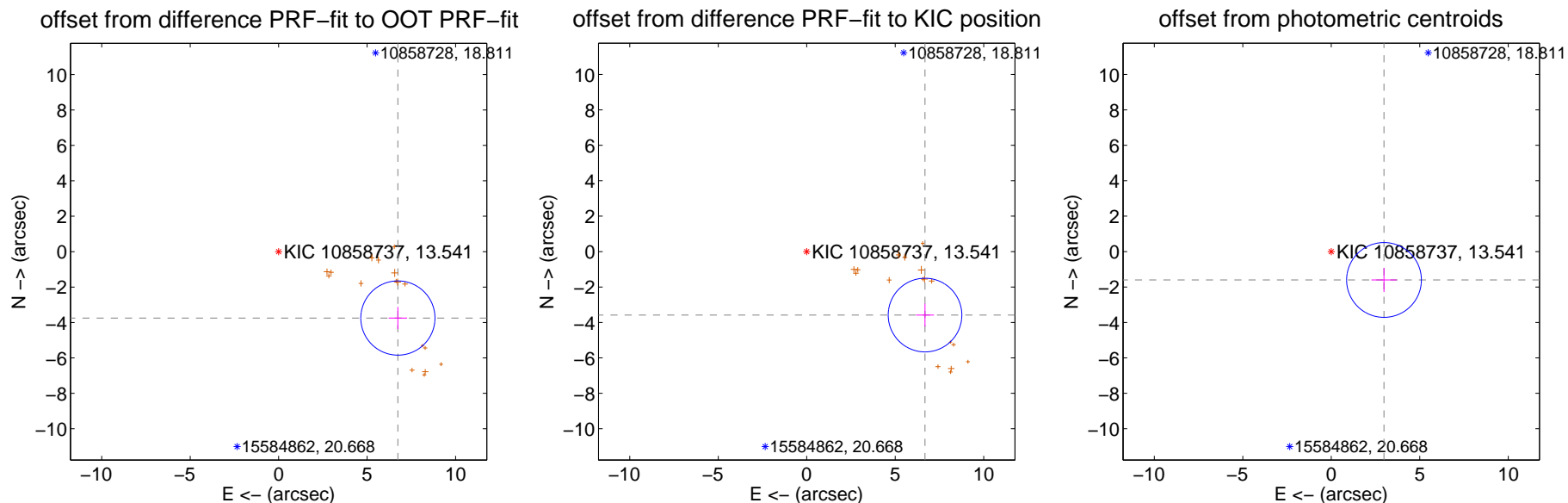
DV Centroid Data

Supplemental centroid analysis for 010858737-01. Kepler magnitude: 13.54. Transit SNR 14.15

There are 0 quarters with good PRF difference image offsets

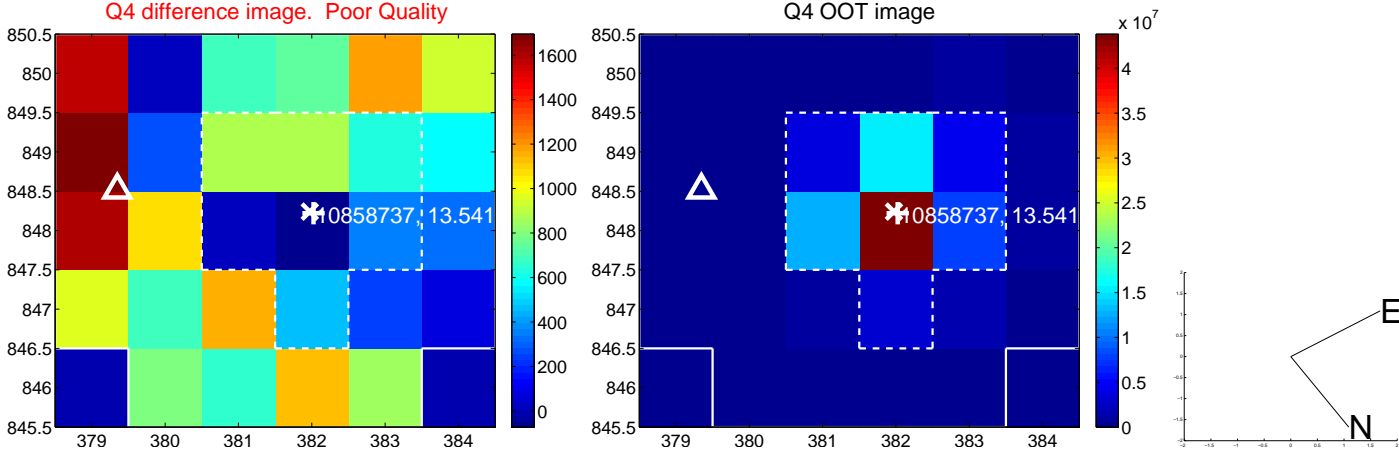
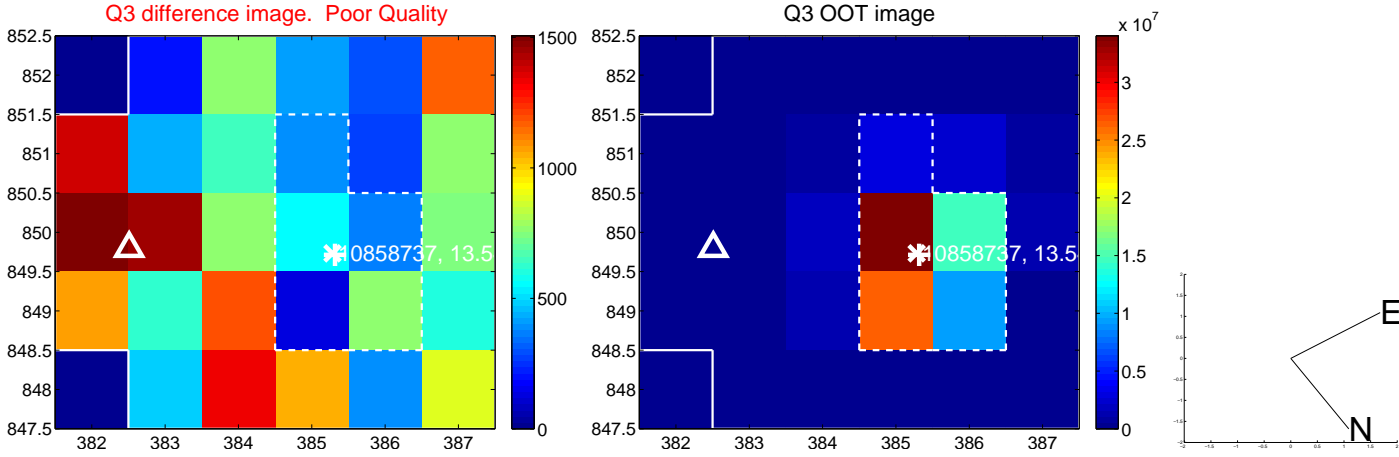
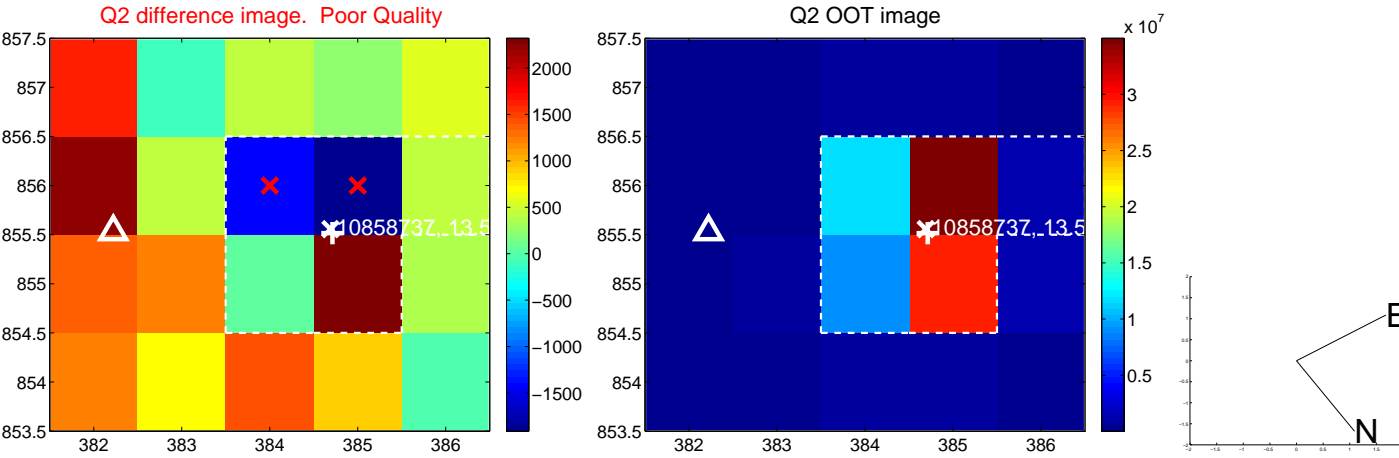
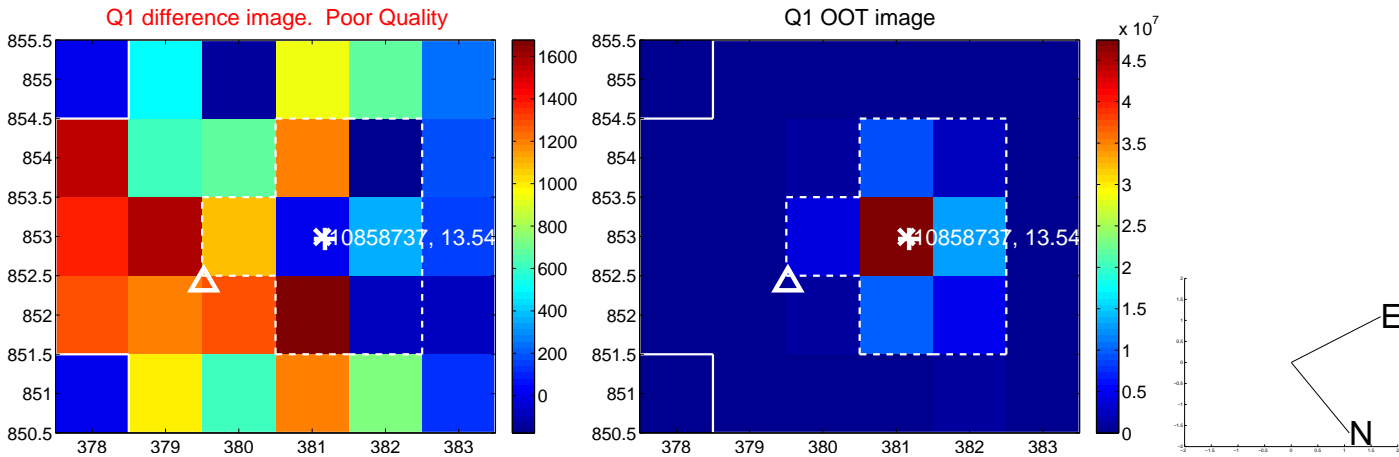
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.710 ± 0.699	11.04	-6.738 ± 0.519	-3.748 ± 0.627
PRF-fit source offset from KIC position	7.582 ± 0.693	10.94	-6.682 ± 0.506	-3.584 ± 0.644
photometric centroid source offset	3.38 ± 0.70	4.80	-2.98 ± 0.71	-1.60 ± 0.69

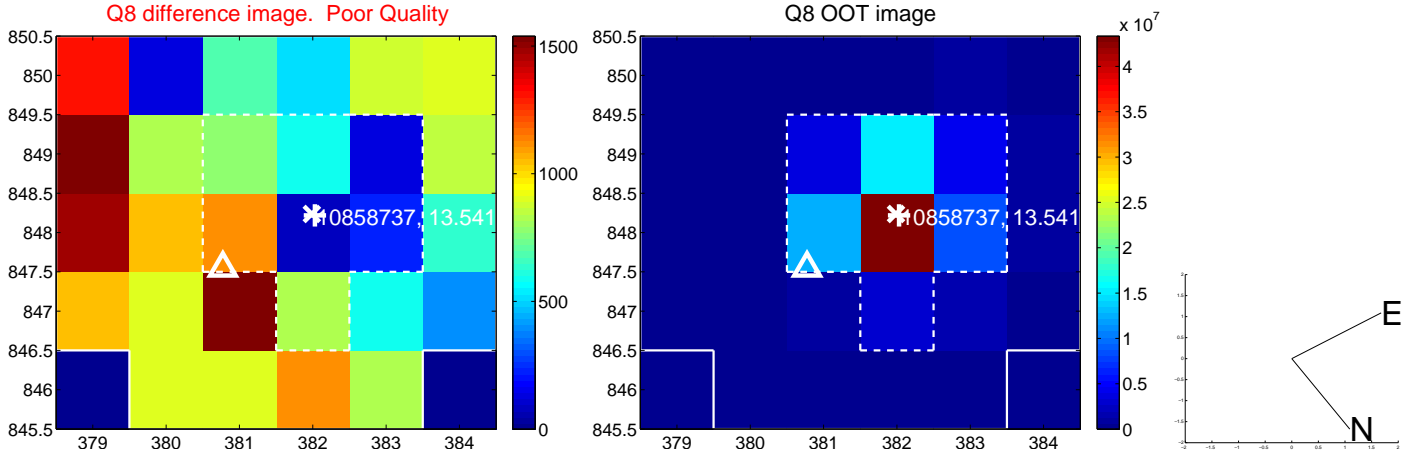
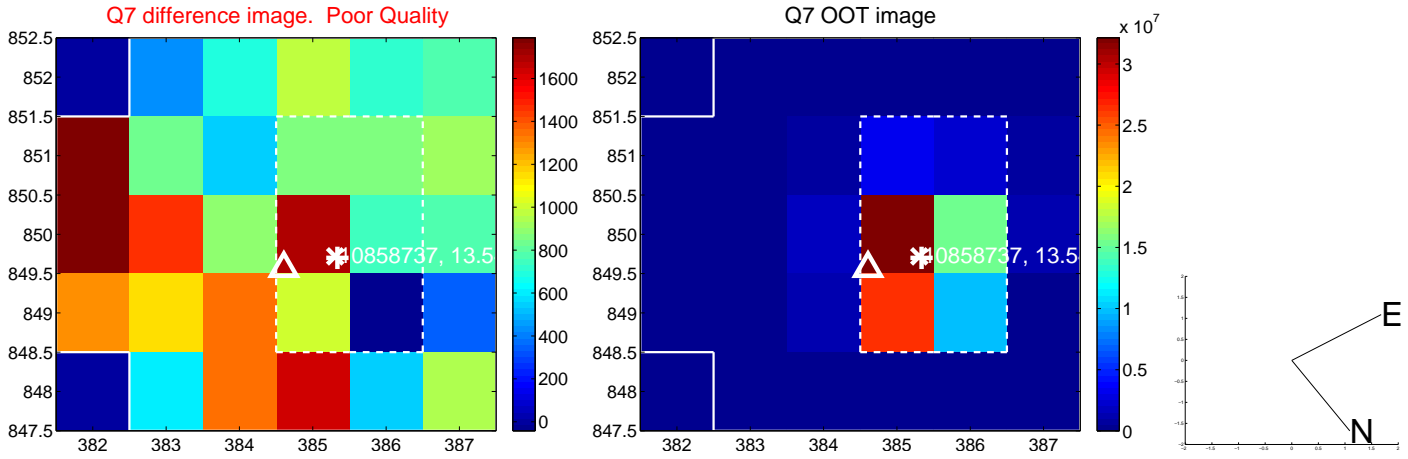
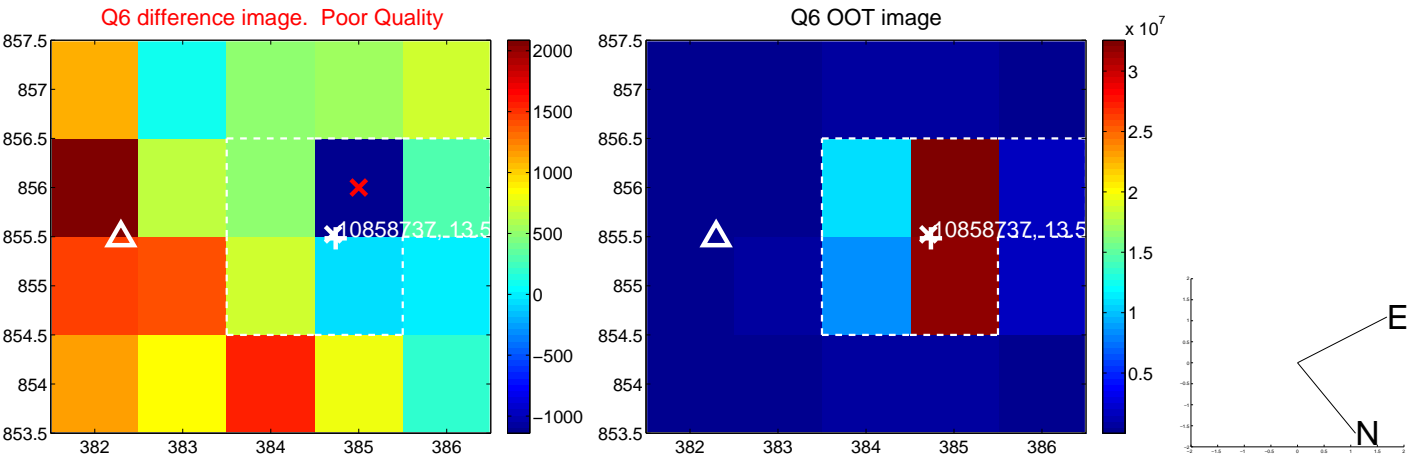
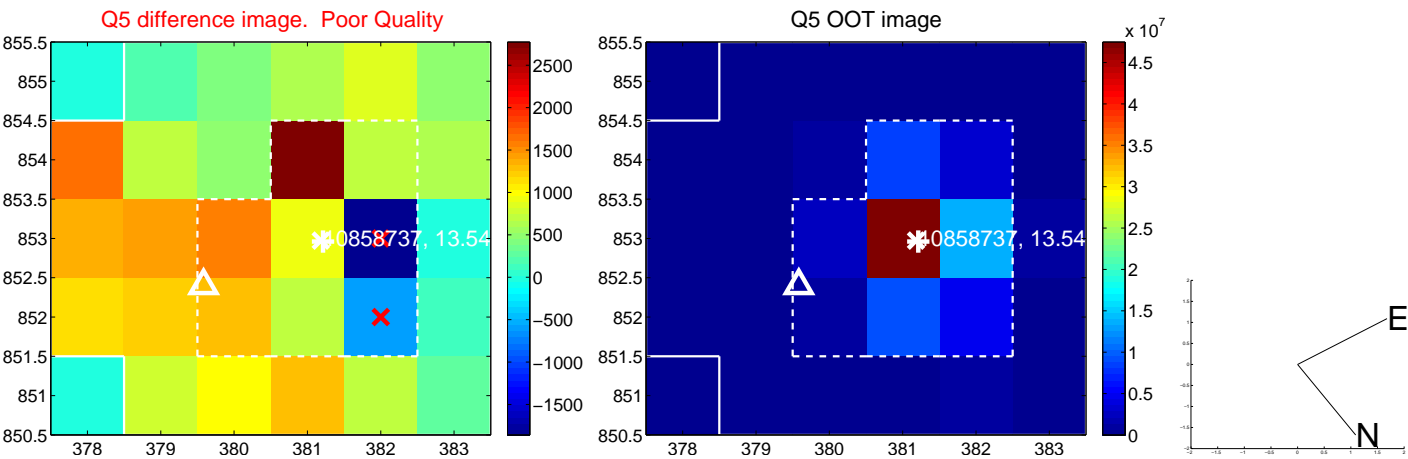


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

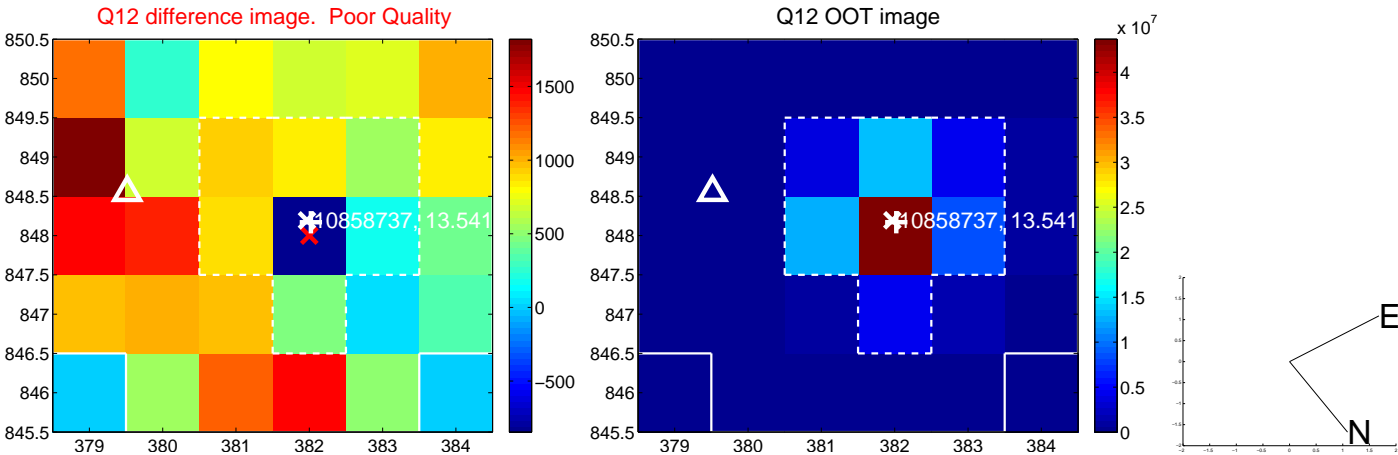
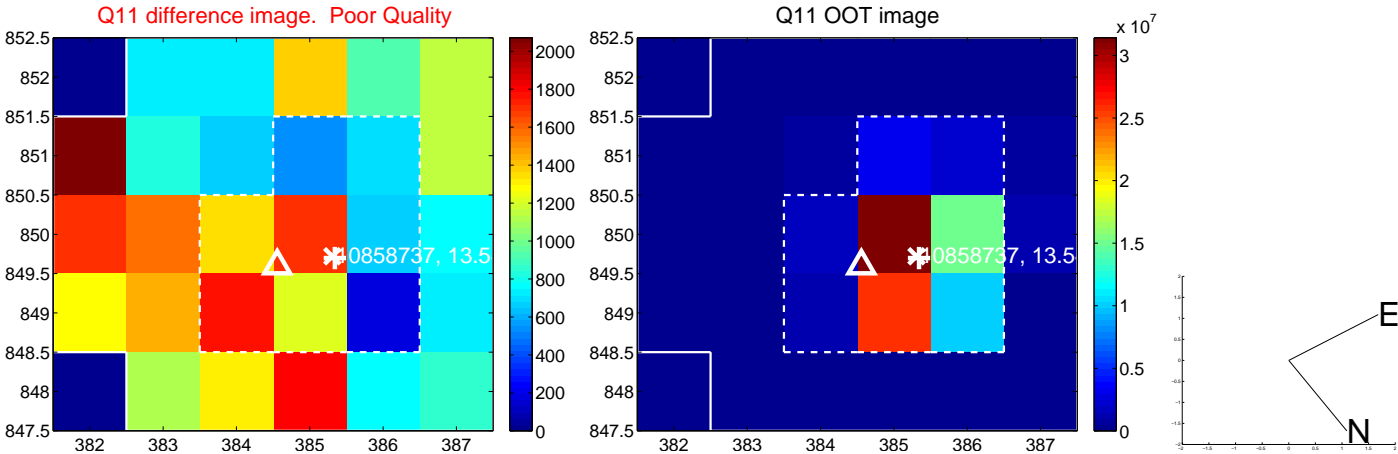
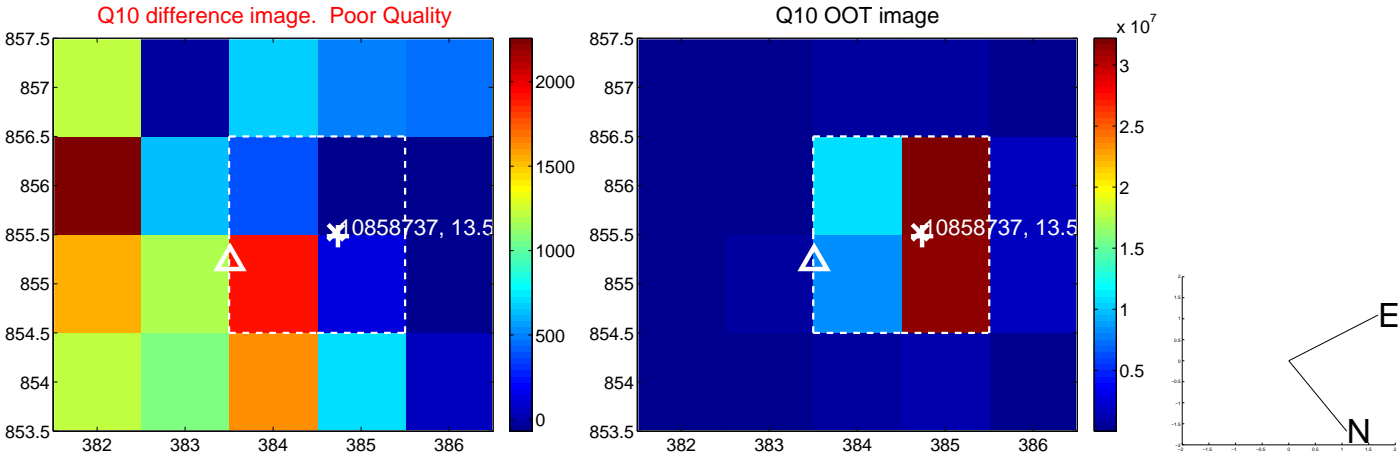
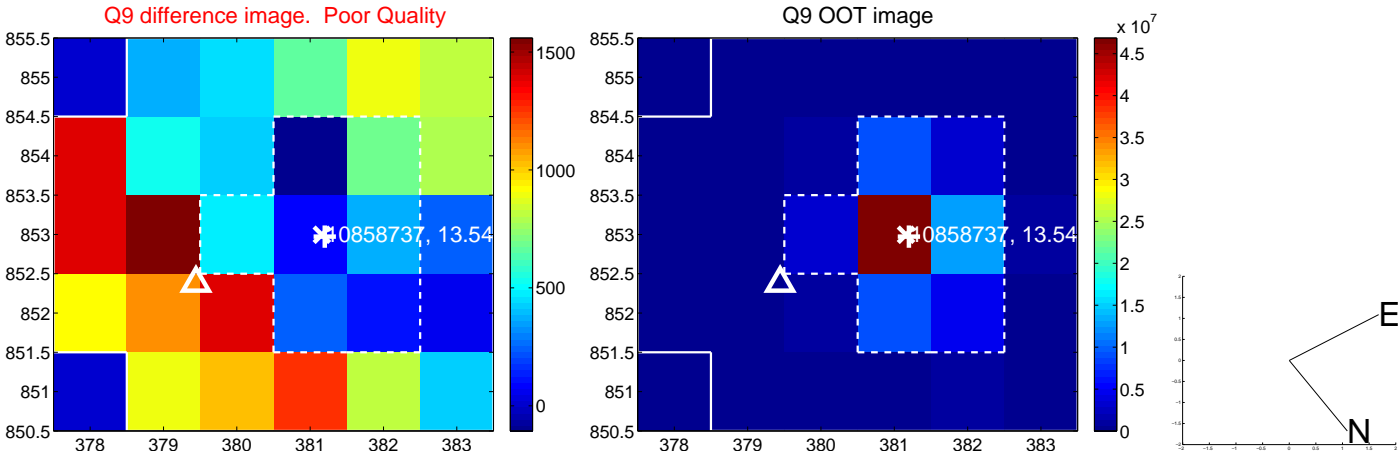
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



