

KIC 008581232

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})
008581232-01	OBS	6059.01	4.012538	134.652440	21624.3	2.073	891.1	636.2	0.63	4483	10.70	81.19
008581232-02	OBS	No	4.012538	132.062937	4948.5	2.785	250.2	230.9	0.63	4483	5.27	81.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008581232-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—SEASONAL_DEPTH_ALT—CENT_UNRESOLVED_OFFSET
008581232-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

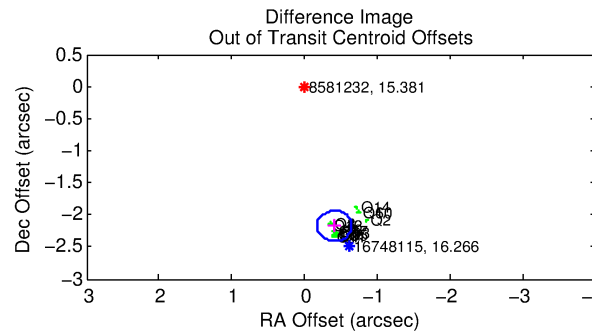
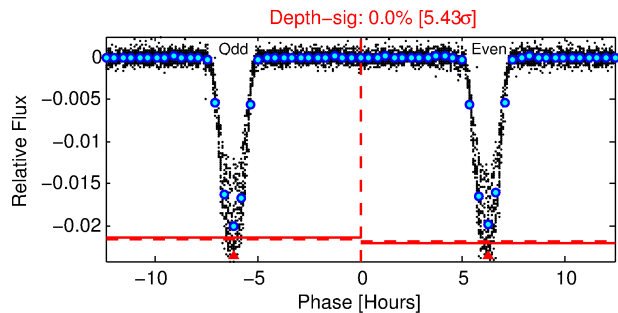
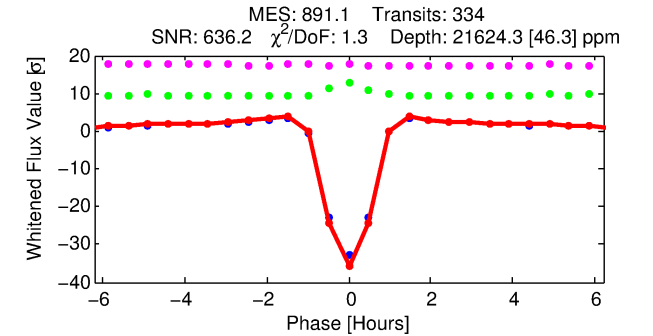
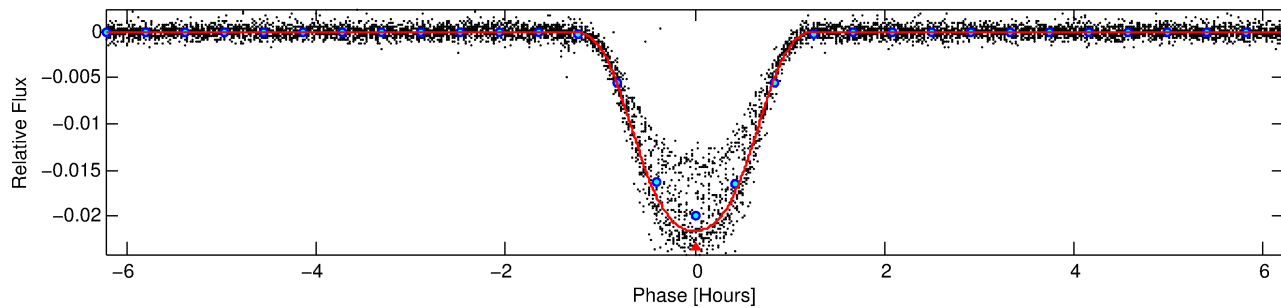
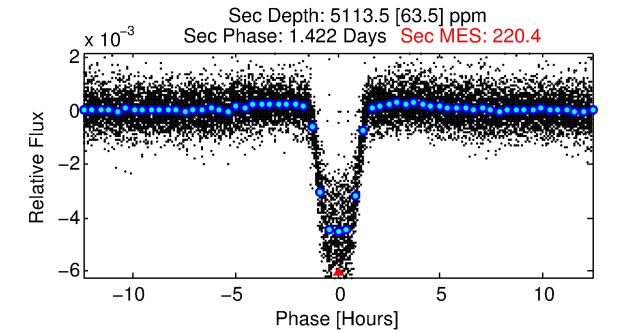
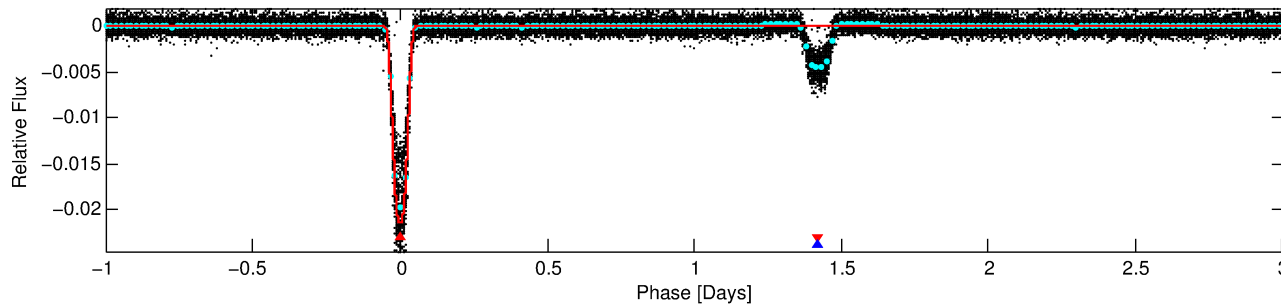
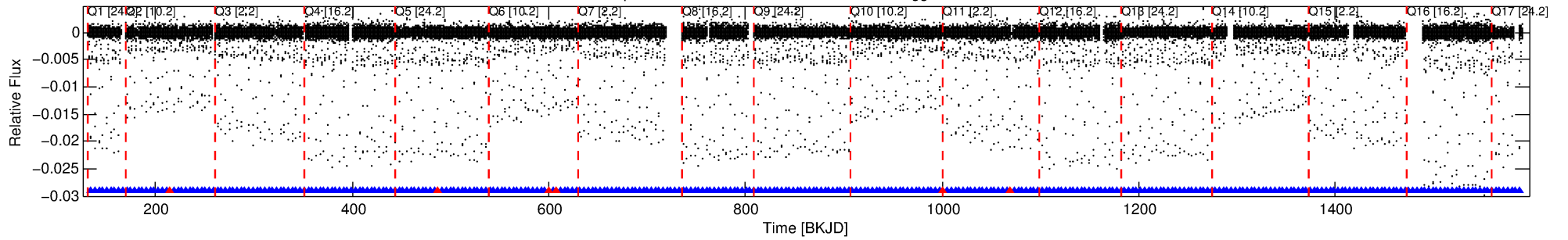
Ephemeris Match Information For 008581232-01

No Significant Match Found

DV One-Page Summary

KIC: 8581232 Candidate: 1 of 2 Period: 4.013 d
KOI: K06059.01 Corr: 0.998

Kp: 15.38 R*: 0.63 Rs Teff: 4483.0 K Logg: 4.63 Fe/H: -0.340



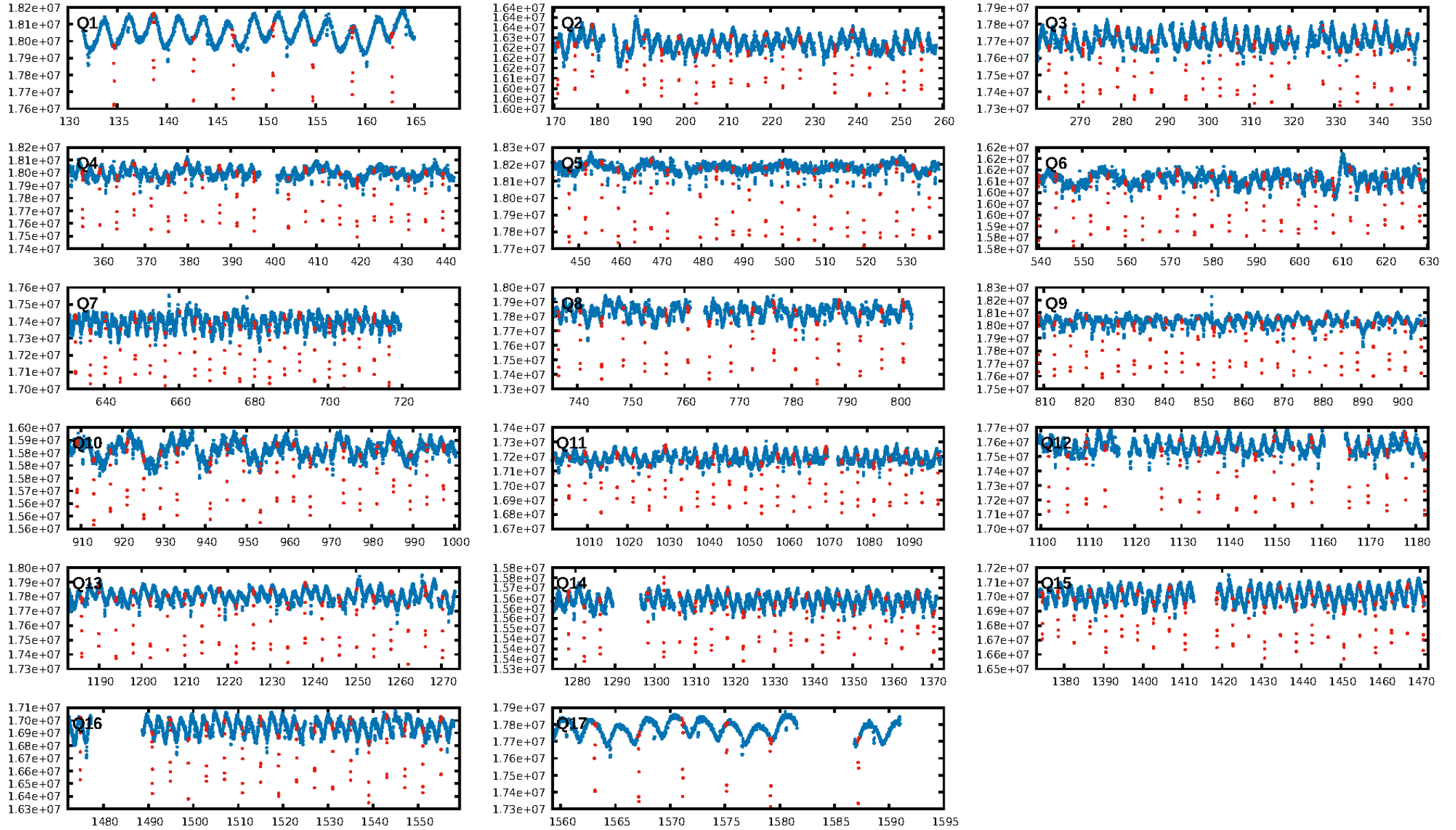
DV Fit Results:

Period = 4.01254 [0.00000] d
Epoch = 134.6524 [0.0001] BKJD
Rp/R* = 0.1556 [0.0004]
a/R* = 12.16 [0.06]
b = 0.81 [0.00]
Seff = 81.19 [13.04]
Teq = 765 [31] K
Rp = 10.70 [1.05] Re
a = 0.0421 [0.0033] AU
Ag = 43.49 [4.74] [8.97σ]
Teffp = 3039 [91] K [23.73σ]

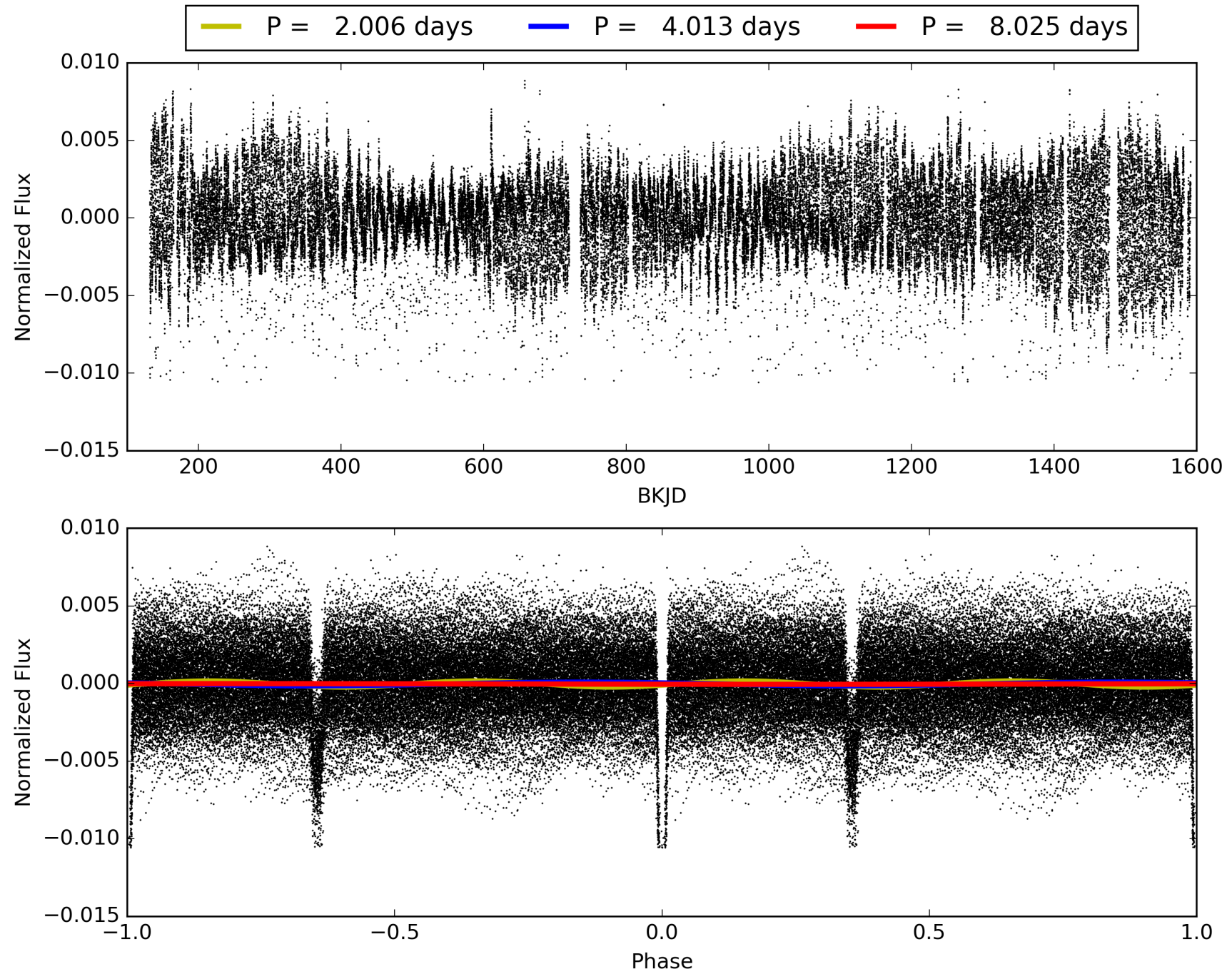
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [314/320]
GhostDiagnostic-chr: 0.682
Centroid-sig: 0.0%
Centroid-so: 2.666 arcsec [195.43σ]
OotOffset-rm: 2.211 arcsec [28.00σ]
KicOffset-rm: 2.562 arcsec [34.82σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 00581232-01, PDC Light Curves

