

KIC 011966557

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})
011966557-01	OBS	7498.01	60.299161	161.851425	318545.0	9.000	1302.8	-1.0	0.98	5995	35.77	12.65
011966557-02	OBS	No	37.483971	145.233102	3055.3	27.223	30.9	12.4	0.98	5995	6.69	23.85
011966557-03	OBS	No	40.197492	157.201747	79083.2	9.416	416.8	116.6	0.98	5995	38.94	21.73
011966557-04	OBS	No	39.001835	145.936533	2777.1	35.491	24.3	12.7	0.98	5995	9.55	22.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011966557-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—CENT_NOFITS
011966557-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011966557-03	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011966557-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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.

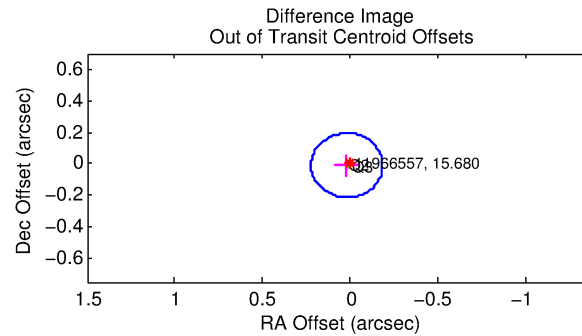
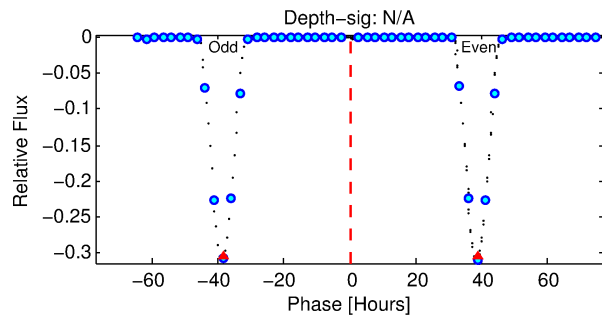
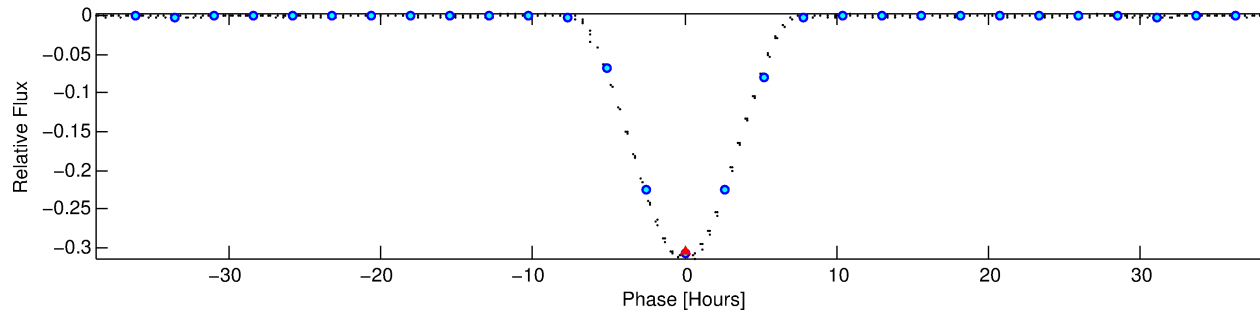
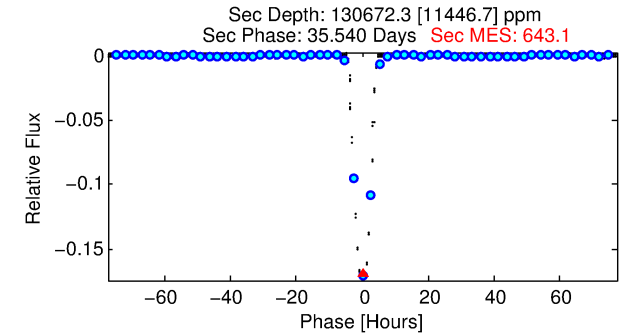
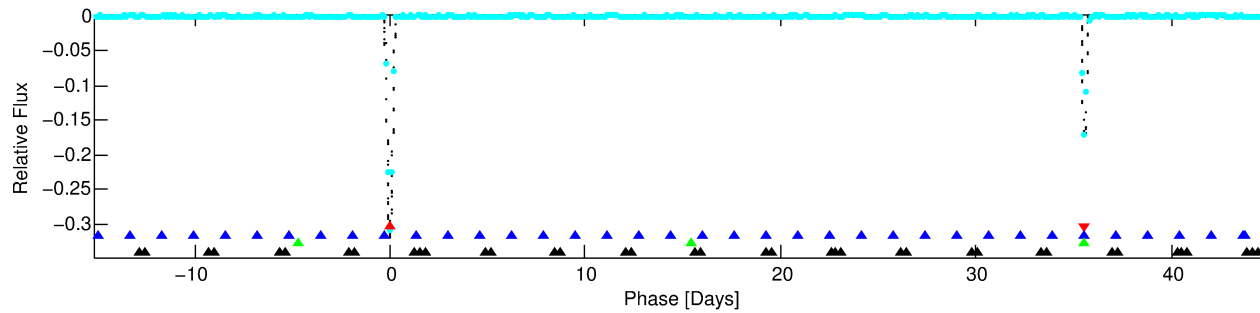
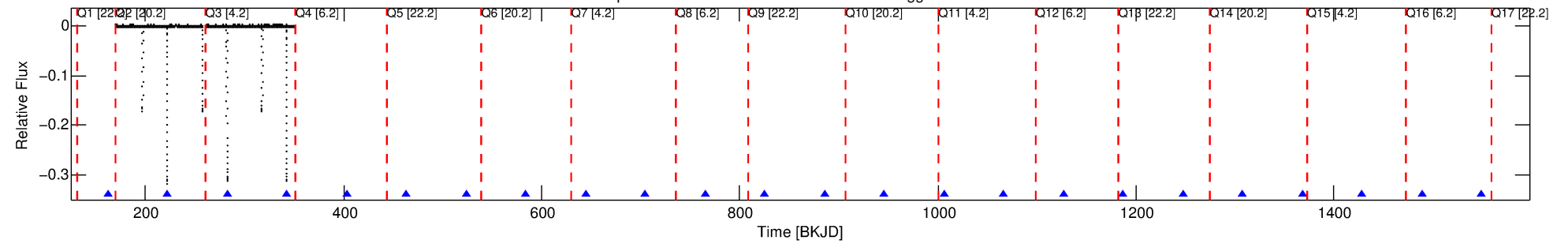
Ephemeris Match Information For 011966557-01

