

KIC 009579499

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})
009579499-01	OBS	1461.01	7.946721	137.157018	9172.7	1.569	206.2	208.1	0.70	4859	10.94	48.65
009579499-02	OBS	No	7.946718	132.761087	5995.9	2.793	167.0	164.6	0.70	4859	8.73	48.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009579499-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
009579499-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 009579499-01

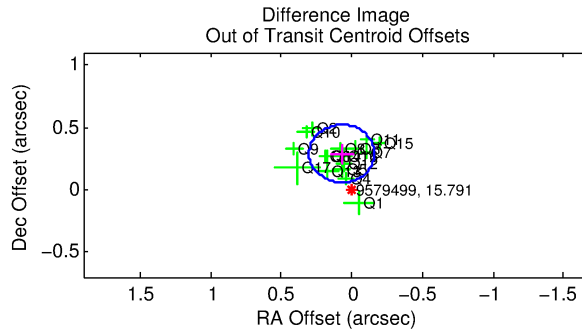
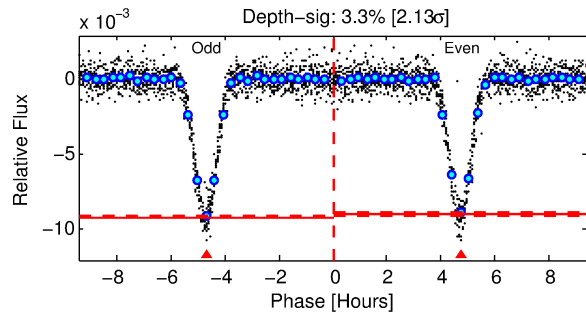
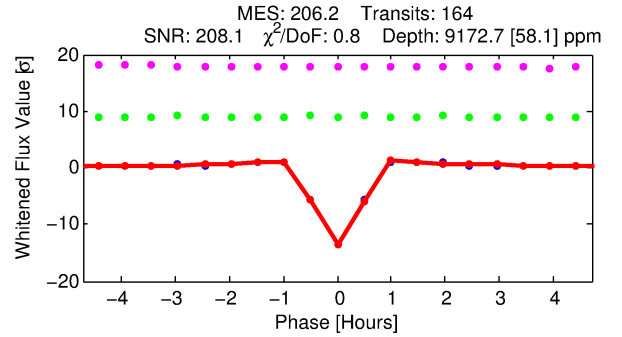
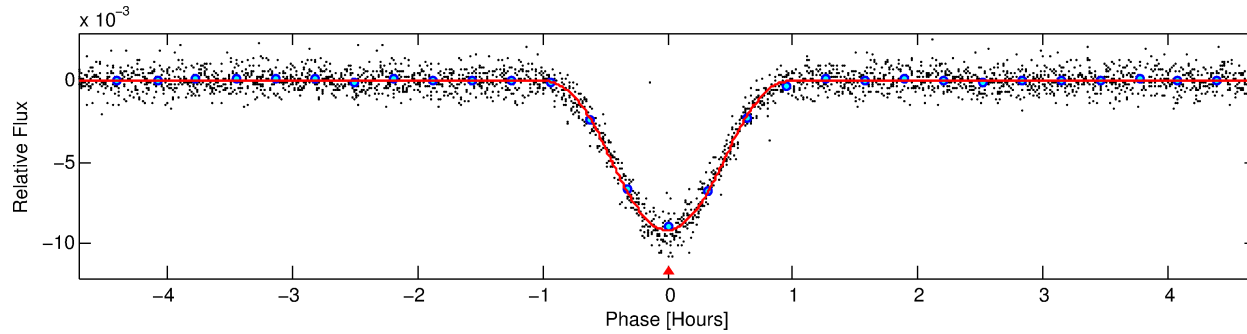
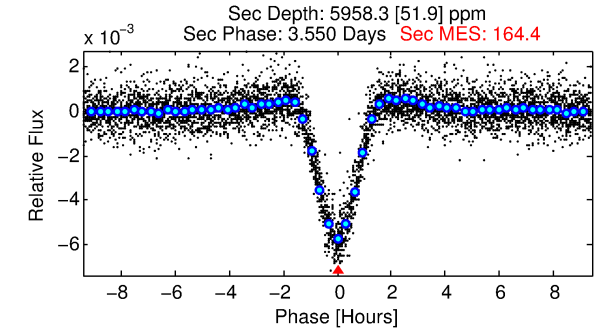
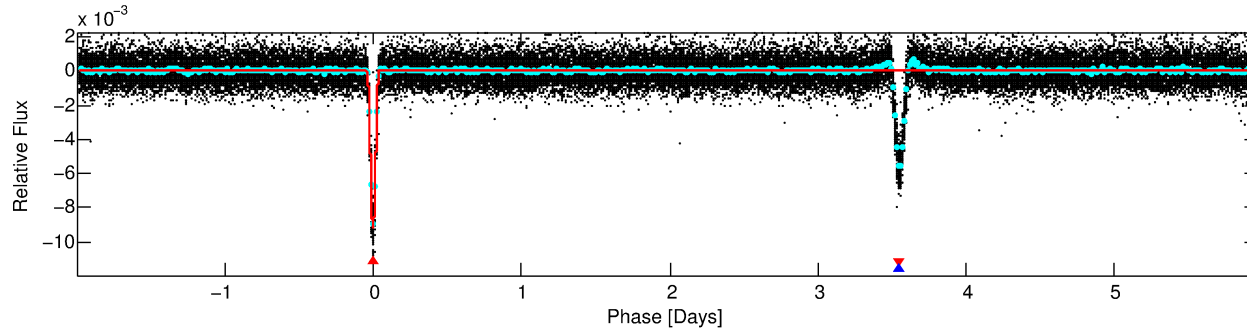
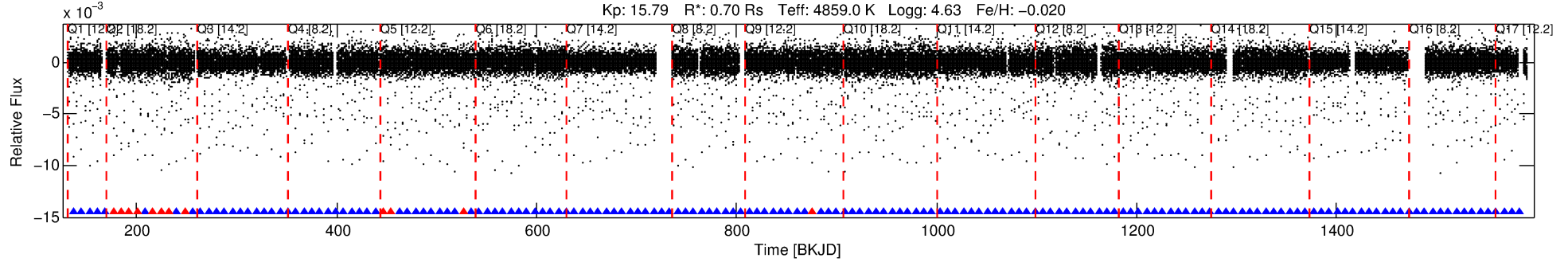
No Significant Match Found

DV One-Page Summary

KIC: 9579499 Candidate: 1 of 2 Period: 7.947 d

KOI: K01461 Corr: No Ephemeris Match

Kp: 15.79 R*: 0.70 Rs Teff: 4859.0 K Logg: 4.63 Fe/H: -0.020



DV Fit Results:

Period = 7.94672 [0.00000] d
Epoch = 137.1570 [0.0002] BKJD
Rp/R* = 0.1428 [0.0389]
a/R* = 23.91 [1.36]
b = 0.96 [0.06]
Seff = 48.65 [8.37]
Teq = 673 [29] K
Rp = 10.94 [3.23] Re
a = 0.0711 [0.0064] AU
Ag = 138.50 [77.38] [1.78σ]
Teffp = 3572 [498] K [5.81σ]

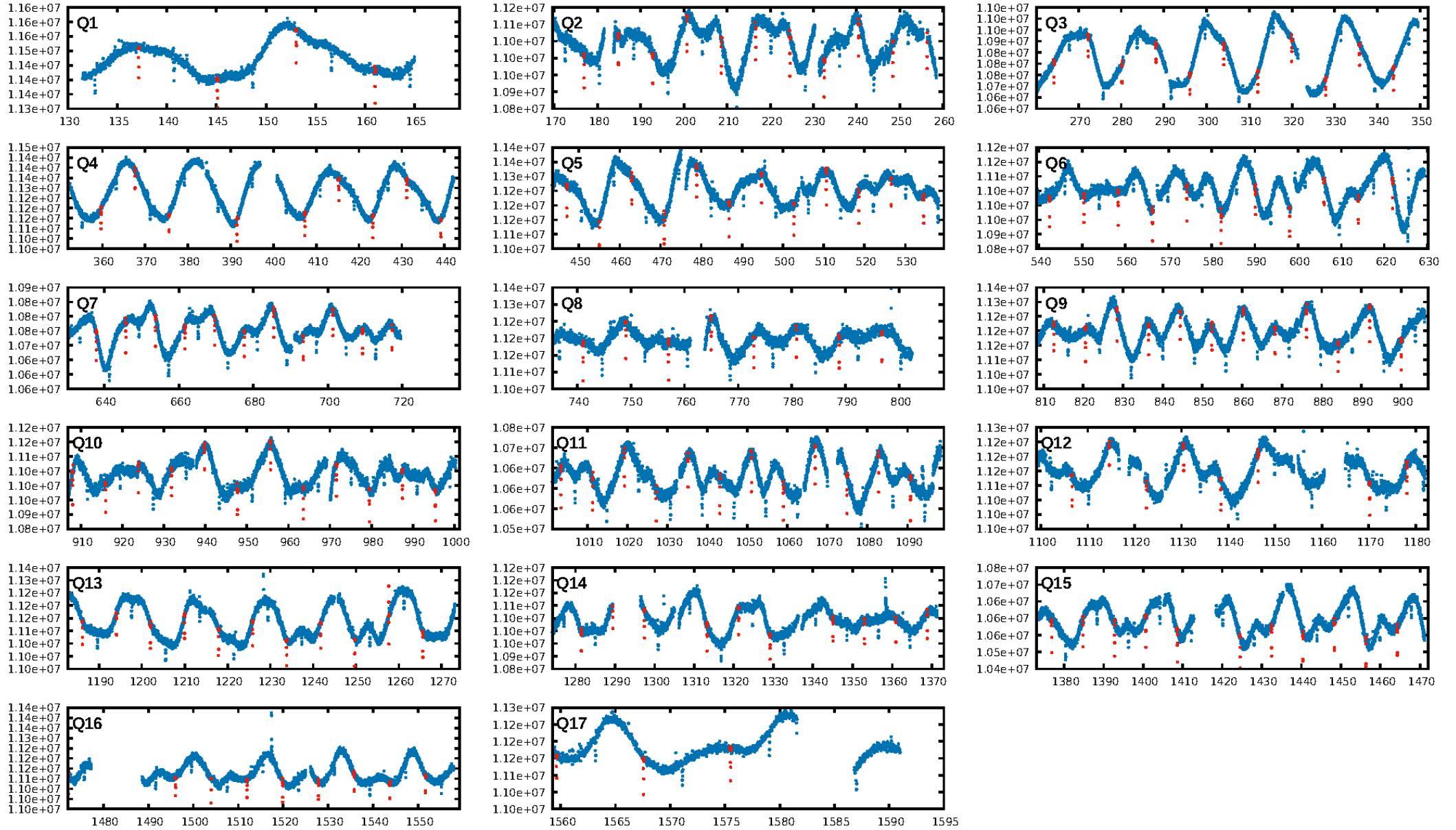
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 92.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.92 [145/157]
GhostDiagnostic-chr: 3.123
Centroid-sig: 0.0%
Centroid-so: 0.380 arcsec [5.63σ]
OotOffset-rm: 0.298 arcsec [3.87σ]
KicOffset-rm: 0.257 arcsec [3.36σ]
OotOffset-st: 4/4/4/5 [17]
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DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

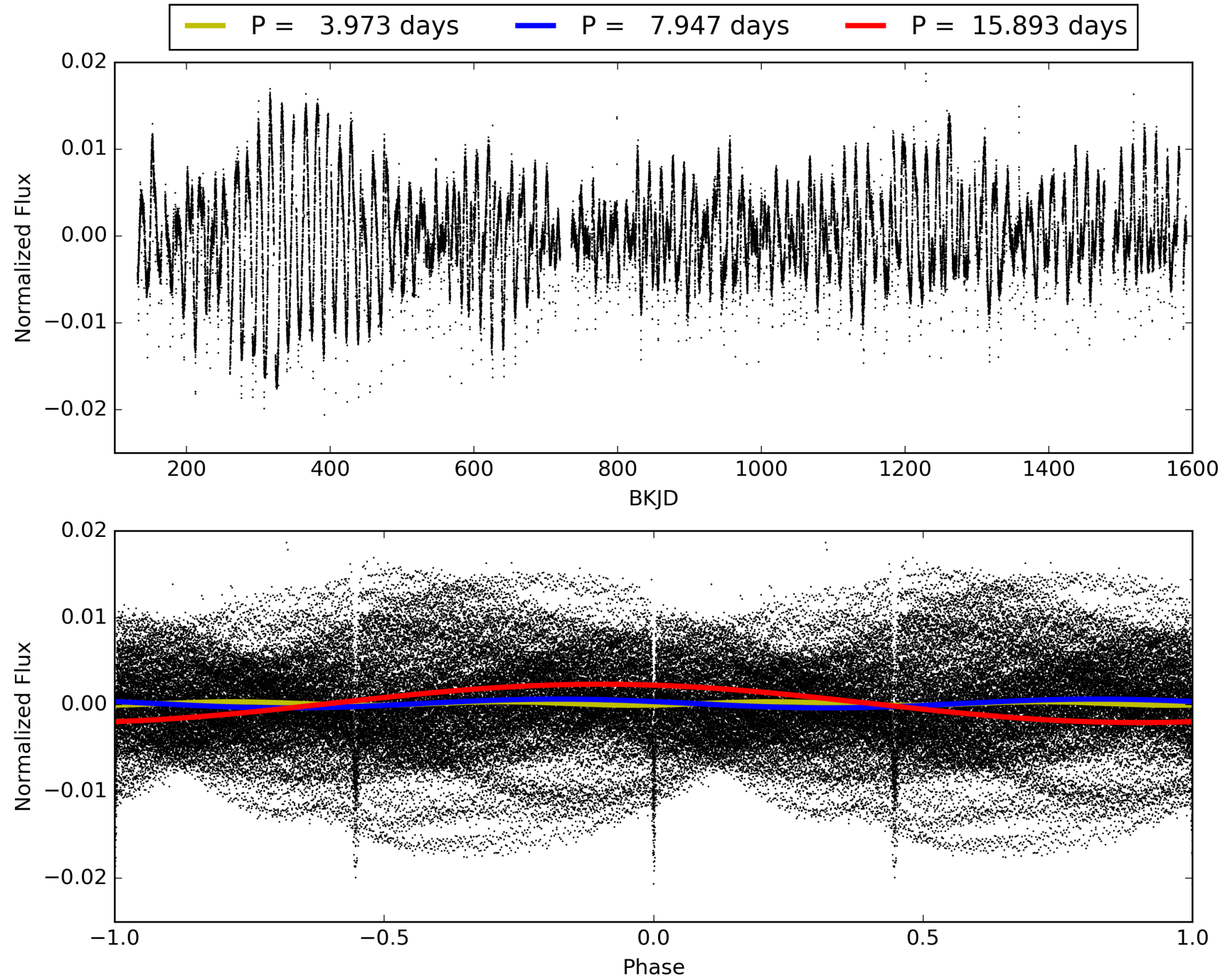
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:10:32 Z