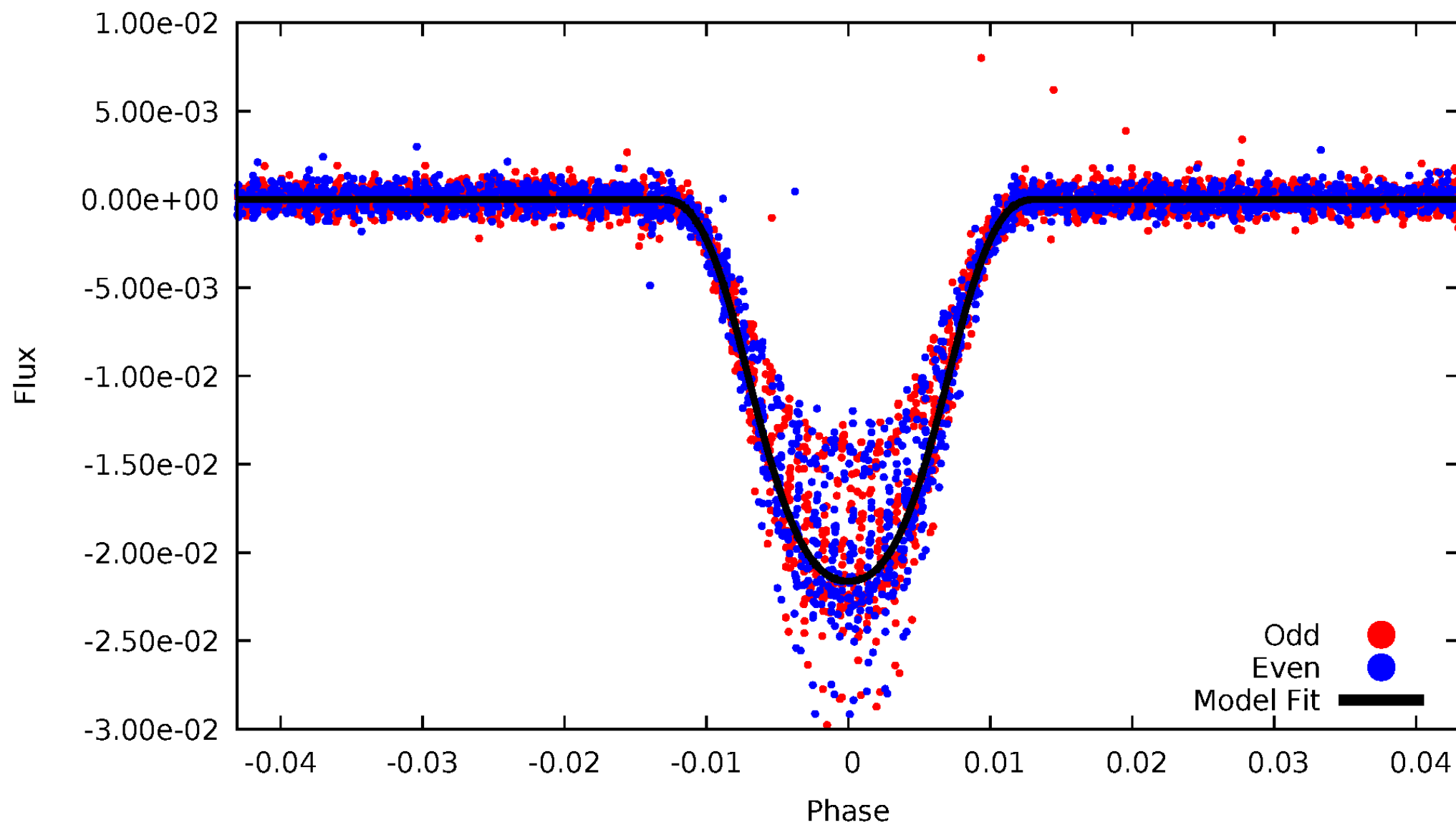


TCE 008581232-01



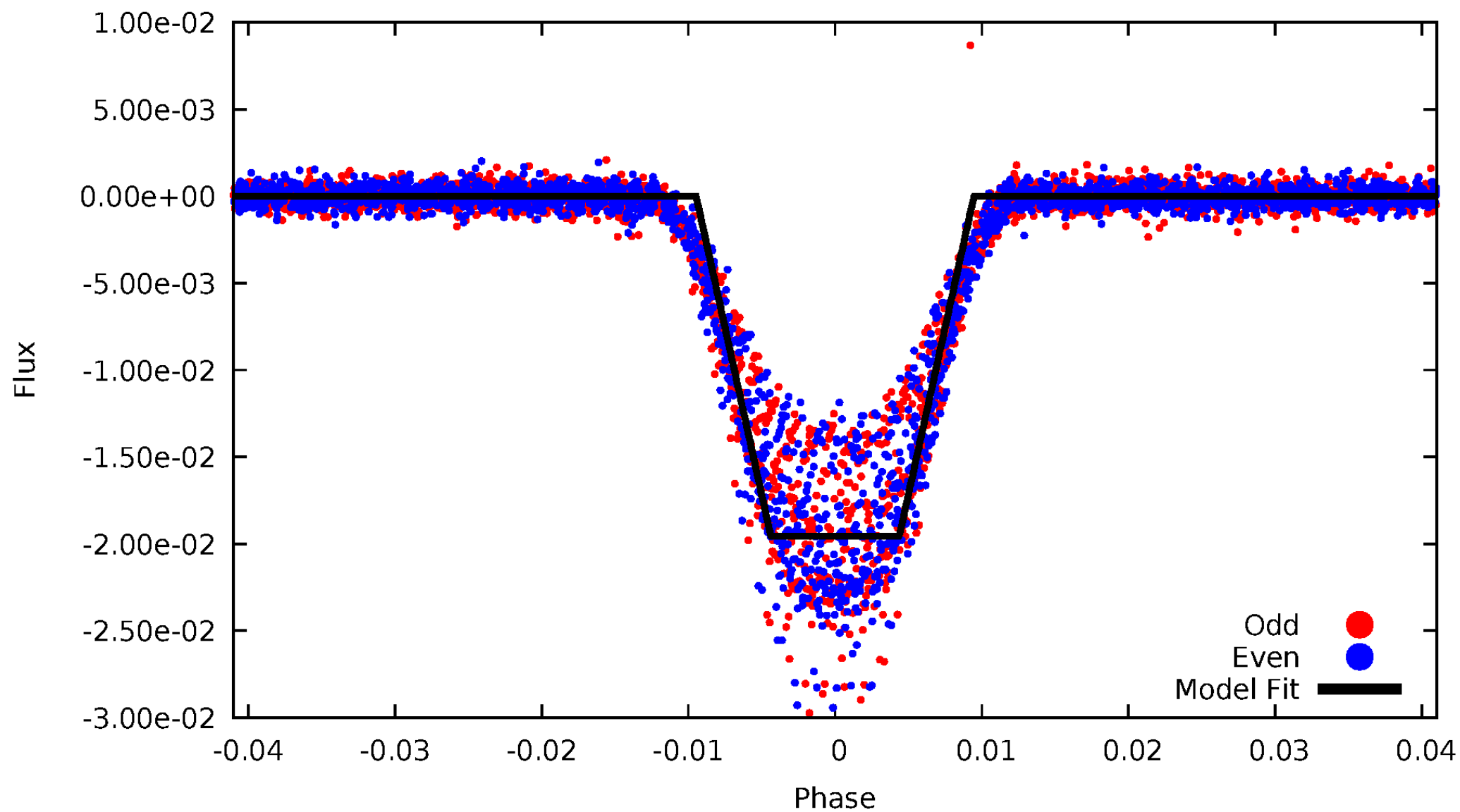
DV Odd/Even

TCE 008581232-01



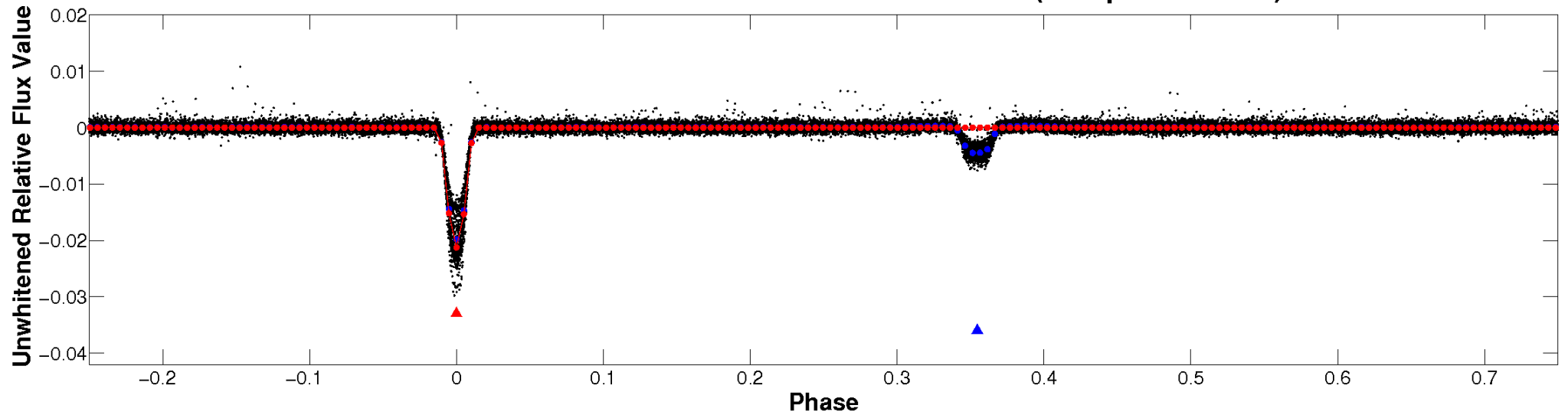
ALT Odd/Even

TCE 008581232-01

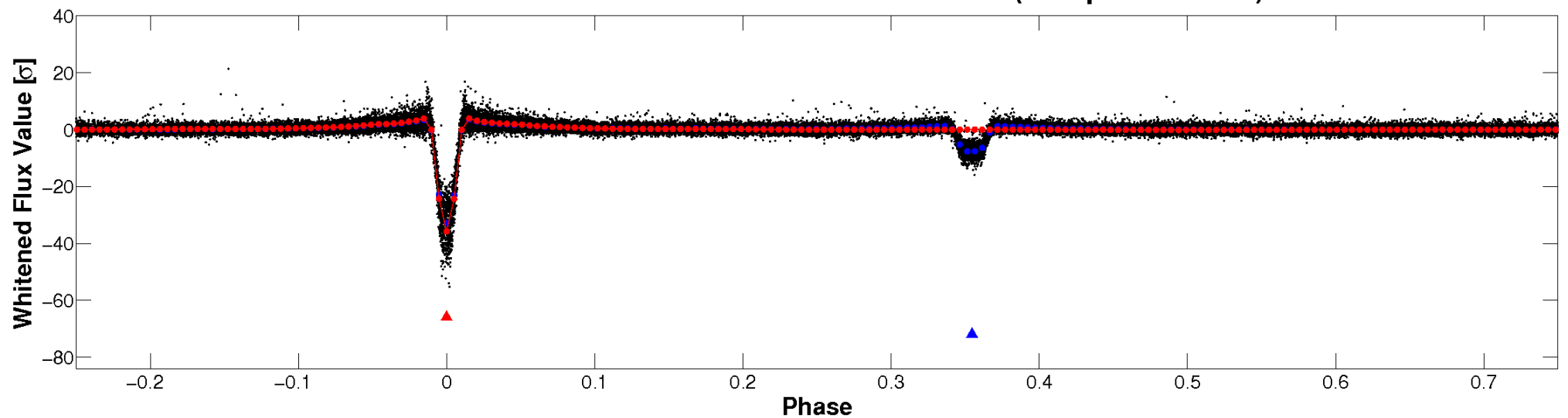


Non-Whitened Vs. Whitened Light Curve

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

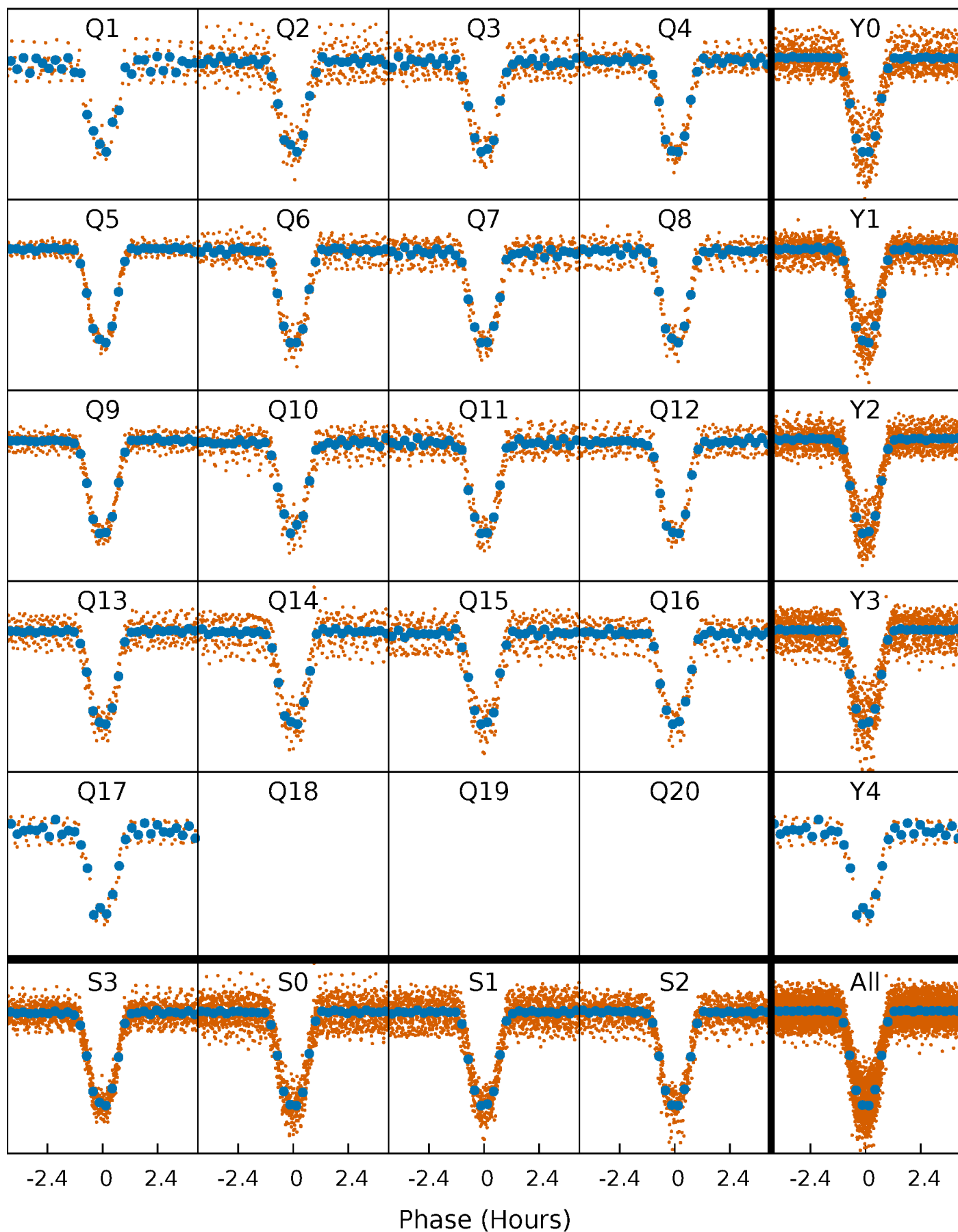


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



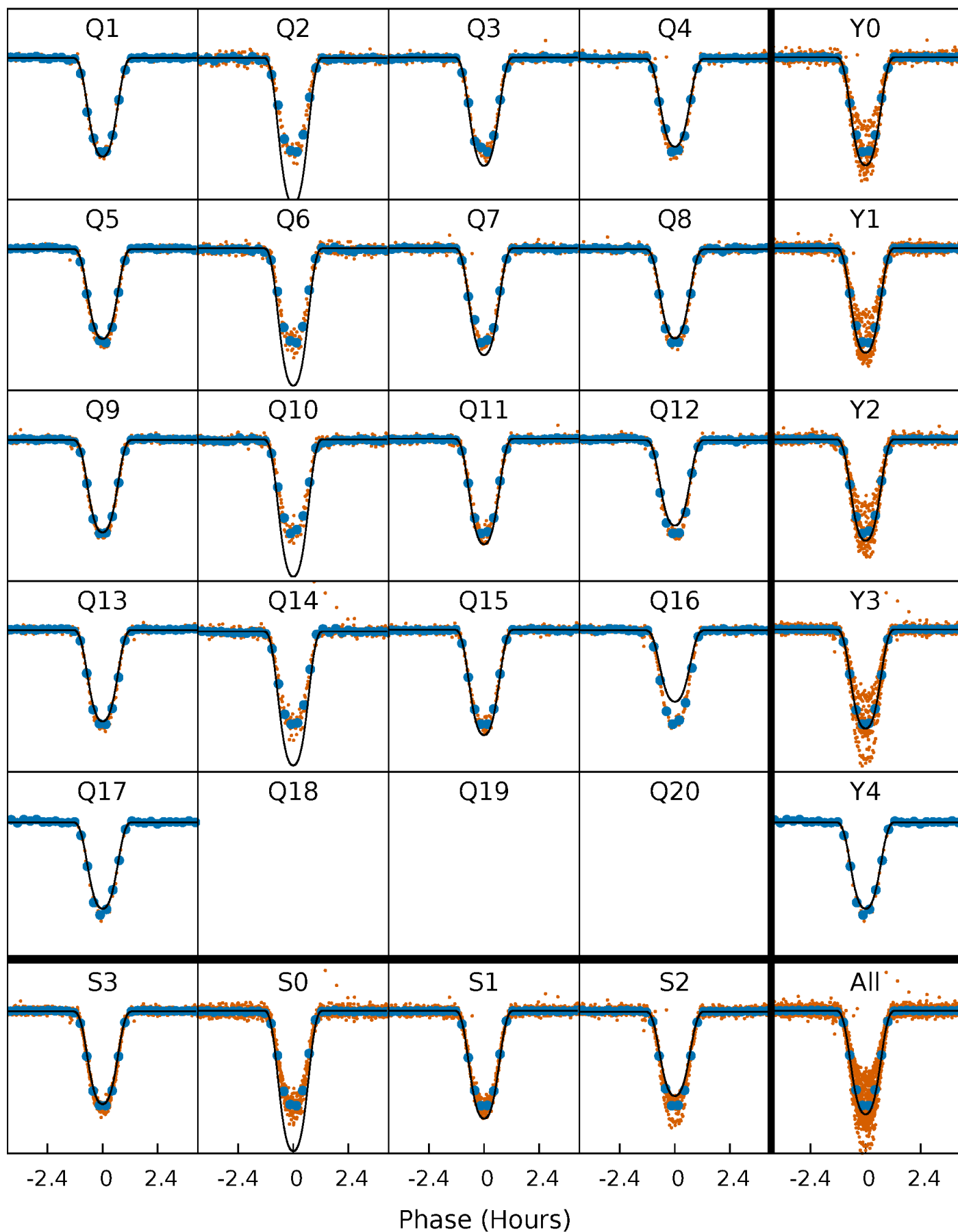
PDC Quarter-Phased Transit Curves

TCE 008581232-01 P= 4.012538 Days $T_0=134.652440$ (BKJD)



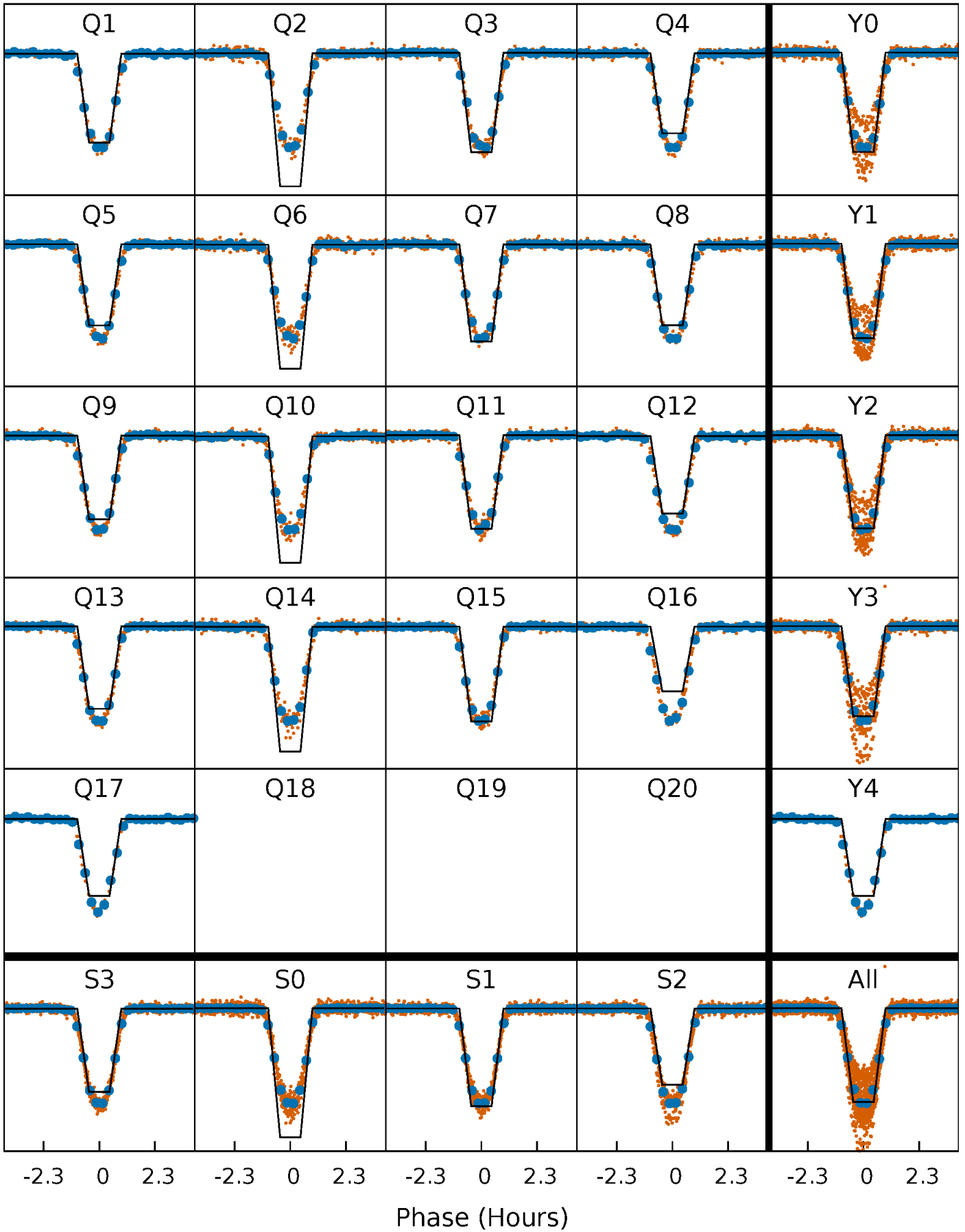
DV Quarter-Phased Transit Curves

TCE 008581232-01 P= 4.012538 Days $T_0=134.652440$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

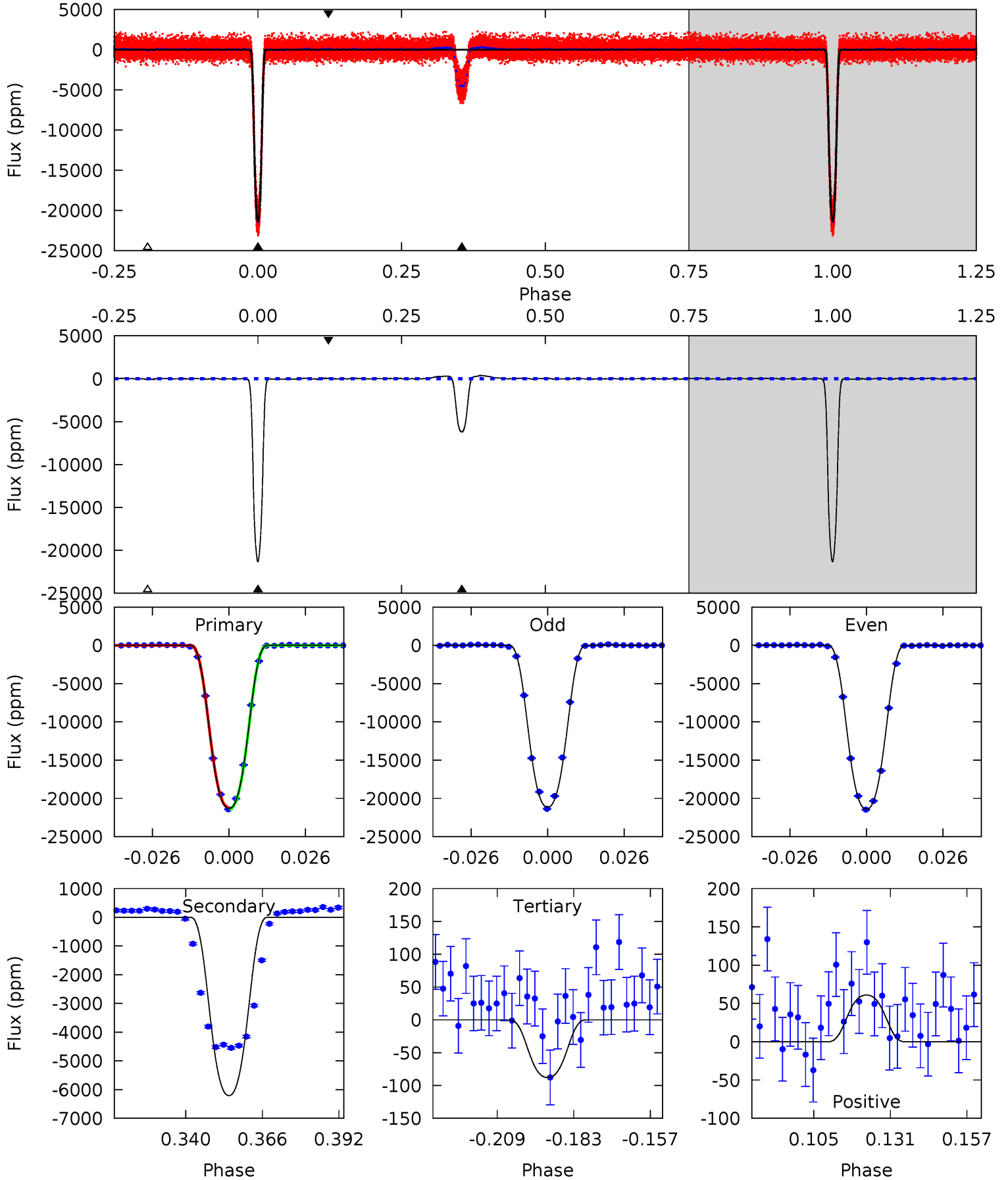
TCE 008581232-01 P= 4.012545 Days $T_0=134.651079$ (BKJD)



