

KIC 008565229

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})
008565229-01	OBS	No	0.803384	132.217059	54.0	2.428	11.4	10.9	2.70	7963	2.32	59505.59
008565229-02	OBS	No	0.602535	131.625577	58.4	2.062	8.2	9.3	2.70	7963	2.42	87326.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565229-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
008565229-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

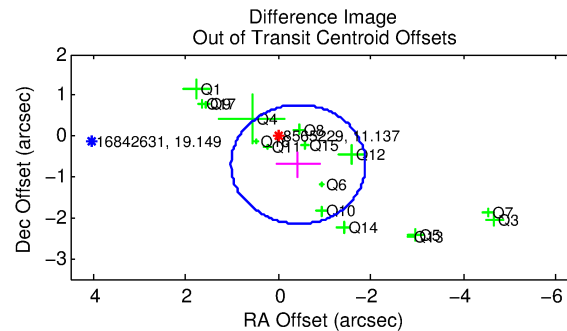
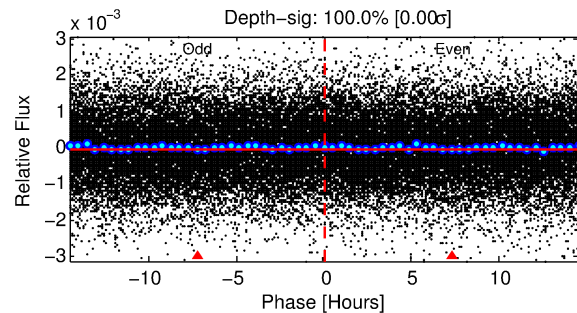
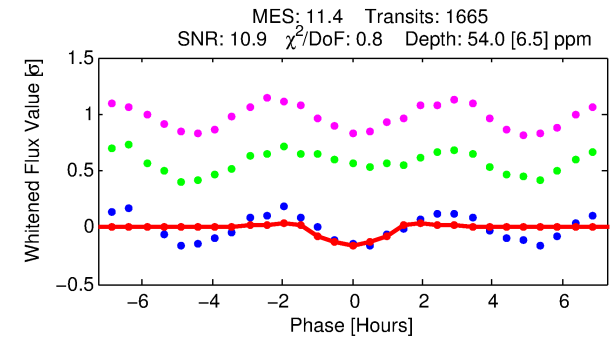
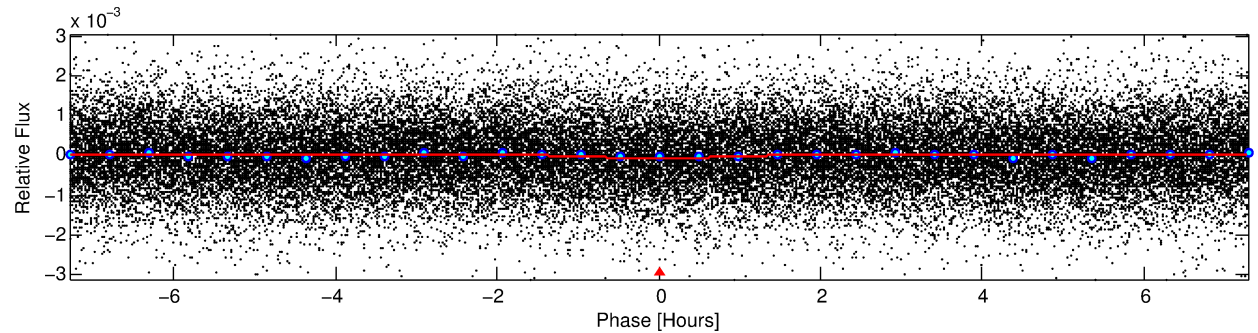
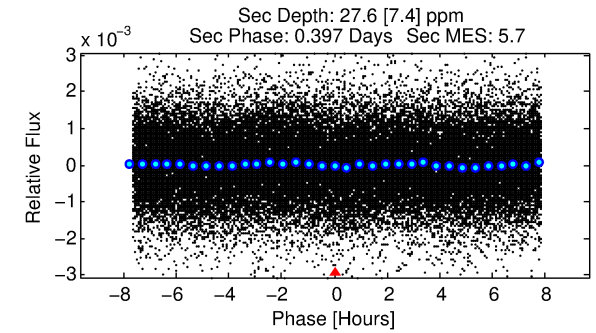
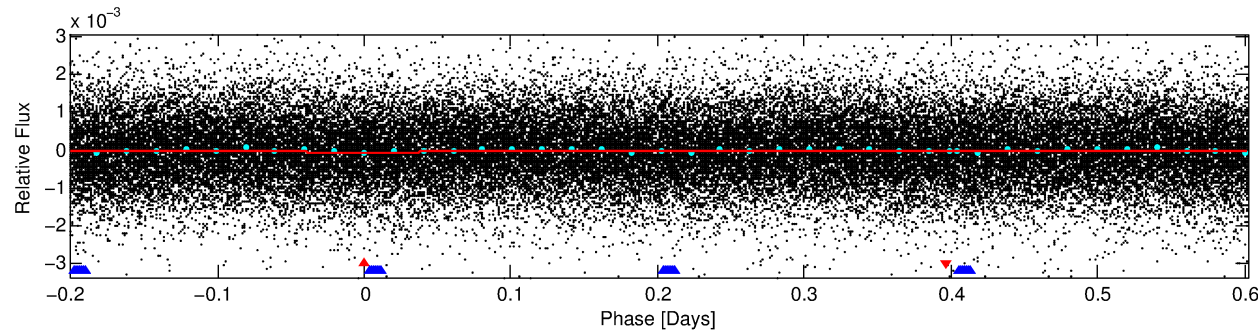
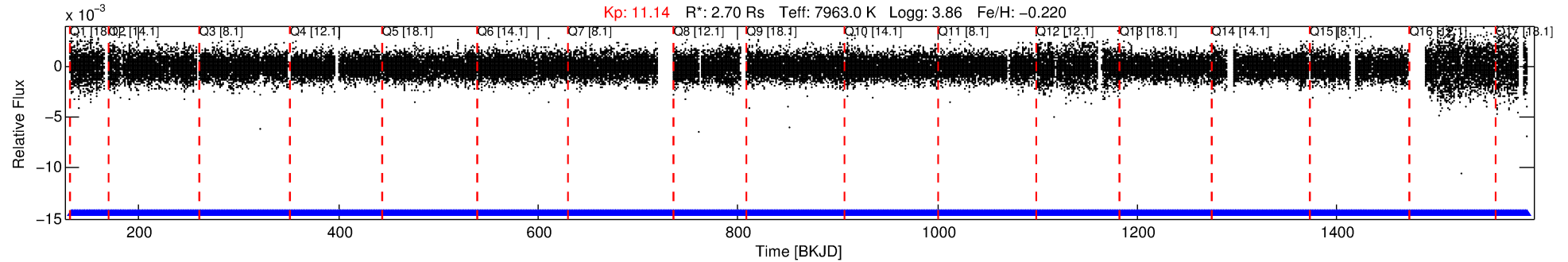
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008565229-01

No Significant Match Found

DV One-Page Summary

KIC: 8565229 Candidate: 1 of 2 Period: 0.803 d



DV Fit Results:

Period = 0.80338 [0.00001] d
Epoch = 132.2171 [0.0029] BKJD
 $R_p/R^* = 0.0079$ [0.0054]
 $a/R^* = 1.48$ [3.25]
 $b = 0.90$ [0.87]
 $S_{\text{eff}} = 59505.59$ [36667.31]
 $T_{\text{eq}} = 3983$ [614] K
 $R_p = 2.32$ [1.85] R_e
 $a = 0.0210$ [0.0080] AU
 $A_g = 1.25$ [1.89] [0.13σ]
 $T_{\text{eff}} = 6508$ [2287] K [1.07σ]

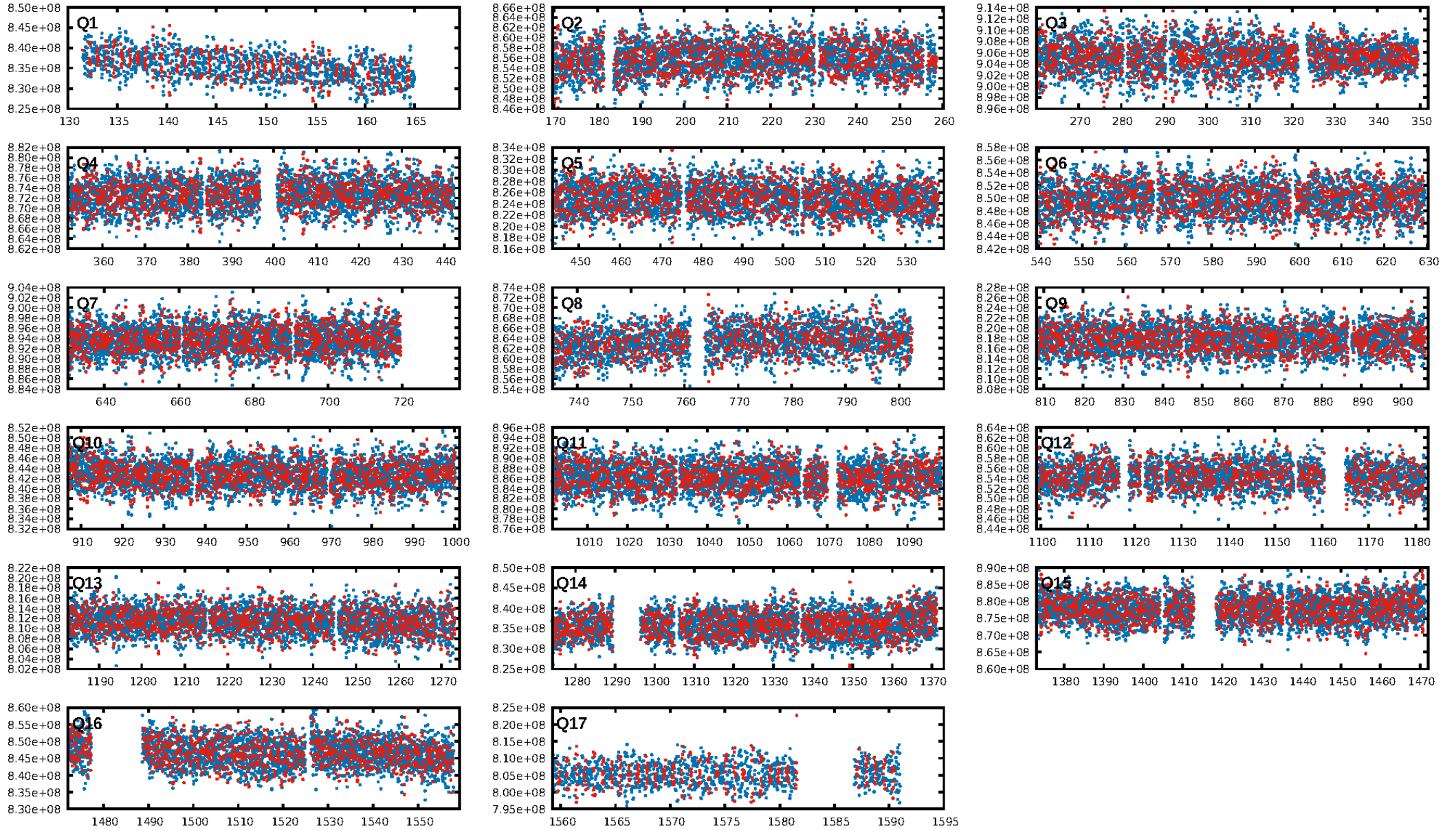
DV Diagnostic Results:

ShortPeriod-sig: 87.0% [1.51σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.89e-33
RollingBand-fgt: 1.00 [1591/1591]
GhostDiagnostic-chr: 10.15
Centroid-sig: 0.0%
Centroid-so: 0.792 arcsec [3.83σ]
OotOffset-rm: 0.818 arcsec [1.68σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-rm: 0.921 arcsec [1.62σ]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.38 [6/16]
DiffImageOverlap-fno: 0.00 [0/17]

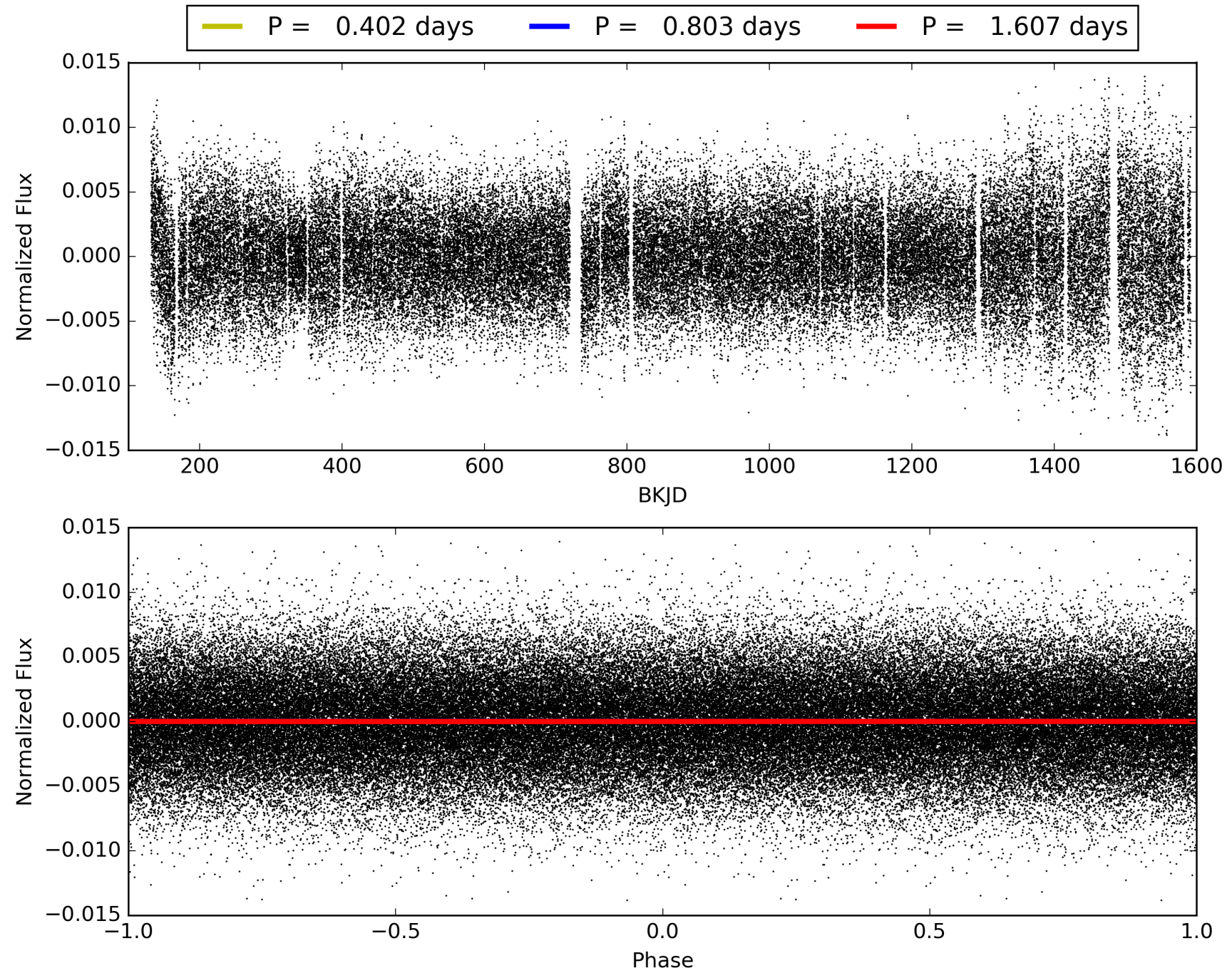
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:20:19 Z