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

TCE 009579499-01, PDC Light Curves

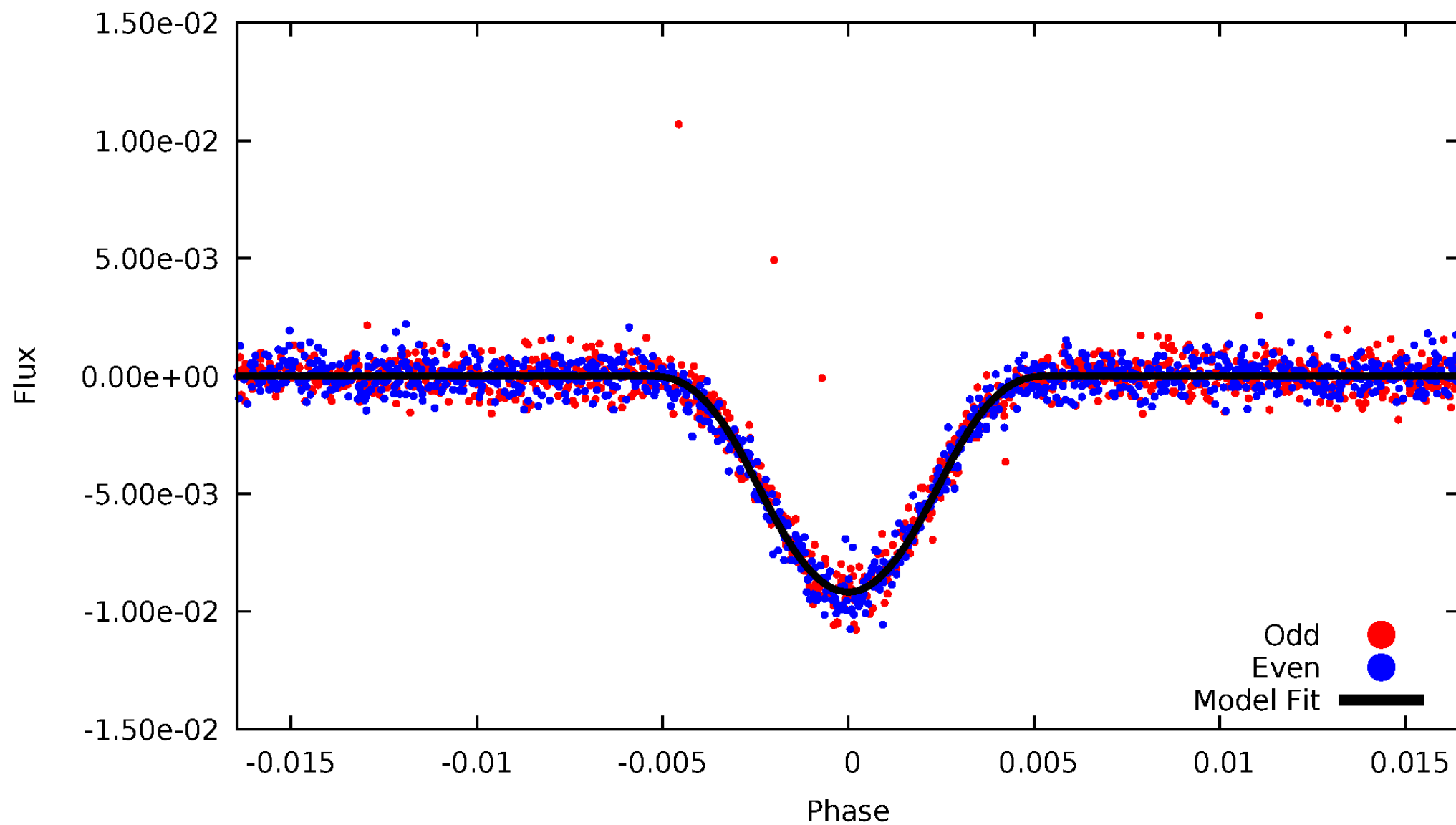


TCE 009579499-01



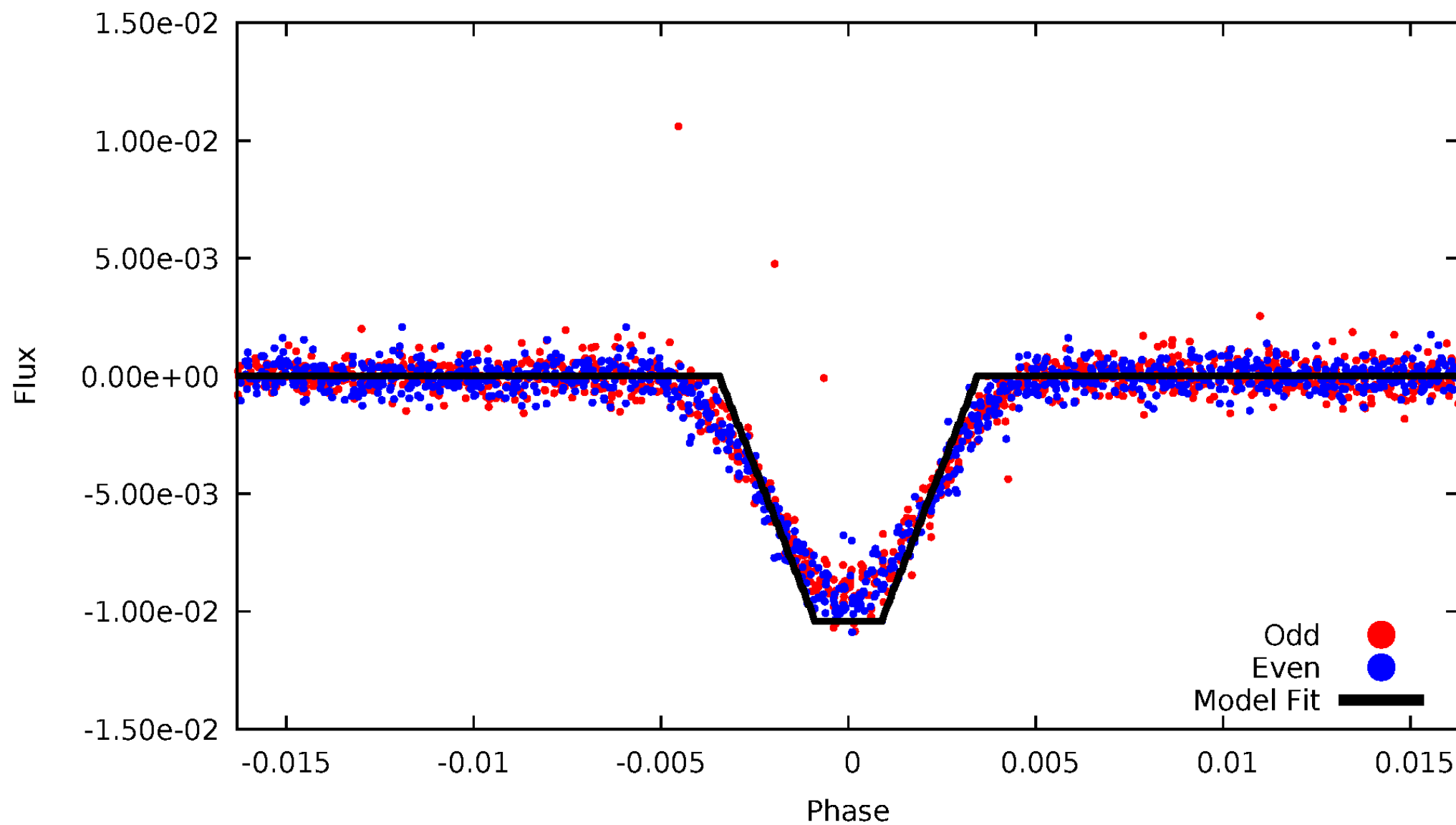
DV Odd/Even

TCE 009579499-01



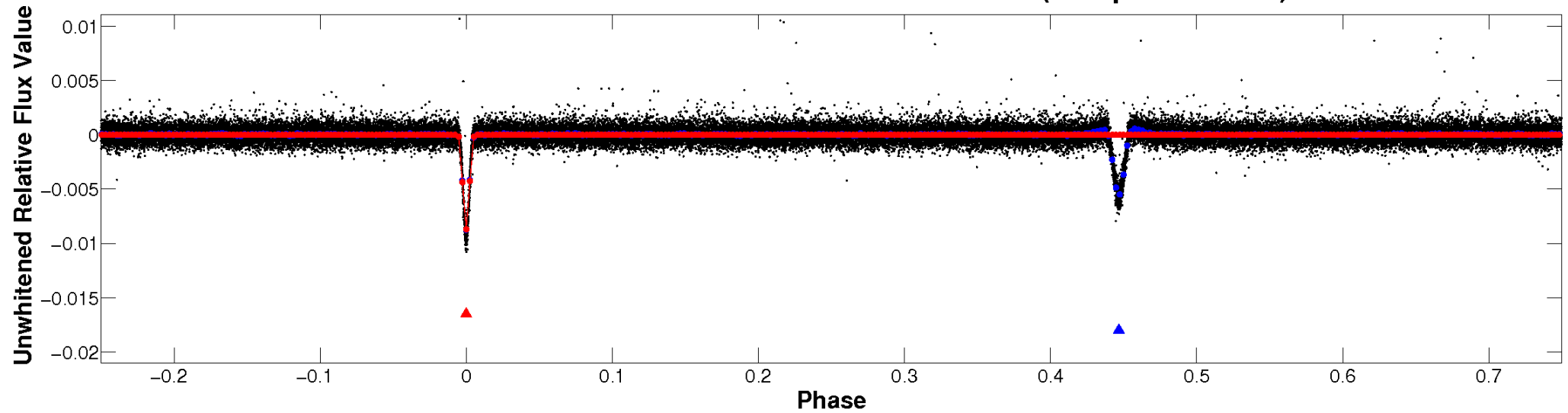
ALT Odd/Even

TCE 009579499-01

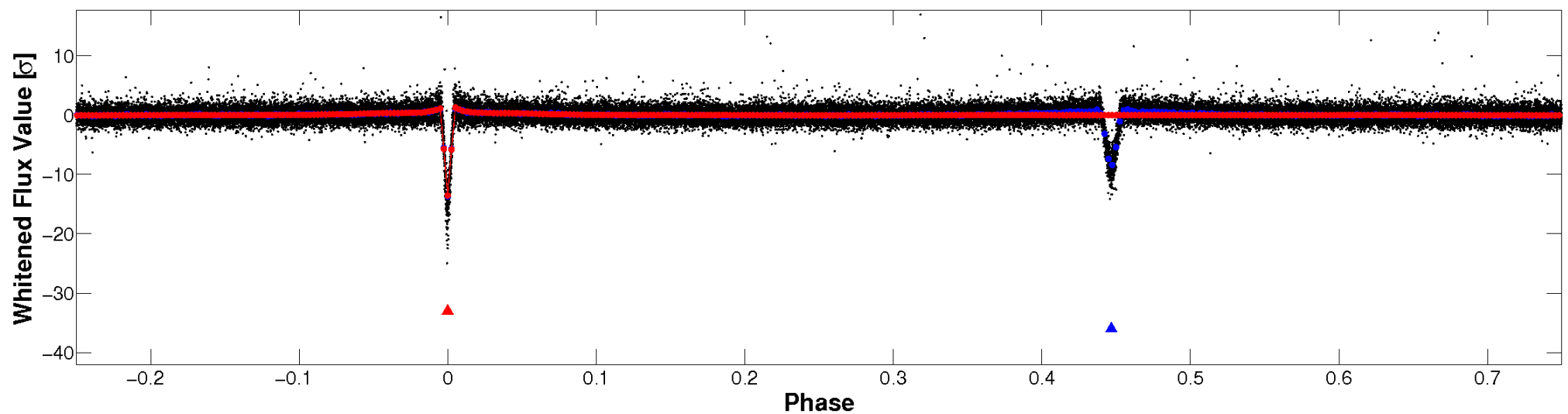


Non-Whitened Vs. Whitened Light Curve

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

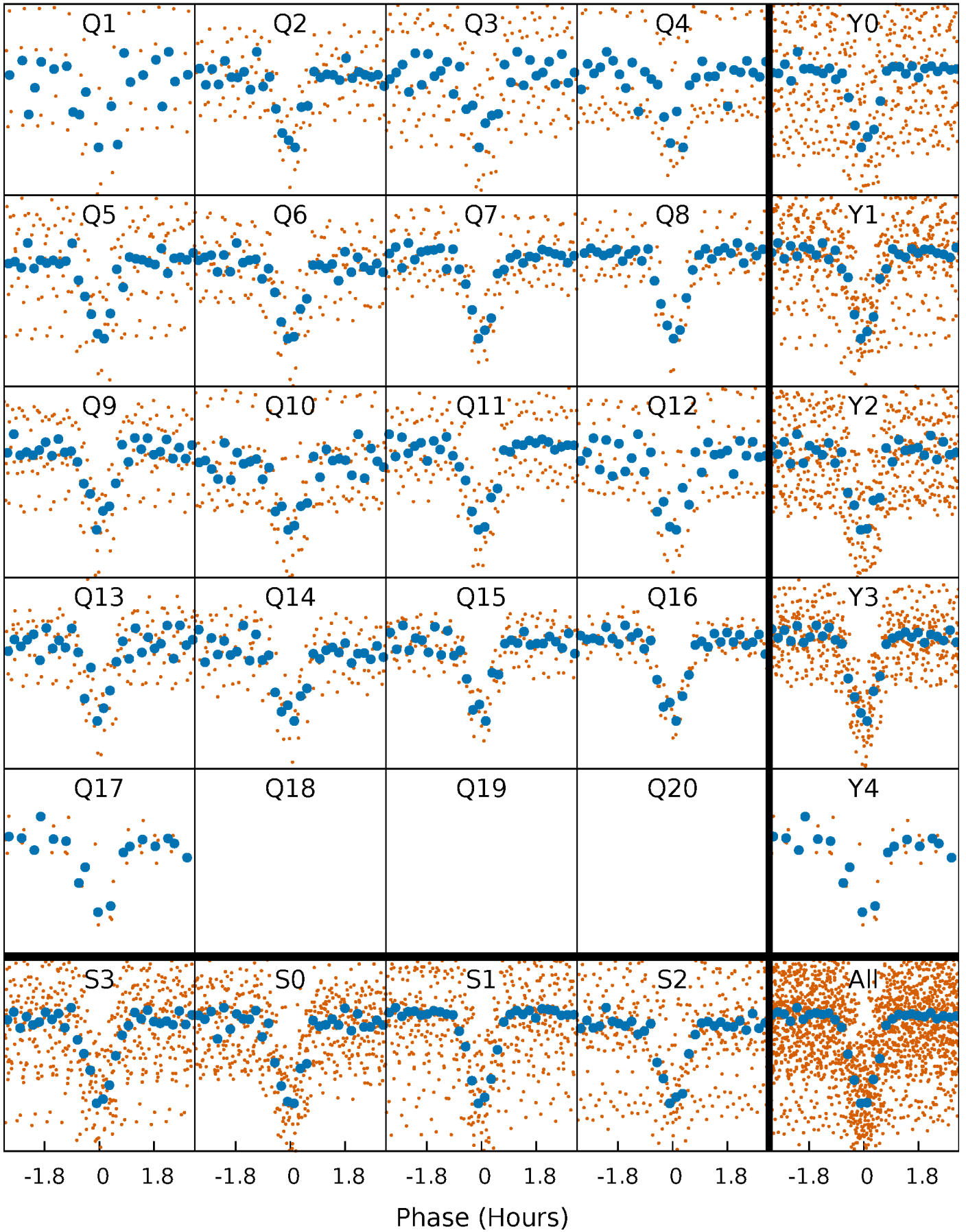


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



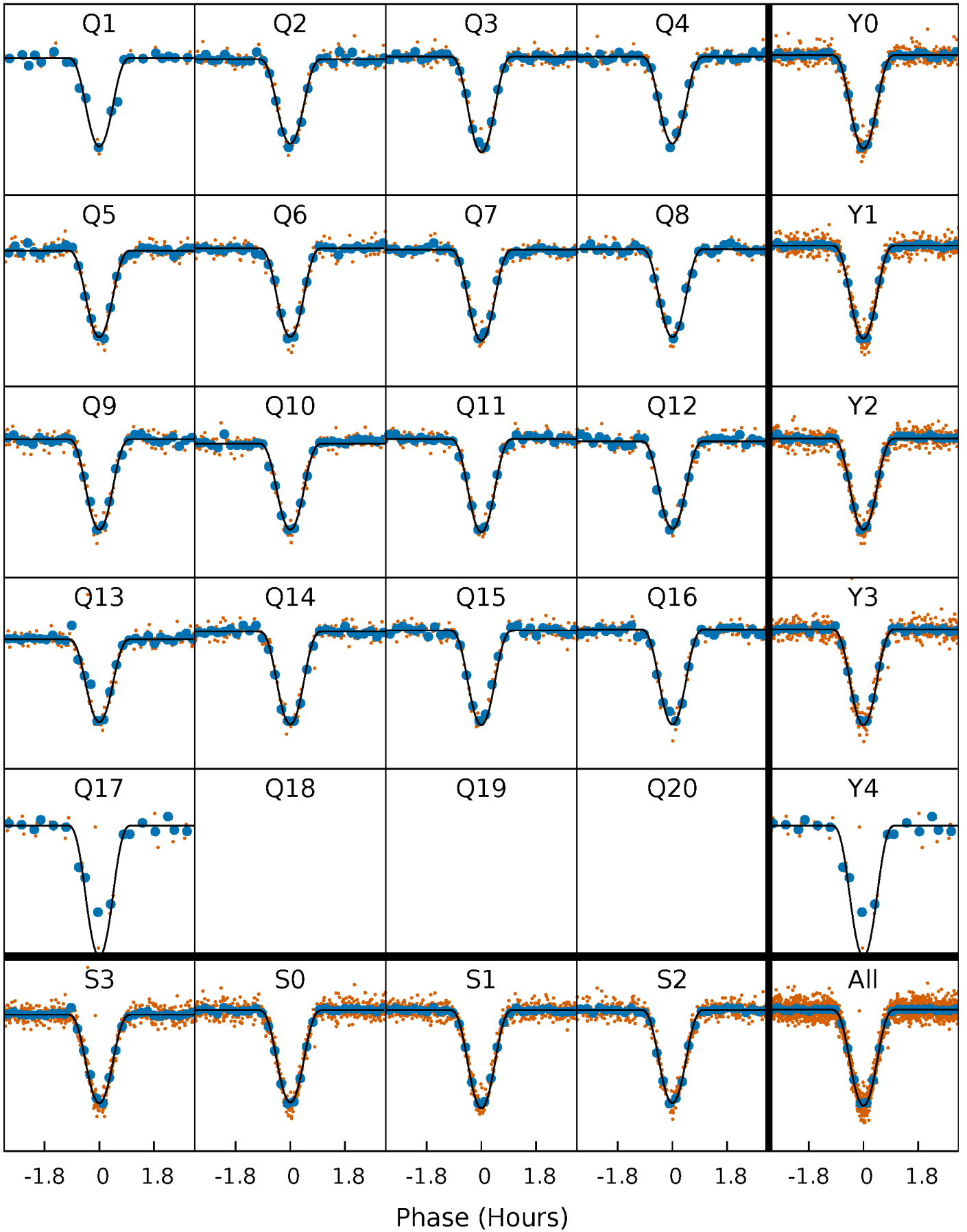
PDC Quarter-Phased Transit Curves

TCE 009579499-01 P= 7.946721 Days $T_0=137.157018$ (BKJD)



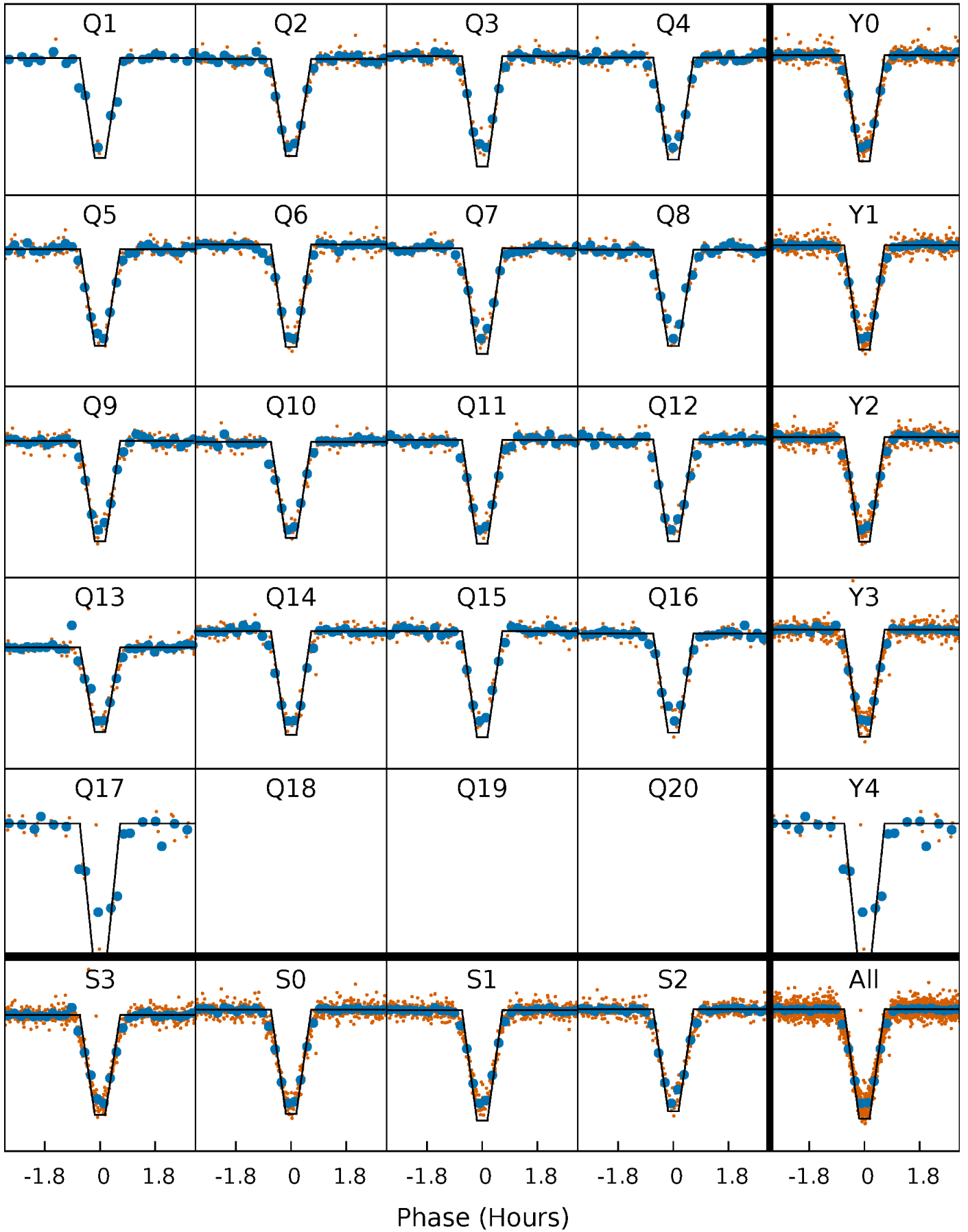
DV Quarter-Phased Transit Curves

TCE 009579499-01 P= 7.946721 Days $T_0=137.157018$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

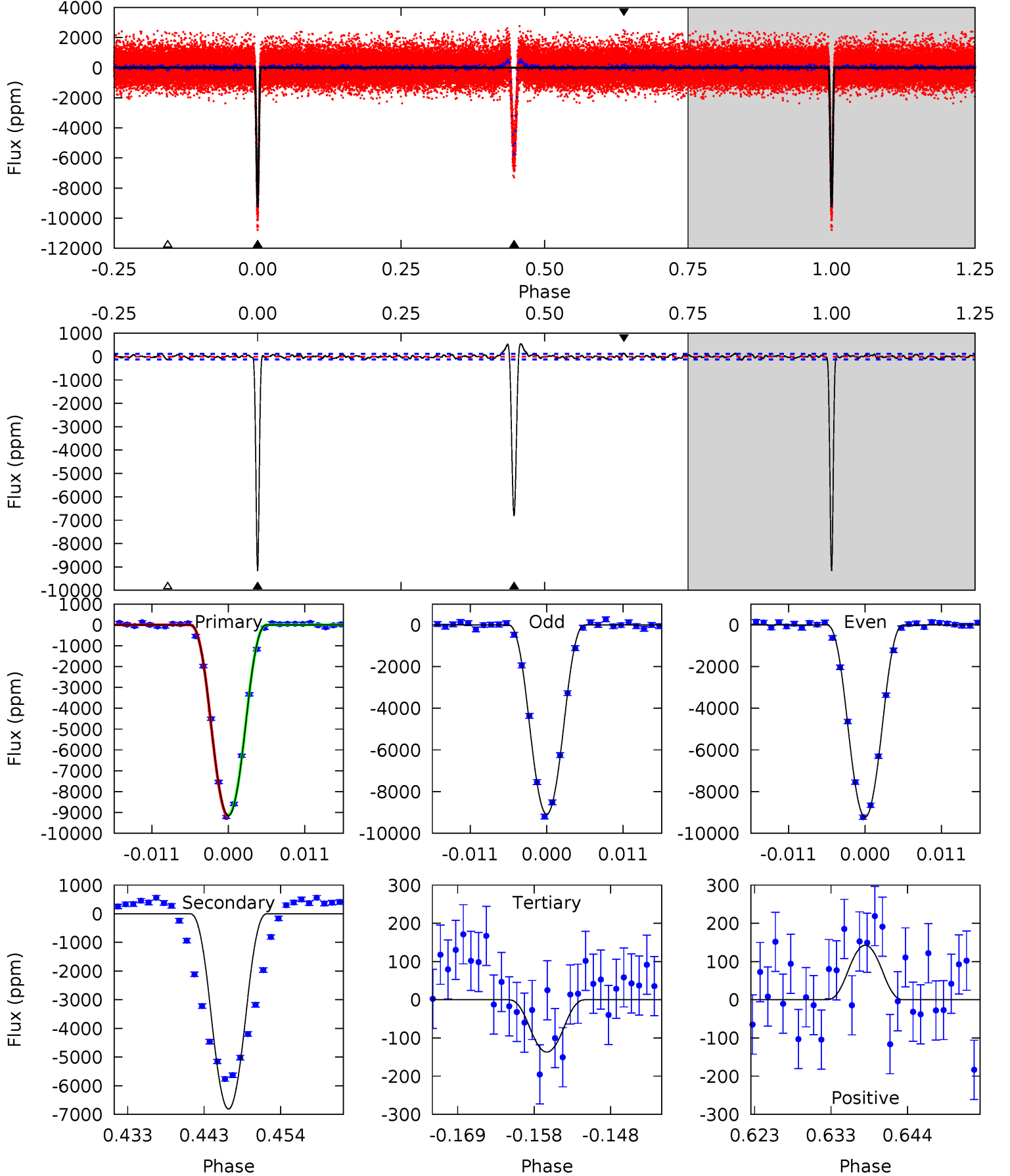
TCE 009579499-01 P= 7.946716 Days $T_0=137.157570$ (BKJD)