DV Model-Shift Uniqueness Test

008581232-01, P = 4.012538 Days, E = 130.639902 Days

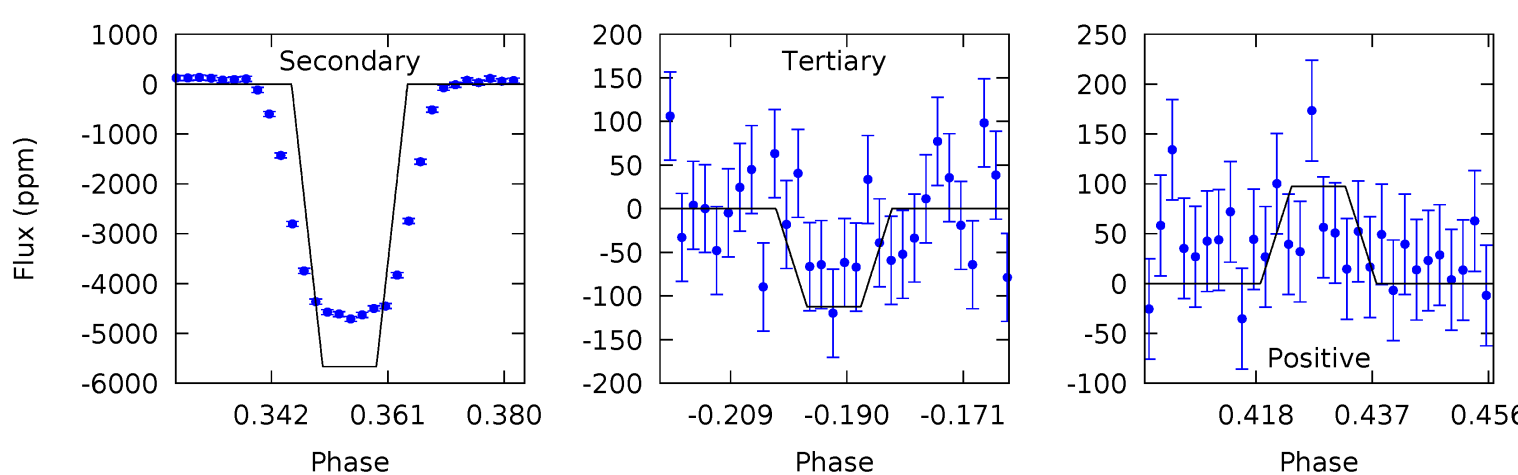
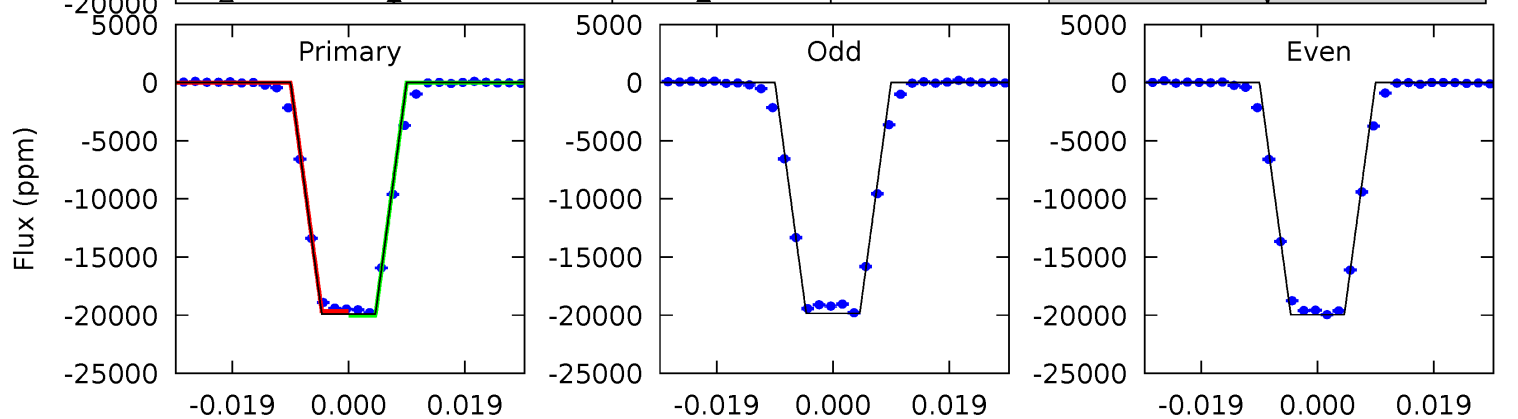
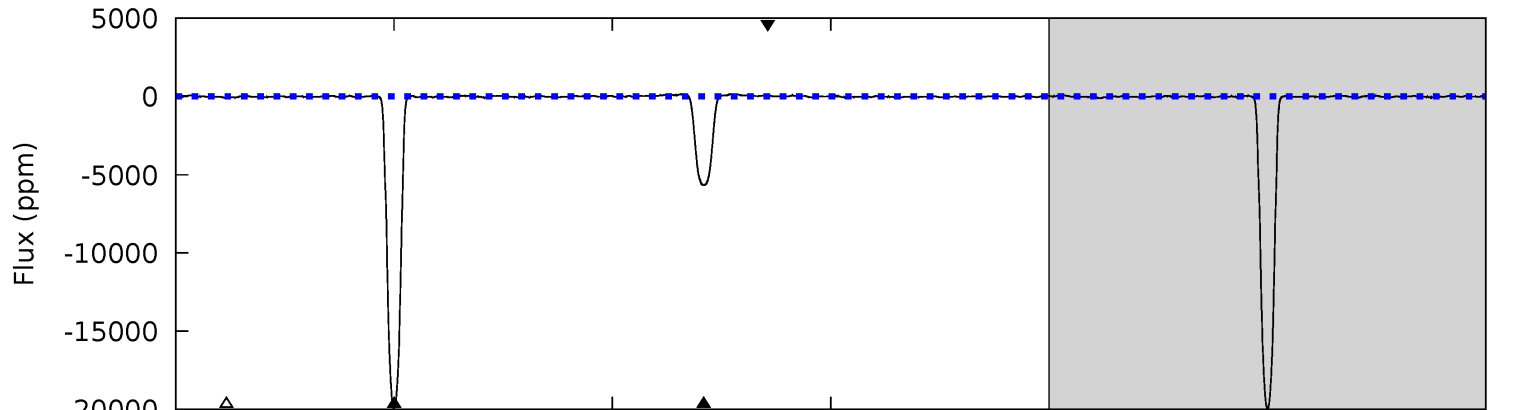
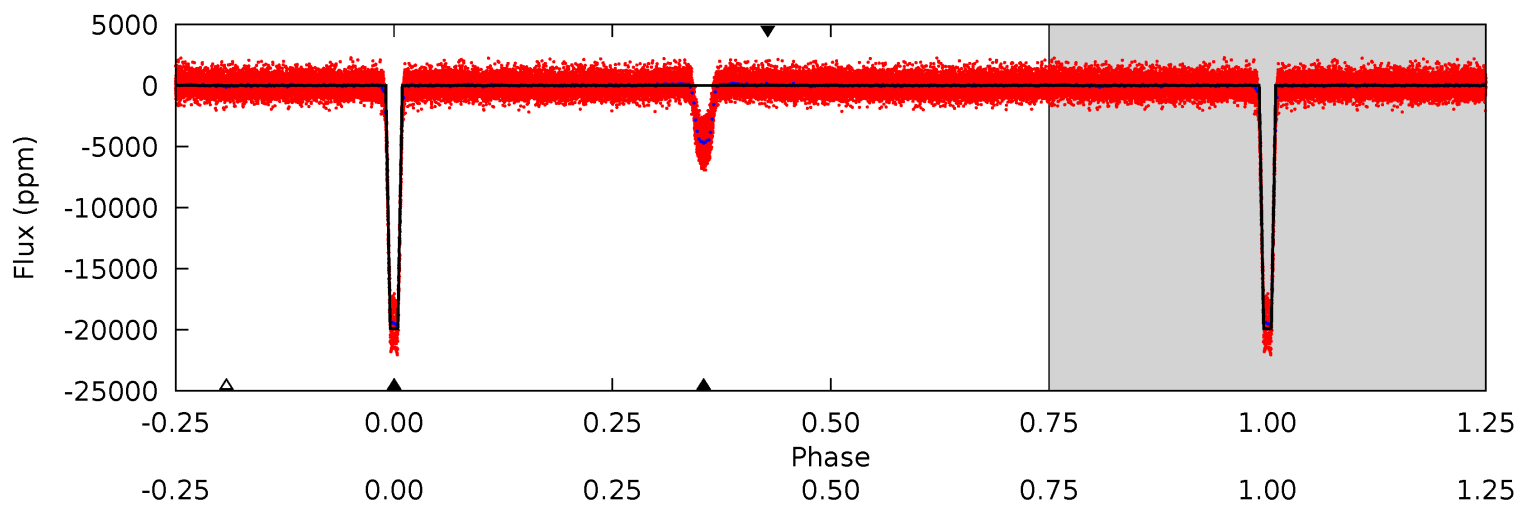
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1418	413.2	5.85	4.06	4.84	2.22	4.88	1413	1414	407.4	409.2	8.84	0.97	0.02	4.40



Alt Model-Shift Uniqueness Test

008581232-01, P = 4.012545 Days, E = 130.638534 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
968.3	275.7	5.47	4.74	4.90	2.35	1.87	962.8	963.5	270.2	271.0	2.68	0.99	0.01	0



Stellar Parameters For KIC 008581232

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4483^{+120}_{-133}	$4.629^{+0.056}_{-0.024}$	$-0.340^{+0.300}_{-0.300}$	$0.630^{+0.045}_{-0.062}$	$0.616^{+0.067}_{-0.045}$	$3.471^{+0.877}_{-0.397}$
	+3%/-3%	+1%/-1%	+88%/-88%	+7%/-10%	+11%/-7%	+25%/-11%
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 008581232-01 / KOI 6059.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6209 ± 15	$10.66^{+0.46}_{-0.60}$	1060^{+36}_{-40}	3525^{+79}_{-91}	54^{+4}_{-3}
Alt.	-5667 ± 21	$9.59^{+0.43}_{-0.50}$	1062^{+35}_{-38}	3602^{+83}_{-97}	61^{+5}_{-4}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

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

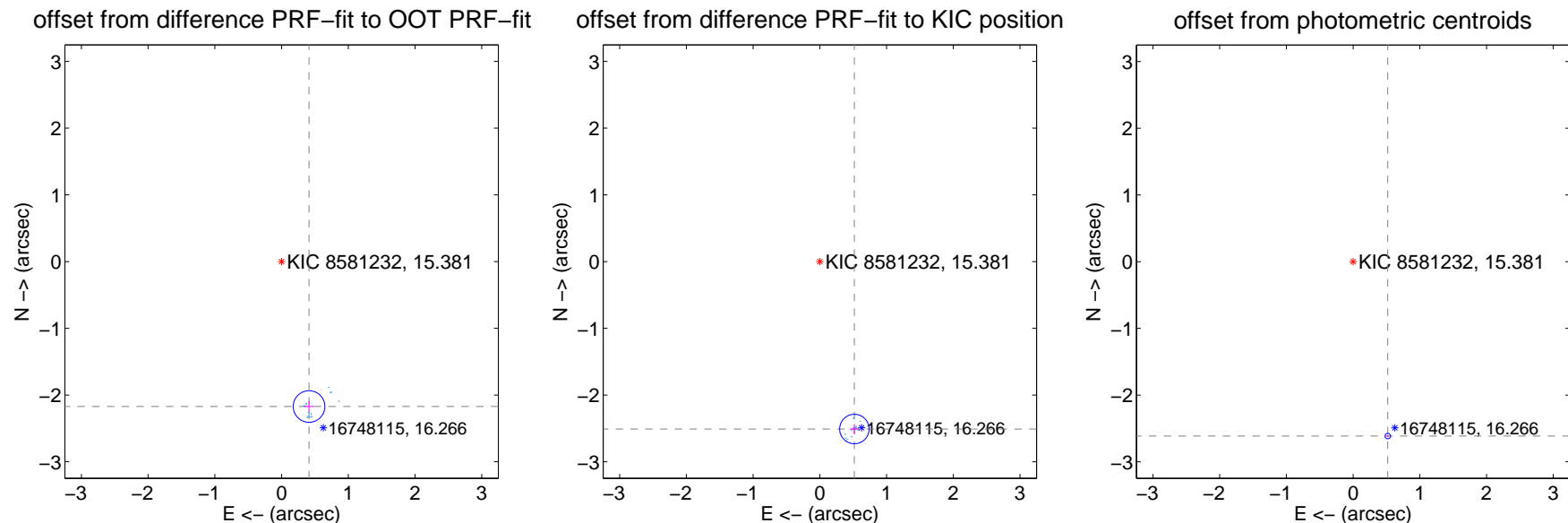
DV Centroid Data

Supplemental centroid analysis for 008581232-01. Kepler magnitude: 15.38. Transit SNR 636.18

There are 17 quarters with good PRF difference image offsets

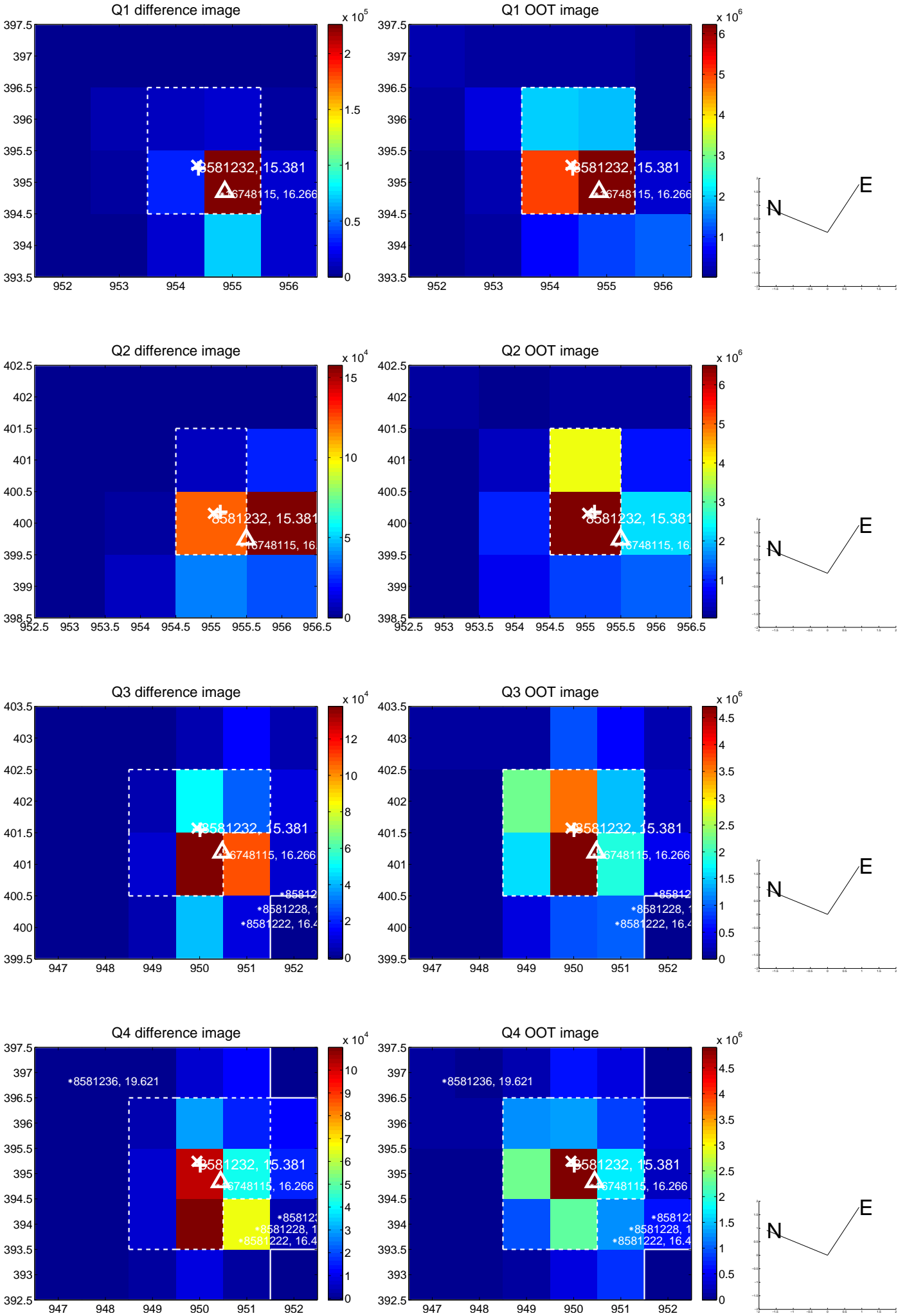
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.211 ± 0.079	28.00	-0.412 ± 0.069	-2.172 ± 0.079
PRF-fit source offset from KIC position	2.562 ± 0.074	34.82	-0.518 ± 0.068	-2.509 ± 0.074
photometric centroid source offset	2.67 ± 0.01	195.43	-0.52 ± 0.01	-2.61 ± 0.01

