

KIC 011400961

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})
011400961-01	OBS	No	2.706058	132.792415	17.4	4.922	8.2	6.8	1.81	7252	0.87	4230.66
011400961-02	OBS	No	429.132773	154.072813	14.8	7.666	17.2	0.5	1.81	7252	0.81	4.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011400961-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
011400961-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_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_SATURATED

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

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

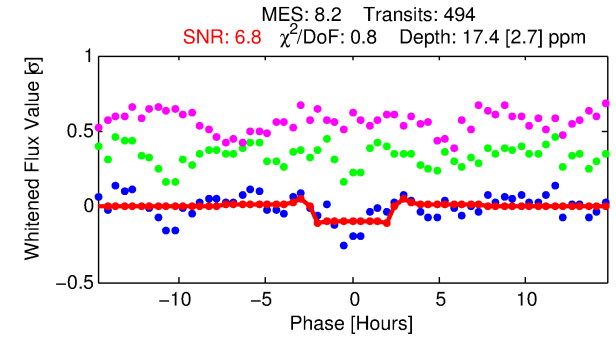
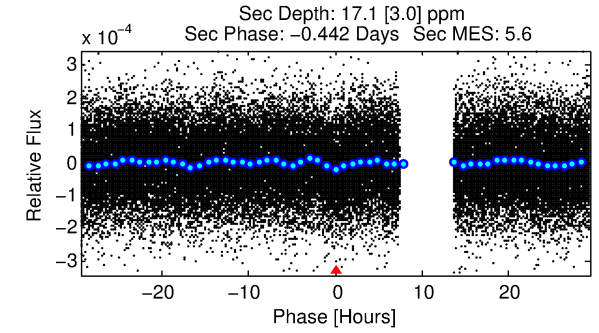
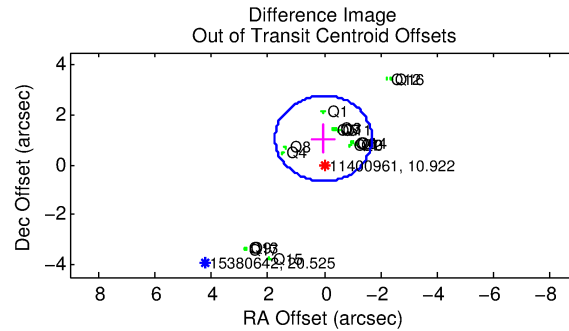
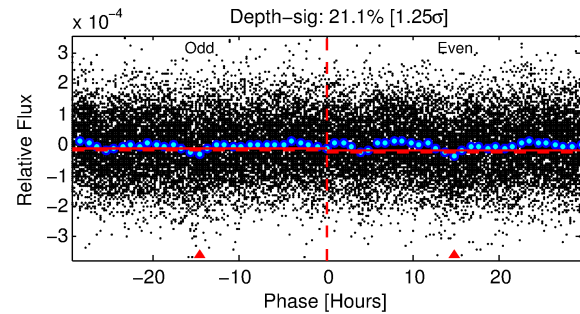
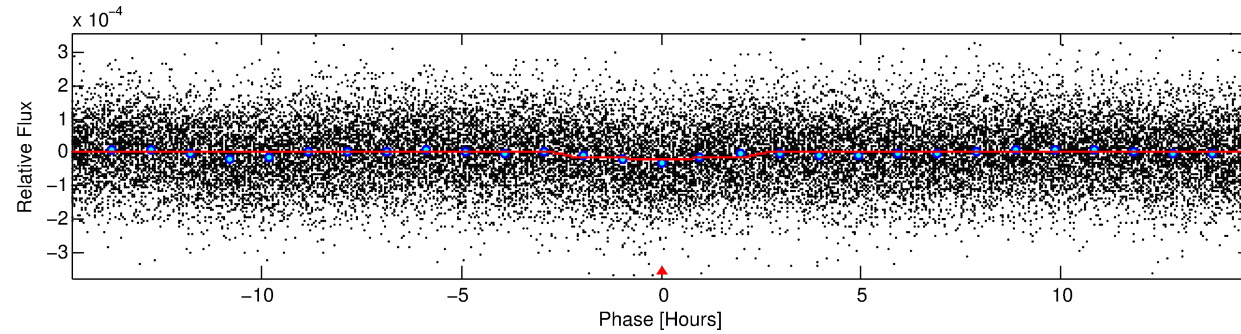
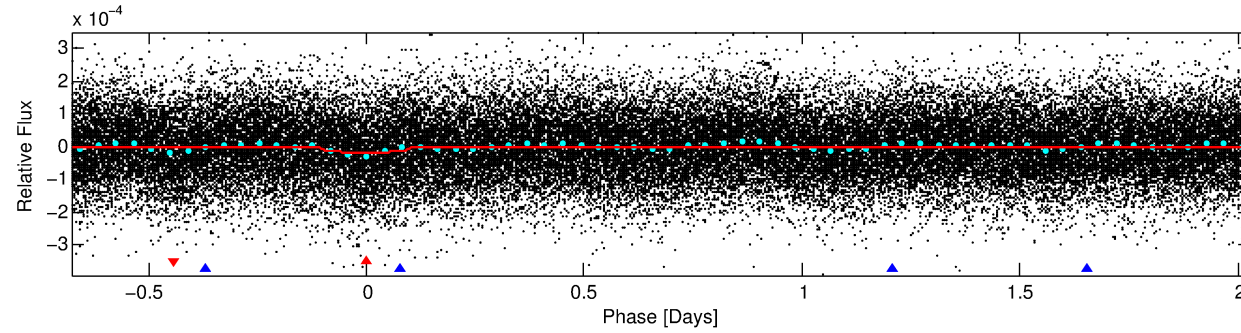
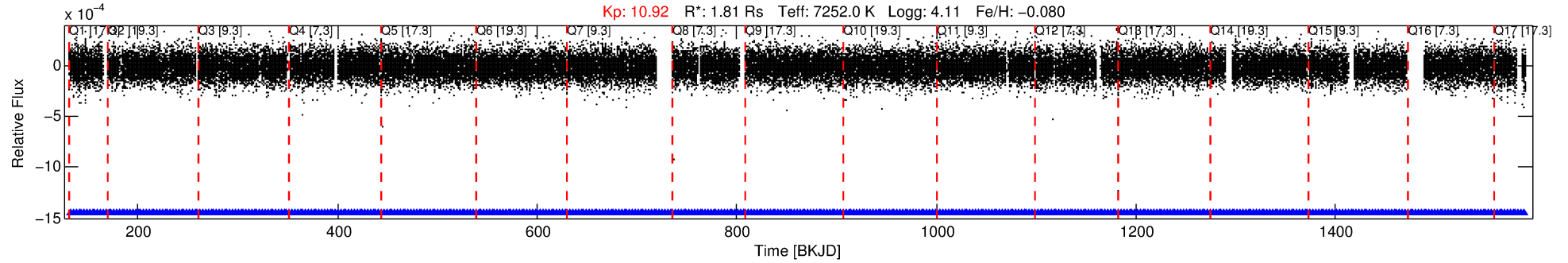
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011400961-01

No Significant Match Found

DV One-Page Summary

KIC: 11400961 Candidate: 1 of 2 Period: 2.706 d



DV Fit Results:

Period = 2.70606 [0.00002] d
Epoch = 132.7924 [0.0042] BKJD
Rp/R* = 0.0044 [0.0009]
a/R* = 2.09 [1.84]
b = 0.90 [0.24]
Seff = 4230.66 [1608.17]
Teff = 2056 [195] K
Rp = 0.87 [0.32] Re
a = 0.0438 [0.0109] AU
Ag = 23.68 [13.05] [1.74 σ]
Teffp = 7014 [795] K [6.05 σ]

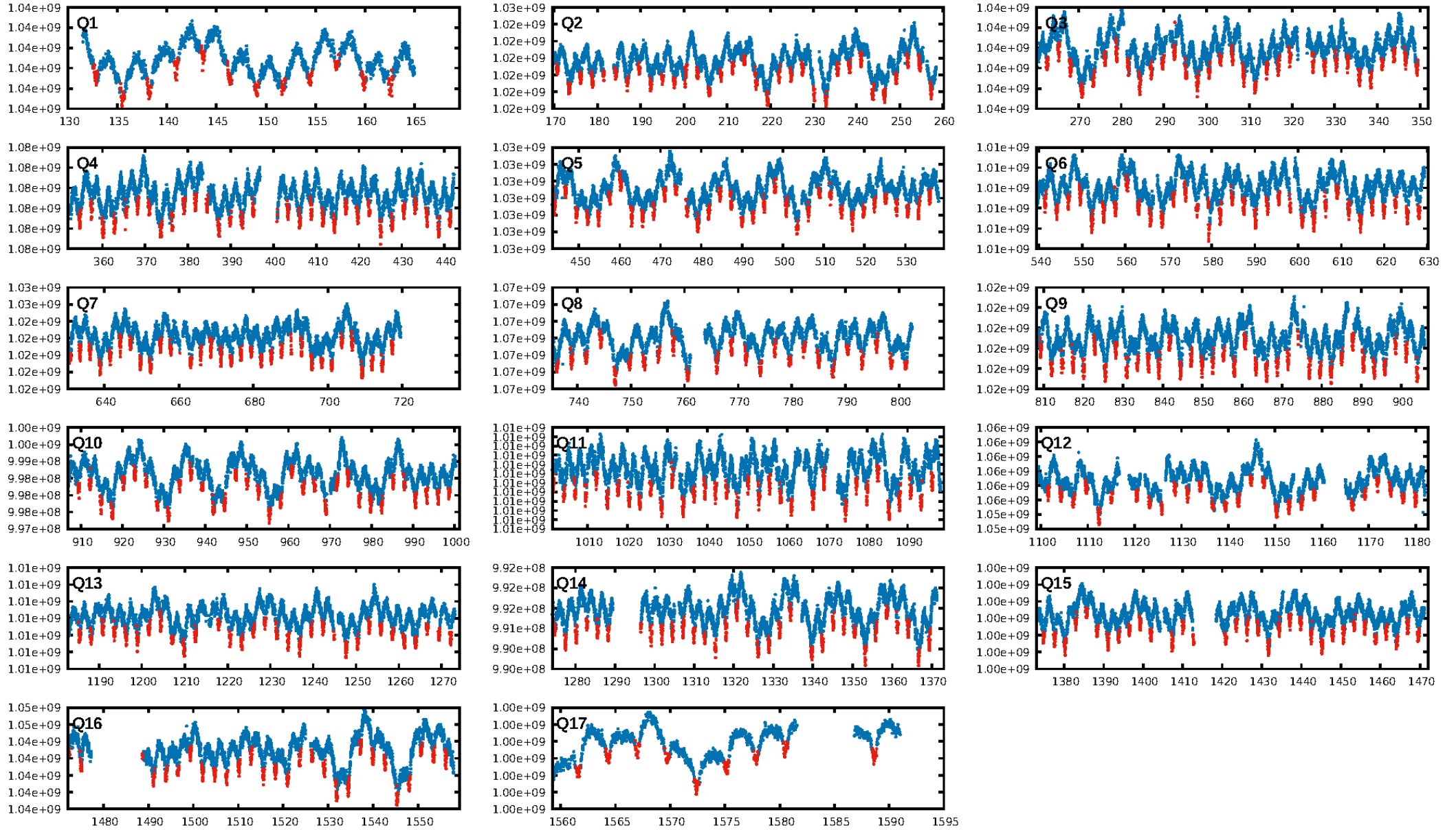
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1123.38 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.31e-14
RollingBand-fgt: 1.00 [473/473]
GhostDiagnostic-chr: 0.7771
Centroid-sig: 0.0%
Centroid-so: 4.827 arcsec [6.03 σ]
OotOffset-rm: 1.048 arcsec [1.83 σ]
KicOffset-rm: 1.705 arcsec [3.07 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

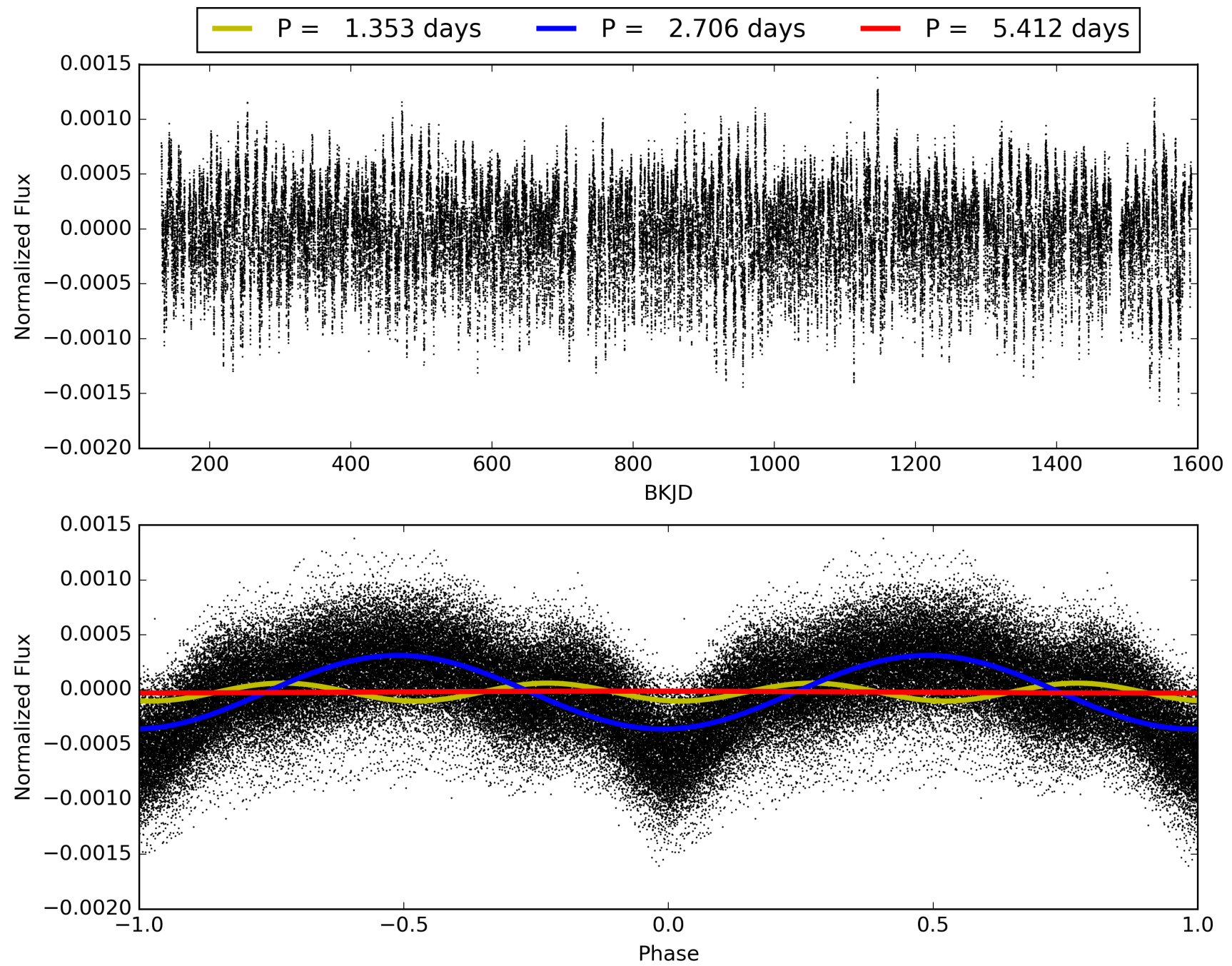
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:01:25 Z