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

TCE 008565229-01, PDC Light Curves

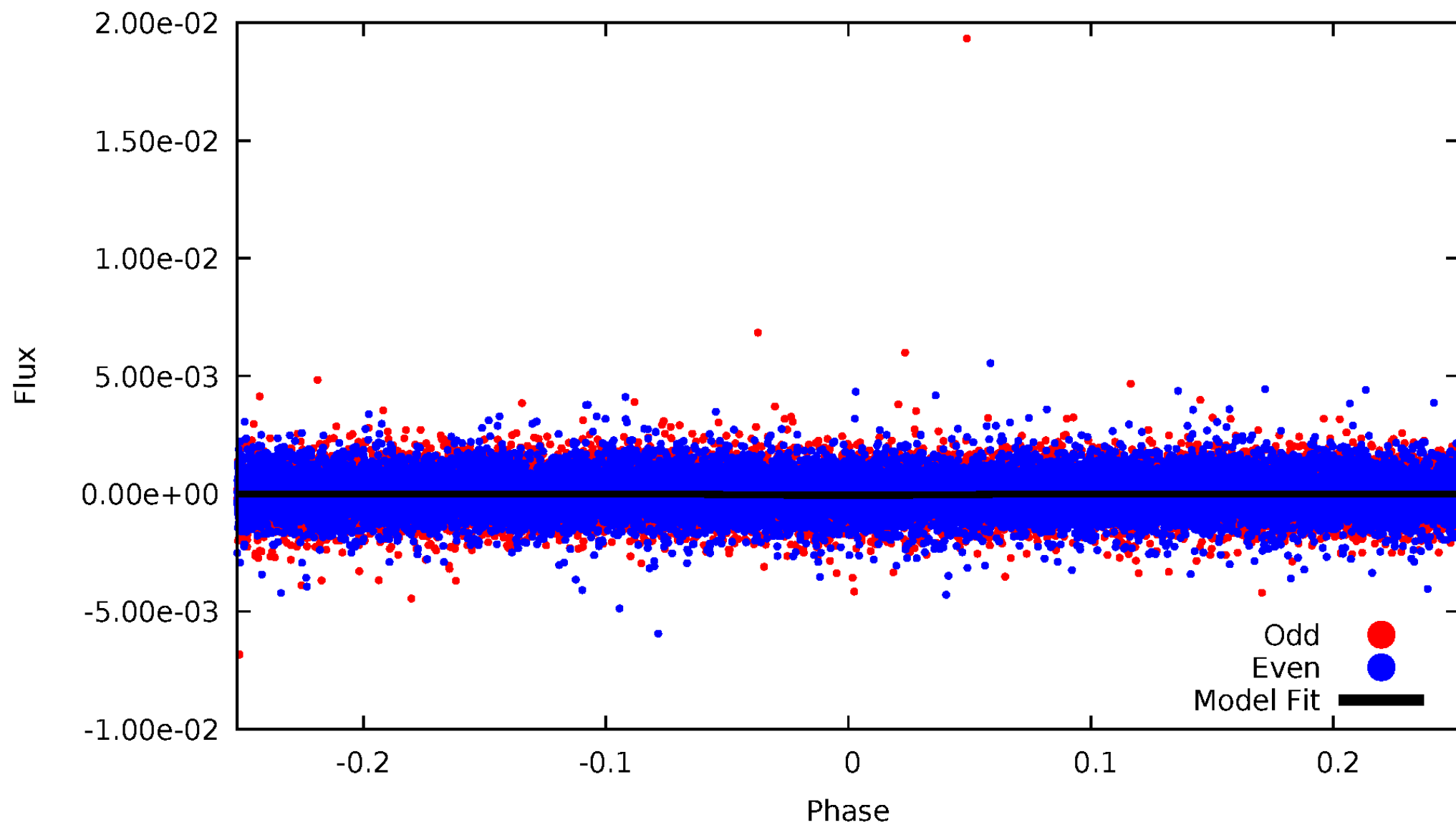


TCE 008565229-01



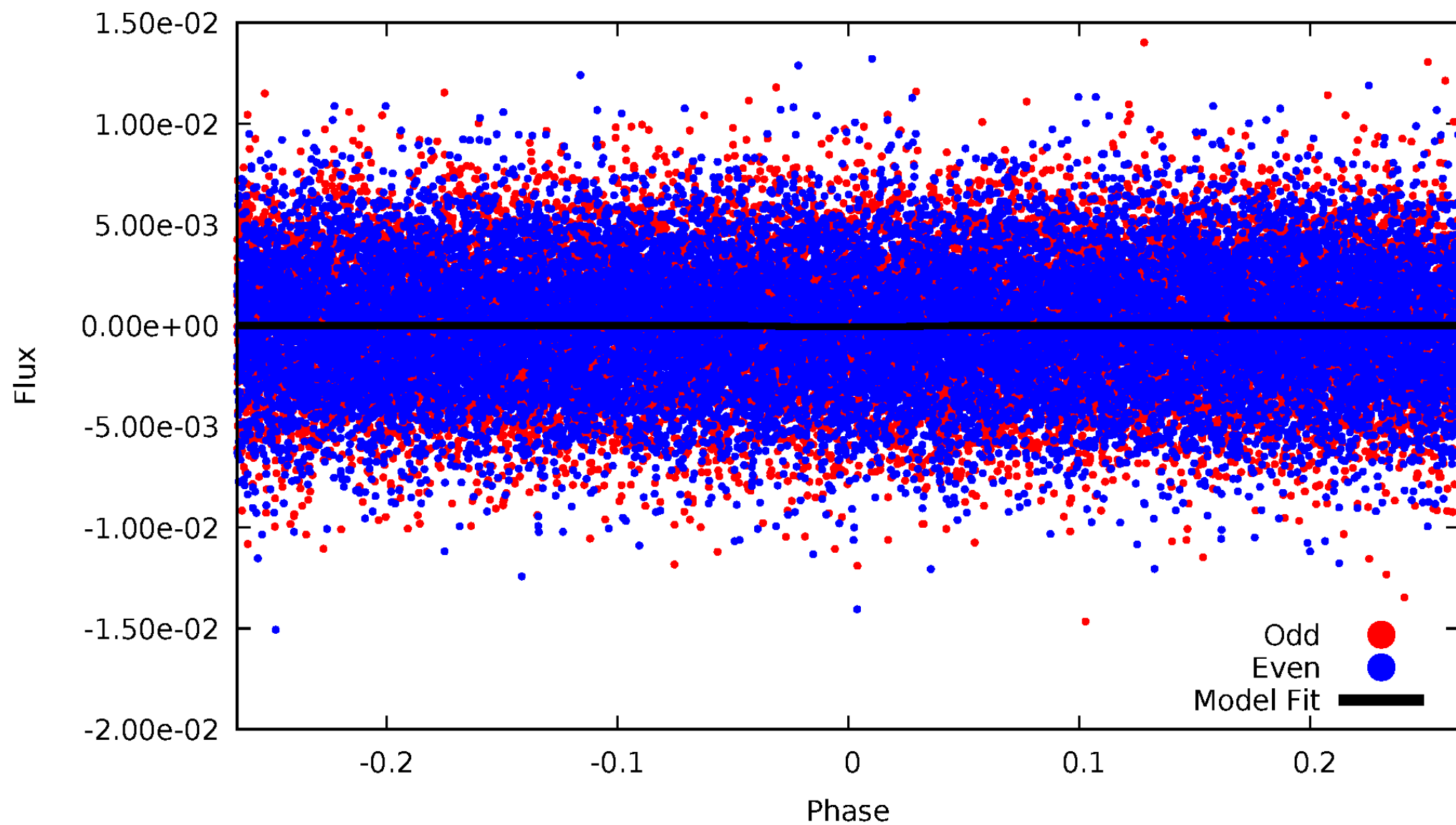
DV Odd/Even

TCE 008565229-01



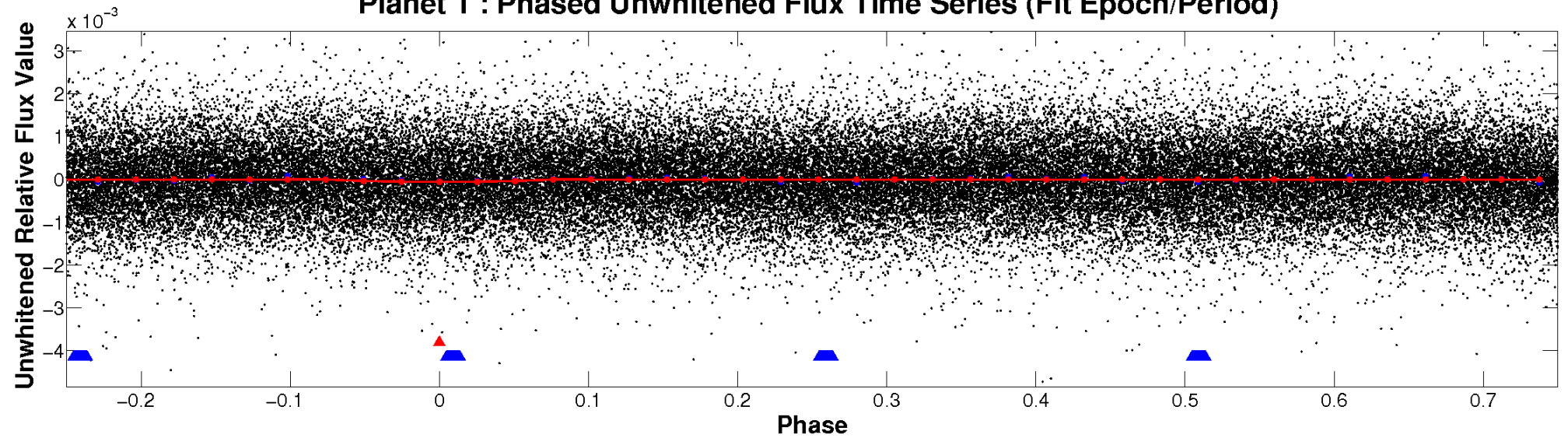
ALT Odd/Even

TCE 008565229-01

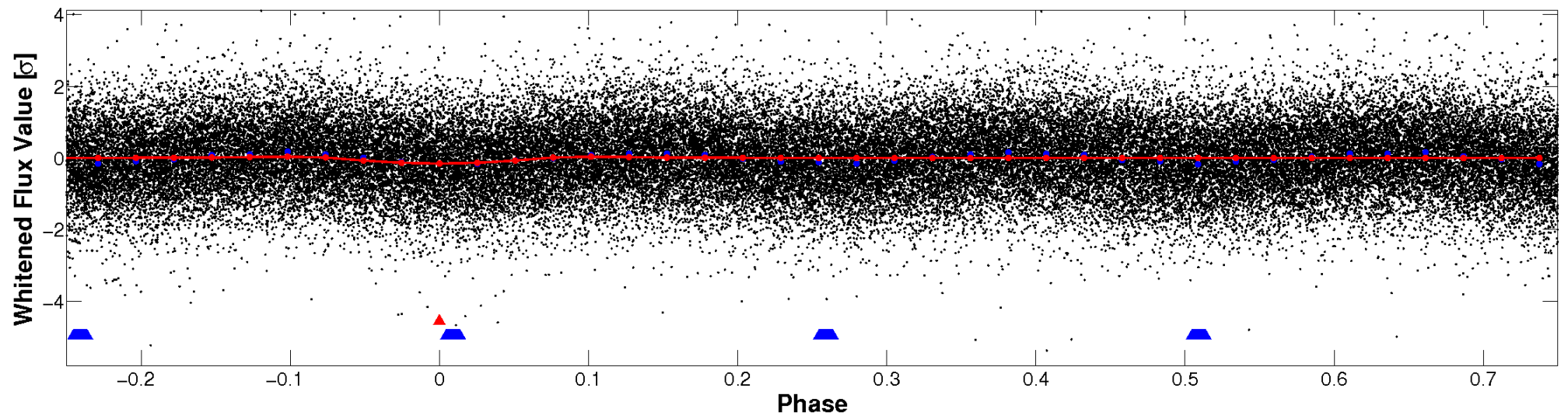


Non-Whitened Vs. Whitened Light Curve

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

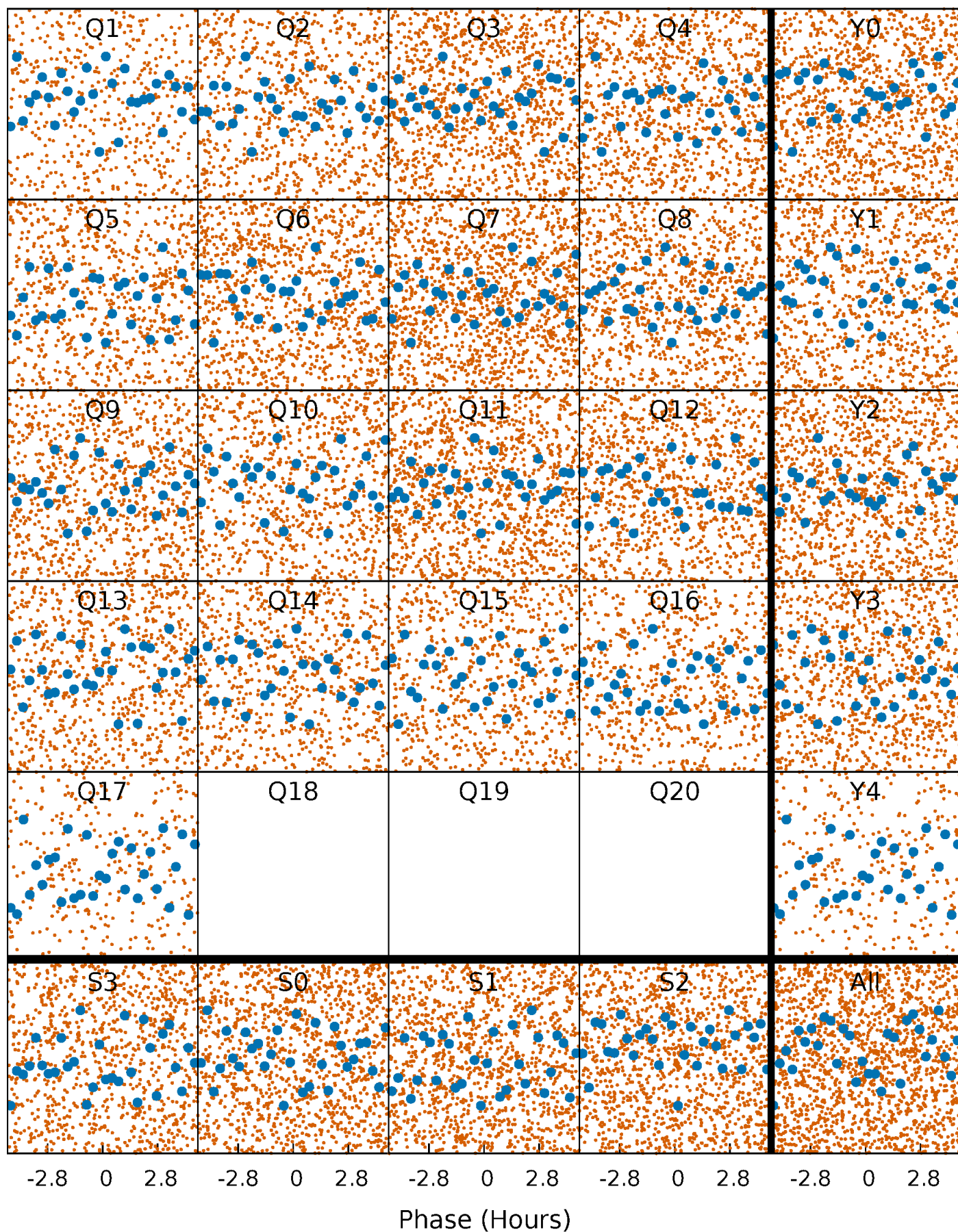


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



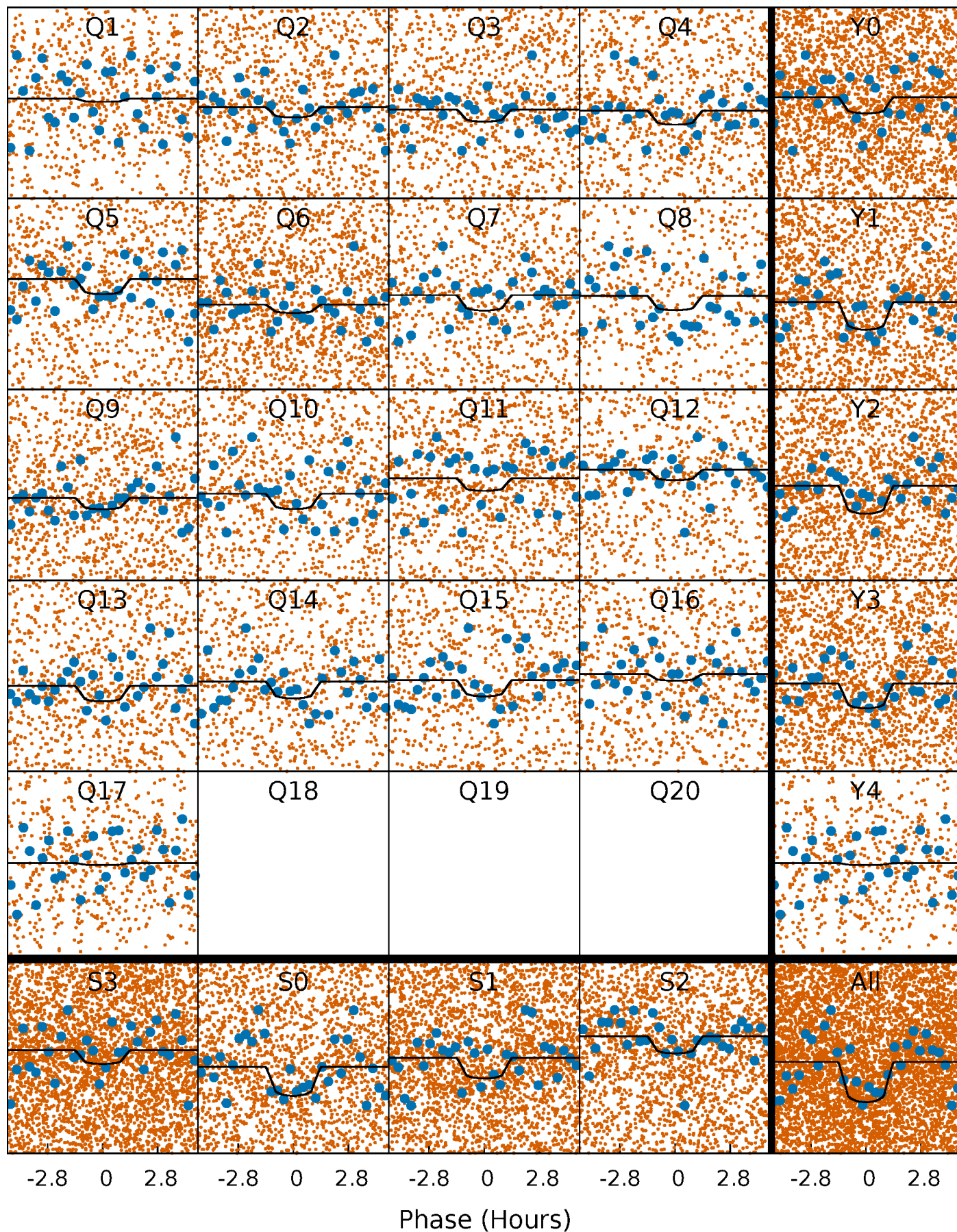
PDC Quarter-Phased Transit Curves

TCE 008565229-01 P= 0.803384 Days $T_0=132.217059$ (BKJD)



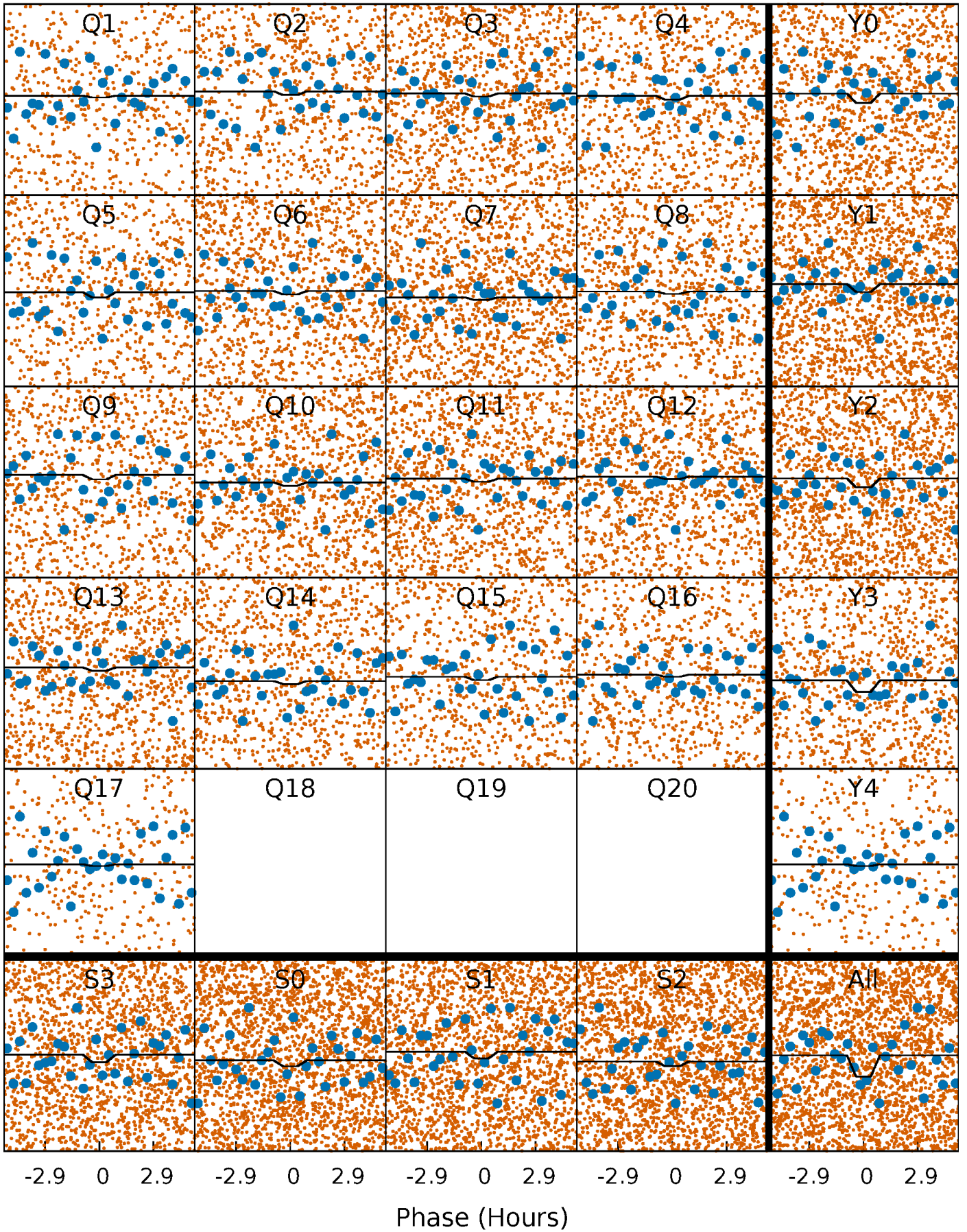
DV Quarter-Phased Transit Curves

TCE 008565229-01 P= 0.803384 Days $T_0=132.217059$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

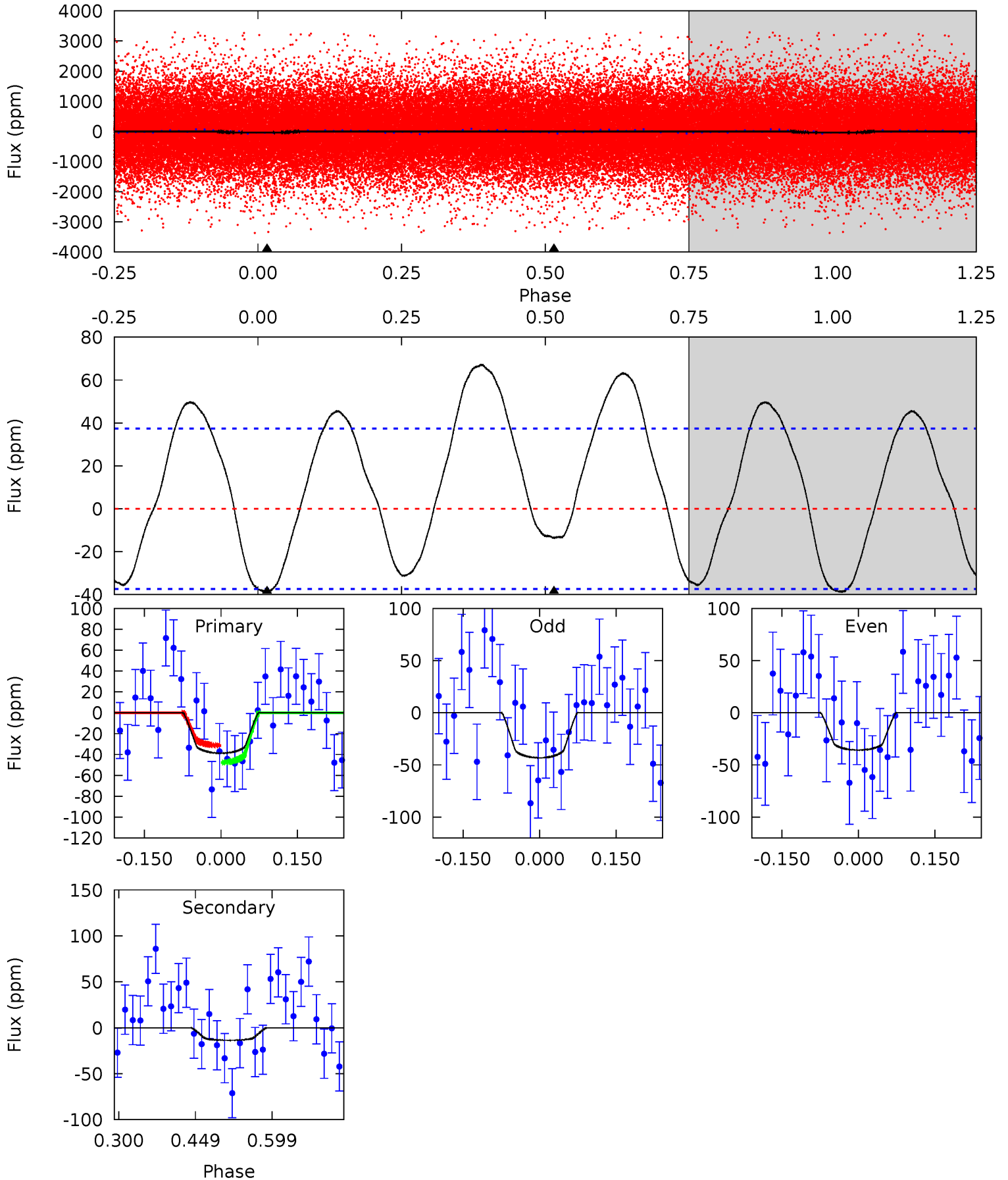
TCE 008565229-01 P= 0.803391 Days $T_0=132.210498$ (BKJD)