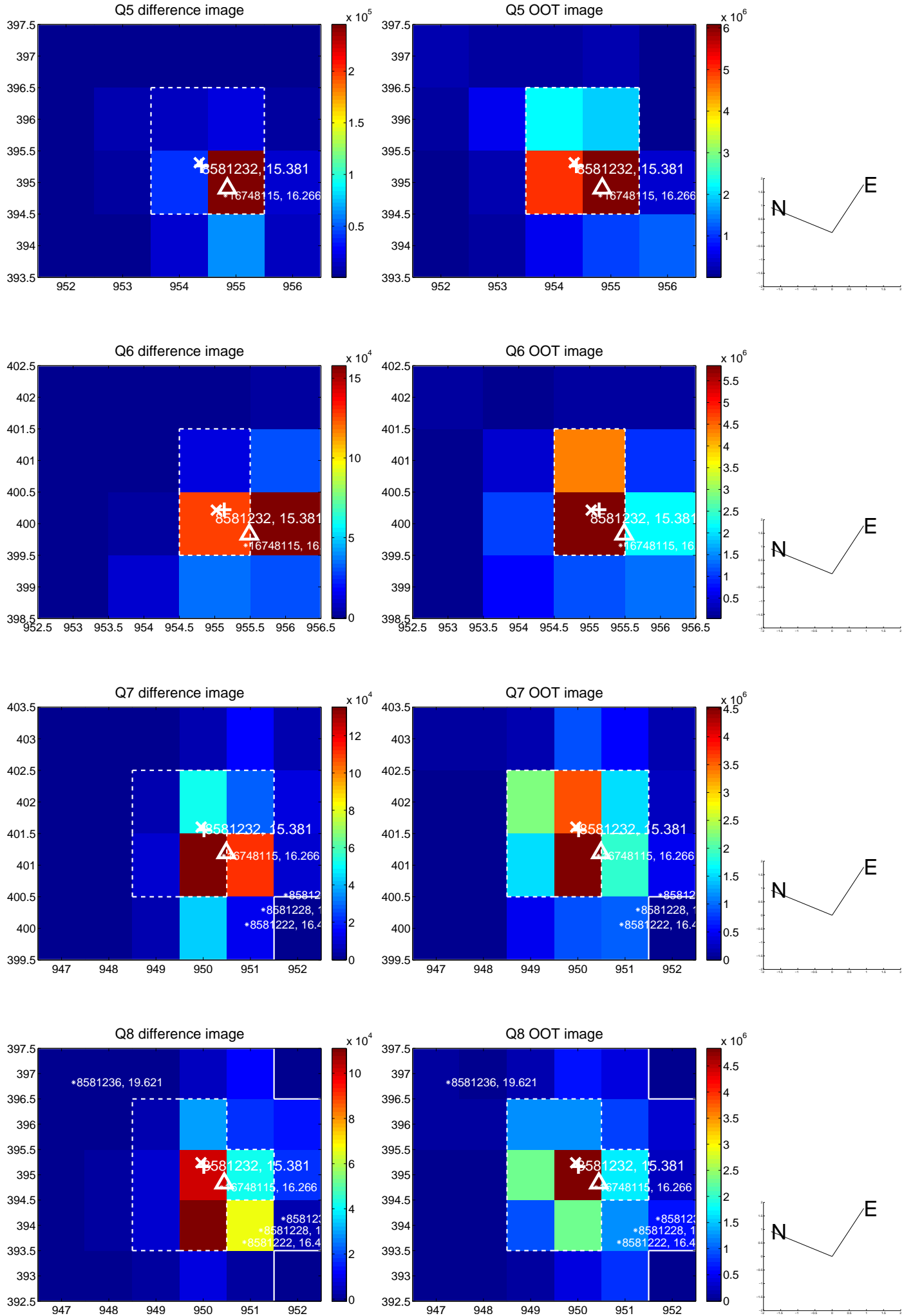


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

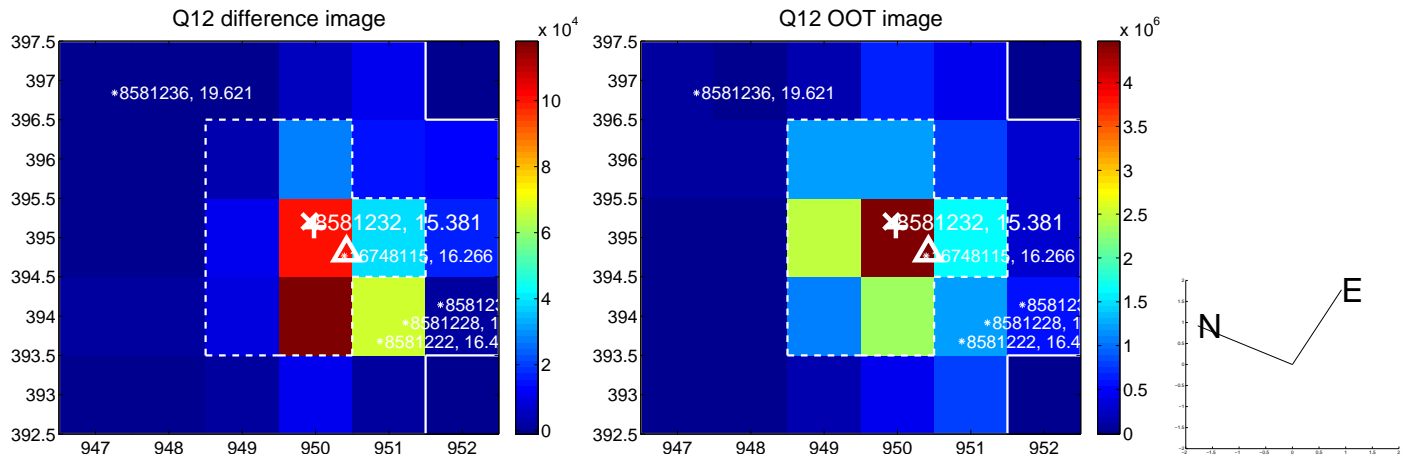
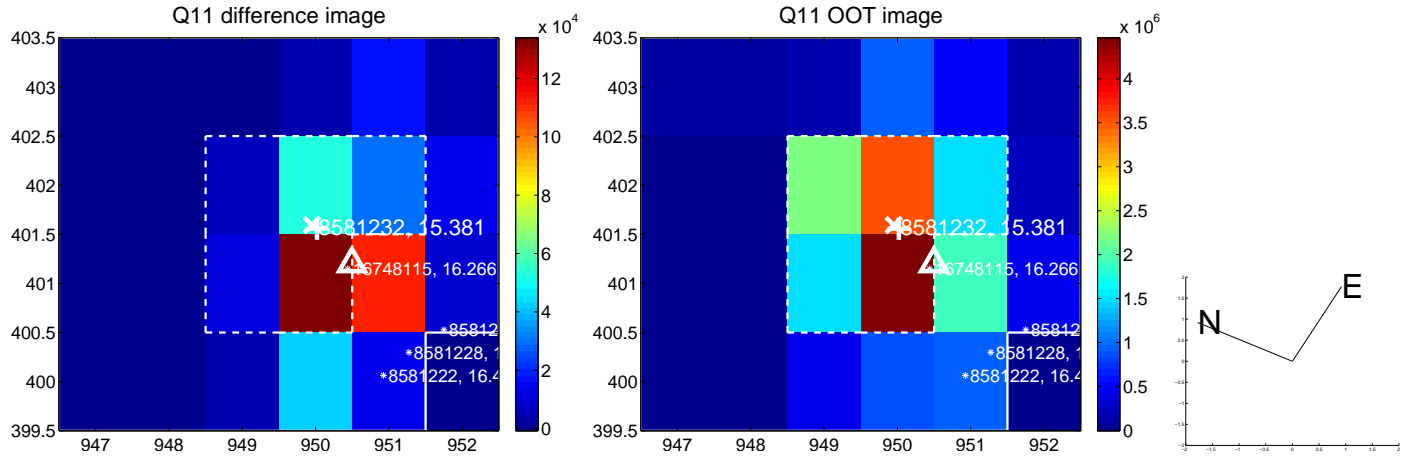
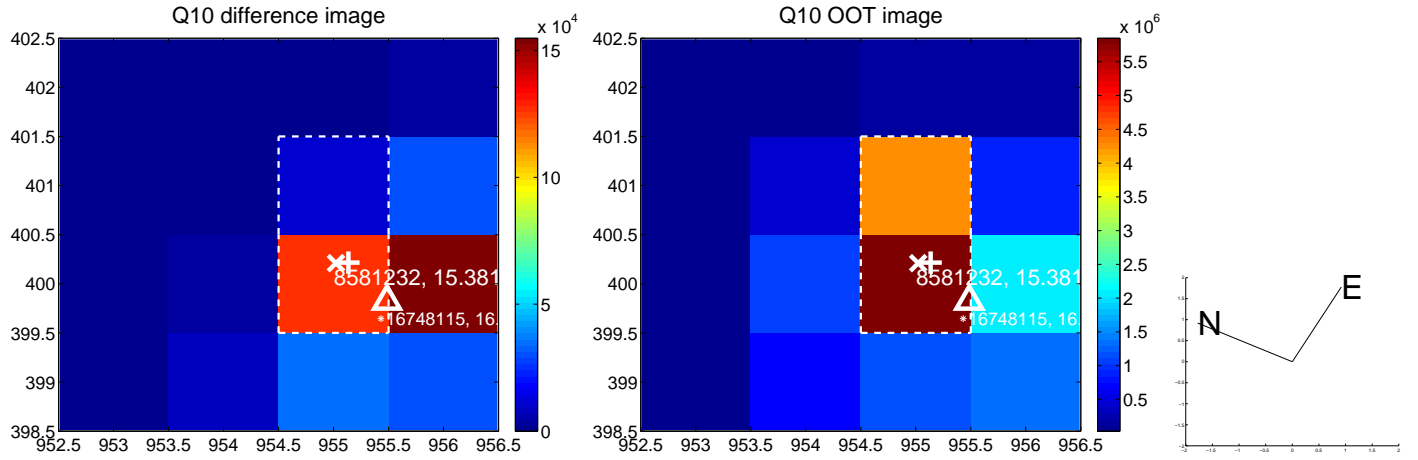
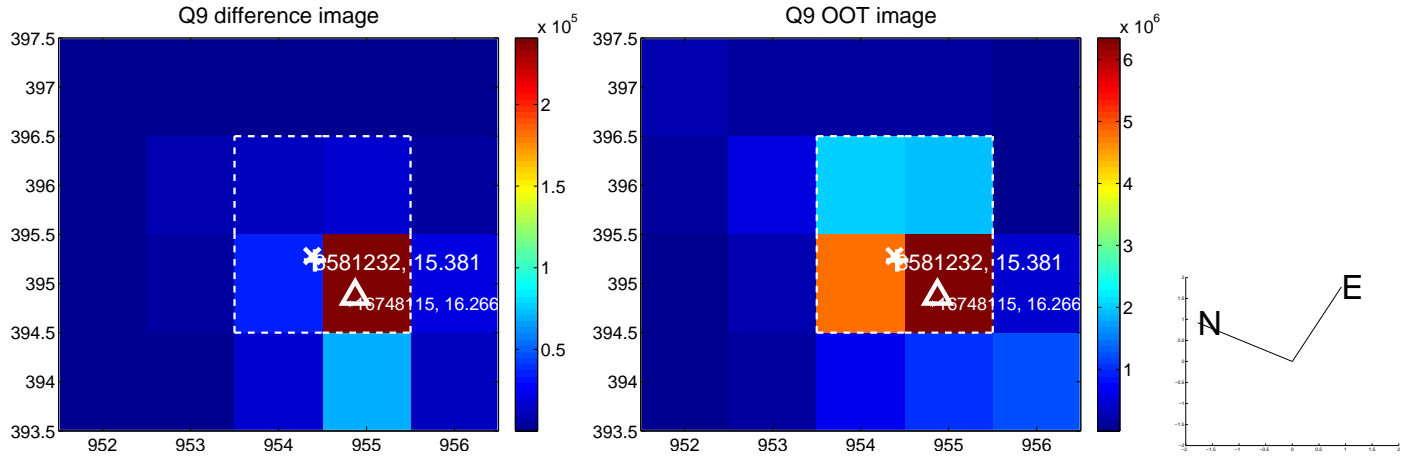
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



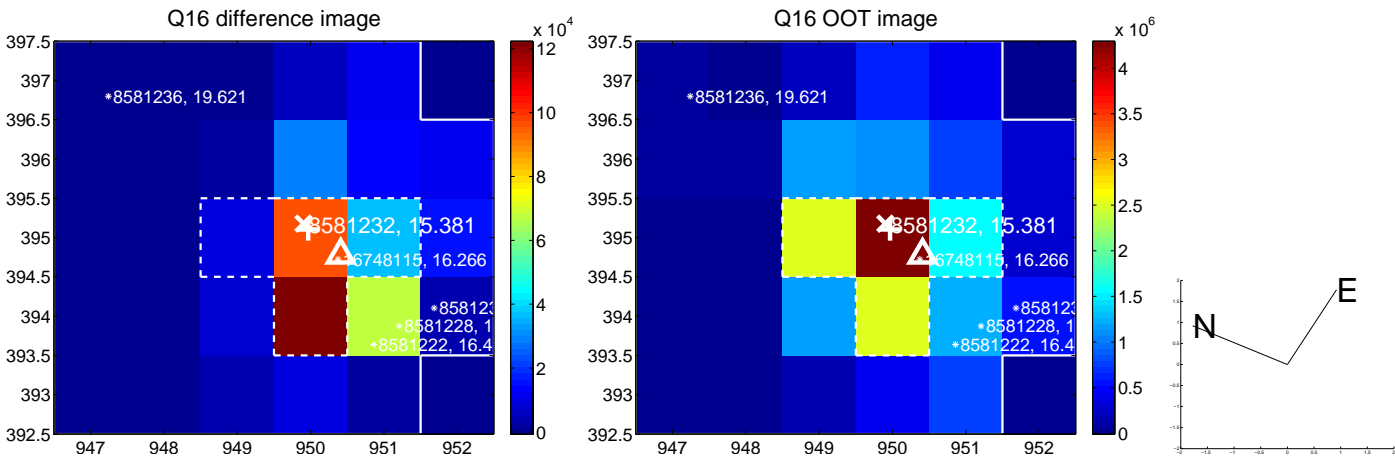
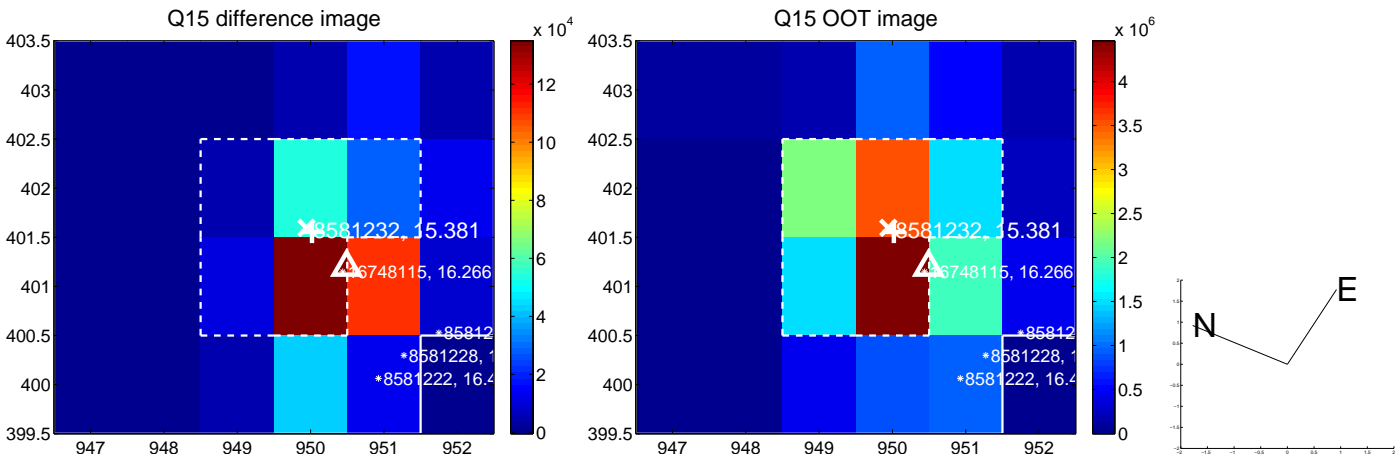
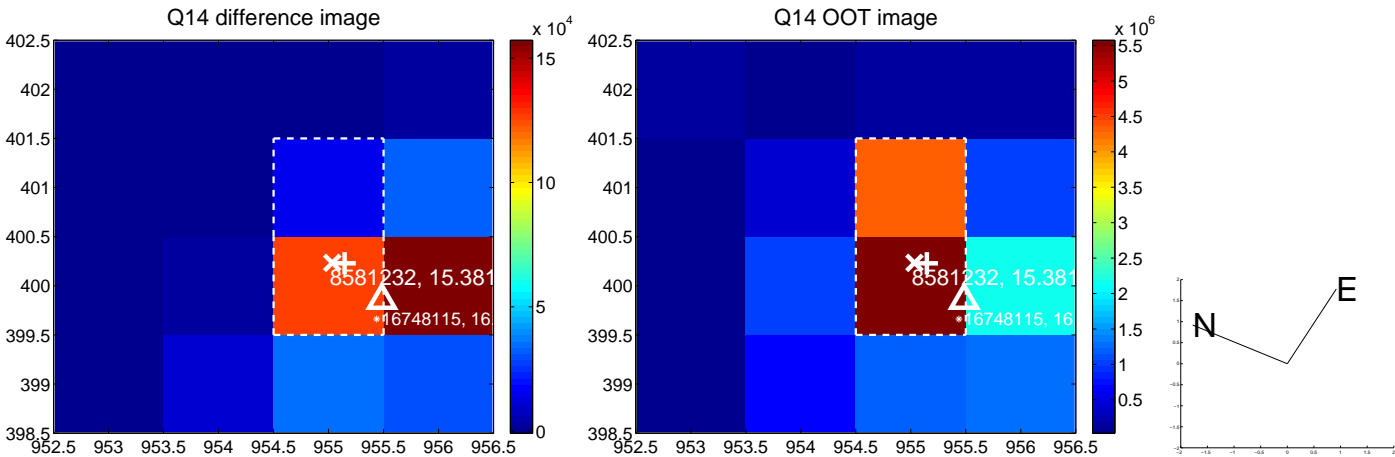
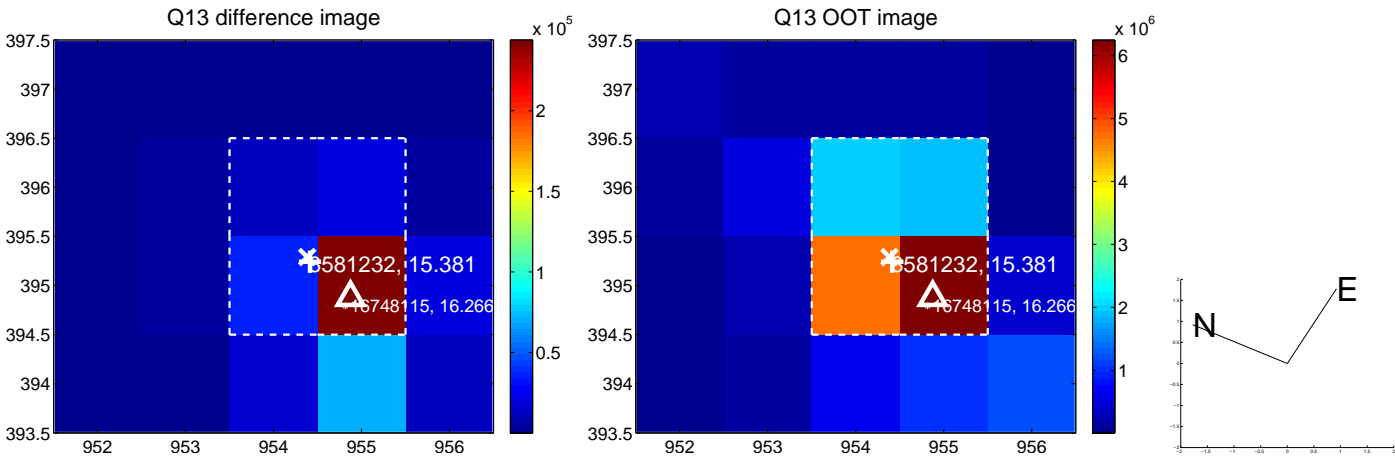
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



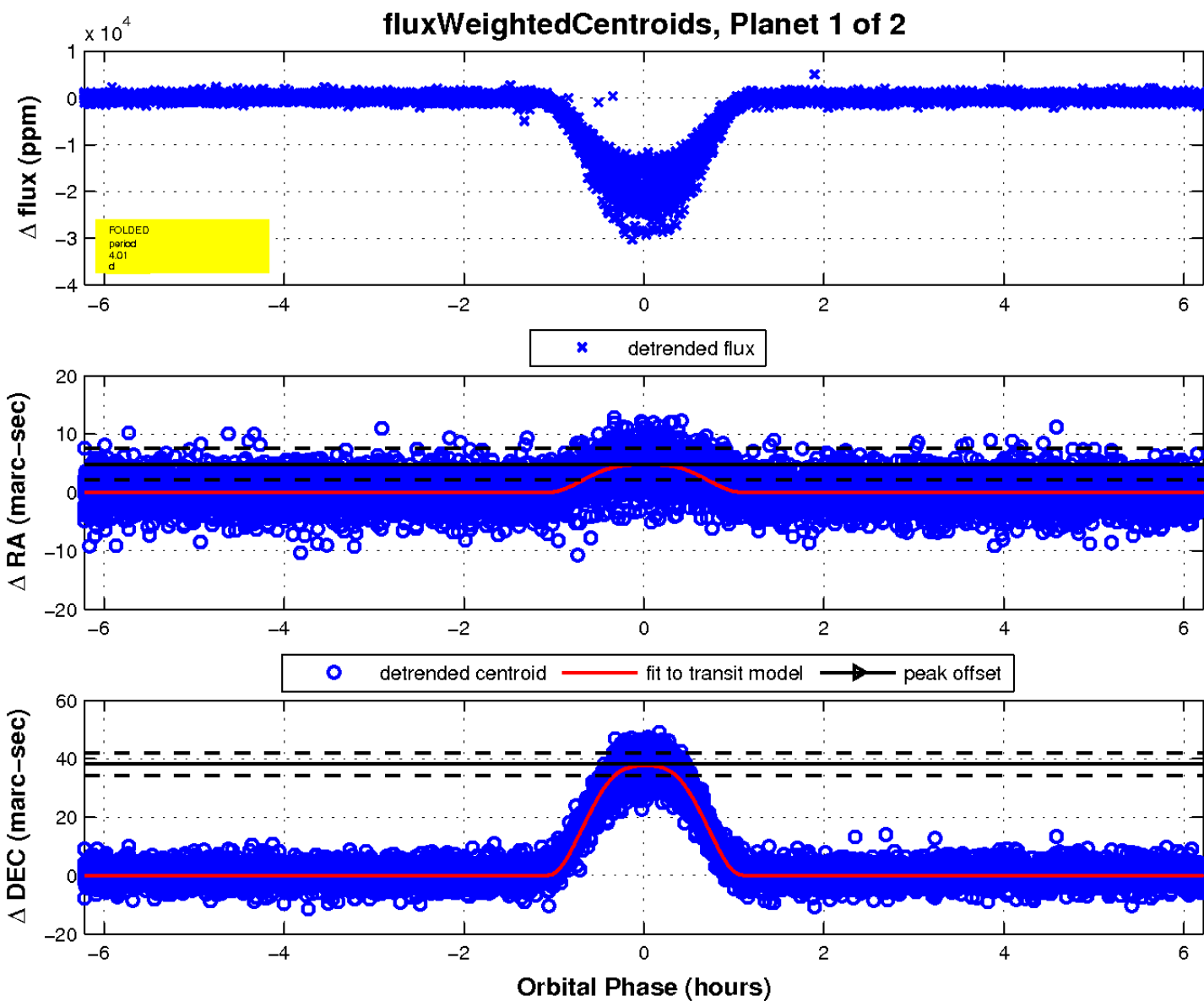
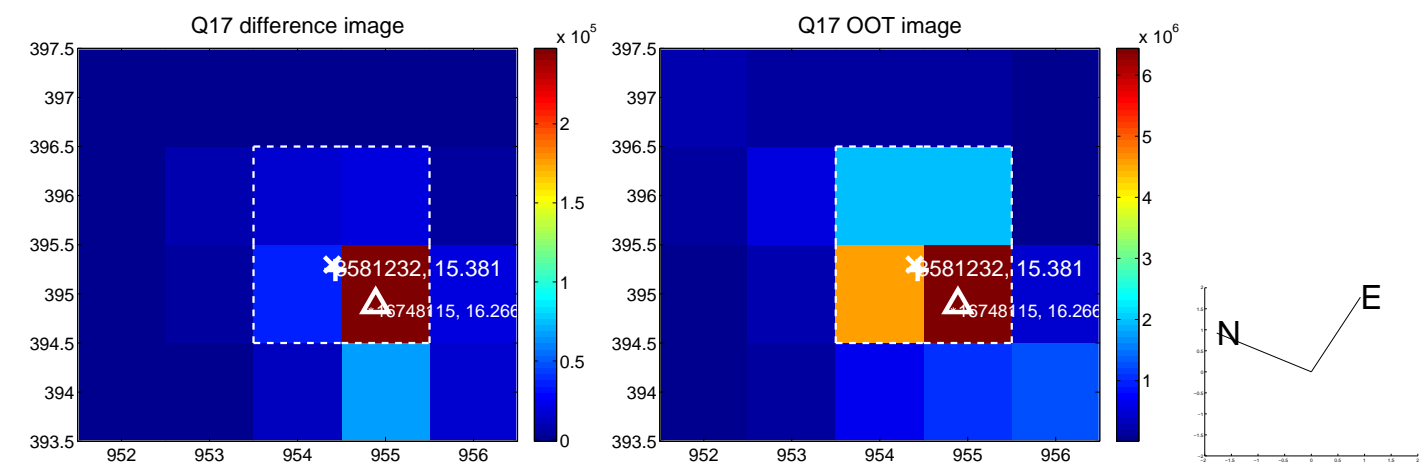
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