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

TCE 011400961-01, PDC Light Curves

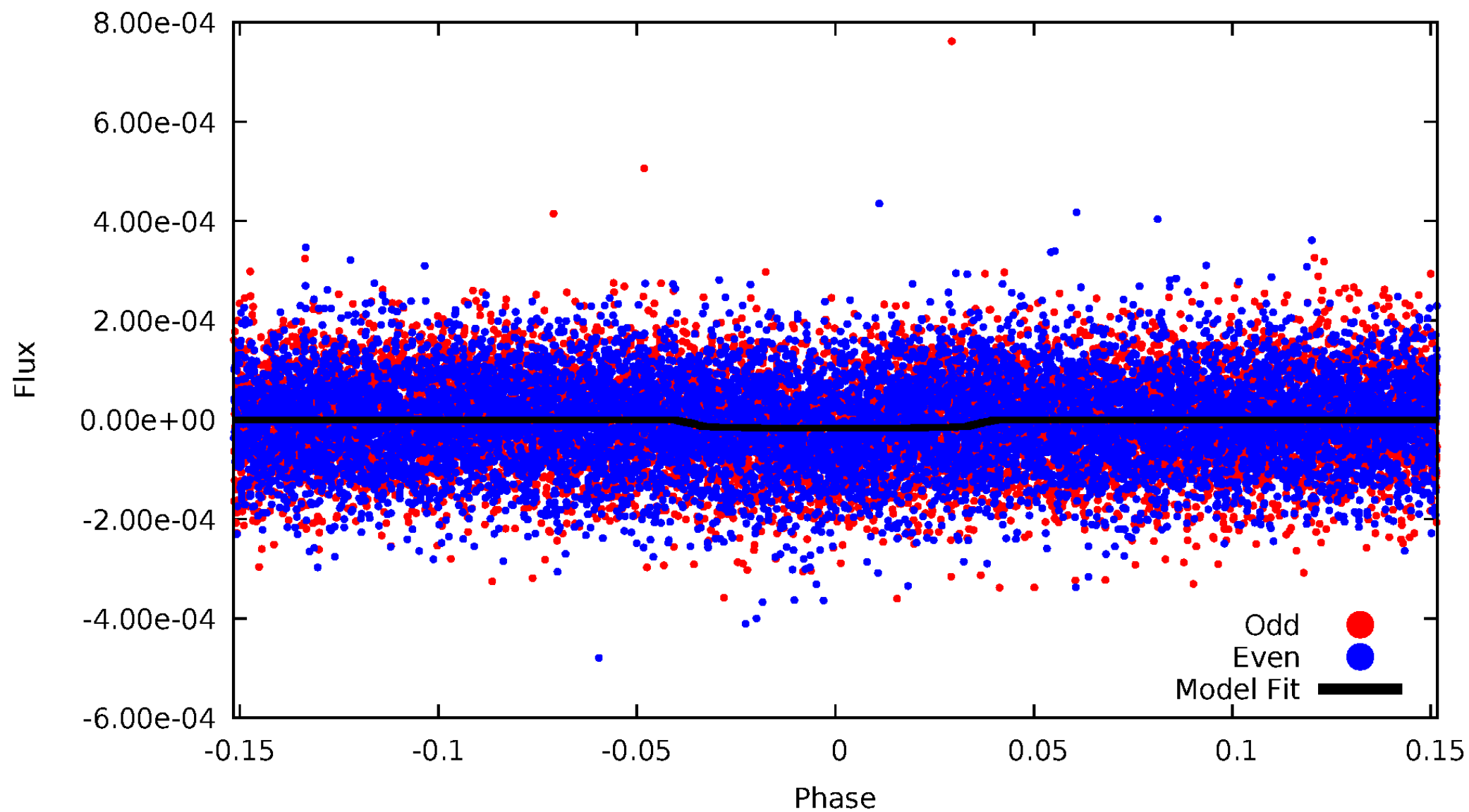


TCE 011400961-01



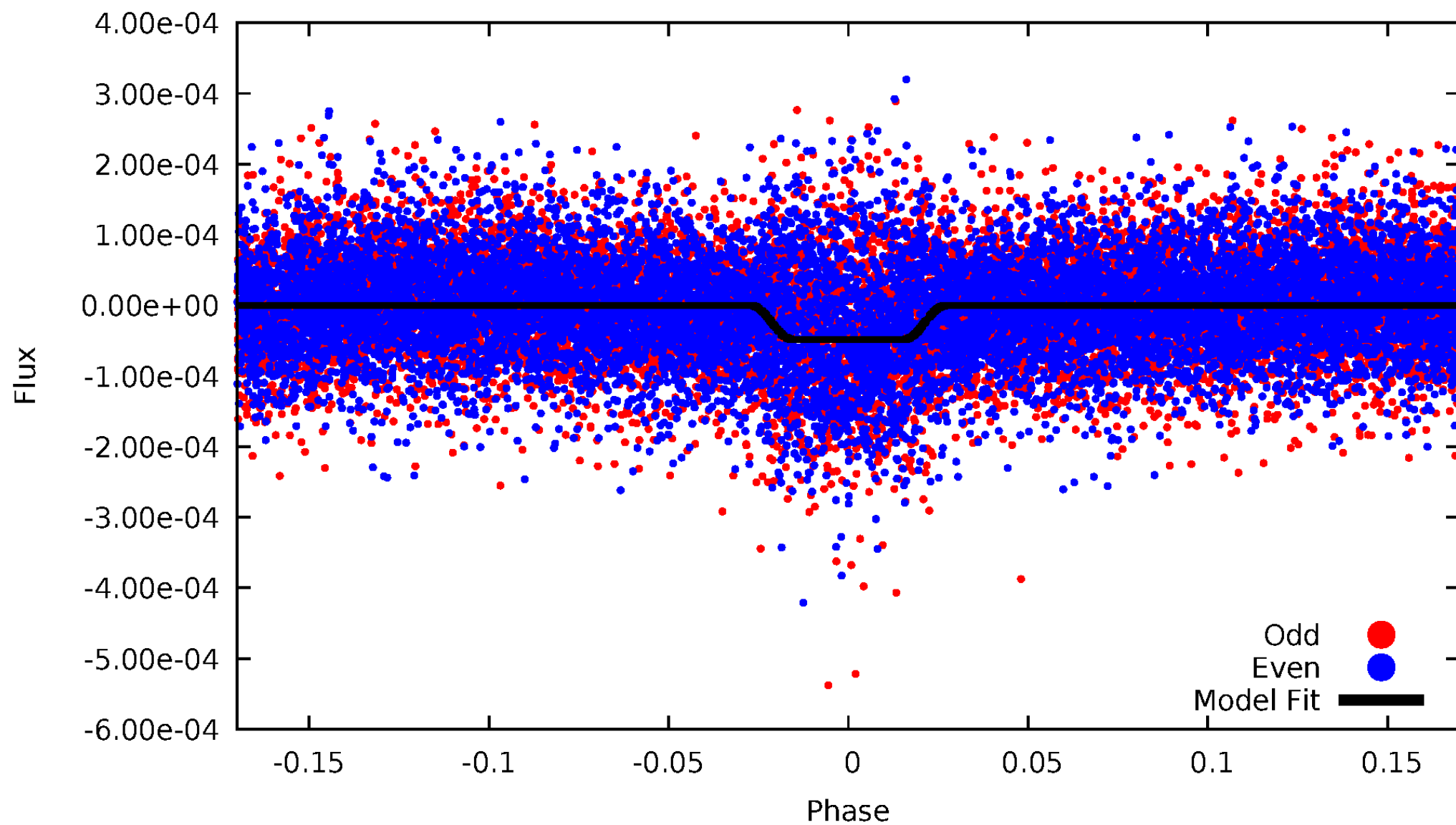
DV Odd/Even

TCE 011400961-01



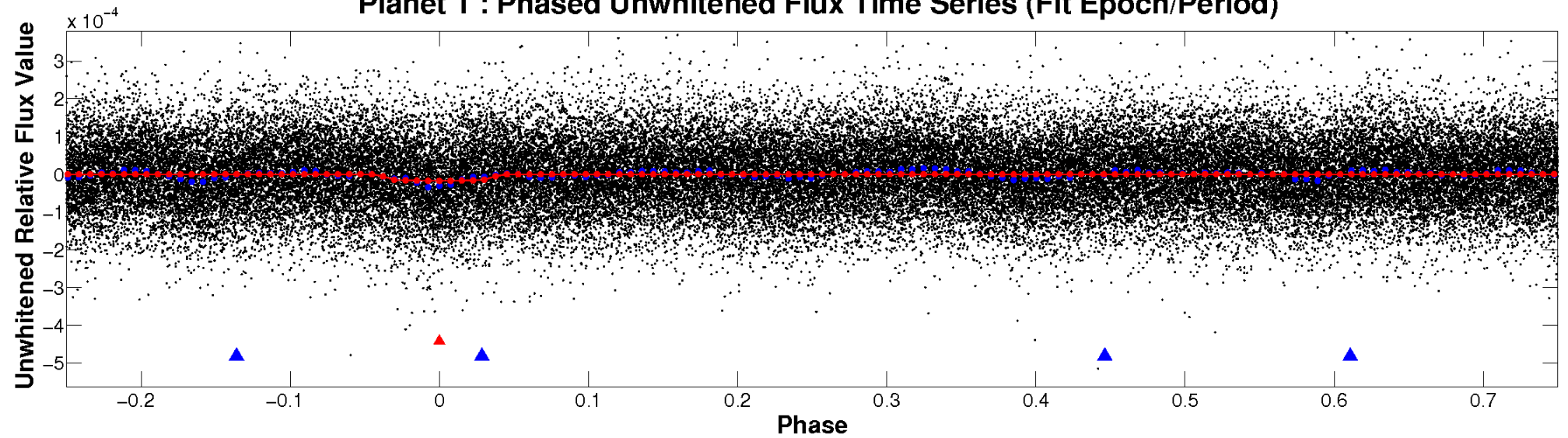
ALT Odd/Even

TCE 011400961-01

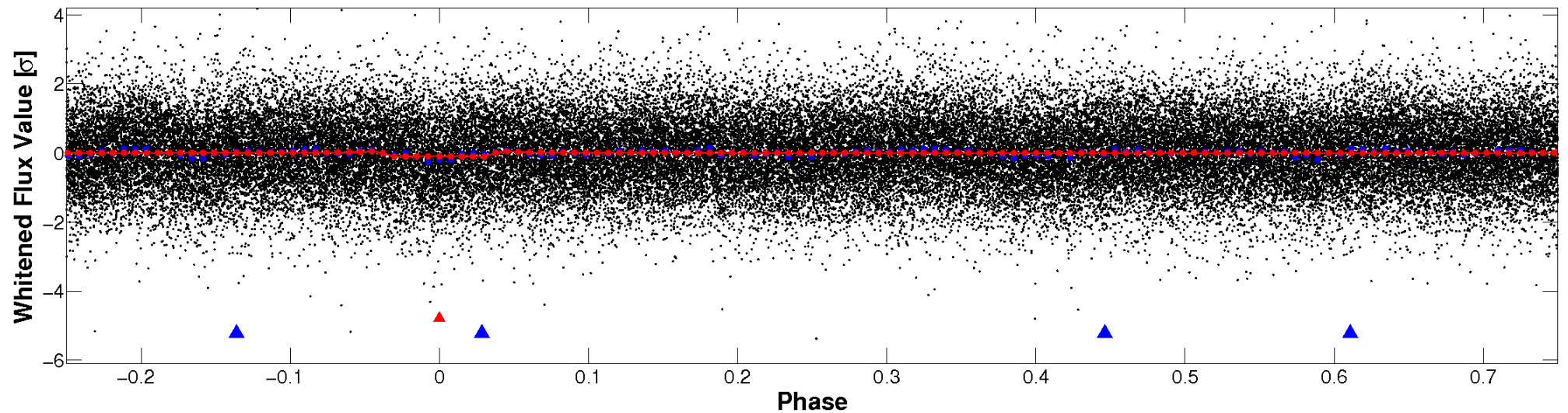


Non-Whitened Vs. Whitened Light Curve

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

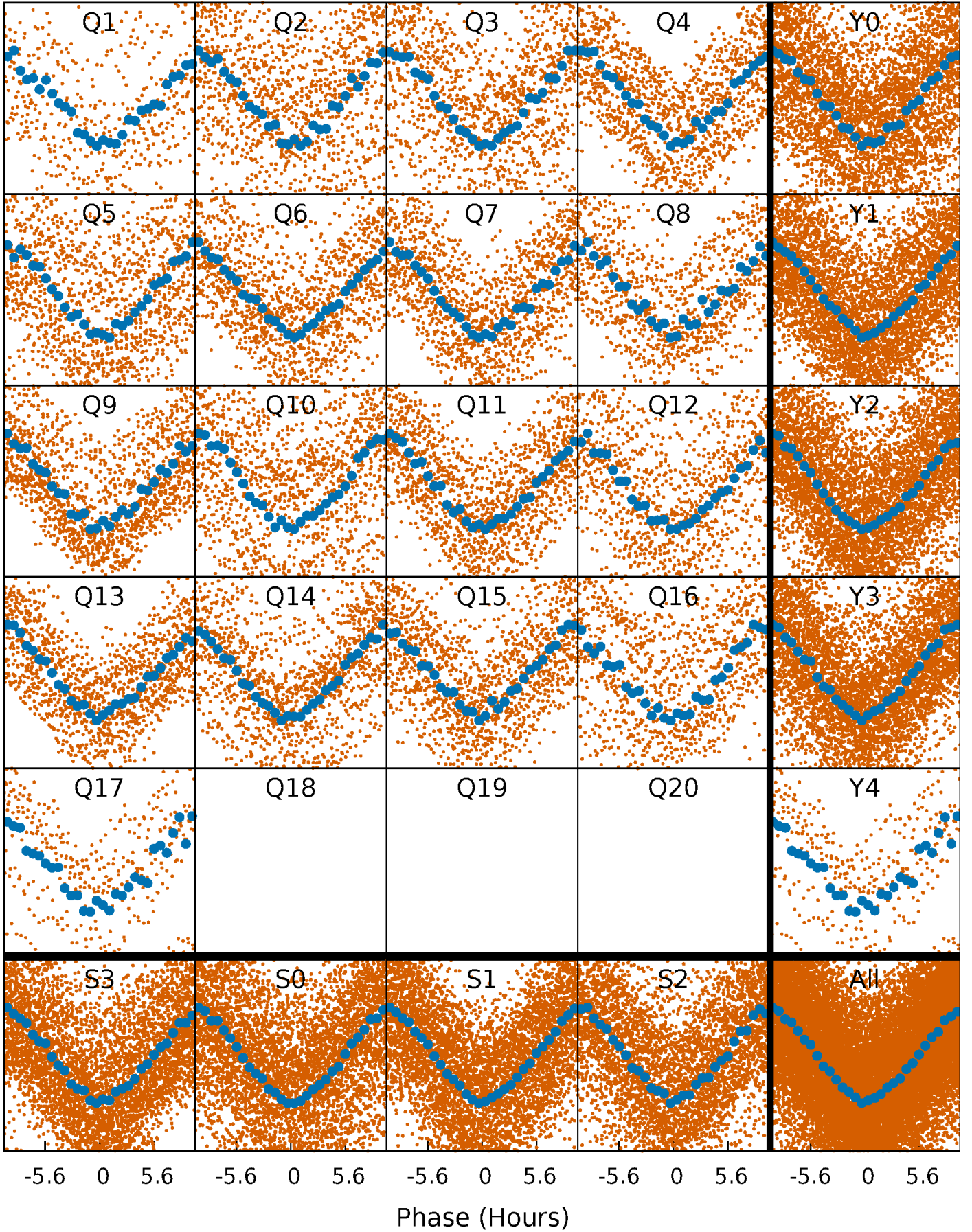


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



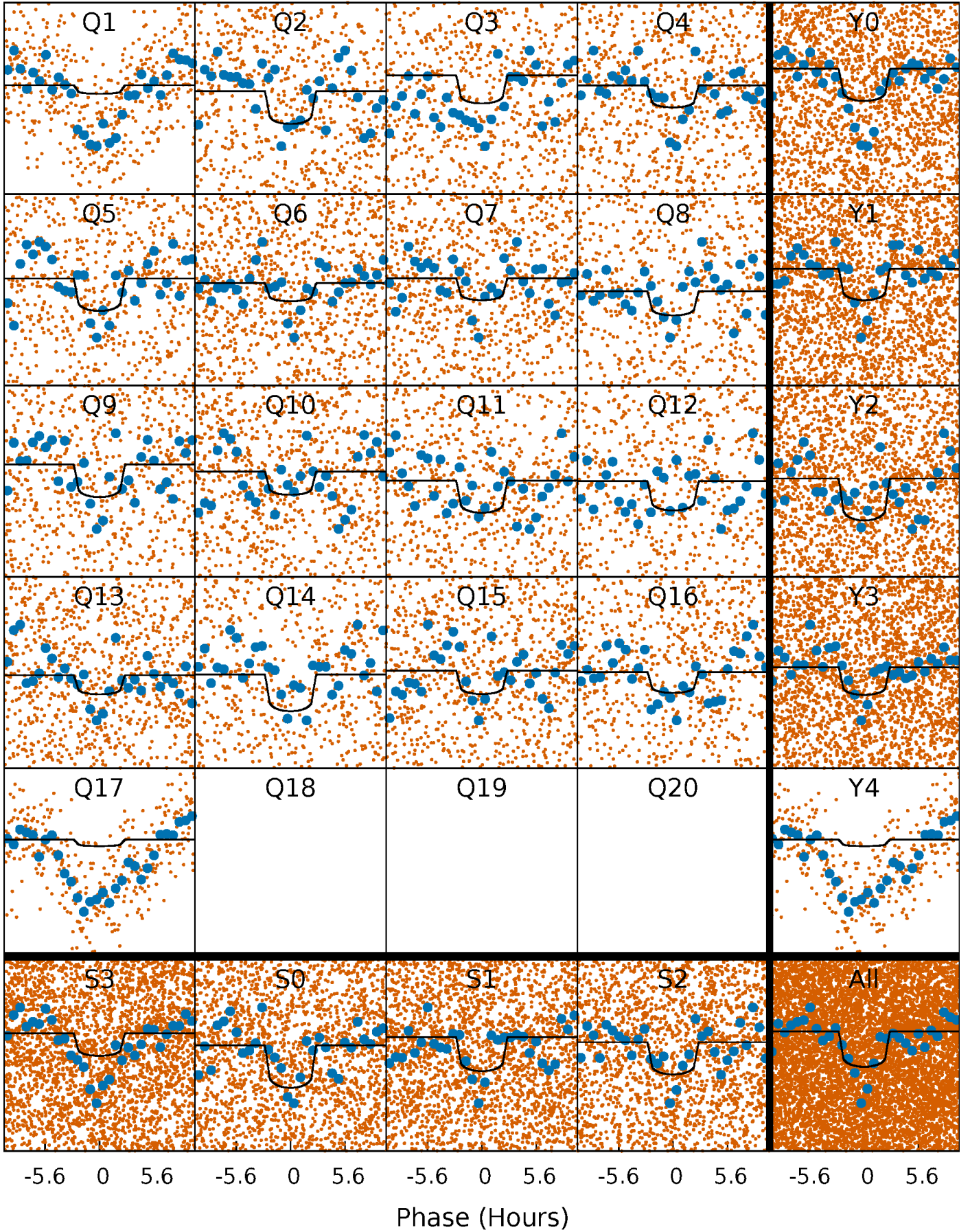
PDC Quarter-Phased Transit Curves

TCE 011400961-01 P= 2.706058 Days $T_0=132.792415$ (BKJD)



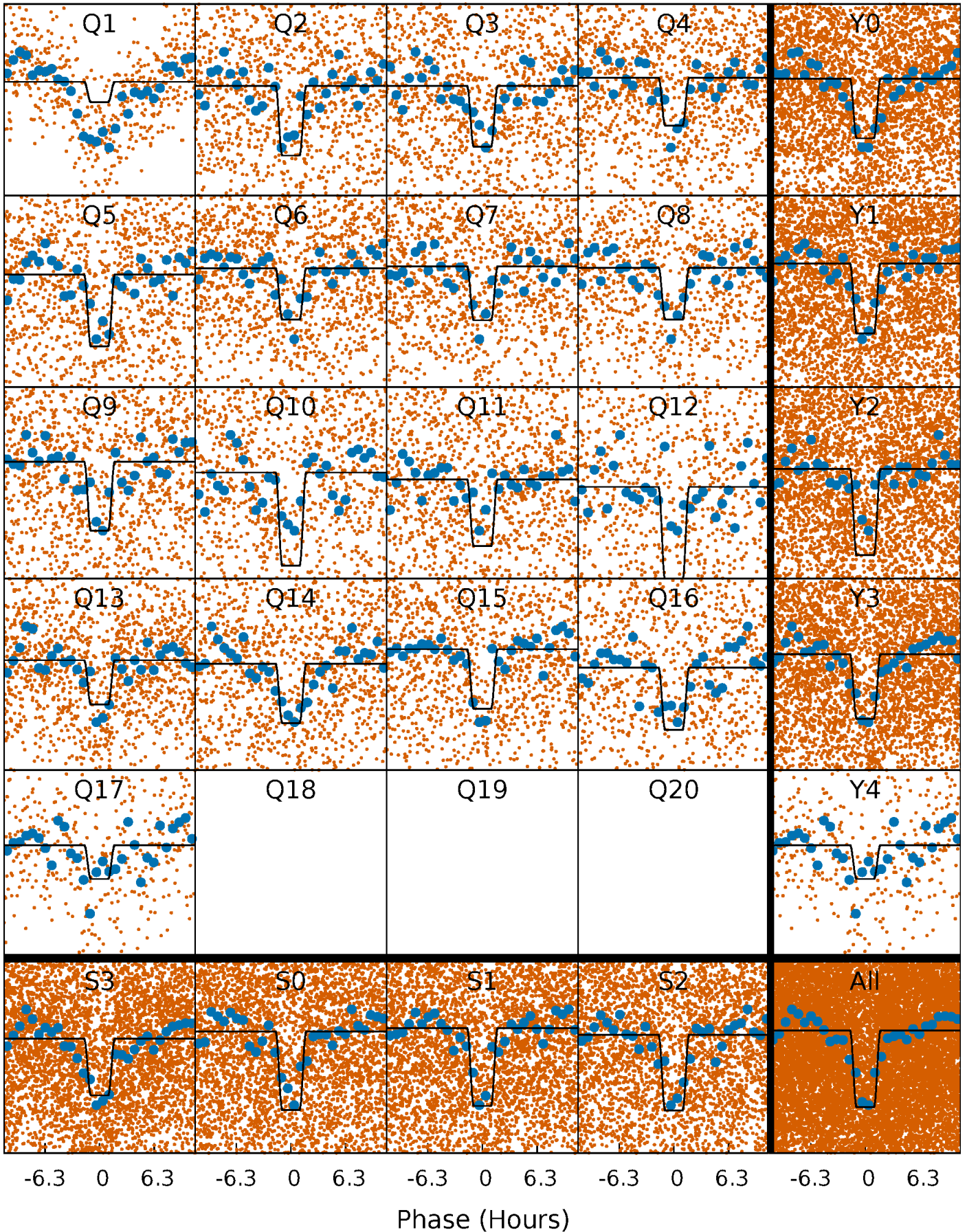
DV Quarter-Phased Transit Curves

TCE 011400961-01 P= 2.706058 Days $T_0=132.792415$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