DV Model-Shift Uniqueness Test

009579499-01, P = 7.946721 Days, E = 129.210297 Days

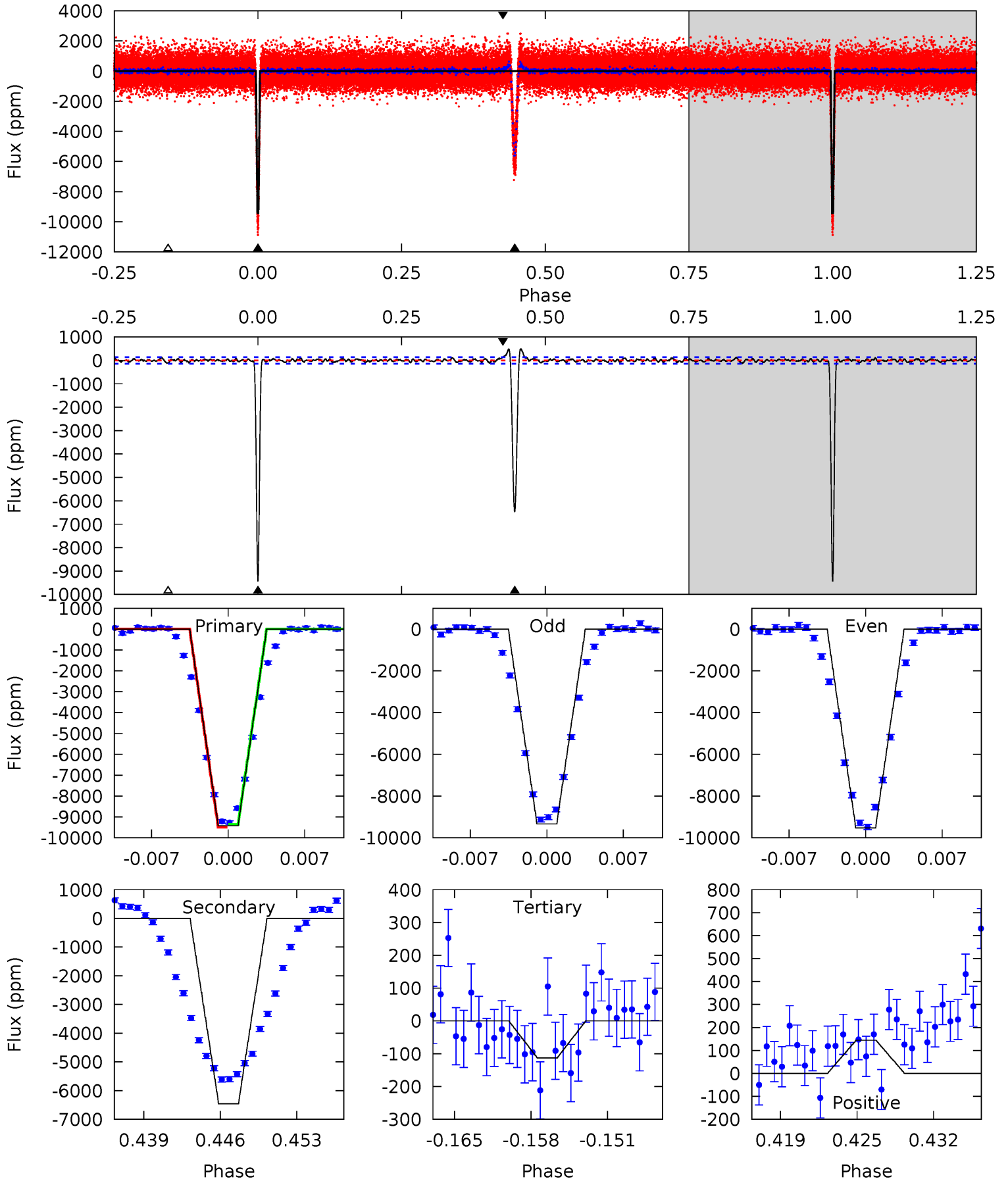
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
383.2	285.1	5.73	5.97	5.02	2.56	2.99	377.5	377.3	279.3	279.1	2.98	1.00	0.06	1.32



Alt Model-Shift Uniqueness Test

009579499-01, P = 7.946716 Days, E = 129.210854 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
340.0	233.2	4.08	5.22	5.10	2.70	2.36	335.9	334.8	229.1	227.9	3.44	1.00	0.05	1.86



Stellar Parameters For KIC 009579499

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4859^{+146}_{-131}	$4.626^{+0.027}_{-0.063}$	$-0.020^{+0.300}_{-0.300}$	$0.702^{+0.080}_{-0.049}$	$0.789^{+0.048}_{-0.084}$	$3.211^{+0.404}_{-0.776}$
	+3%/-3%	+1%/-1%	+1500%/-1500%	+11%/-7%	+6%/-11%	+13%/-24%
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 009579499-01 / KOI 1461.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6812 ± 24	$11.36^{+2.94}_{-3.12}$	953^{+33}_{-34}	3937^{+486}_{-303}	149^{+133}_{-56}
Alt.	-6461 ± 28	$8.08^{+2.97}_{-3.06}$	948^{+36}_{-30}	4427^{+904}_{-499}	280^{+438}_{-131}

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

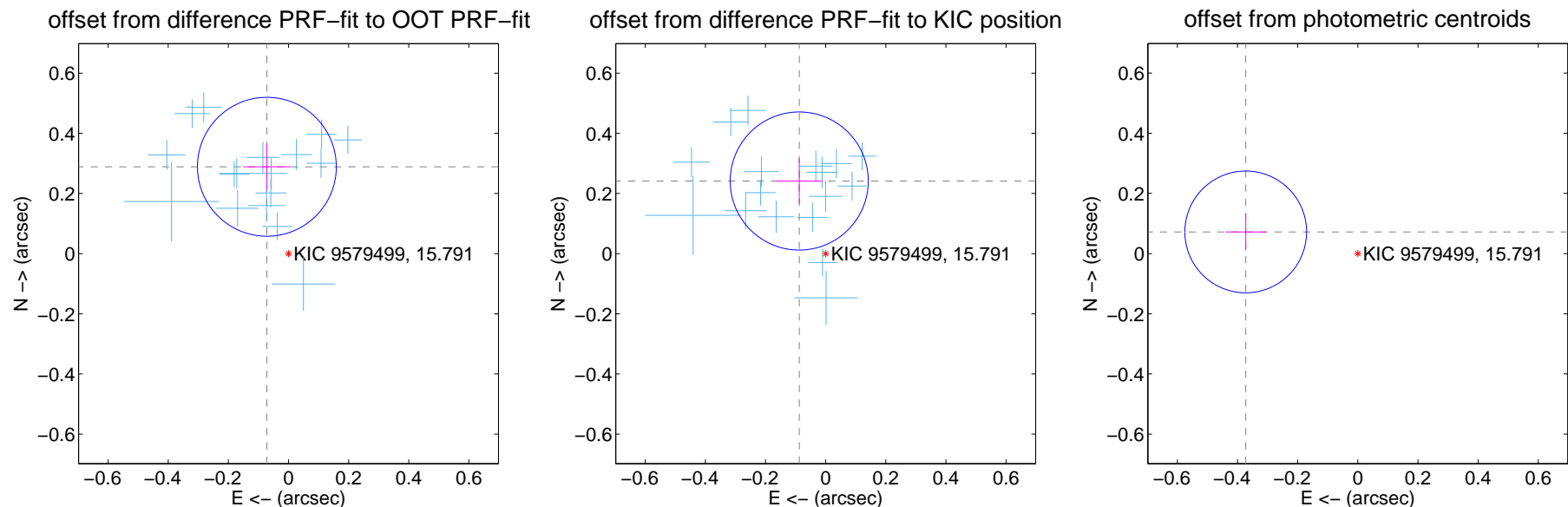
DV Centroid Data

Supplemental centroid analysis for 009579499-01. Kepler magnitude: 15.79. Transit SNR 208.12

There are 17 quarters with good PRF difference image offsets

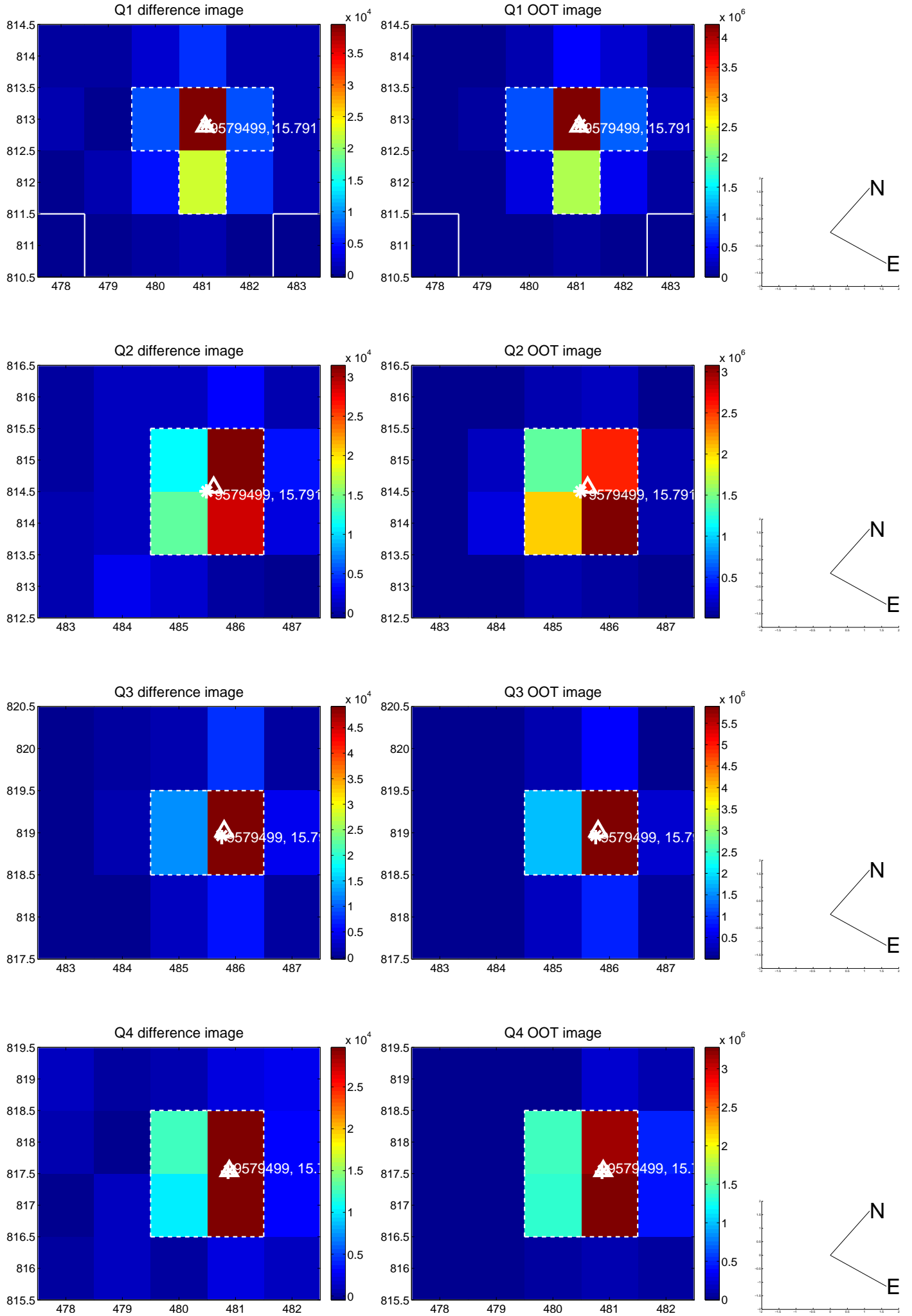
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.298 ± 0.077	3.87	0.072 ± 0.079	0.289 ± 0.076
PRF-fit source offset from KIC position	0.257 ± 0.077	3.36	0.088 ± 0.078	0.242 ± 0.075
photometric centroid source offset	0.38 ± 0.07	5.63	0.37 ± 0.07	0.07 ± 0.06

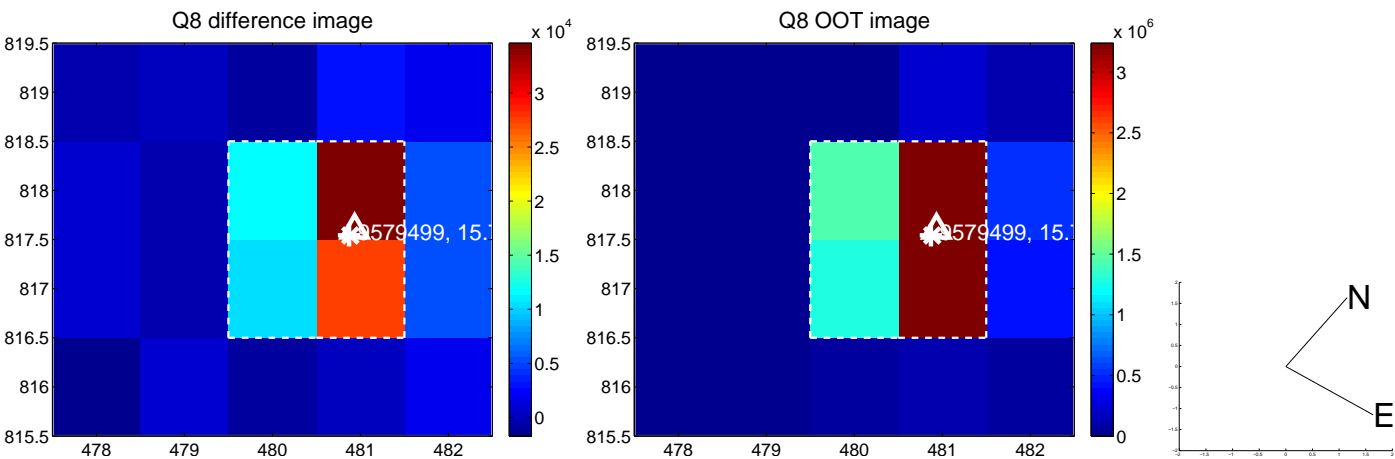
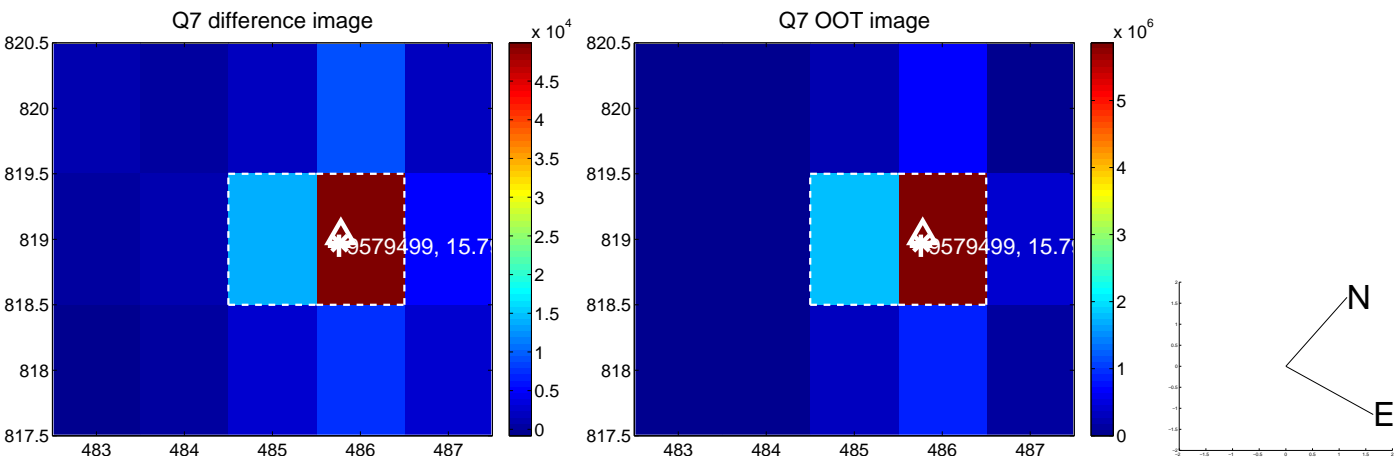
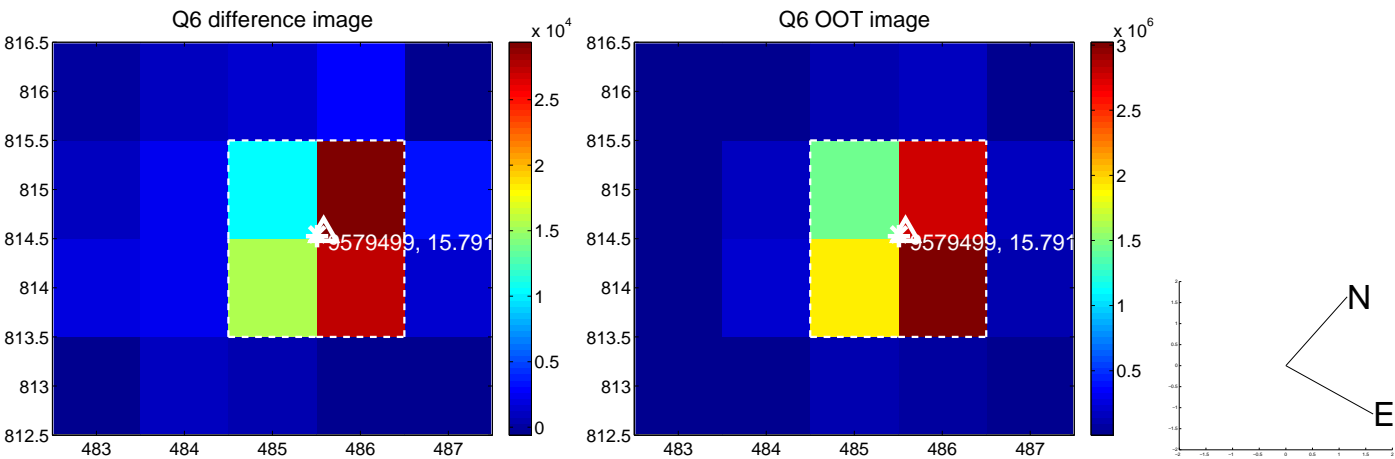
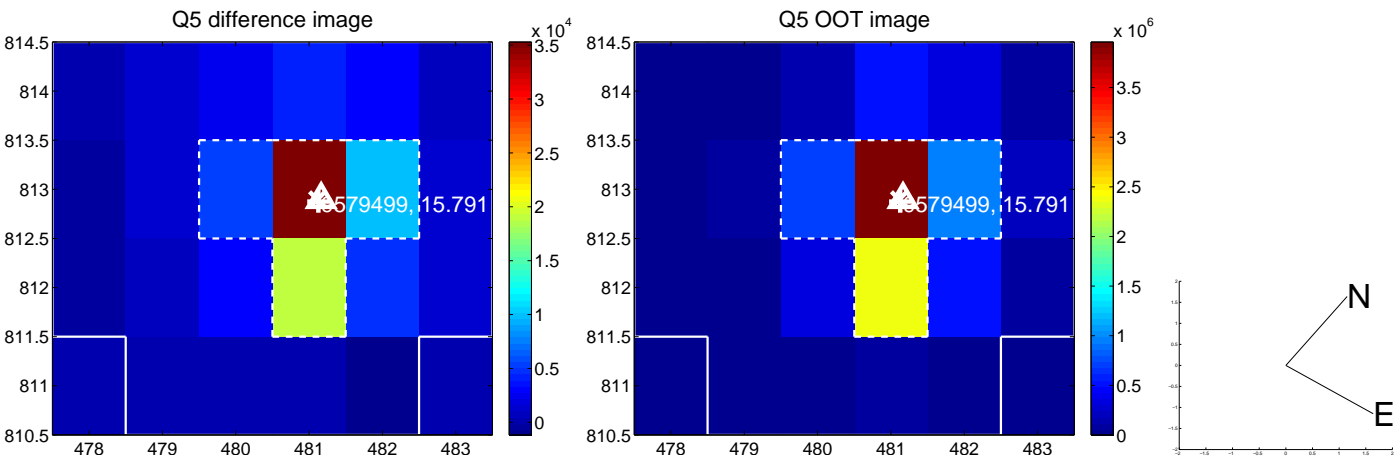