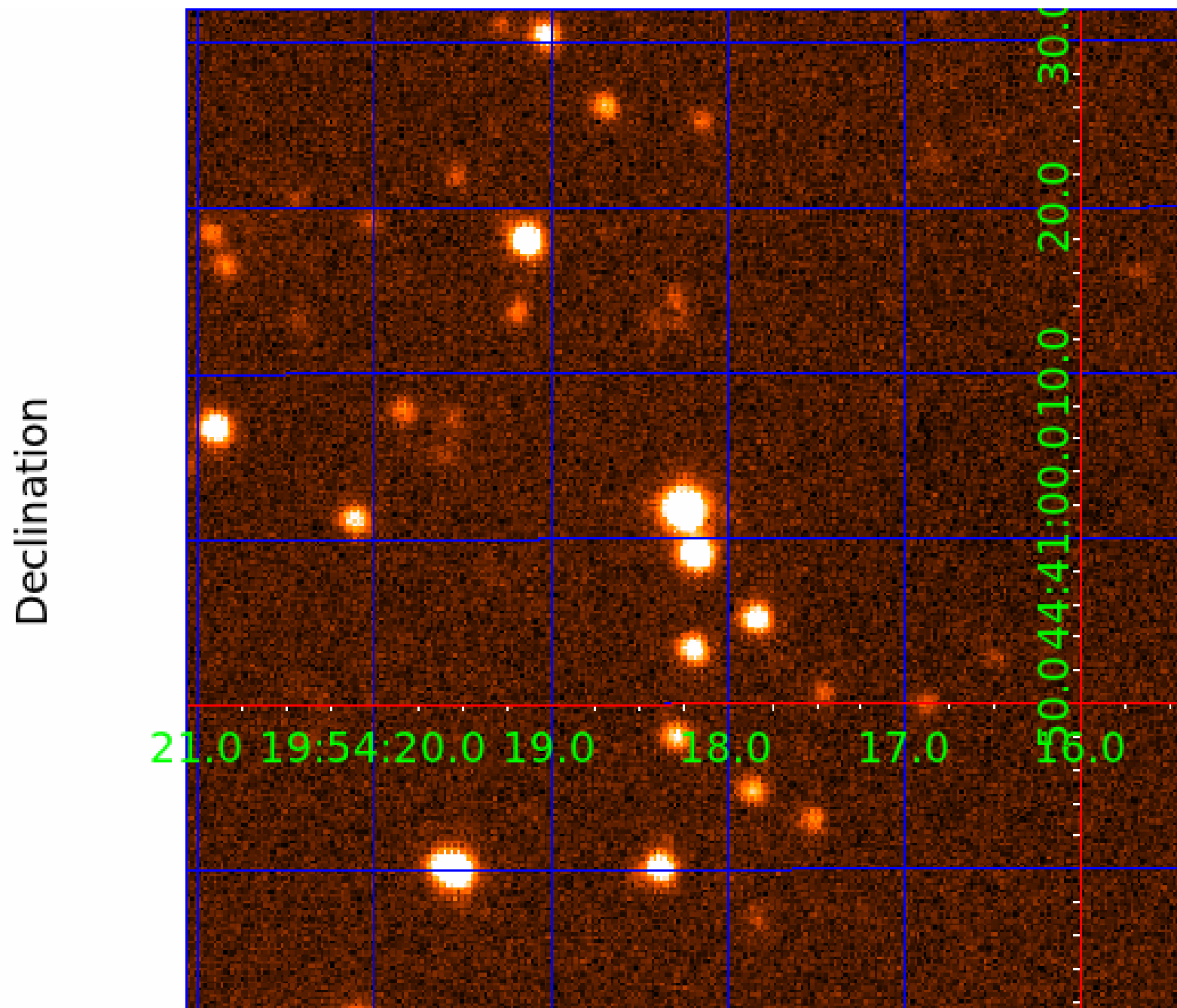
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image



KIC 008581232

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})
008581232-01	OBS	6059.01	4.012538	134.652440	21624.3	2.073	891.1	636.2	0.63	4483	10.70	81.19
008581232-02	OBS	No	4.012538	132.062937	4948.5	2.785	250.2	230.9	0.63	4483	5.27	81.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008581232-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—SEASONAL_DEPTH_ALT—CENT_UNRESOLVED_OFFSET
008581232-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

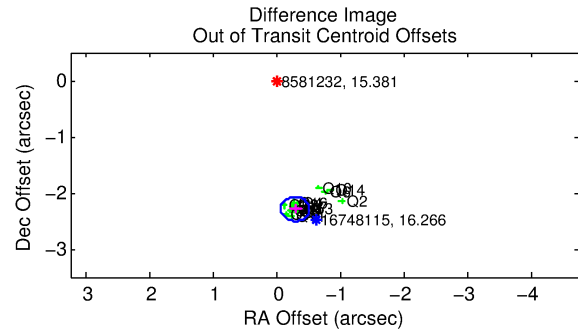
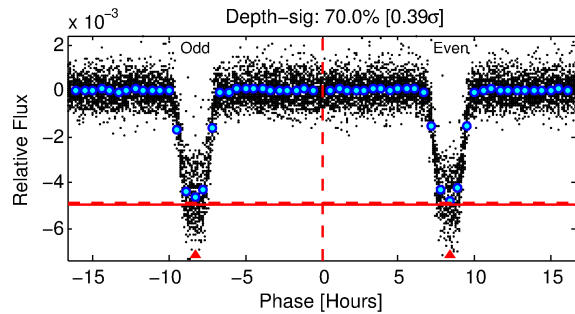
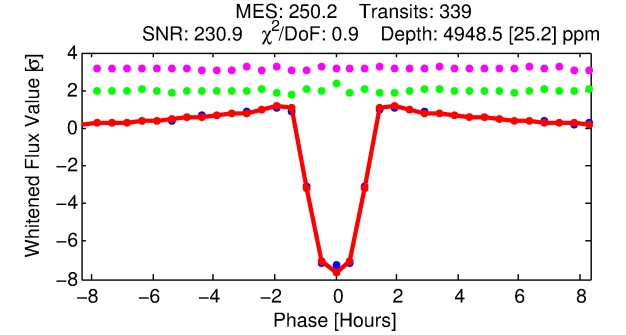
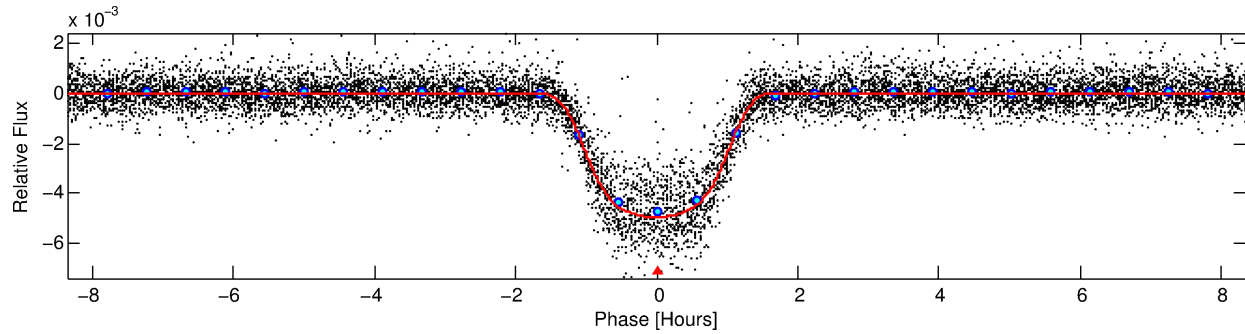
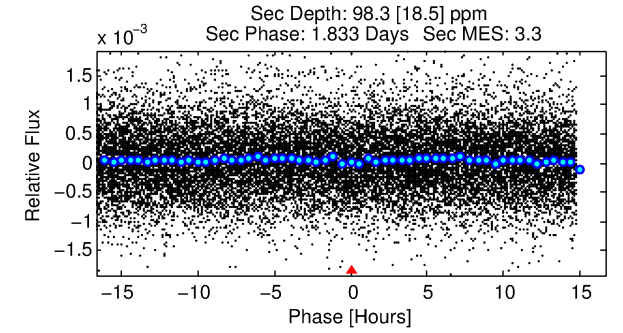
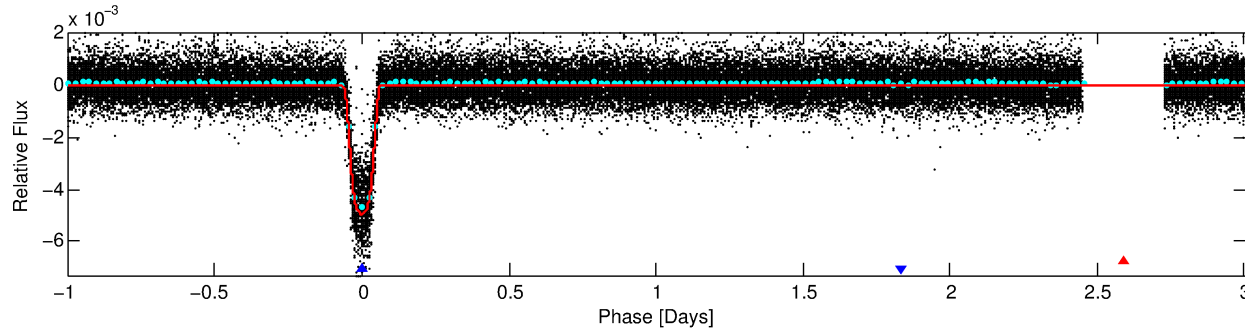
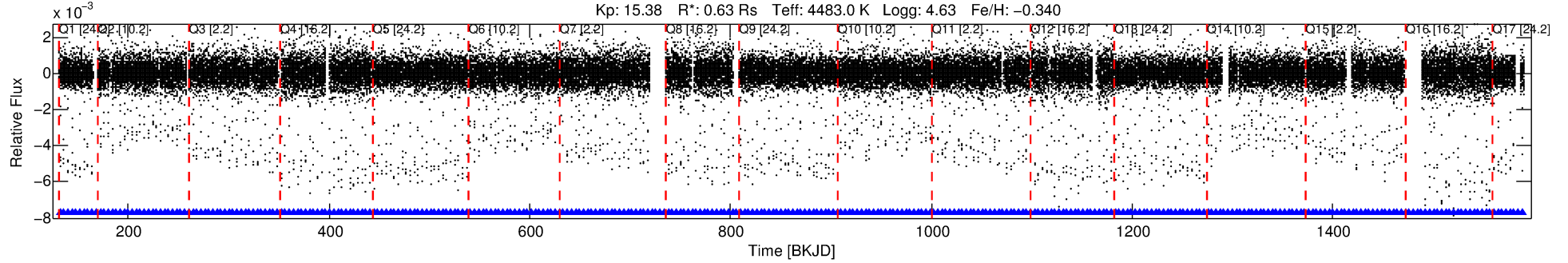
Ephemeris Match Information For 008581232-02

No Significant Match Found

DV One-Page Summary

KIC: 8581232 Candidate: 2 of 2 Period: 4.013 d
KOI: K06059 Corr: No Ephemeris Match

Kp: 15.38 R*: 0.63 Rs Teff: 4483.0 K Logg: 4.63 Fe/H: -0.340



DV Fit Results:

Period = 4.01254 [0.00000] d
Epoch = 132.0629 [0.0002] BKJD
Rp/R* = 0.0766 [0.0005]
a/R* = 7.12 [0.12]
b = 0.87 [0.01]
Seff = 81.19 [13.04]
Teq = 765 [31] K
Rp = 5.27 [0.52] Re
a = 0.0421 [0.0033] AU
Ag = 3.45 [0.75] [3.26 σ]
Teff = 1613 [90] K [8.92 σ]

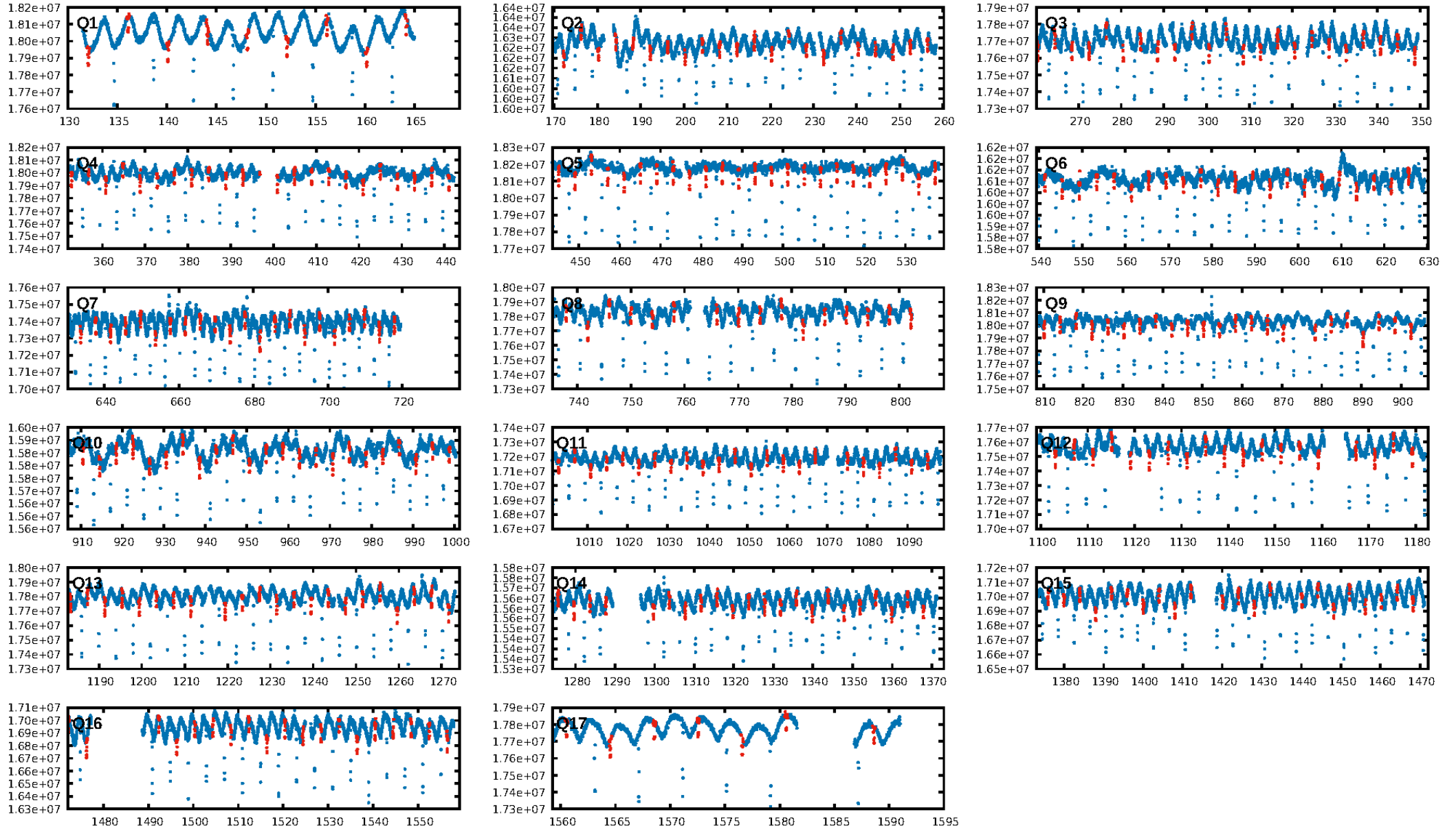
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [323/323]
GhostDiagnostic-chr: 0.9253
Centroid-sig: 0.0%
Centroid-so: 2.571 arcsec [52.63 σ]
OotOffset-rm: 2.305 arcsec [31.72 σ]
KicOffset-rm: 2.564 arcsec [35.70 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

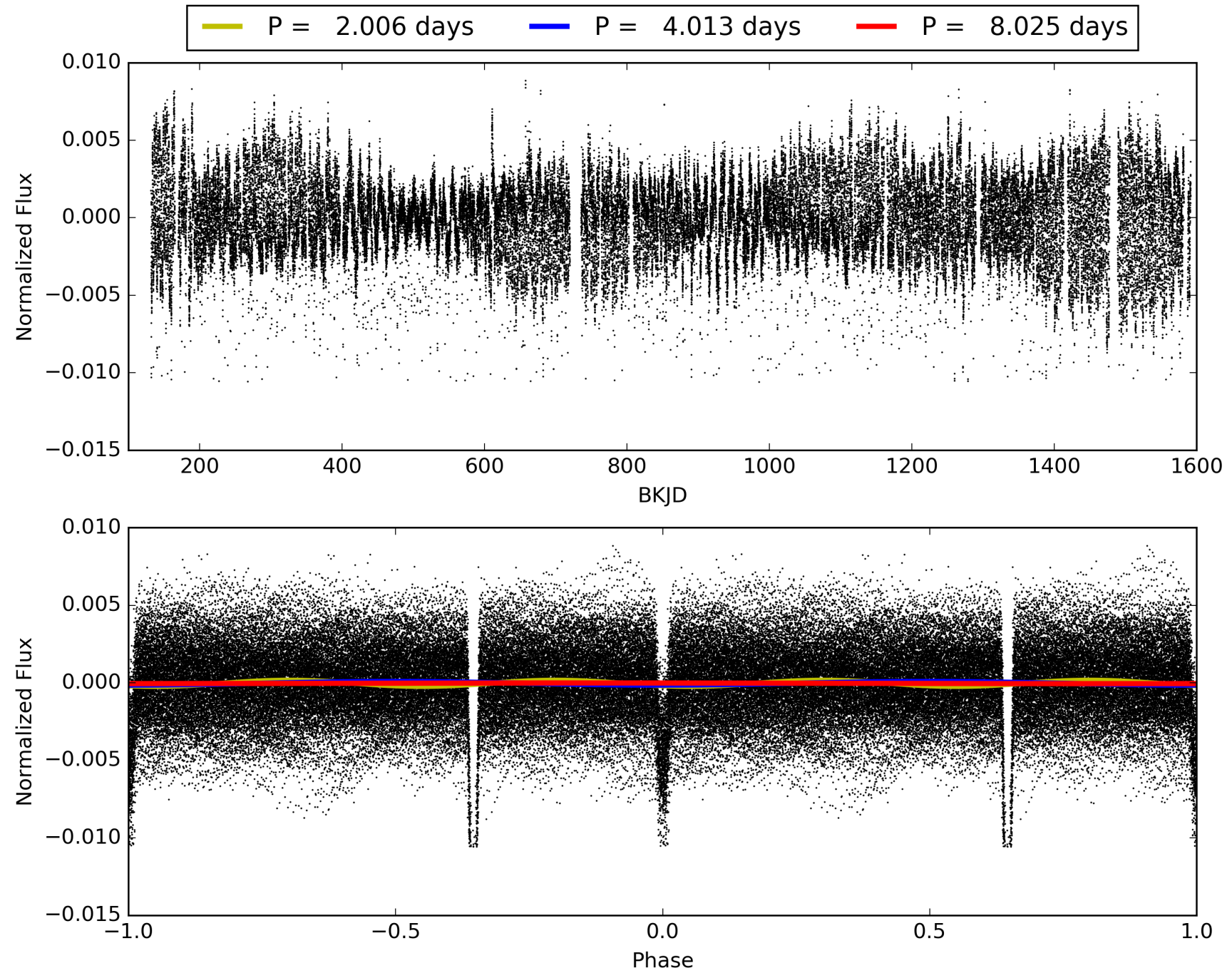
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:12:35 Z