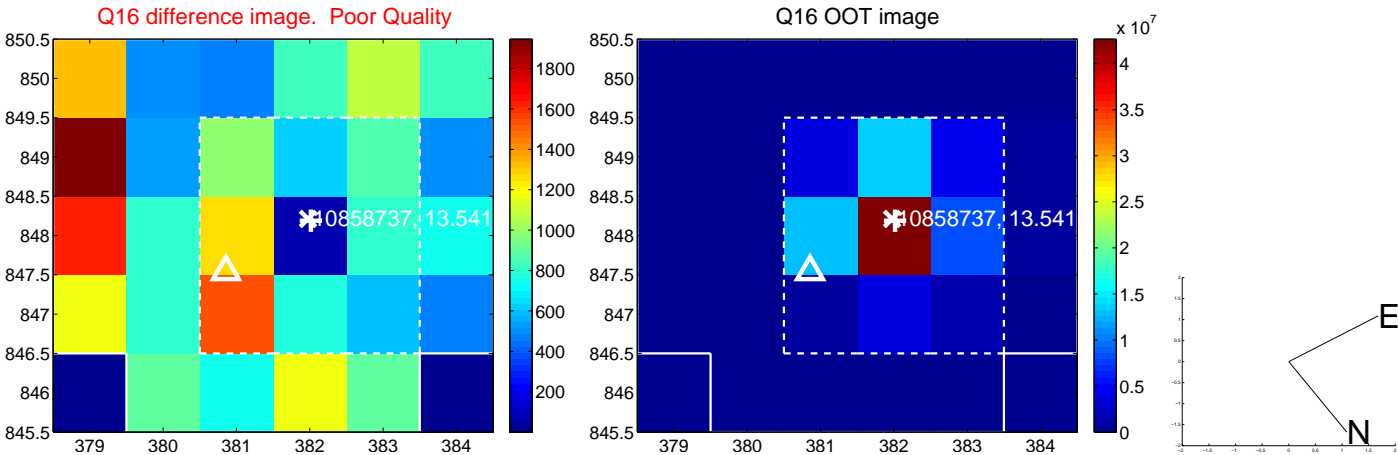
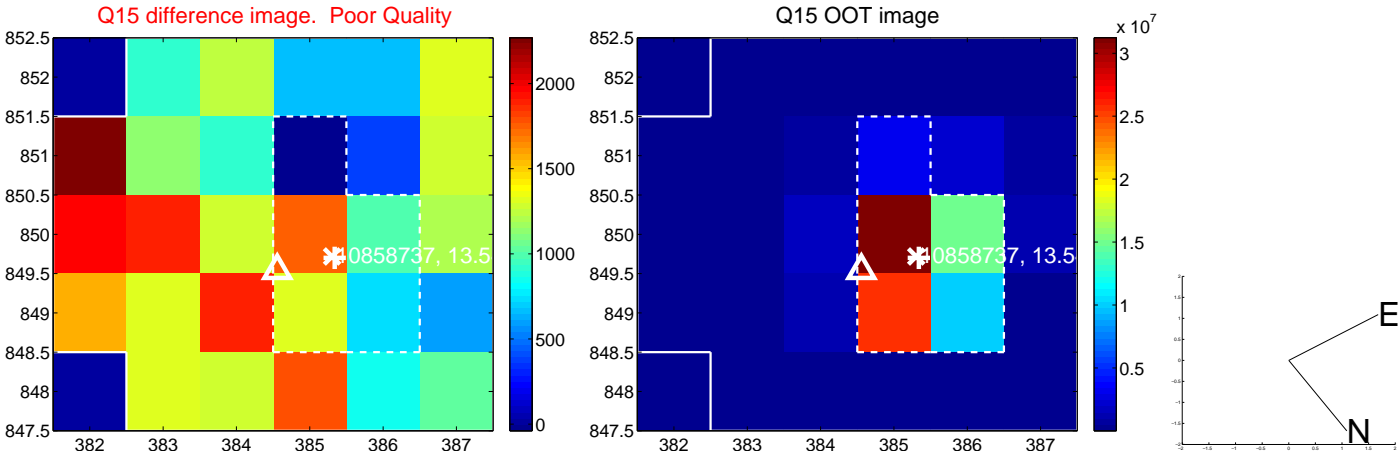
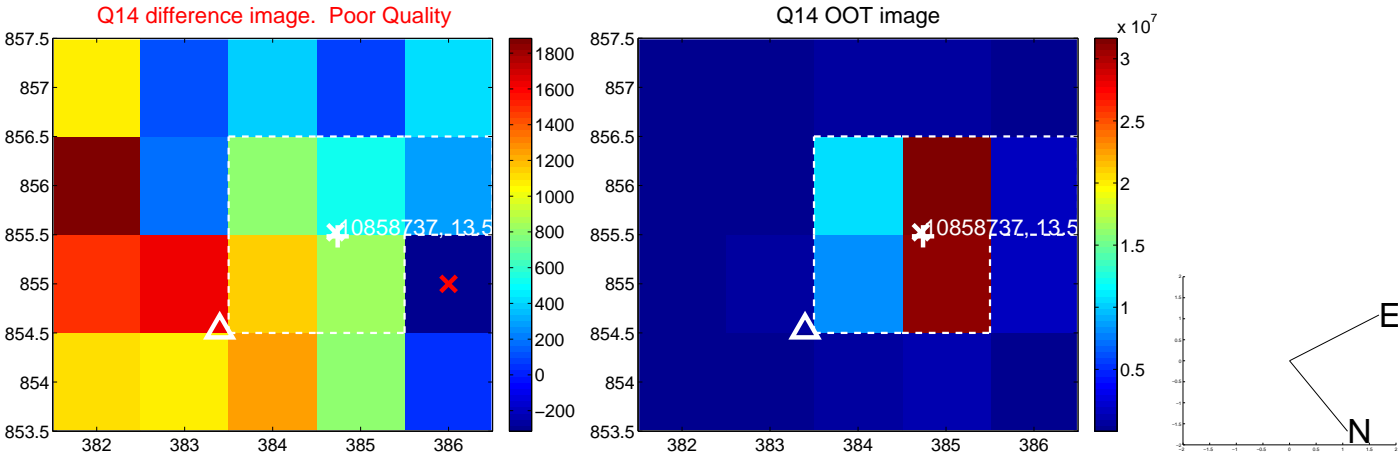
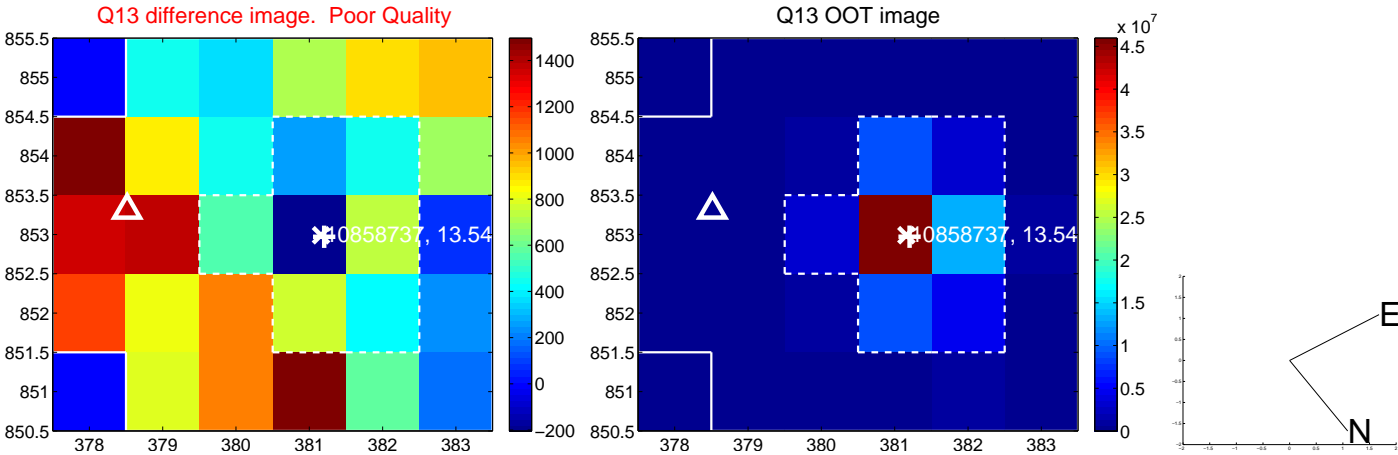
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



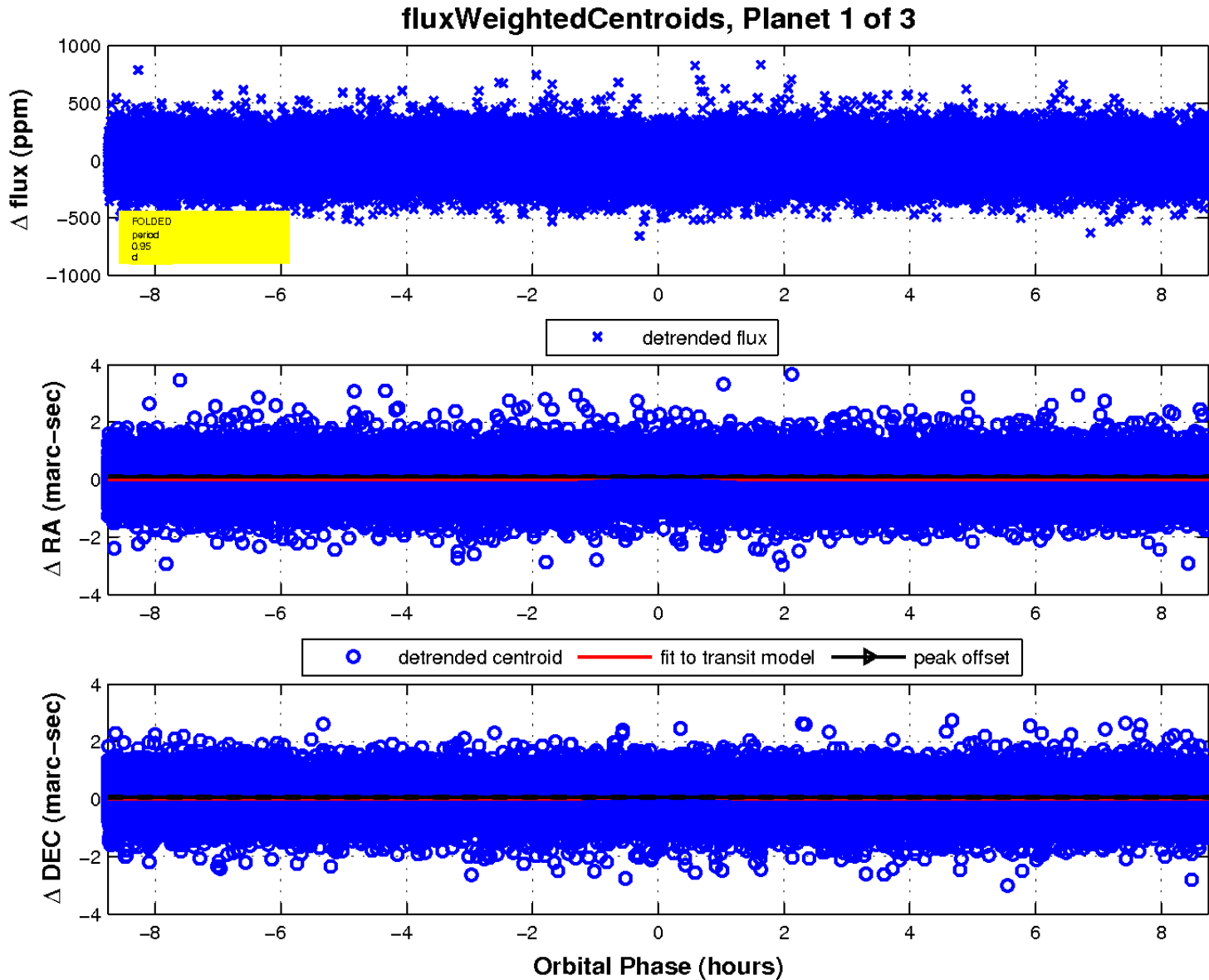
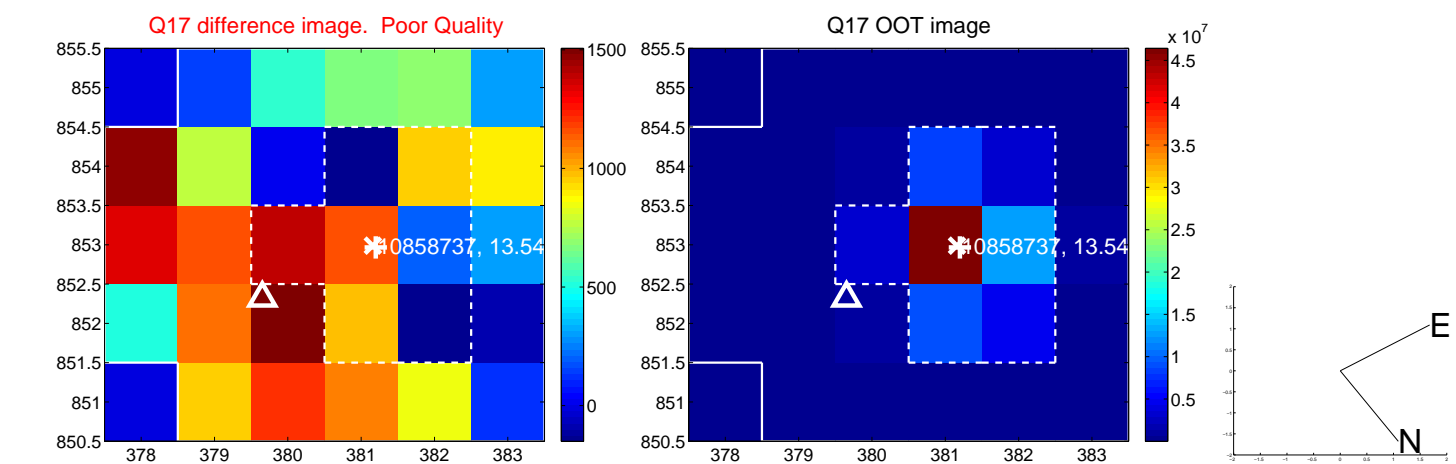
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

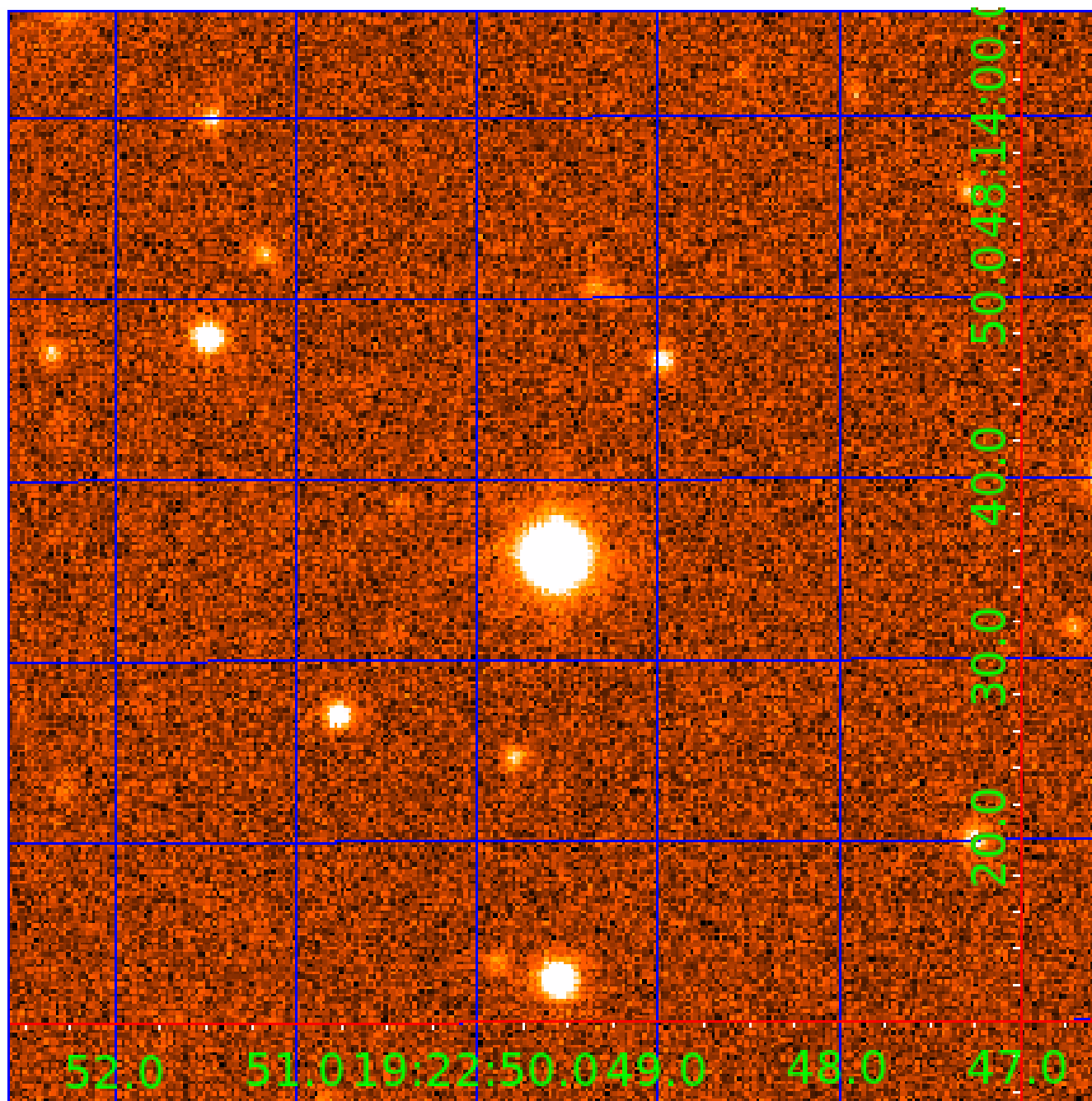


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010858737

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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010858737-02	OBS	No	182.638628	295.744138	206.7	12.916	14.1	6.2	1.38	6963	2.54	8.75
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010858737-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858737-03	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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

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

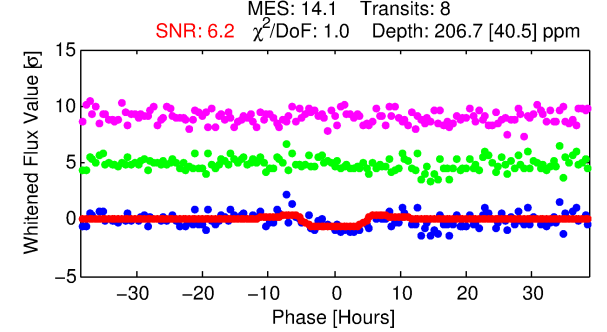
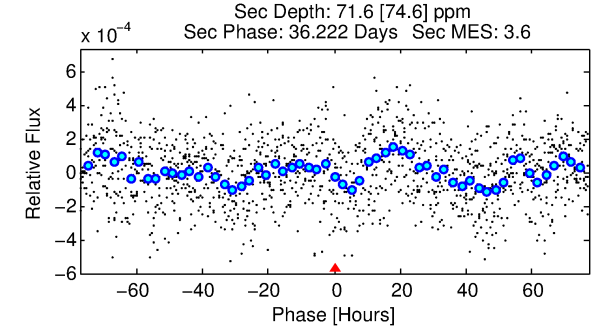
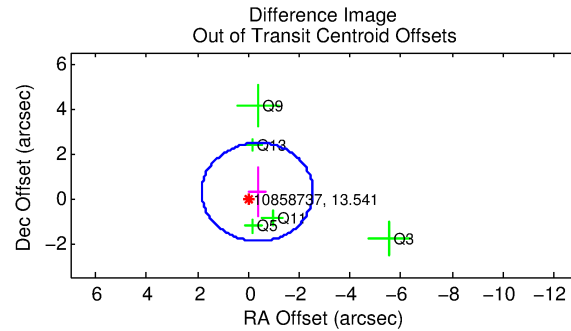
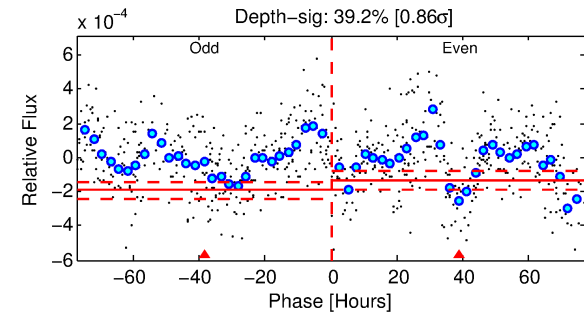
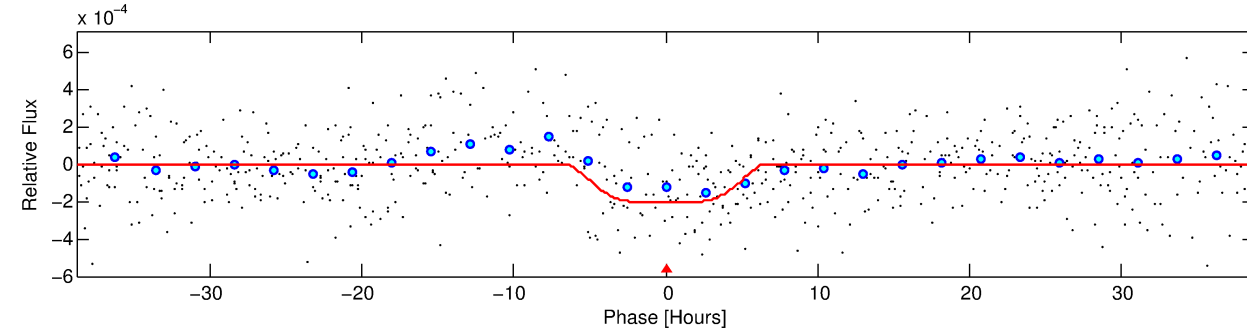
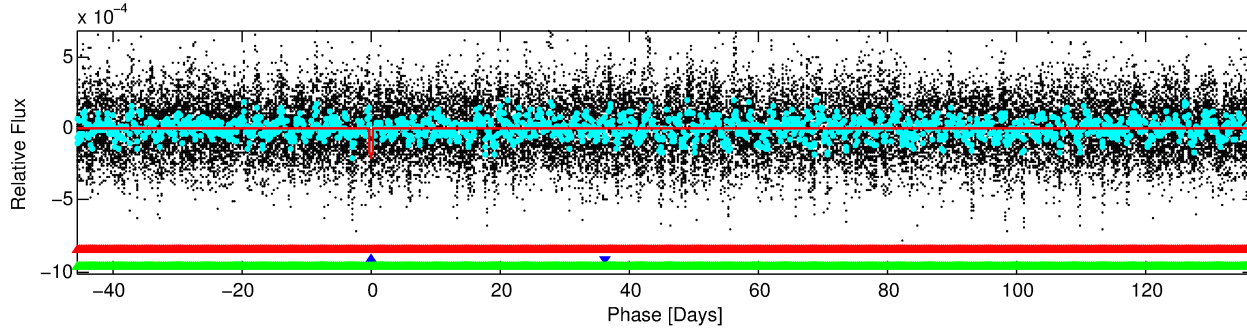
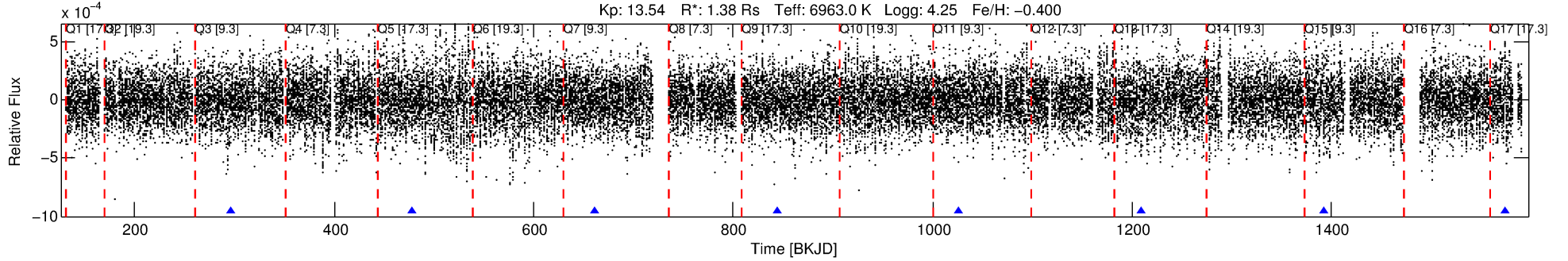
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010858737-02