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

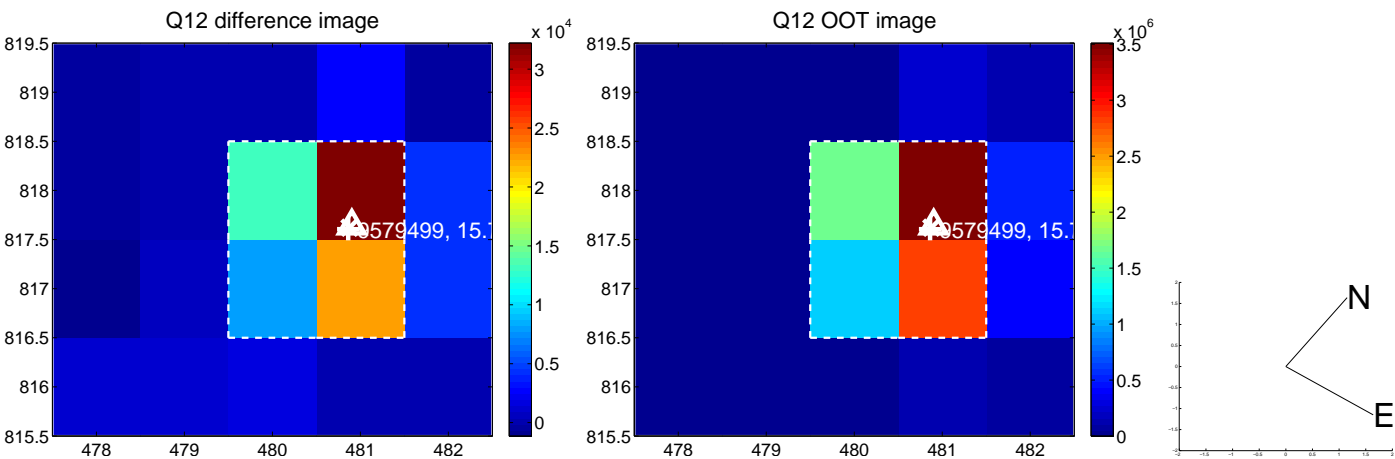
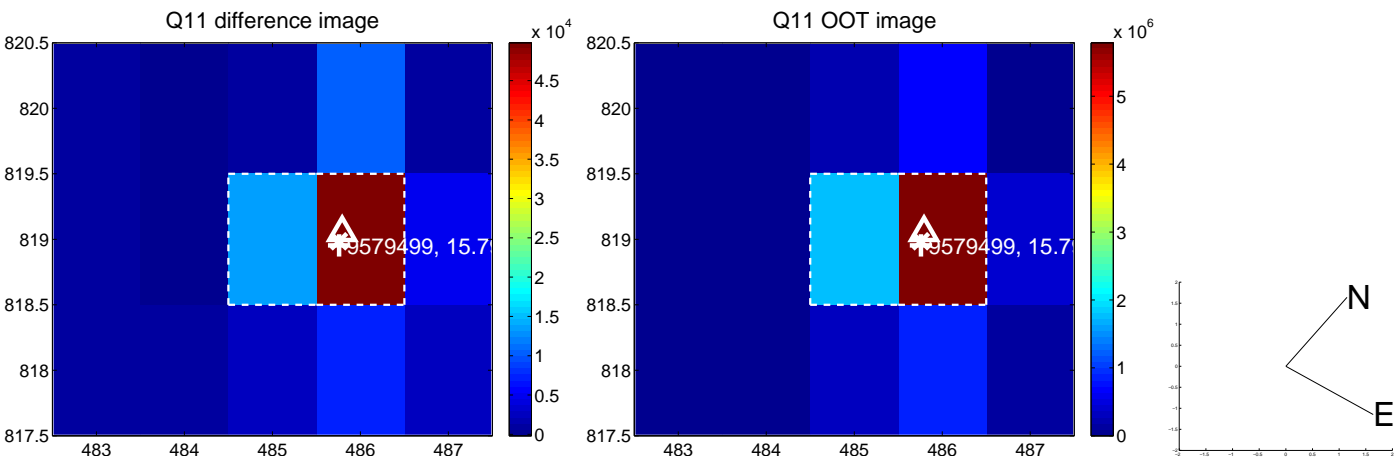
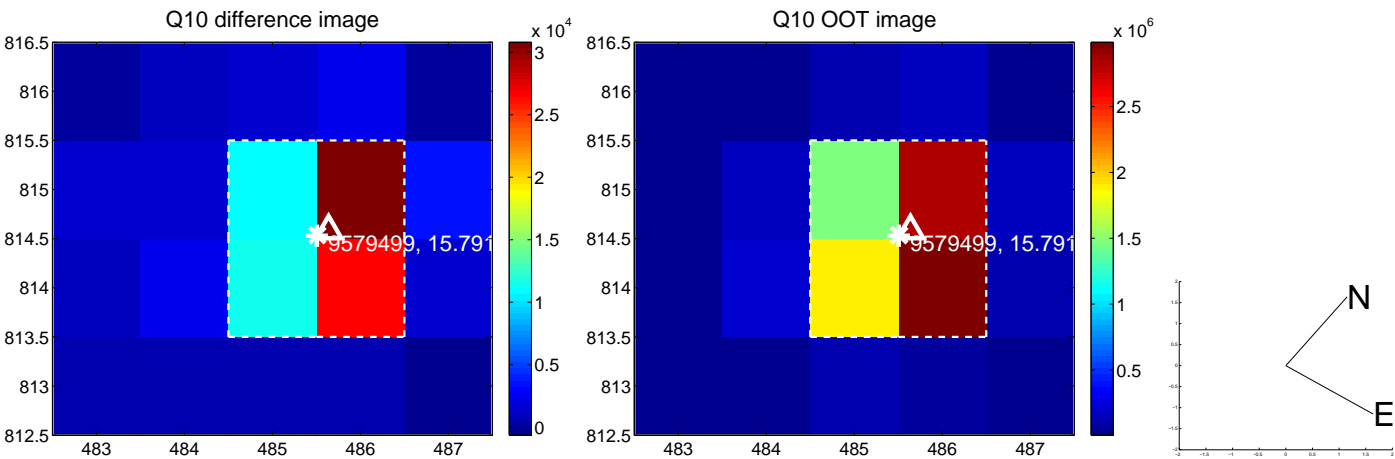
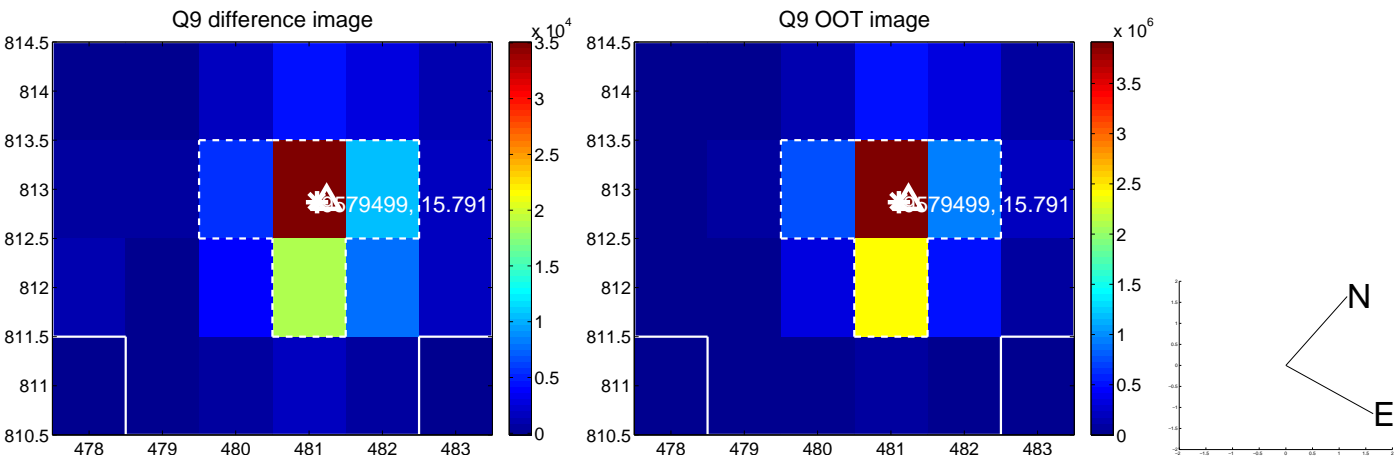
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



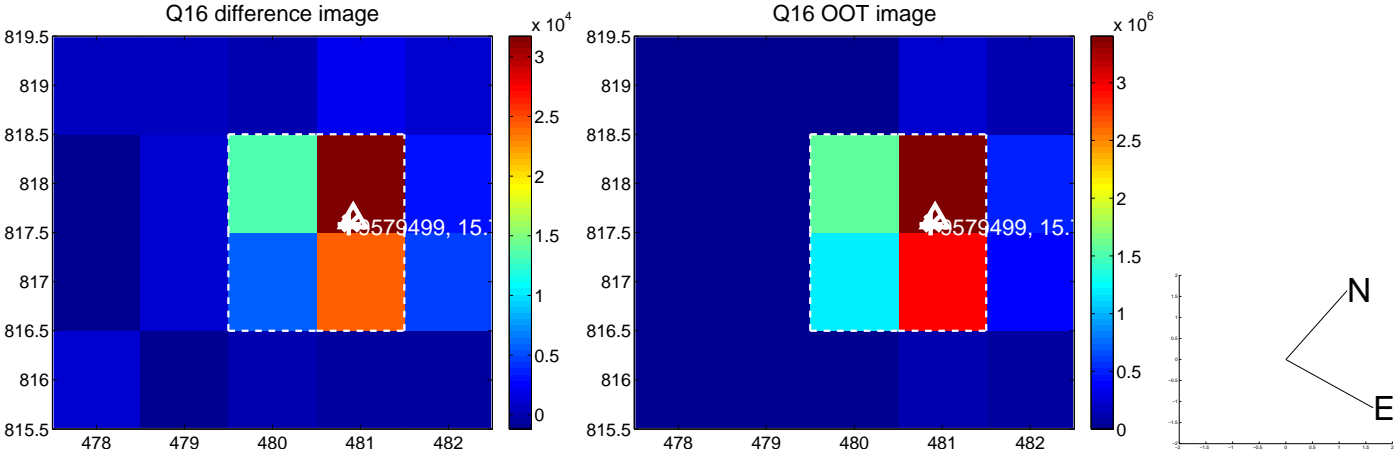
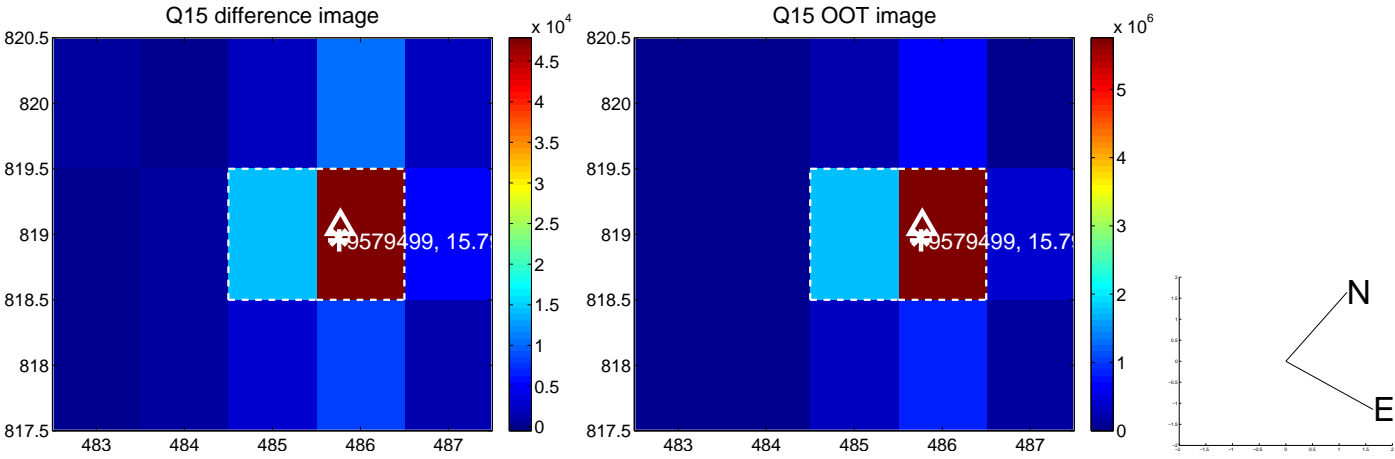
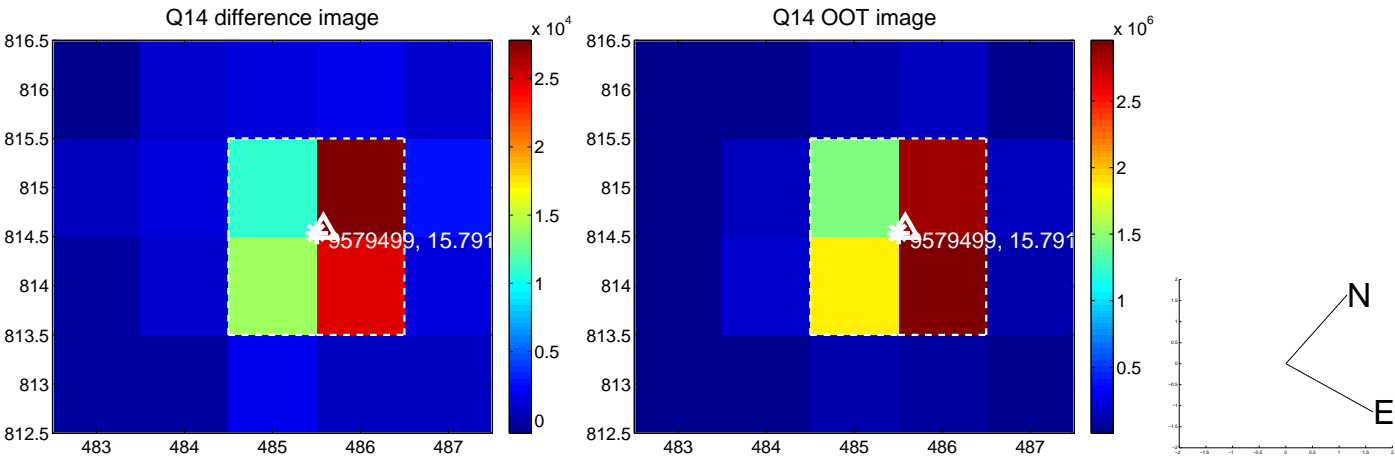
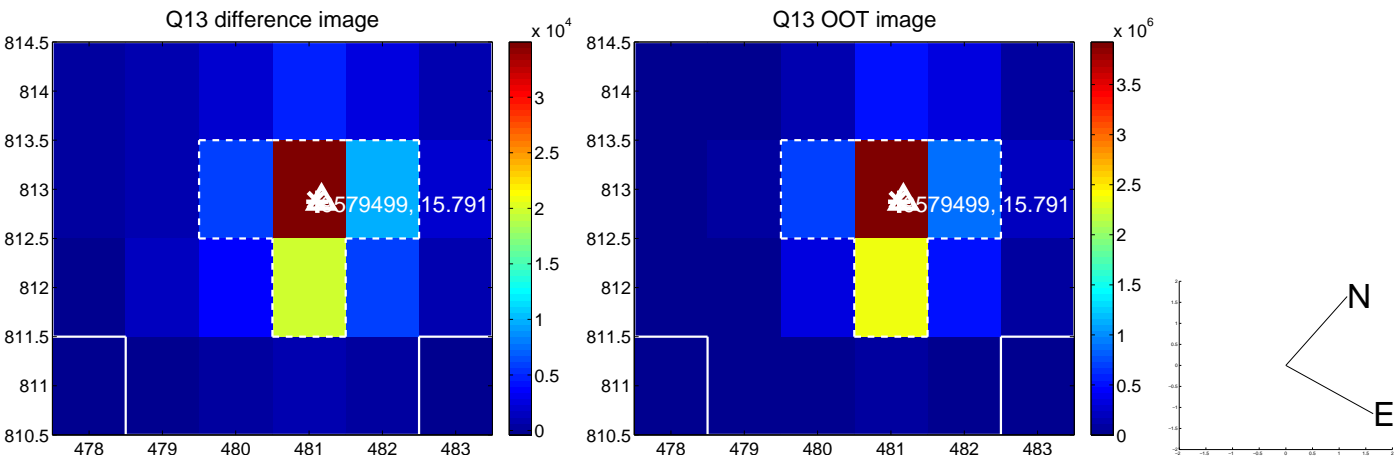
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



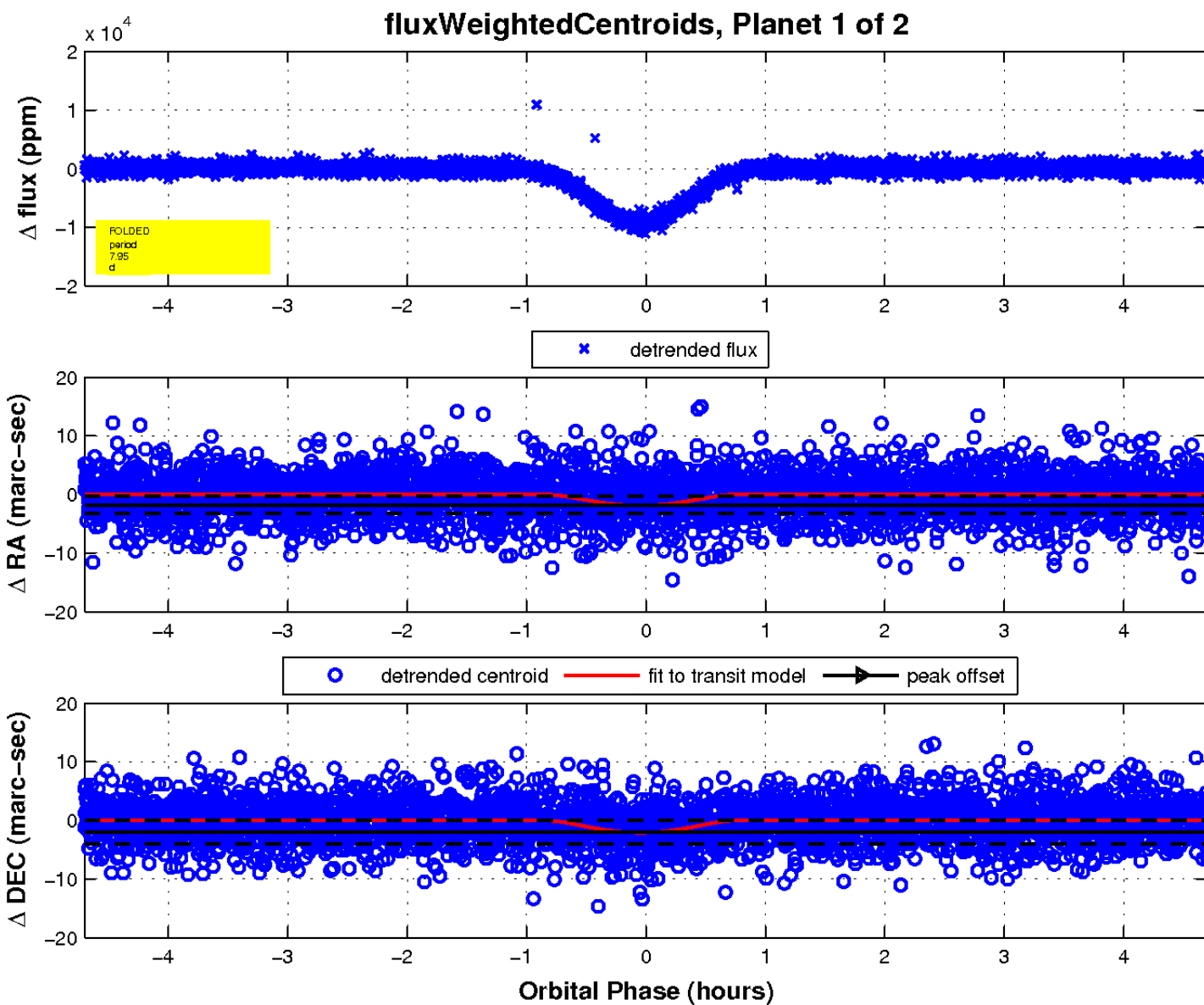
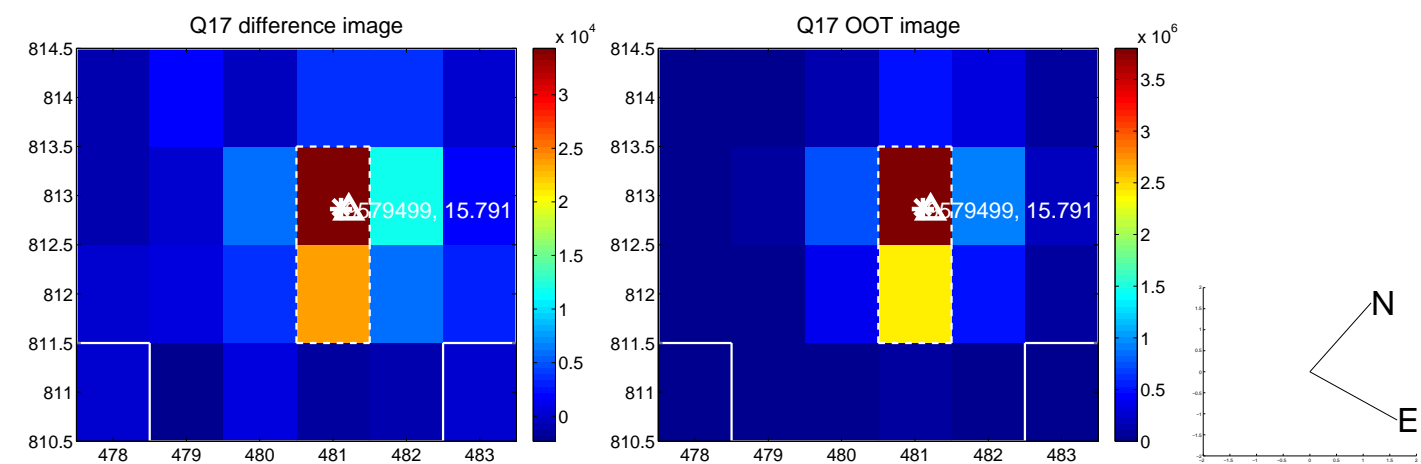
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