DV Model-Shift Uniqueness Test

008565229-01, P = 0.803384 Days, E = 131.413675 Days

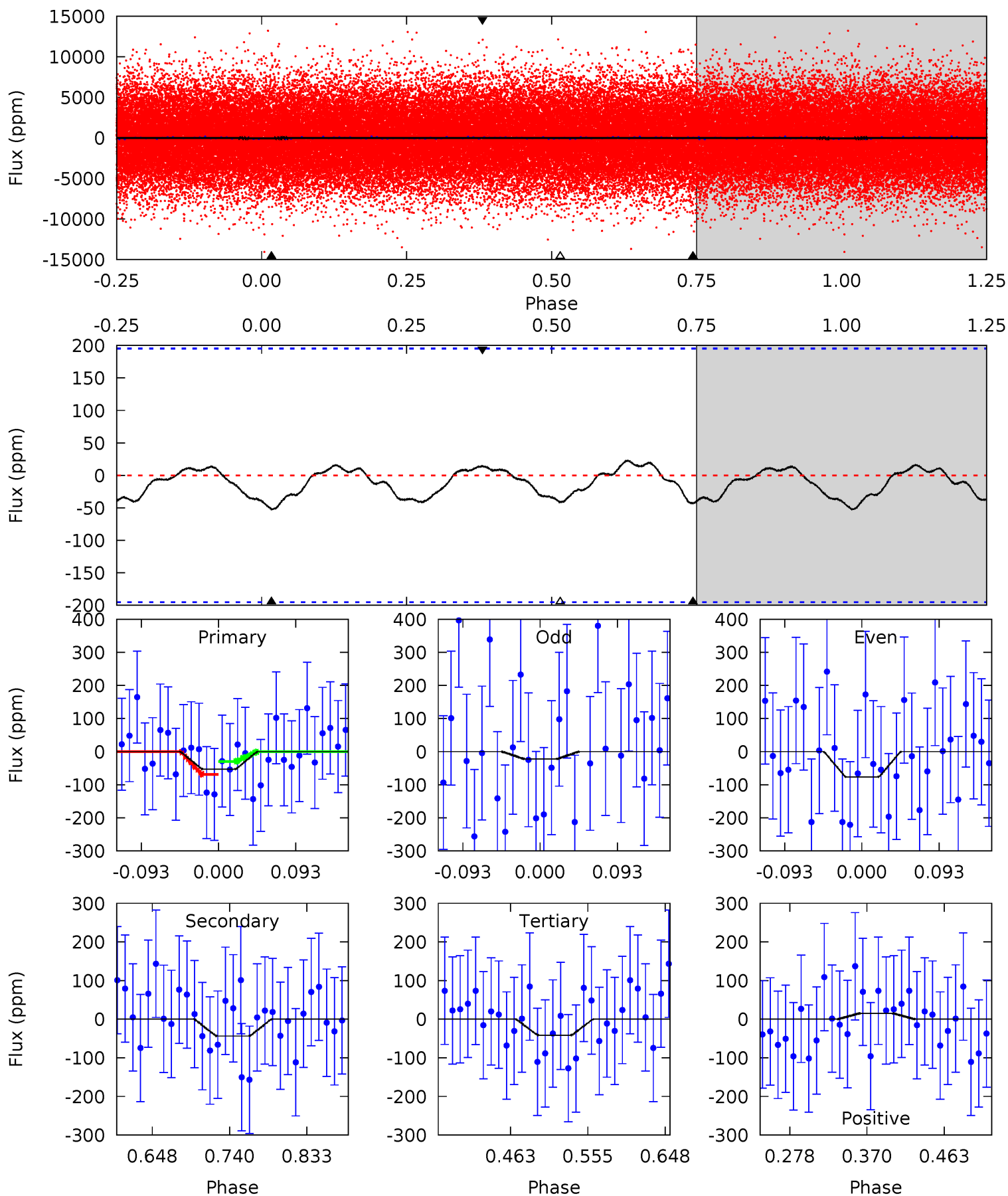
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.64	1.63	0	0	4.48	1.44	3.15	4.64	4.64	1.63	1.63	0.45	0.77	0.63	0.98



Alt Model-Shift Uniqueness Test

008565229-01, P = 0.803391 Days, E = 131.407107 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.24	1.02	0.98	0.35	4.58	1.68	0.43	0.26	0.89	0.04	0.67	0.64	1.03	0.30	0.46



Stellar Parameters For KIC 008565229

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7963^{+216}_{-325}	$3.857^{+0.344}_{-0.086}$	$-0.220^{+0.200}_{-0.350}$	$2.697^{+0.367}_{-1.102}$	$1.909^{+0.082}_{-0.467}$	$0.137^{+0.341}_{-0.040}$
	+3%/-4%	+9%/-2%	+91%/-159%	+14%/-41%	+4%/-24%	+249%/-29%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008565229-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 8	$2.24^{+1.52}_{-1.26}$	5428^{+359}_{-551}	4208^{+3309}_{-8238}	$0.536^{+2.676}_{-0.399}$
Alt.	-44 ± 43	$2.29^{+1.58}_{-1.35}$	5455^{+336}_{-493}	6061^{+6113}_{-10701}	$1.531^{+9.321}_{-1.583}$

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 $A_{obs} \gg 1.0$

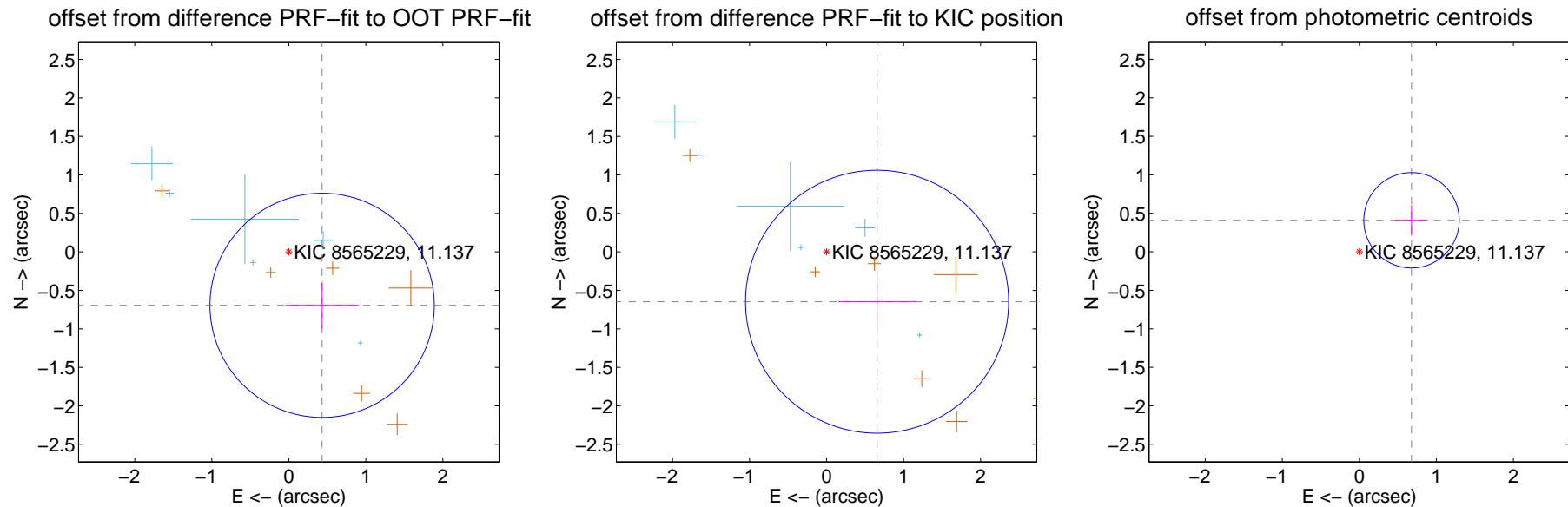
DV Centroid Data

Supplemental centroid analysis for 008565229-01. **Kepler magnitude: 11.14.** Transit SNR 10.90

There are 6 quarters with good PRF difference image offsets

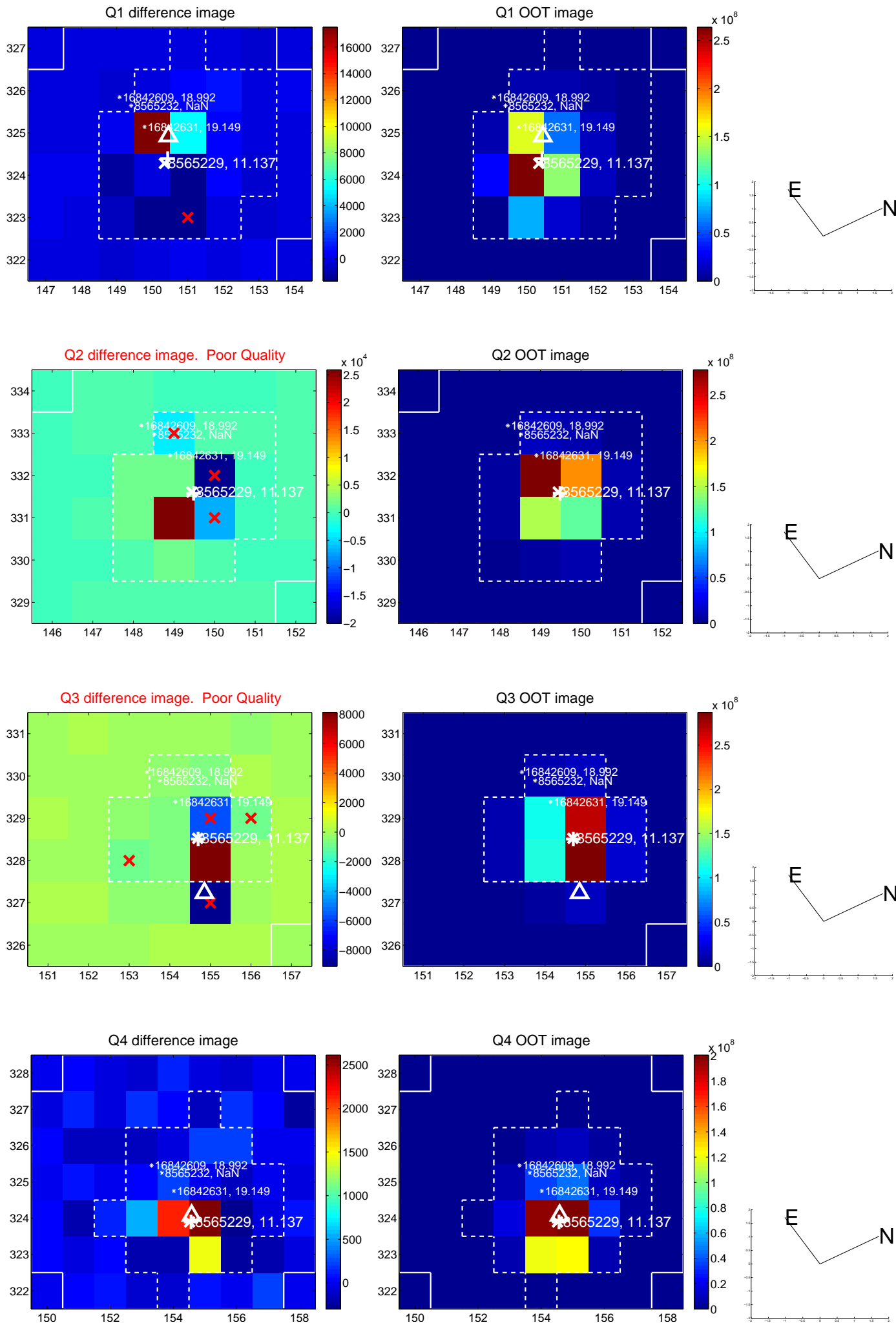
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.818 ± 0.485	1.68	-0.432 ± 0.477	-0.694 ± 0.301
PRF-fit source offset from KIC position	0.921 ± 0.569	1.62	-0.655 ± 0.506	-0.647 ± 0.328
photometric centroid source offset	0.79 ± 0.21	3.83	-0.68 ± 0.21	0.41 ± 0.20

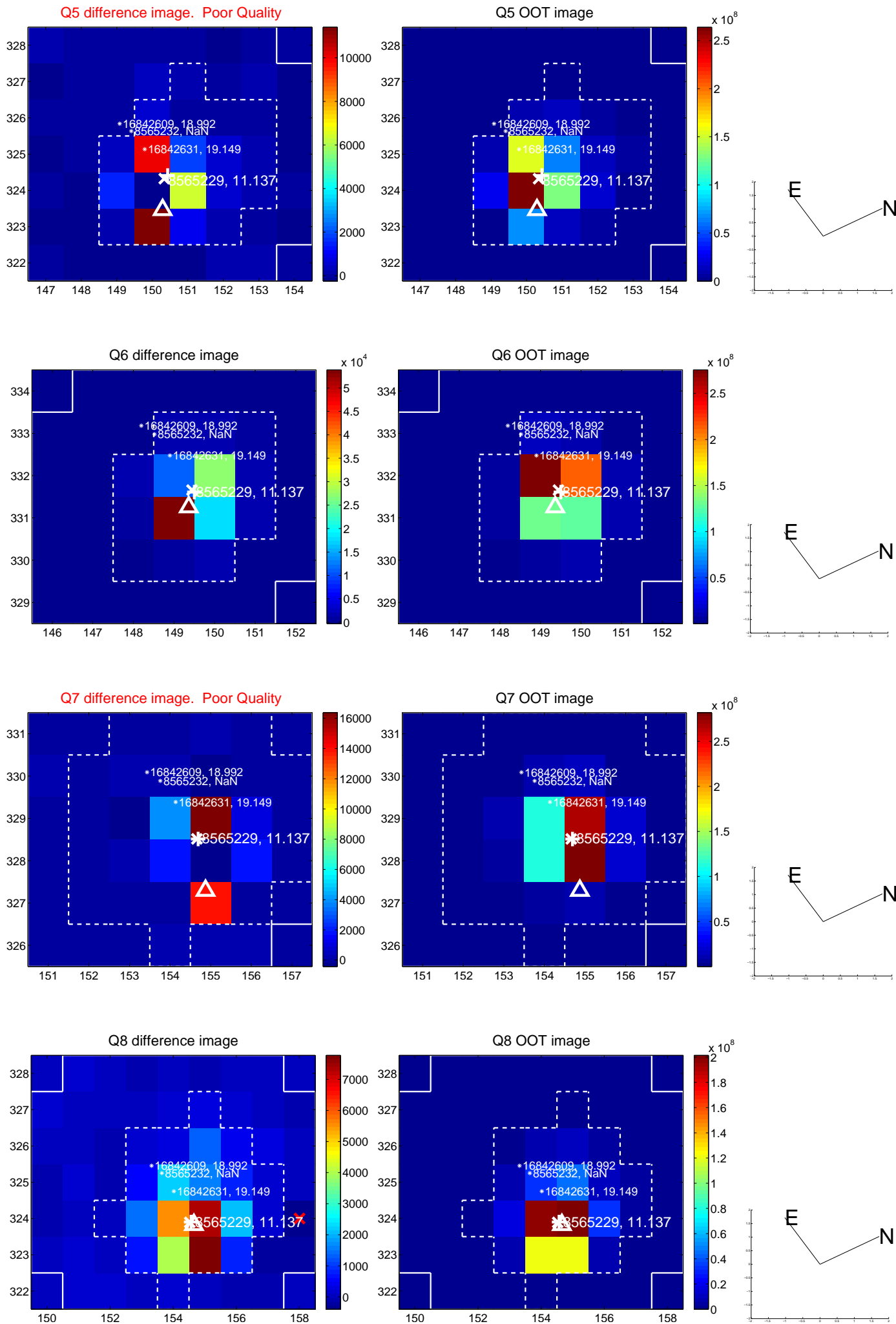


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

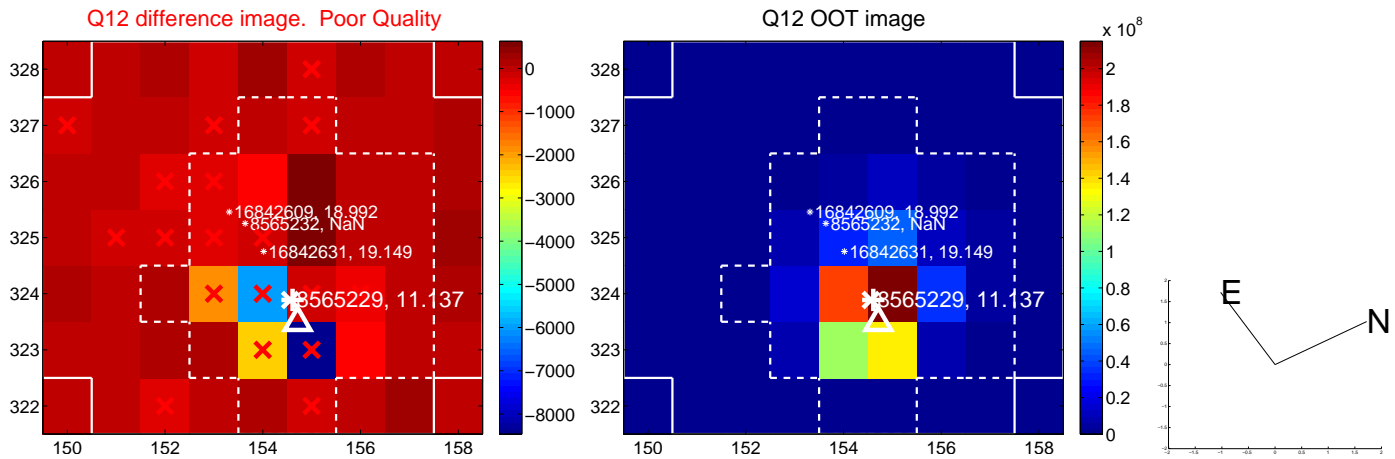
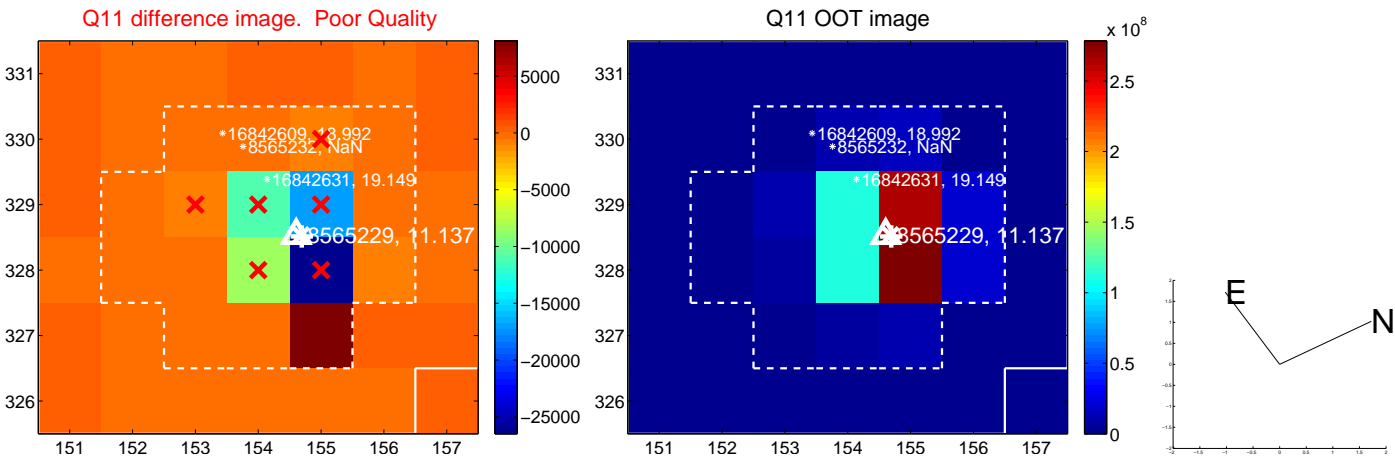
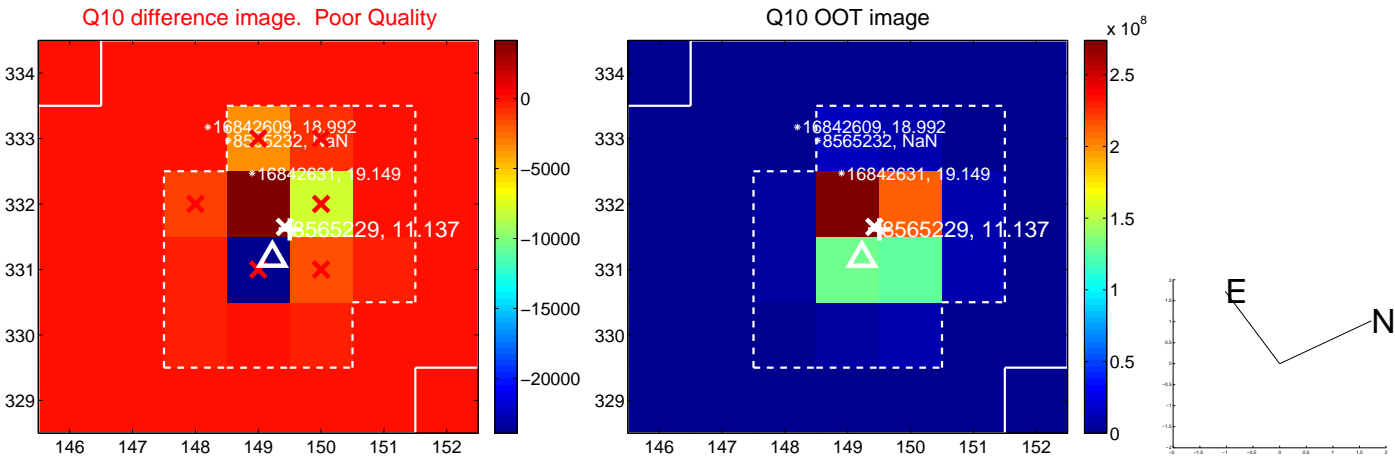
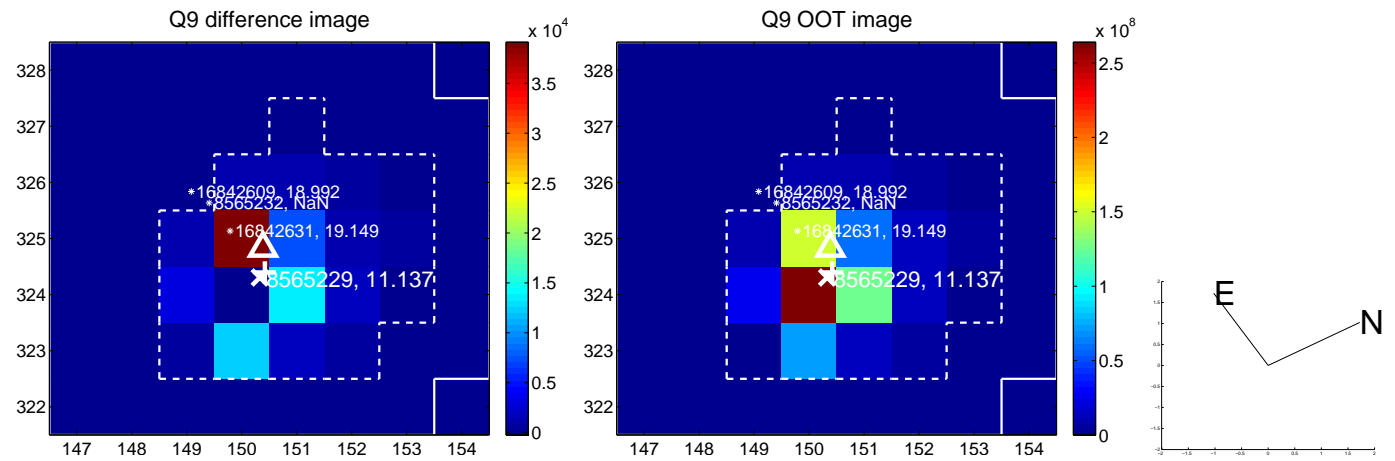
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