No Significant Match Found

DV One-Page Summary

KIC: 10858737 Candidate: 2 of 3 Period: 182.639 d
KOI: K04183 Corr: No Ephemeris Match



DV Fit Results:

Period = 182.63863 [0.00707] d
Epoch = 295.7441 [0.0295] BKJD
Rp/R* = 0.0170 [0.0019]
a/R* = 31.37 [7.23]
b = 0.97 [0.01]
Seff = 8.75 [3.31]
Teq = 439 [41] K
Rp = 2.55 [0.80] Re
a = 0.6745 [0.1635] AU
Ag = 2764.53 [3102.42] [0.89 σ]
Teffp = 4917 [1325] K [3.38 σ]

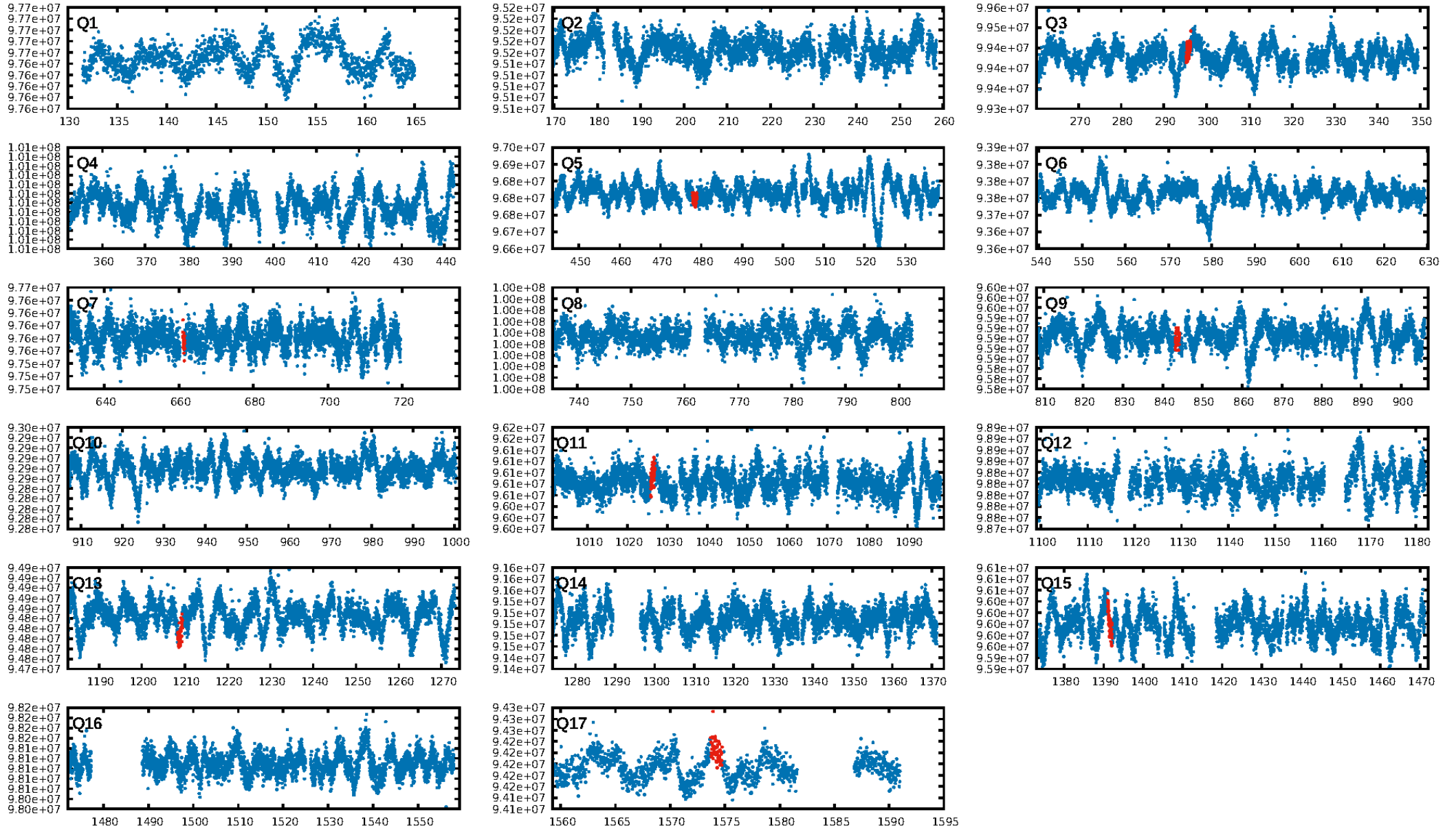
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [329.31 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.17e-25
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -1.403
Centroid-sig: 58.4%
Centroid-so: 0.748 arcsec [0.91 σ]
OotOffset-rm: 0.452 arcsec [0.62 σ]
KicOffset-rm: 0.486 arcsec [0.51 σ]
OotOffset-st: 0/2/0/3 [5]
KicOffset-st: 0/2/0/3 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.00 [0/7]

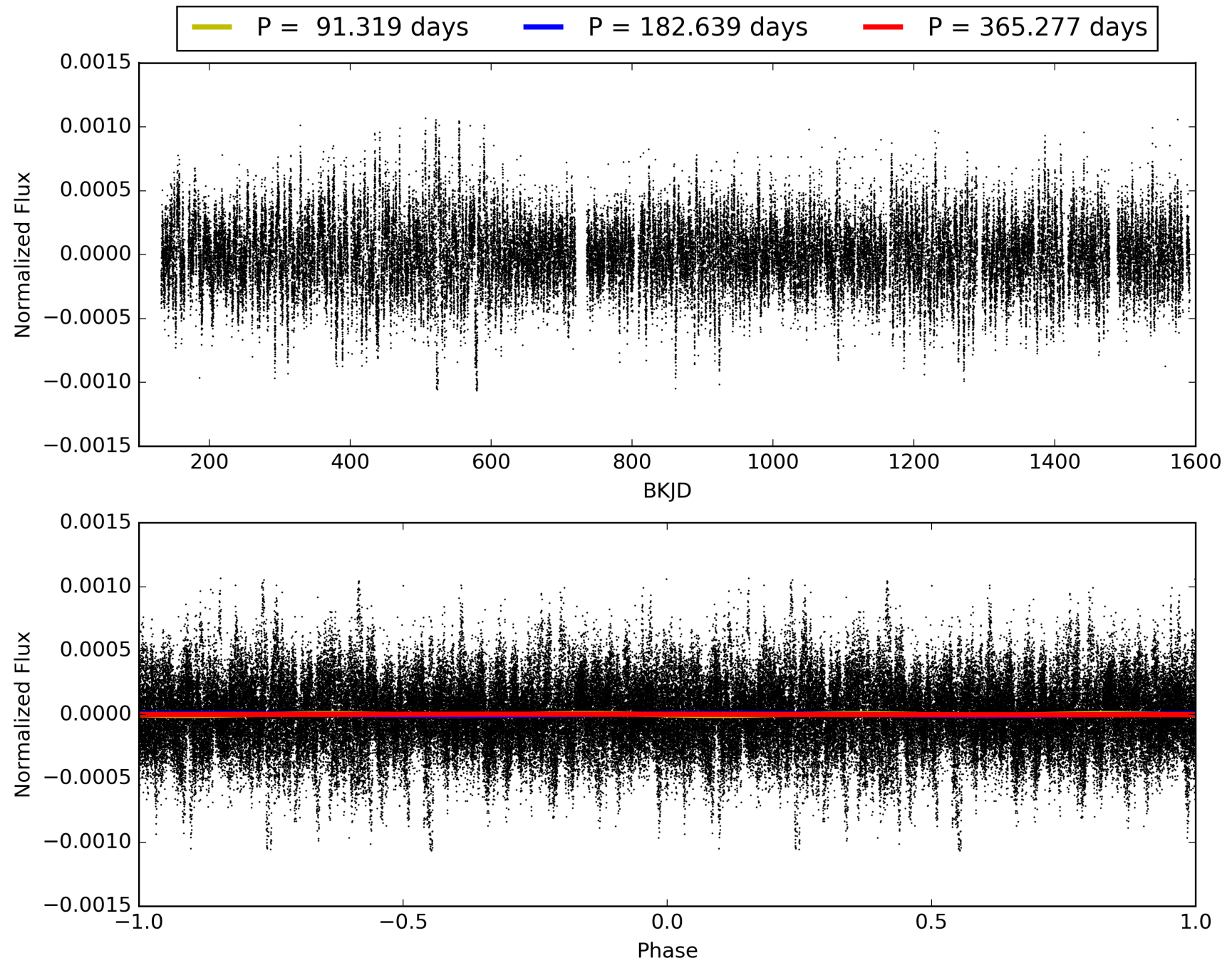
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:52:36 Z

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

TCE 010858737-02, PDC Light Curves

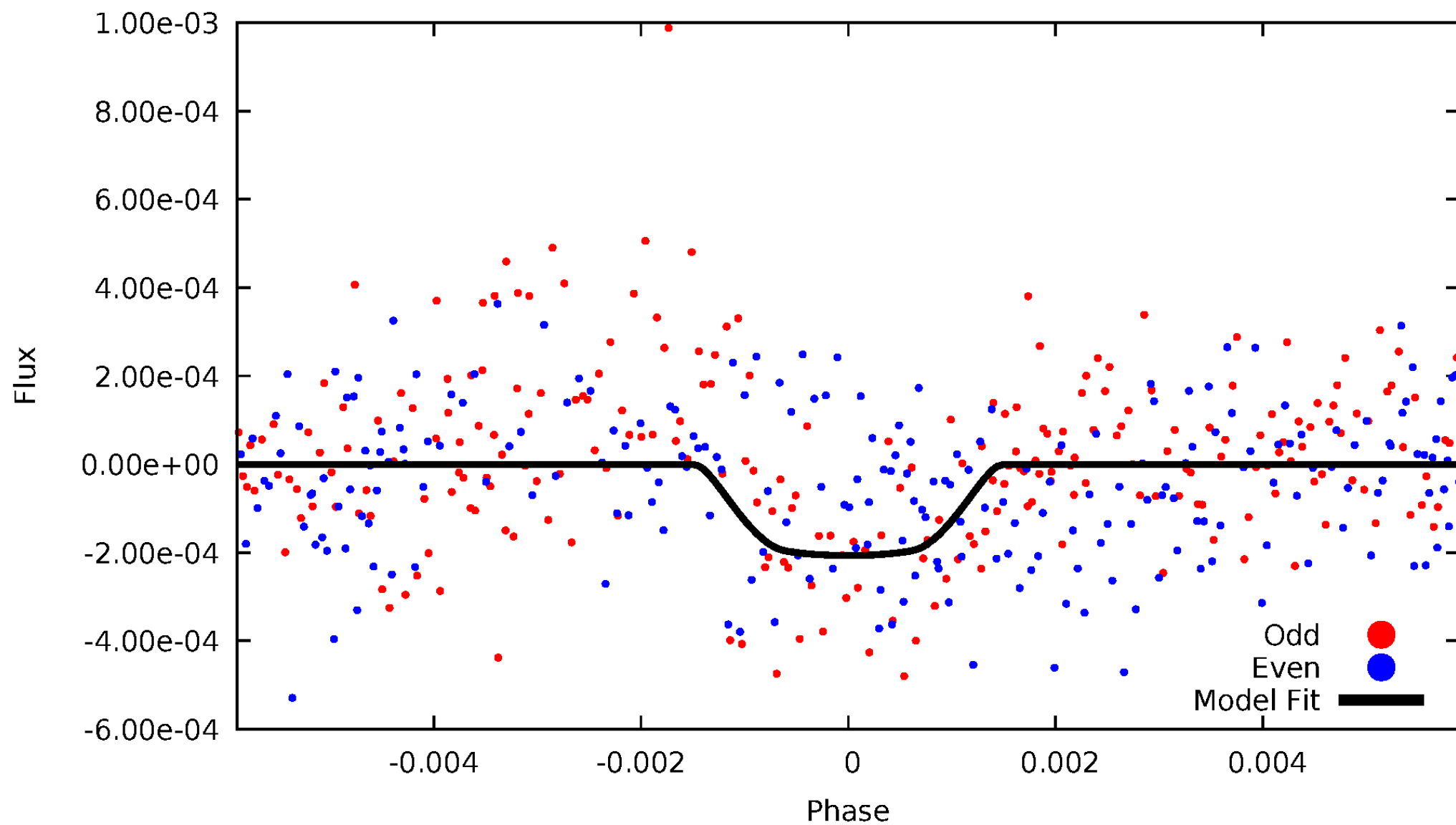


TCE 010858737-02



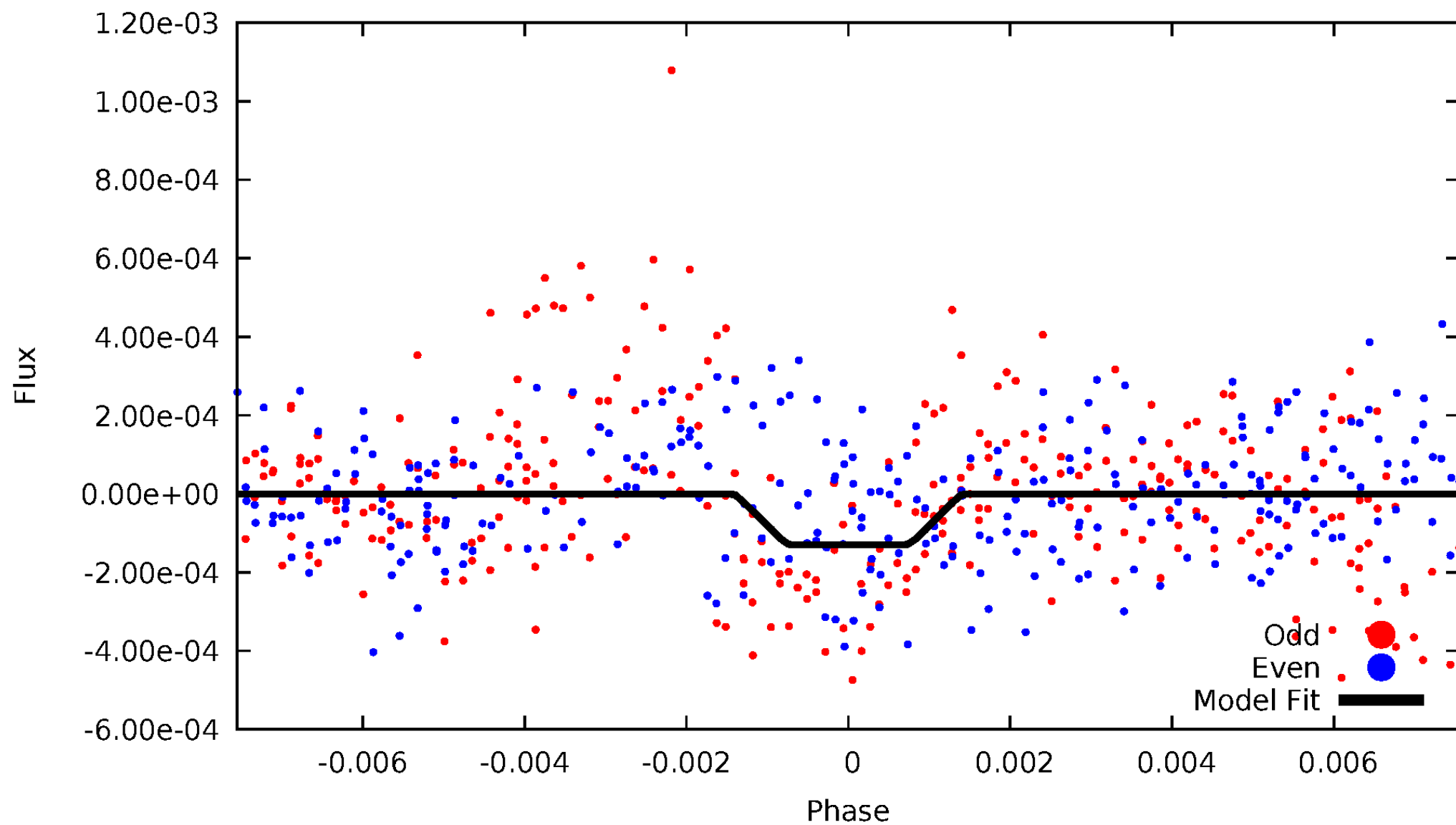
DV Odd/Even

TCE 010858737-02



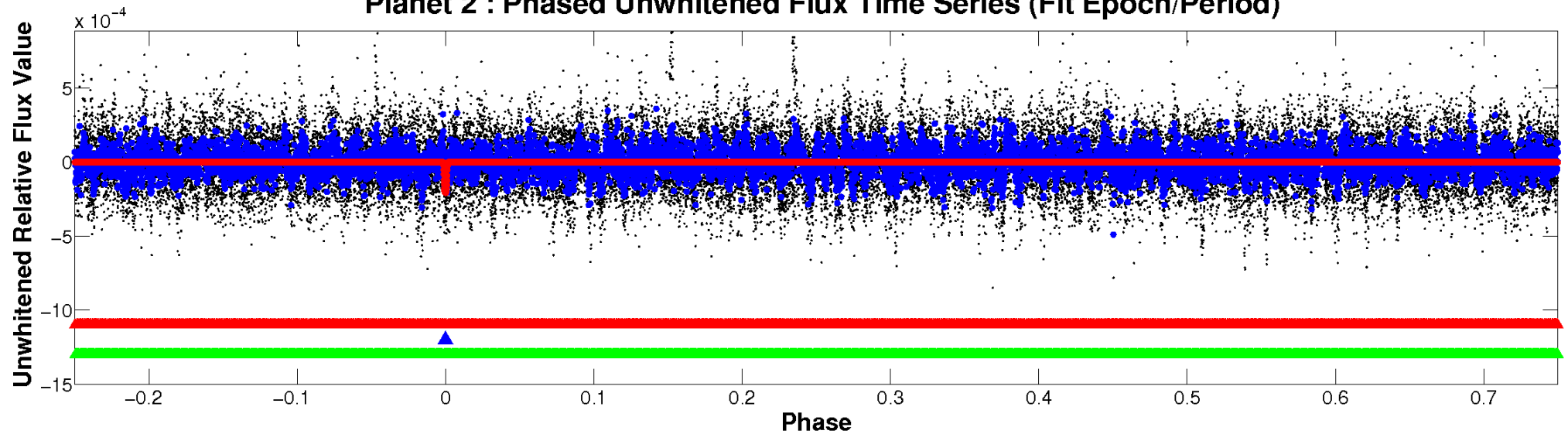
ALT Odd/Even

TCE 010858737-02

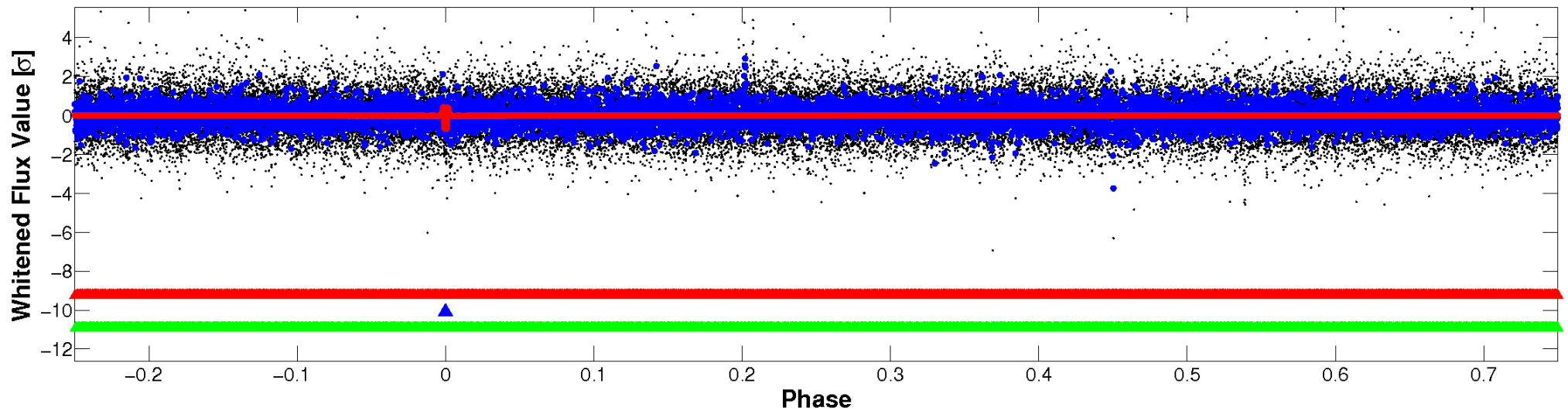


Non-Whitened Vs. Whitened Light Curve

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

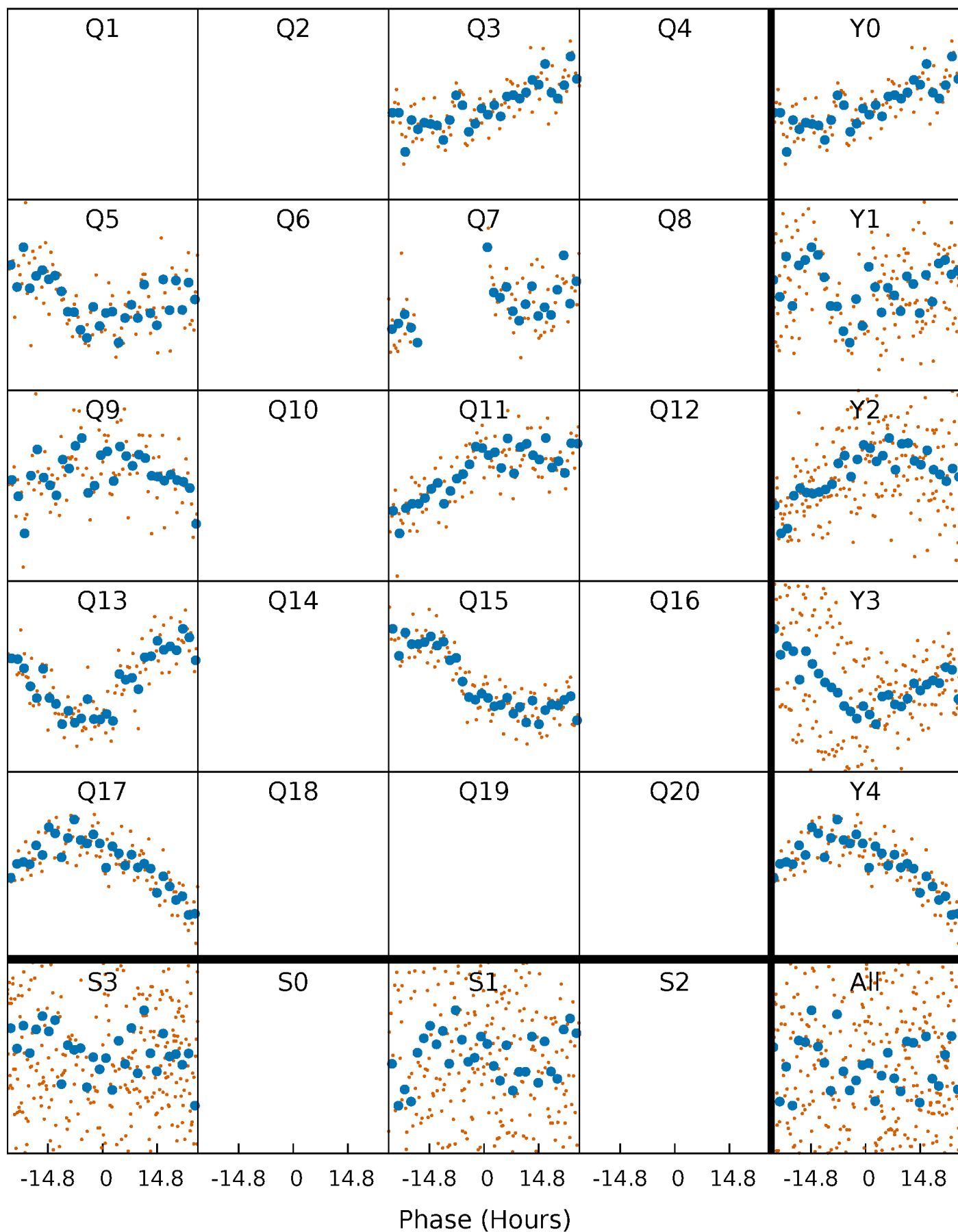


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 010858737-02 $P=182.638628$ Days $T_0=295.744138$ (BKJD)