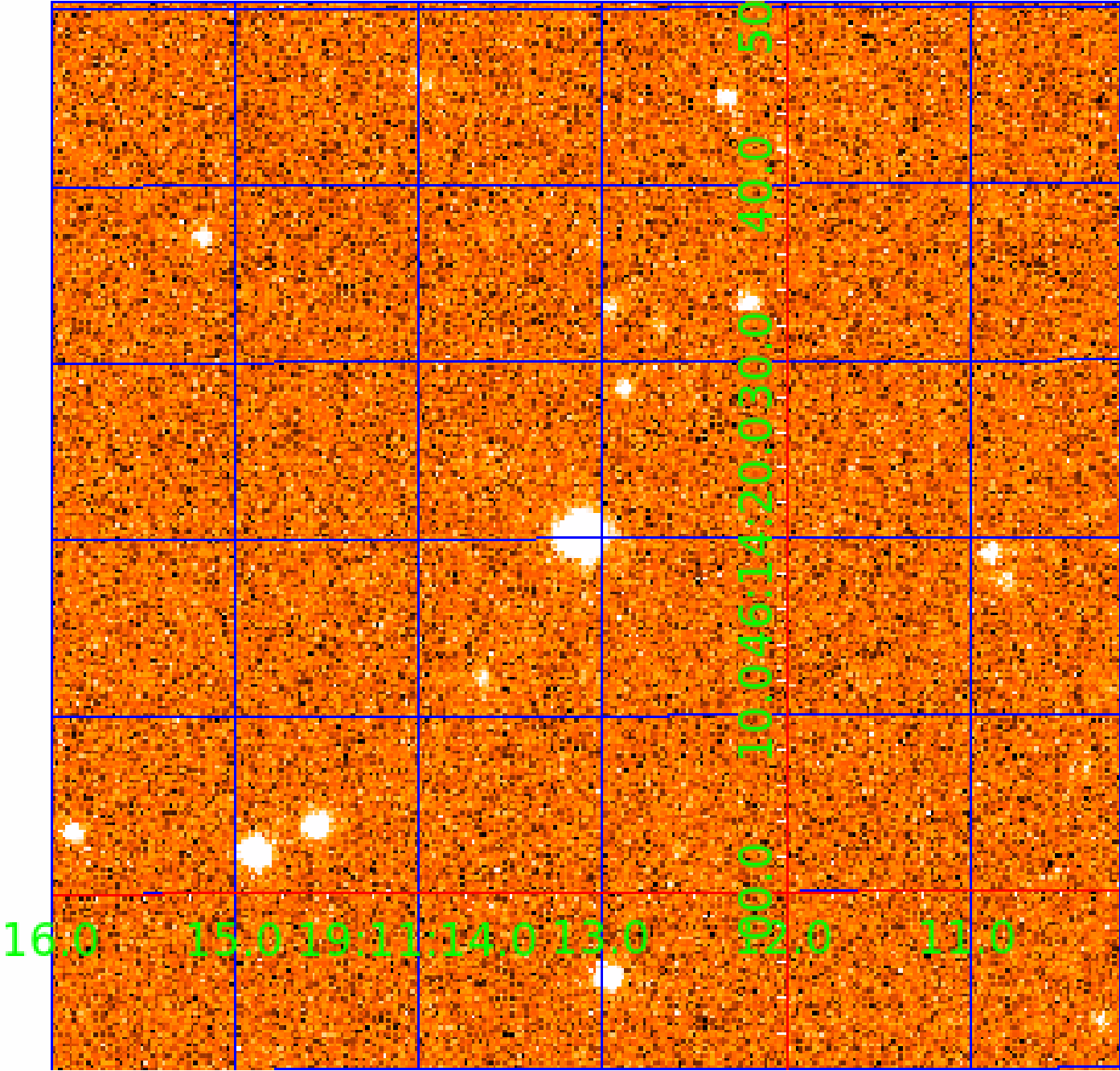


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009579499

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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009579499-02	OBS	No	7.946718	132.761087	5995.9	2.793	167.0	164.6	0.70	4859	8.73	48.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009579499-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
009579499-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

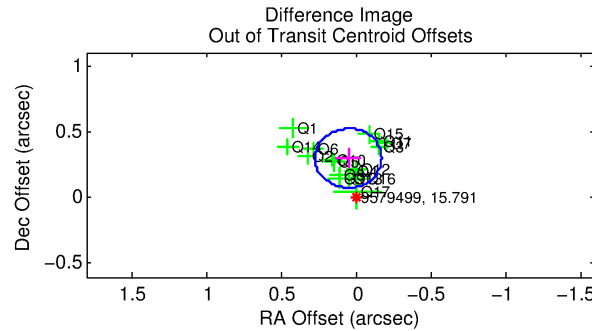
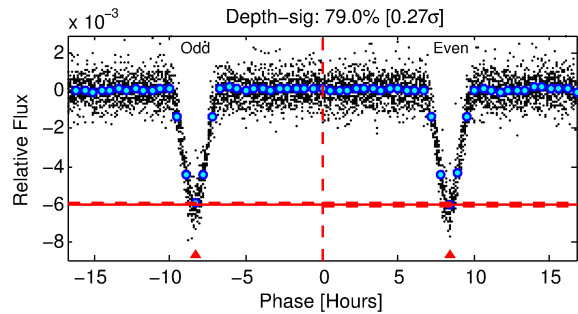
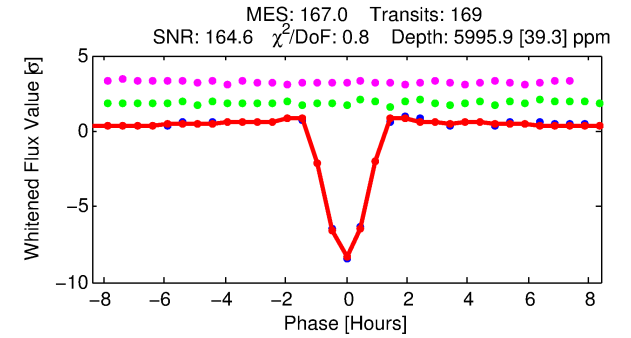
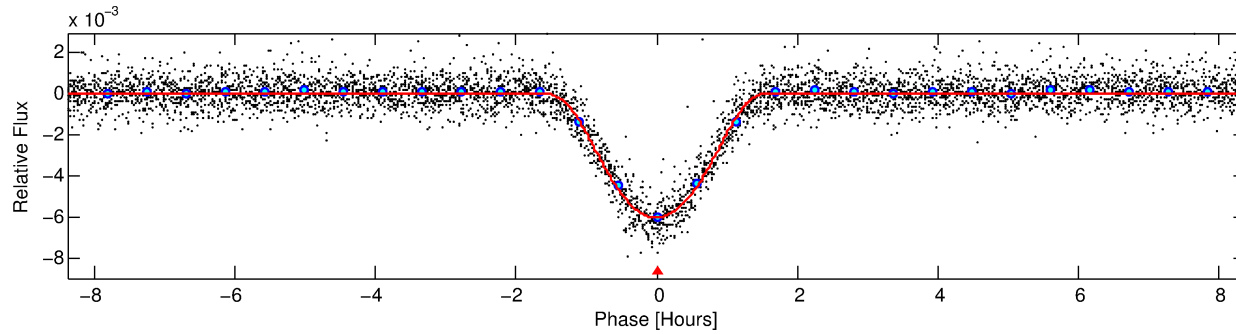
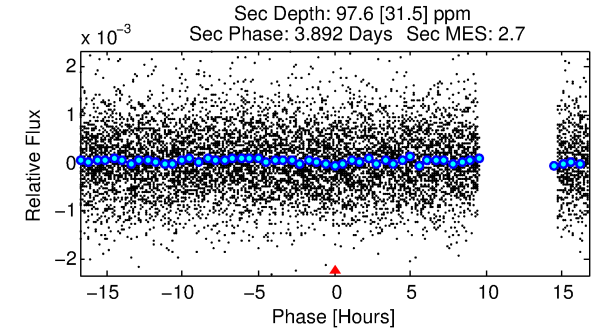
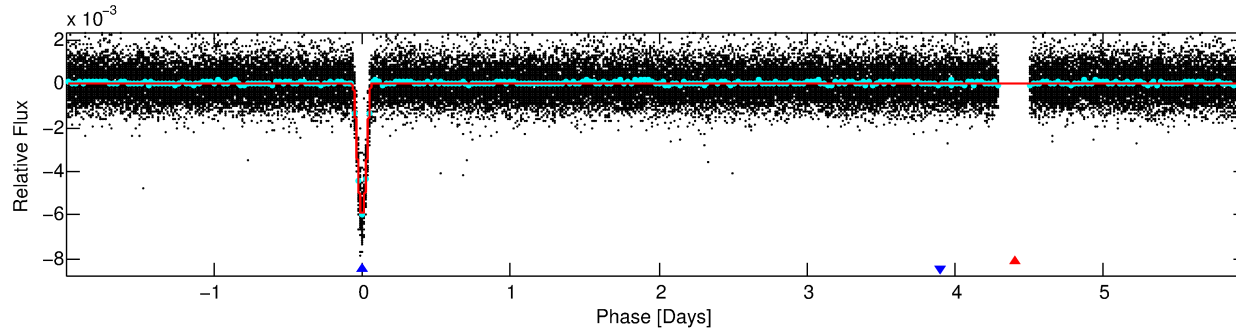
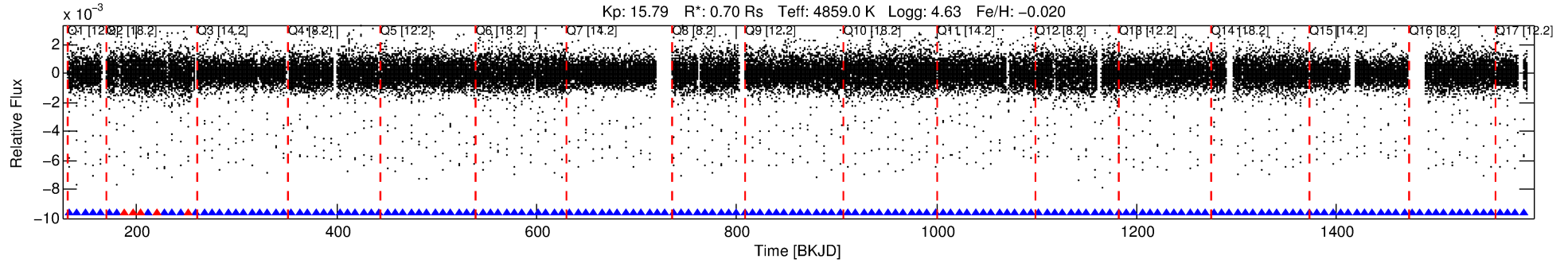
Ephemeris Match Information For 009579499-02

No Significant Match Found

DV One-Page Summary

KIC: 9579499 Candidate: 2 of 2 Period: 7.947 d

KOI: K01461.01 Corr: 0.989



DV Fit Results:

Period = 7.94672 [0.00000] d
Epoch = 132.7611 [0.0003] BKJD
Rp/R* = 0.1139 [0.0184]
a/R* = 12.10 [0.48]
b = 0.97 [0.03]
Seff = 48.65 [8.37]
Teq = 673 [29] K
Rp = 8.73 [1.73] Re
a = 0.0711 [0.0064] AU
Ag = 3.57 [1.69] [1.52 σ]
Teffp = 1431 [169] K [4.42 σ]

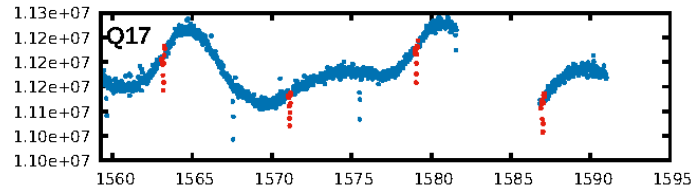
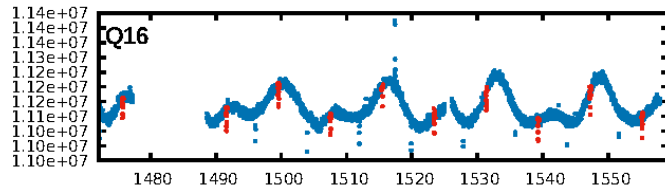
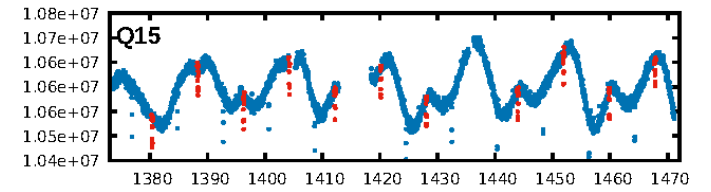
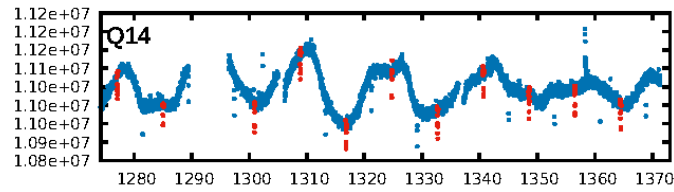
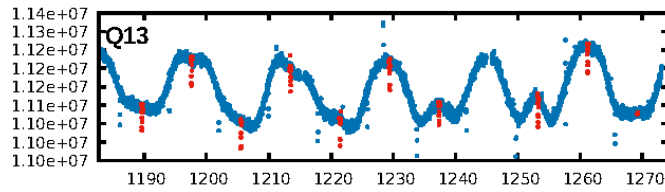
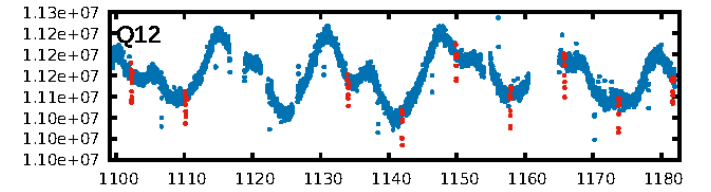
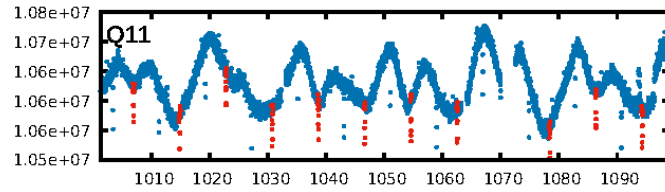
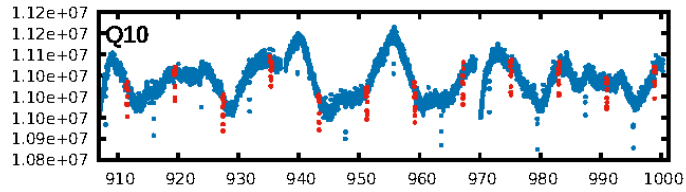
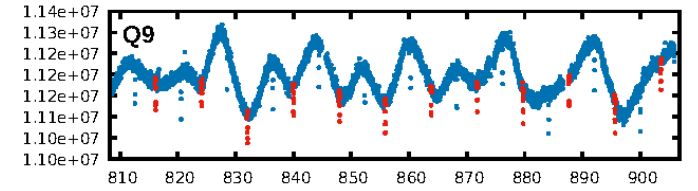
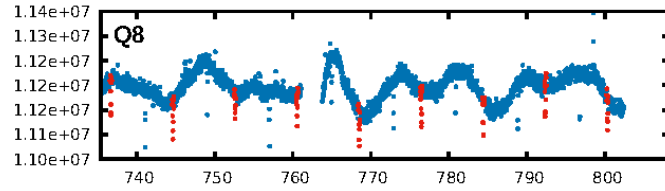
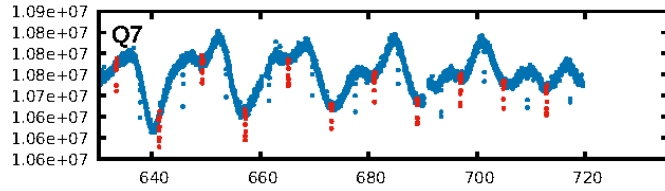
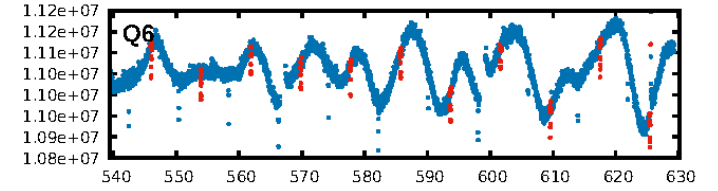
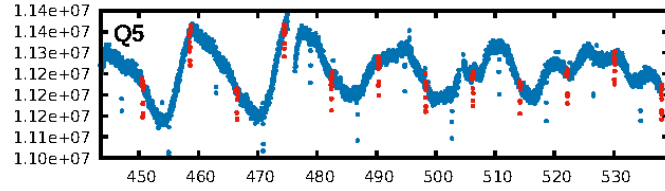
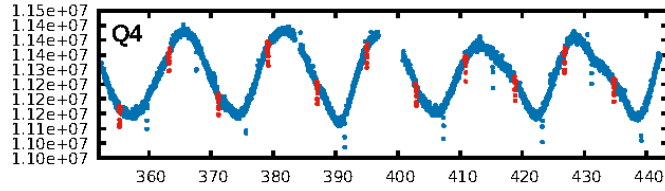
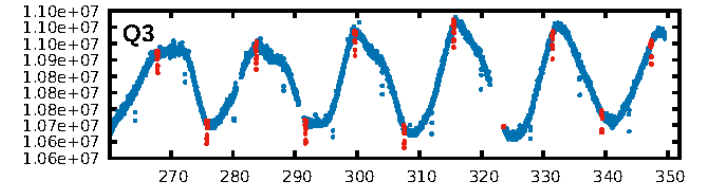
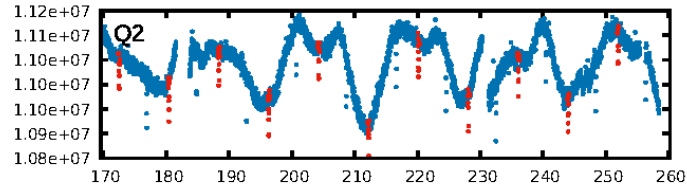
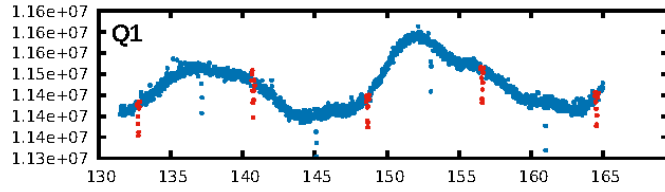
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: 97.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [155/160]
GhostDiagnostic-chr: 3.199
Centroid-sig: 0.0%
Centroid-so: 0.280 arcsec [3.67 σ]
OotOffset-rm: 0.303 arcsec [4.06 σ]
KicOffset-rm: 0.255 arcsec [3.28 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]

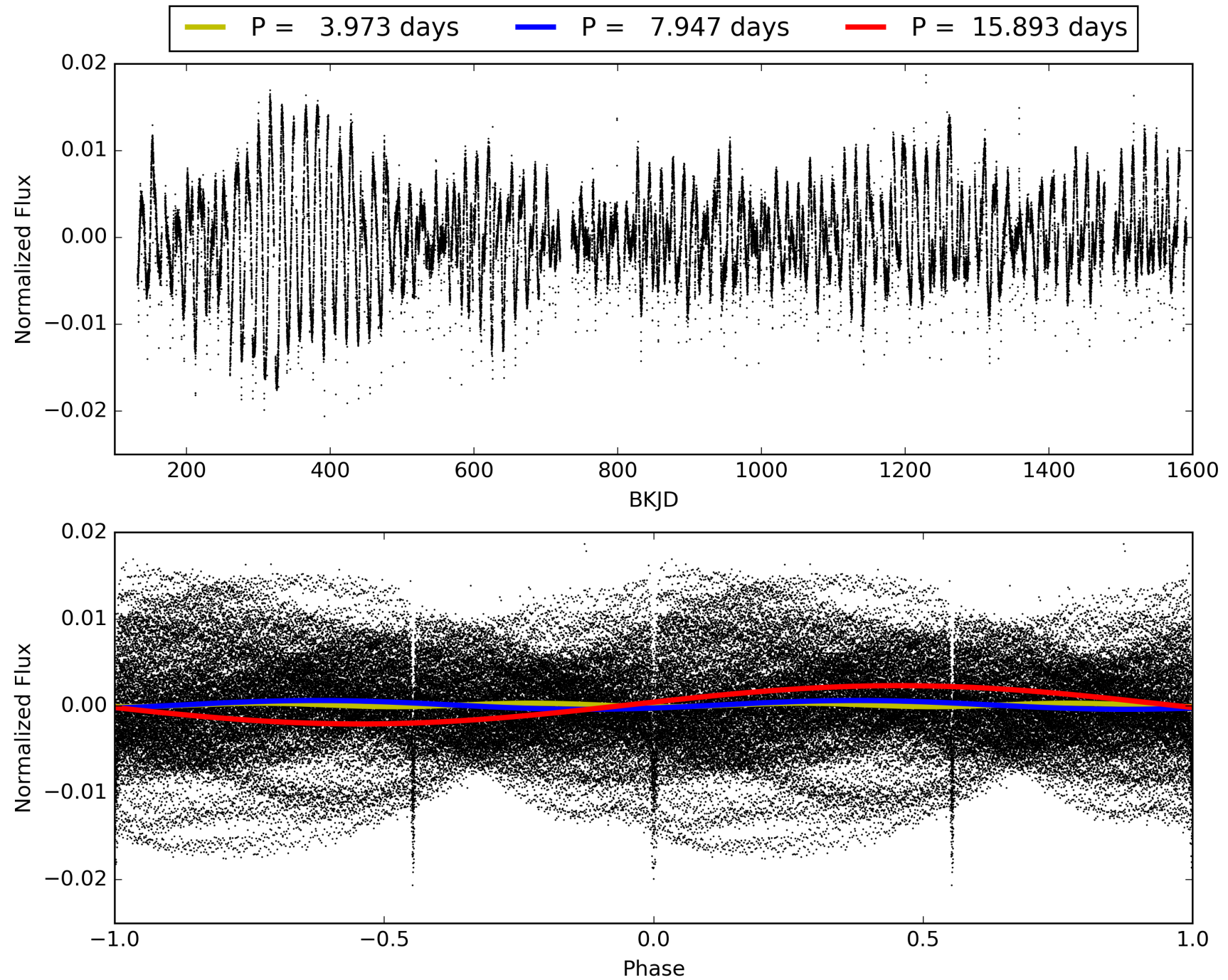
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:10:38 Z