No Significant Match Found

DV One-Page Summary

KIC: 11966557 Candidate: 1 of 4 Period: 60.299 d
KOI: K07498.01 Corr: 0.795

Kp: 15.68 R*: 0.98 Rs Teff: 5995.0 K Logg: 4.43 Fe/H: -0.280



TPS TCE Results:

Period = 60.29916 d
Epoch = 161.8514 BKJD

DV fit results are unavailable

DV Diagnostic Results:

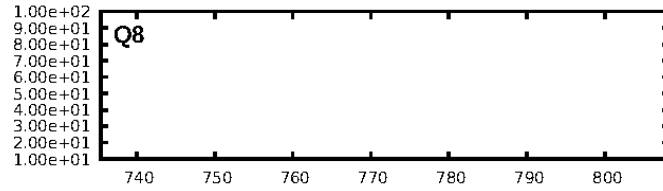
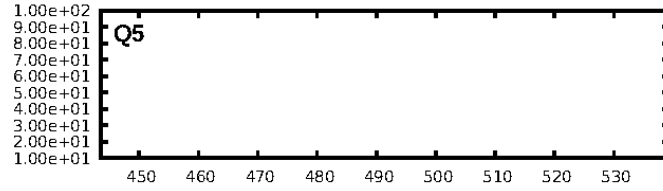
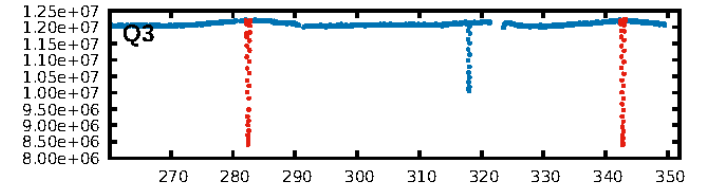
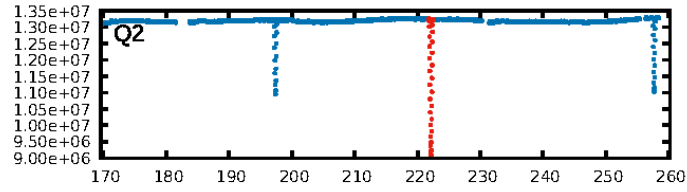
ShortPeriod-sig: 100.0% [37.04σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.726