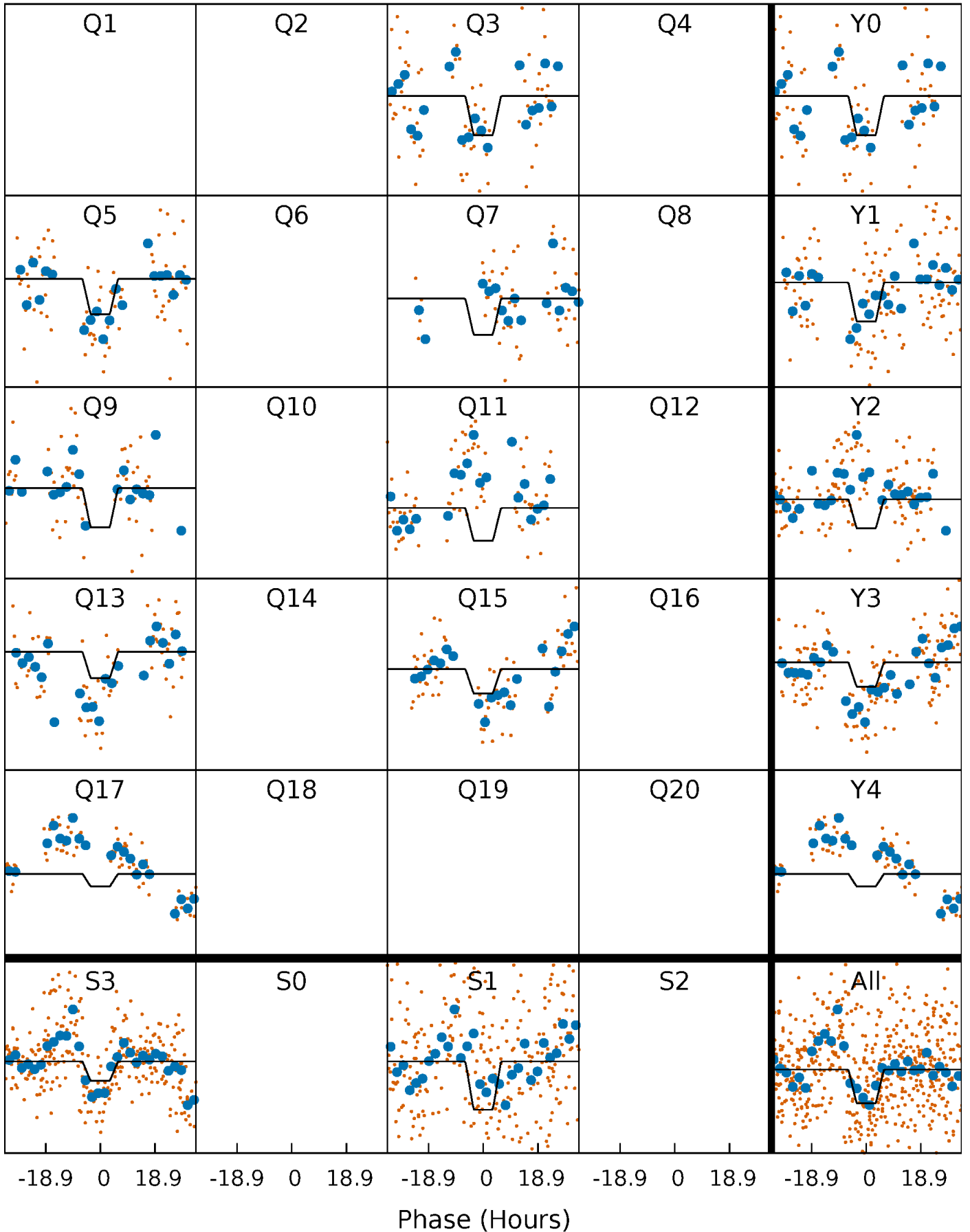
DV Quarter-Phased Transit Curves

TCE 010858737-02 $P=182.638628$ Days $T_0=295.744138$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

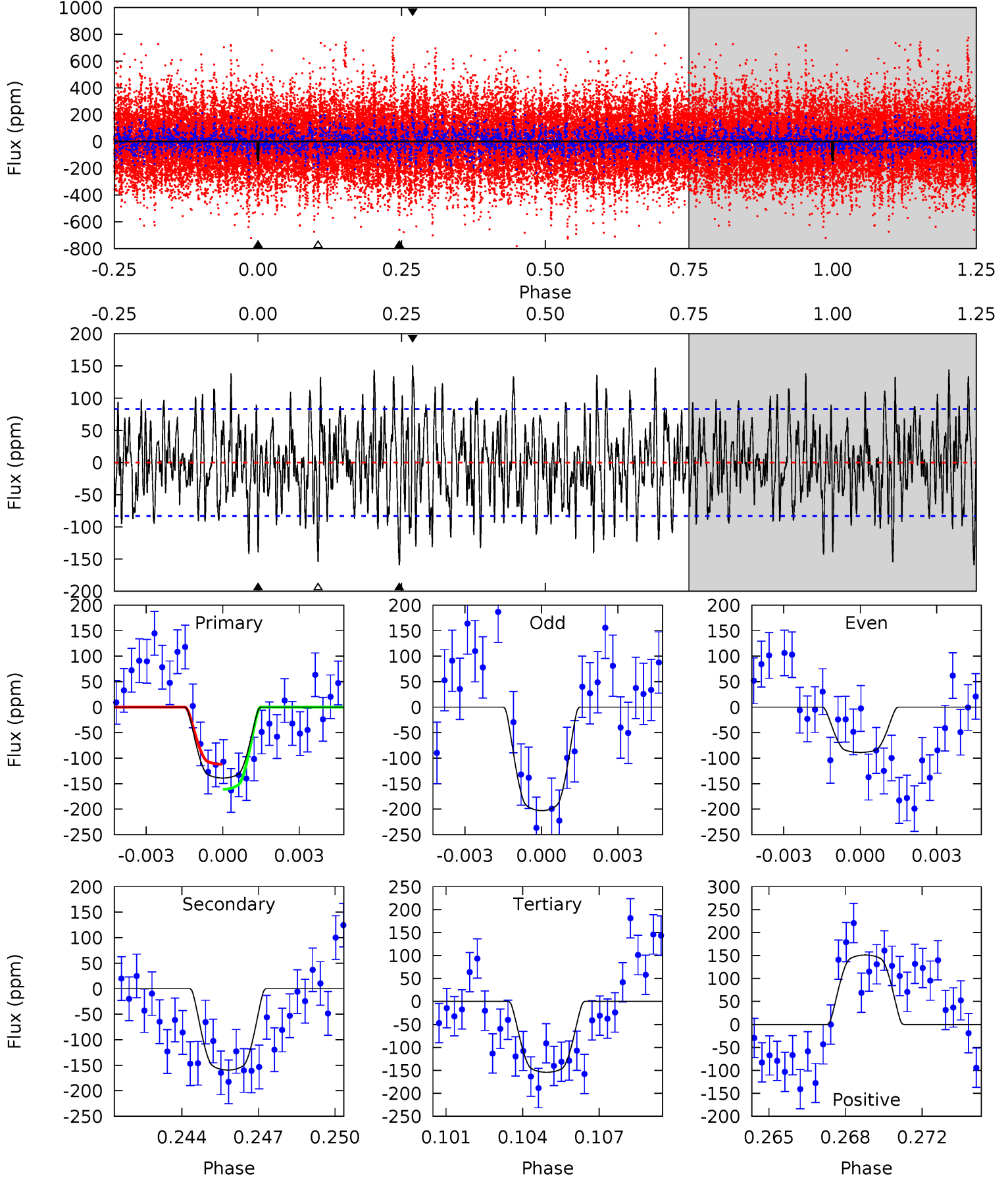
TCE 010858737-02 P=182.635159 Days $T_0=295.850642$ (BKJD)



DV Model-Shift Uniqueness Test

010858737-02, P = 182.638628 Days, E = 113.105510 Days

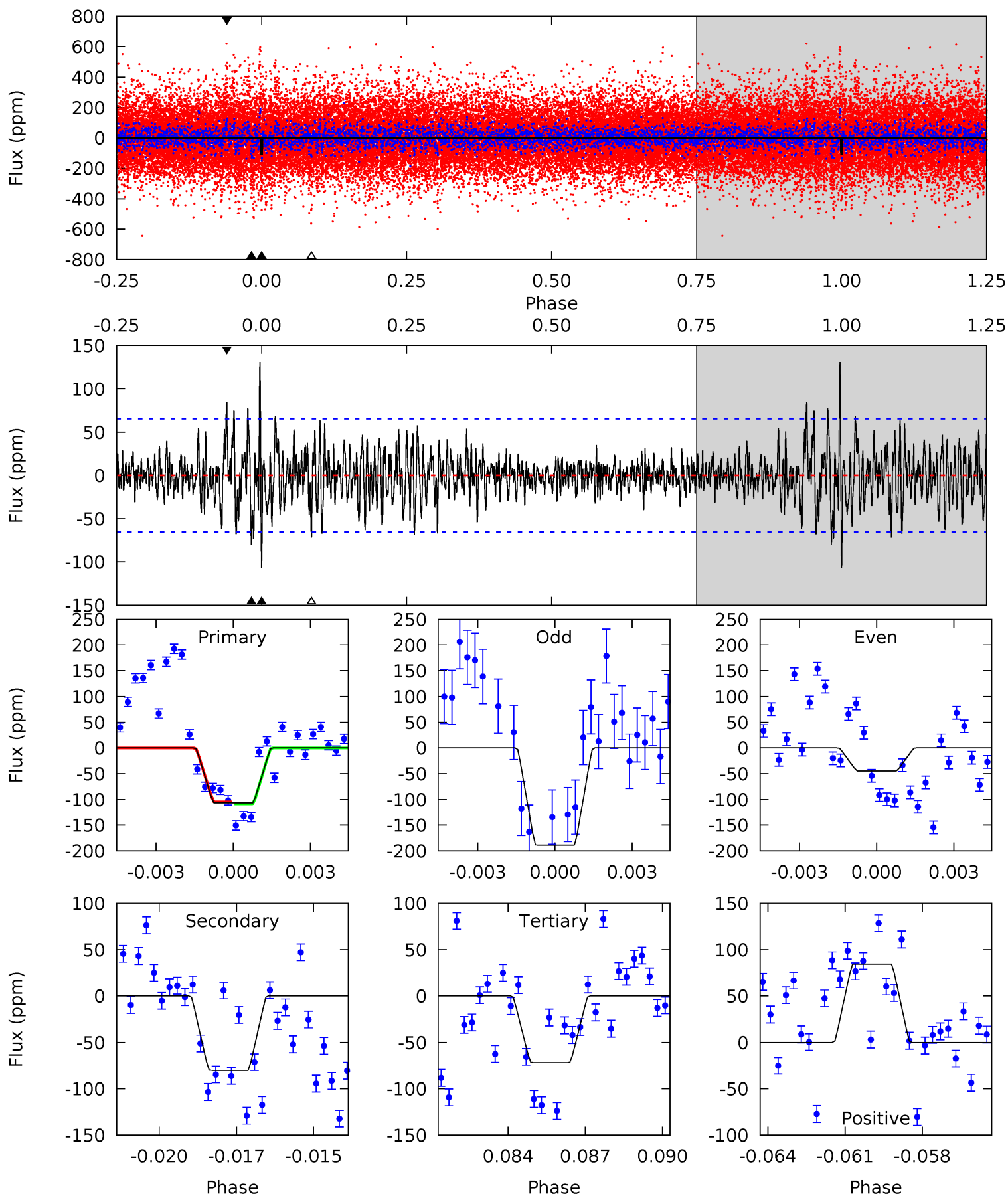
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.78	10.1	9.74	9.55	5.25	2.96	3.29	-0.96	-0.77	0.33	0.52	3.58	0.40	0.49	1.54



Alt Model-Shift Uniqueness Test

010858737-02, P = 182.635159 Days, E = 113.215483 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.56	6.44	5.76	6.78	5.26	2.98	1.73	2.81	1.78	0.68	-0.34	5.79	0.37	0.55	0.15



Stellar Parameters For KIC 010858737

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6963^{+192}_{-264}	$4.250^{+0.124}_{-0.186}$	$-0.400^{+0.250}_{-0.300}$	$1.375^{+0.404}_{-0.235}$	$1.233^{+0.189}_{-0.171}$	$0.668^{+0.395}_{-0.337}$
	+3%/-4%	+3%/-4%	+62%/-75%	+29%/-17%	+15%/-14%	+59%/-50%
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 010858737-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-159 ± 16	$2.59^{+0.50}_{-0.39}$	617^{+44}_{-40}	5942^{+429}_{-373}	5844^{+2411}_{-1625}
Alt.	-80 ± 12	$1.76^{+0.38}_{-0.36}$	615^{+46}_{-37}	6086^{+687}_{-541}	6447^{+3785}_{-2350}

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

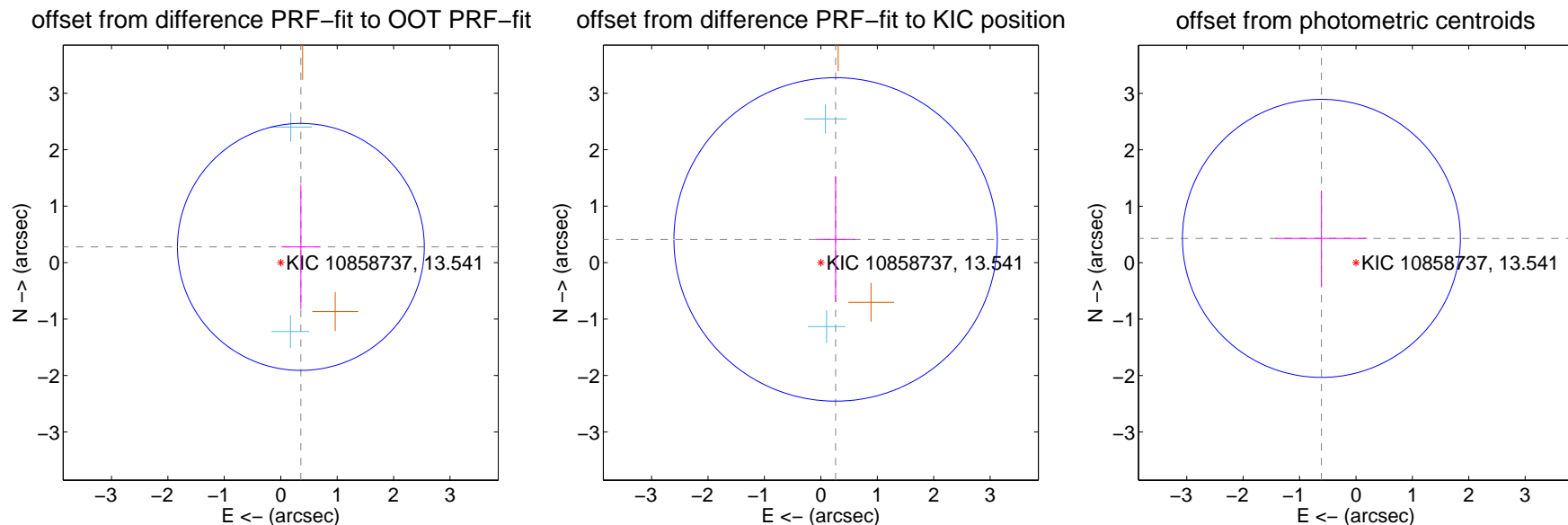
DV Centroid Data

Supplemental centroid analysis for 010858737-02. Kepler magnitude: 13.54. Transit SNR 6.24

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.452 ± 0.729	0.62	-0.357 ± 0.343	0.278 ± 1.103
PRF-fit source offset from KIC position	0.486 ± 0.955	0.51	-0.261 ± 0.347	0.410 ± 1.110
photometric centroid source offset	0.75 ± 0.82	0.91	0.61 ± 0.81	0.43 ± 0.85



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



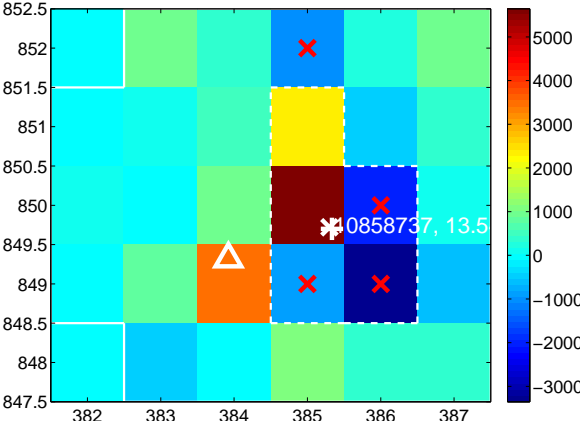
Q2 no difference image



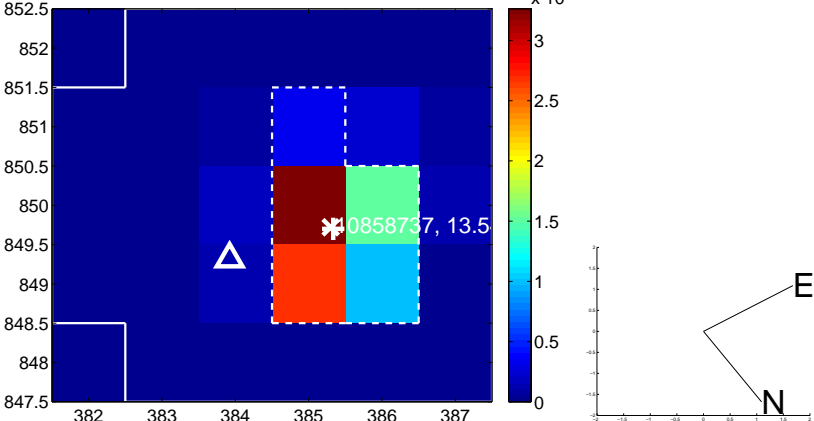
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



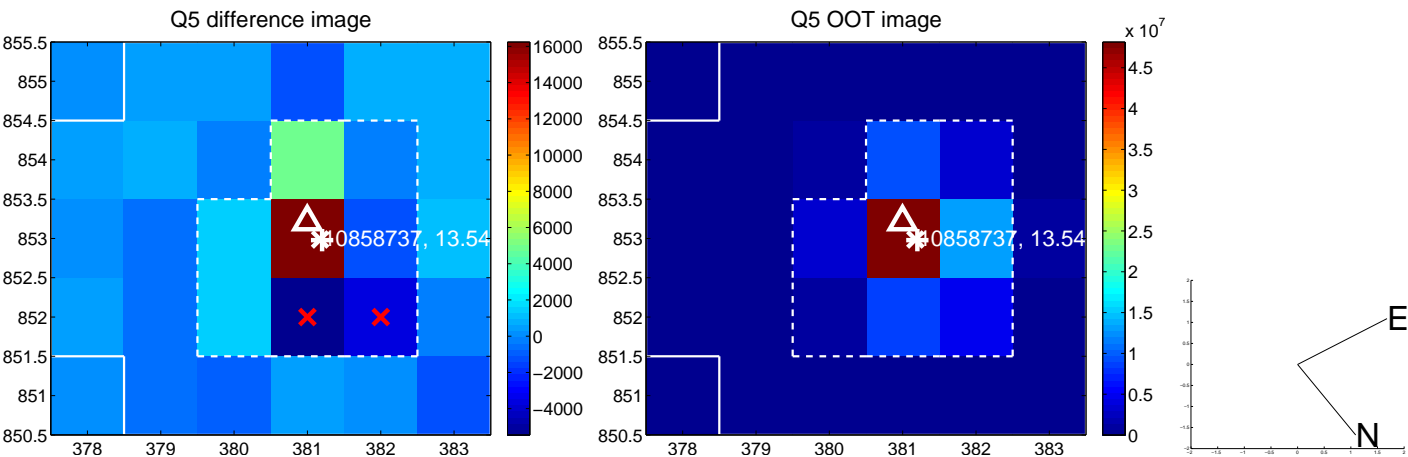
Q4 no difference image



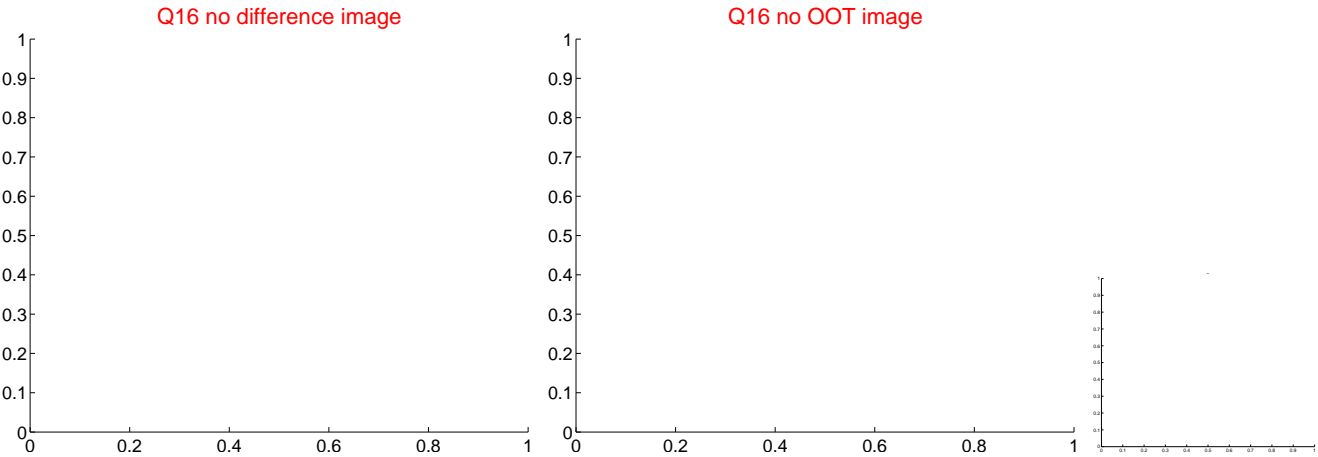
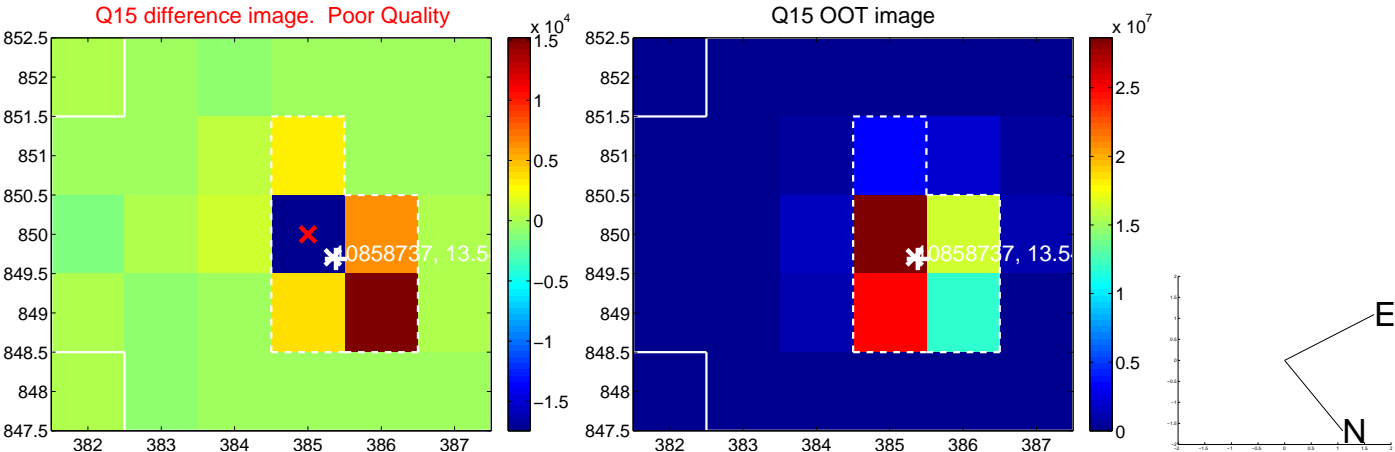
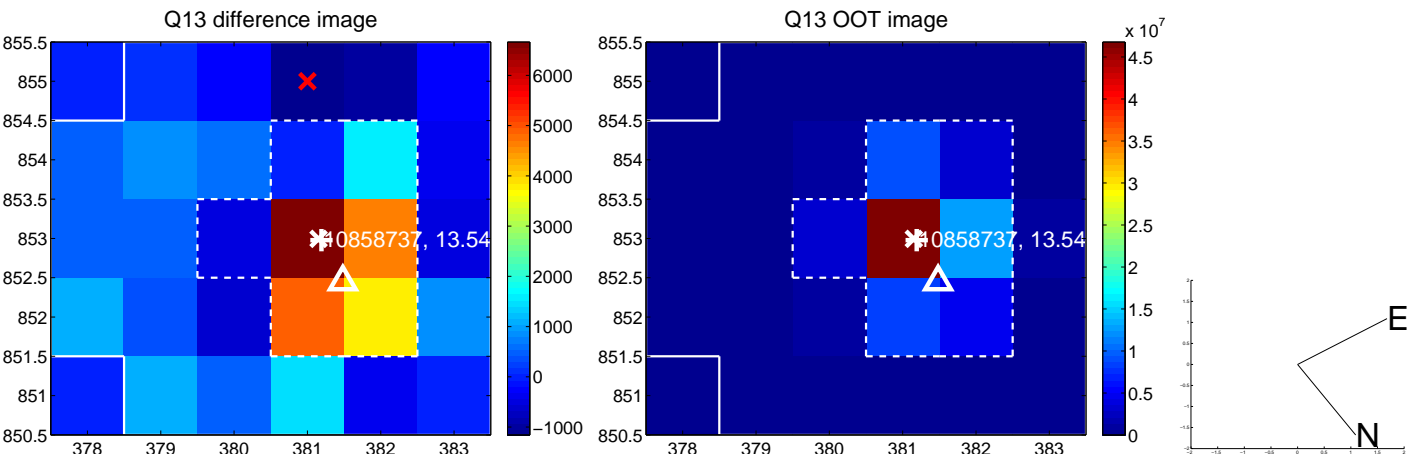
Q4 no OOT image