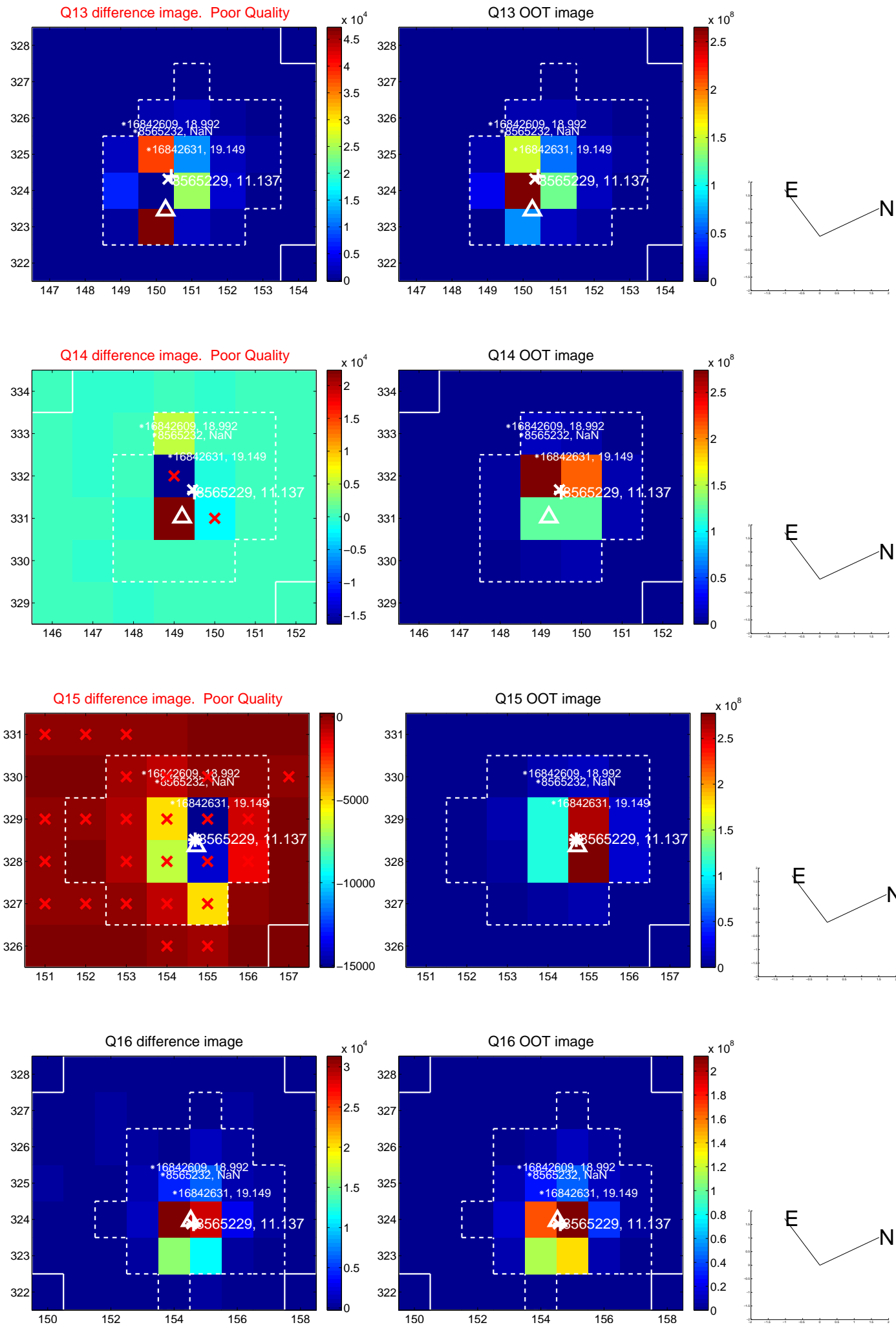
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



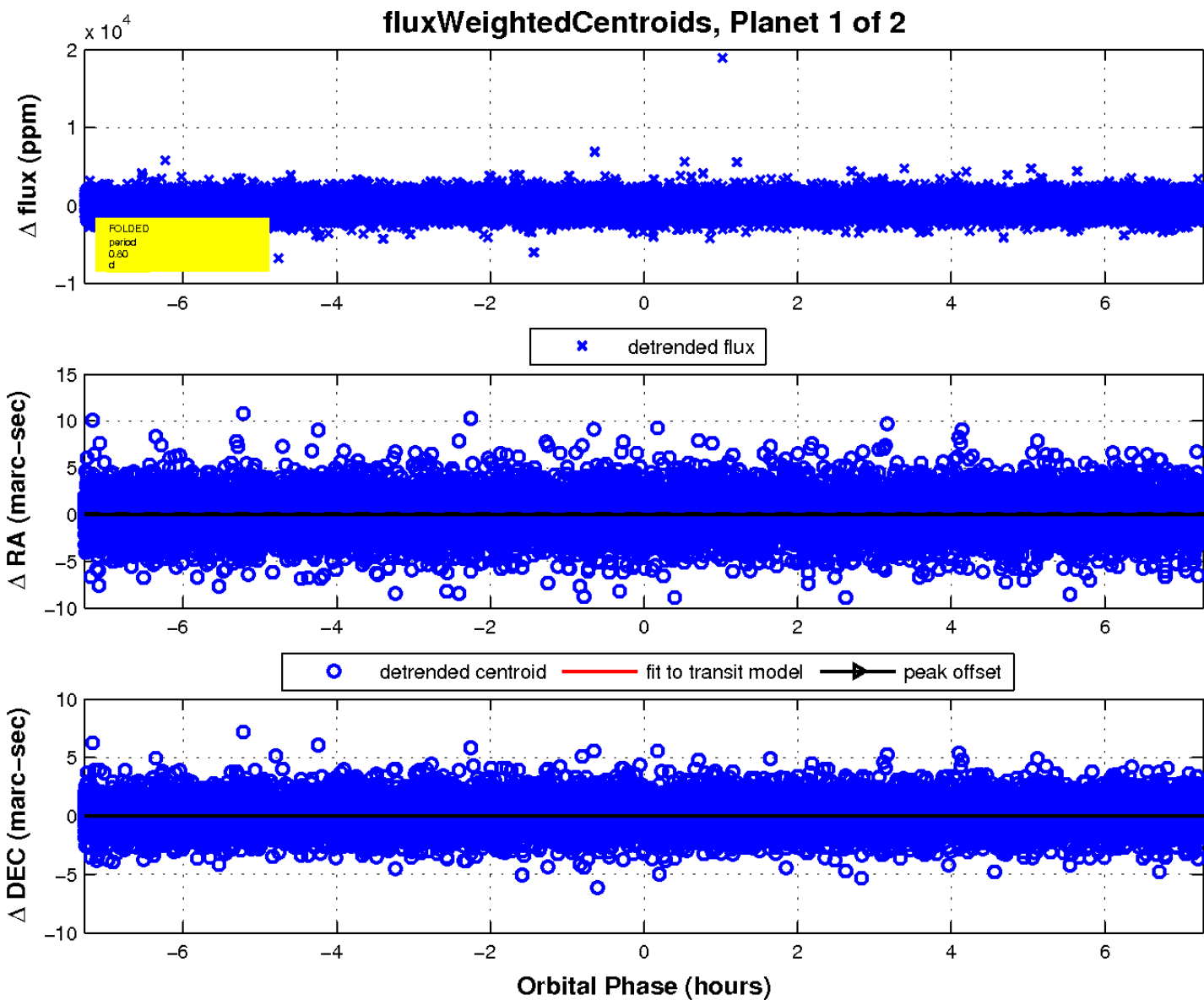
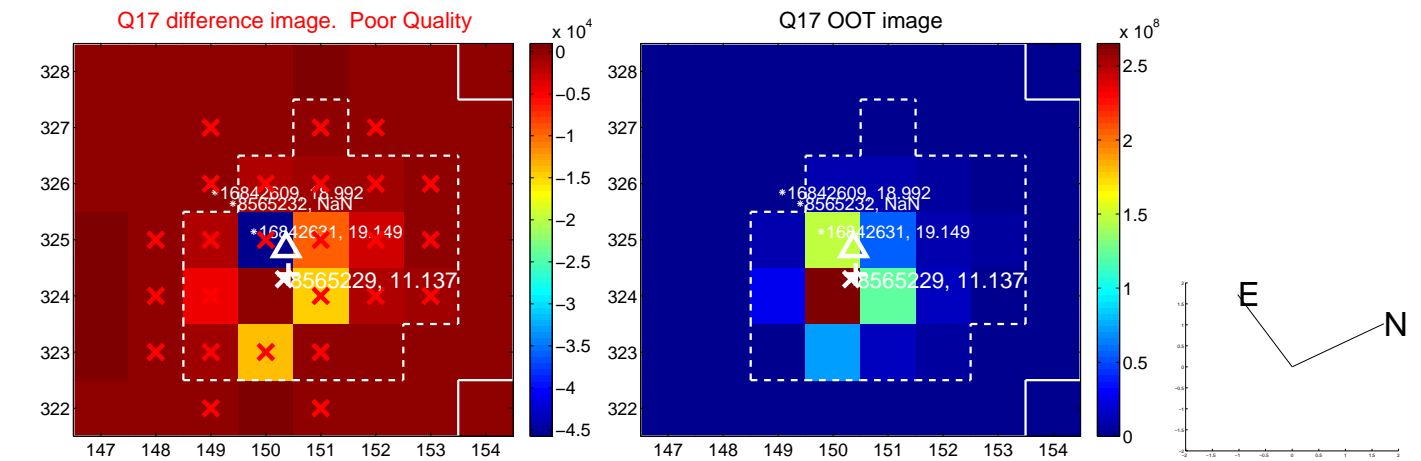
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

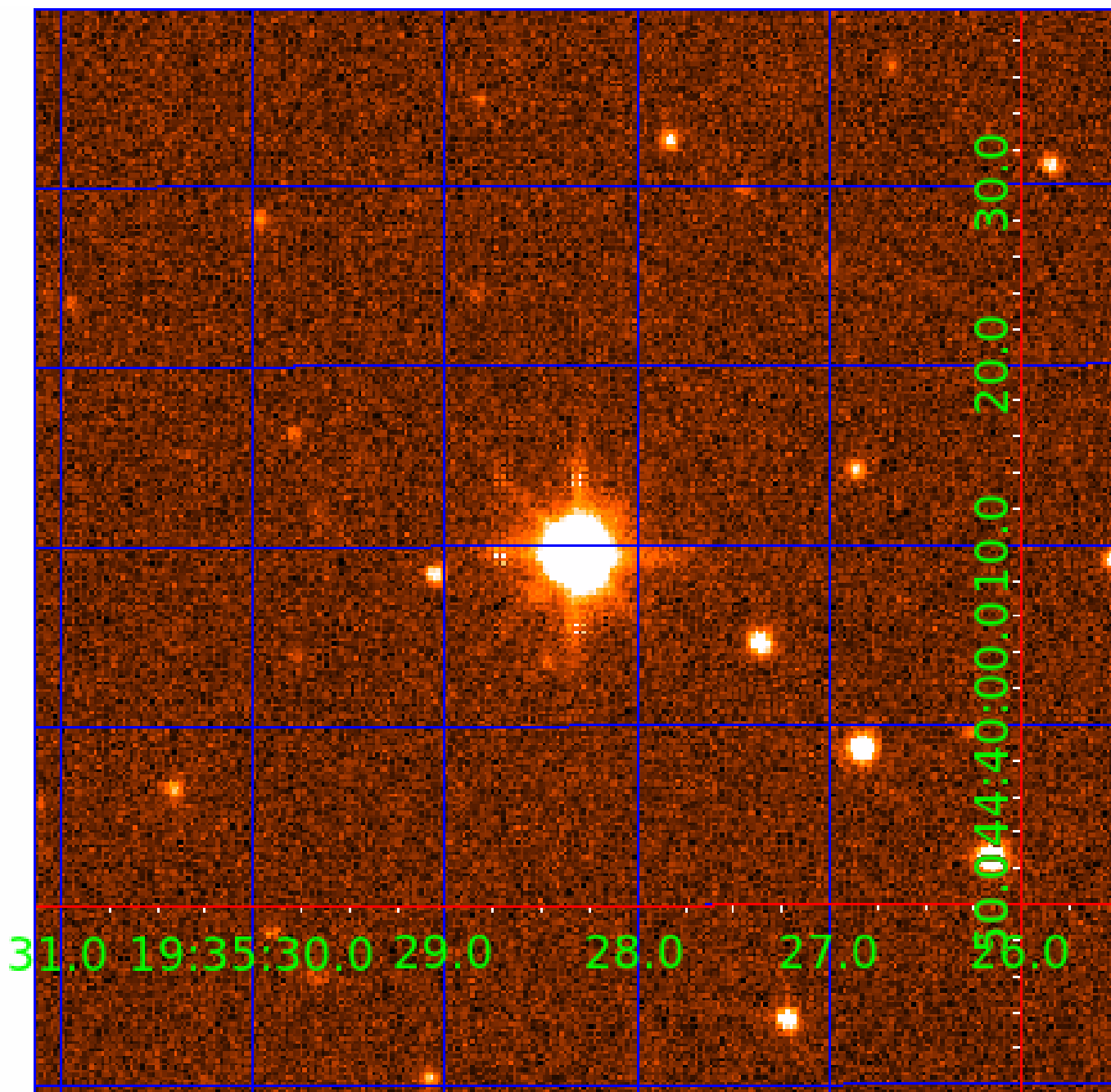


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008565229

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})
008565229-01	OBS	No	0.803384	132.217059	54.0	2.428	11.4	10.9	2.70	7963	2.32	59505.59
008565229-02	OBS	No	0.602535	131.625577	58.4	2.062	8.2	9.3	2.70	7963	2.42	87326.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565229-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
008565229-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

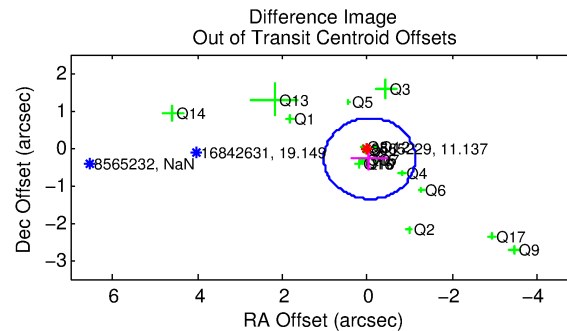
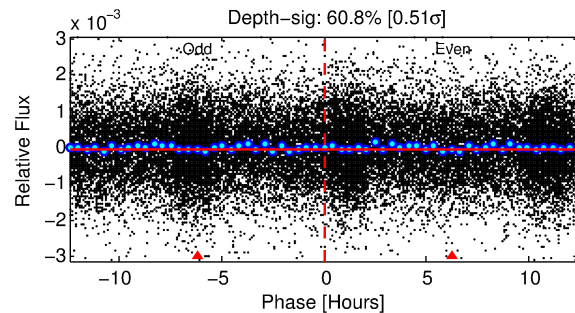
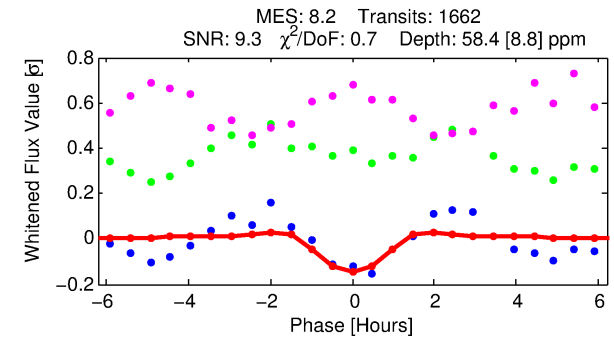
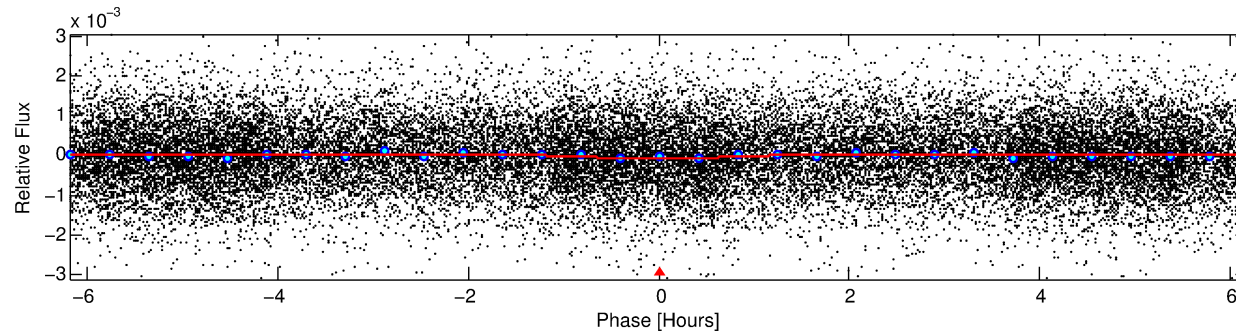
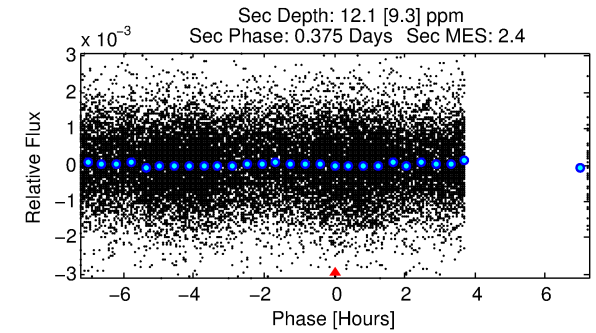
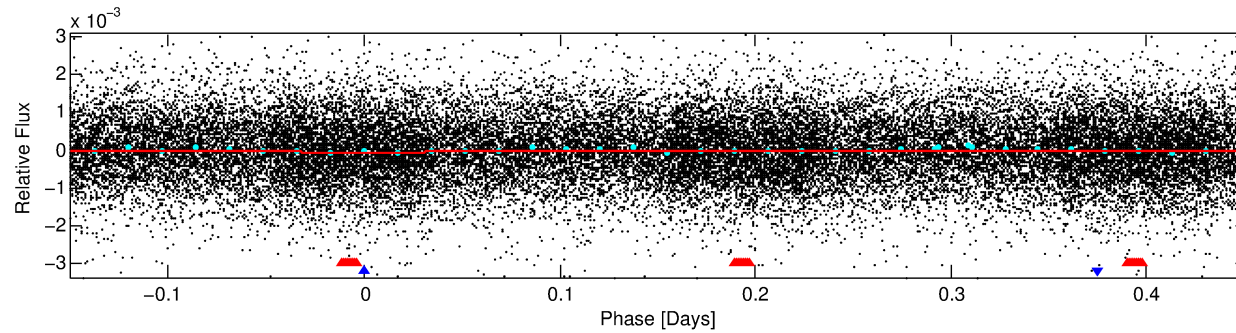
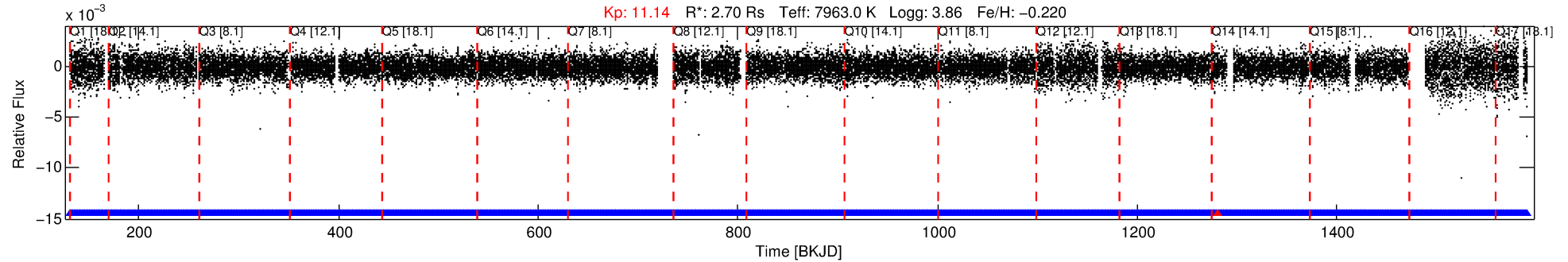
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008565229-02