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

TCE 00581232-02, PDC Light Curves

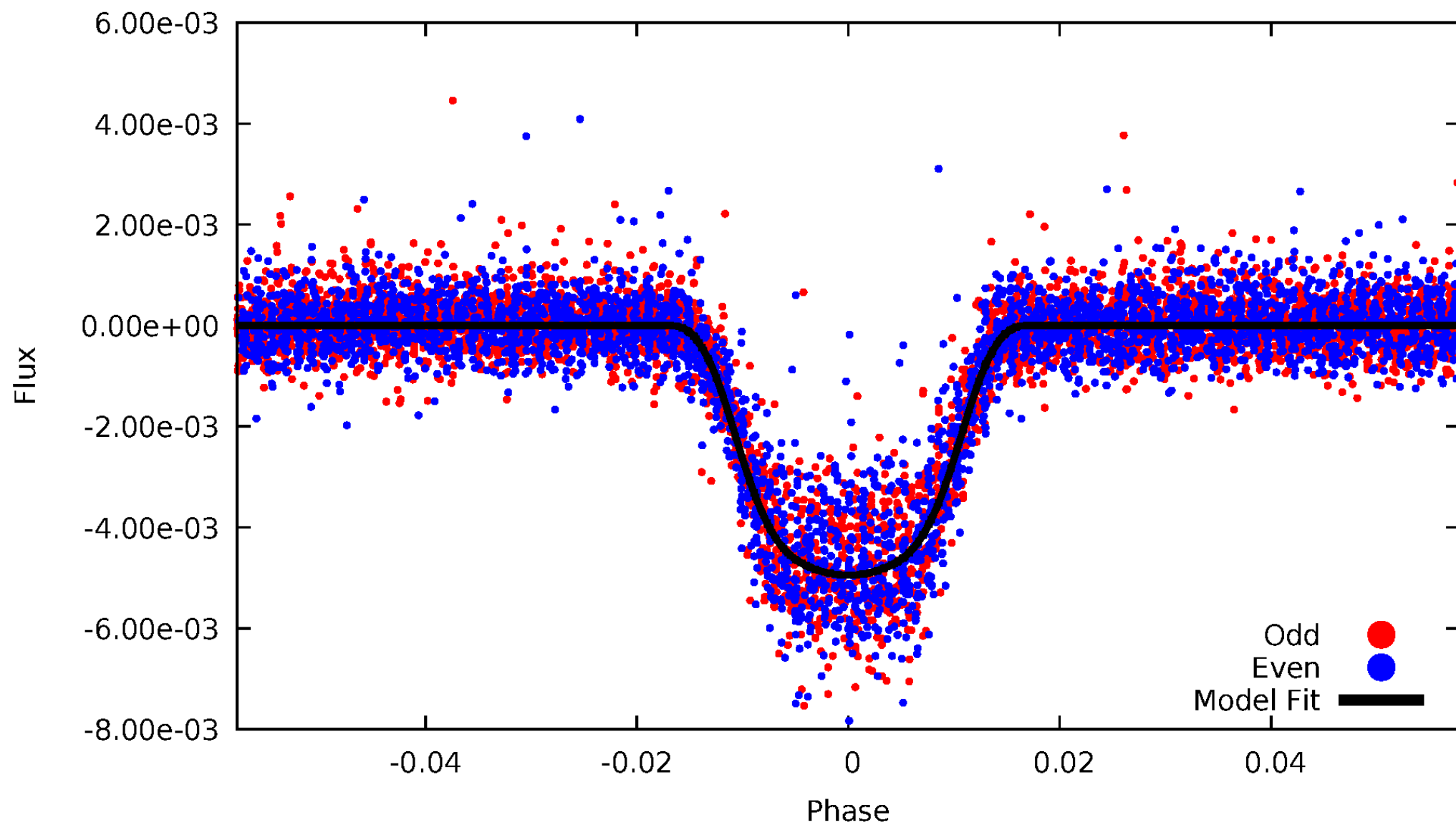


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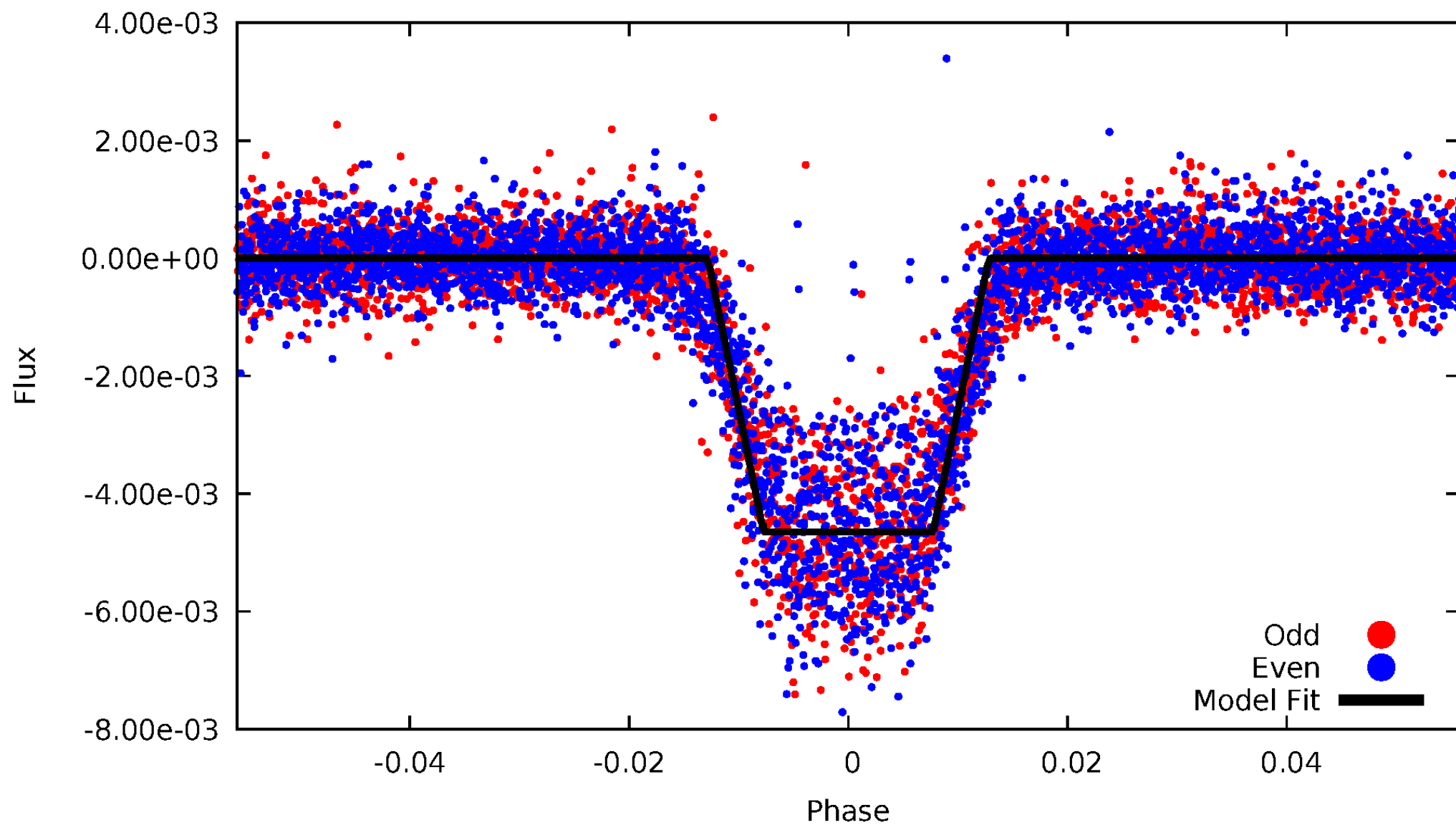
DV Odd/Even

TCE 008581232-02



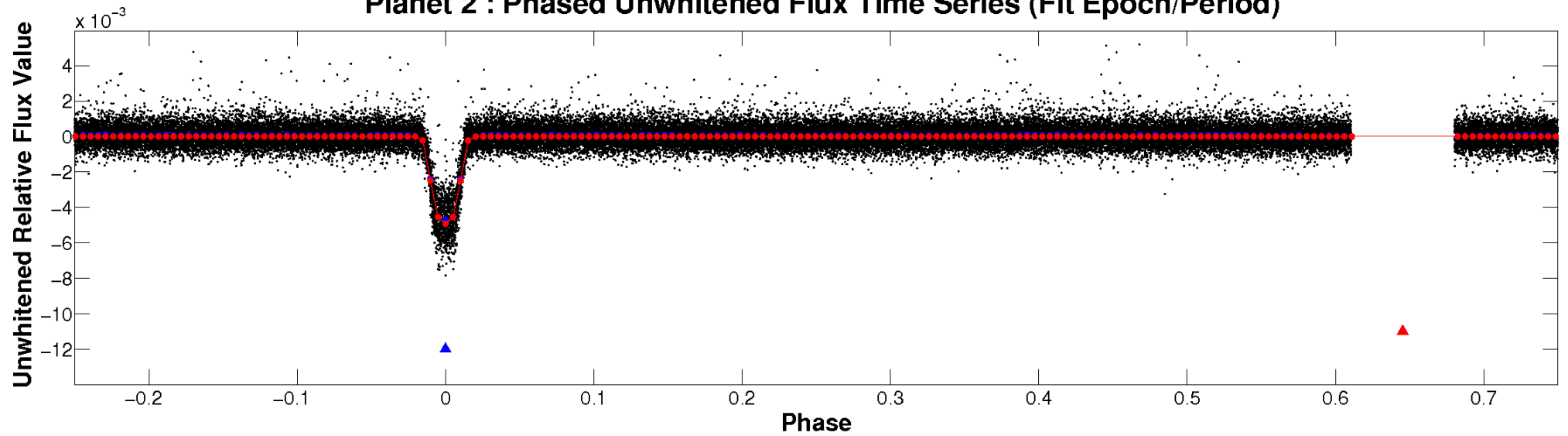
ALT Odd/Even

TCE 008581232-02

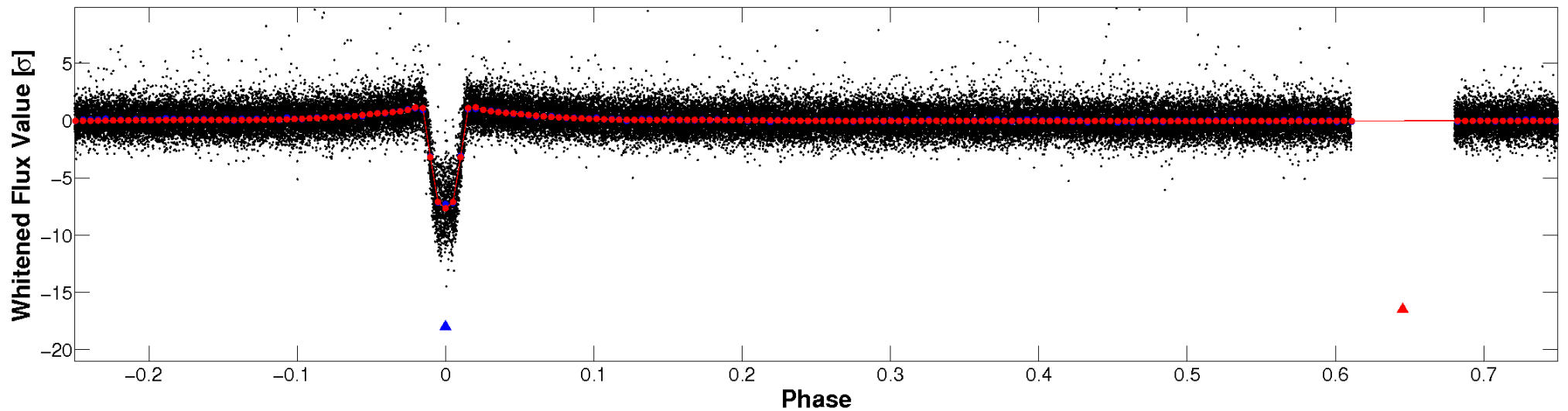


Non-Whitened Vs. Whitened Light Curve

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

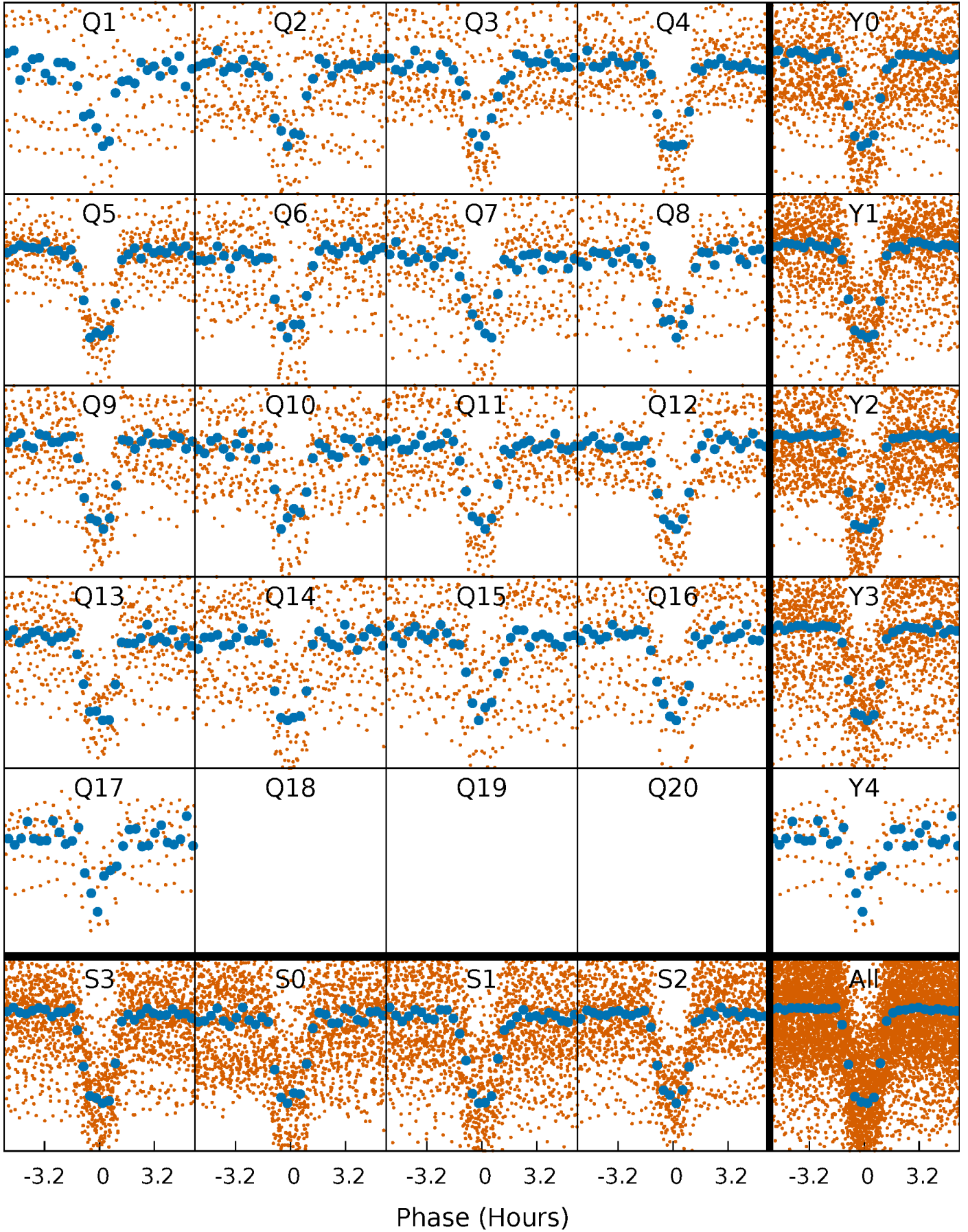


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



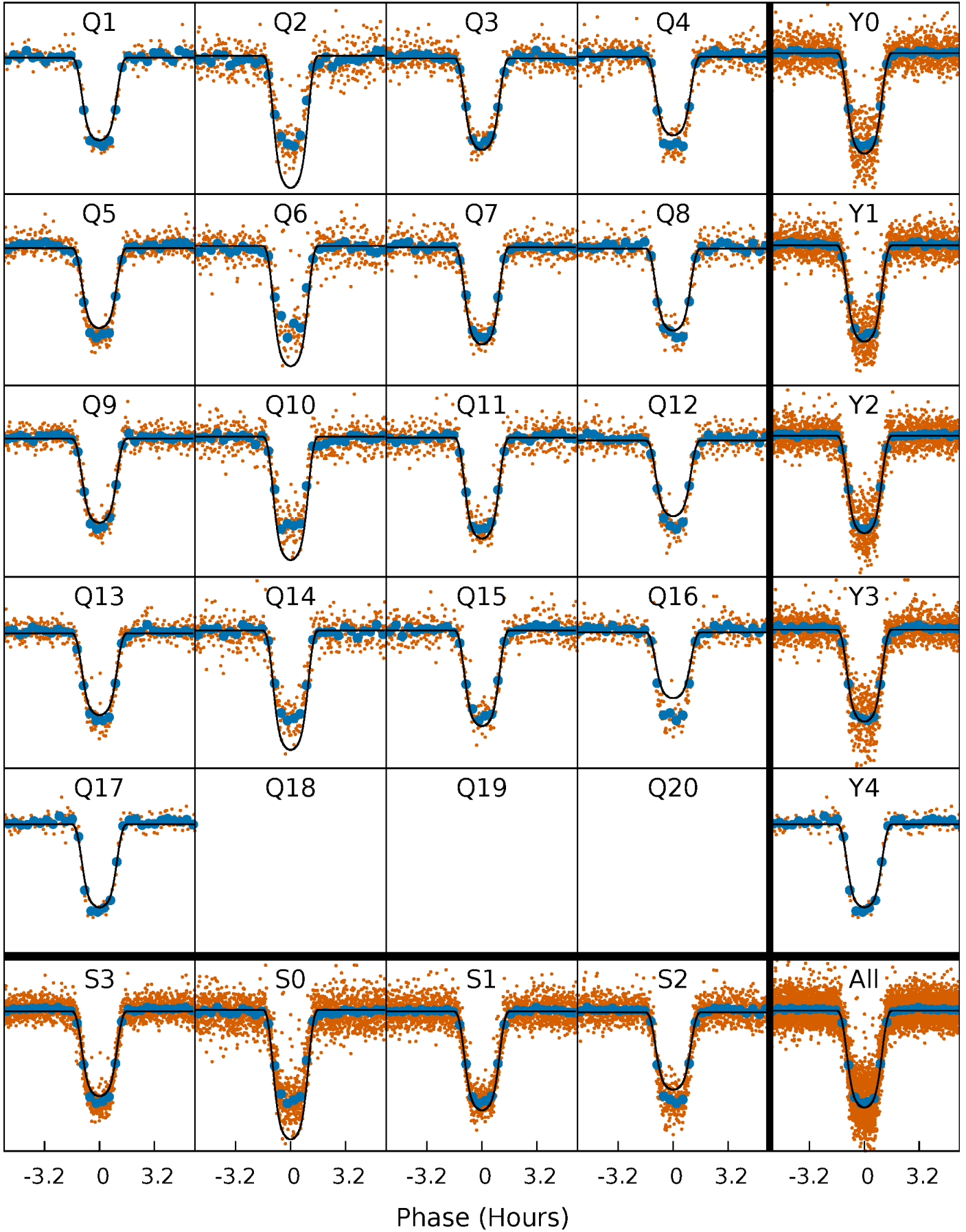
PDC Quarter-Phased Transit Curves

TCE 008581232-02 P= 4.012538 Days $T_0=132.062937$ (BKJD)



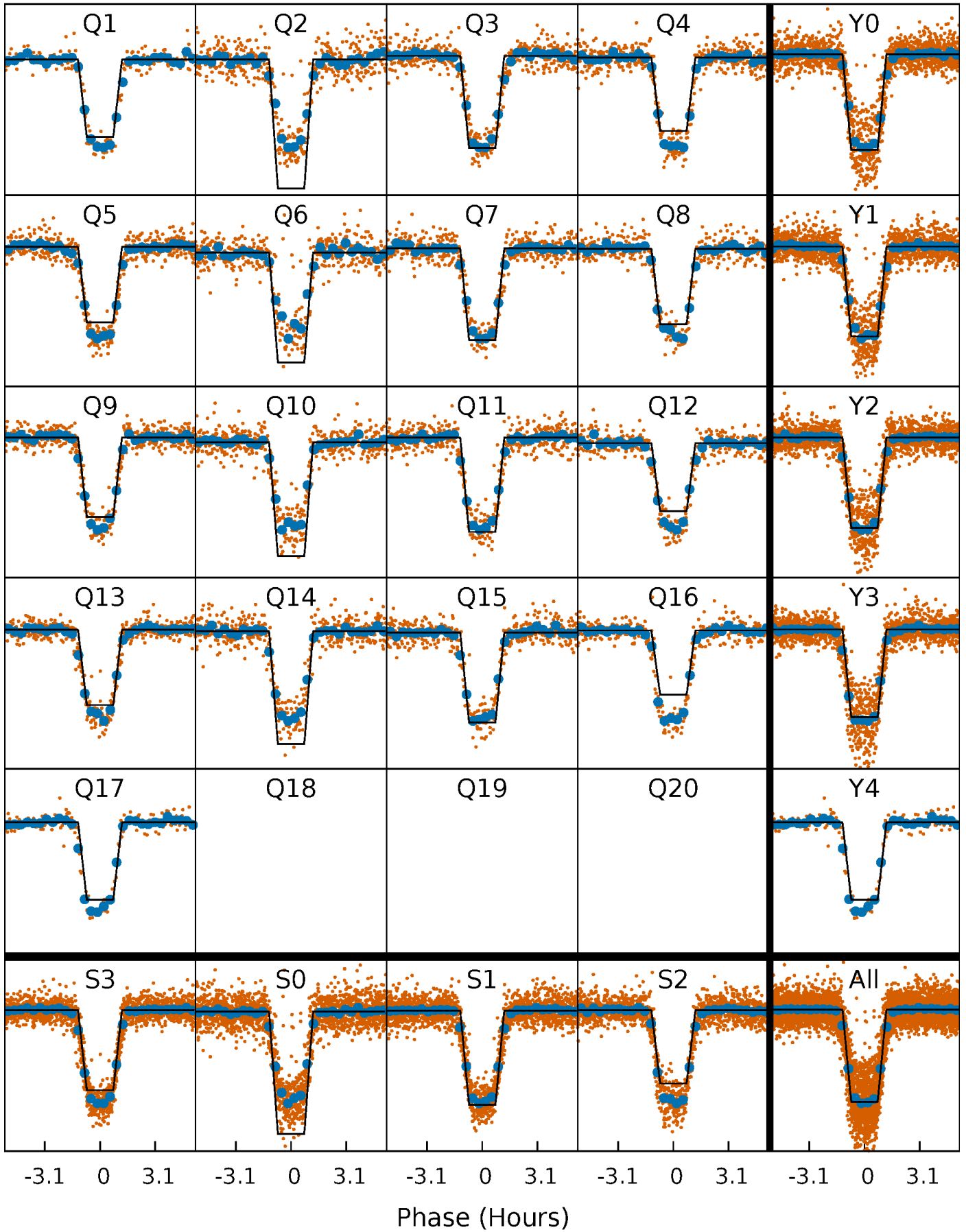
DV Quarter-Phased Transit Curves

TCE 008581232-02 P= 4.012538 Days $T_0=132.062937$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