Centroid-sig: 0.0%
Centroid-so: 0.312 arcsec [46.09σ]
OotOffset-rm: 0.022 arcsec [0.33σ]
KicOffset-rm: 0.192 arcsec [2.31σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

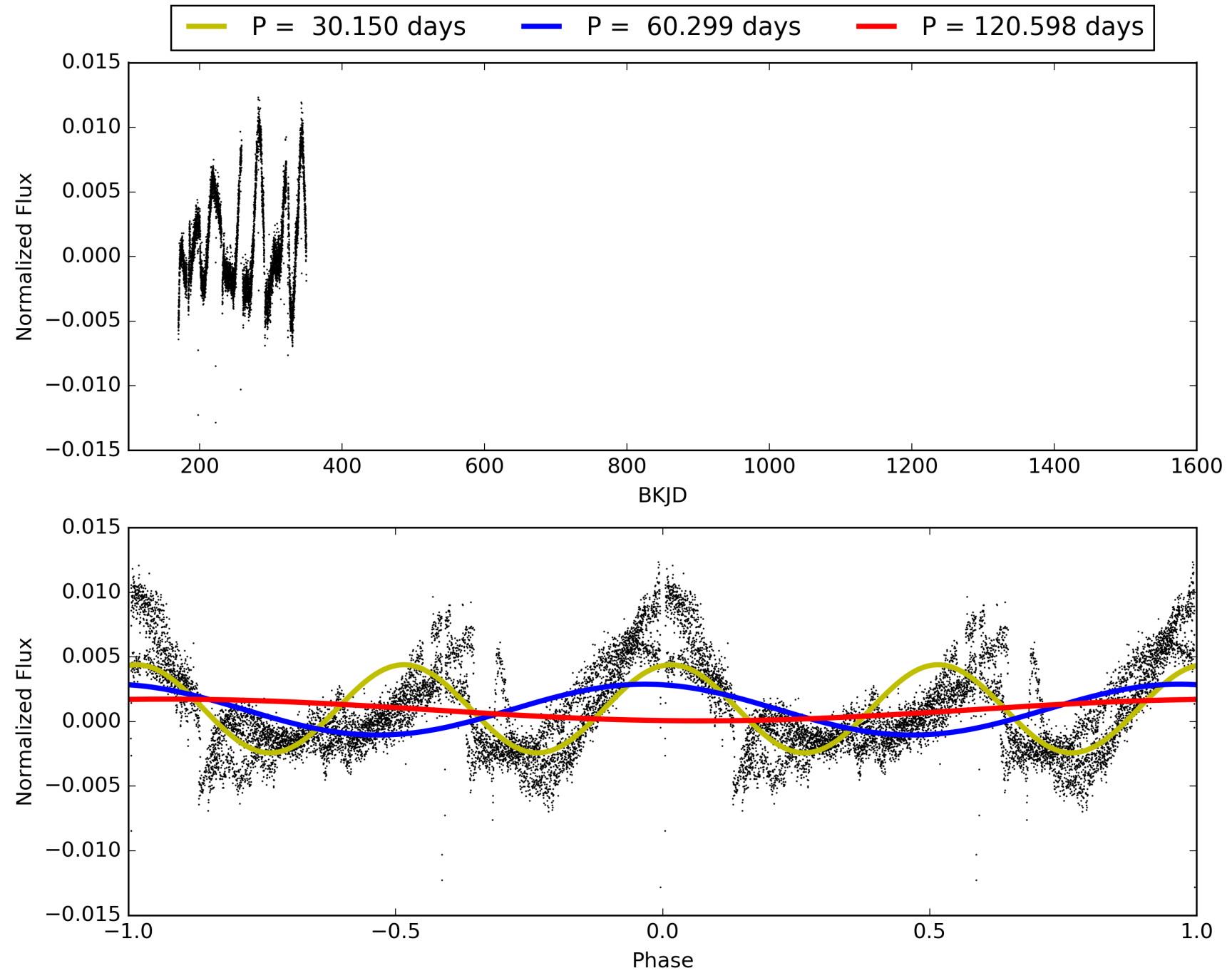
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:46:24 Z