No Significant Match Found

DV One-Page Summary

KIC: 8565229 Candidate: 2 of 2 Period: 0.603 d



DV Fit Results:

Period = 0.60253 [0.00001] d
Epoch = 131.6256 [0.0033] BKJD
 $R_p/R^* = 0.0082$ [0.0067]
 $a/R^* = 1.37$ [3.09]
 $b = 0.90$ [1.00]
 $S_{\text{eff}} = 87326.43$ [53810.48]
 $T_{\text{eq}} = 4383$ [675] K
 $R_p = 2.42$ [2.21] R_e
 $a = 0.0173$ [0.0066] AU
 $A_g = 0.34$ [0.65] [-1.02σ]
 $T_{\text{eff}} = 5177$ [2348] K [0.32σ]

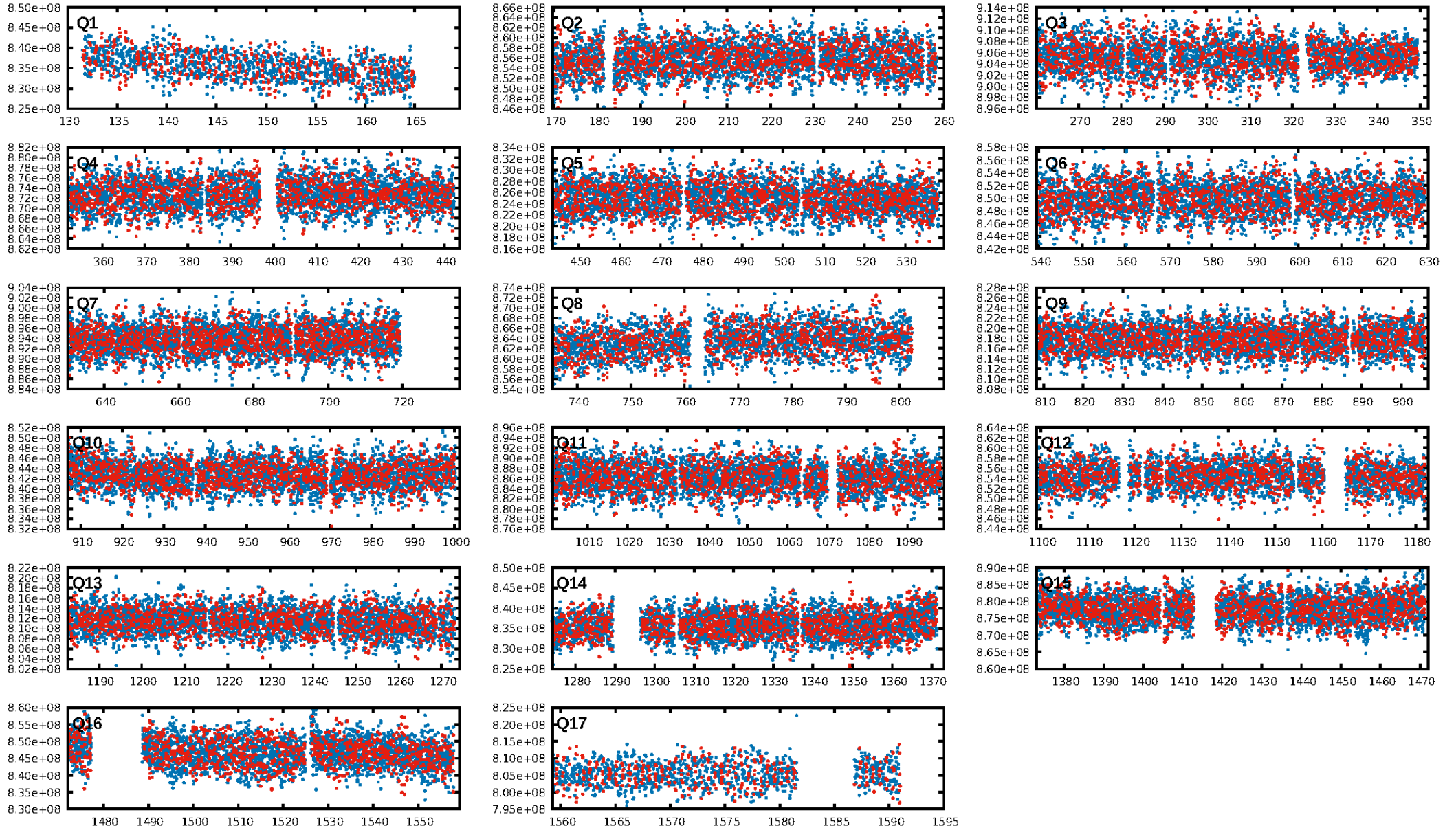
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 87.0% [1.51σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.53e-18
RollingBand-fgt: 1.00 [1586/1587]
GhostDiagnostic-chr: 3.014
Centroid-sig: 0.0%
Centroid-so: 0.232 arcsec [1.40σ]
OotOffset-rm: 0.289 arcsec [0.80σ]
KicOffset-rm: 0.219 arcsec [0.47σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 1.00 [17/17]

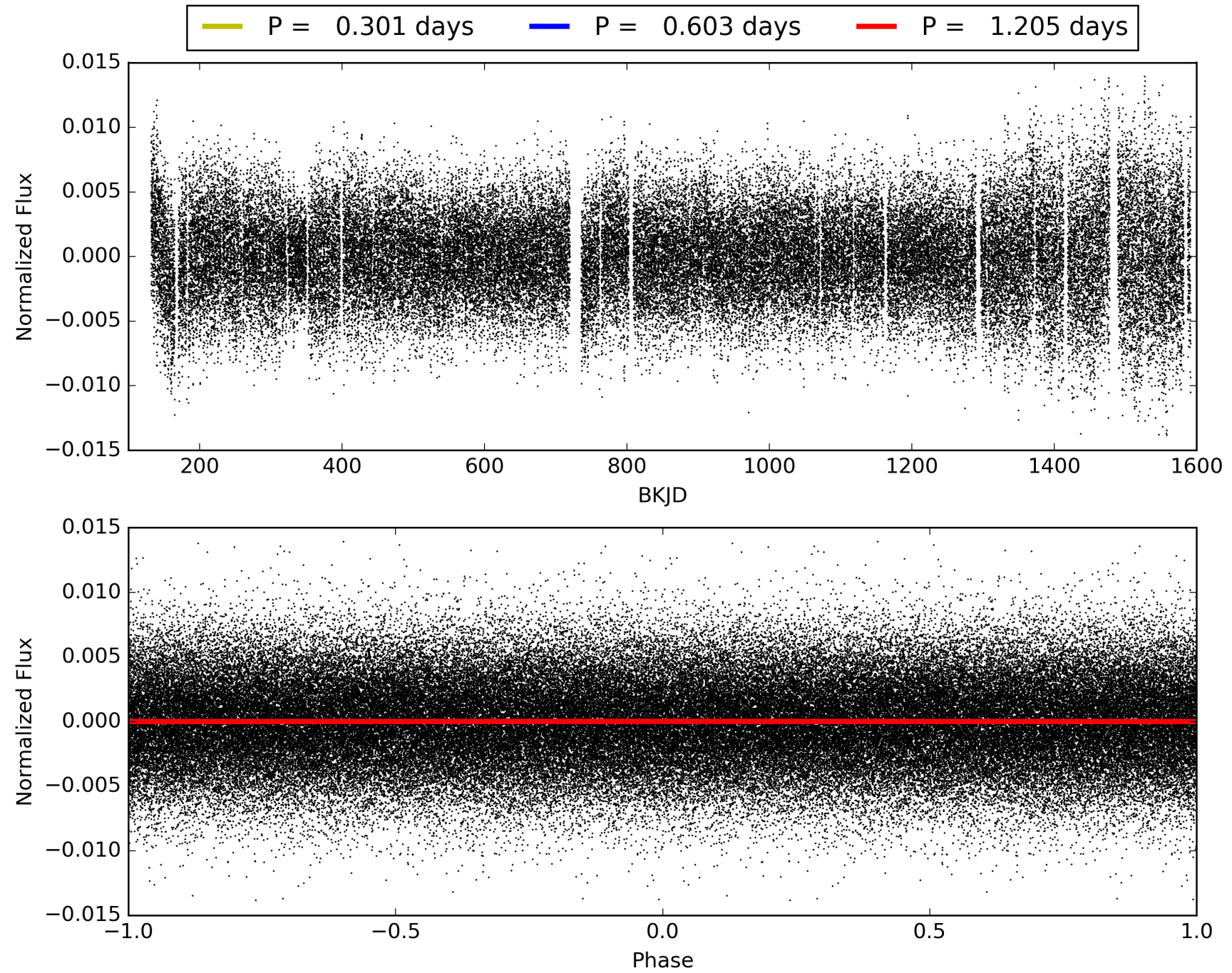
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:20:31 Z