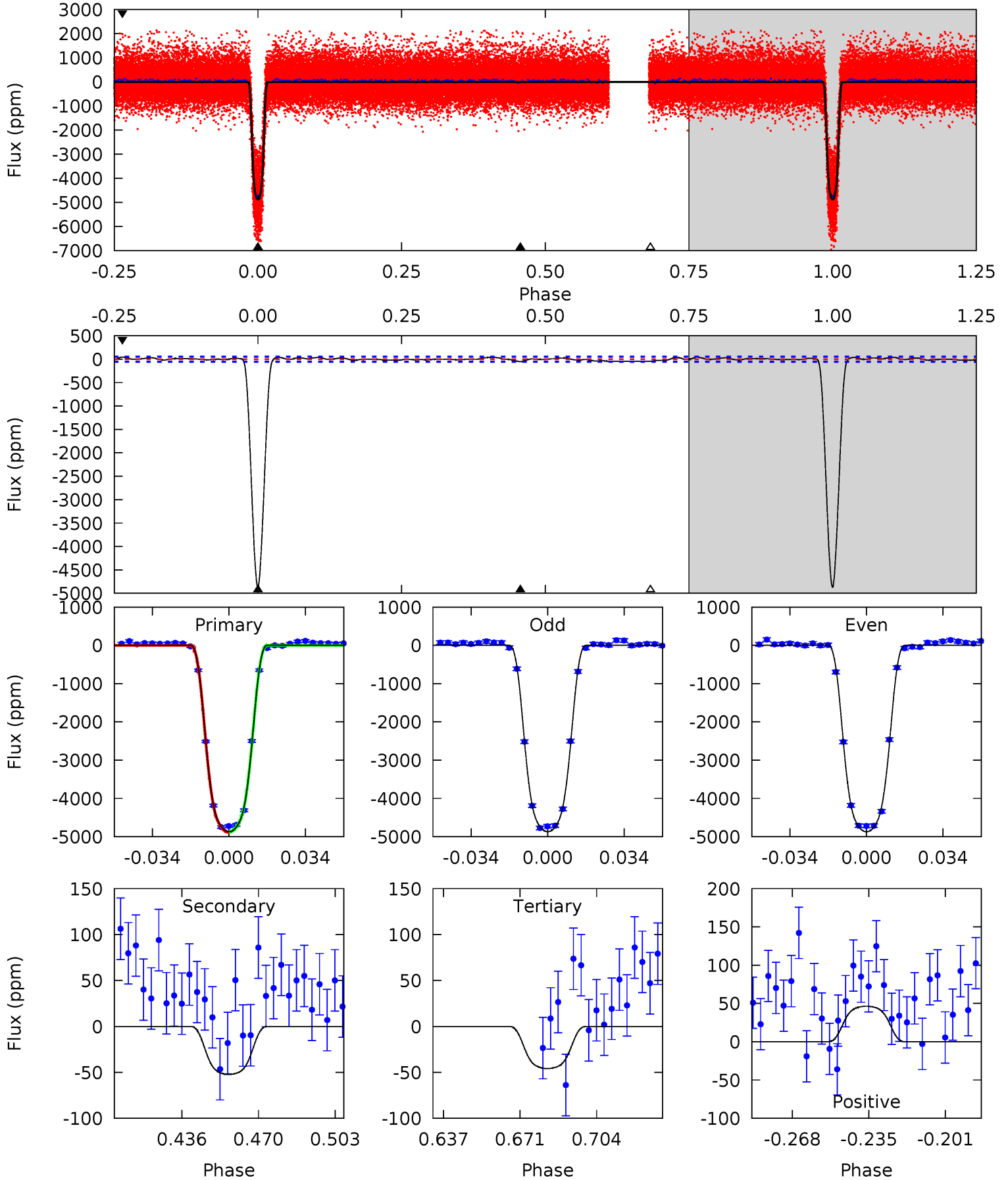
TCE 008581232-02 P= 4.012555 Days $T_0=132.059552$ (BKJD)



DV Model-Shift Uniqueness Test

008581232-02, P = 4.012538 Days, E = 128.050399 Days

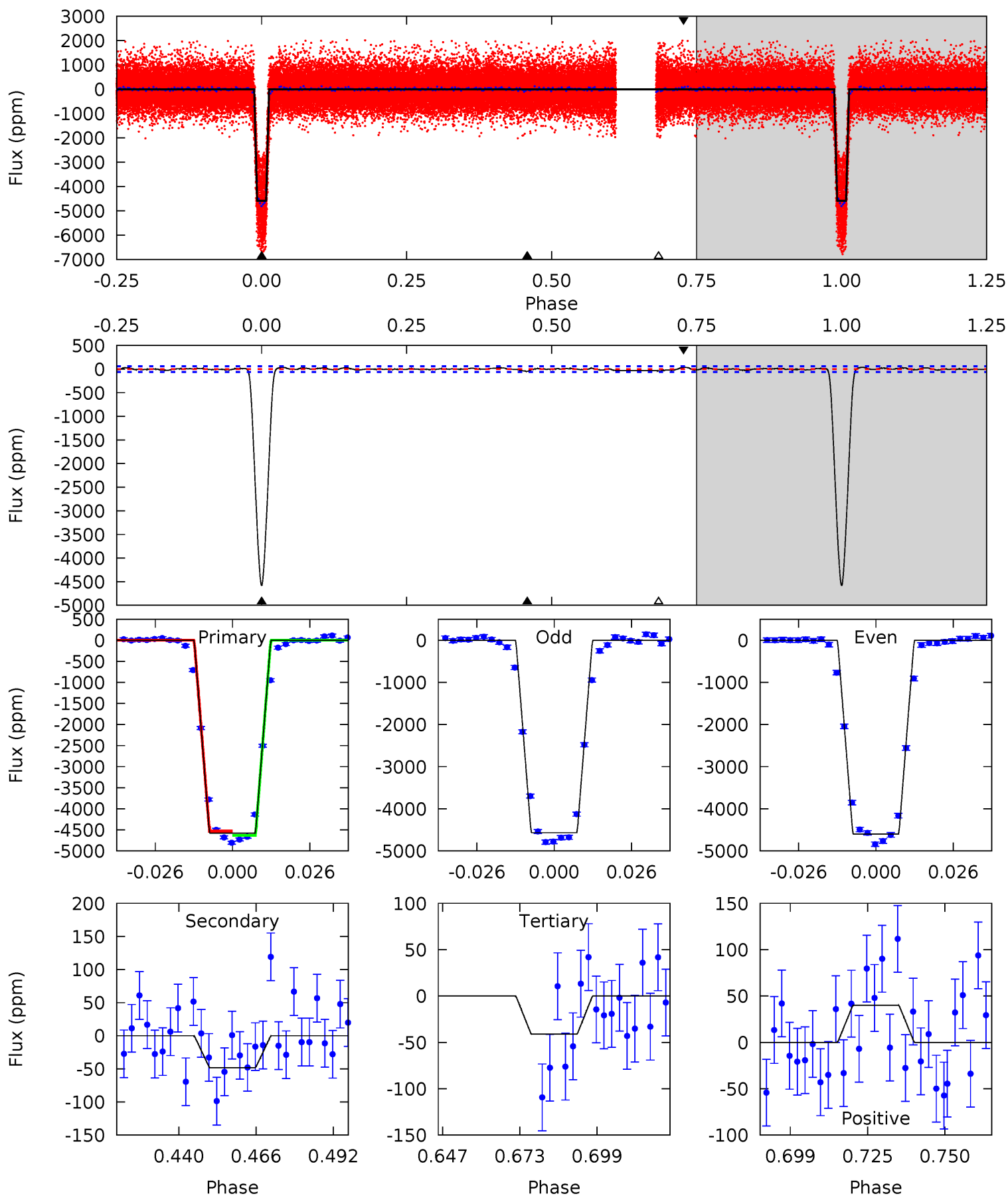
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
425.6	4.57	4.01	4.06	4.79	2.13	1.65	421.5	421.5	0.56	0.51	0.05	0.98	0.01	0.72



Alt Model-Shift Uniqueness Test

008581232-02, P = 4.012555 Days, E = 128.046997 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
364.8	3.85	3.27	3.19	4.84	2.23	1.11	361.5	361.6	0.58	0.66	1.25	0.98	0.01	4.15



Stellar Parameters For KIC 008581232

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4483^{+120}_{-133}	$4.629^{+0.056}_{-0.024}$	$-0.340^{+0.300}_{-0.300}$	$0.630^{+0.045}_{-0.062}$	$0.616^{+0.067}_{-0.045}$	$3.471^{+0.877}_{-0.397}$
	+3%/-3%	+1%/-1%	+88%/-88%	+7%/-10%	+11%/-7%	+25%/-11%
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 008581232-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-52 ± 11	$5.26^{+0.22}_{-0.27}$	1061^{+35}_{-33}	2203^{+70}_{-77}	$1.856^{+0.436}_{-0.434}$
Alt.	-48 ± 13	$4.68^{+0.21}_{-0.26}$	1063^{+35}_{-38}	2252^{+80}_{-101}	$2.179^{+0.590}_{-0.554}$

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 $A_{obs} \gg 1.0$

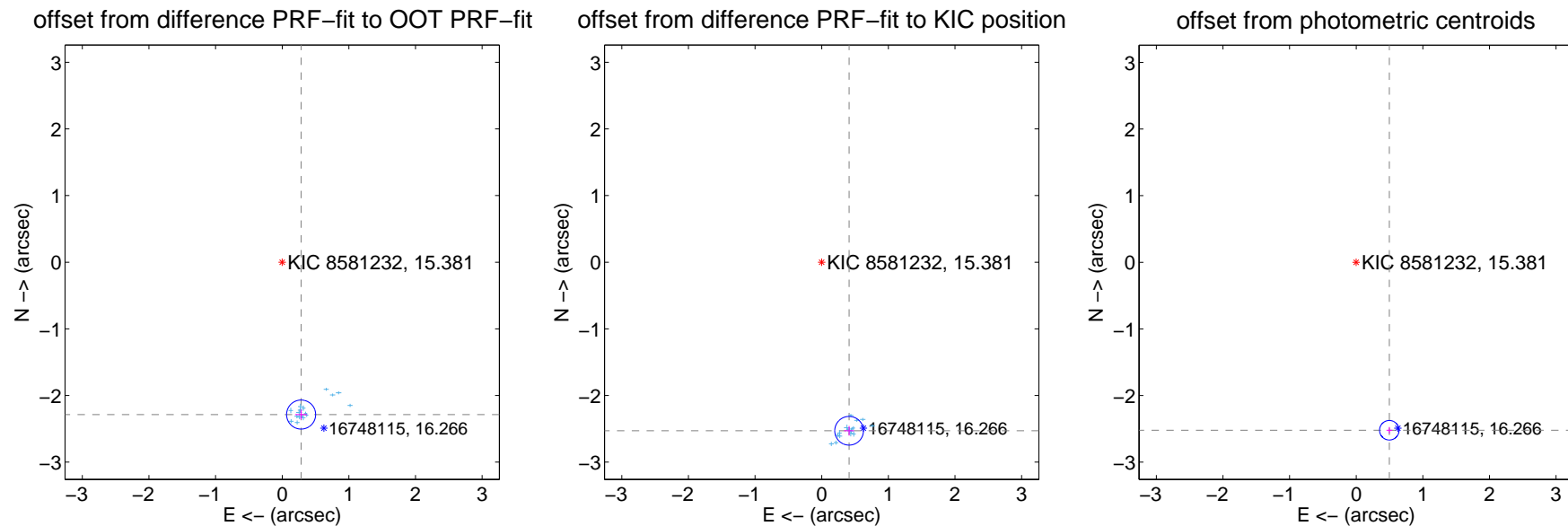
DV Centroid Data

Supplemental centroid analysis for 008581232-02. Kepler magnitude: 15.38. Transit SNR 230.89

There are 17 quarters with good PRF difference image offsets

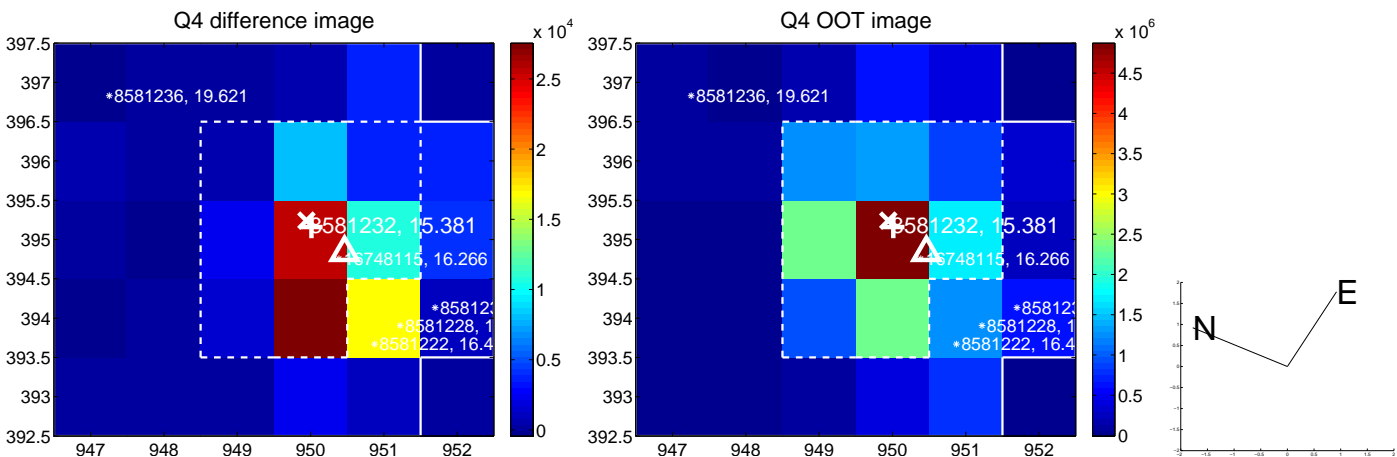
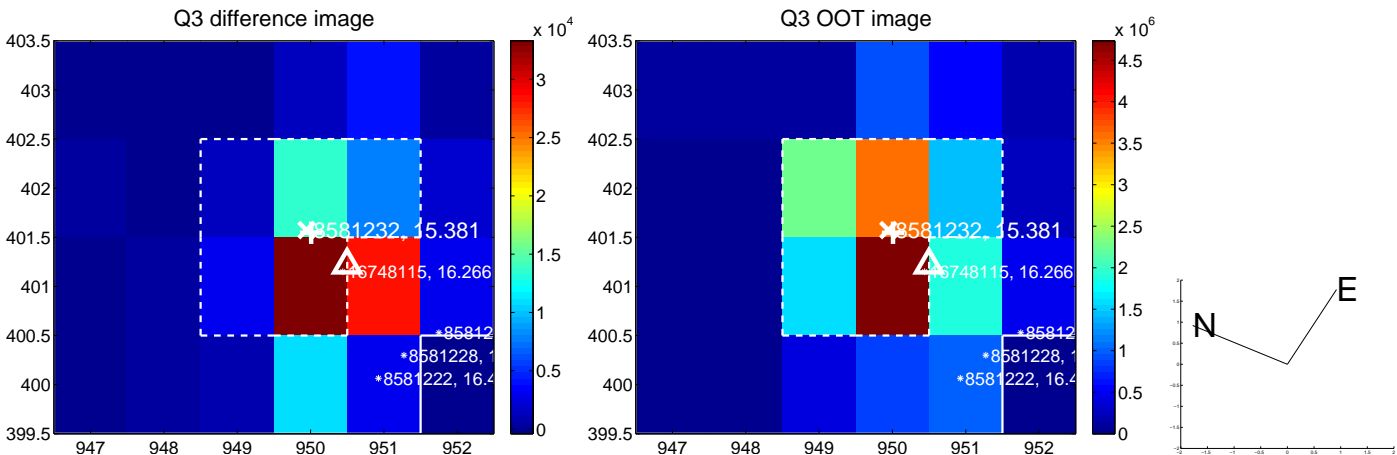
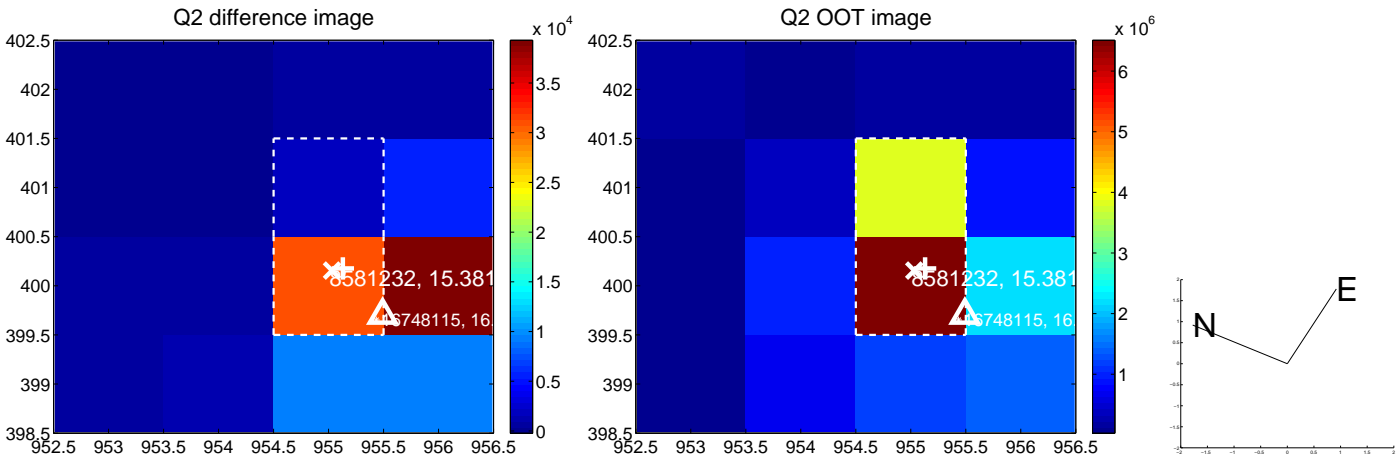
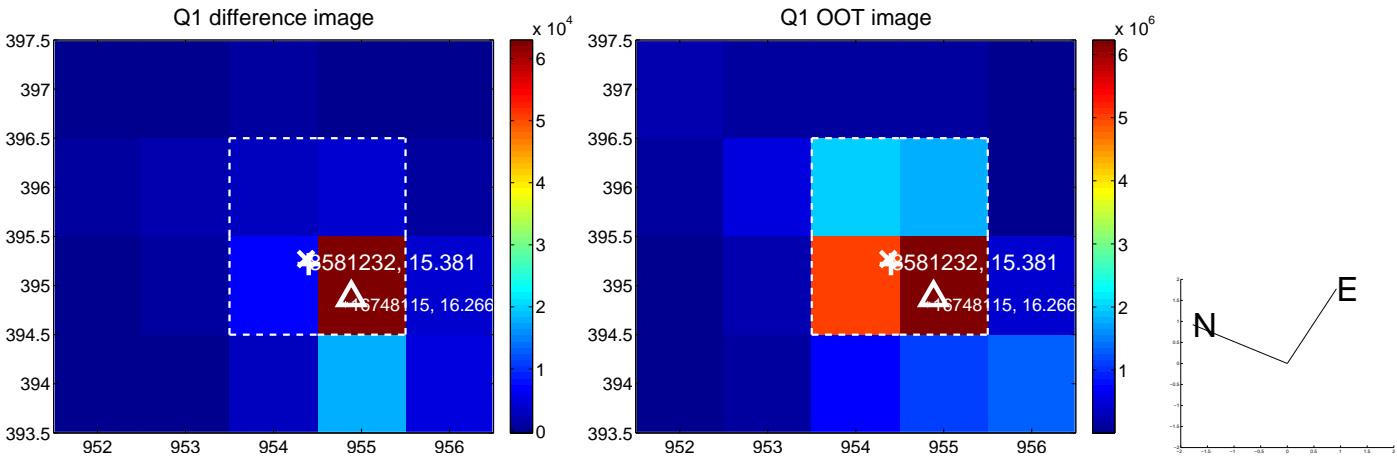
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.305 ± 0.073	31.72	-0.284 ± 0.090	-2.287 ± 0.075
PRF-fit source offset from KIC position	2.564 ± 0.072	35.70	-0.411 ± 0.075	-2.530 ± 0.072
photometric centroid source offset	2.57 ± 0.05	52.63	-0.50 ± 0.04	-2.52 ± 0.05