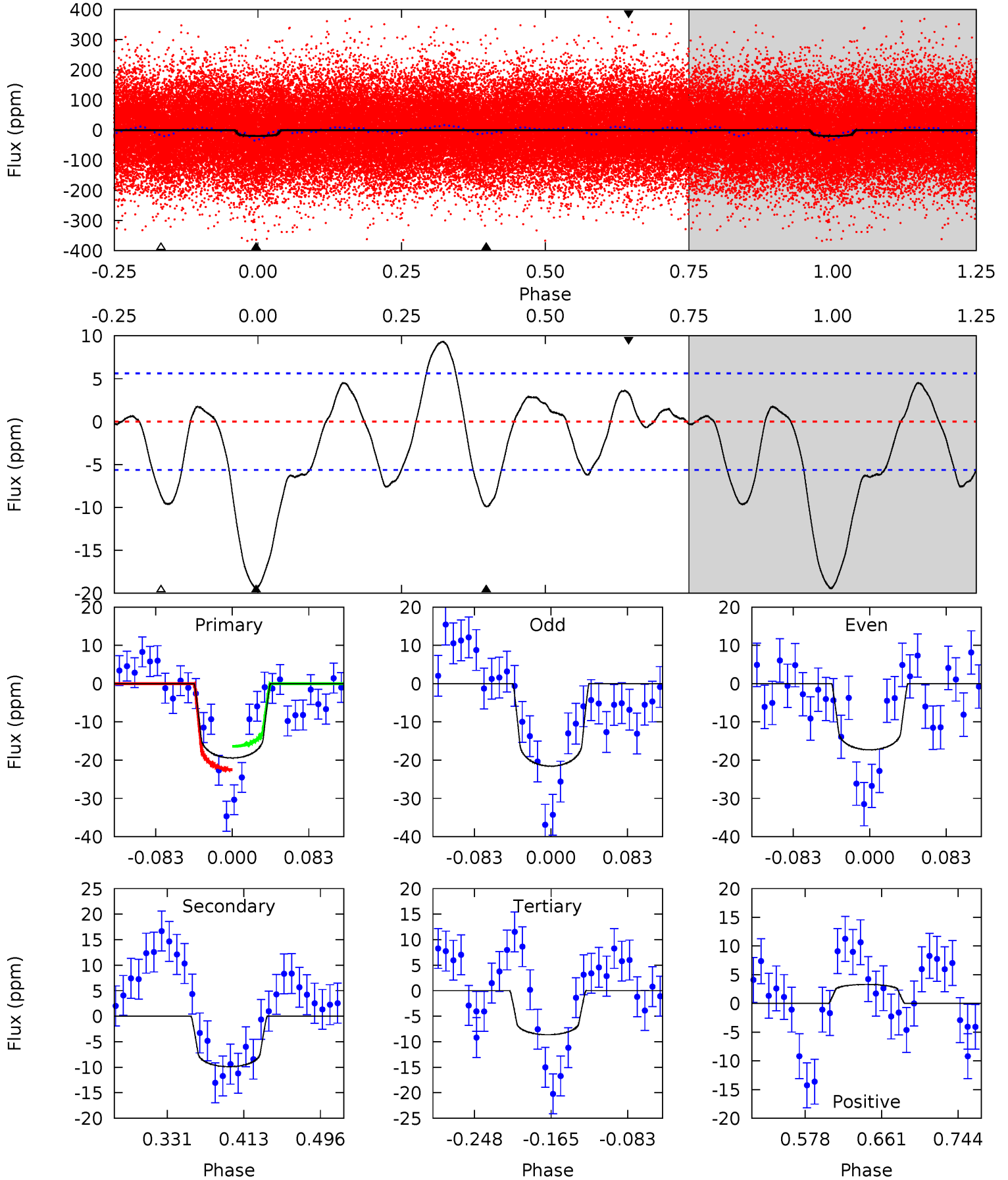
TCE 011400961-01 P= 2.706011 Days $T_0=132.798589$ (BKJD)



DV Model-Shift Uniqueness Test

011400961-01, P = 2.706058 Days, E = 130.086357 Days

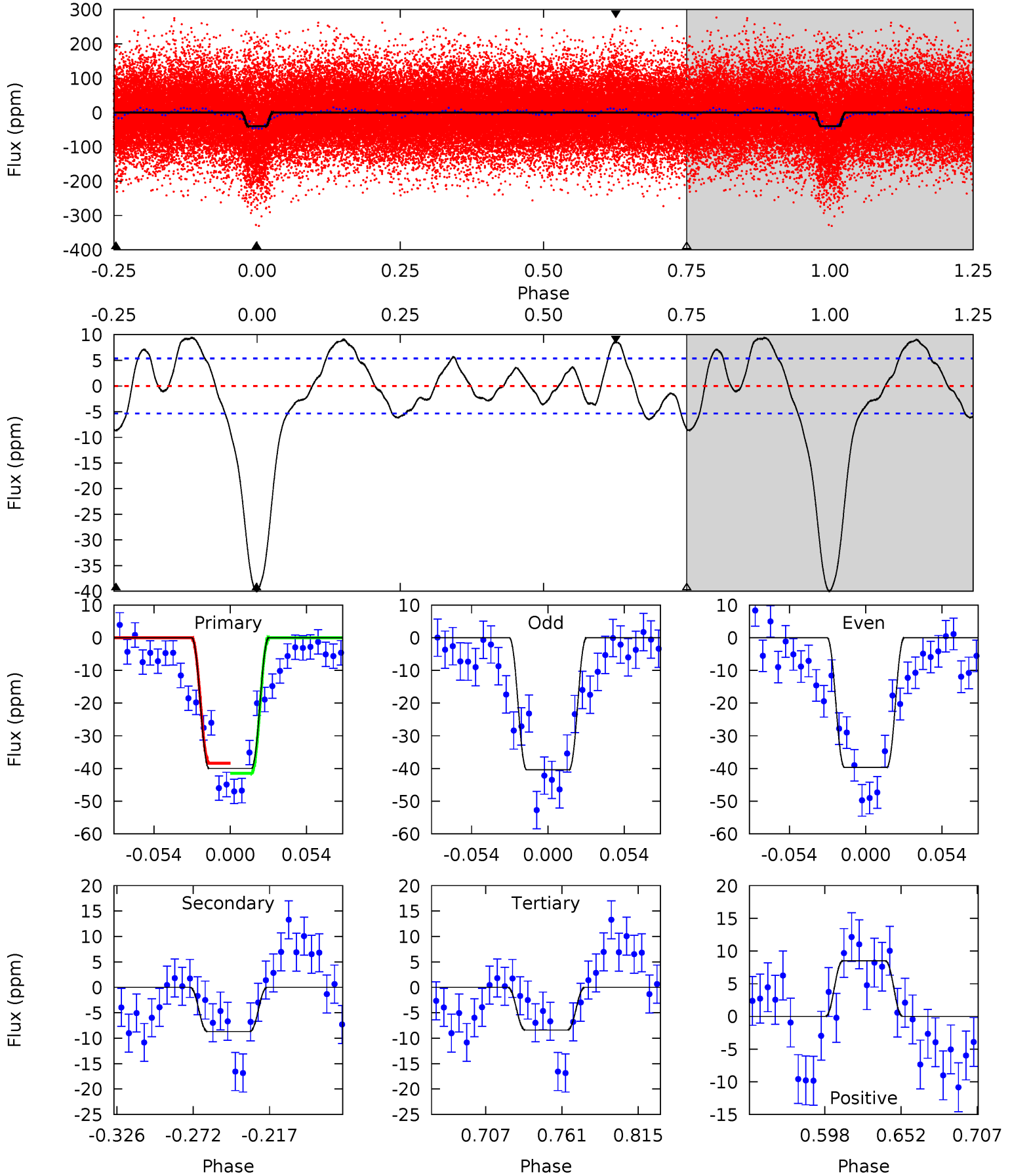
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	8.10	7.06	2.71	4.60	1.74	3.22	8.84	13.2	1.03	5.39	1.75	1.03	0.32	2.49



Alt Model-Shift Uniqueness Test

011400961-01, P = 2.706011 Days, E = 130.092578 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.0	7.61	7.35	7.46	4.69	1.92	3.78	27.7	27.6	0.25	0.15	0.33	0.96	0.19	1.34



Stellar Parameters For KIC 011400961

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7252^{+201}_{-277}	$4.107^{+0.149}_{-0.182}$	$-0.080^{+0.250}_{-0.350}$	$1.808^{+0.563}_{-0.375}$	$1.522^{+0.212}_{-0.259}$	$0.362^{+0.319}_{-0.179}$
	+3%/-4%	+4%/-4%	+312%/-438%	+31%/-21%	+14%/-17%	+88%/-49%
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 011400961-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 1	$0.88^{+0.21}_{-0.19}$	2871^{+219}_{-184}	5973^{+663}_{-545}	13^{+8}_{-4}
Alt.	-9 ± 1	$1.39^{+0.29}_{-0.26}$	2884^{+224}_{-194}	4709^{+333}_{-305}	$4.593^{+2.260}_{-1.399}$

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

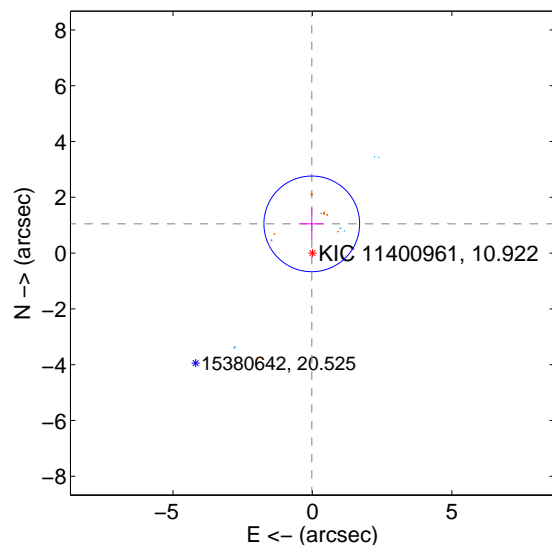
Supplemental centroid analysis for 011400961-01. **Kepler magnitude: 10.92**. Transit SNR 6.81

There are 7 quarters with good PRF difference image offsets

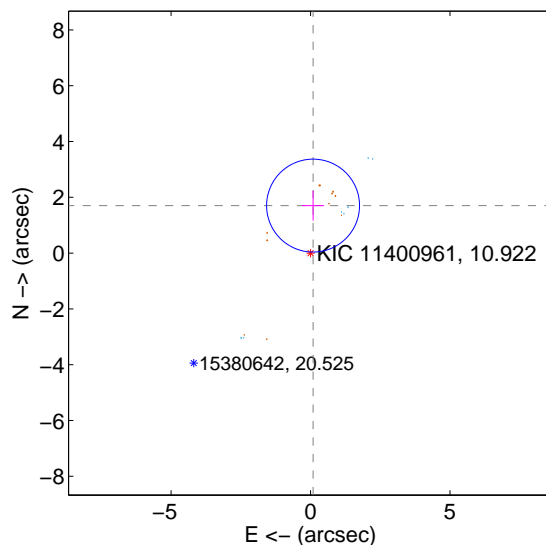
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.048 ± 0.572	1.83	0.024 ± 0.417	1.048 ± 0.580
PRF-fit source offset from KIC position	1.705 ± 0.555	3.07	-0.091 ± 0.394	1.702 ± 0.537
photometric centroid source offset	4.83 ± 0.80	6.03	0.84 ± 0.66	-4.75 ± 0.80

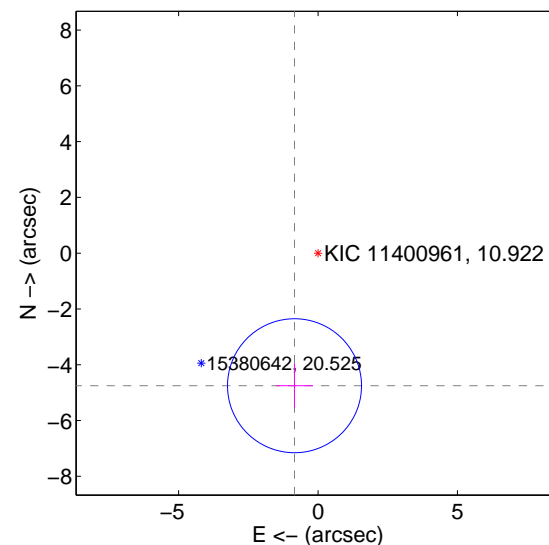
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

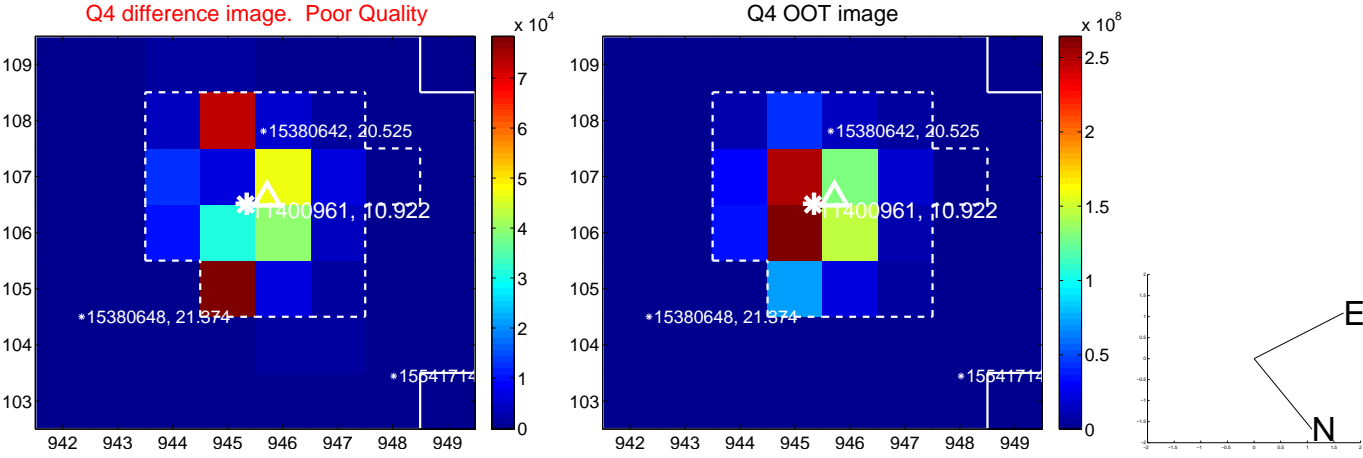
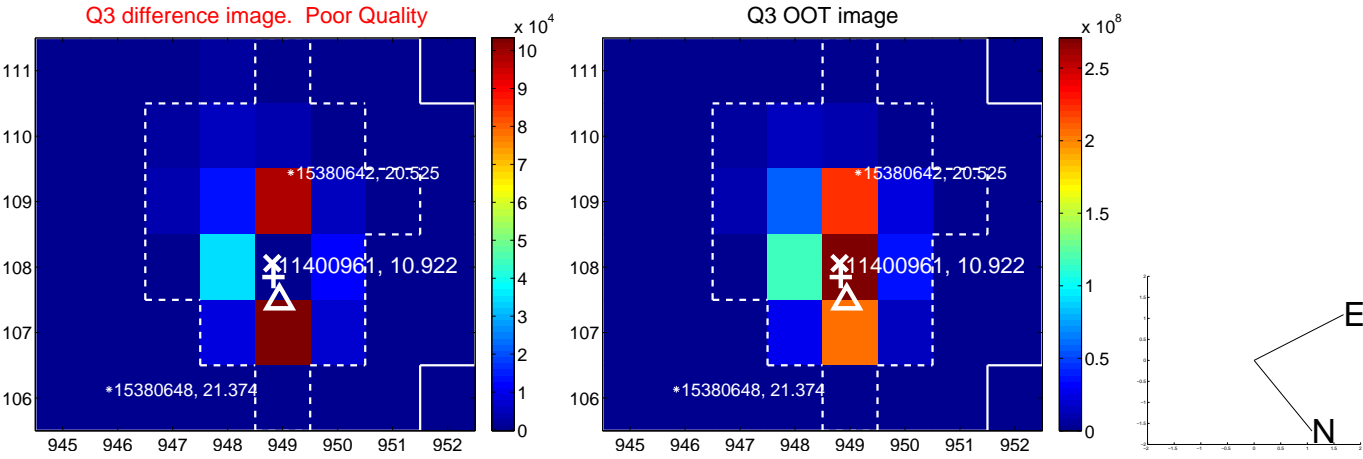
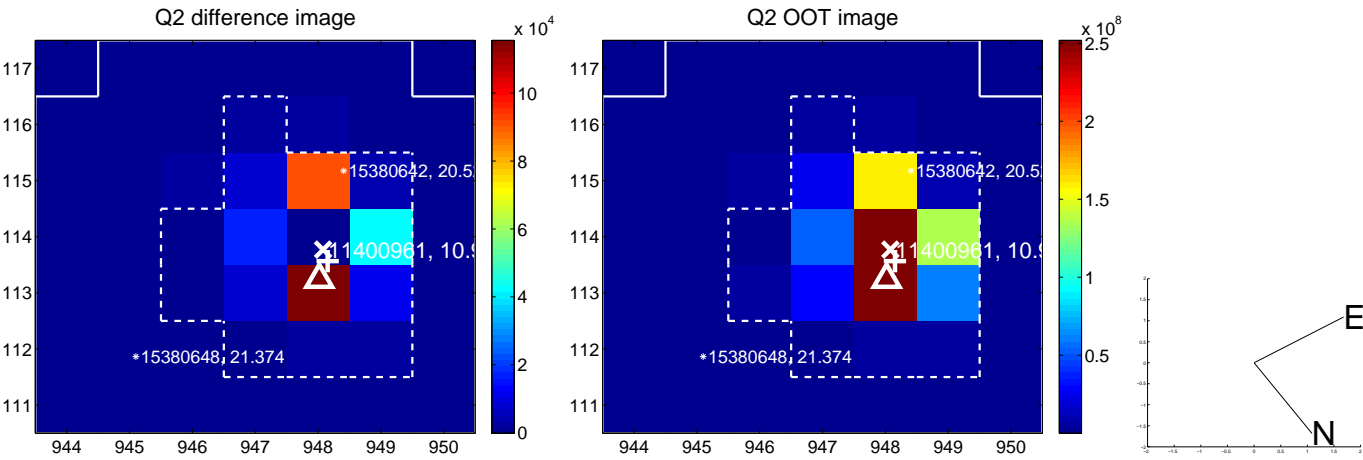
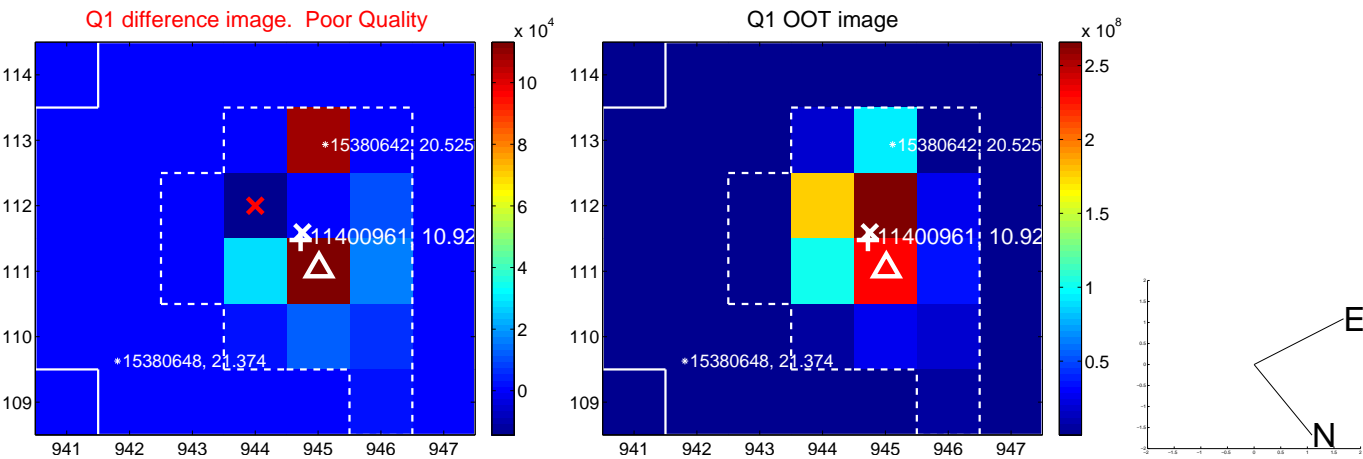