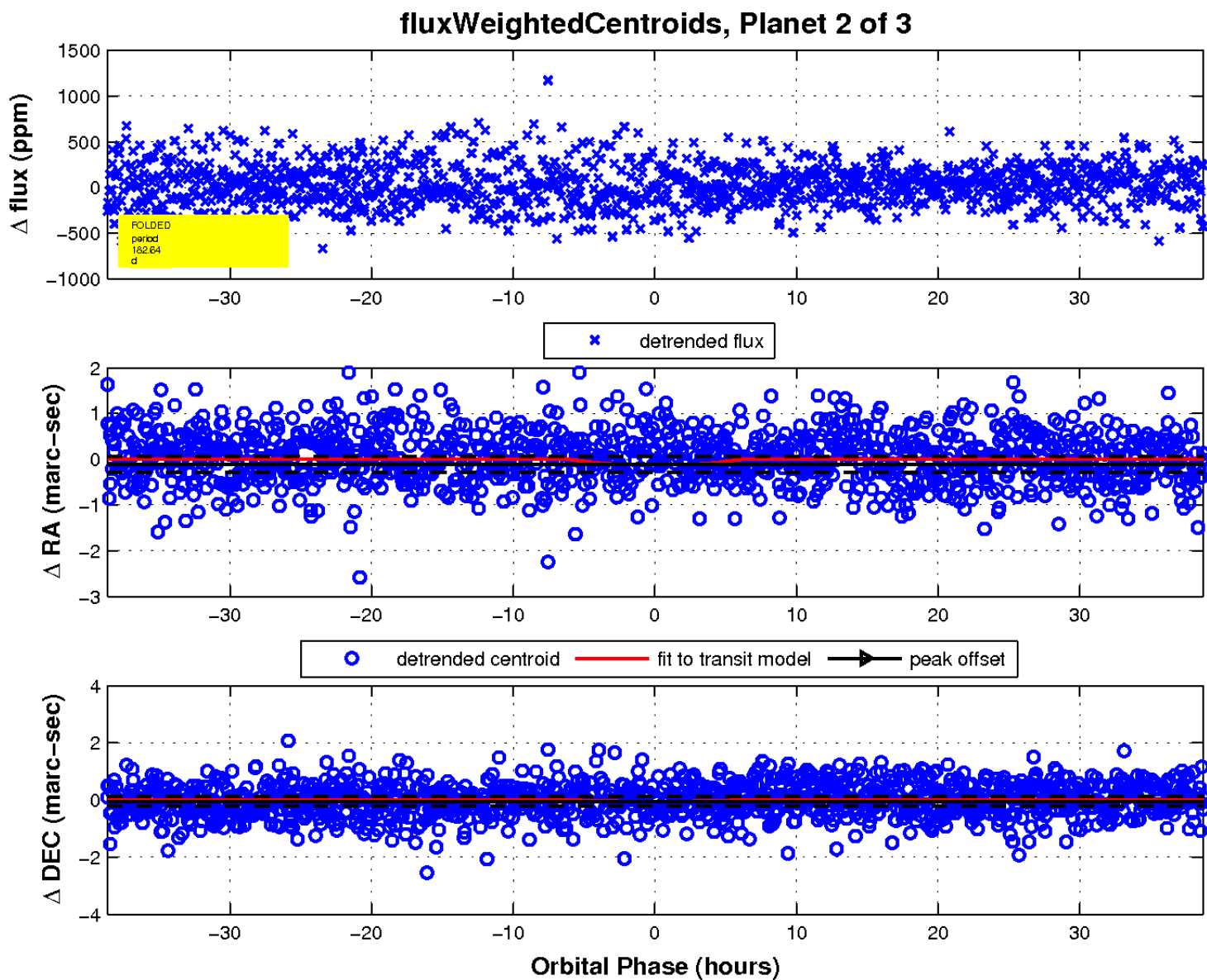
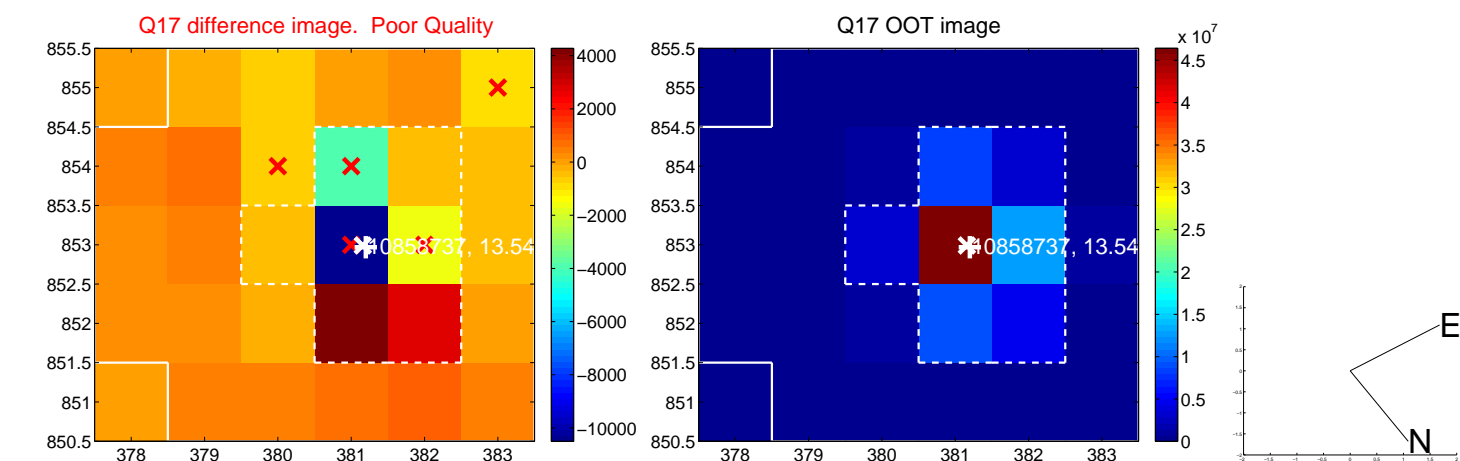
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

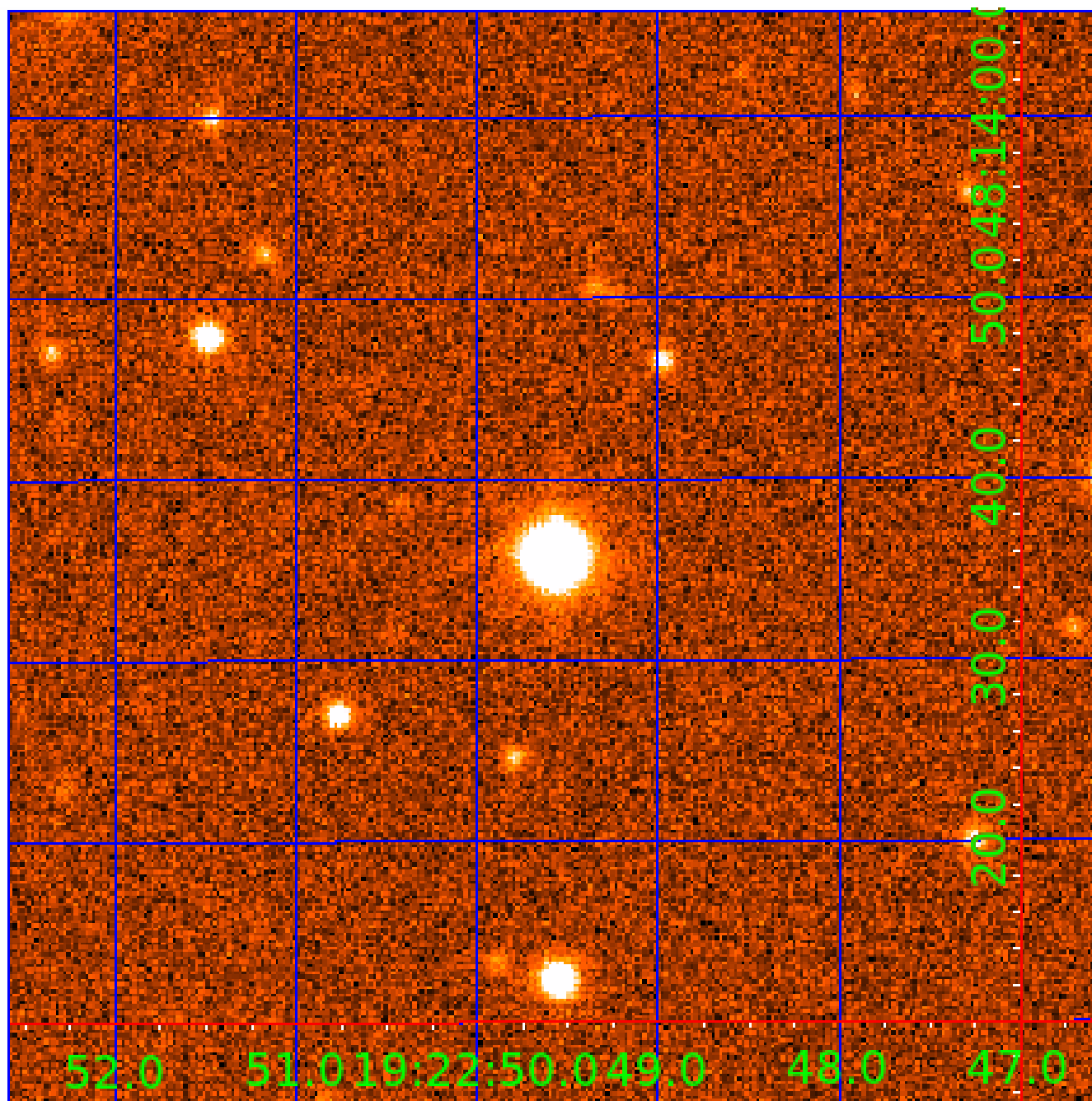


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010858737

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})
010858737-01	OBS	No	0.952386	132.328621	34.5	2.917	11.8	14.1	1.38	6963	1.14	9679.75
010858737-02	OBS	No	182.638628	295.744138	206.7	12.916	14.1	6.2	1.38	6963	2.54	8.75
010858737-03	OBS	4183.01	0.952334	131.882826	20.1	2.919	12.8	10.2	1.38	6963	0.63	9680.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010858737-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—EPHEM_MATCH
010858737-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858737-03	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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 010858737-03

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010858737-03	10858737	010858720-sec	10858720	1:1	88.3	-14	17	10.97	13.54	22995.00	Direct-PRF	0	4.35	1.81

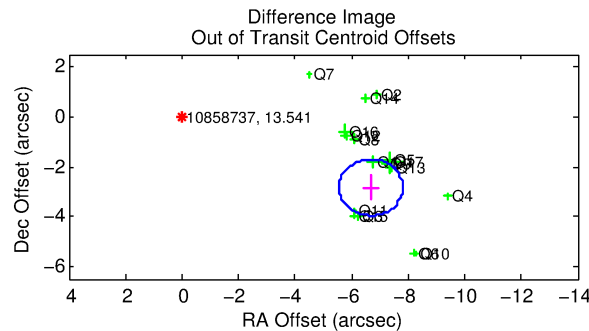
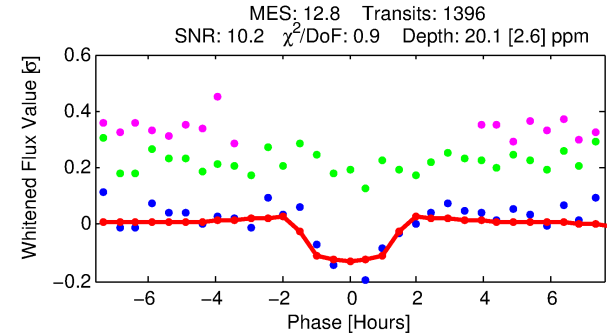
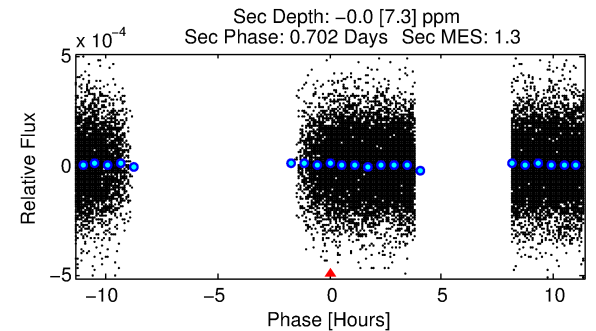
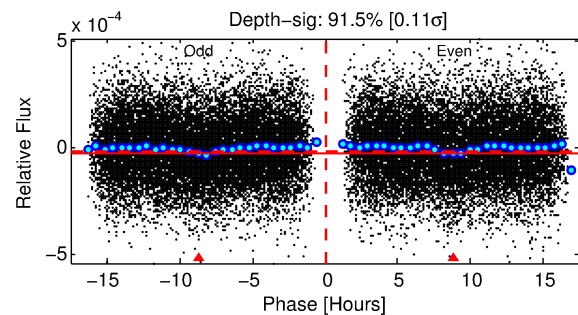
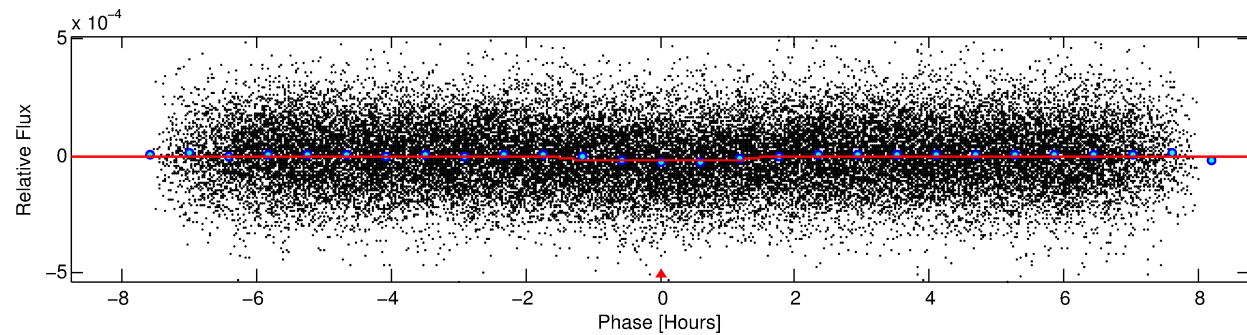
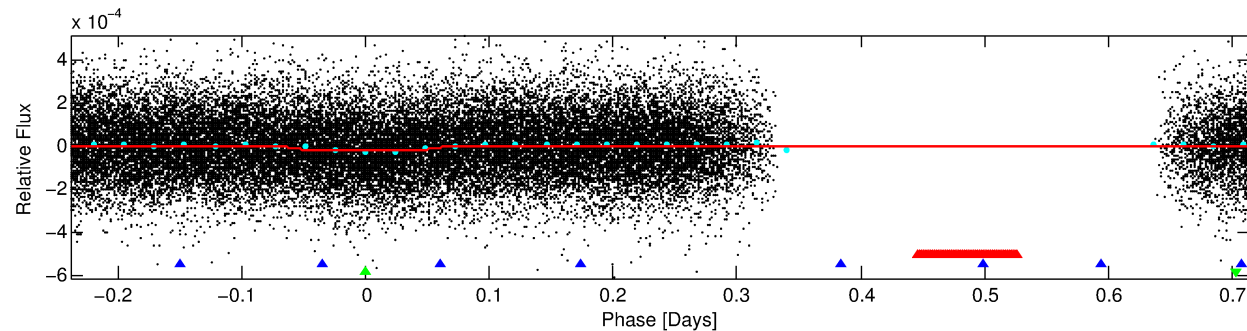
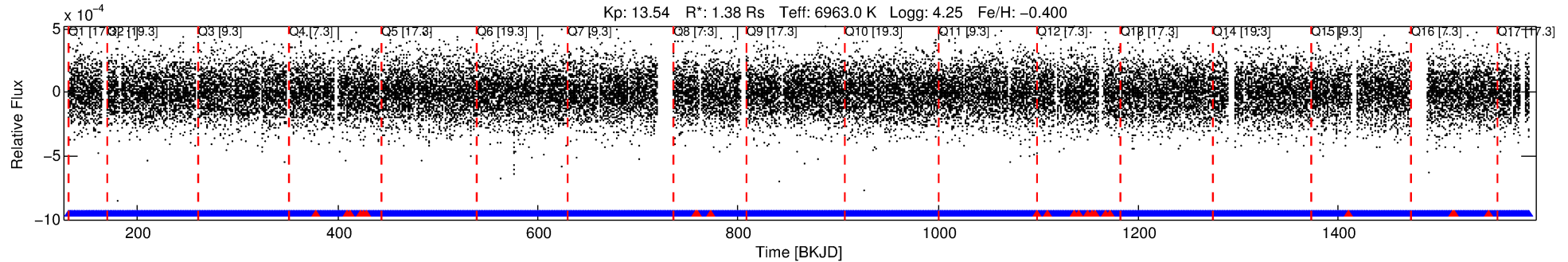
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10858737 Candidate: 3 of 3 Period: 0.952 d

KOI: K04183.01 Corr: 0.832

Kp: 13.54 R*: 1.38 Rs Teff: 6963.0 K Logg: 4.25 Fe/H: -0.400



DV Fit Results:

Period = 0.95233 [0.00001] d
Epoch = 131.8828 [0.0033] BKJD
Rp/R* = 0.0042 [0.0021]
a/R* = 2.48 [5.91]
b = 0.29 [8.92]
Seff = 9680.47 [3659.30]
Teq = 2529 [239] K
Rp = 0.63 [0.37] Re
a = 0.0203 [0.0049] AU
Ag = N/A
Teffp = N/A

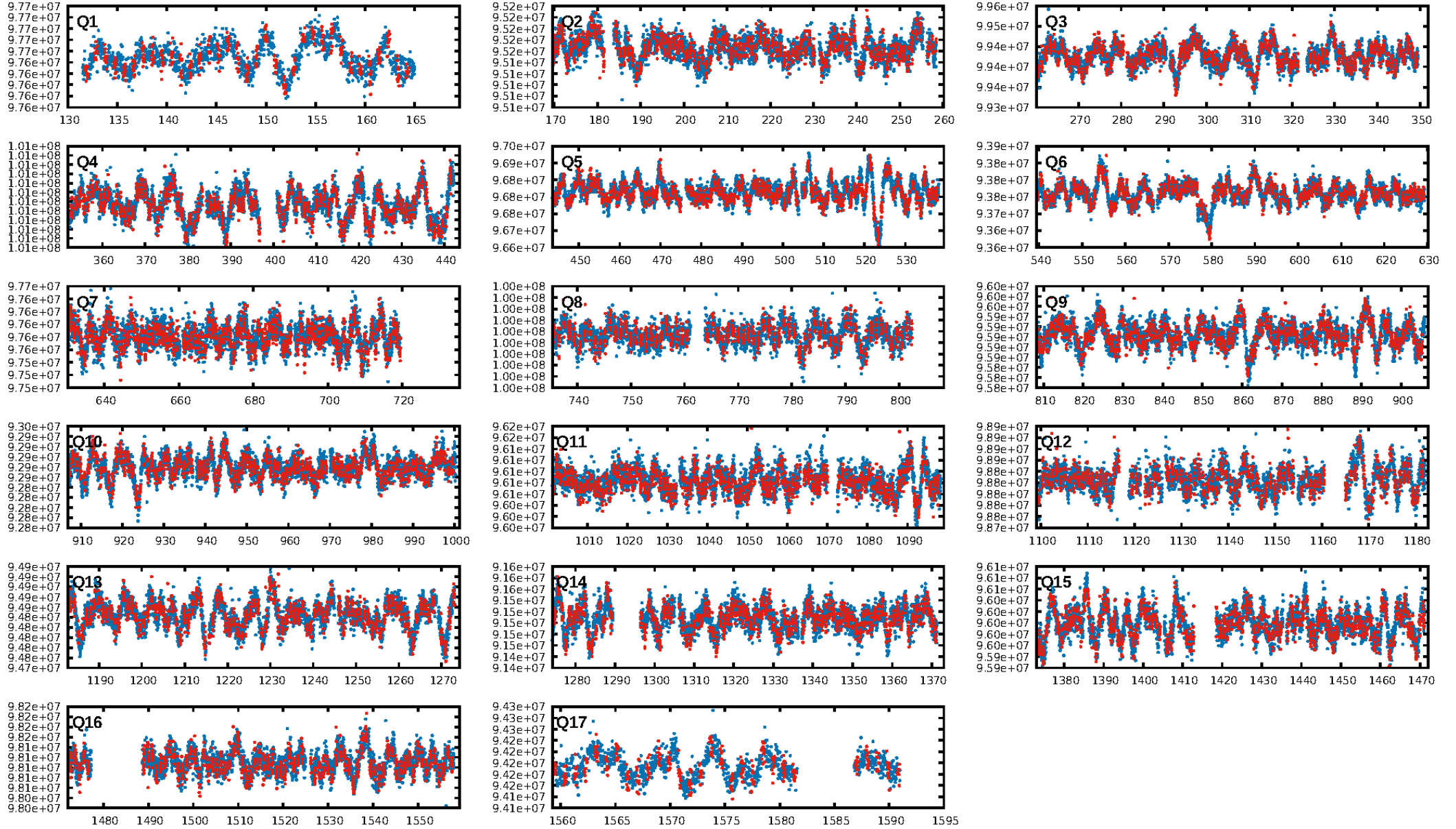
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.35e-33
RollingBand-fgt: 0.98 [1311/1334]
GhostDiagnostic-chr: 0.3911
Centroid-sig: 0.0%
Centroid-so: 3.312 arcsec [3.39σ]
OotOffset-rm: 7.253 arcsec [19.26σ]
KicOffset-rm: 7.125 arcsec [17.72σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

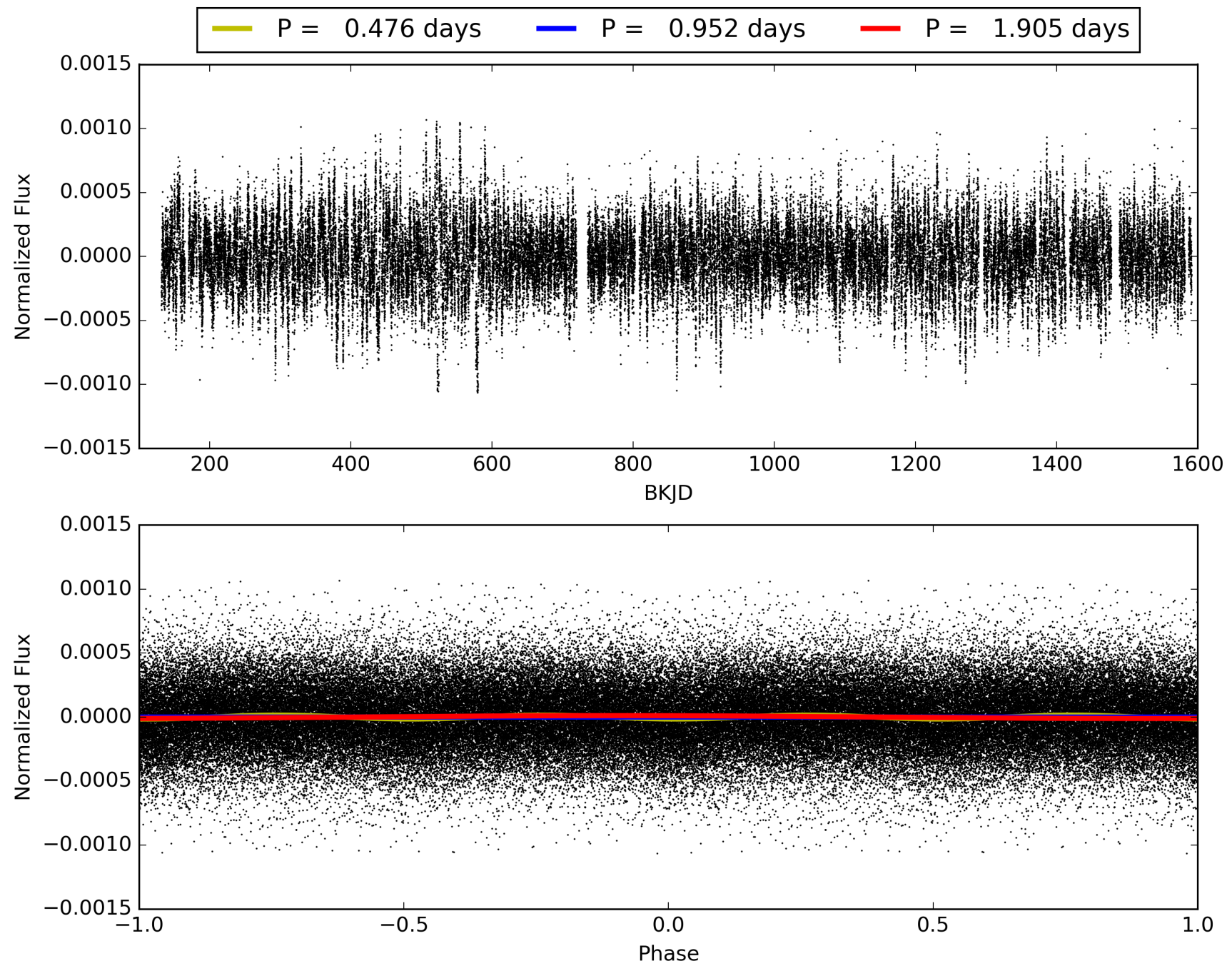
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:52:43 Z