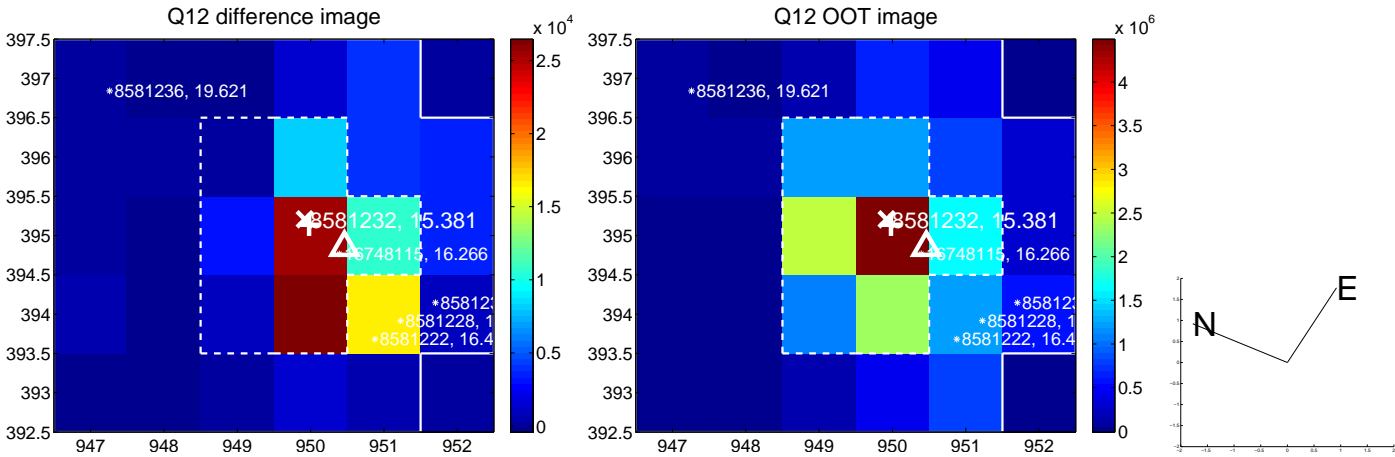
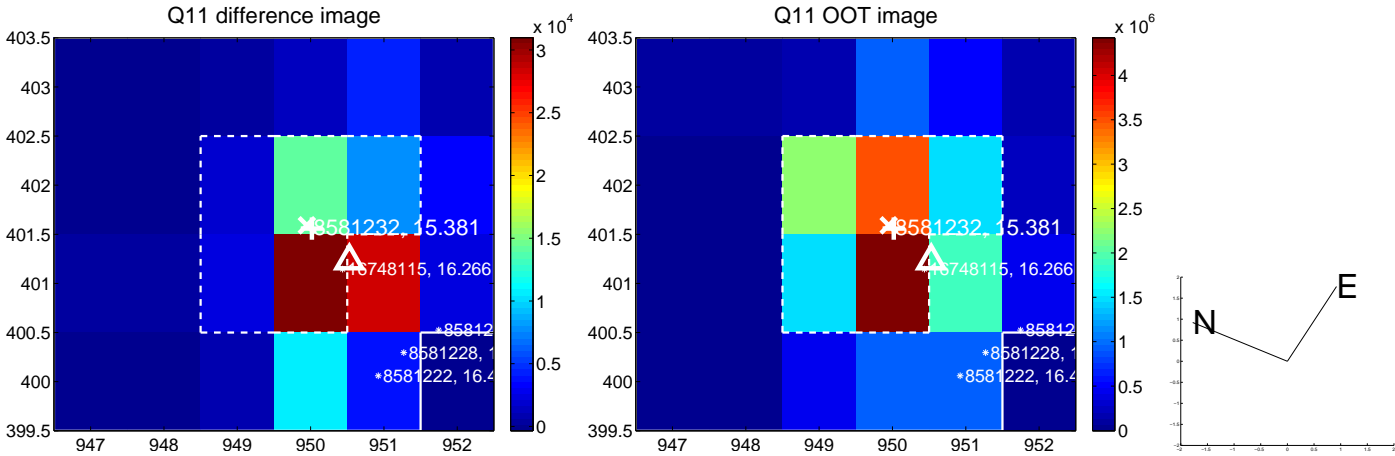
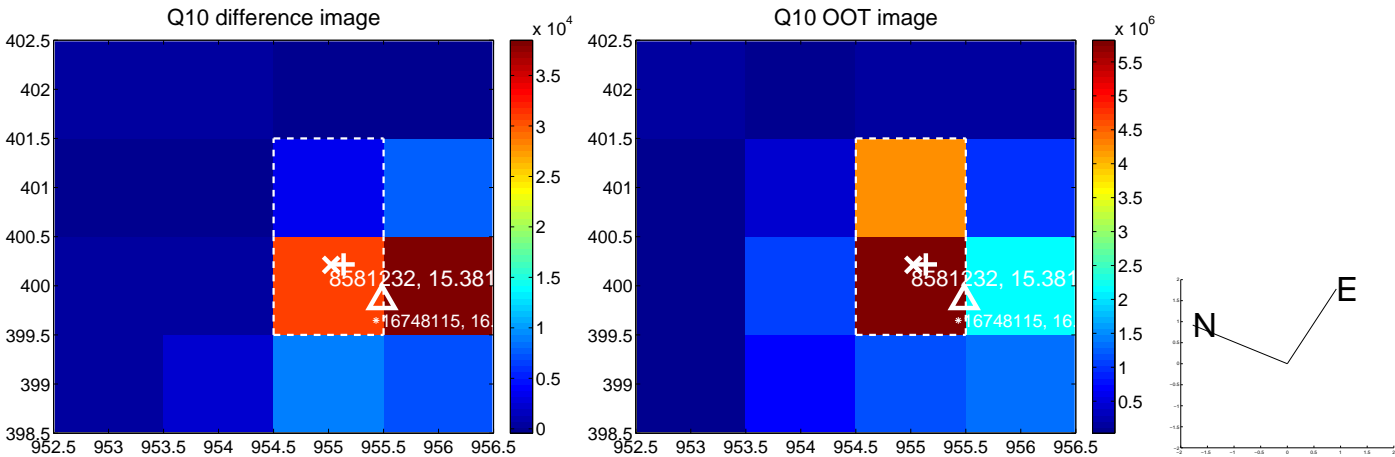
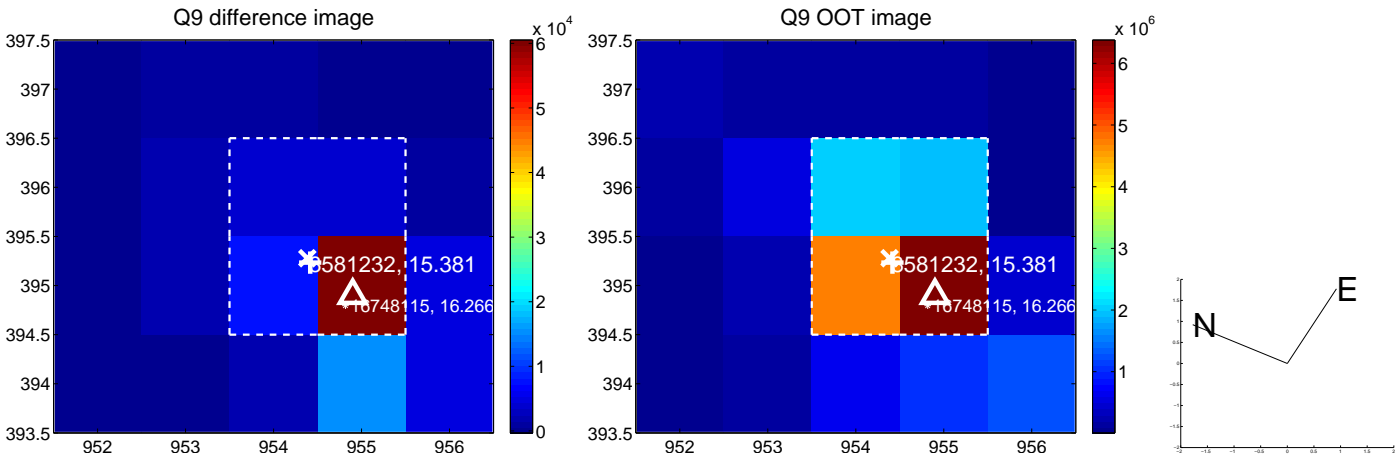


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

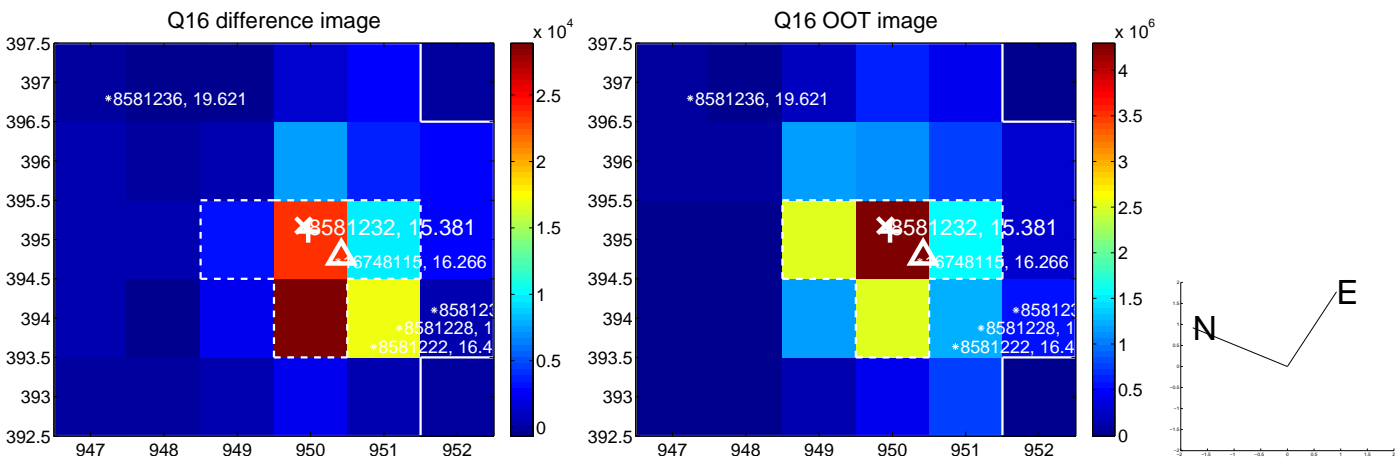
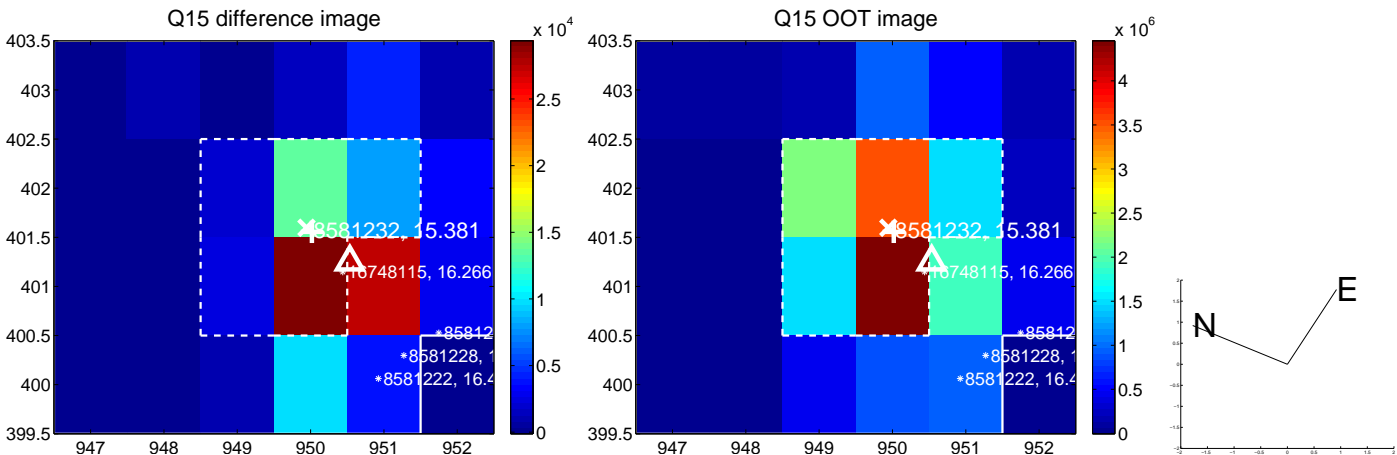
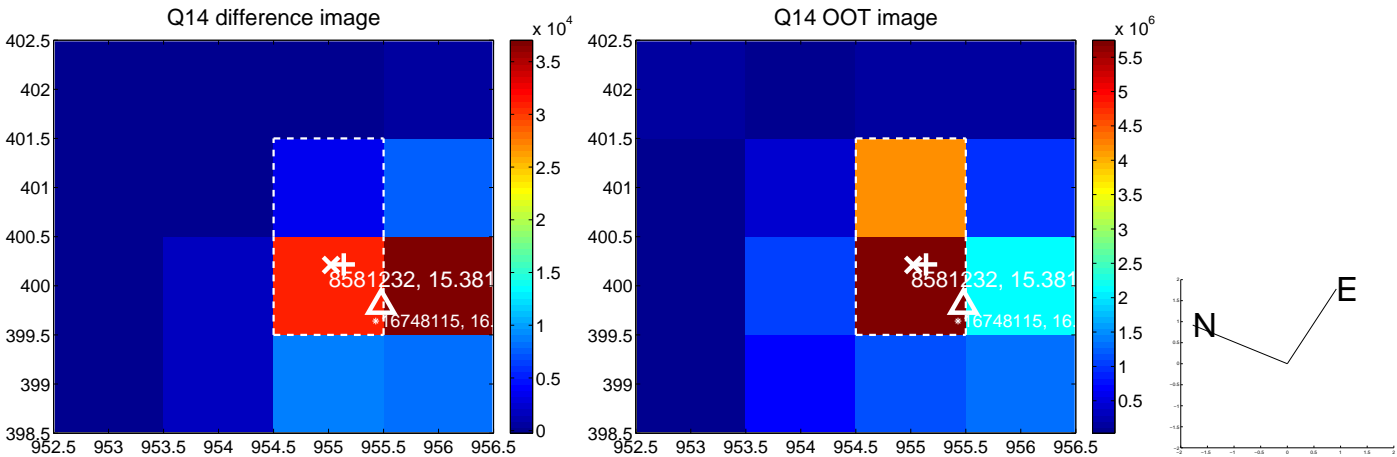
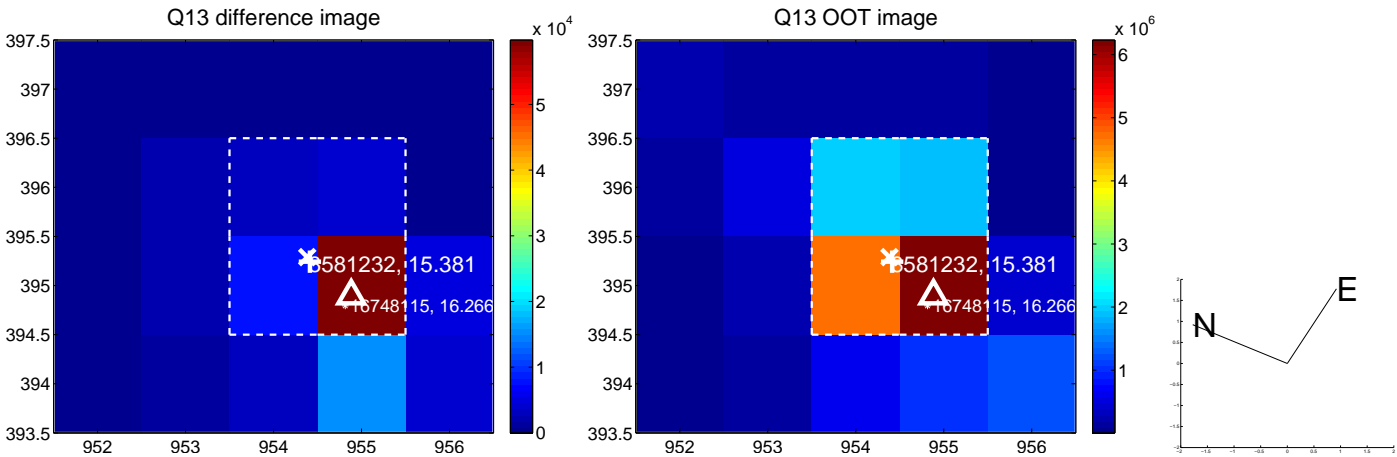
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



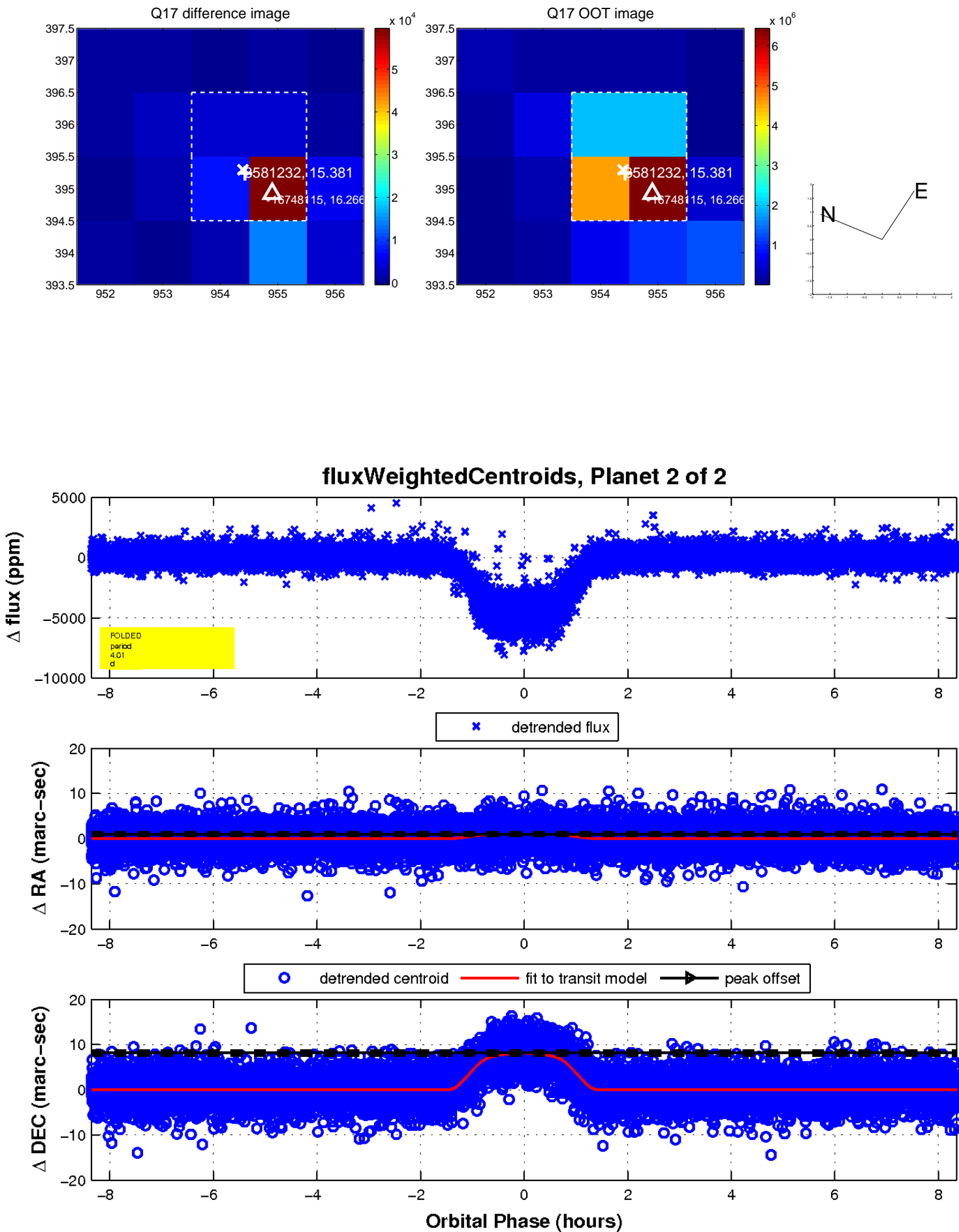
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