offset from photometric centroids

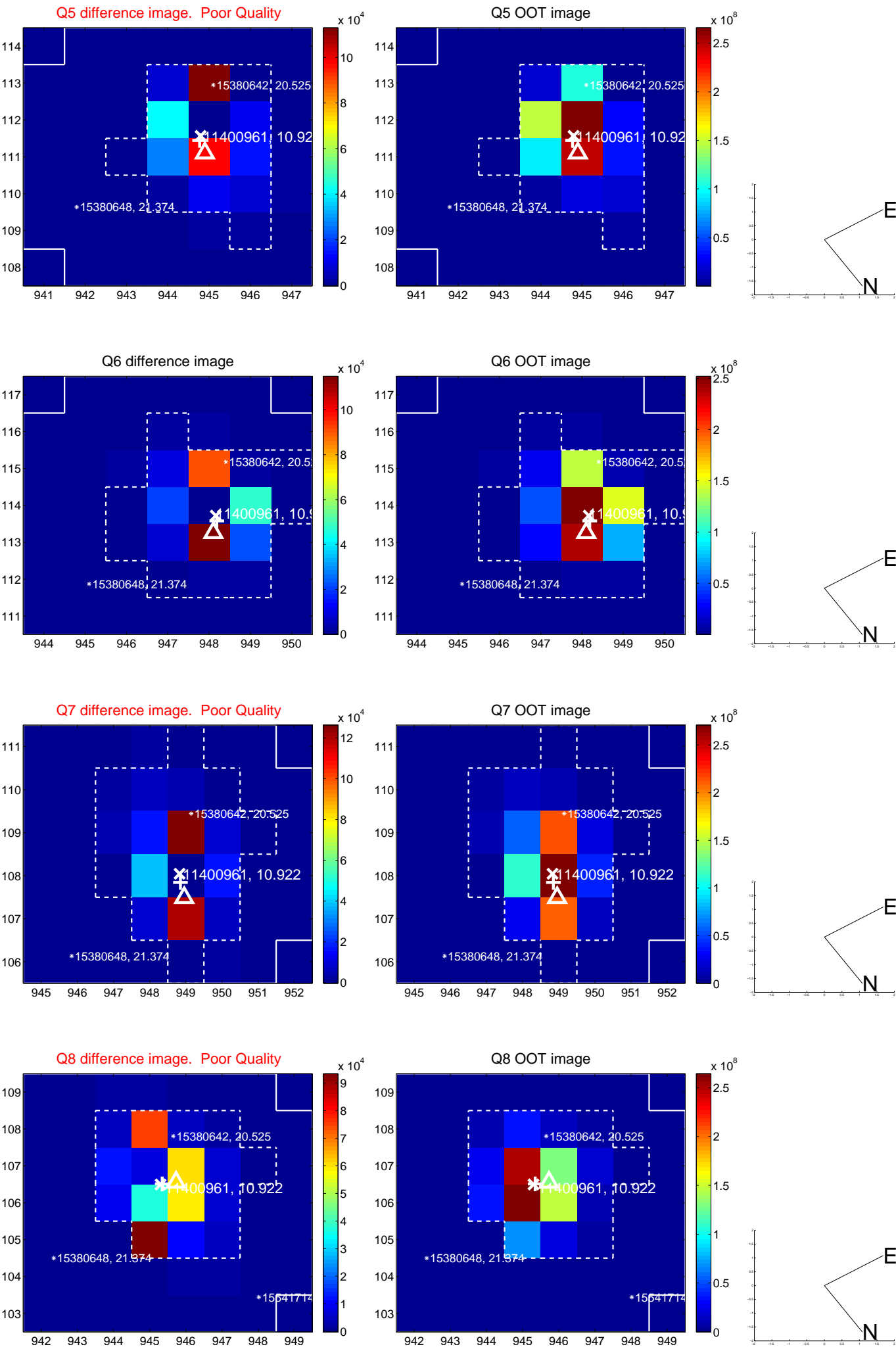


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

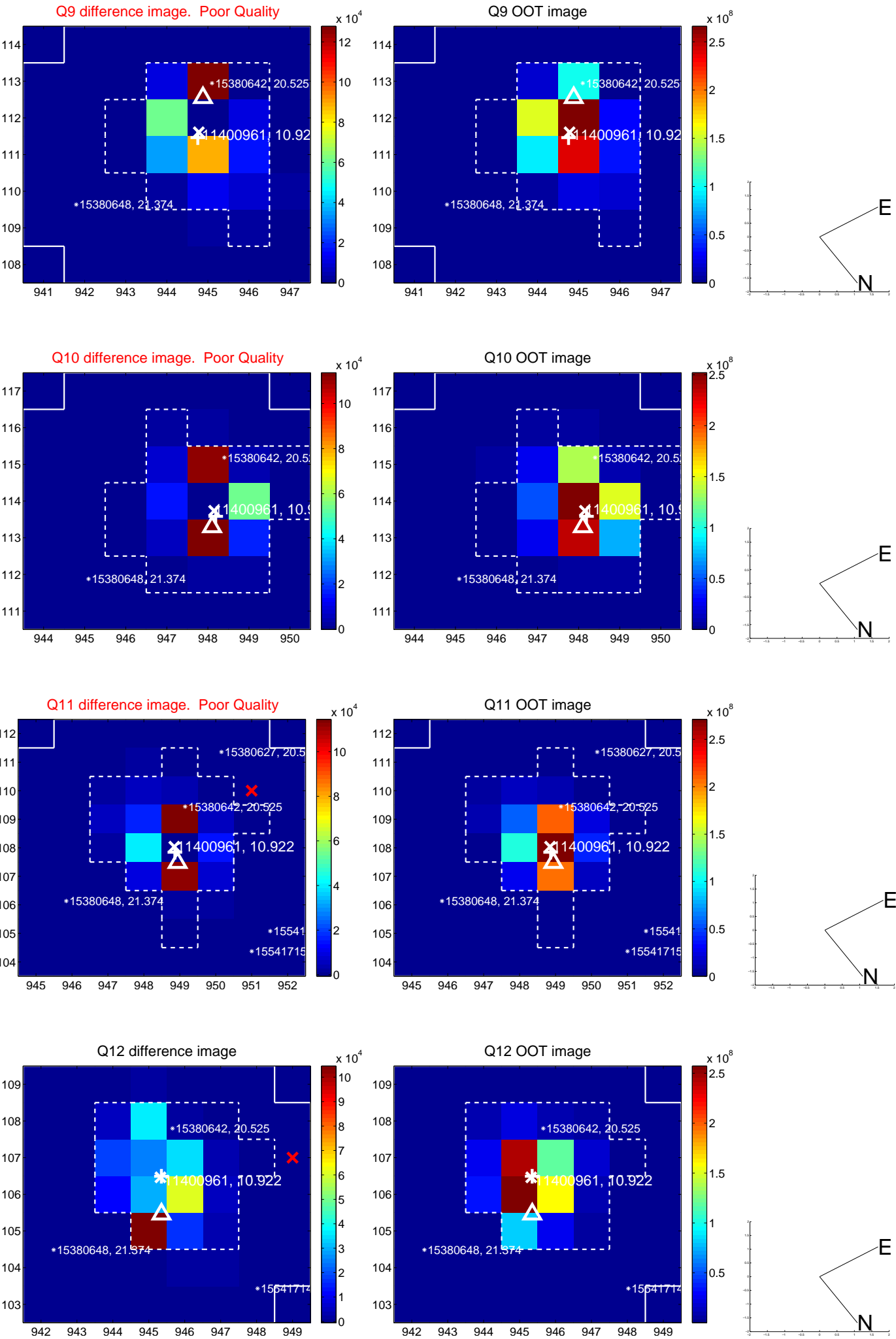
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



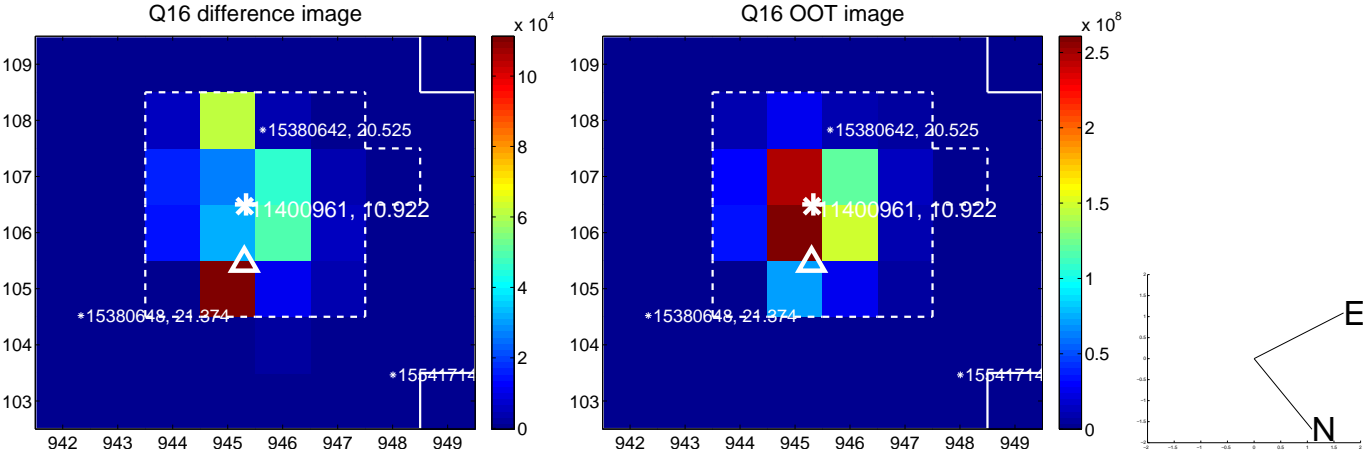
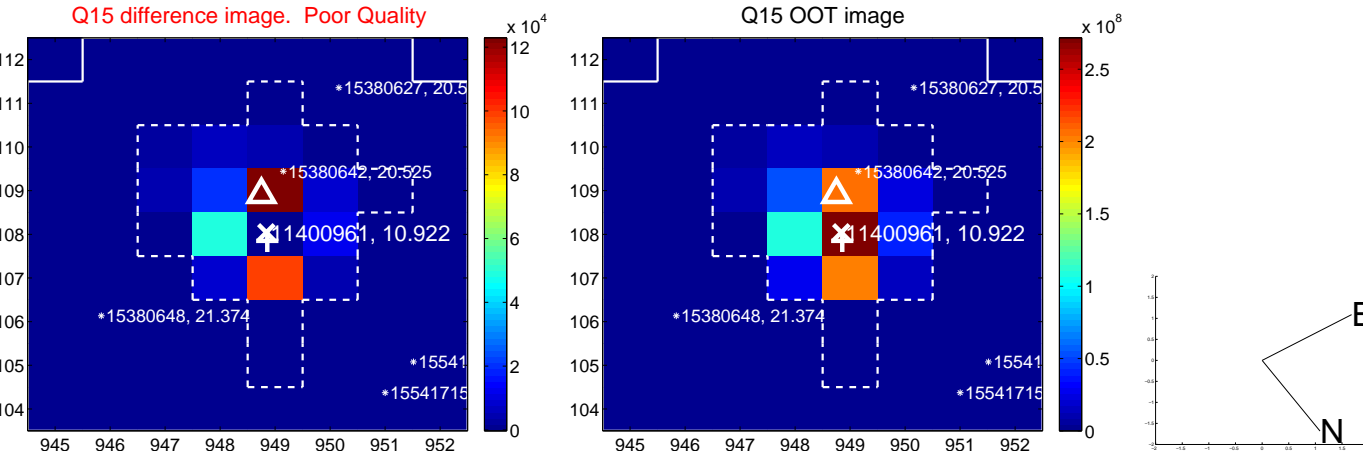
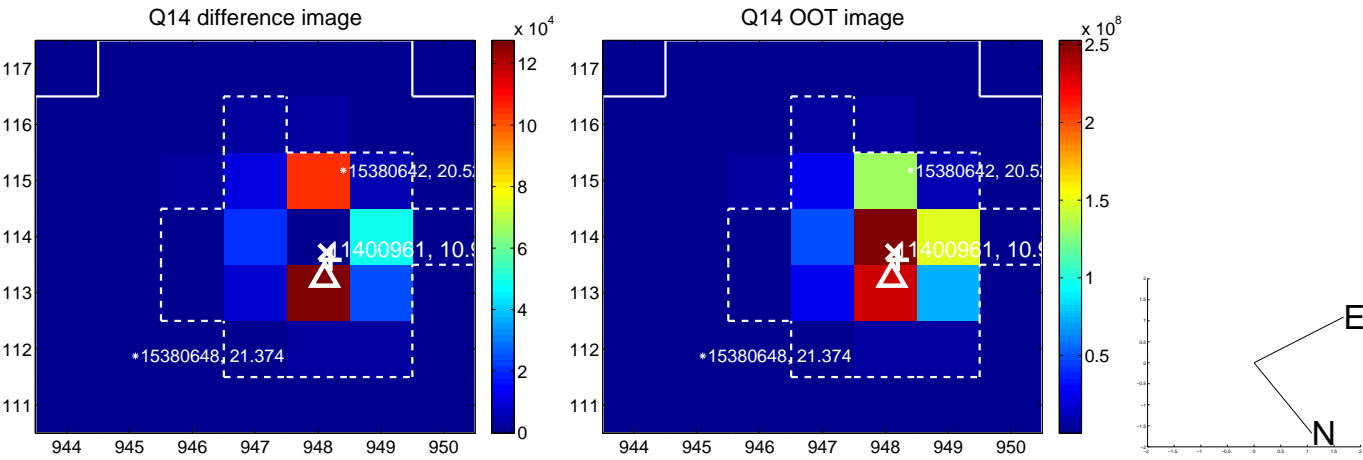
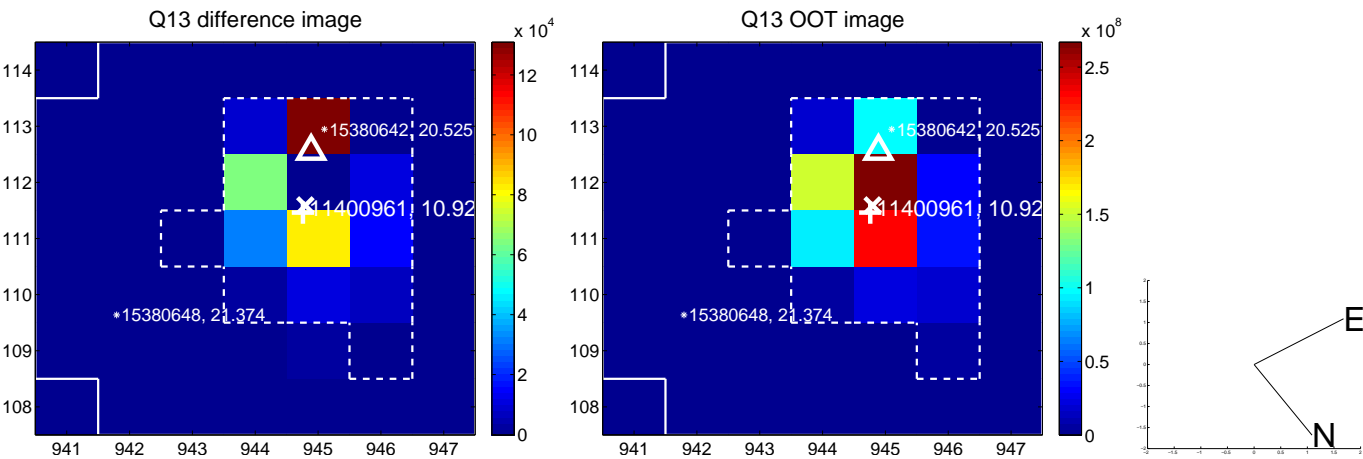
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



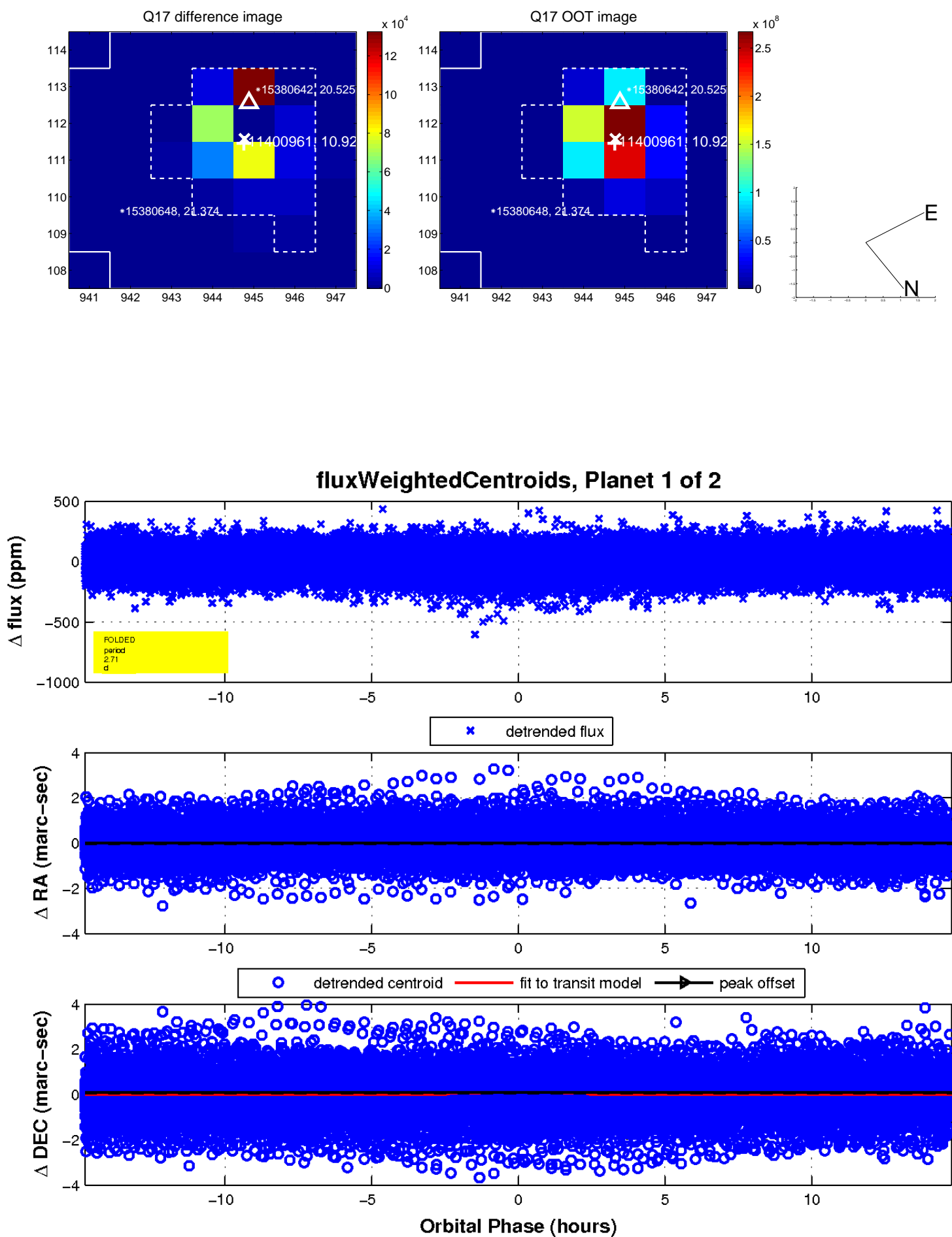
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