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

TCE 010858737-03, PDC Light Curves

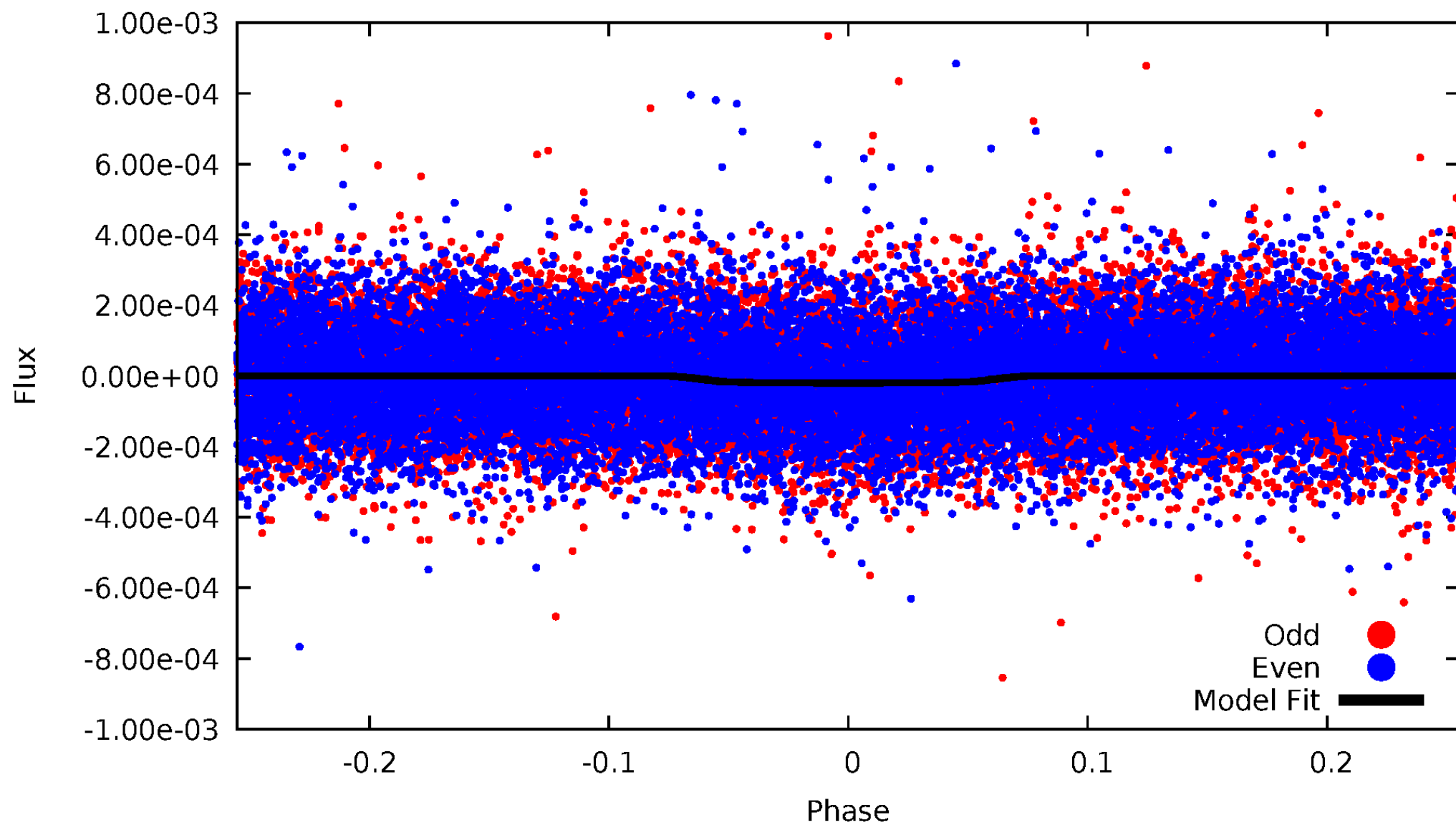


TCE 010858737-03



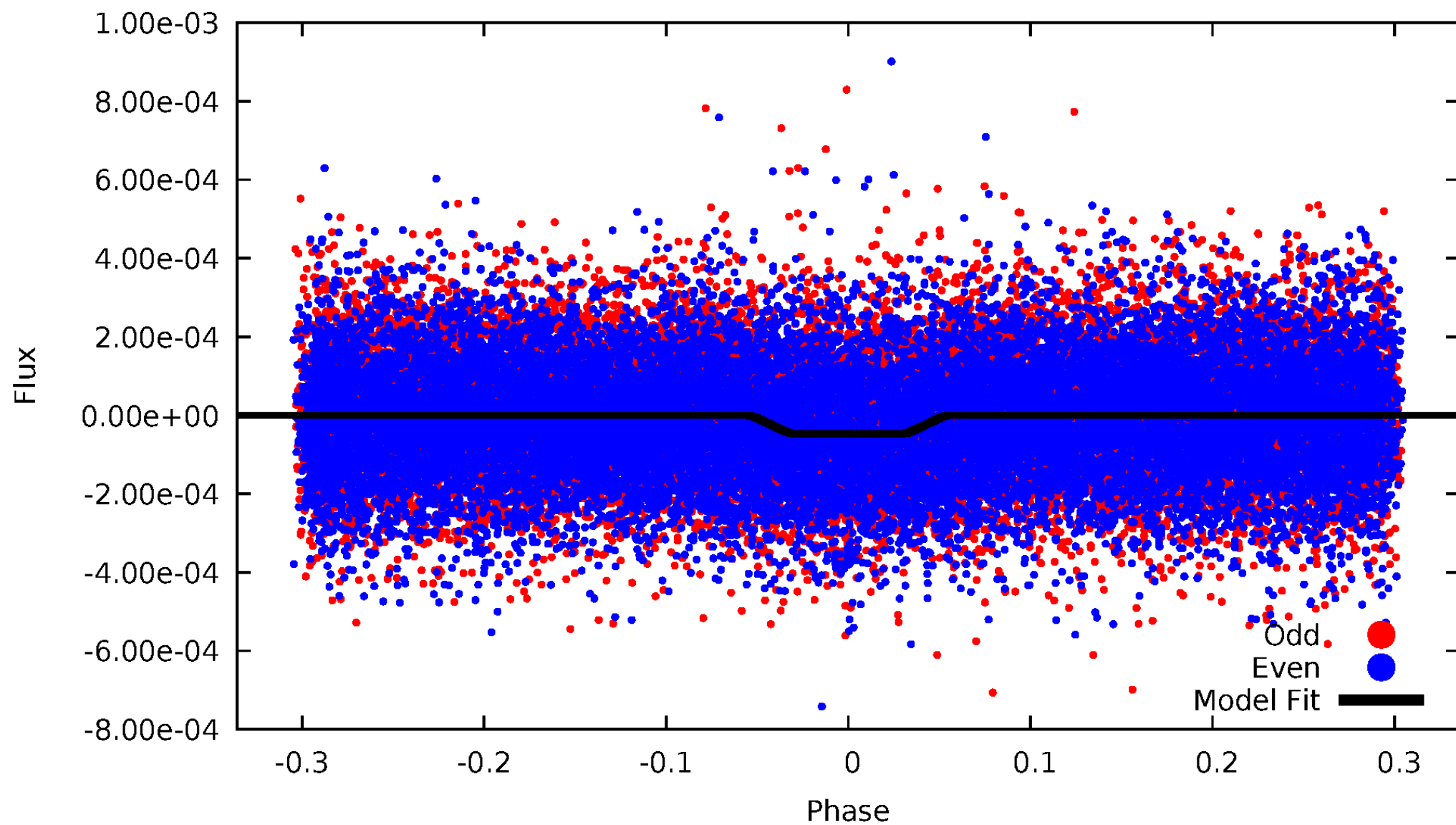
DV Odd/Even

TCE 010858737-03



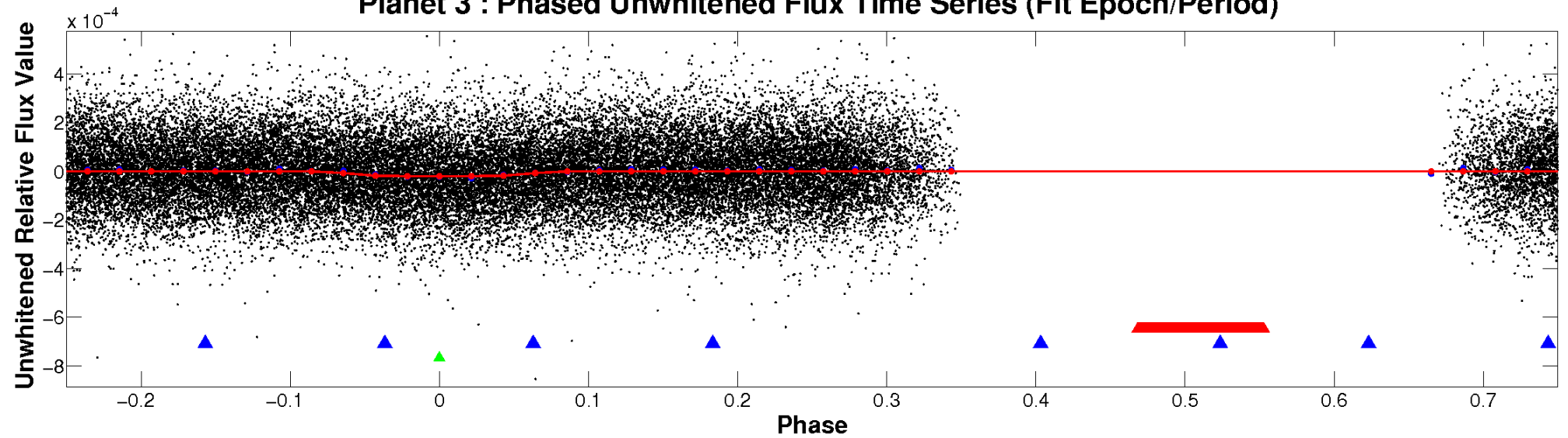
ALT Odd/Even

TCE 010858737-03

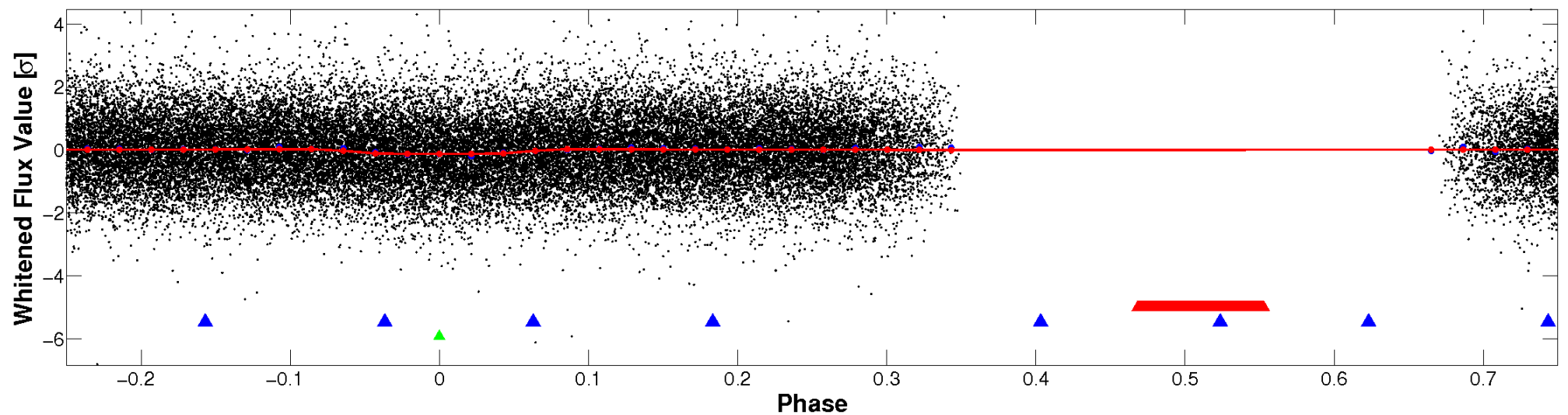


Non-Whitened Vs. Whitened Light Curve

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

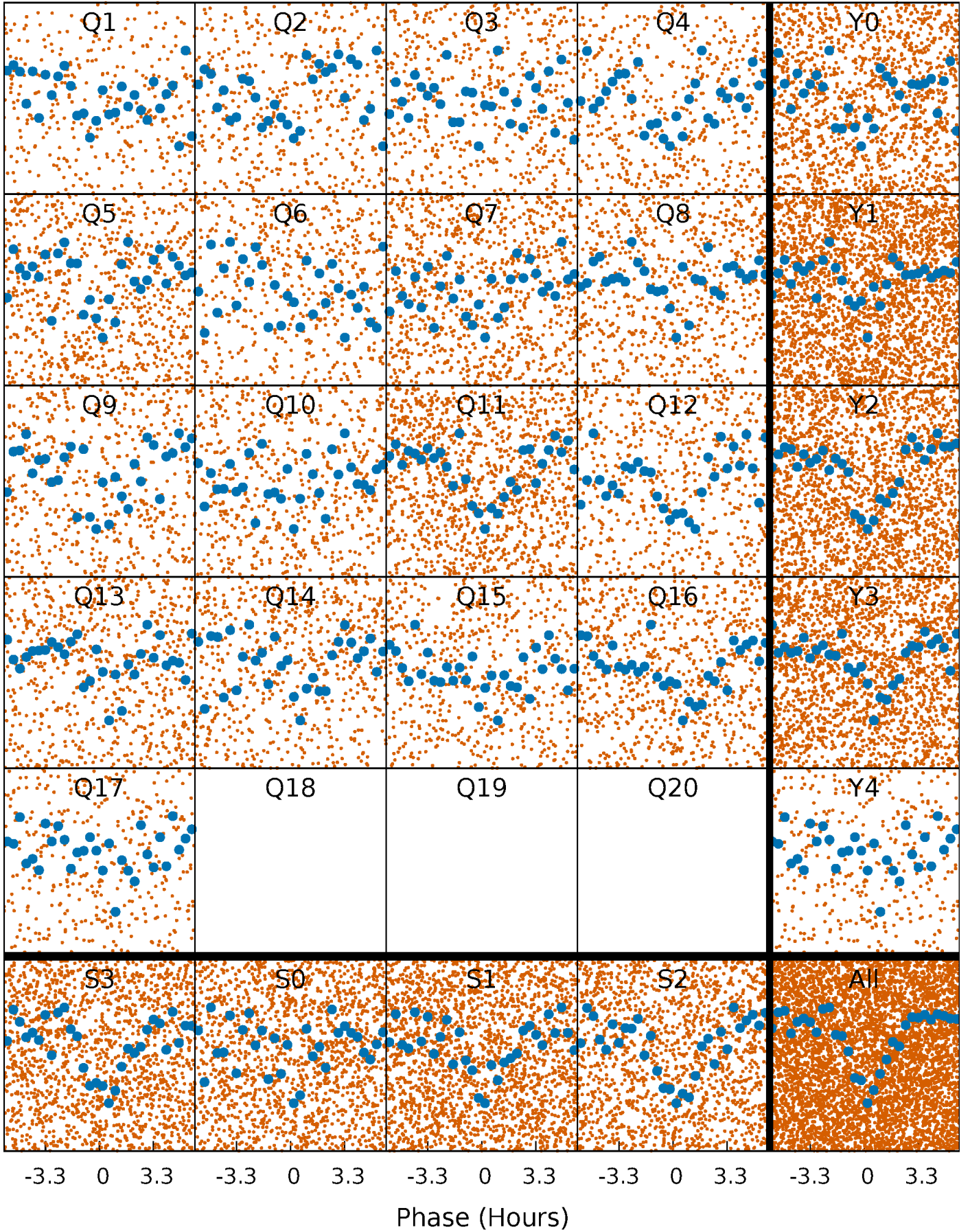


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



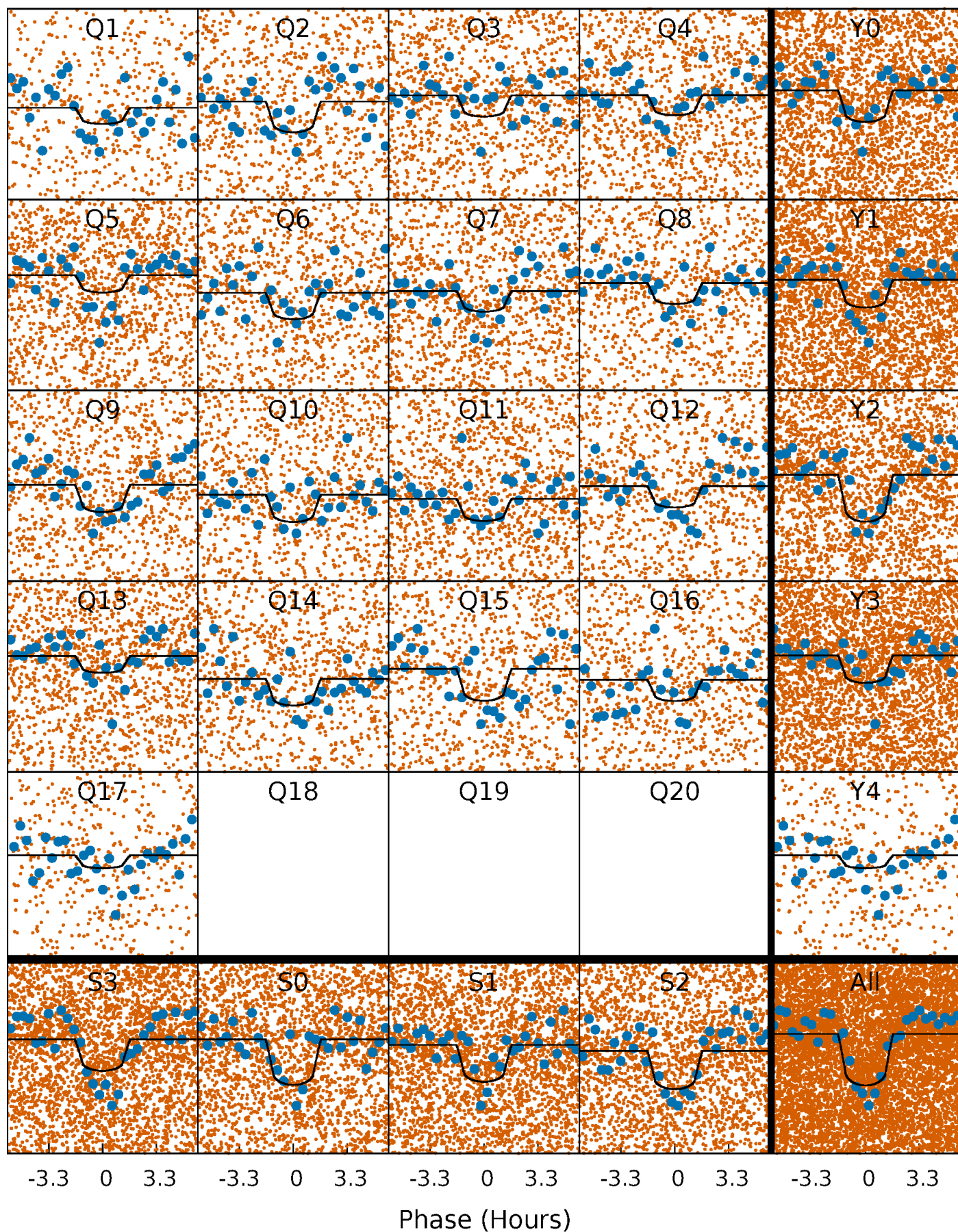
PDC Quarter-Phased Transit Curves

TCE 010858737-03 P= 0.952334 Days $T_0=131.882826$ (BKJD)



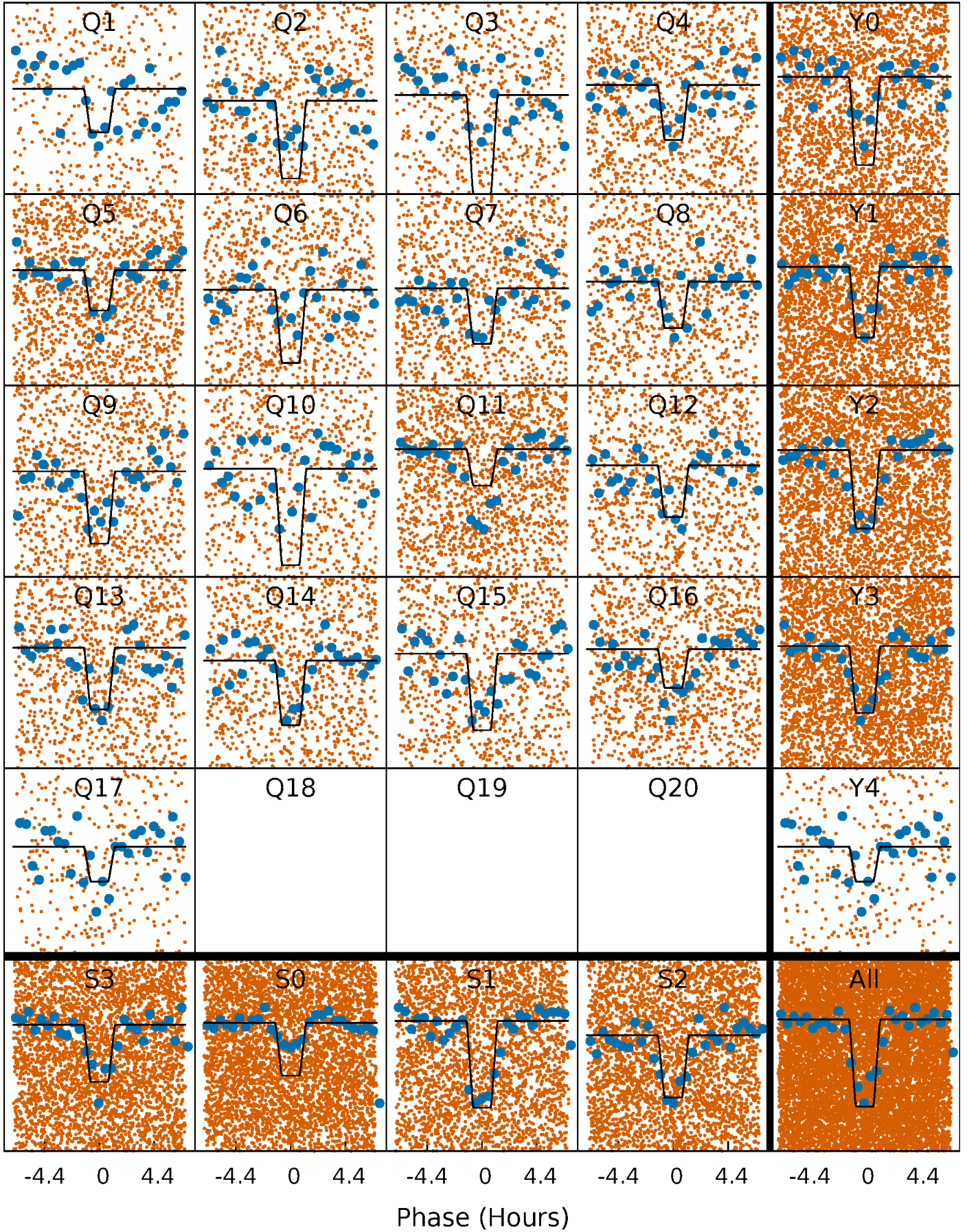
DV Quarter-Phased Transit Curves

TCE 010858737-03 P= 0.952334 Days $T_0=131.882826$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