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

TCE 011966557-01, PDC Light Curves

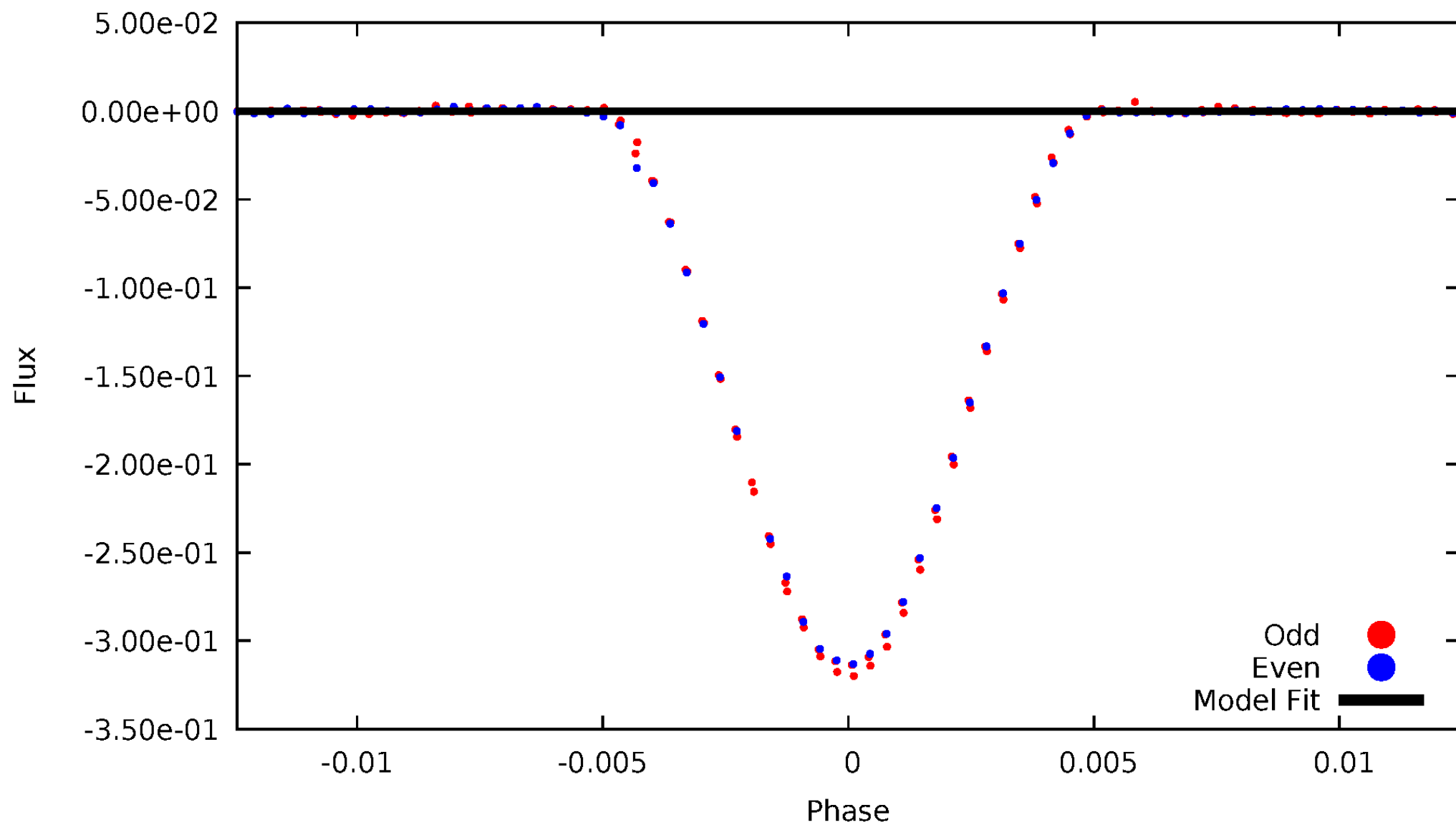


TCE 011966557-01