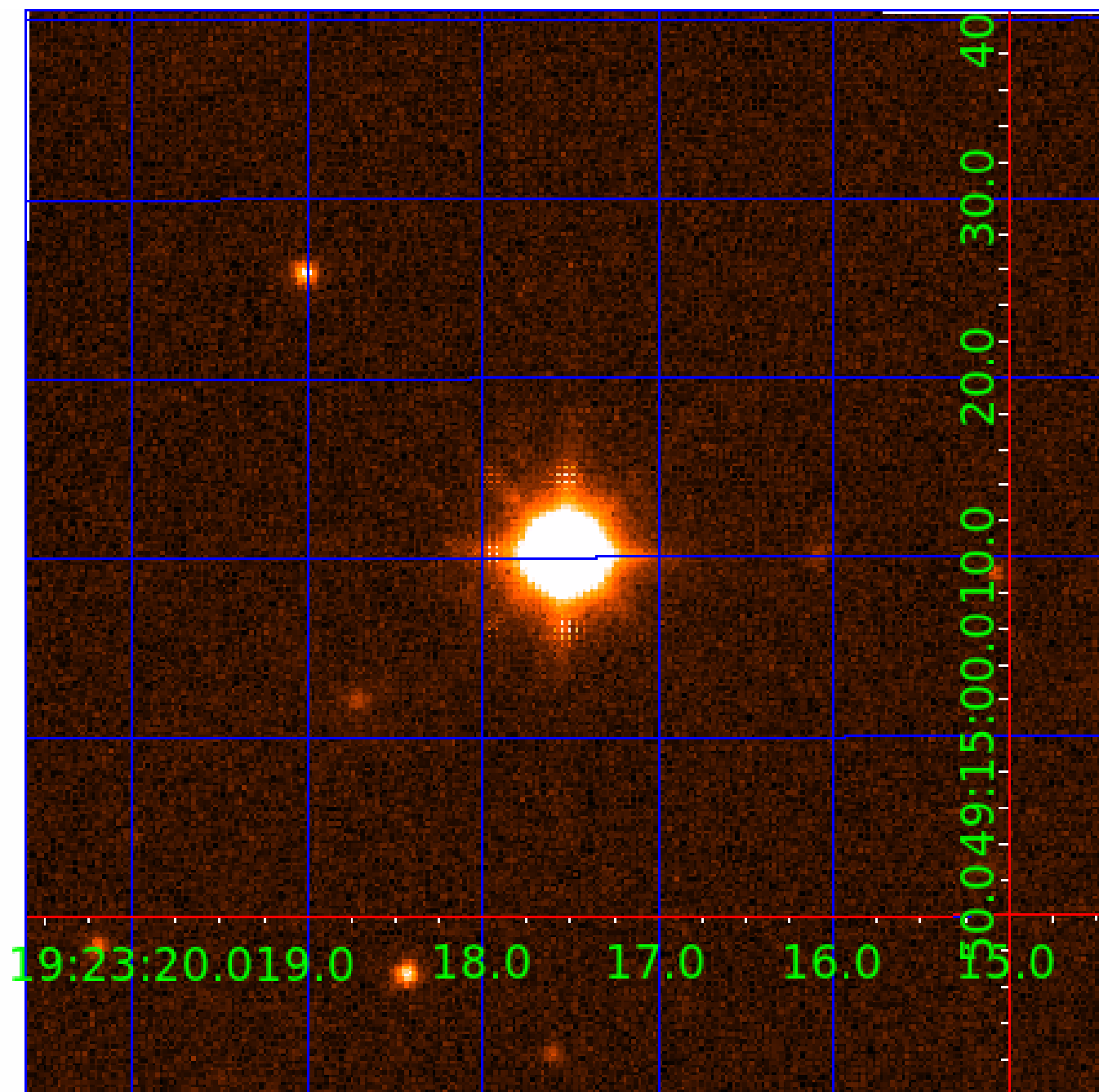


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011400961

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})
011400961-01	OBS	No	2.706058	132.792415	17.4	4.922	8.2	6.8	1.81	7252	0.87	4230.66
011400961-02	OBS	No	429.132773	154.072813	14.8	7.666	17.2	0.5	1.81	7252	0.81	4.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011400961-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
011400961-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_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_SATURATED

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

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

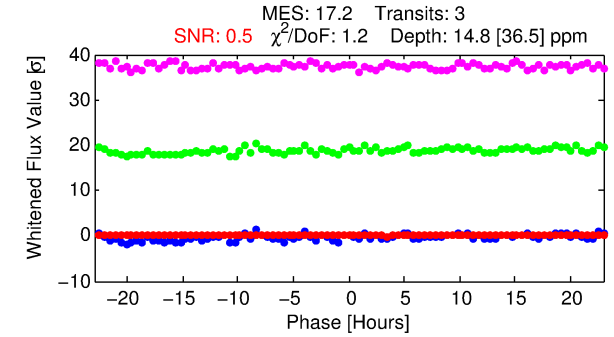
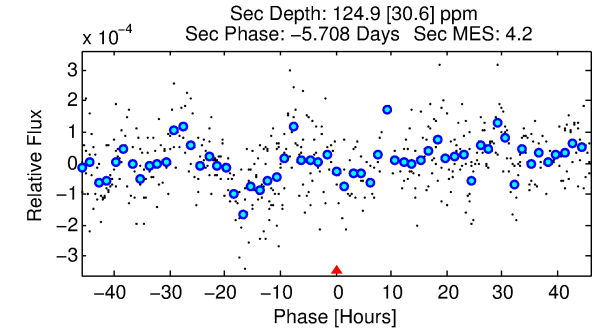
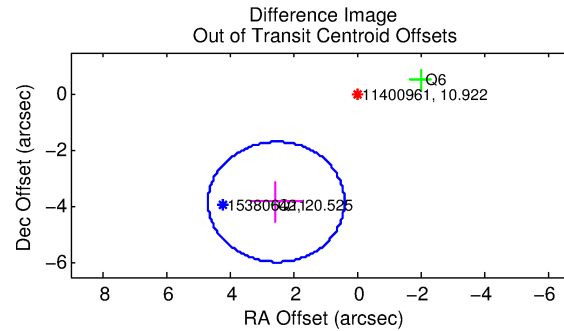
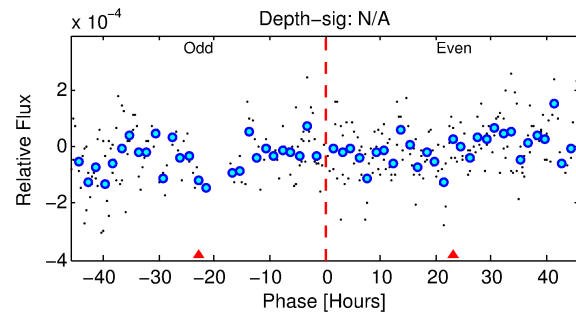
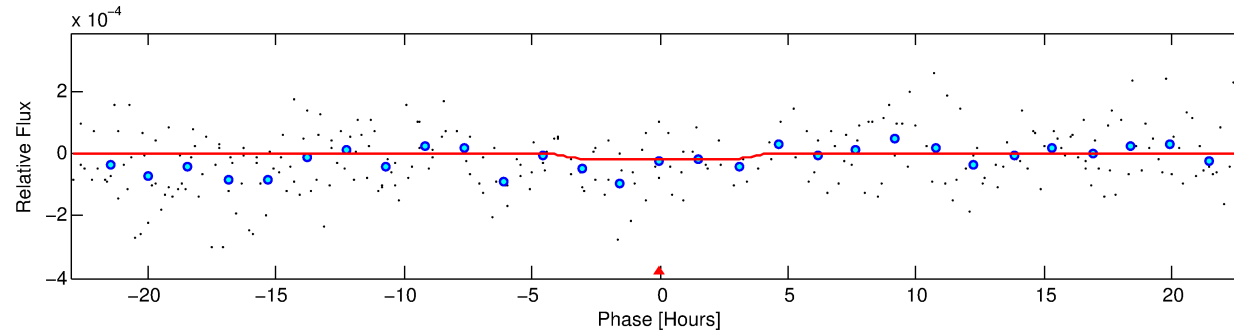
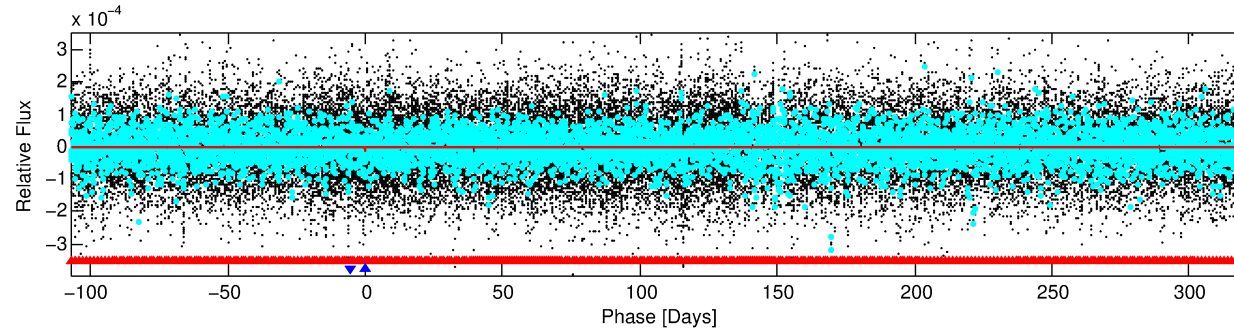
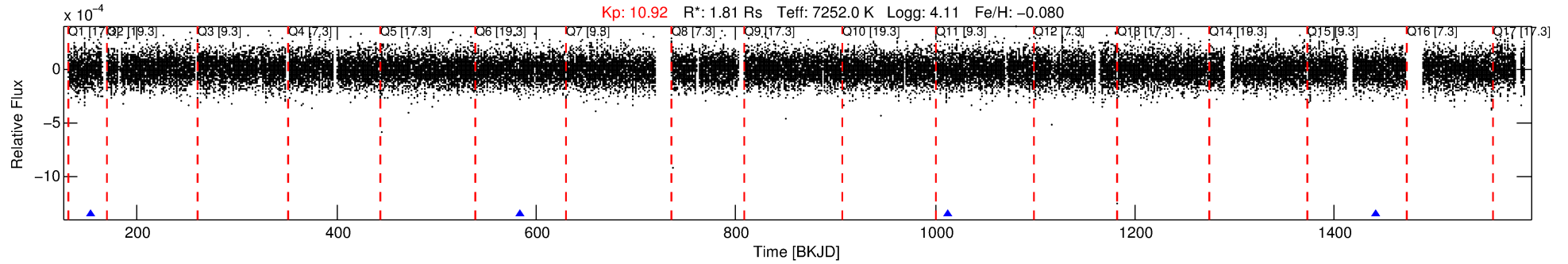
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011400961-02

No Significant Match Found

DV One-Page Summary

KIC: 11400961 Candidate: 2 of 2 Period: 429.133 d



DV Fit Results:

Period = 429.13277 [0.08404] d
Epoch = 154.0728 [0.1524] BKJD
Rp/R* = 0.0041 [0.0094]
a/R* = 191.09 [2202.85]
b = 0.90 [2.49]
Seff = 4.93 [1.87]
Teq = 380 [36] K
Rp = 0.81 [1.87] Re
a = 1.2820 [0.3208] AU
Ag = 173842.03 [801565.99] [0.22σ]
Teffp = 11995 [13795] K [0.84σ]

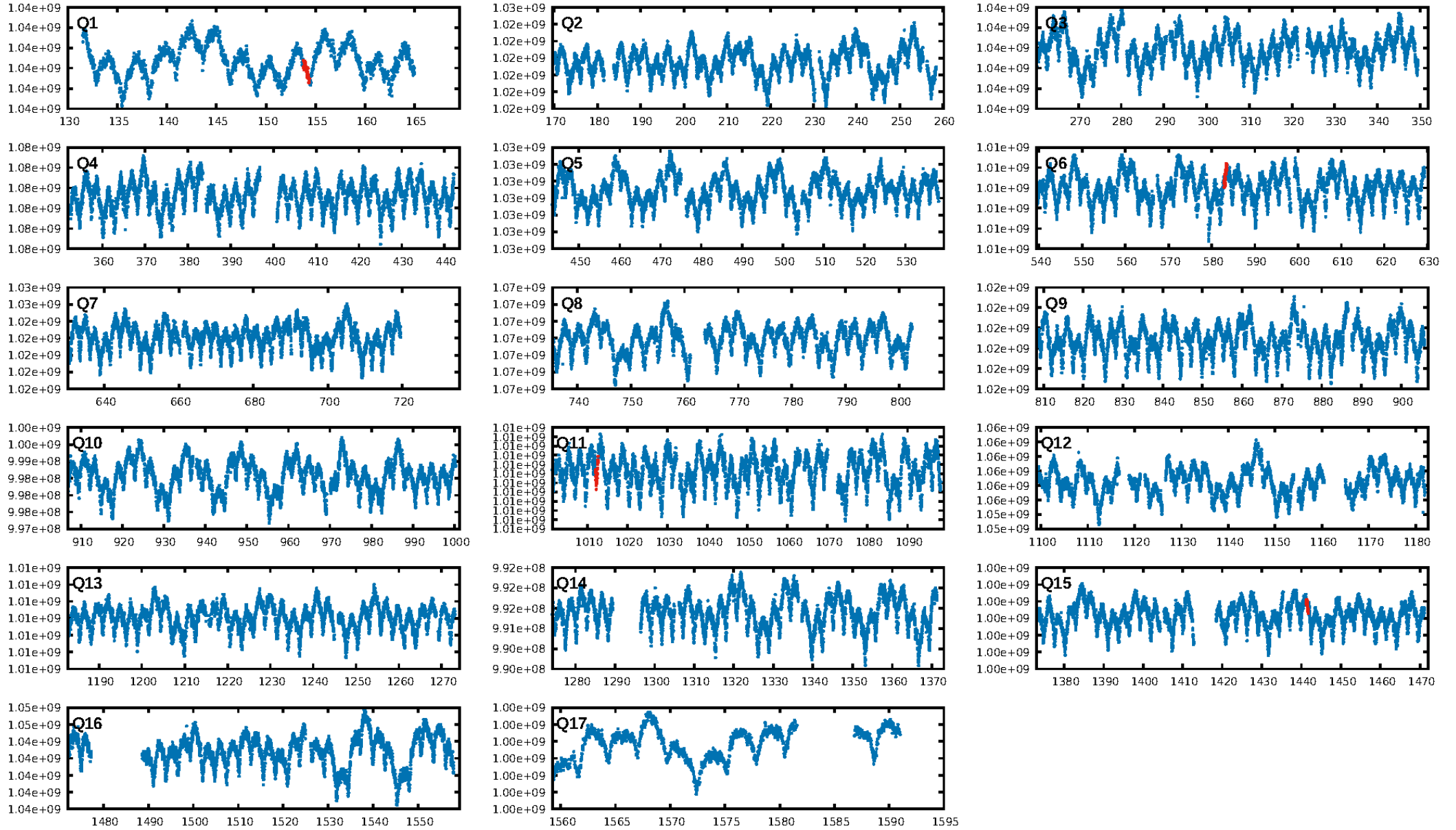
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1123.38σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.45e-29
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 2.305
Centroid-sig: 57.4%
Centroid-so: 5.978 arcsec [0.78σ]
OotOffset-rm: 4.592 arcsec [6.44σ]
KicOffset-rm: 3.841 arcsec [2.20σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
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DiffImageOverlap-fno: 0.50 [2/4]

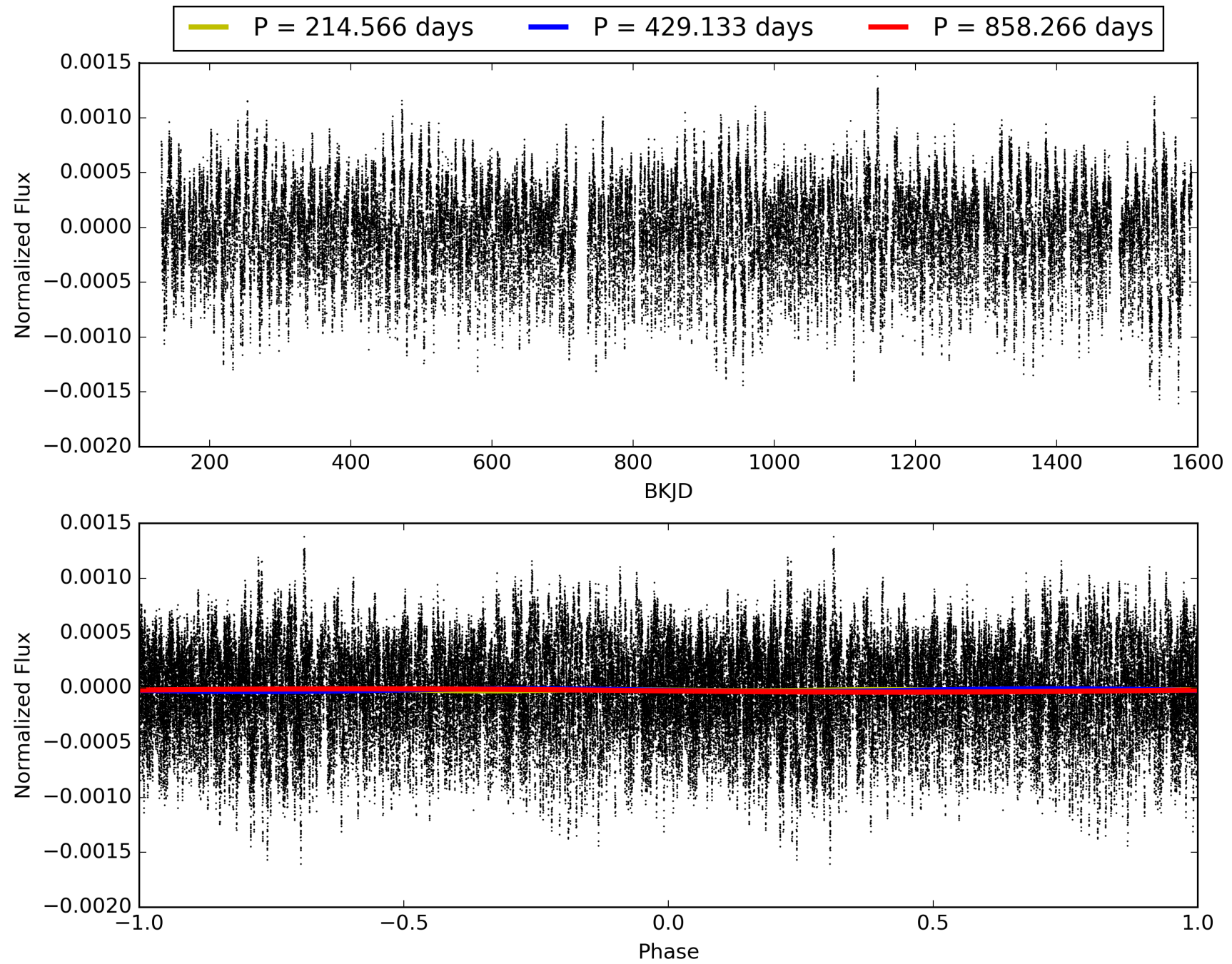
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:01:44 Z