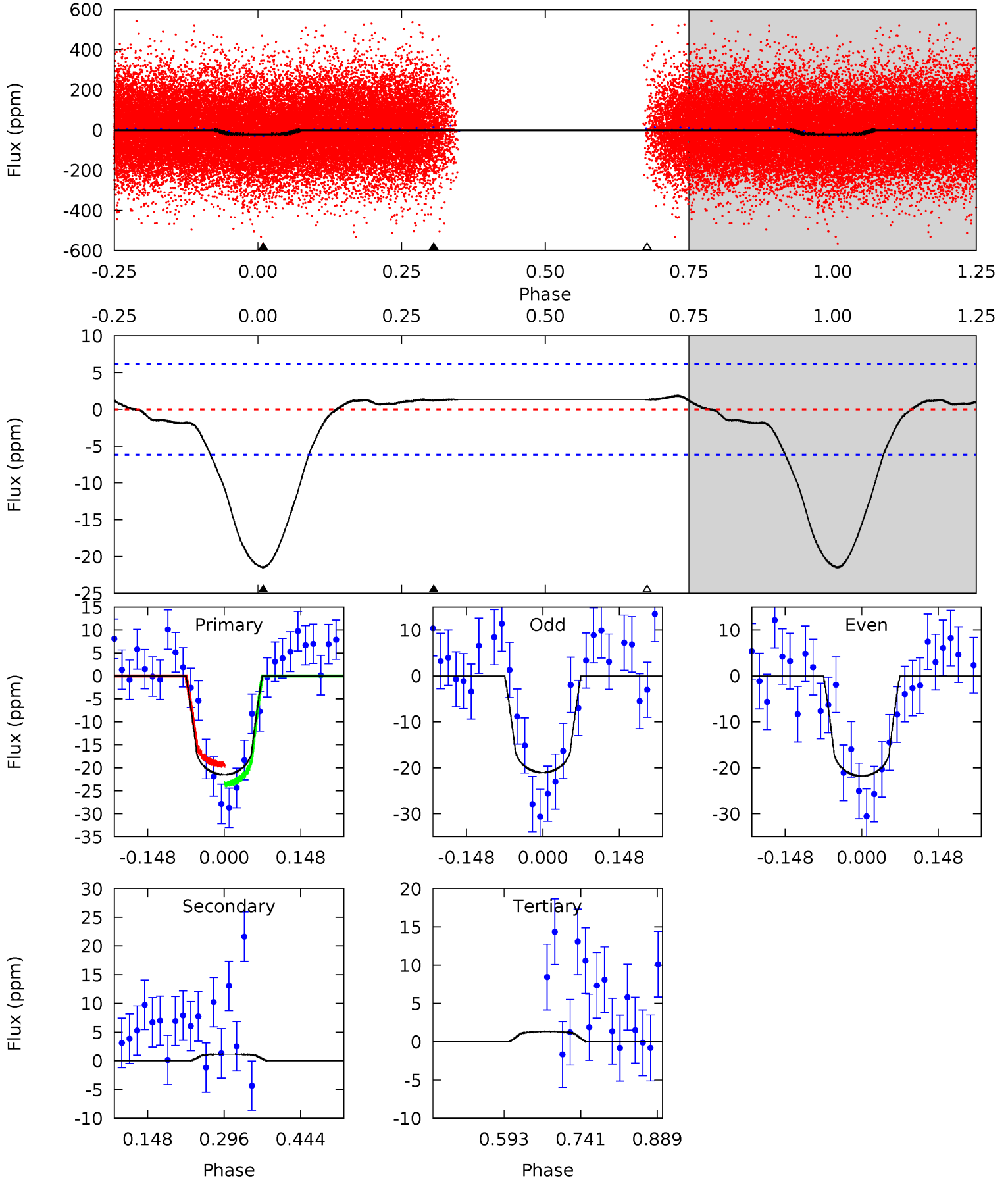
TCE 010858737-03 $P = 0.952377$ Days $T_0 = 131.859190$ (BKJD)



DV Model-Shift Uniqueness Test

010858737-03, P = 0.952334 Days, E = 130.930492 Days

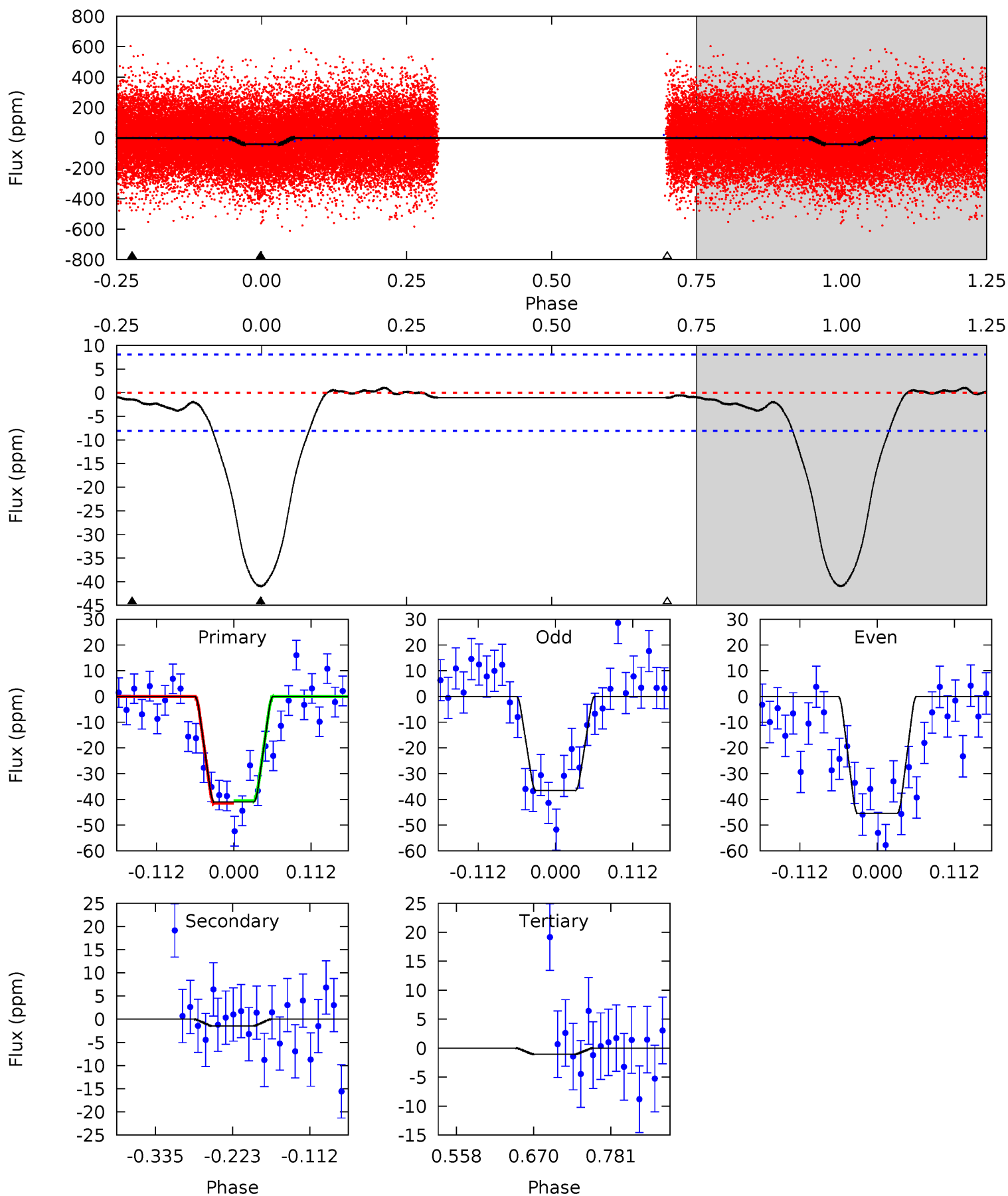
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	-0.86	-0.96	0	4.48	1.45	0.92	16.5	15.6	0.10	-0.86	0.27	0.99	0.08	1.54



Alt Model-Shift Uniqueness Test

010858737-03, P = 0.952377 Days, E = 130.906813 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.0	0.83	0.59	0	4.54	1.59	0.29	22.4	23.0	0.24	0.83	2.51	0.99	0.02	0.29



Stellar Parameters For KIC 010858737

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6963^{+192}_{-264}	$4.250^{+0.124}_{-0.186}$	$-0.400^{+0.250}_{-0.300}$	$1.375^{+0.404}_{-0.235}$	$1.233^{+0.189}_{-0.171}$	$0.668^{+0.395}_{-0.337}$
	+3%/-4%	+3%/-4%	+62%/-75%	+29%/-17%	+15%/-14%	+59%/-50%
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 010858737-03 / KOI 4183.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	1 ± 1	$0.65^{+0.35}_{-0.31}$	3572^{+259}_{-221}	-4056^{+982}_{-1172}	$-0.520^{+0.686}_{-2.181}$
Alt.	-1 ± 2	$1.06^{+0.38}_{-0.33}$	3575^{+251}_{-218}	-2607^{+6356}_{-931}	$0.254^{+0.609}_{-0.285}$

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

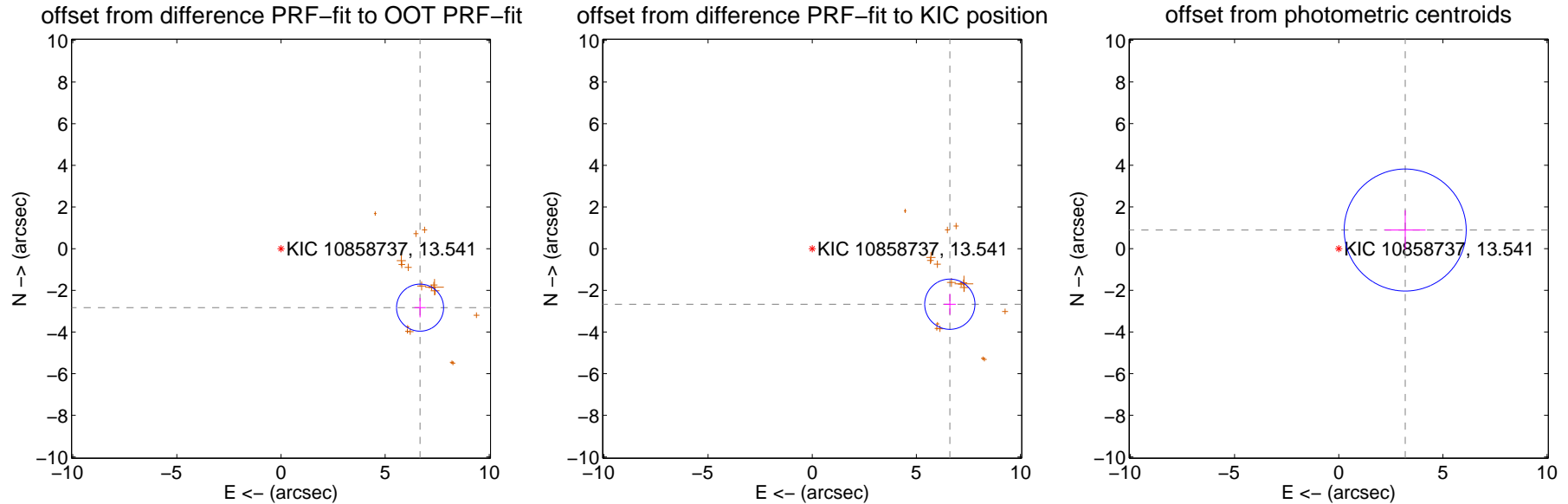
DV Centroid Data

Supplemental centroid analysis for 010858737-03. Kepler magnitude: 13.54. Transit SNR 10.18

There are 0 quarters with good PRF difference image offsets

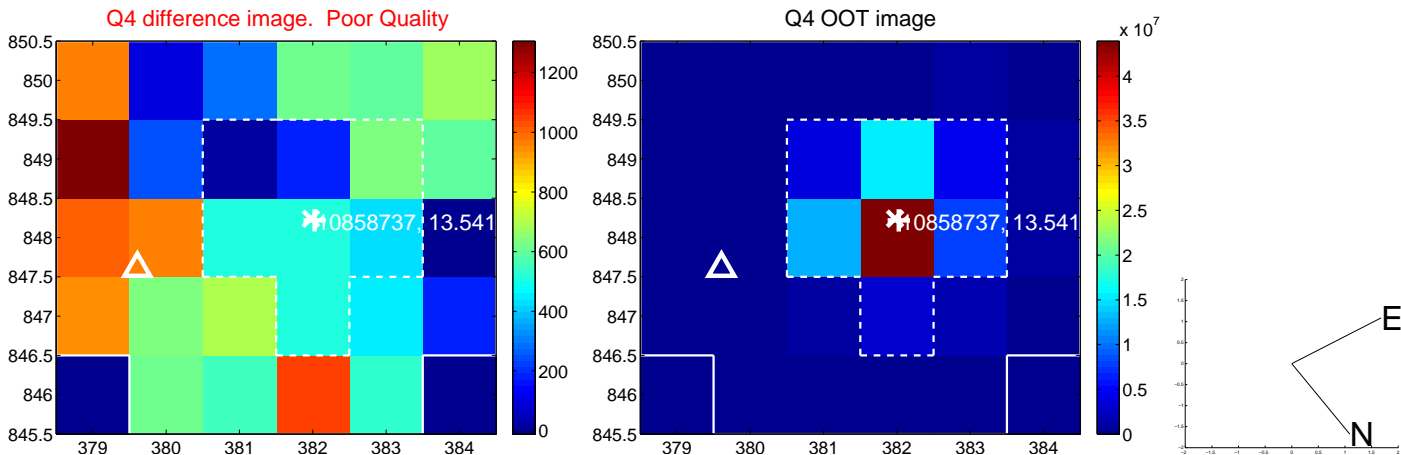
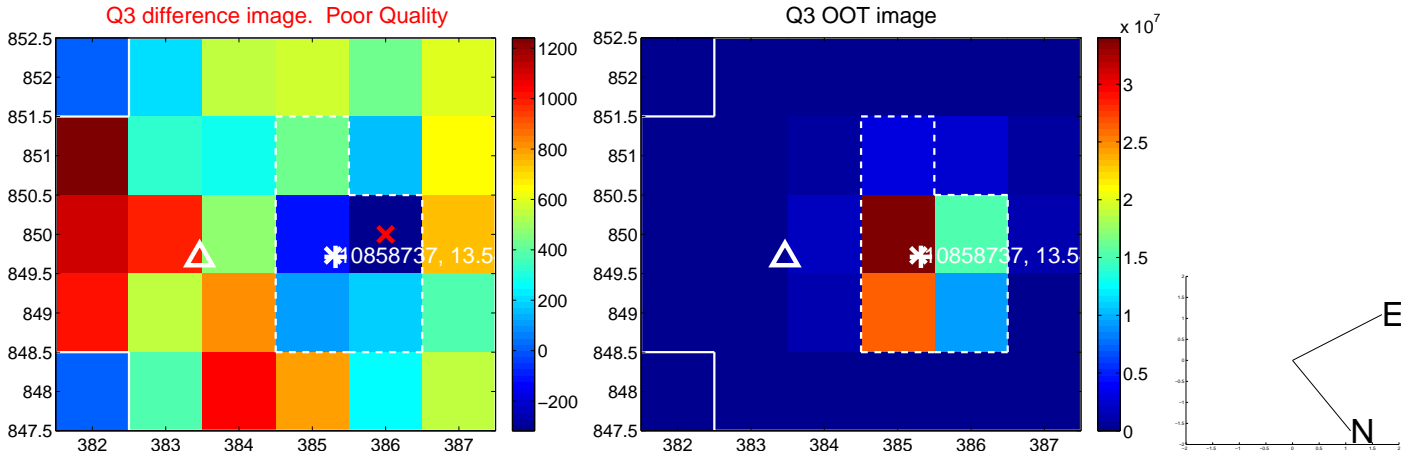
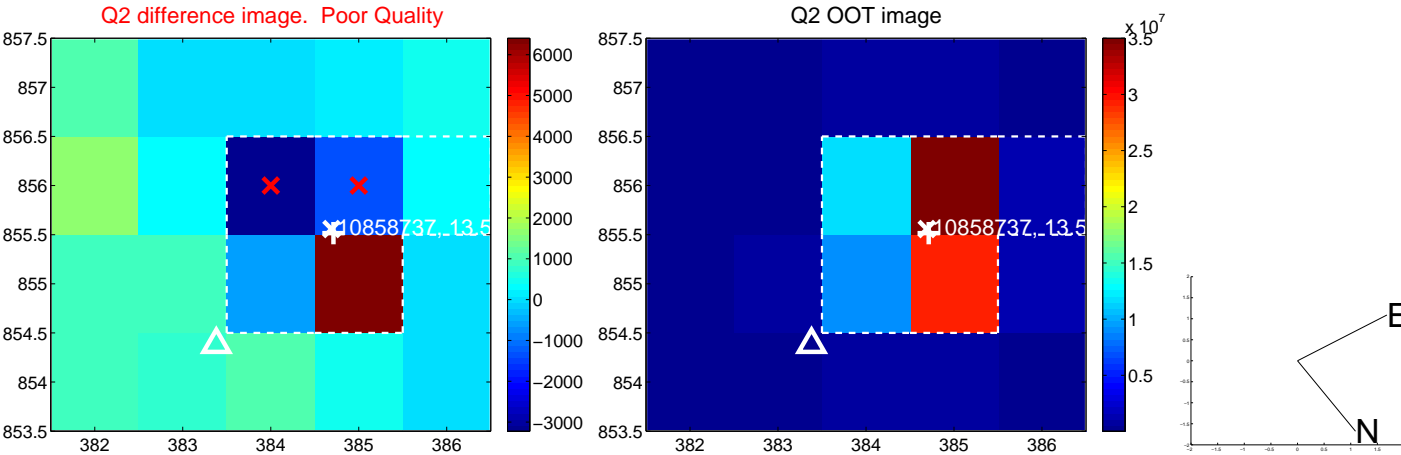
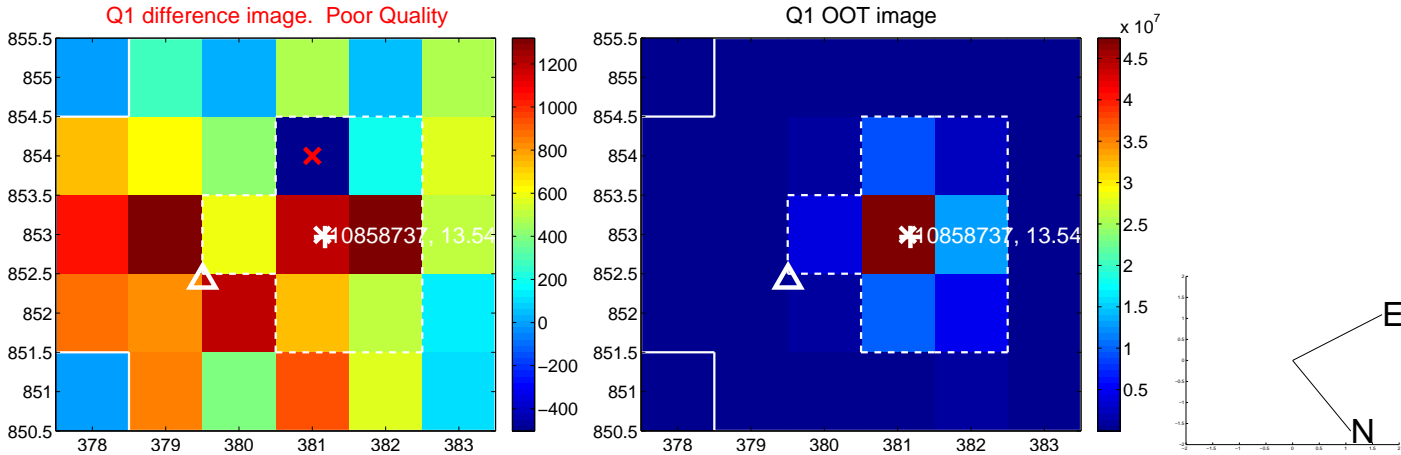
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.253 ± 0.376	19.26	-6.677 ± 0.273	-2.831 ± 0.466
PRF-fit source offset from KIC position	7.125 ± 0.402	17.72	-6.607 ± 0.289	-2.666 ± 0.491
photometric centroid source offset	3.31 ± 0.98	3.39	-3.19 ± 0.98	0.89 ± 0.95

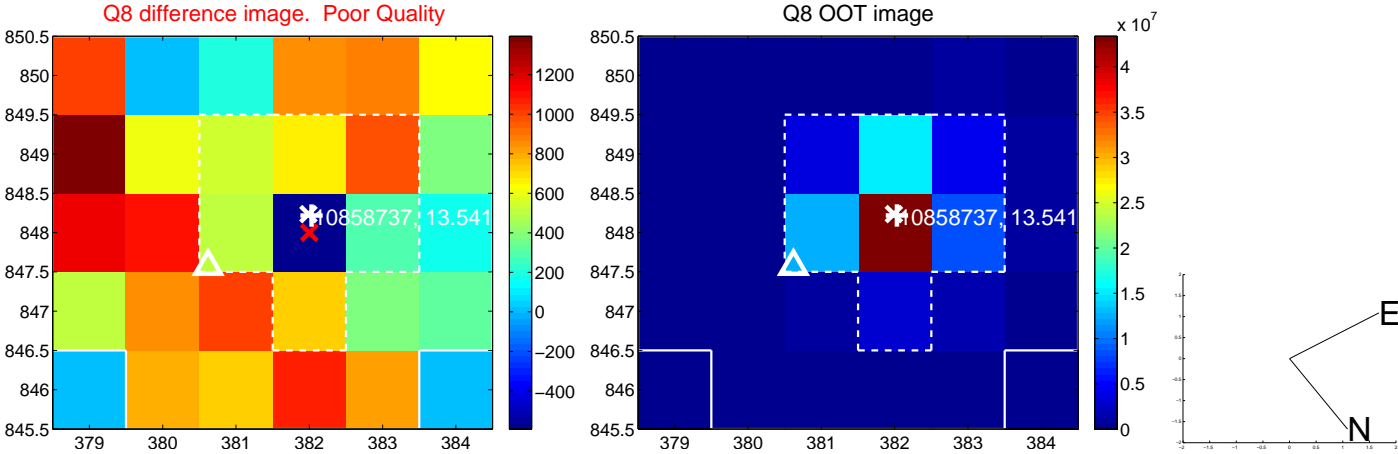
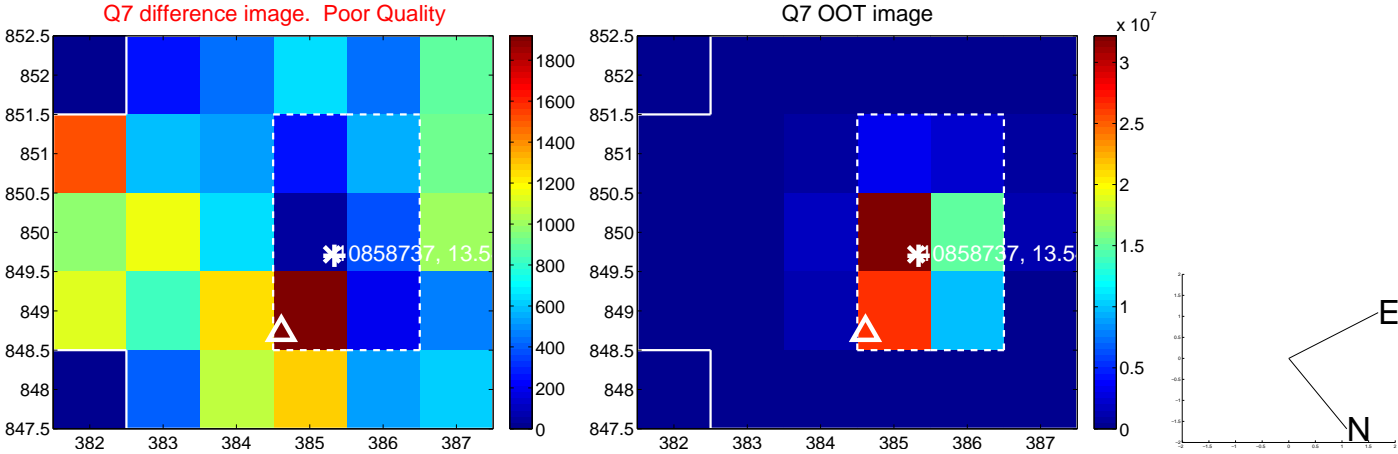
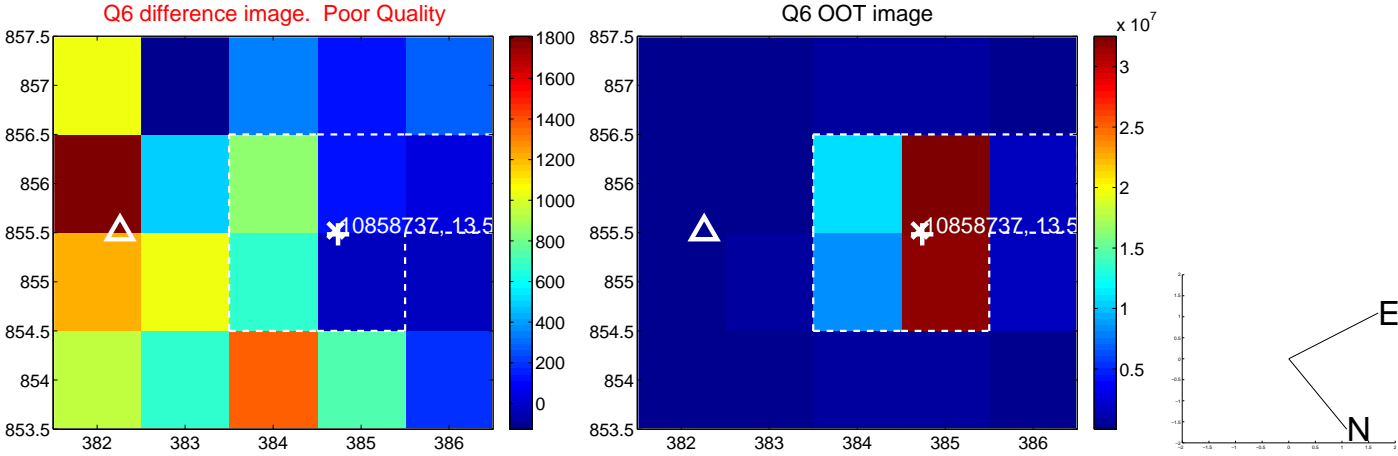
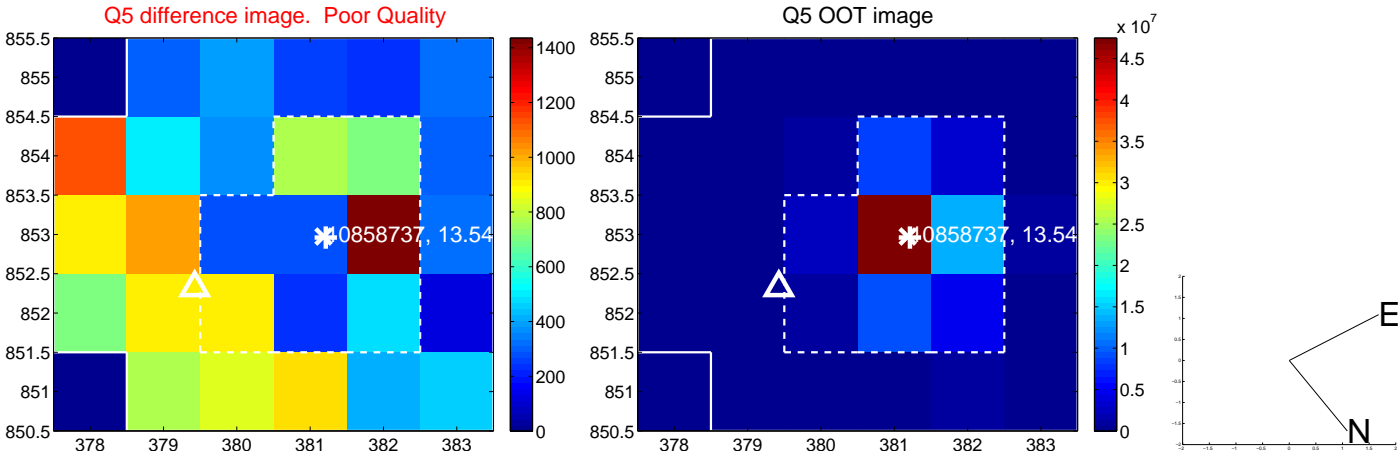