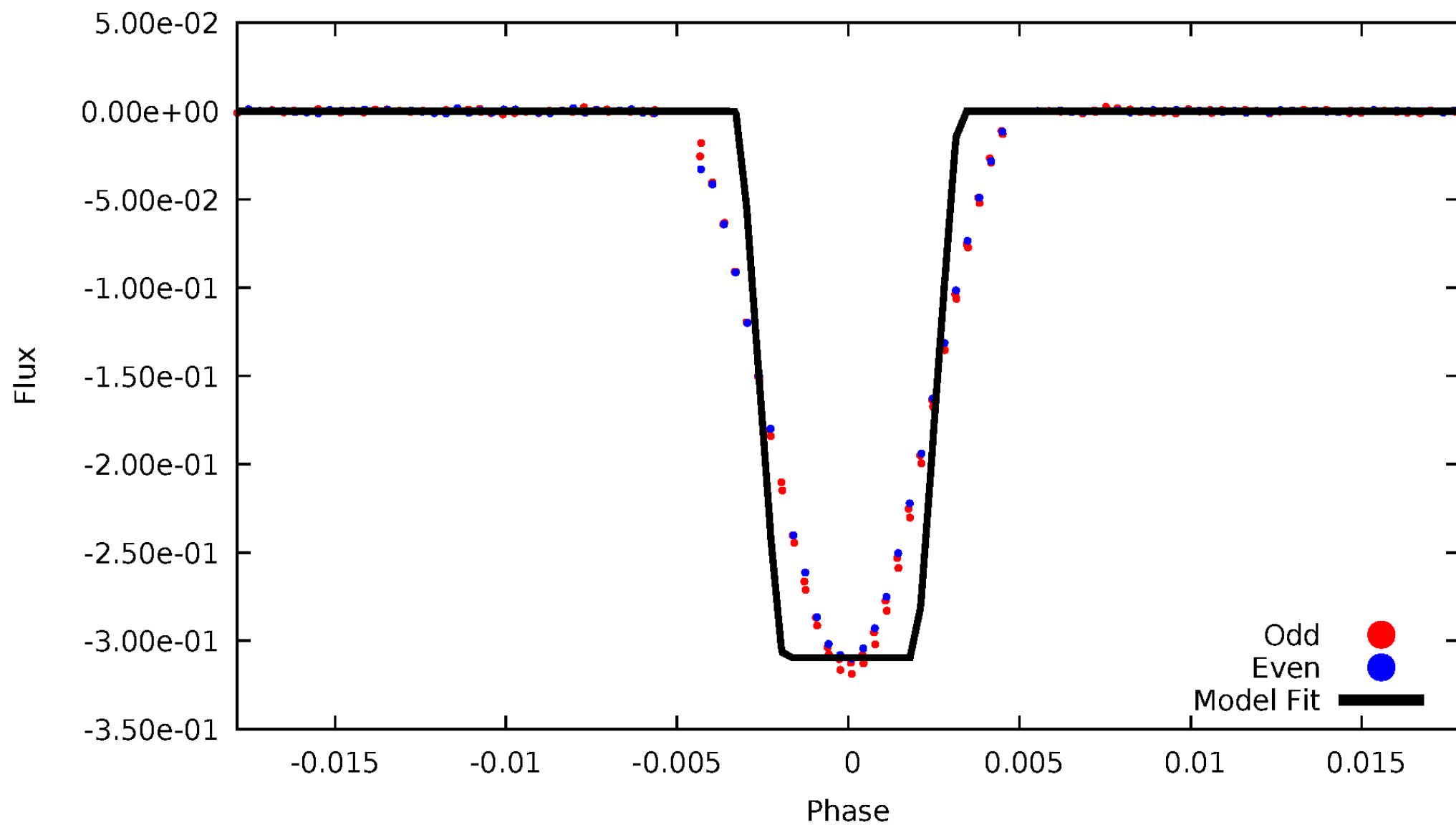
DV Odd/Even

TCE 011966557-01



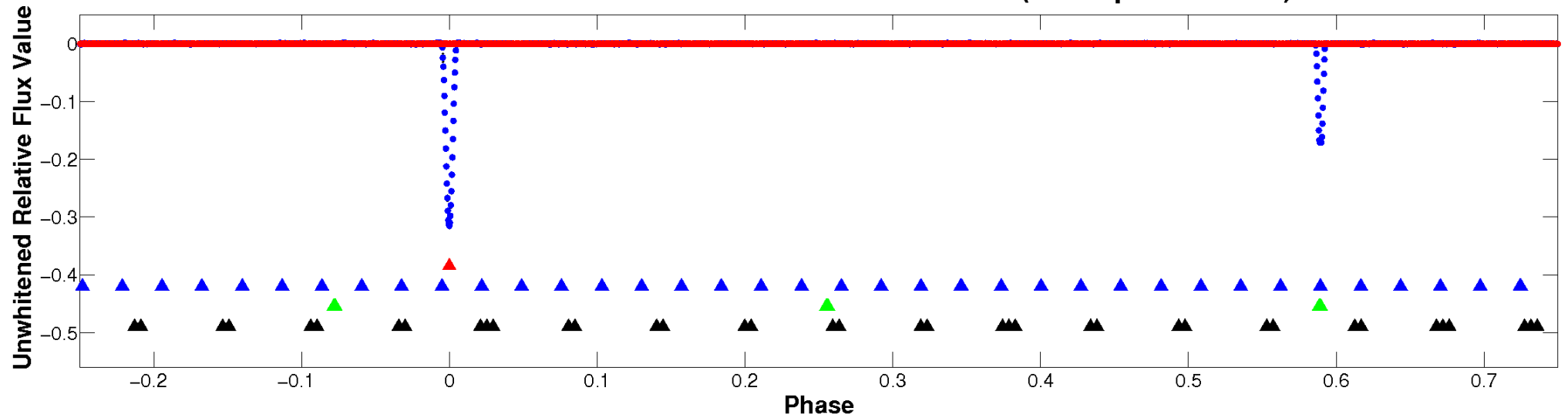
ALT Odd/Even

TCE 011966557-01