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

TCE 011400961-02, PDC Light Curves

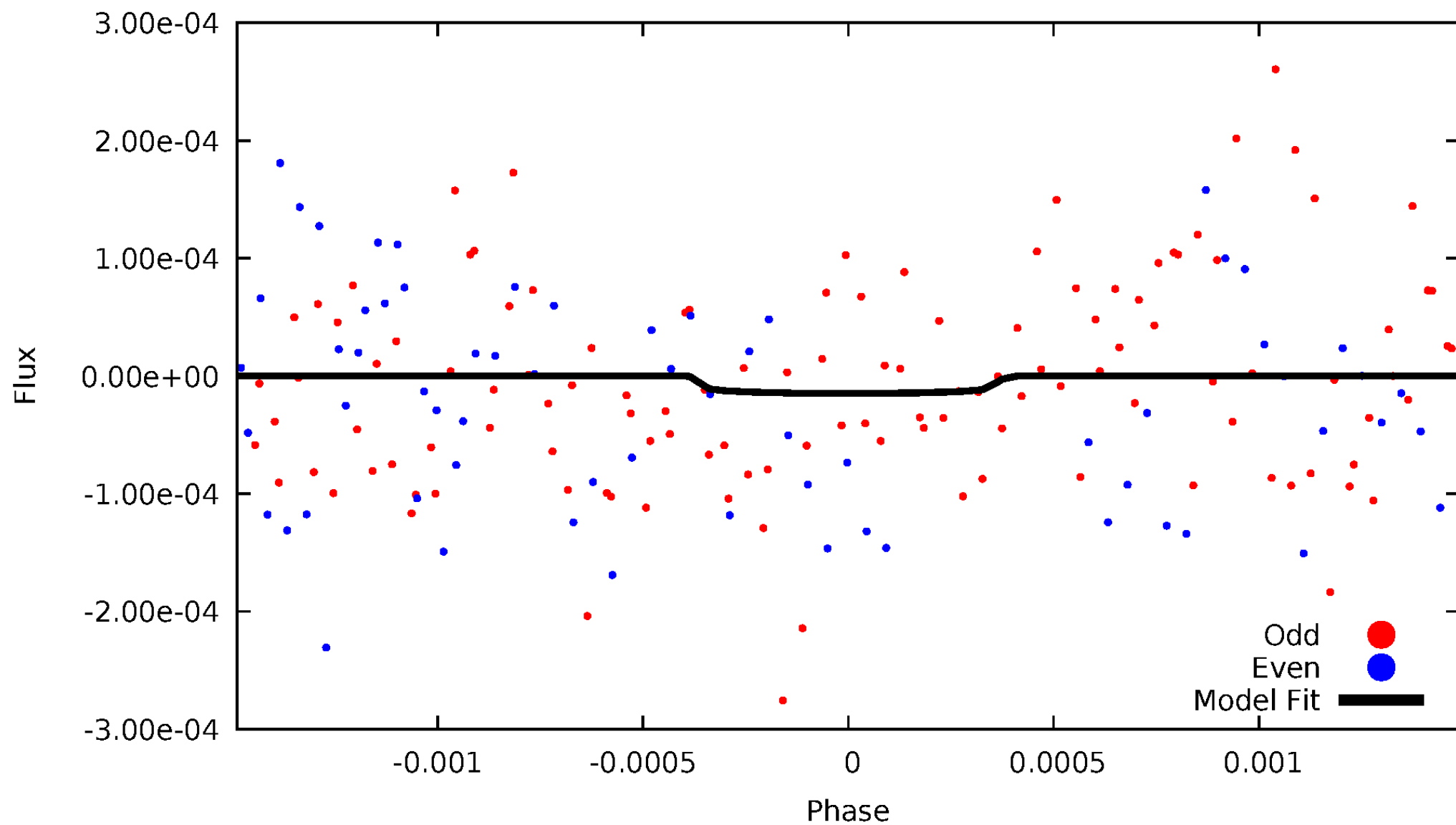


TCE 011400961-02



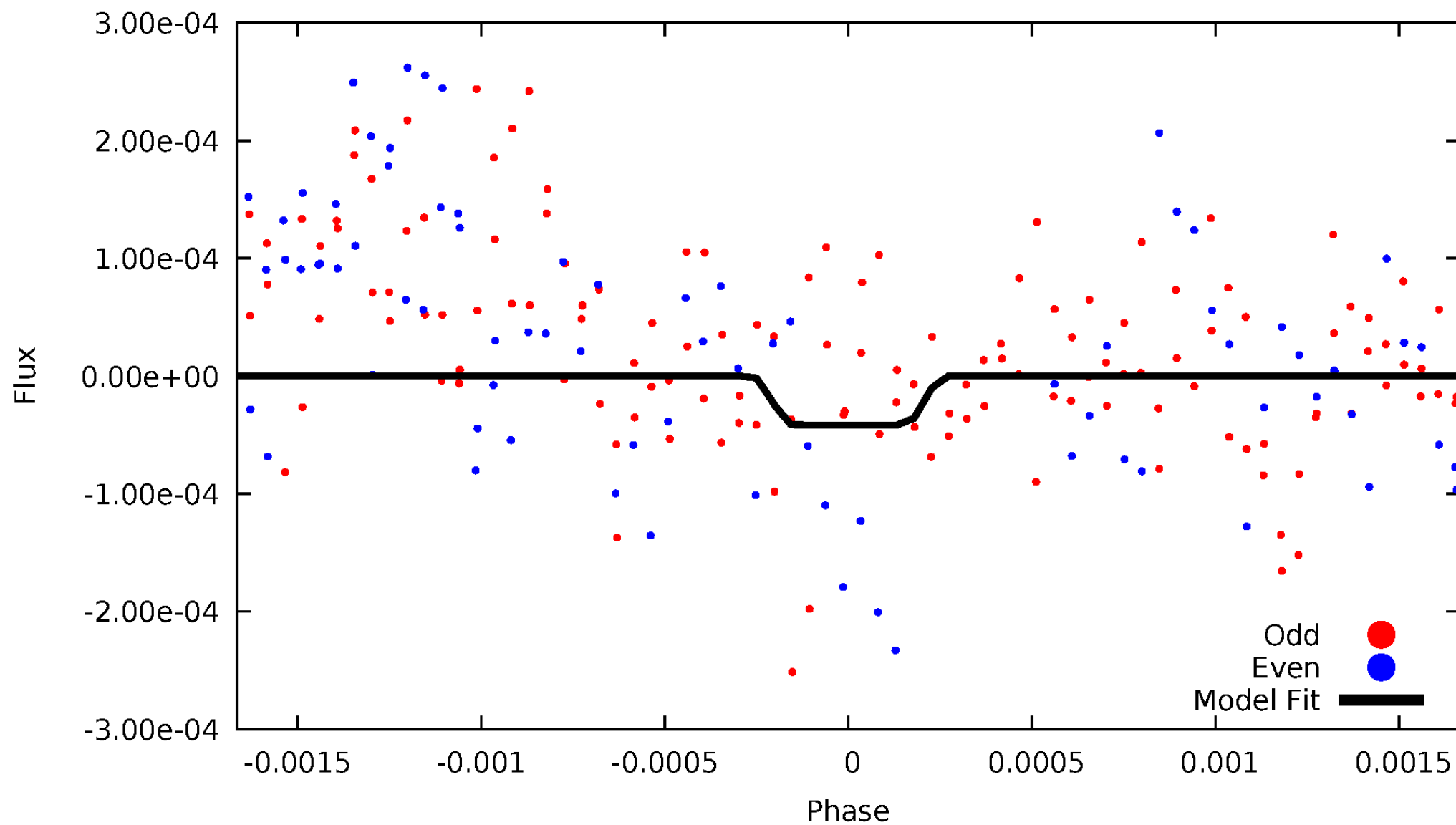
DV Odd/Even

TCE 011400961-02



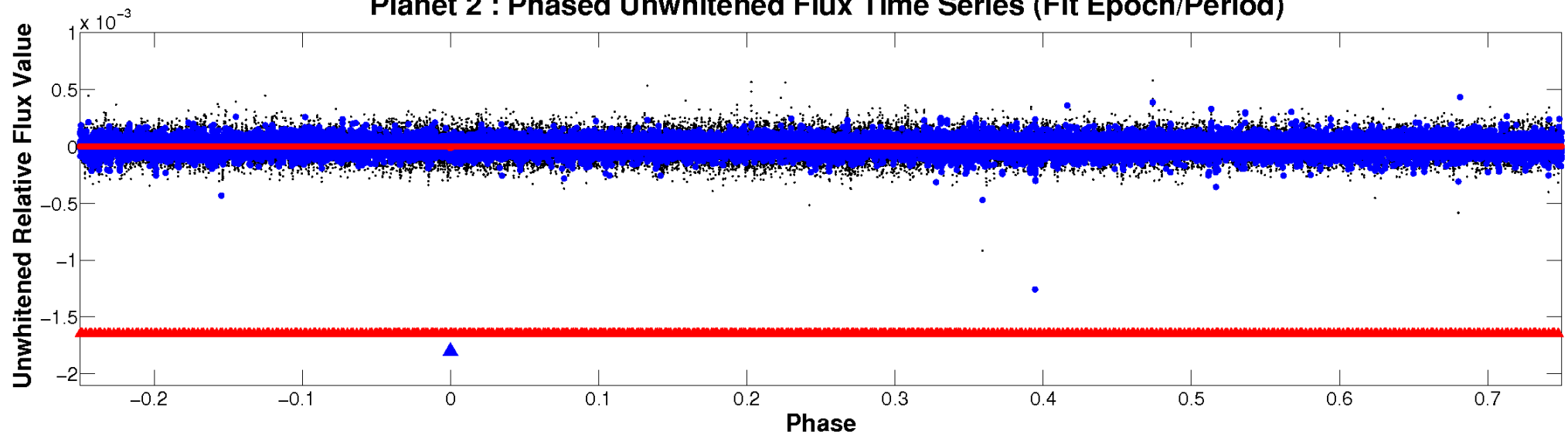
ALT Odd/Even

TCE 011400961-02

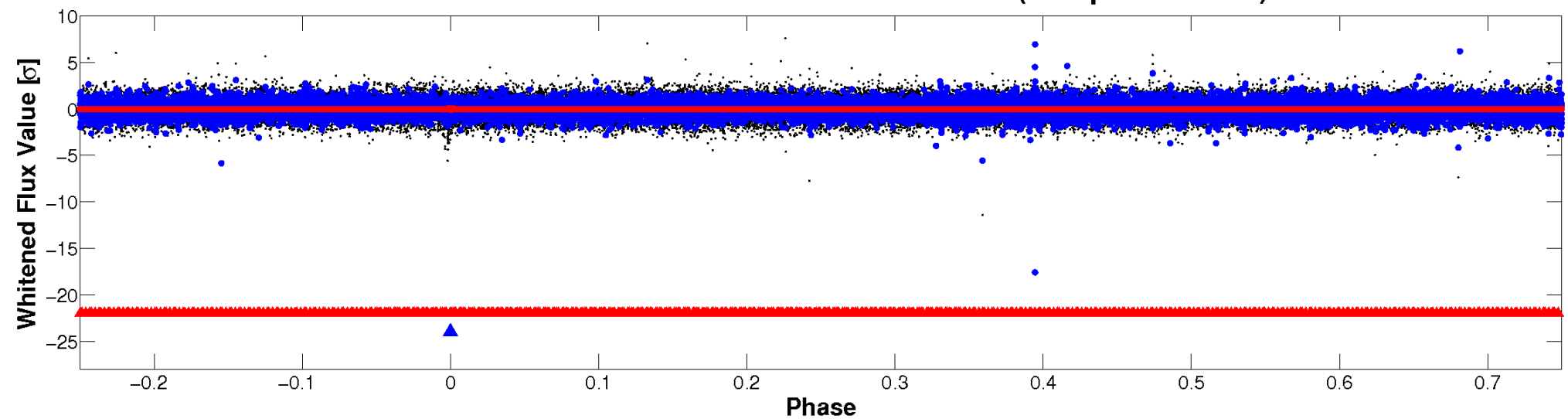


Non-Whitened Vs. Whitened Light Curve

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

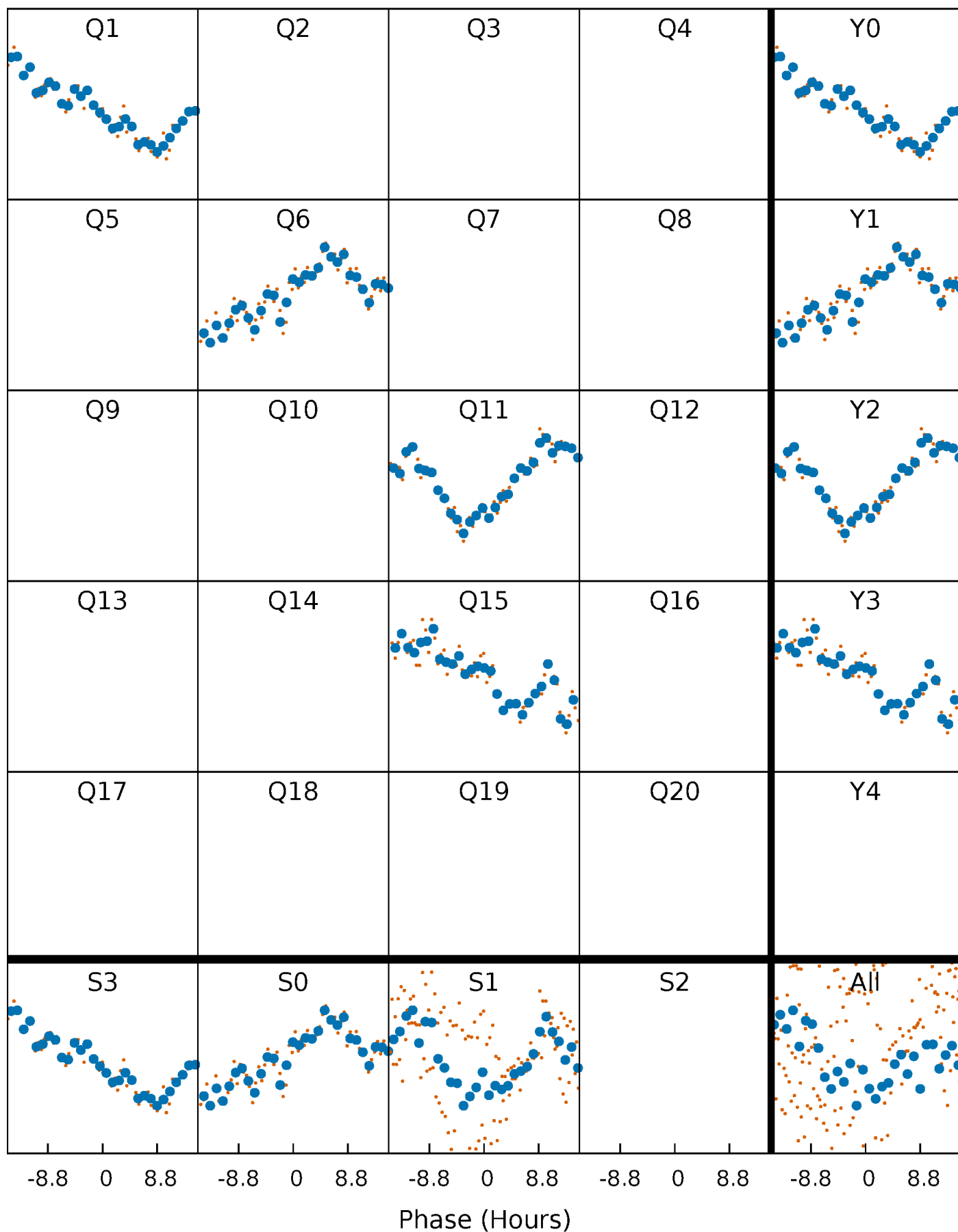


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



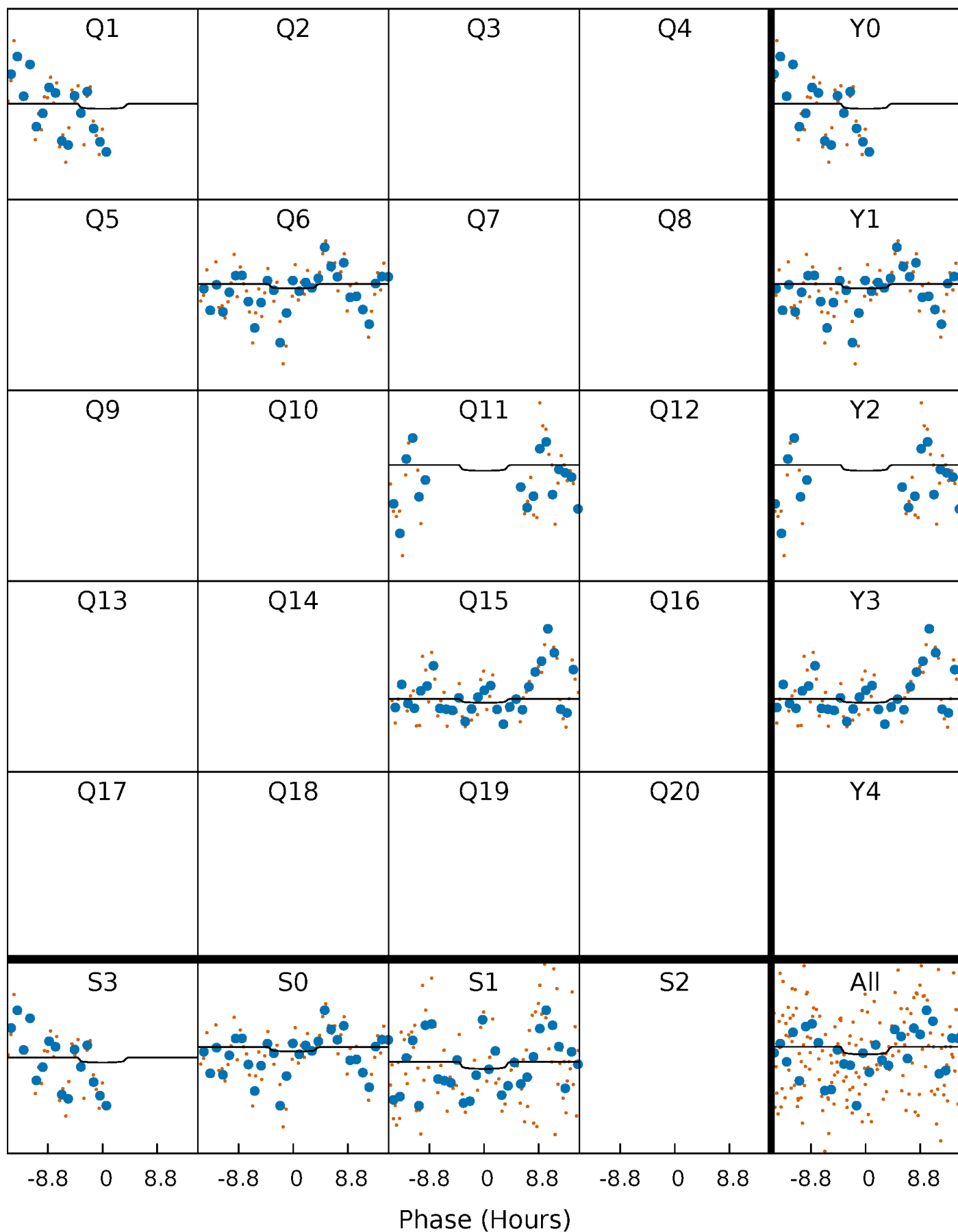
PDC Quarter-Phased Transit Curves

TCE 011400961-02 $P=429.132773$ Days $T_0=154.072813$ (BKJD)