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

TCE 009579499-02, PDC Light Curves

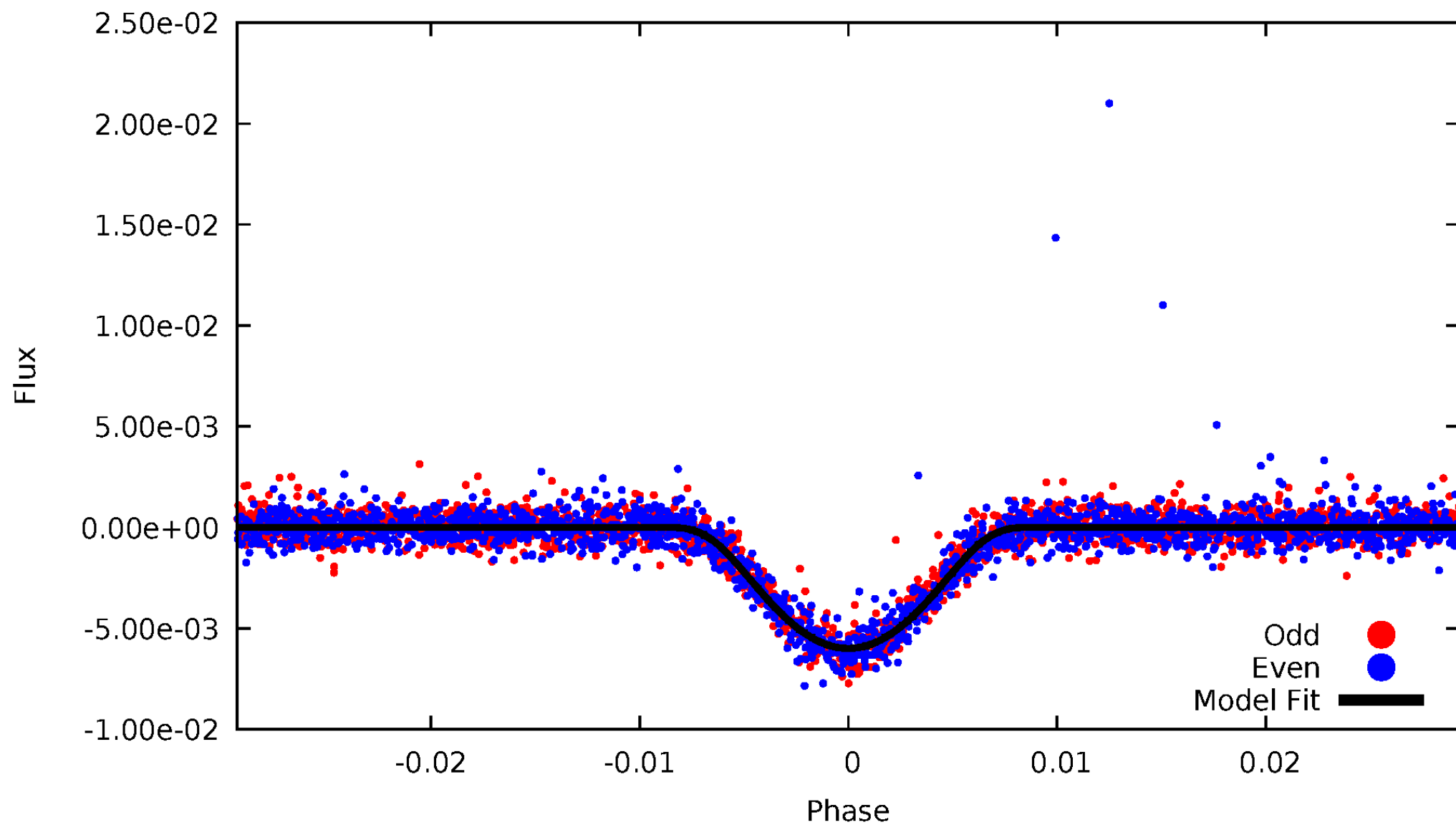


TCE 009579499-02



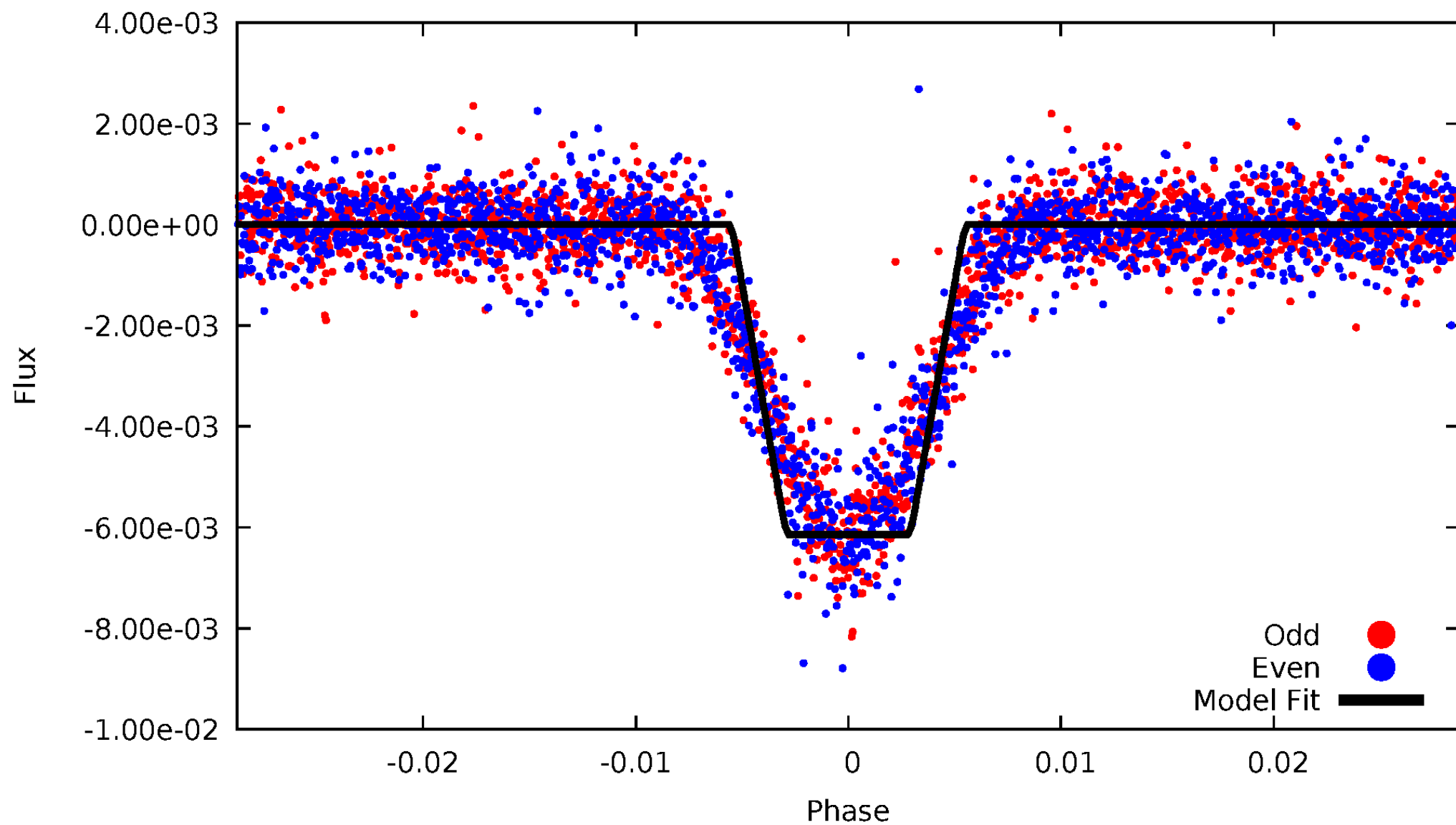
DV Odd/Even

TCE 009579499-02



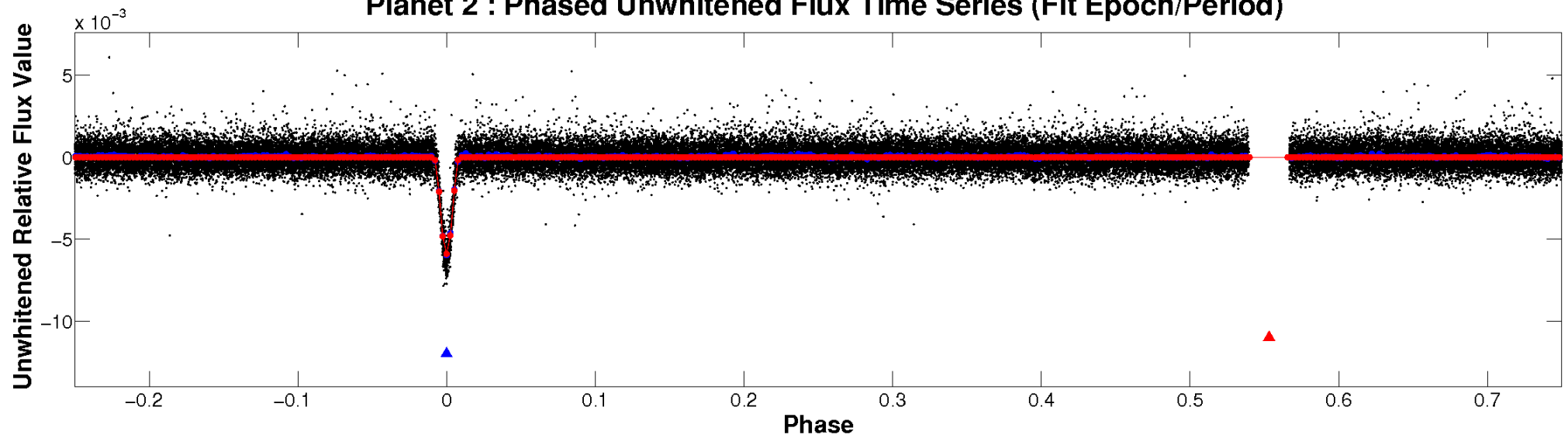
ALT Odd/Even

TCE 009579499-02

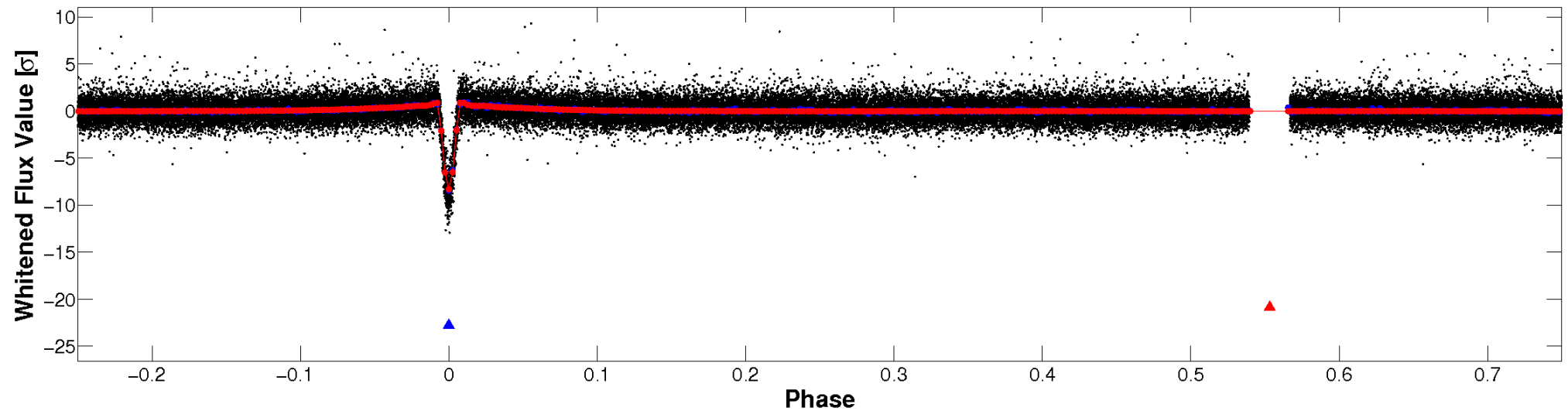


Non-Whitened Vs. Whitened Light Curve

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

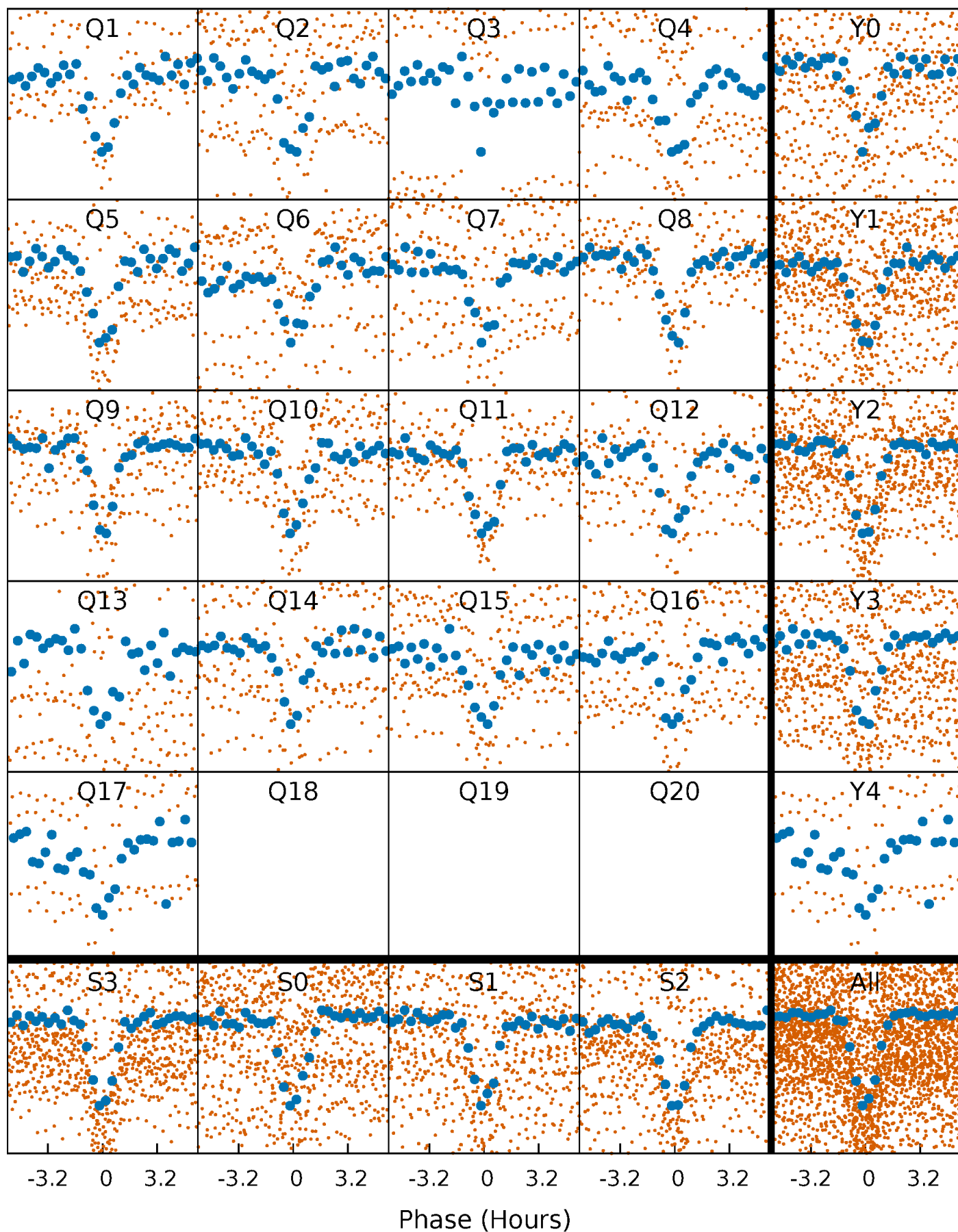


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



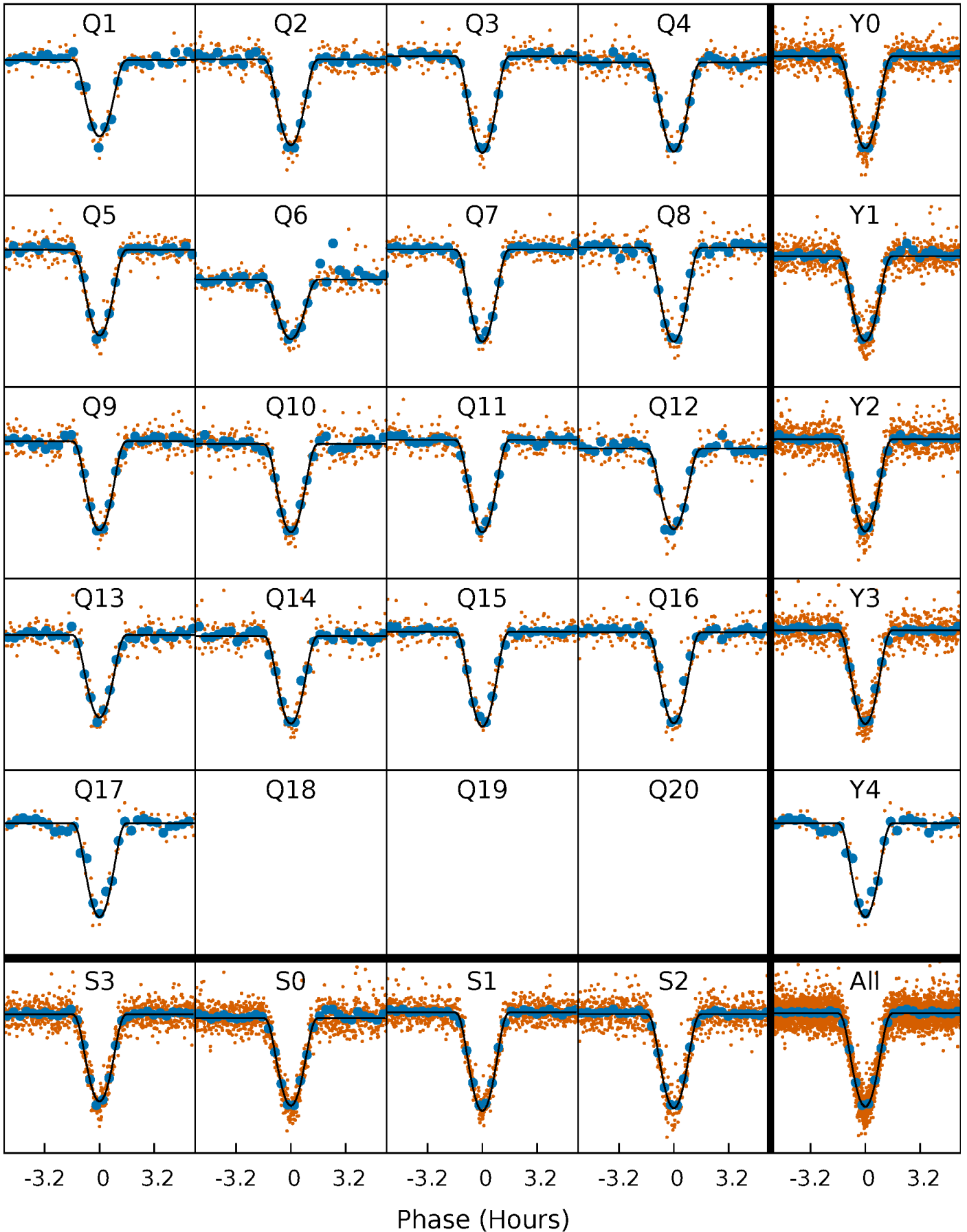
PDC Quarter-Phased Transit Curves

TCE 009579499-02 P= 7.946718 Days $T_0=132.761087$ (BKJD)