Non-Whitened Vs. Whitened Light Curve

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

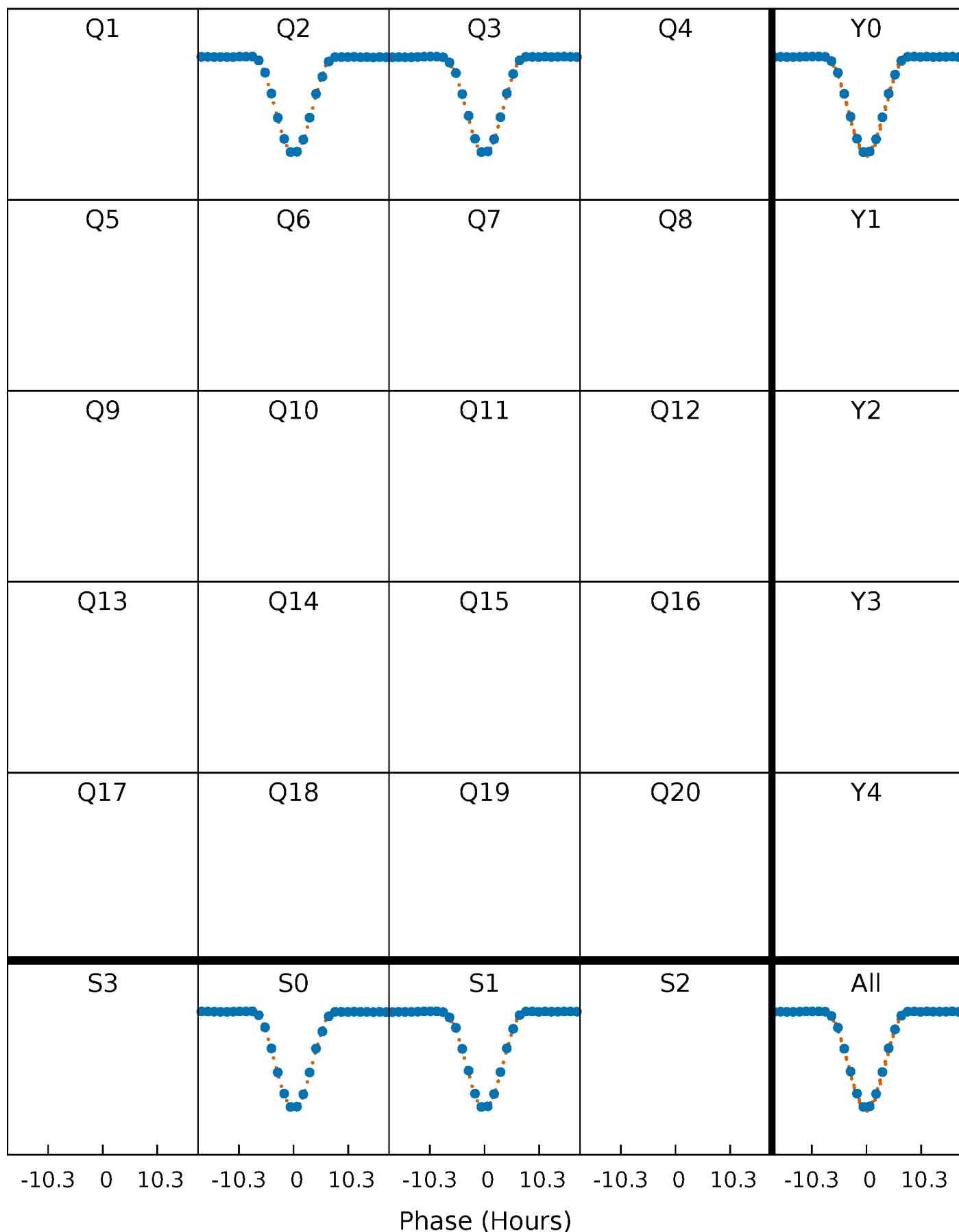


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