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

TCE 008565229-02, PDC Light Curves

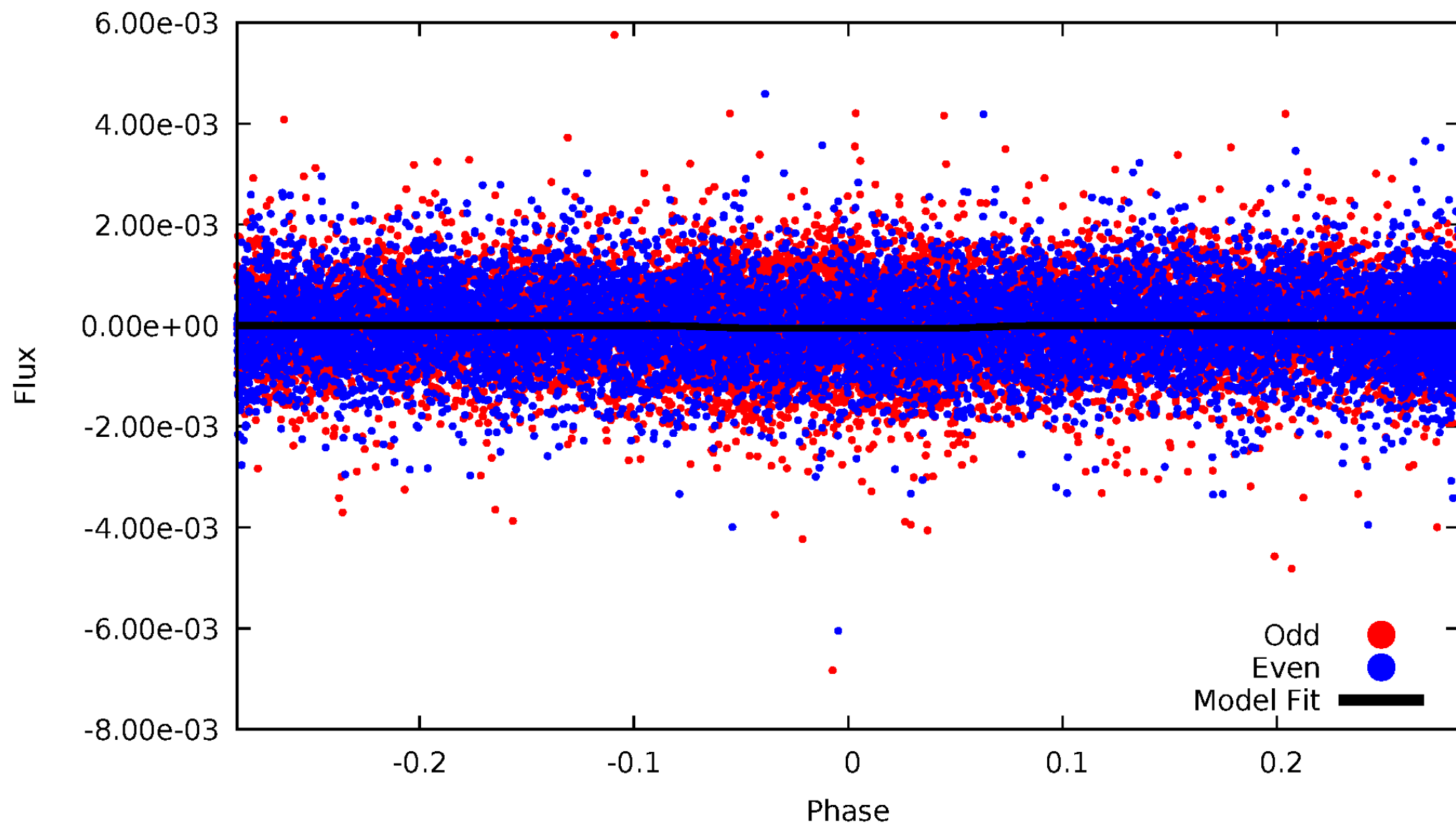


TCE 008565229-02



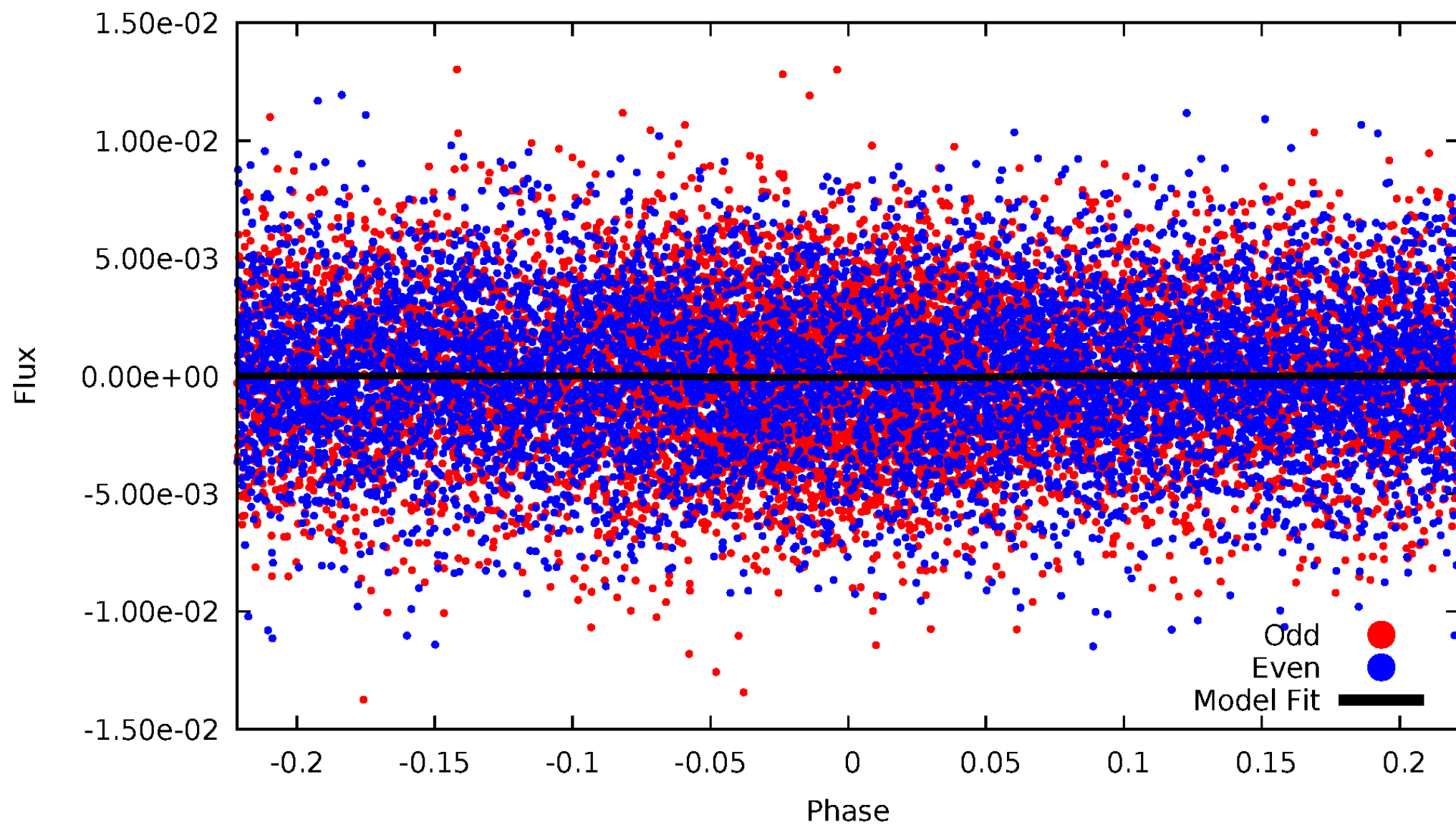
DV Odd/Even

TCE 008565229-02



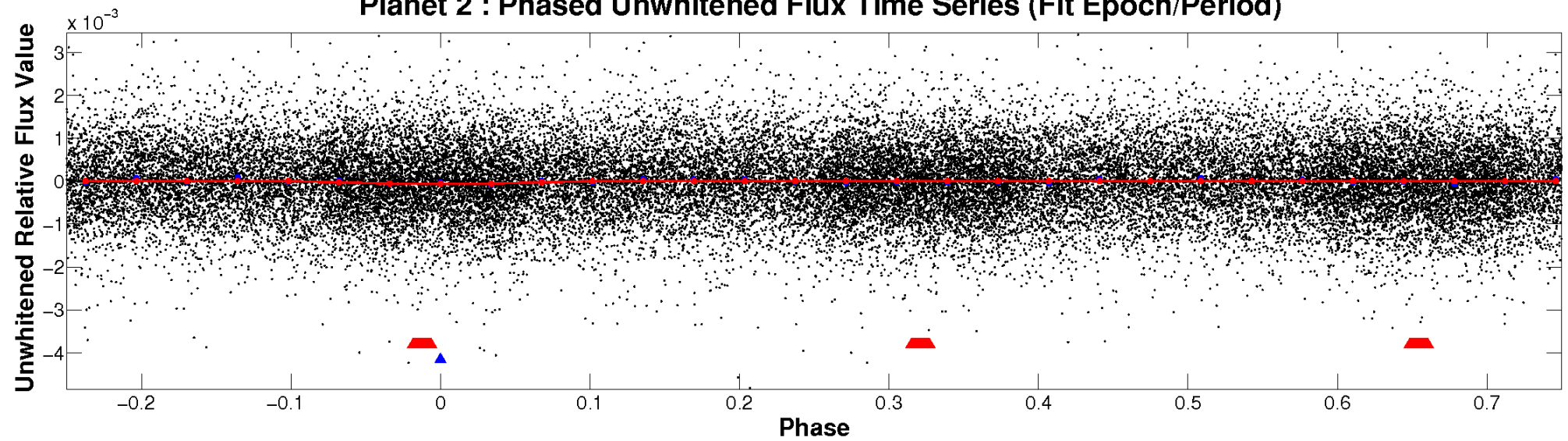
ALT Odd/Even

TCE 008565229-02

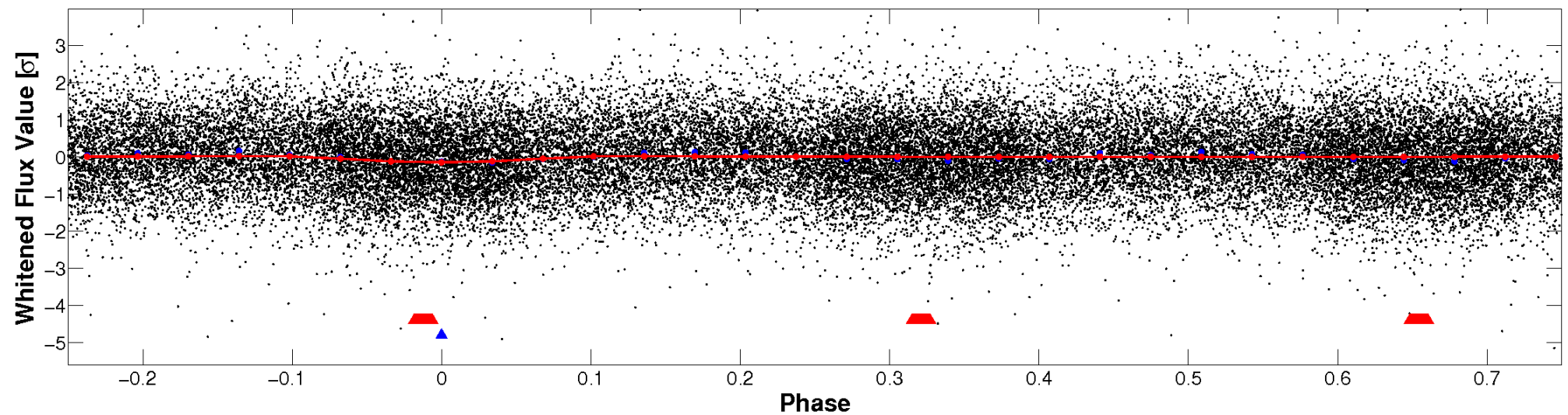


Non-Whitened Vs. Whitened Light Curve

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

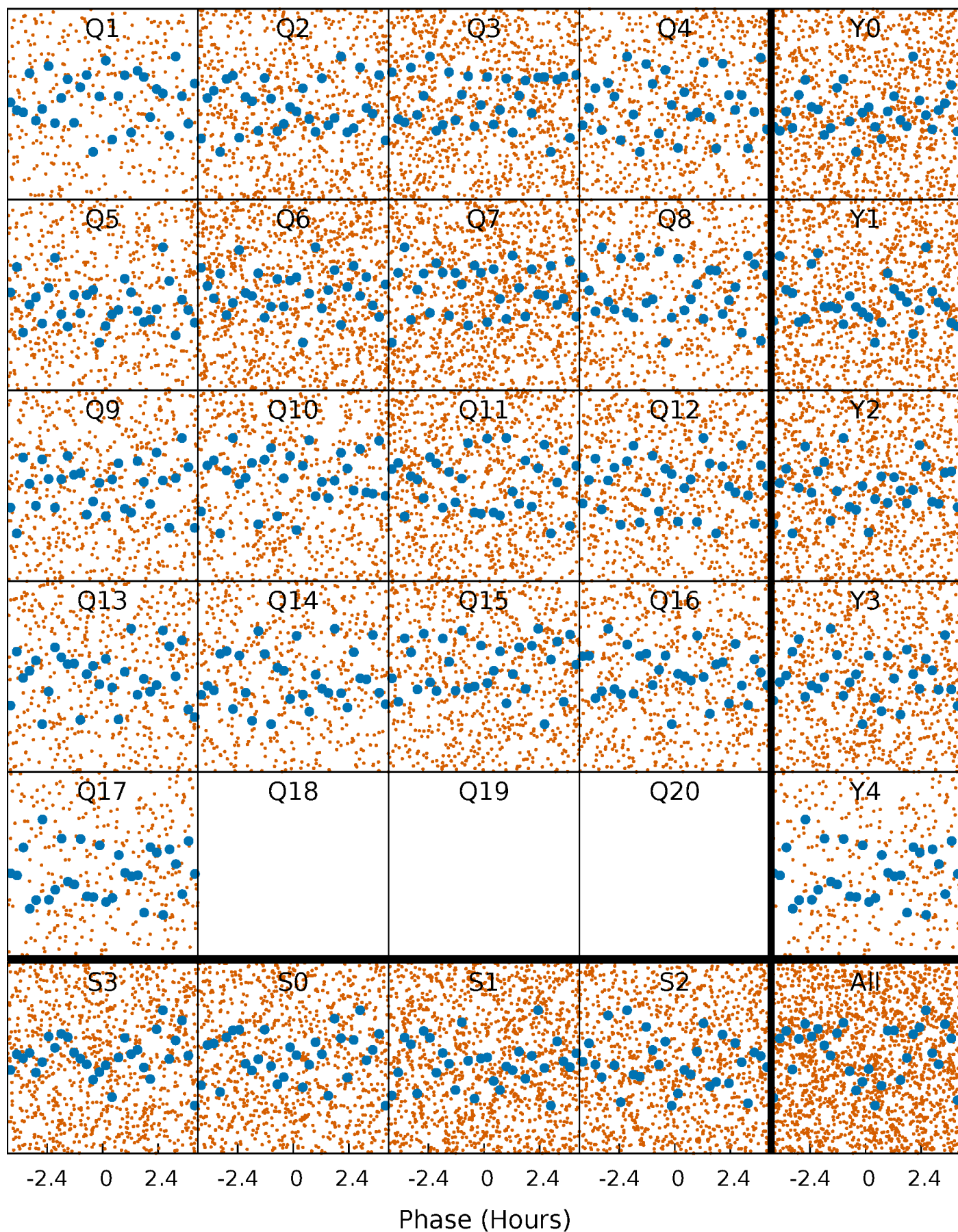


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



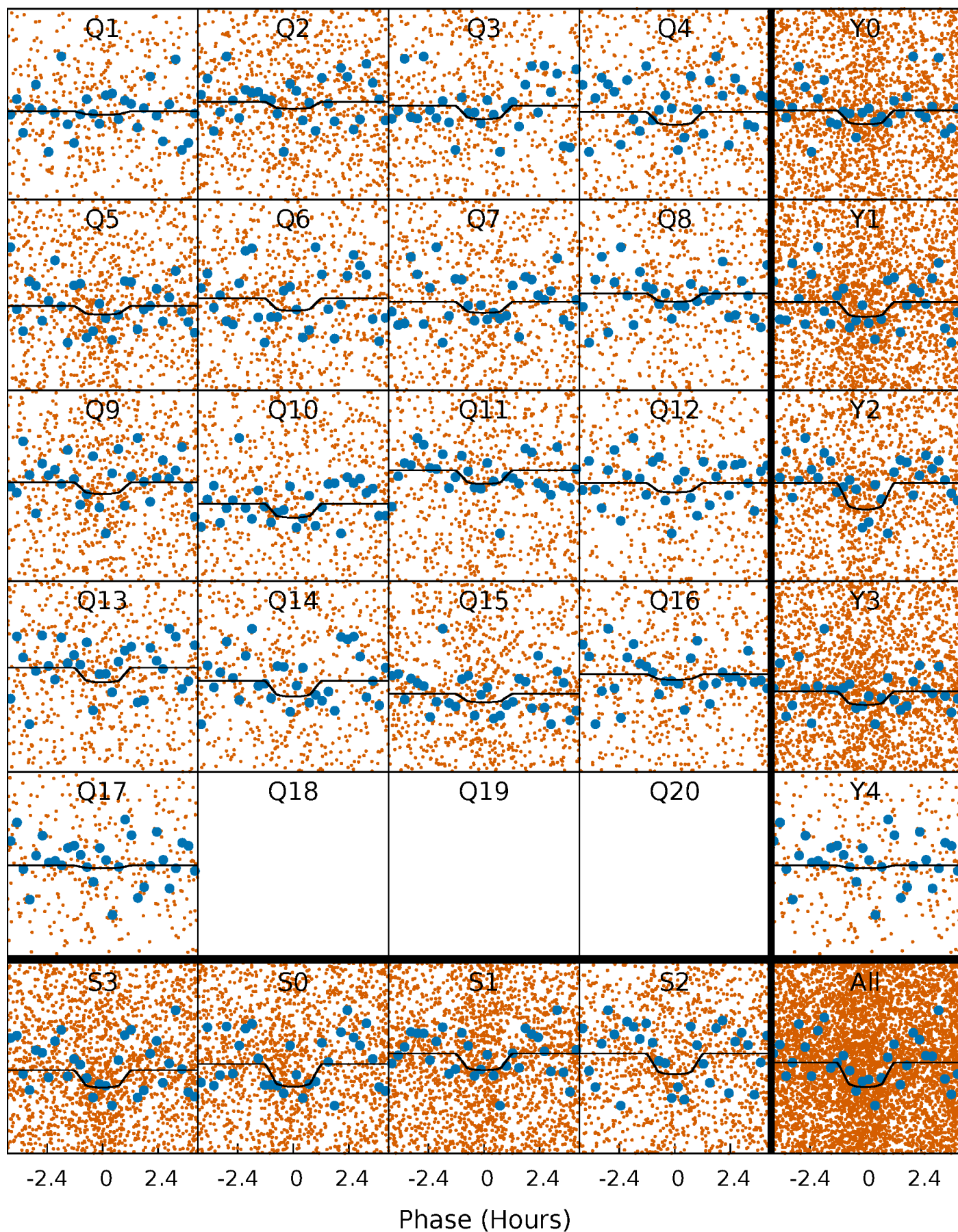
PDC Quarter-Phased Transit Curves

TCE 008565229-02 P= 0.602535 Days $T_0=131.625576$ (BKJD)



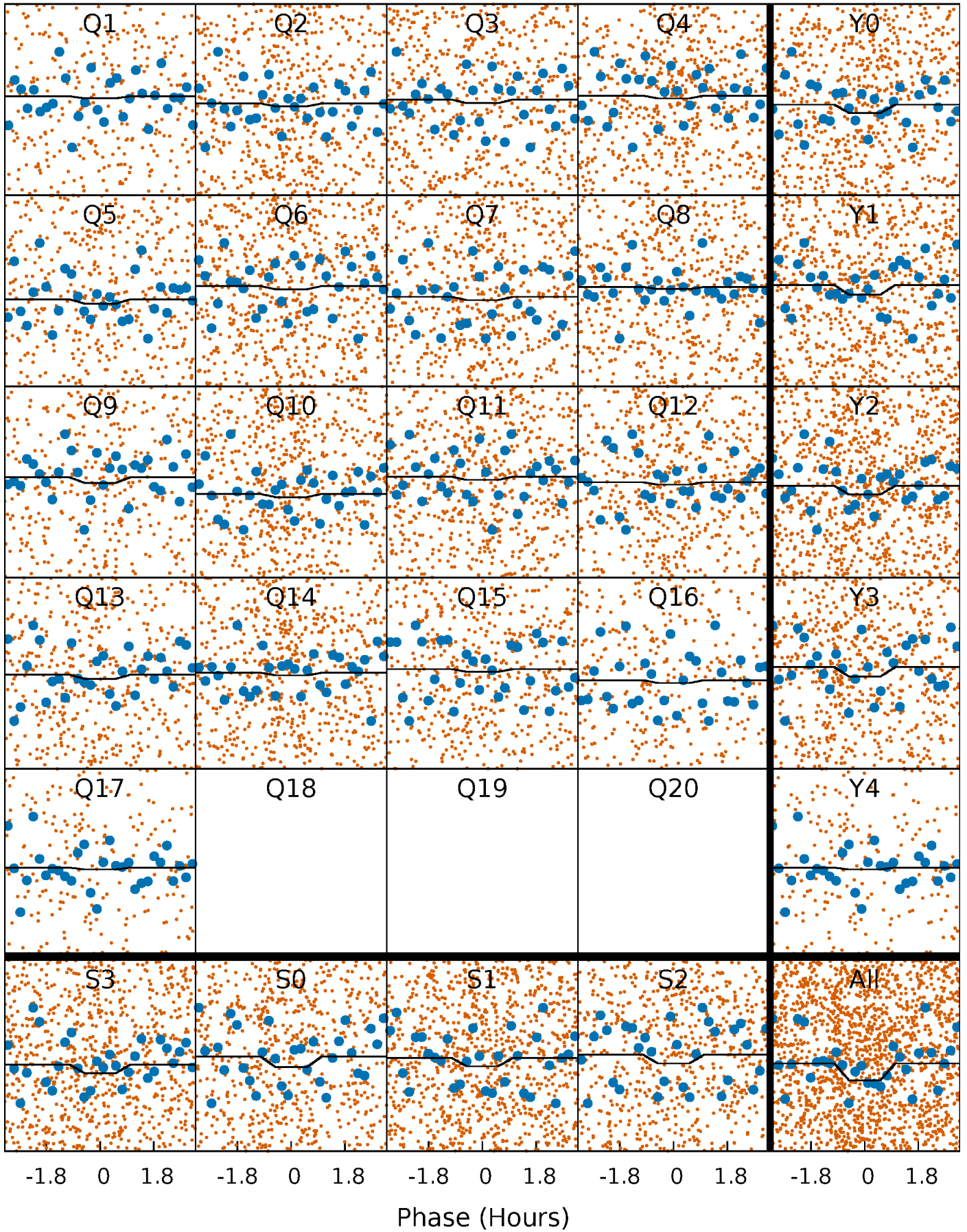
DV Quarter-Phased Transit Curves

TCE 008565229-02 P= 0.602535 Days $T_0=131.625576$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

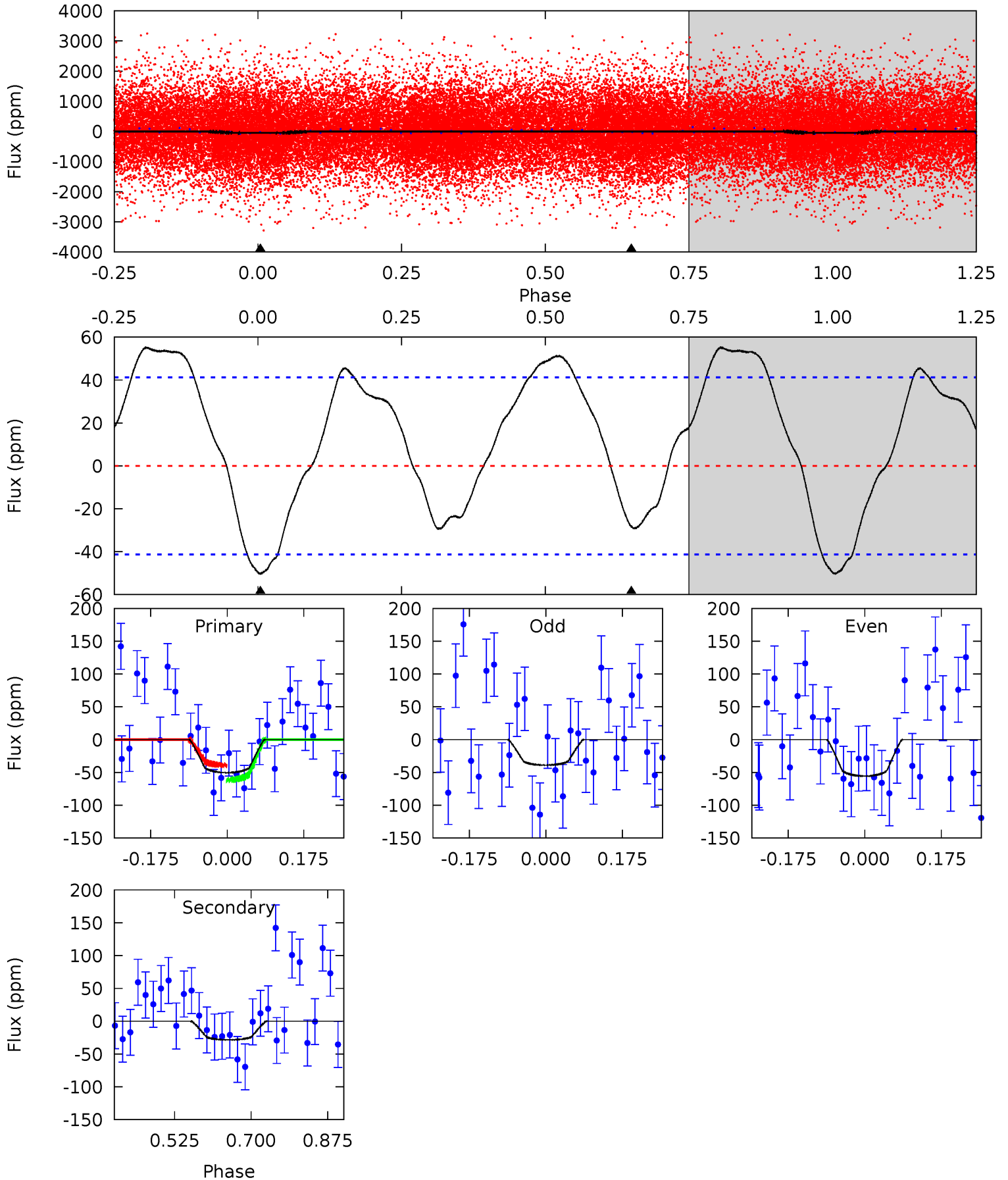
TCE 008565229-02 P= 0.602549 Days $T_0=131.609688$ (BKJD)



DV Model-Shift Uniqueness Test

008565229-02, P = 0.602535 Days, E = 131.023041 Days

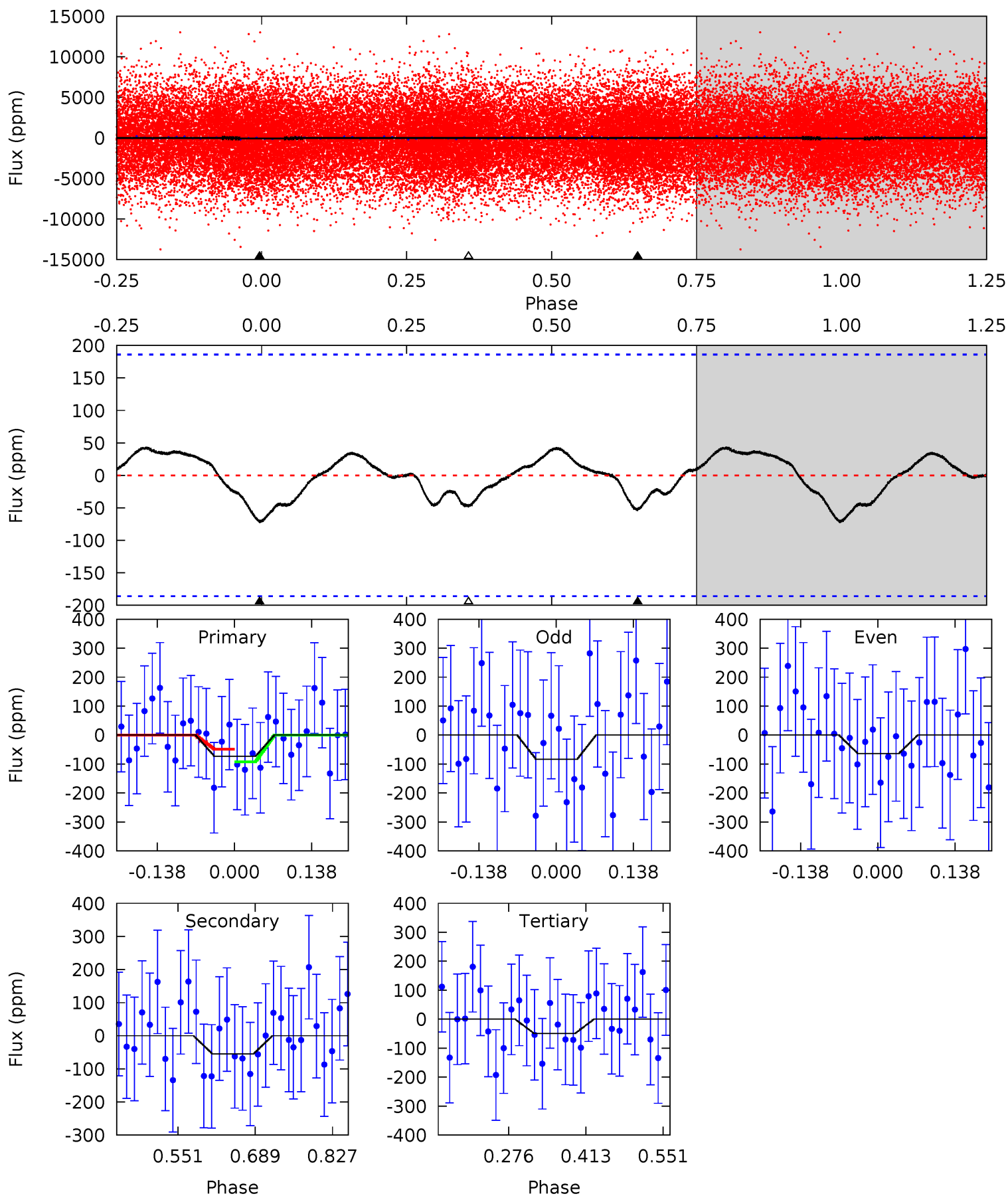
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.43	3.06	0	0	4.45	1.36	2.52	5.43	5.43	3.06	3.06	0.87	1.17	0.52	1.21