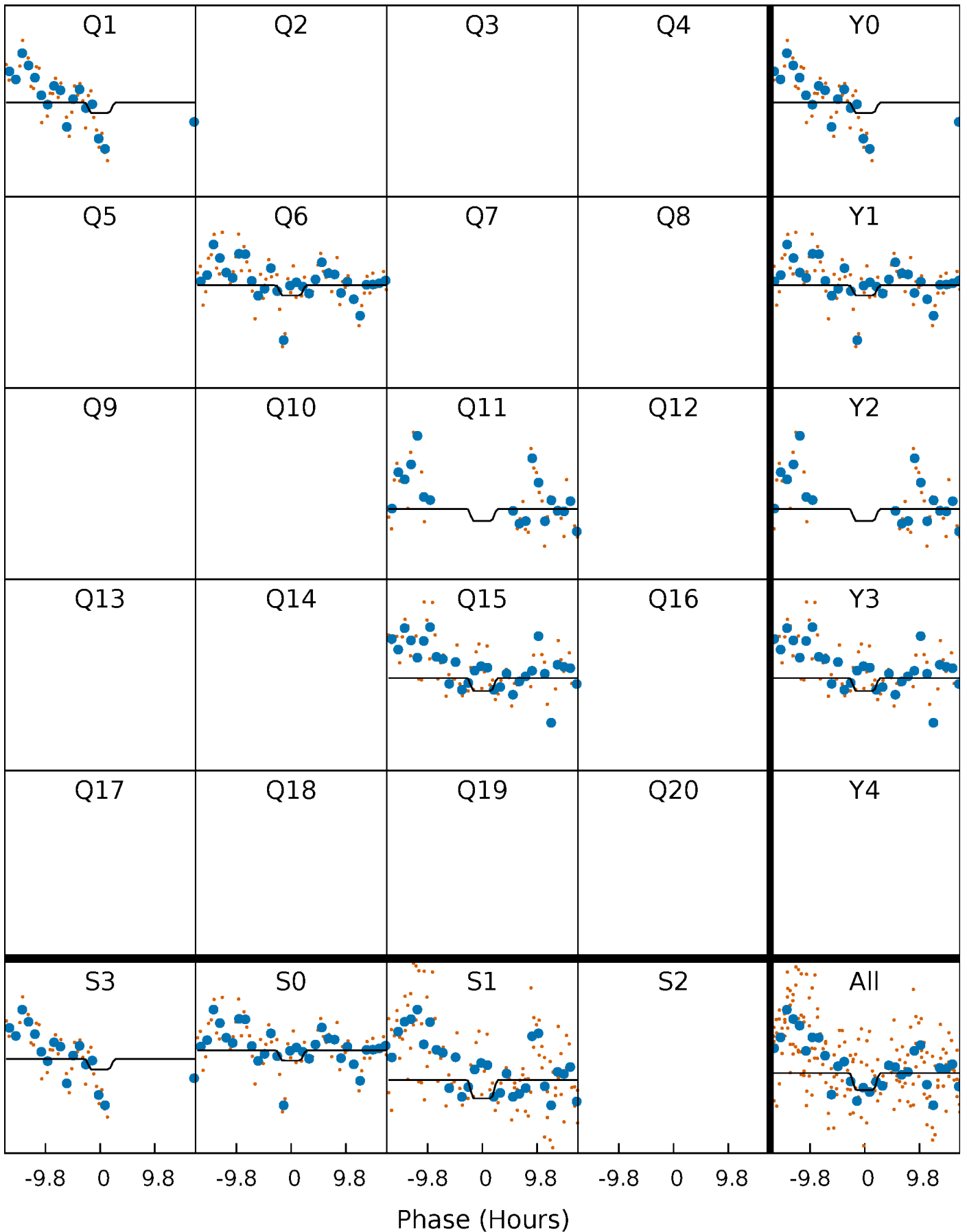
DV Quarter-Phased Transit Curves

TCE 011400961-02 $P=429.132773$ Days $T_0=154.072813$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

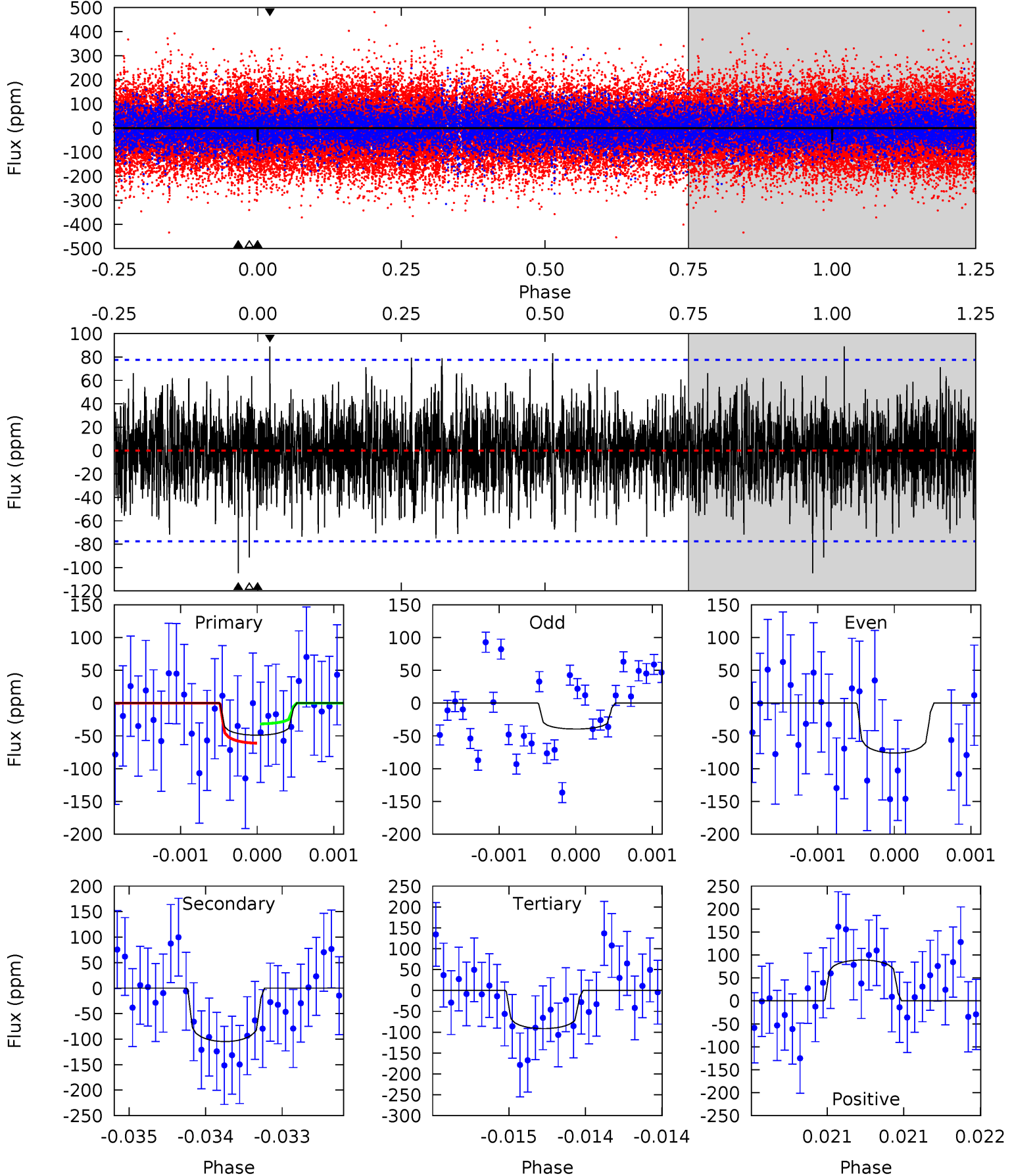
TCE 011400961-02 $P=429.145627$ Days $T_0=154.057288$ (BKJD)



DV Model-Shift Uniqueness Test

011400961-02, P = 429.132773 Days, E = 154.072813 Days

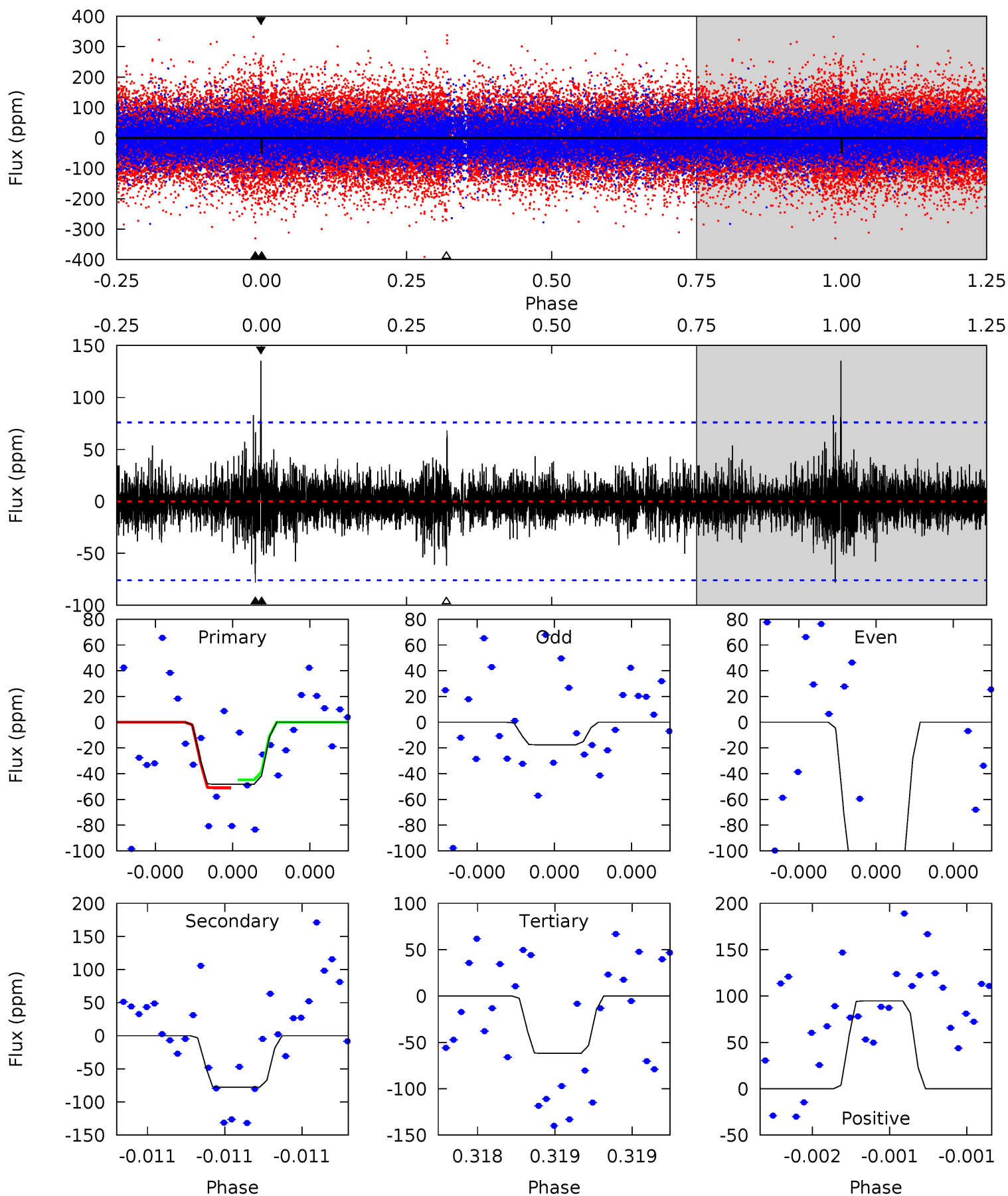
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.47	7.42	6.47	6.30	5.49	3.35	1.64	-3.00	-2.83	0.95	1.12	1.10	1.00	0.46	1.03



Alt Model-Shift Uniqueness Test

011400961-02, P = 429.145627 Days, E = 154.057288 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.55	5.74	4.55	6.97	5.58	3.49	0.99	-1.01	-3.42	1.19	-1.23	3.33	0.82	0.63	0.23



Stellar Parameters For KIC 011400961

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7252^{+201}_{-277}	$4.107^{+0.149}_{-0.182}$	$-0.080^{+0.250}_{-0.350}$	$1.808^{+0.563}_{-0.375}$	$1.522^{+0.212}_{-0.259}$	$0.362^{+0.319}_{-0.179}$
	+3%/-4%	+4%/-4%	+312%/-438%	+31%/-21%	+14%/-17%	+88%/-49%
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 011400961-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-105 ± 14	$1.54^{+1.56}_{-1.00}$	530^{+42}_{-33}	8525^{+13680}_{-2617}	$39841^{+278490}_{-30088}$
Alt.	-78 ± 14	$1.95^{+1.54}_{-1.34}$	535^{+41}_{-37}	6912^{+9182}_{-1782}	$18793^{+175131}_{-13242}$

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

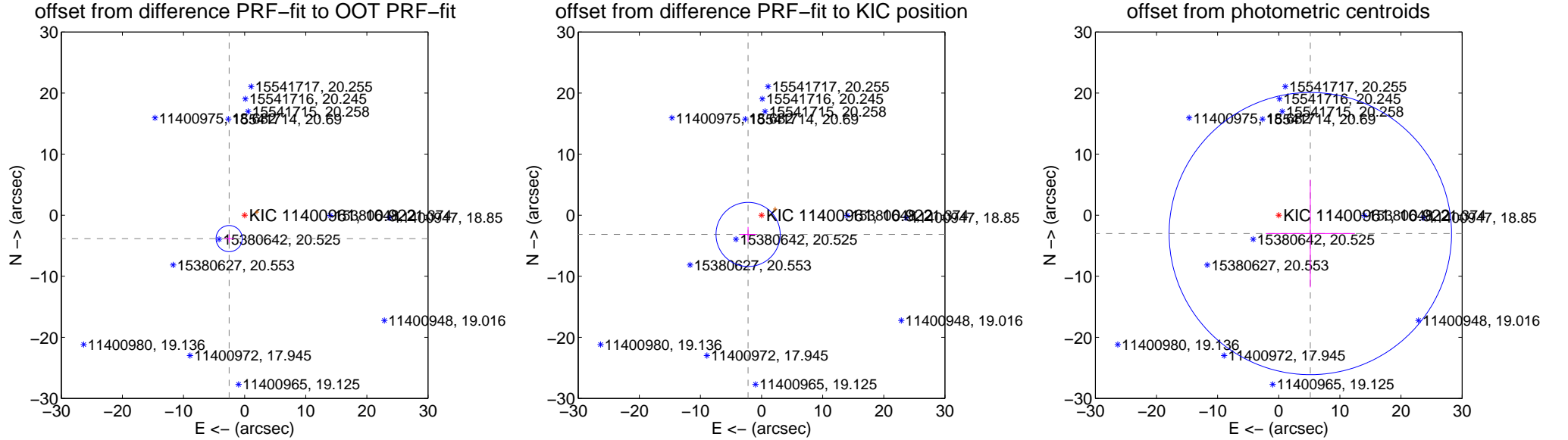
DV Centroid Data

Supplemental centroid analysis for 011400961-02. **Kepler magnitude: 10.92.** Transit SNR 0.49