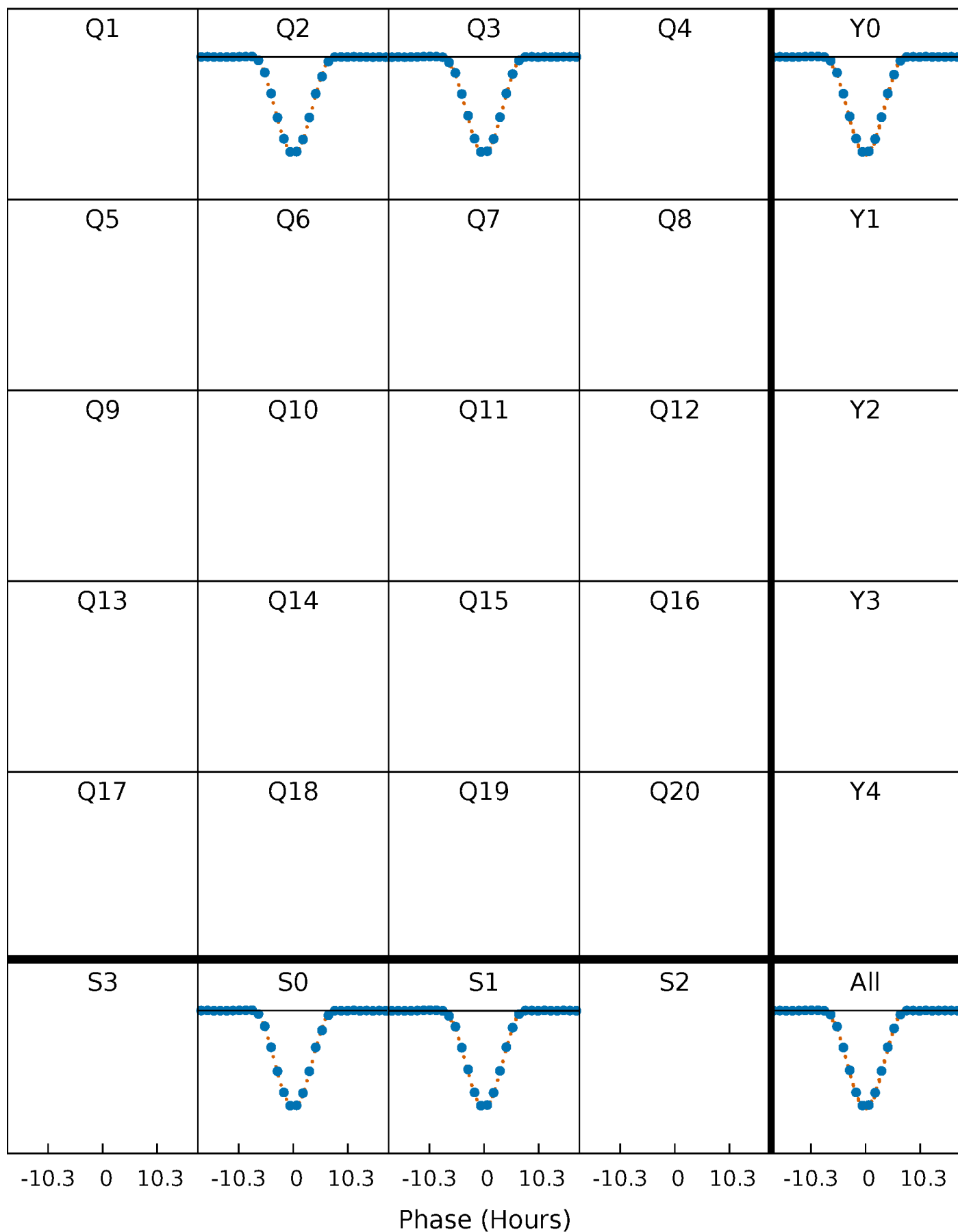
PDC Quarter-Phased Transit Curves

TCE 011966557-01 P= 60.299161 Days $T_0=161.851425$ (BKJD)