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

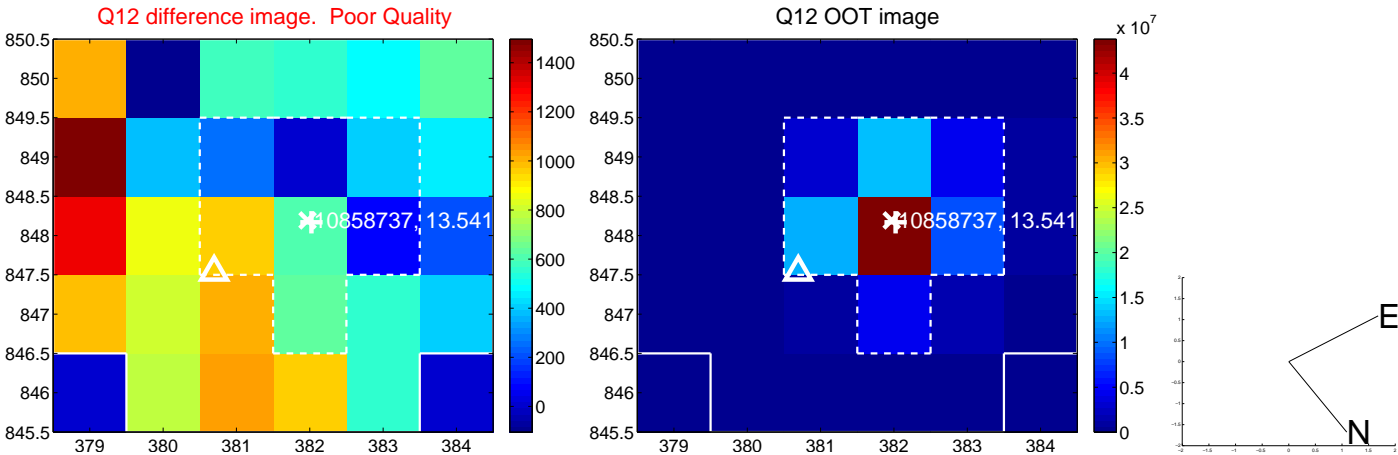
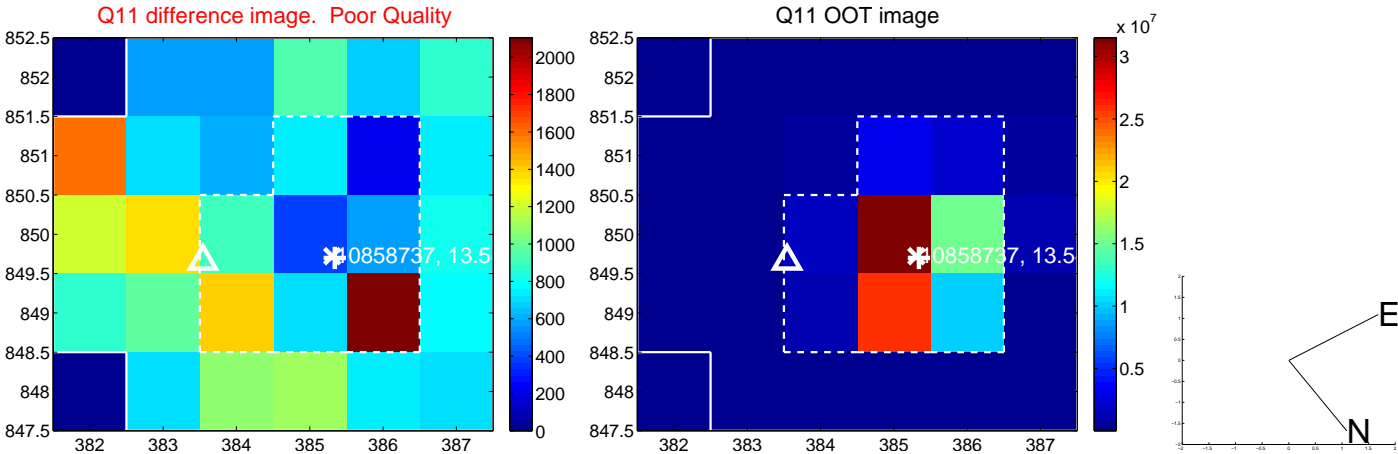
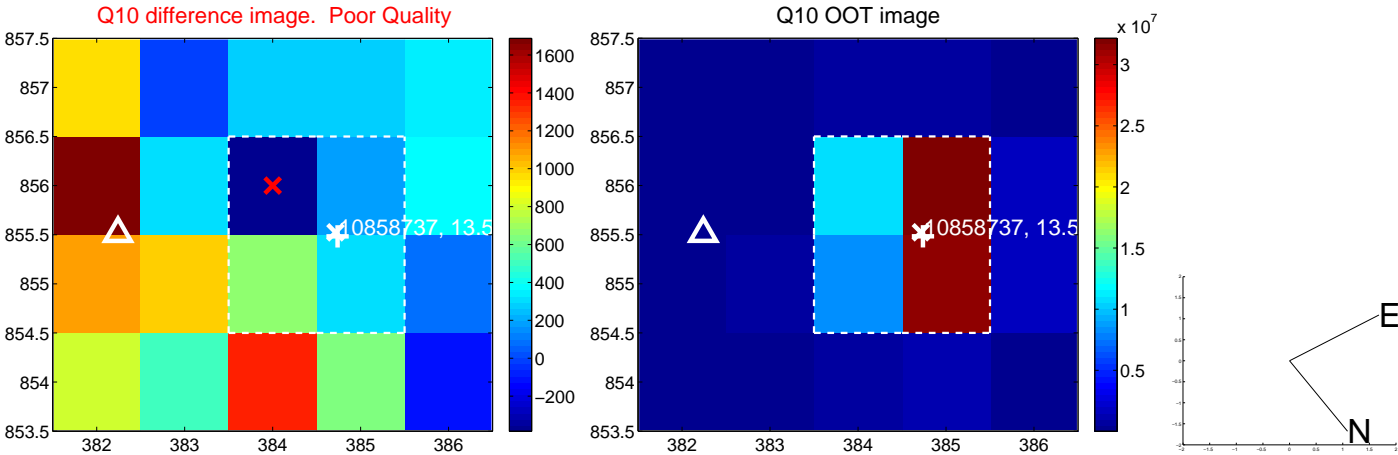
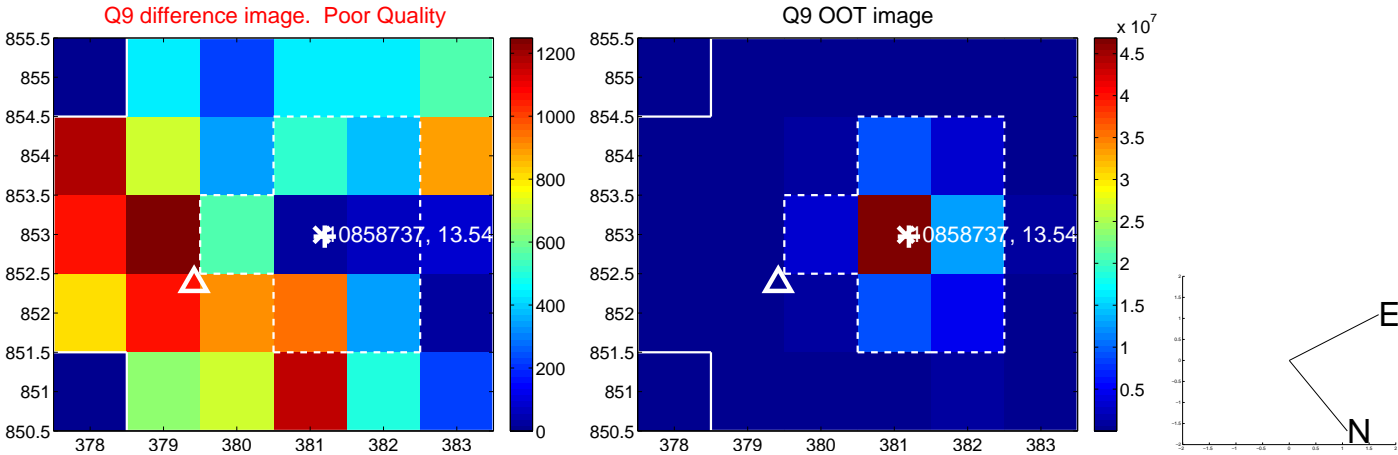
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



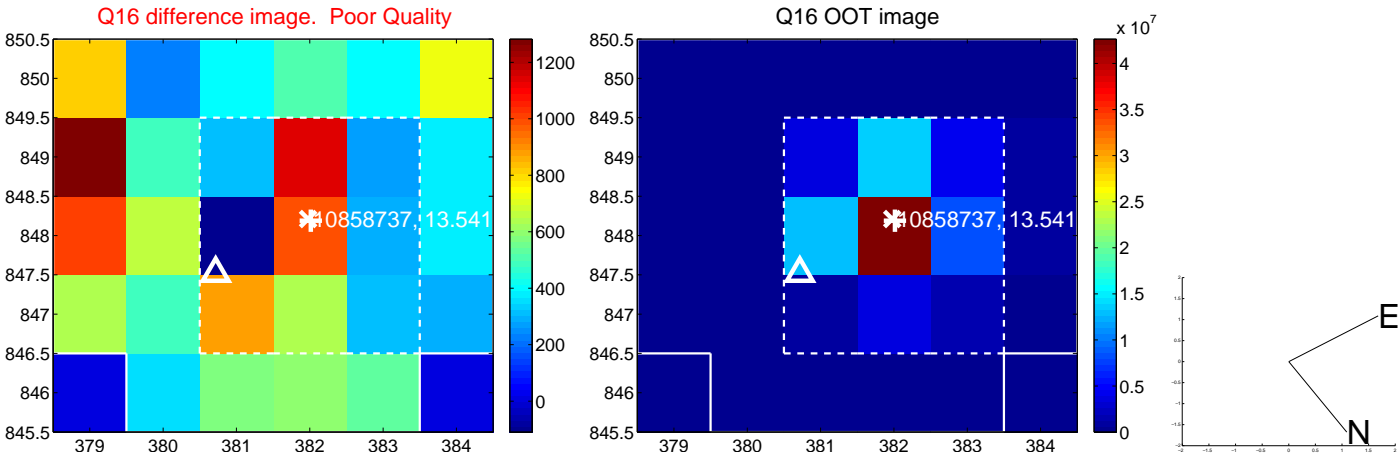
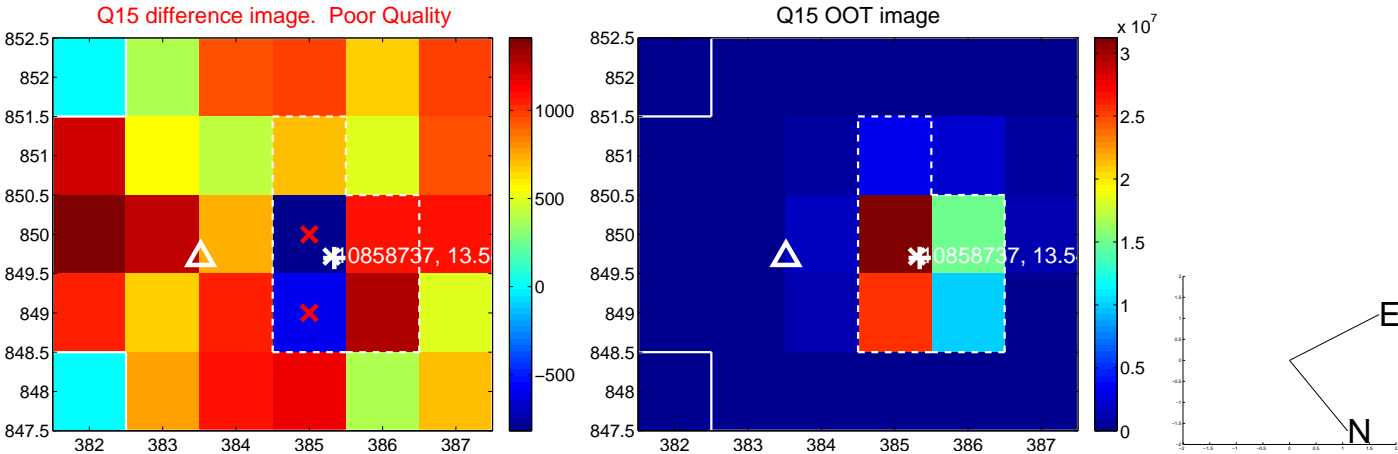
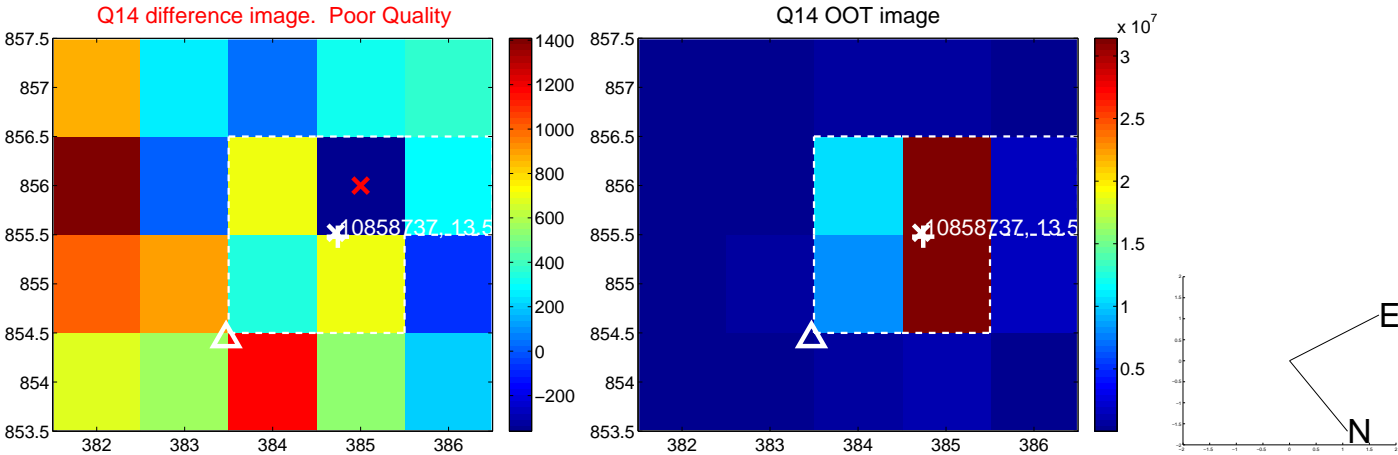
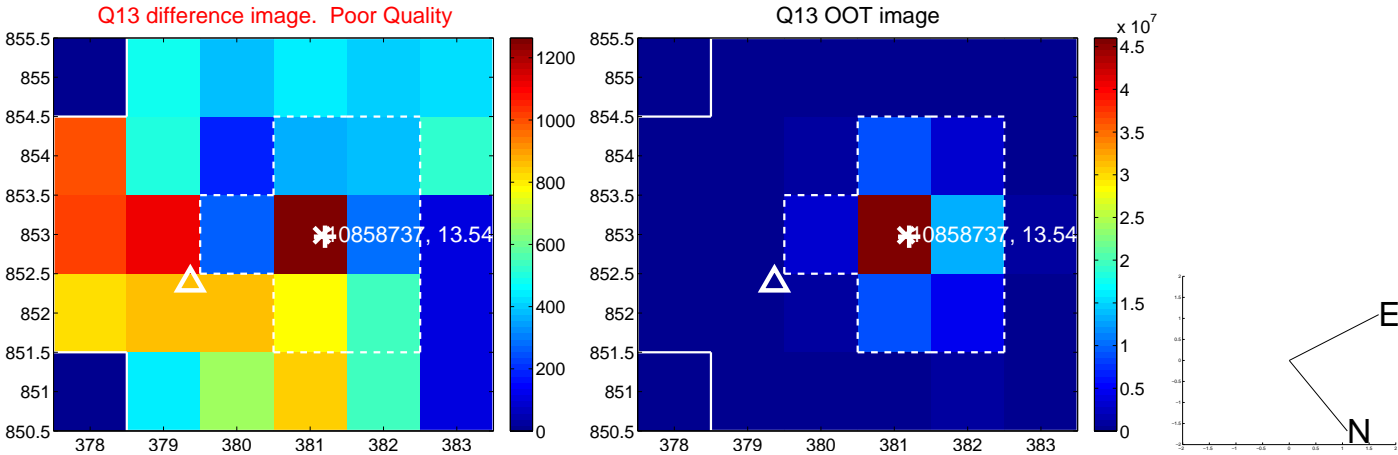
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



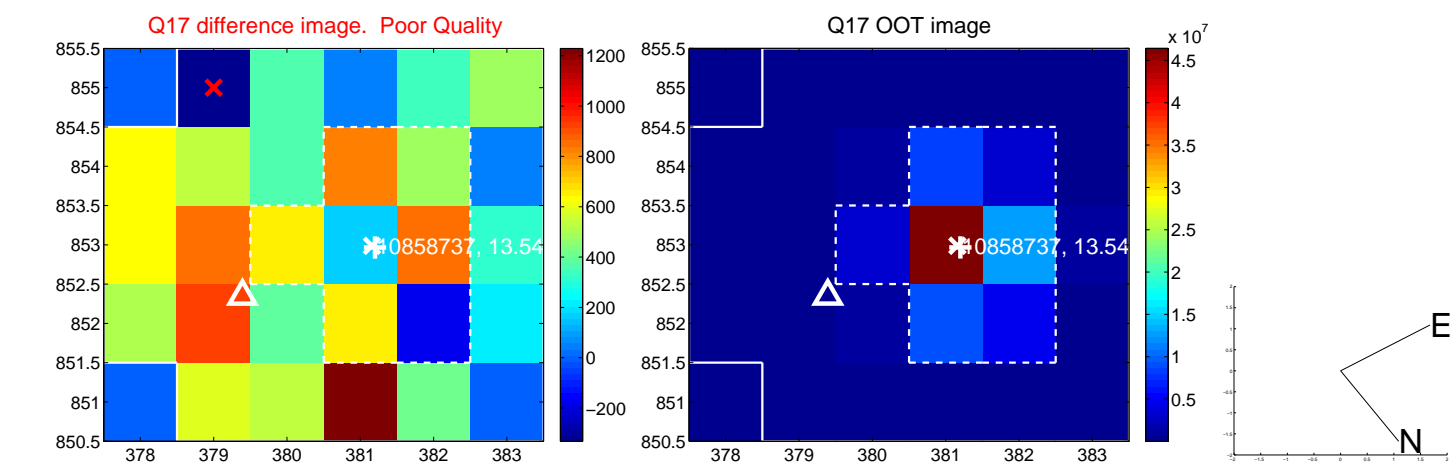
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



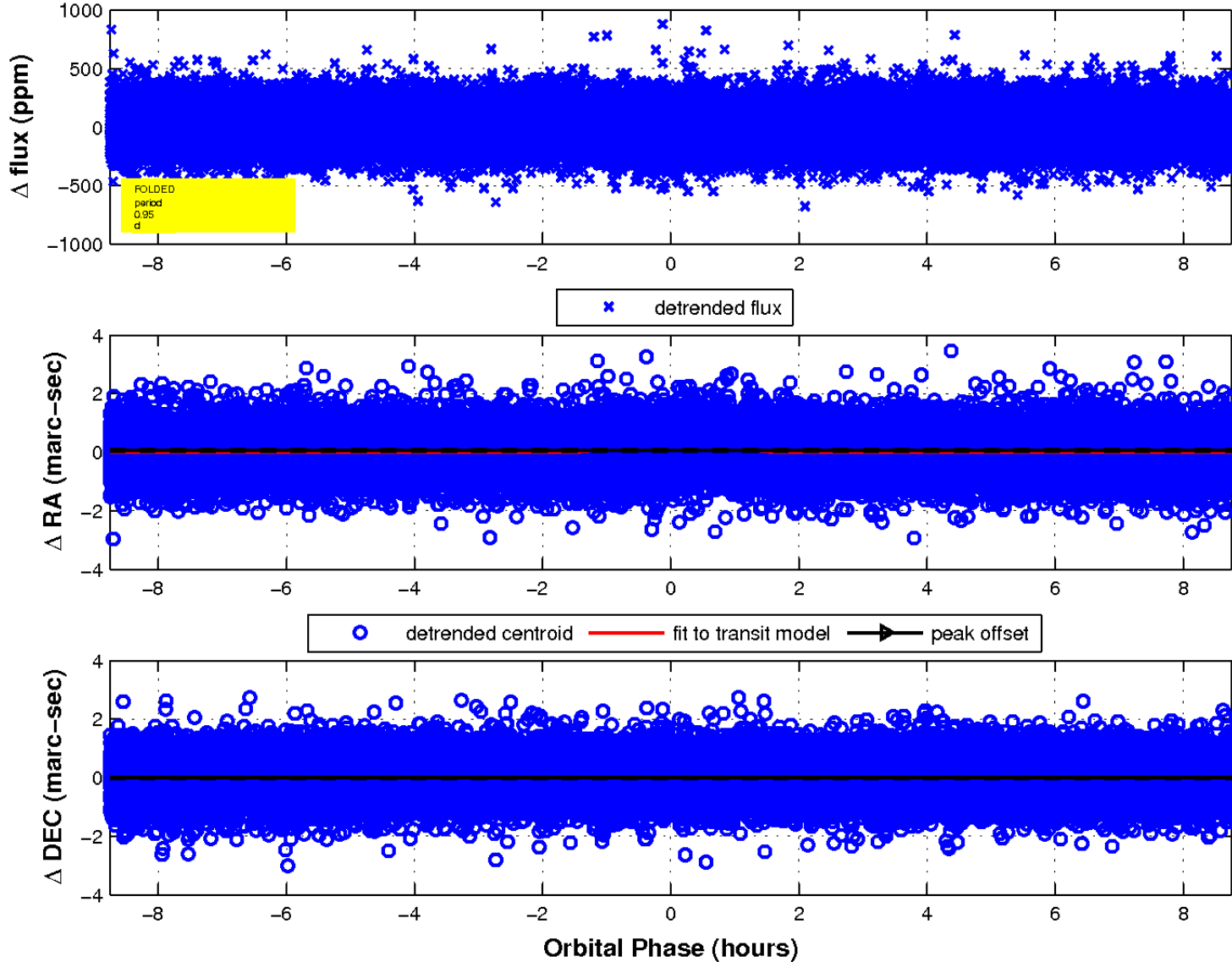
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