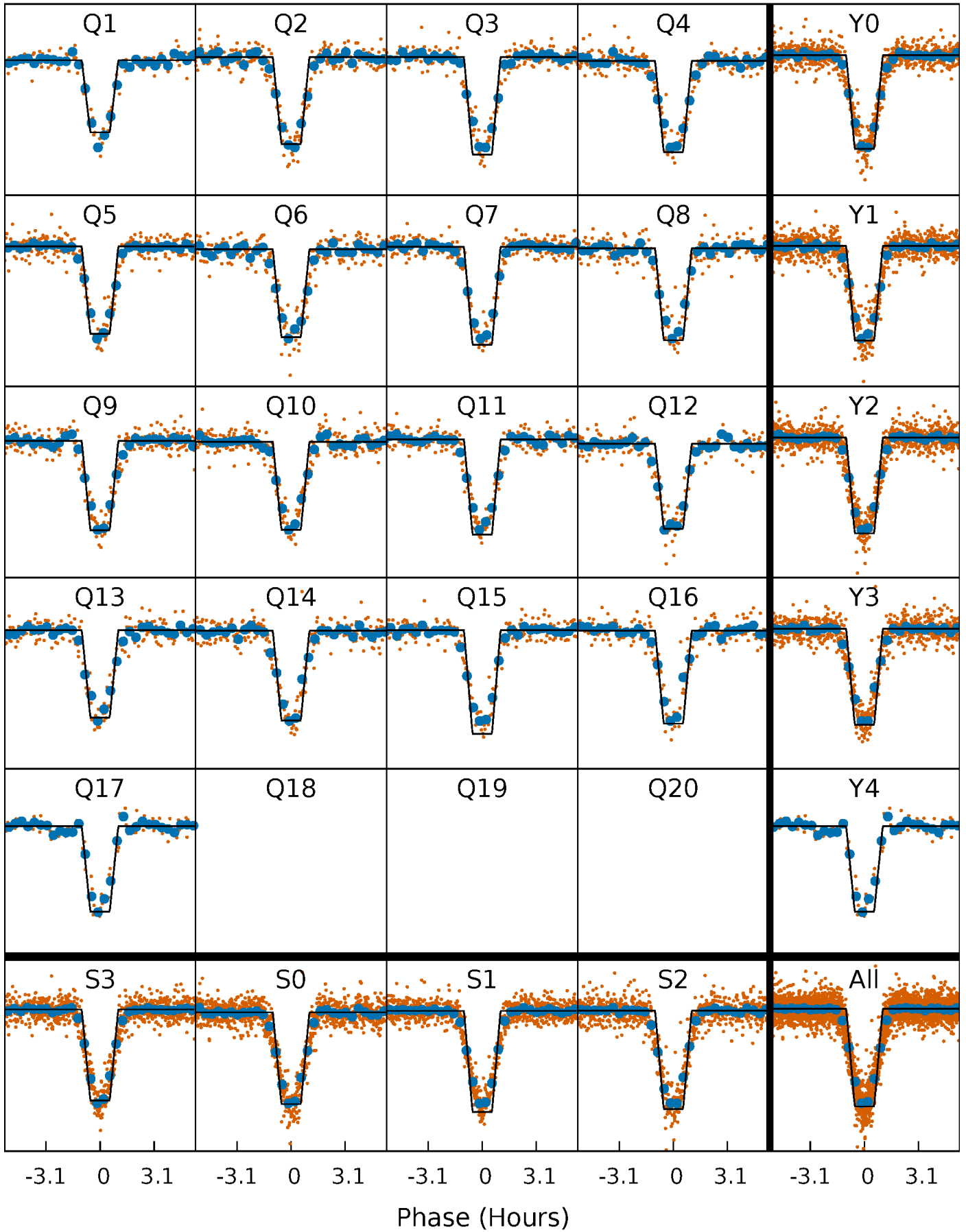
DV Quarter-Phased Transit Curves

TCE 009579499-02 P= 7.946718 Days $T_0=132.761087$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

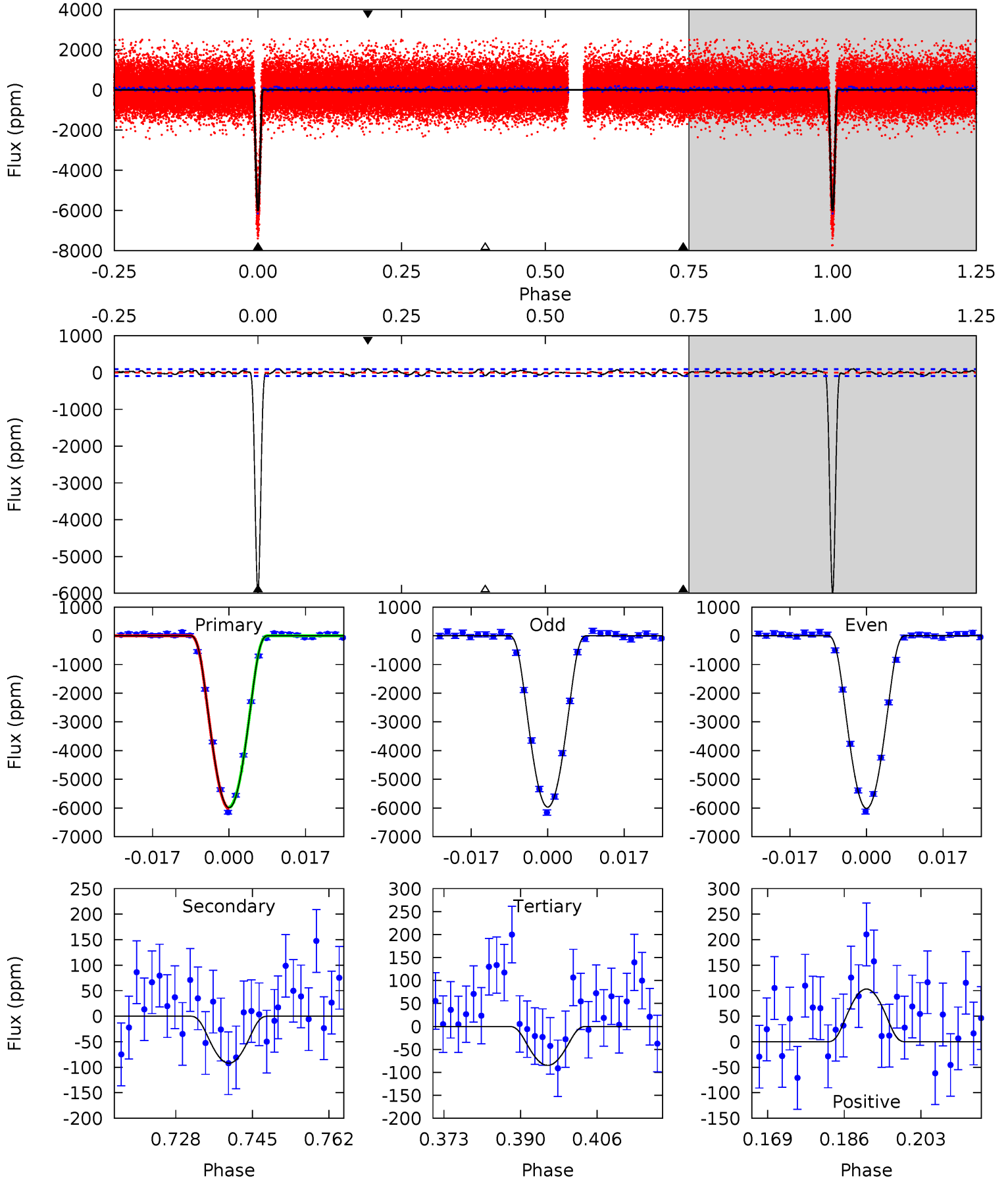
TCE 009579499-02 $P = 7.946728$ Days $T_0 = 132.759847$ (BKJD)



DV Model-Shift Uniqueness Test

009579499-02, P = 7.946718 Days, E = 124.814369 Days

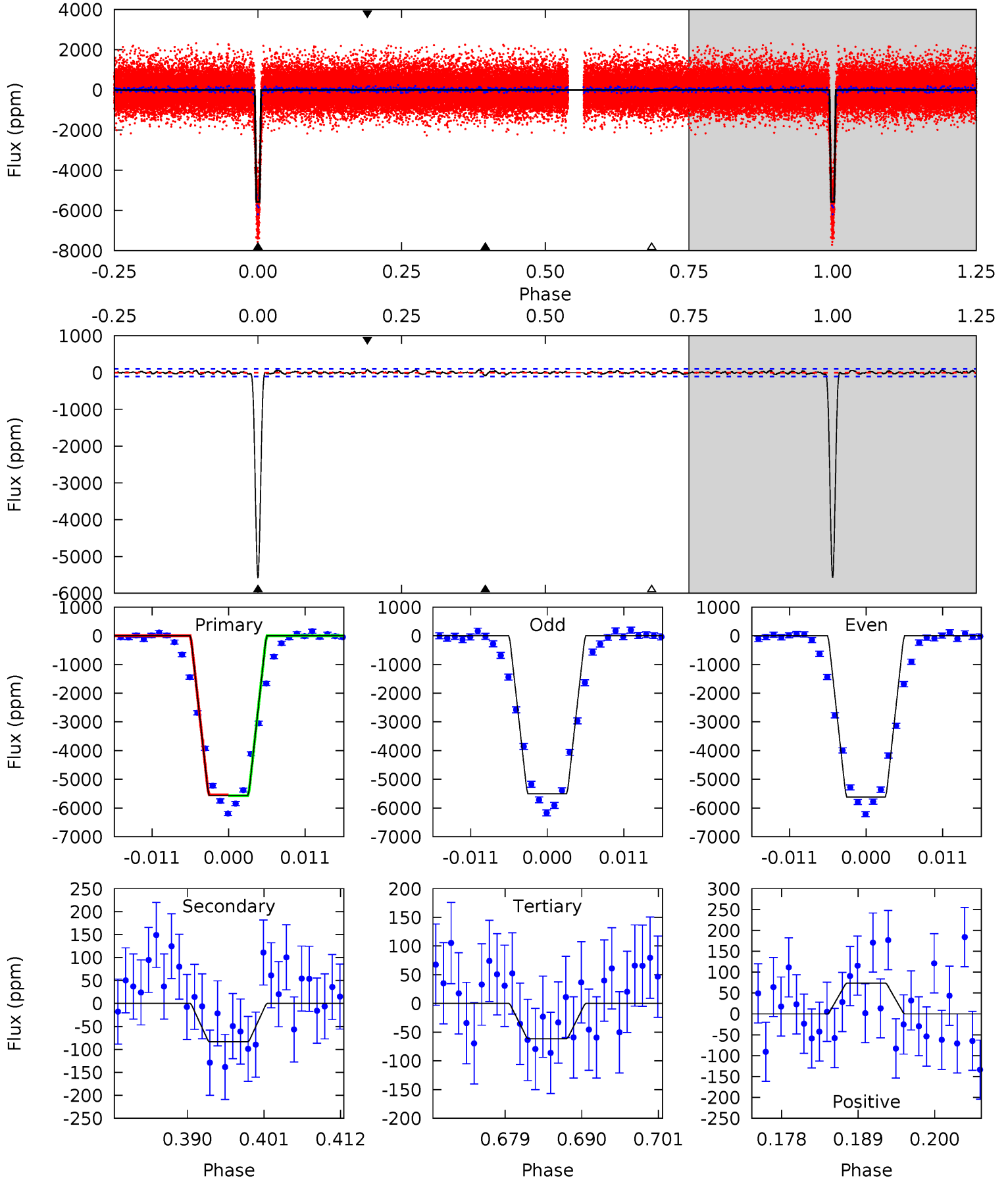
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
314.4	4.83	4.45	5.42	4.92	2.39	1.77	309.9	309.0	0.38	-0.59	1.21	1.00	0.02	1.22



Alt Model-Shift Uniqueness Test

009579499-02, P = 7.946728 Days, E = 124.813119 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
264.5	3.97	2.92	3.51	5.01	2.54	1.09	261.5	261.0	1.05	0.46	2.61	1.01	0.01	0.64



Stellar Parameters For KIC 009579499

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4859^{+146}_{-131}	$4.626^{+0.027}_{-0.063}$	$-0.020^{+0.300}_{-0.300}$	$0.702^{+0.080}_{-0.049}$	$0.789^{+0.048}_{-0.084}$	$3.211^{+0.404}_{-0.776}$
	+3%/-3%	+1%/-1%	+1500%/-1500%	+11%/-7%	+6%/-11%	+13%/-24%
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 009579499-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-92 ± 19	$9.00^{+1.49}_{-1.45}$	950^{+35}_{-29}	2276^{+120}_{-116}	$3.189^{+1.563}_{-1.000}$
Alt.	-84 ± 21	$6.03^{+1.63}_{-1.50}$	950^{+33}_{-31}	2479^{+203}_{-173}	$6.433^{+4.972}_{-2.811}$

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

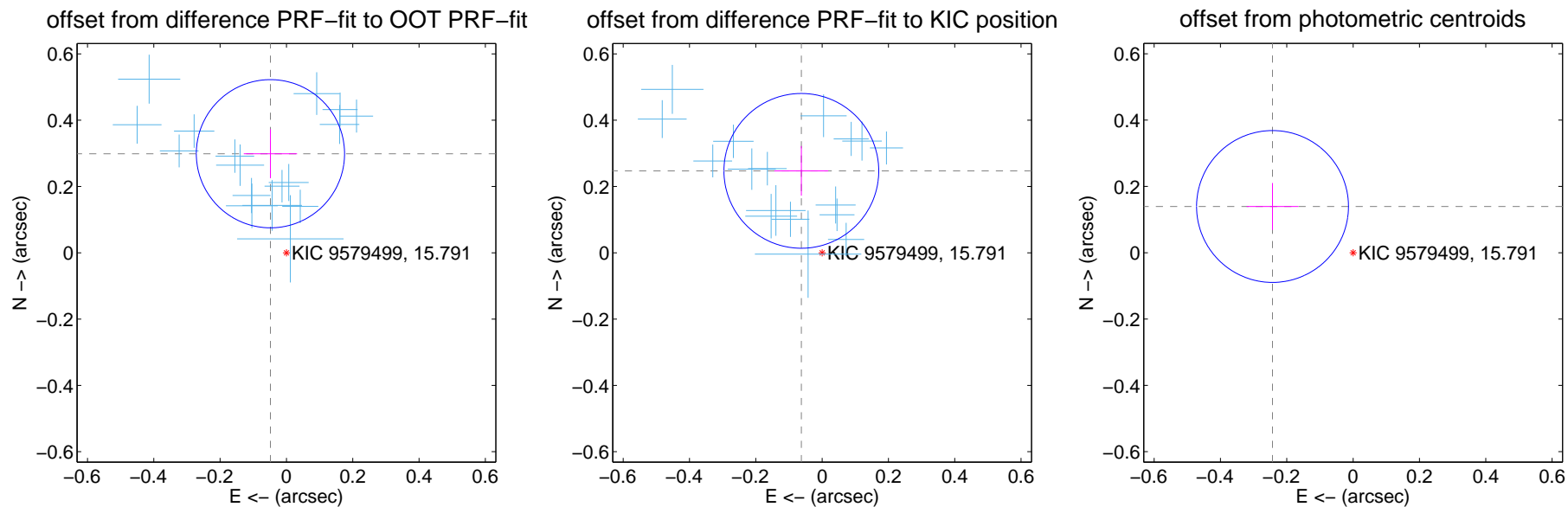
DV Centroid Data

Supplemental centroid analysis for 009579499-02. Kepler magnitude: 15.79. Transit SNR 164.55

There are 17 quarters with good PRF difference image offsets

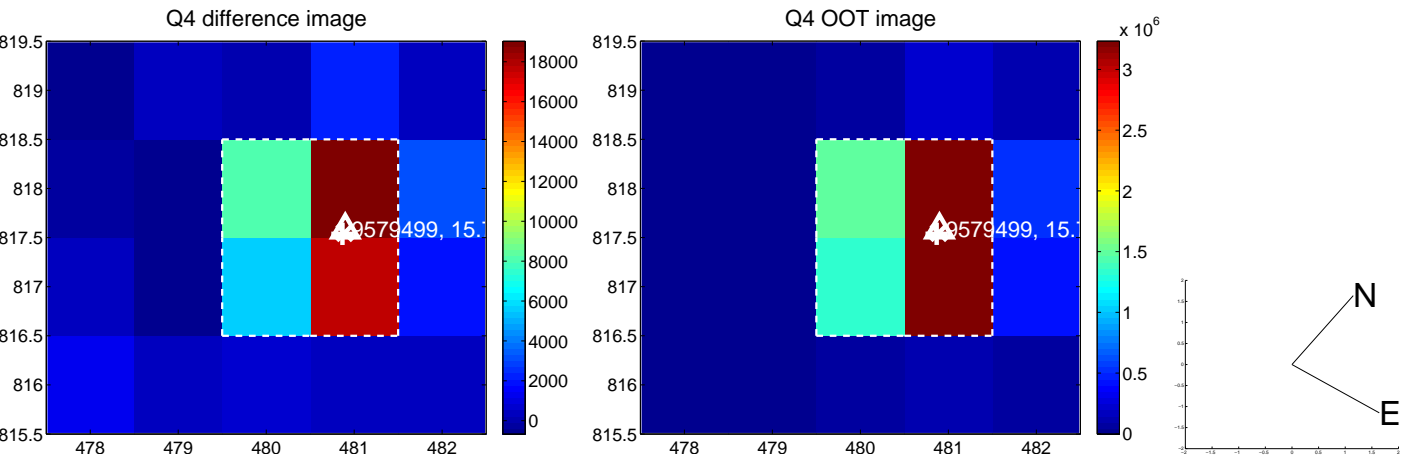
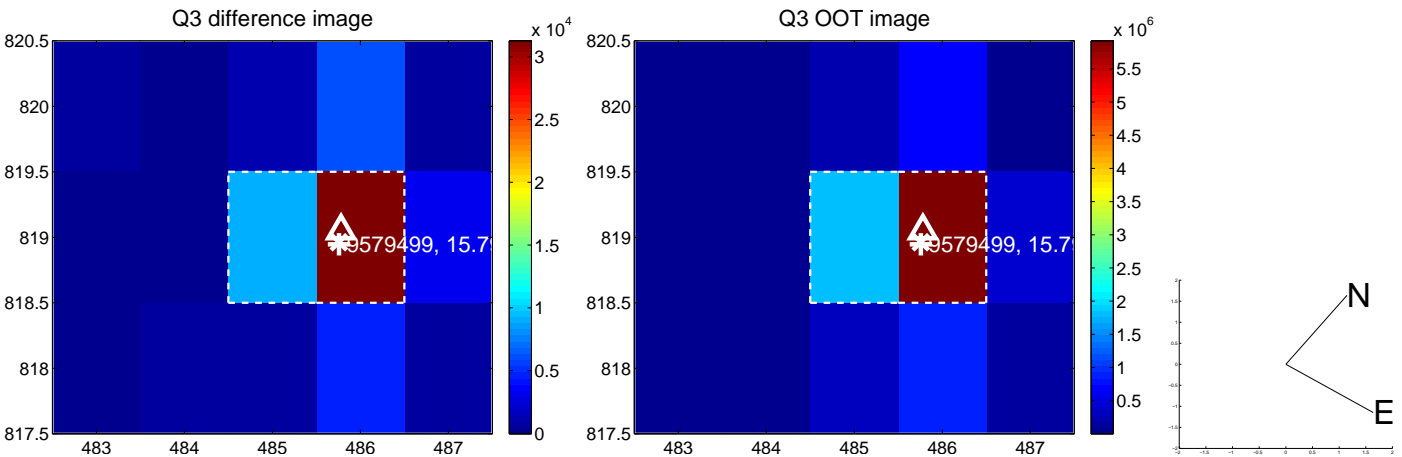
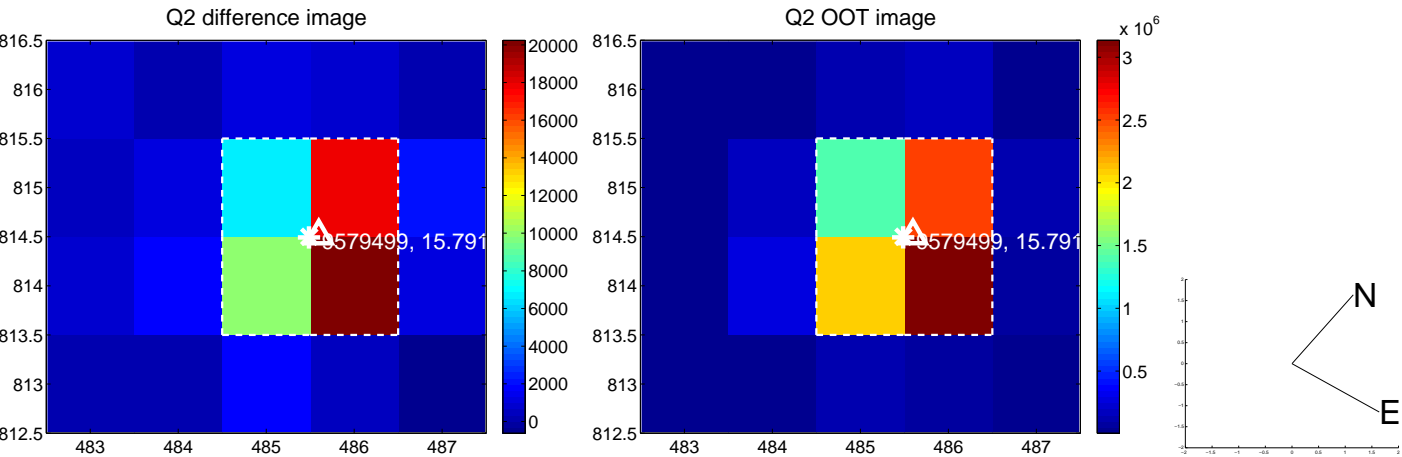
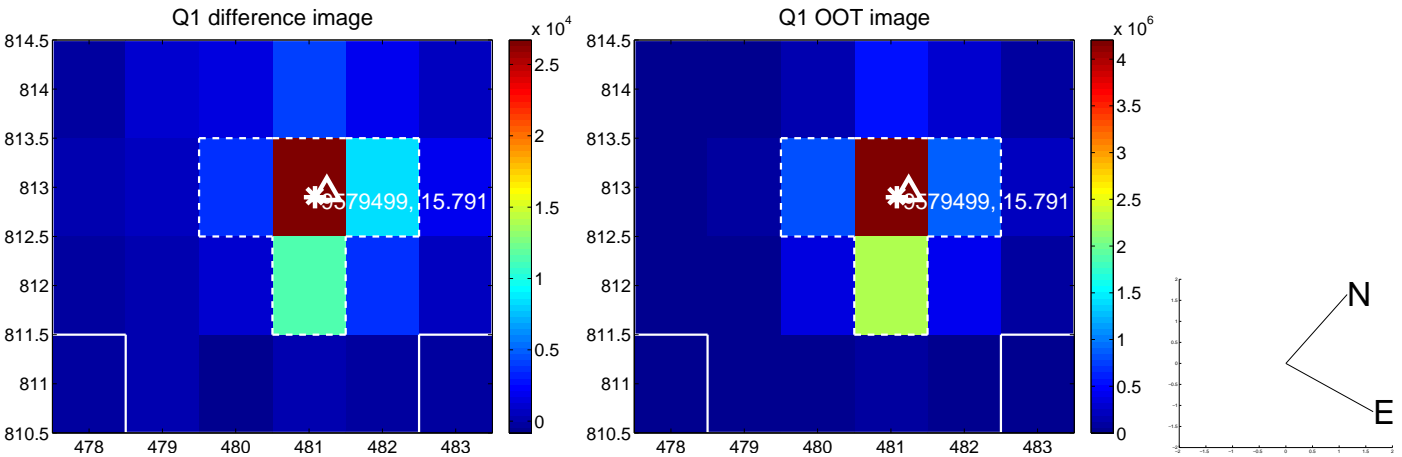
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.303 \pm 0.075	4.06	0.048 \pm 0.080	0.299 \pm 0.074
PRF-fit source offset from KIC position	0.255 \pm 0.078	3.28	0.063 \pm 0.081	0.247 \pm 0.075
photometric centroid source offset	0.28 \pm 0.08	3.67	0.24 \pm 0.08	0.14 \pm 0.07