Alt Model-Shift Uniqueness Test

008565229-02, P = 0.602549 Days, E = 131.007139 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.77	1.33	1.19	0	4.50	1.48	0.69	0.58	1.77	0.14	1.33	0.23	0.98	0.38	0.53



Stellar Parameters For KIC 008565229

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7963^{+216}_{-325}	$3.857^{+0.344}_{-0.086}$	$-0.220^{+0.200}_{-0.350}$	$2.697^{+0.367}_{-1.102}$	$1.909^{+0.082}_{-0.467}$	$0.137^{+0.341}_{-0.040}$
	+3%/-4%	+9%/-2%	+91%/-159%	+14%/-41%	+4%/-24%	+249%/-29%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008565229-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-28 ± 9	$2.38^{+1.90}_{-1.49}$	5980^{+377}_{-589}	5244^{+4870}_{-8994}	$0.766^{+4.381}_{-0.541}$
Alt.	-55 ± 41	$2.44^{+1.74}_{-1.45}$	5963^{+410}_{-643}	6250^{+5973}_{-10129}	$1.298^{+6.223}_{-1.083}$

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

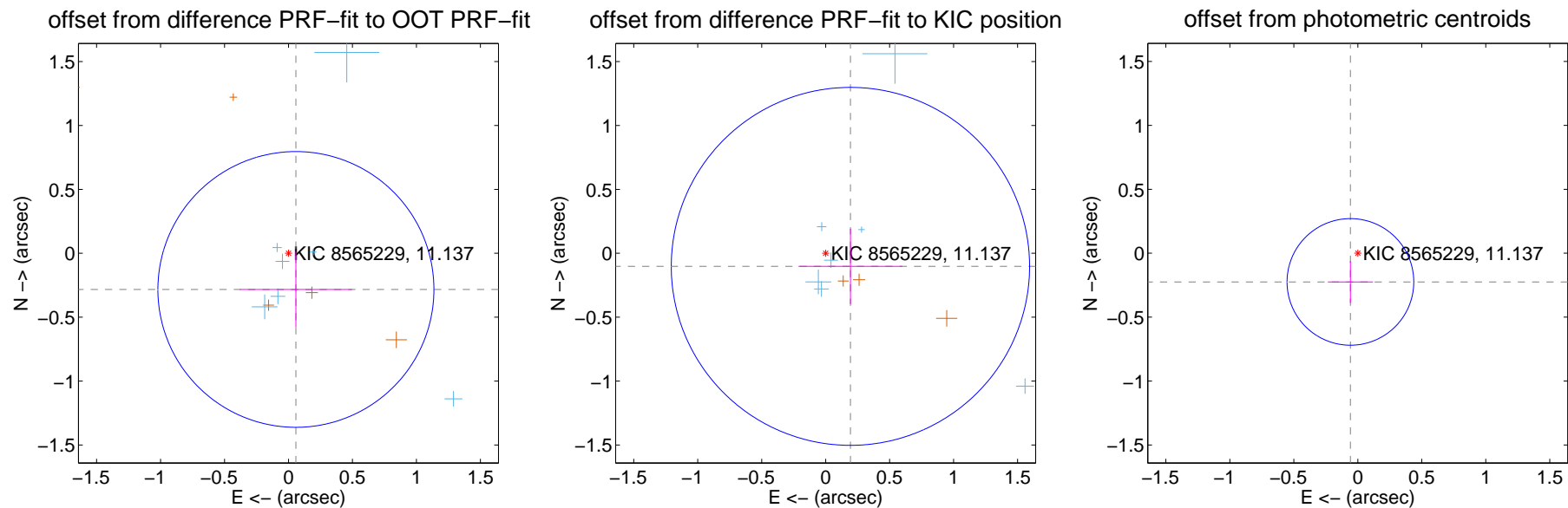
DV Centroid Data

Supplemental centroid analysis for 008565229-02. **Kepler magnitude: 11.14.** Transit SNR 9.28

There are 11 quarters with good PRF difference image offsets

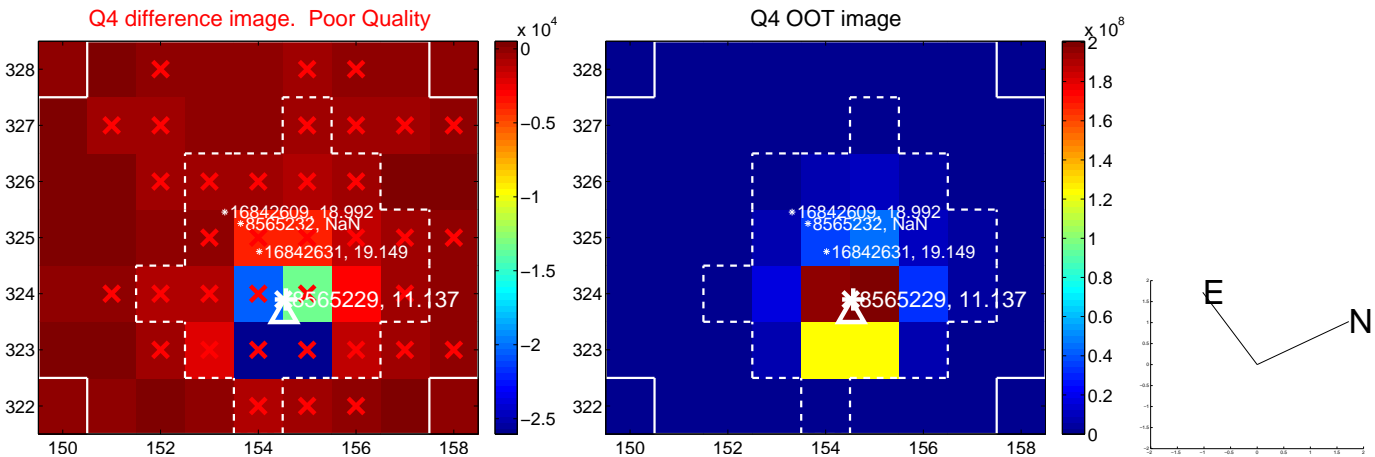
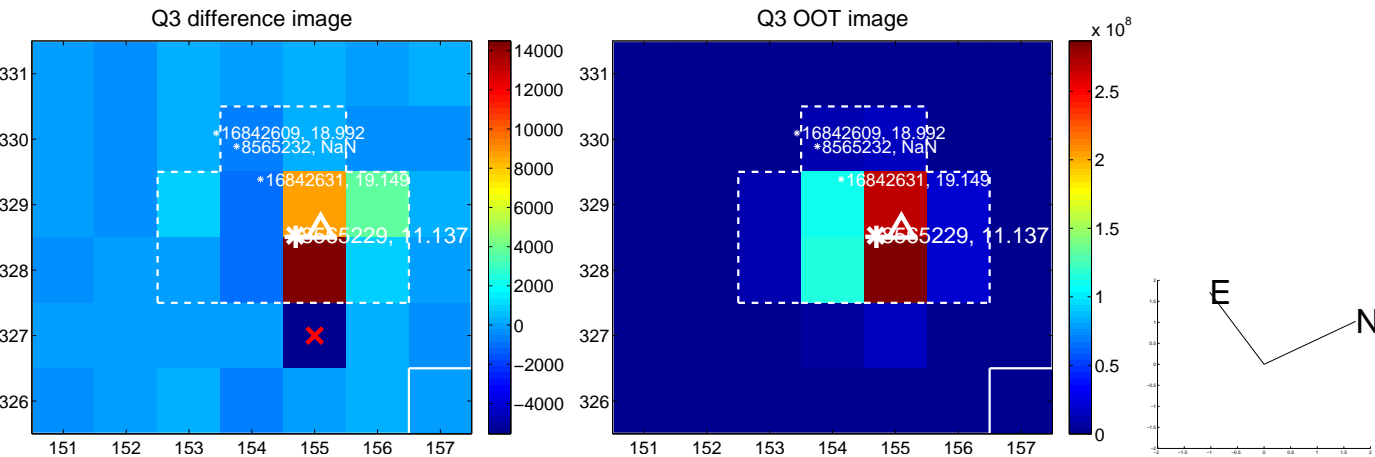
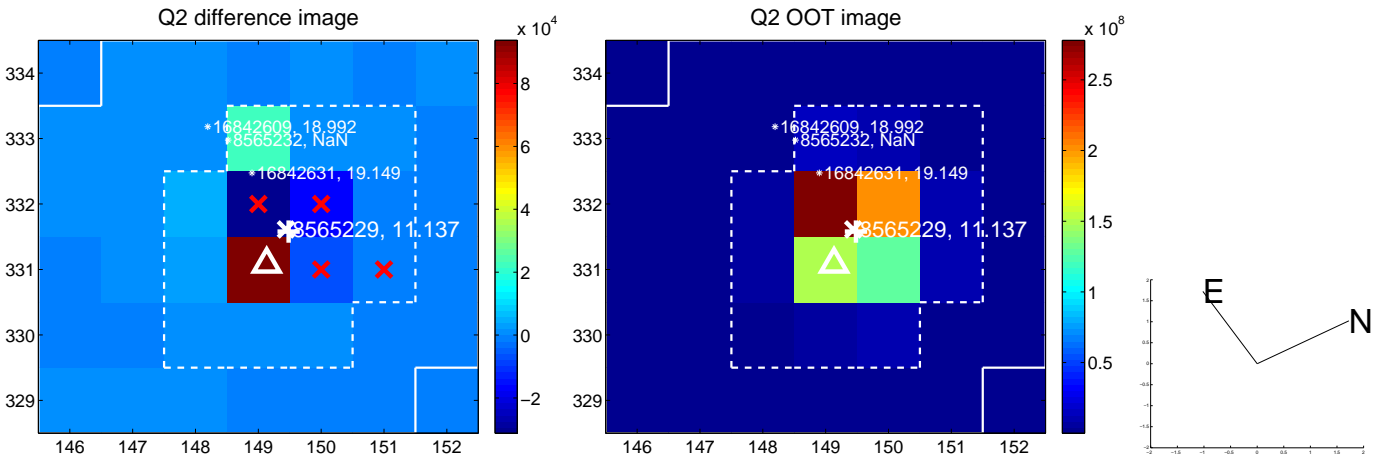
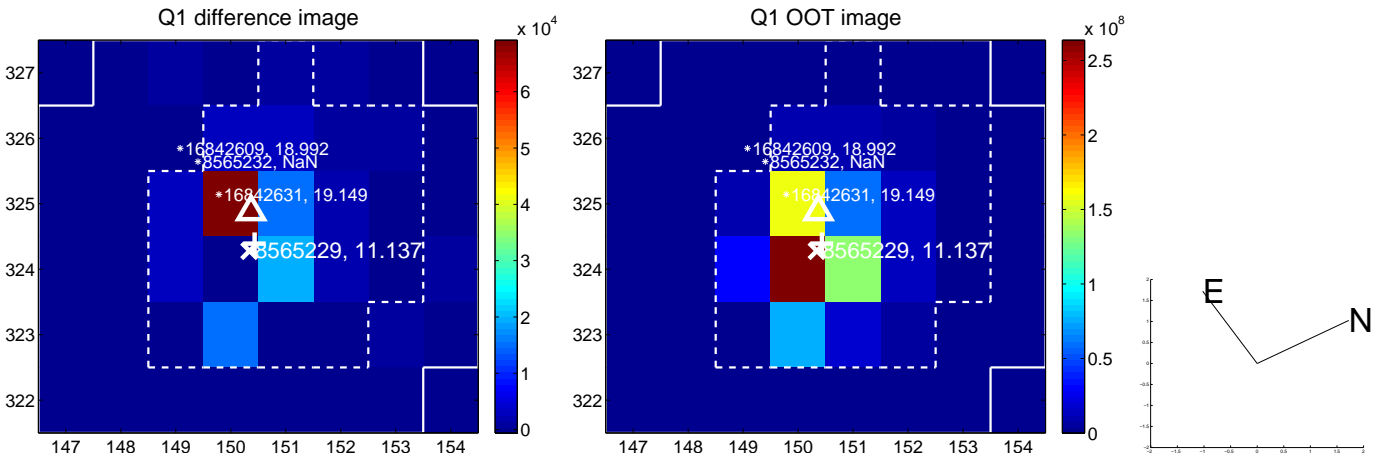
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.289 ± 0.360	0.80	-0.058 ± 0.438	-0.283 ± 0.295
PRF-fit source offset from KIC position	0.219 ± 0.467	0.47	-0.194 ± 0.406	-0.102 ± 0.294
photometric centroid source offset	0.23 ± 0.17	1.40	0.06 ± 0.18	-0.22 ± 0.16

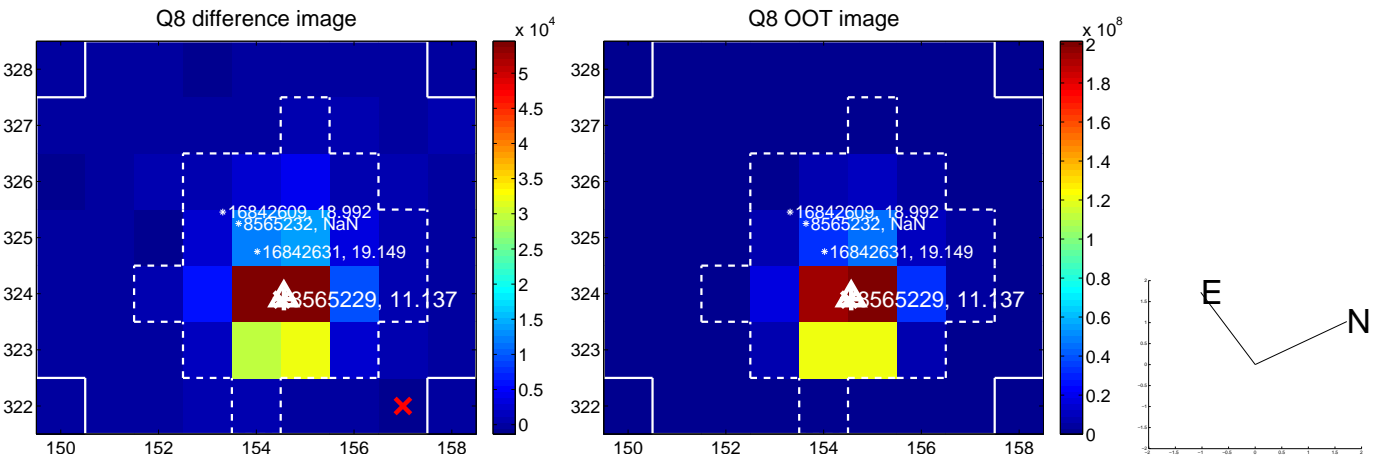
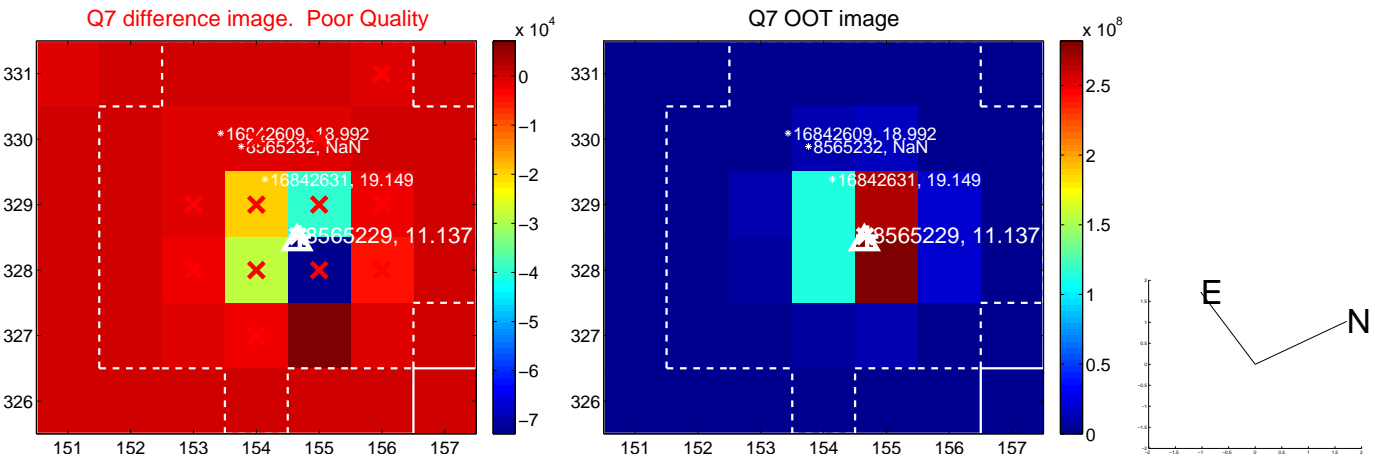
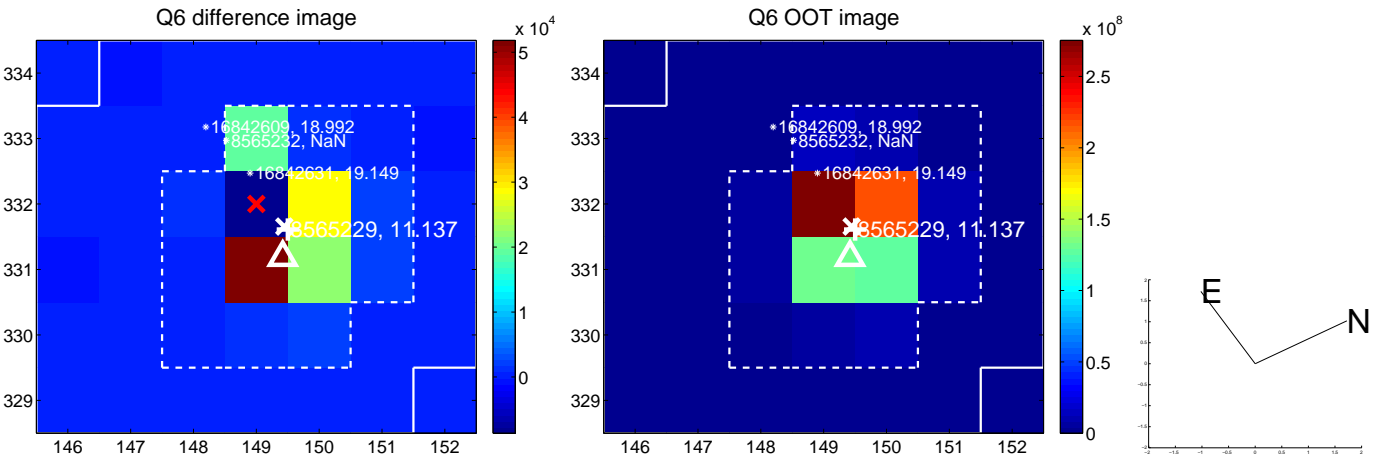
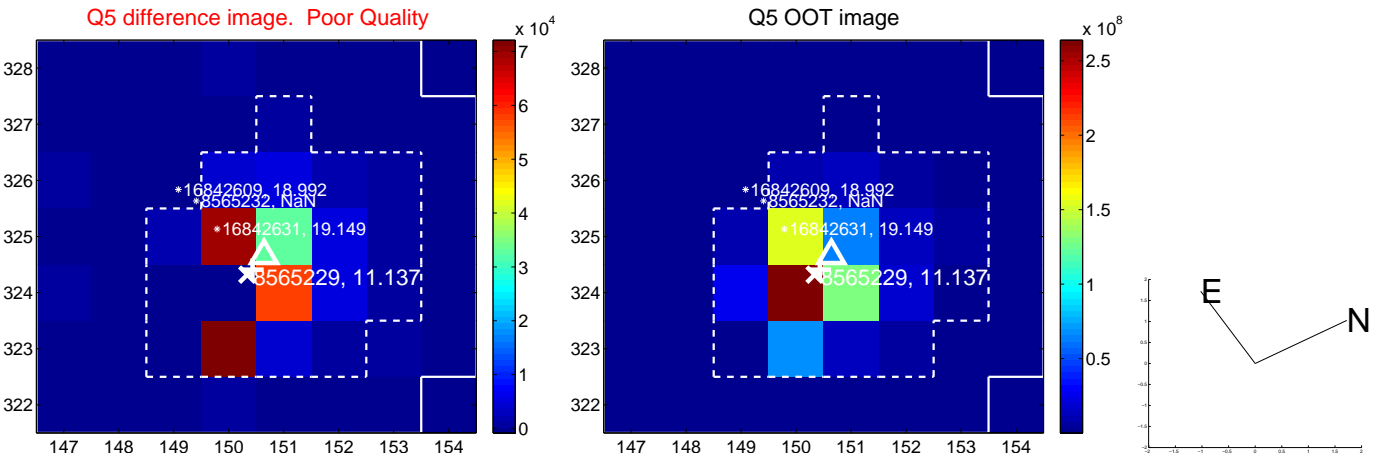