There are 1 quarters with good PRF difference image offsets

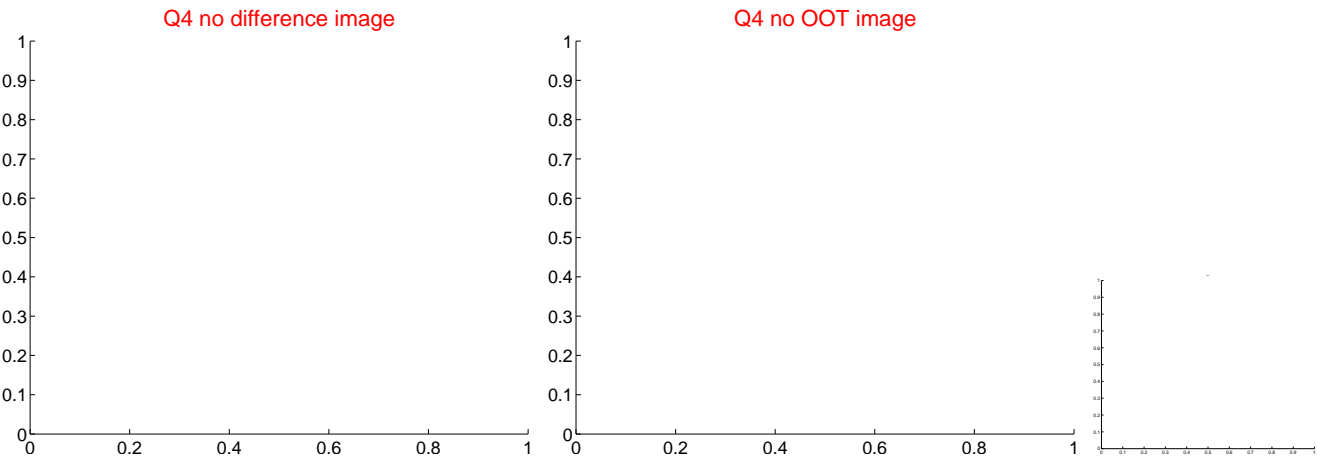
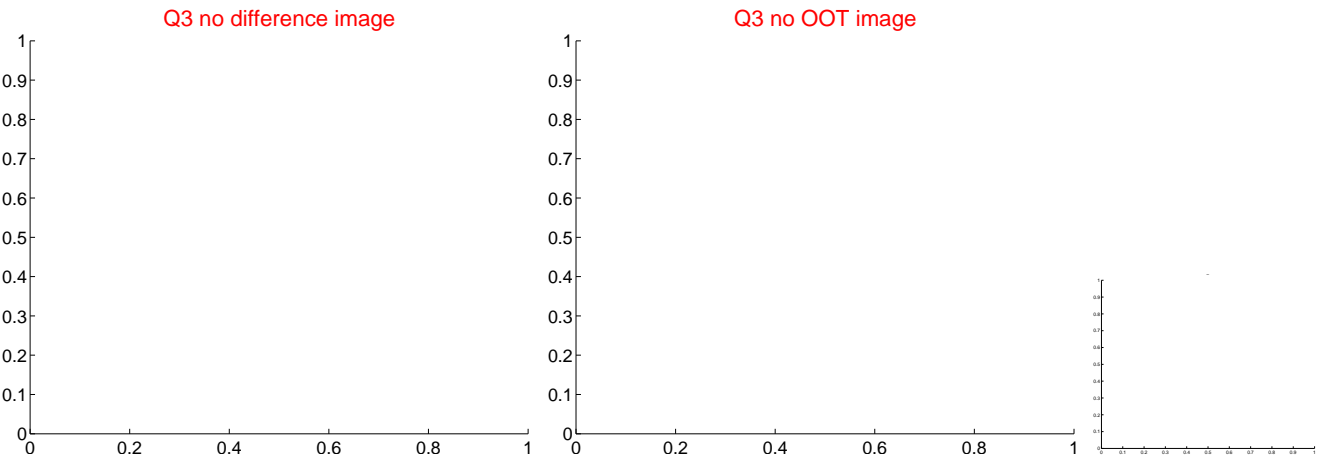
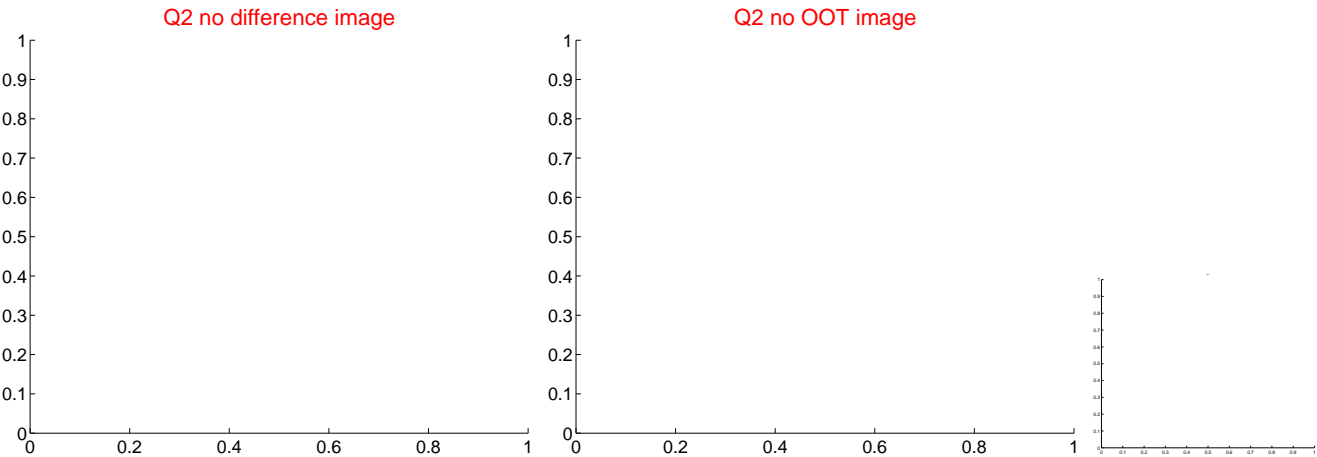
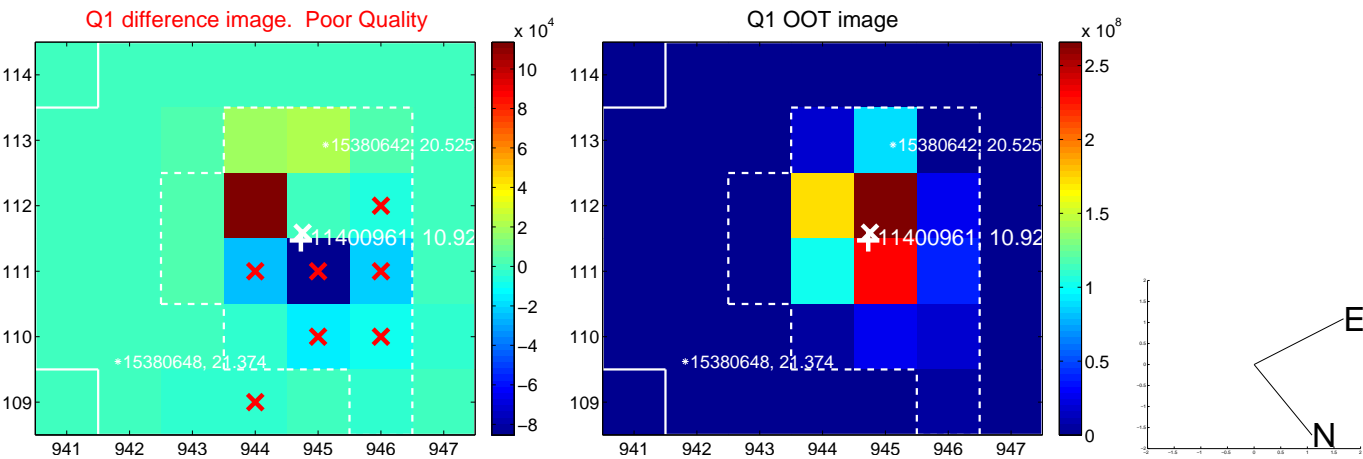
The direct PRF centroid is offset from the target star catalog position by about 0.76 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.592 \pm 0.713	6.44	2.531 \pm 0.792	-3.831 \pm 0.677
PRF-fit source offset from KIC position	3.841 \pm 1.749	2.20	2.202 \pm 1.306	-3.147 \pm 1.223
photometric centroid source offset	5.98 \pm 7.70	0.78	-5.17 \pm 7.29	-3.01 \pm 8.80

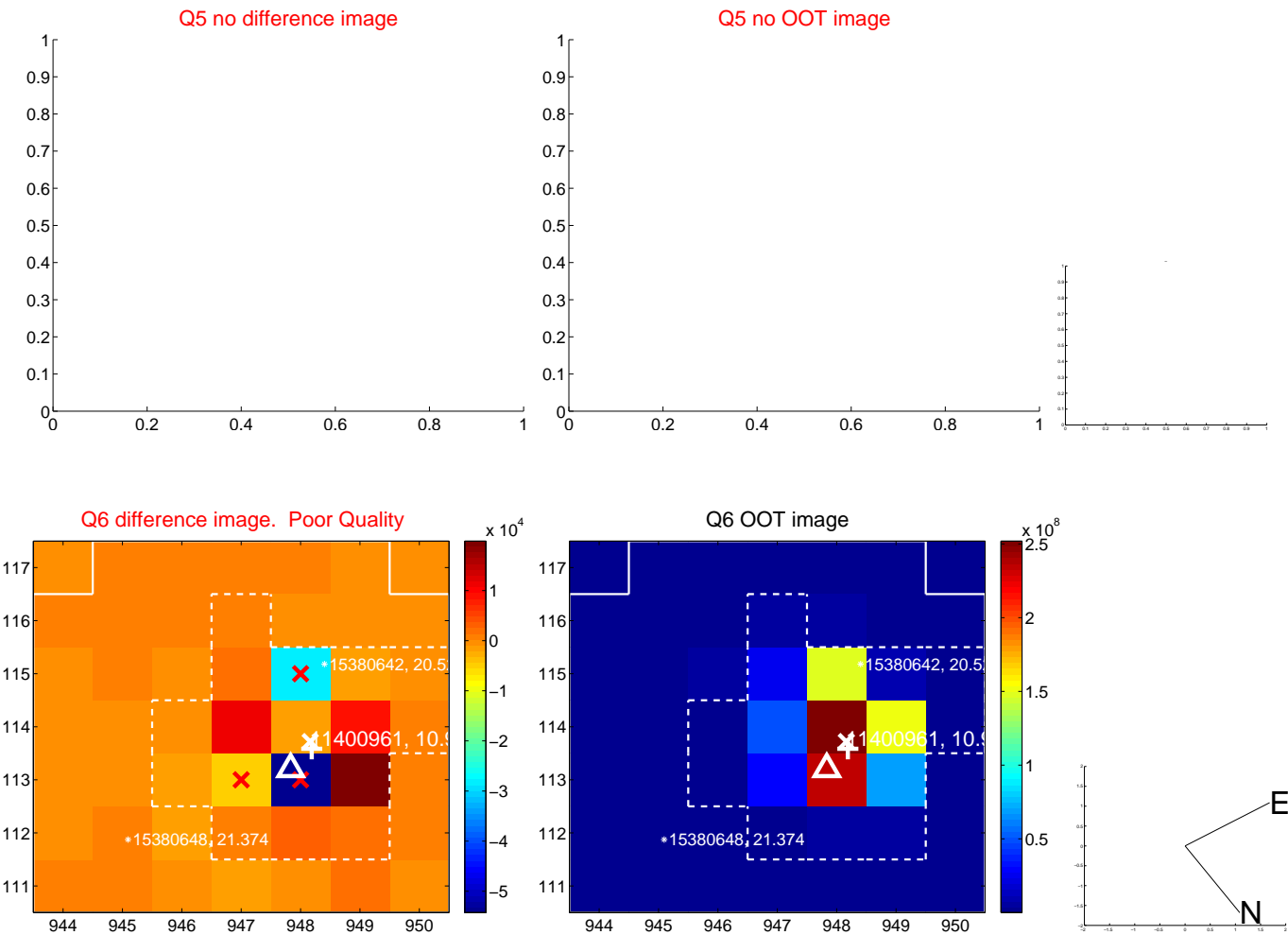


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



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



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

Q9 no difference image



Q9 no OOT image



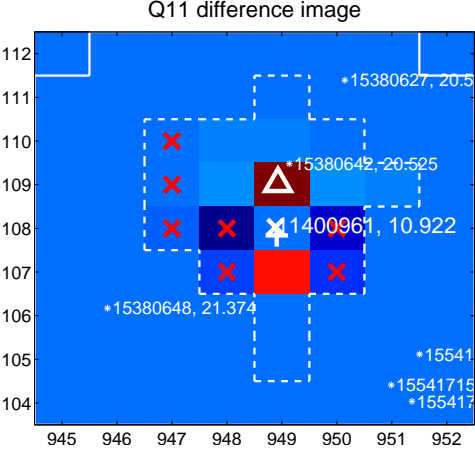
Q10 no difference image



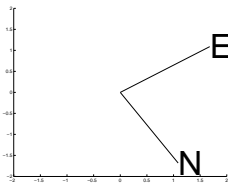
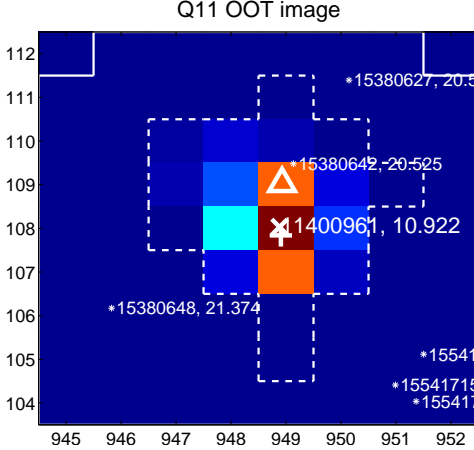
Q10 no OOT image



Q11 difference image



Q11 OOT image



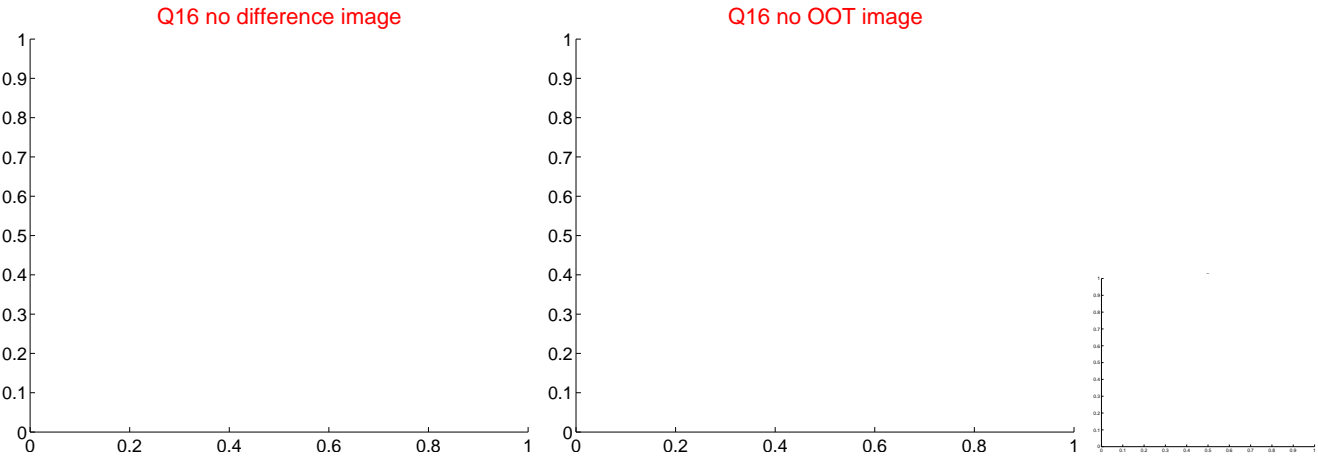
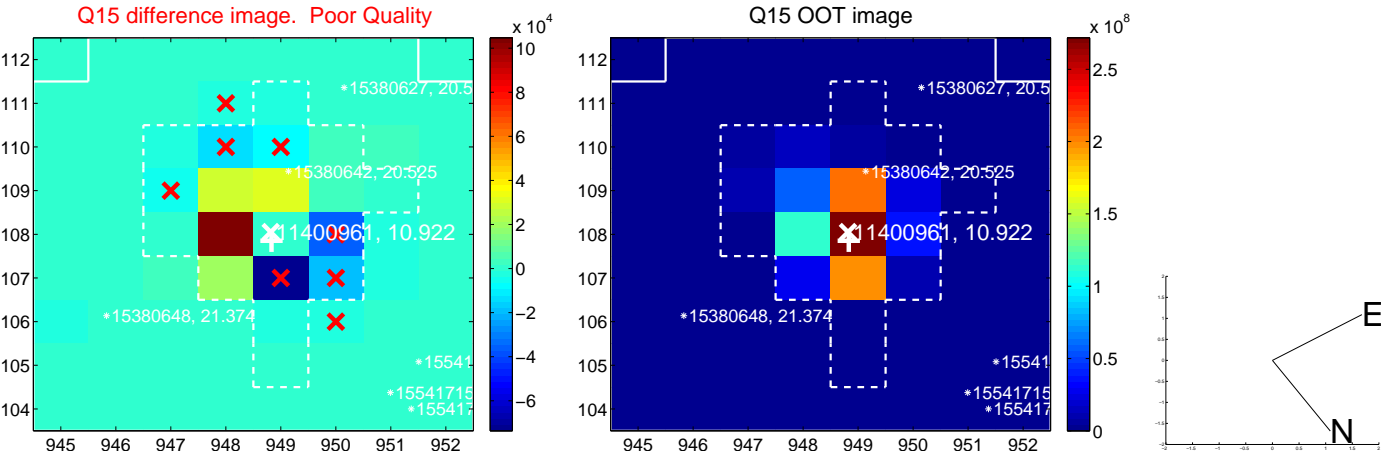
Q12 no difference image



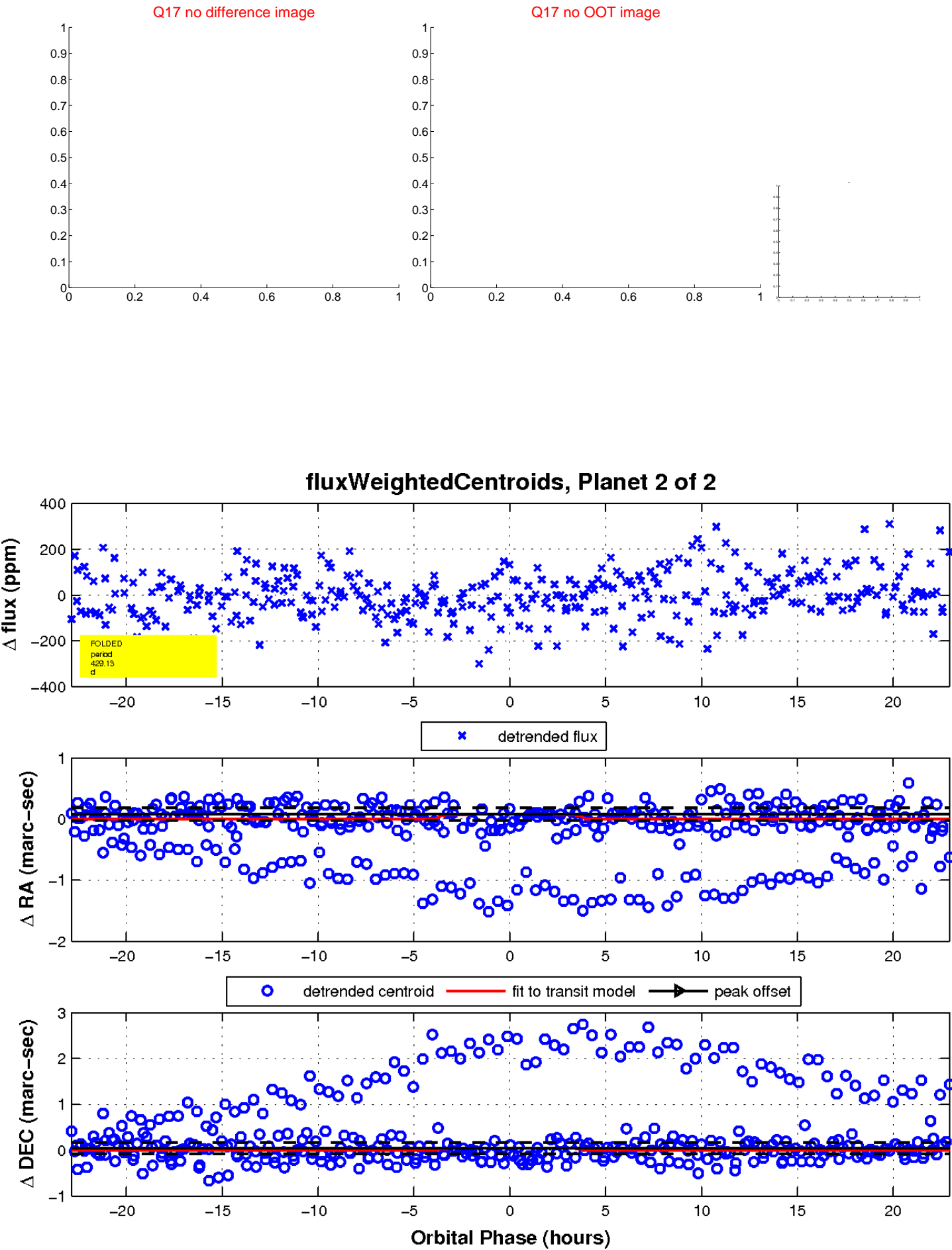
Q12 no OOT image



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



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



UKIRT Image

Declination