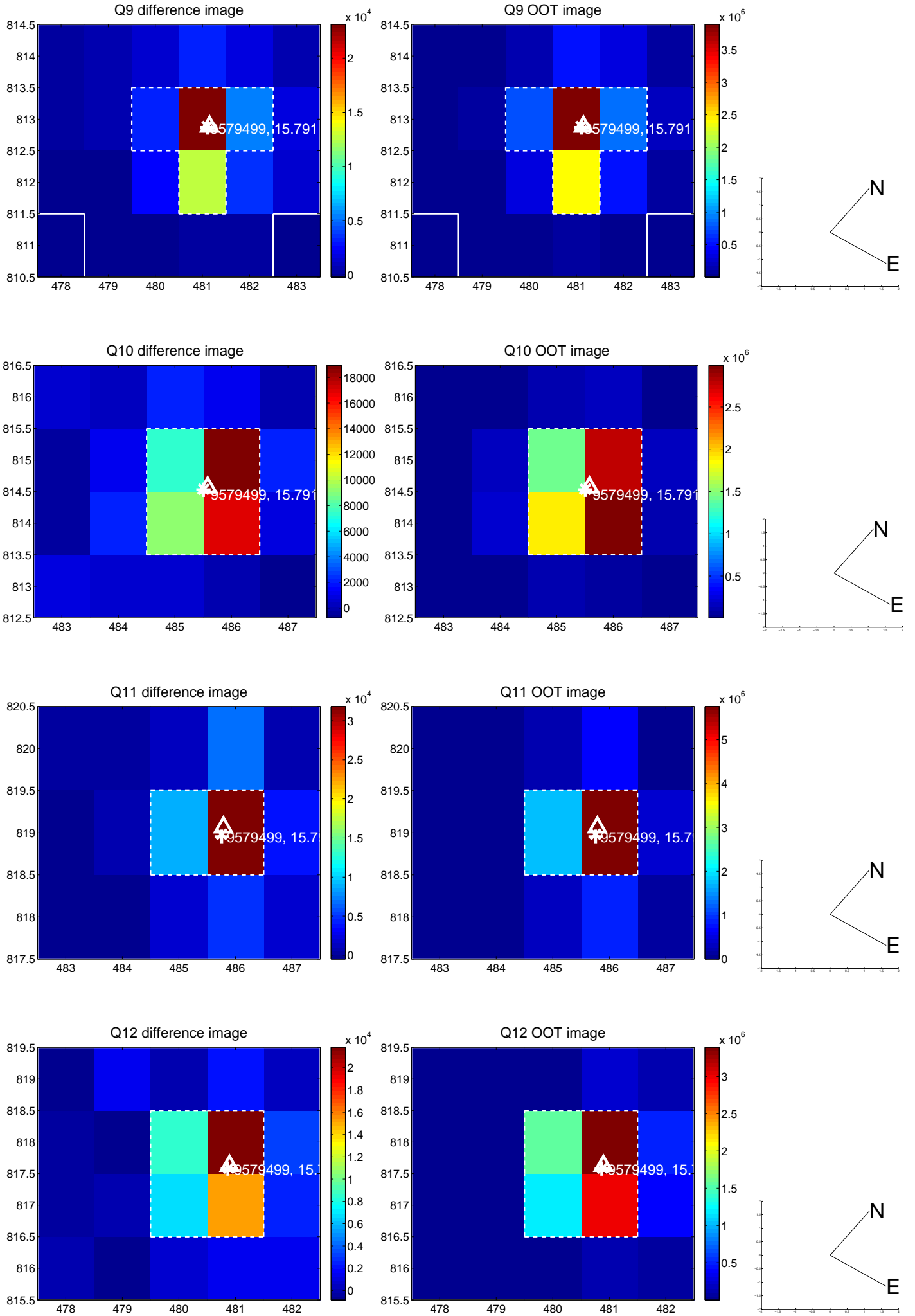


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

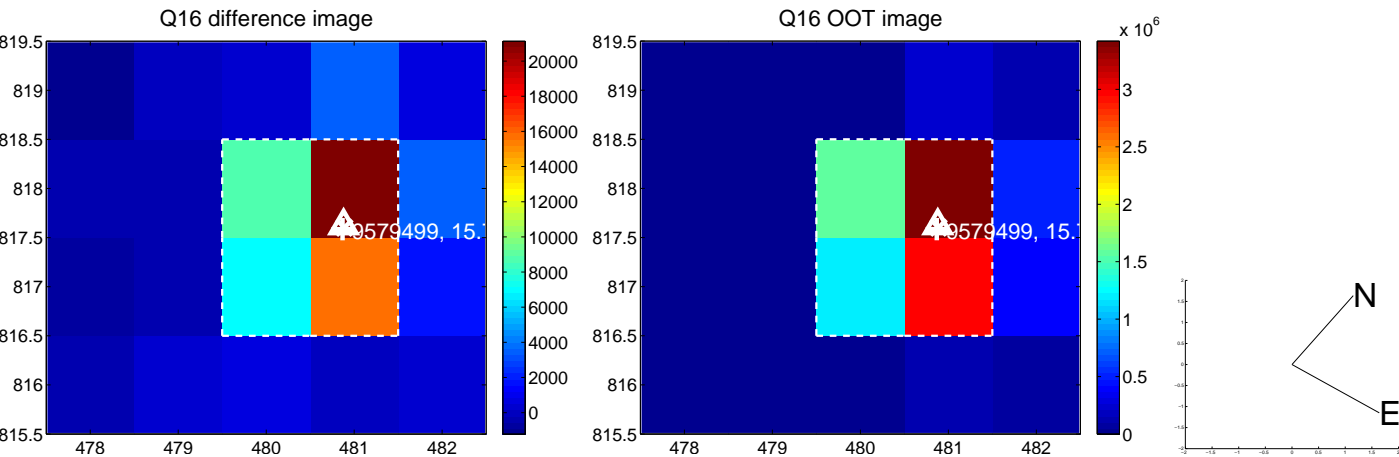
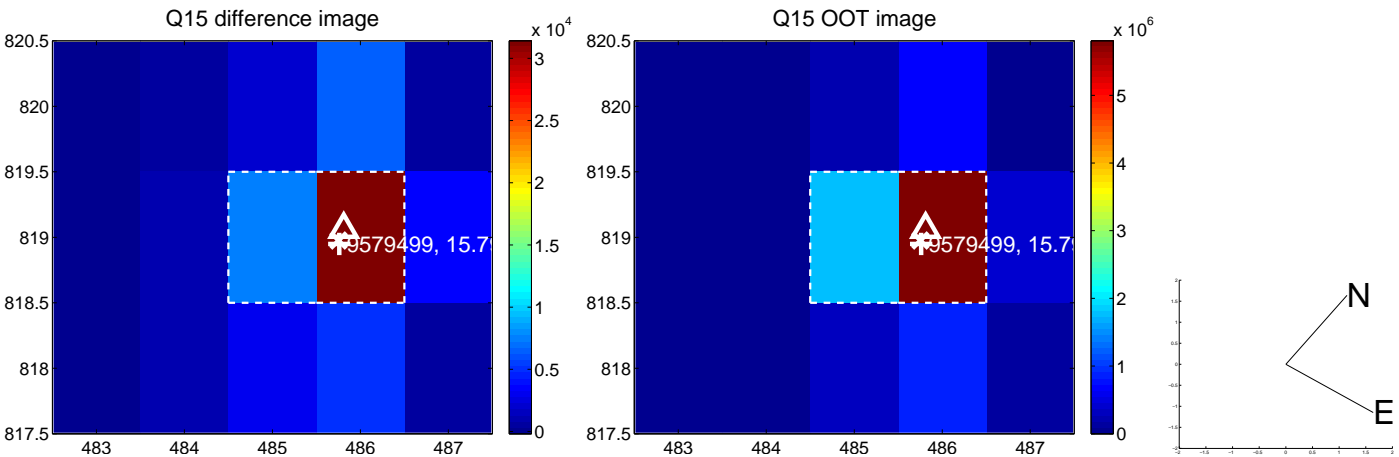
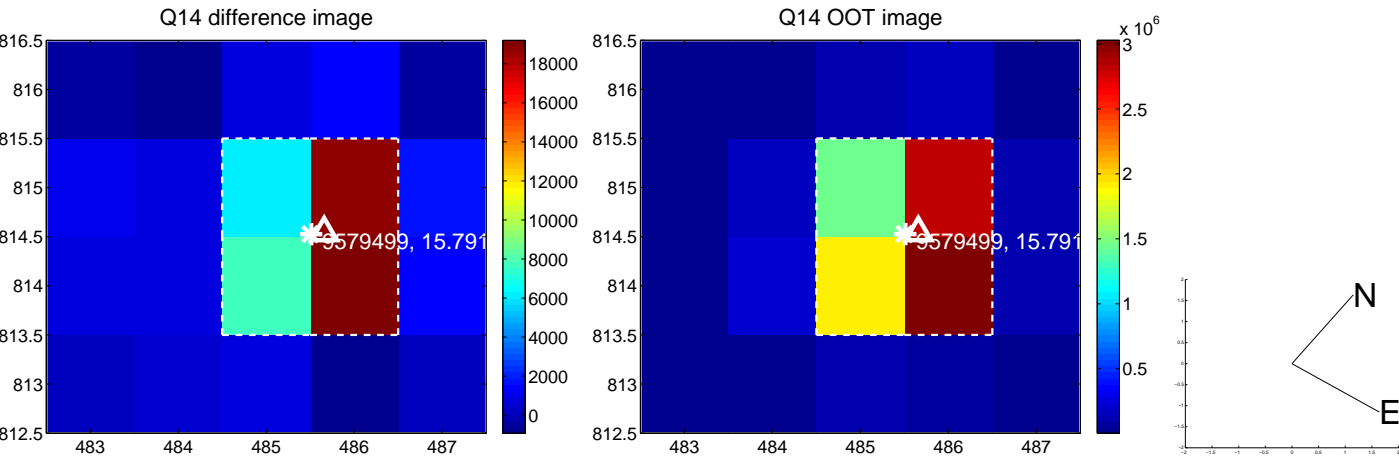
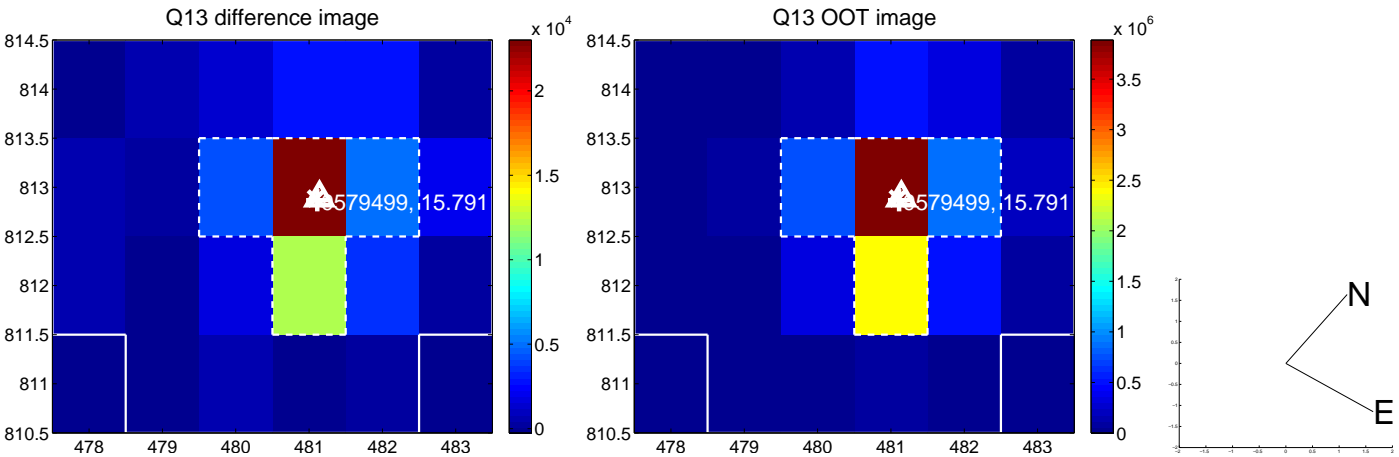
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



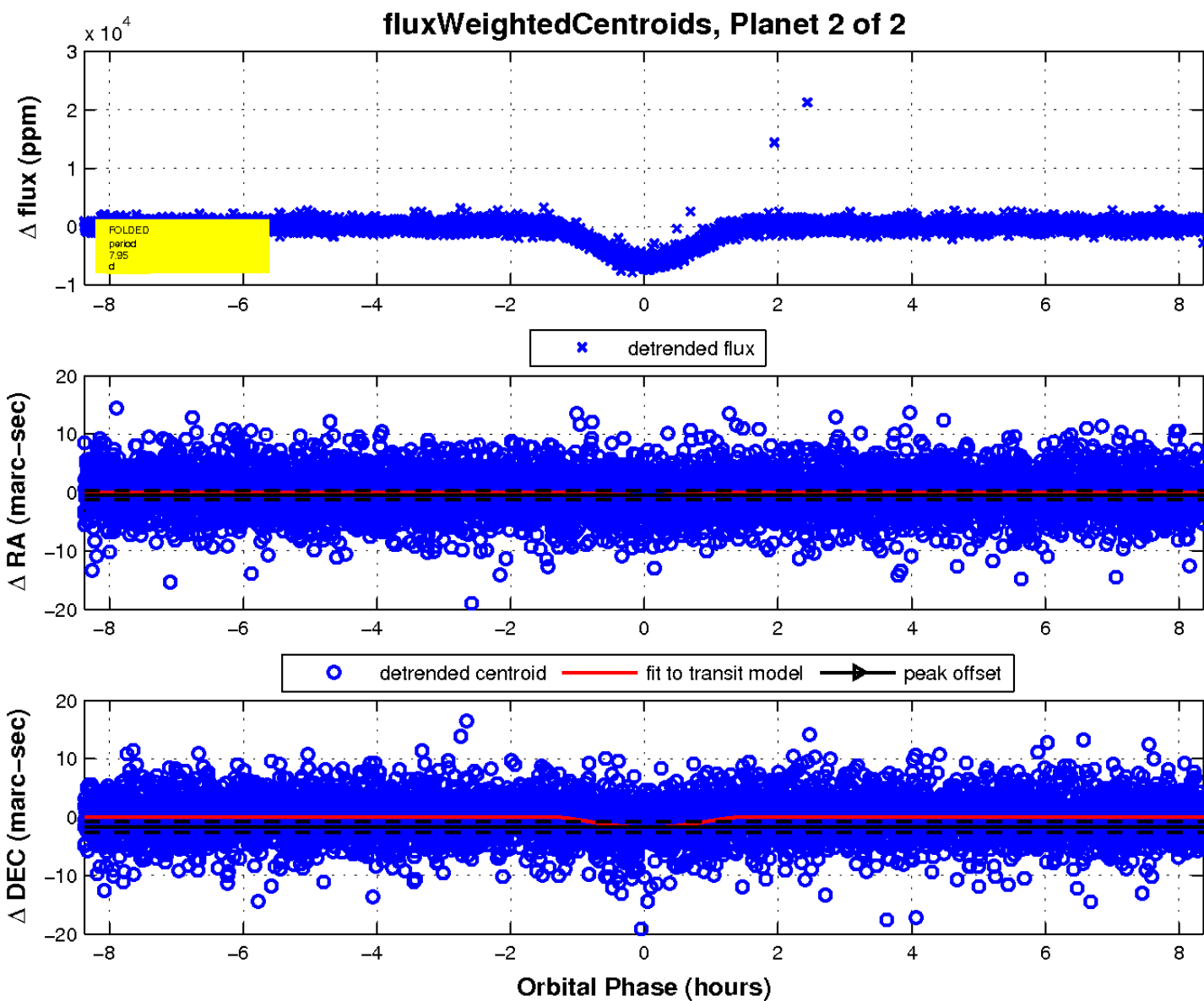
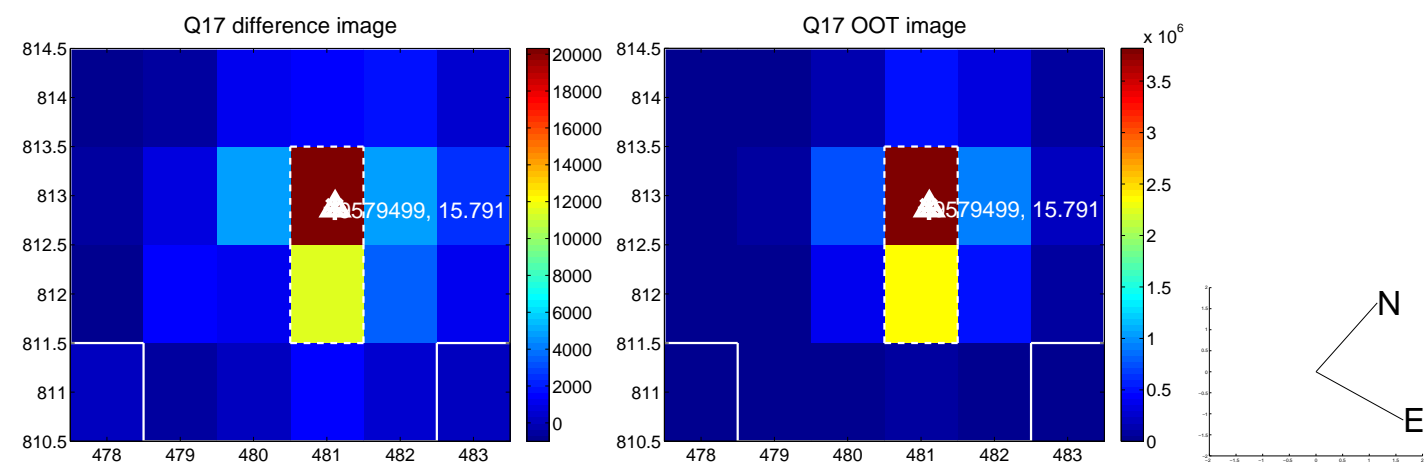
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