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

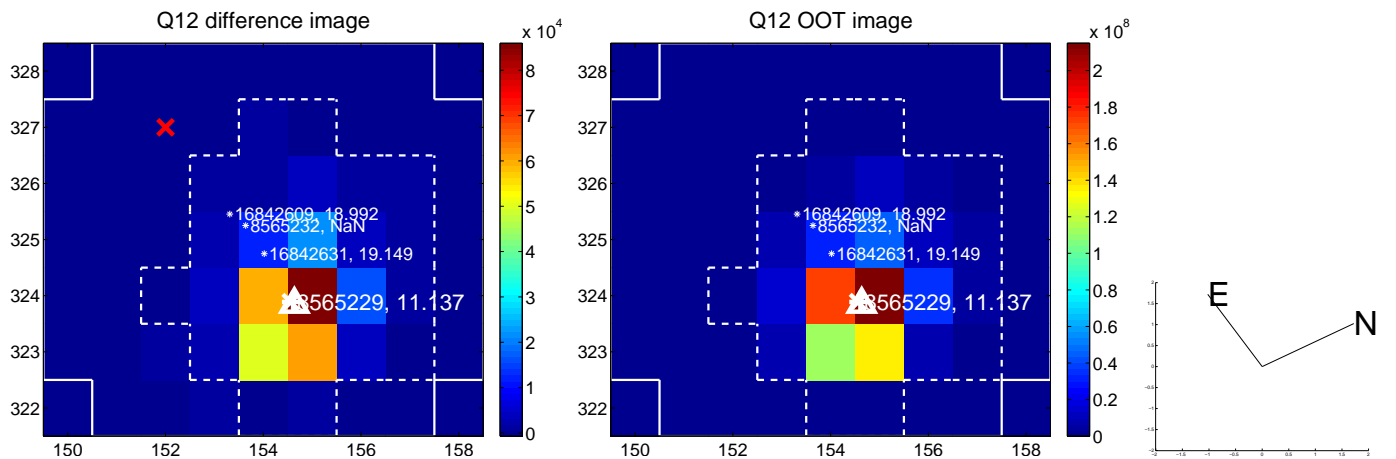
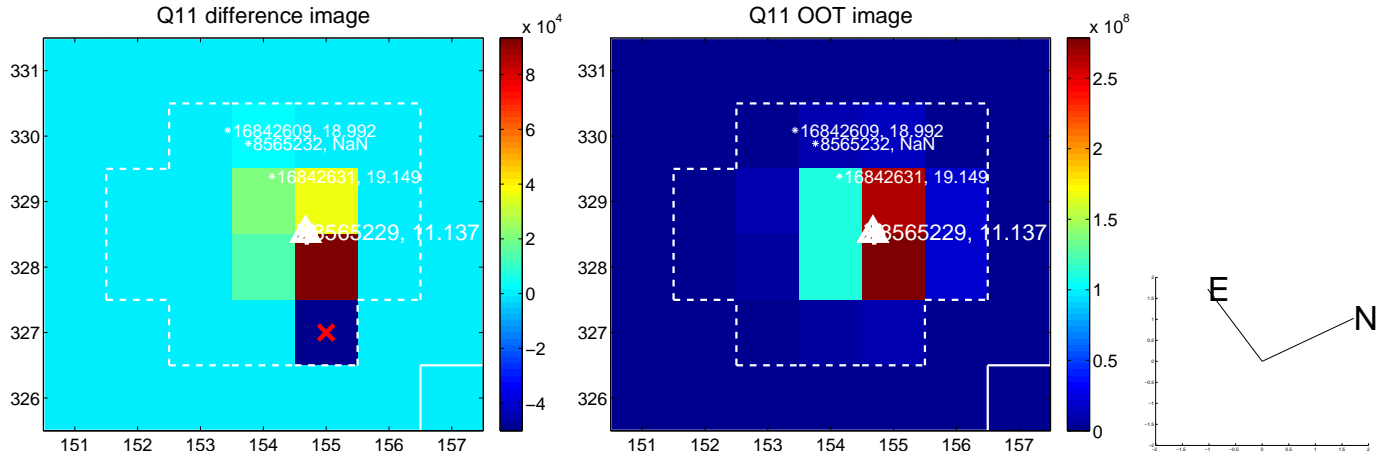
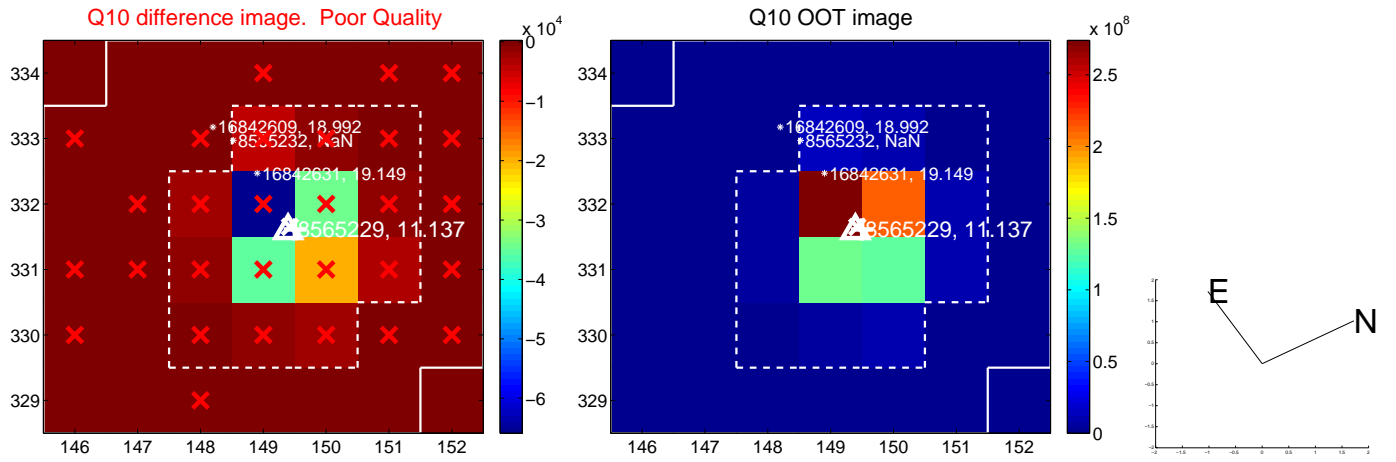
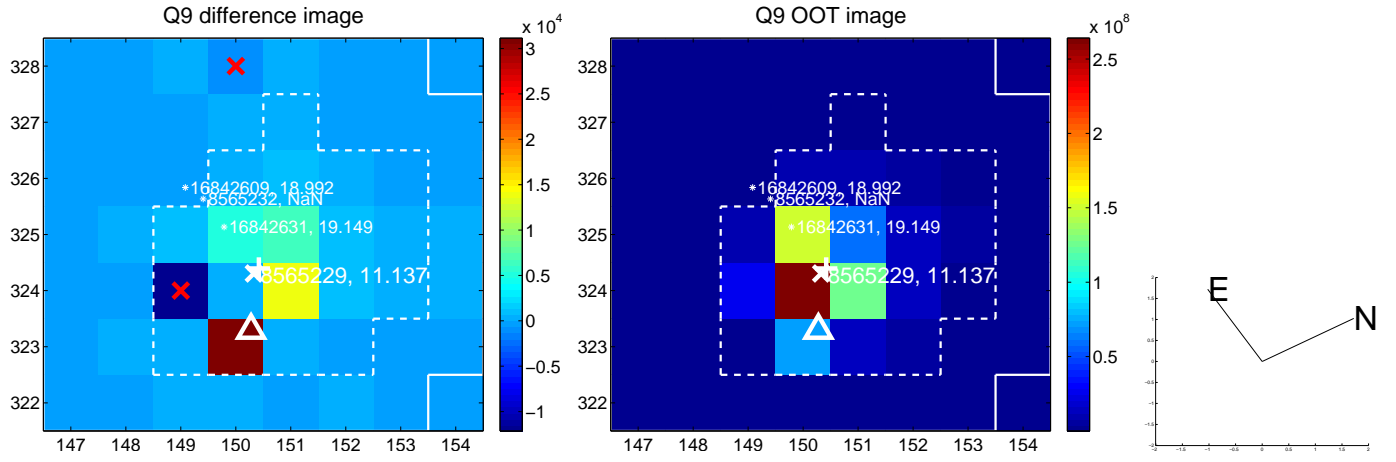
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



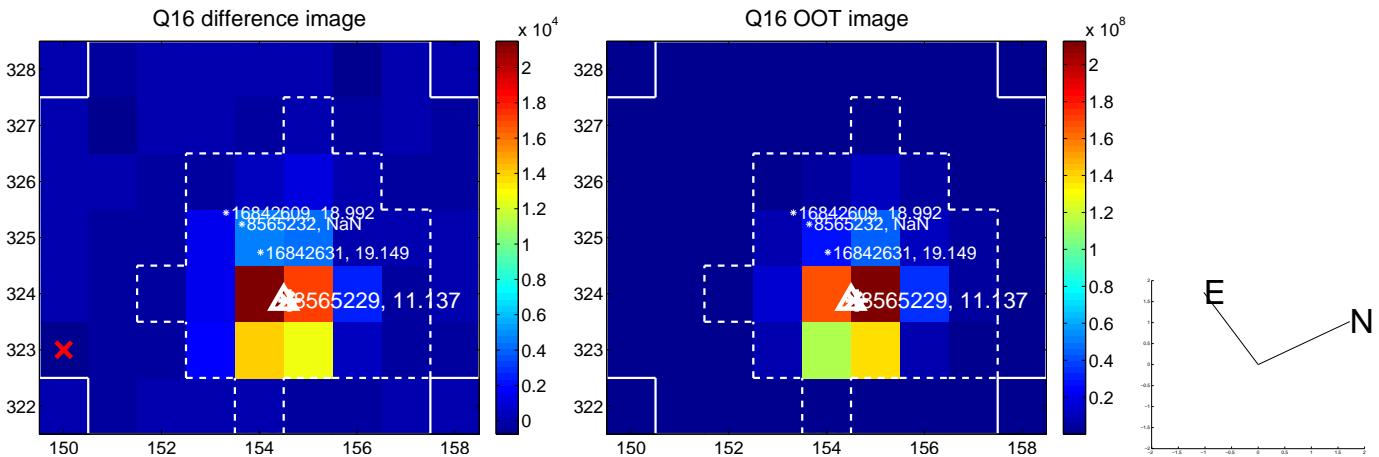
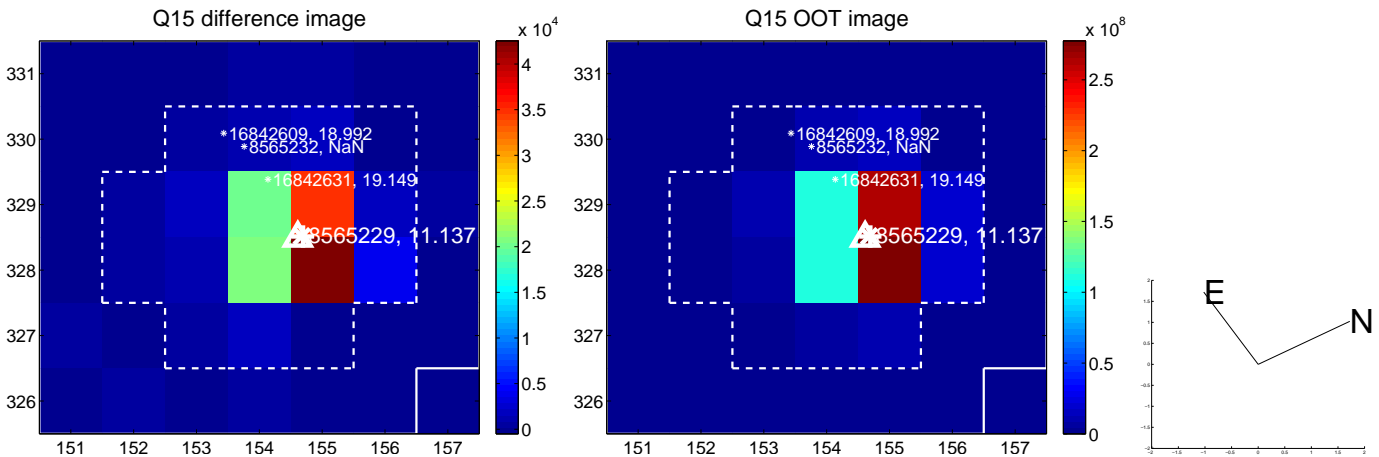
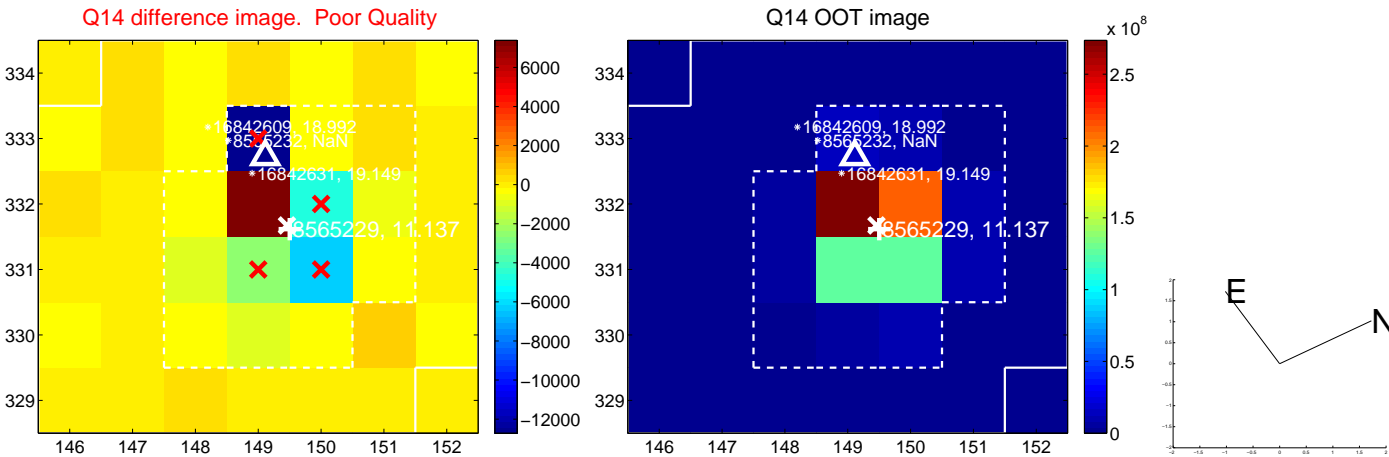
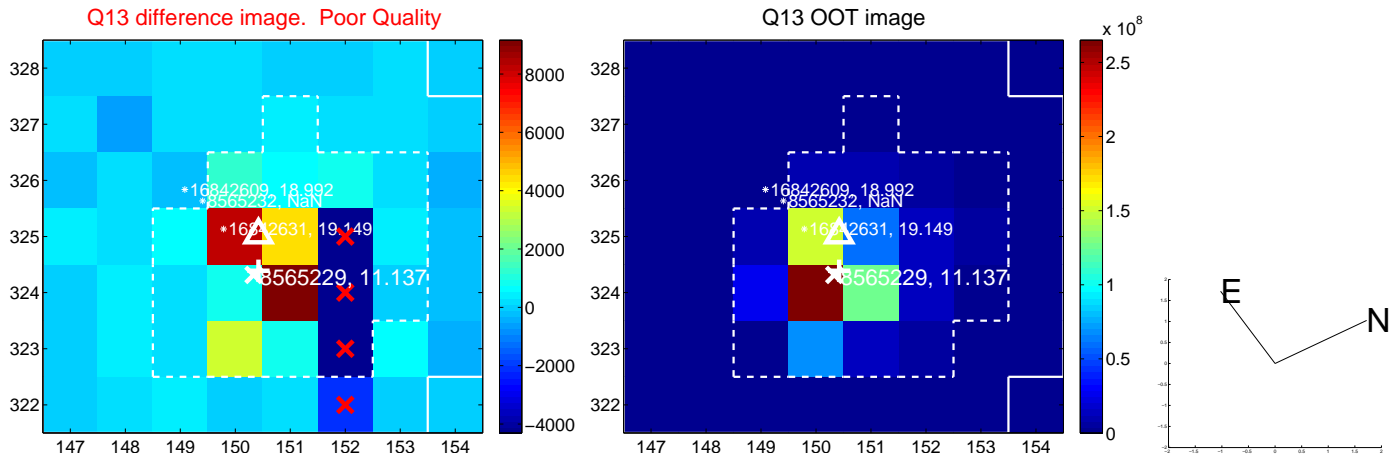
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



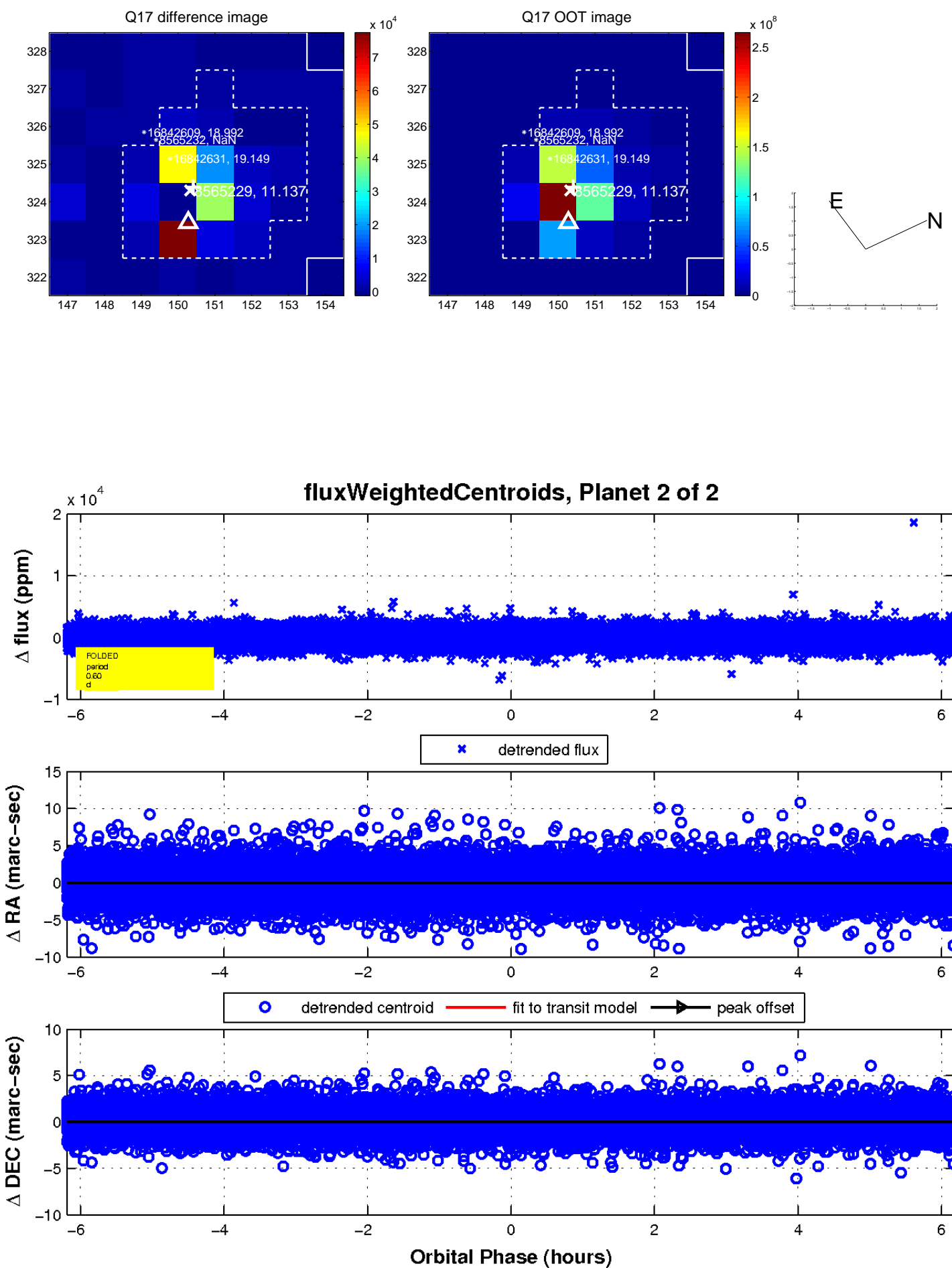
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