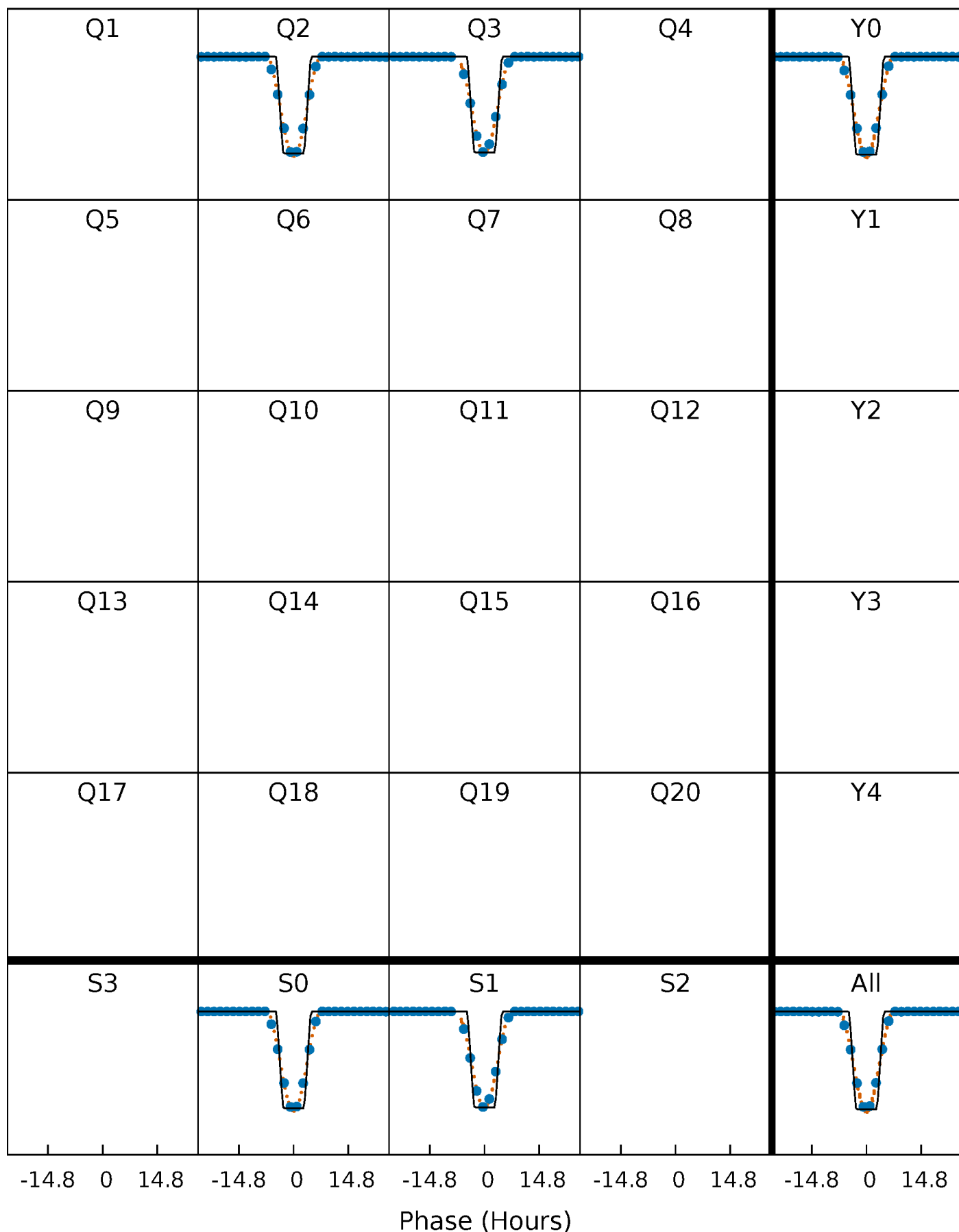
DV Quarter-Phased Transit Curves

TCE 011966557-01 P= 60.299161 Days $T_0=161.851425$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

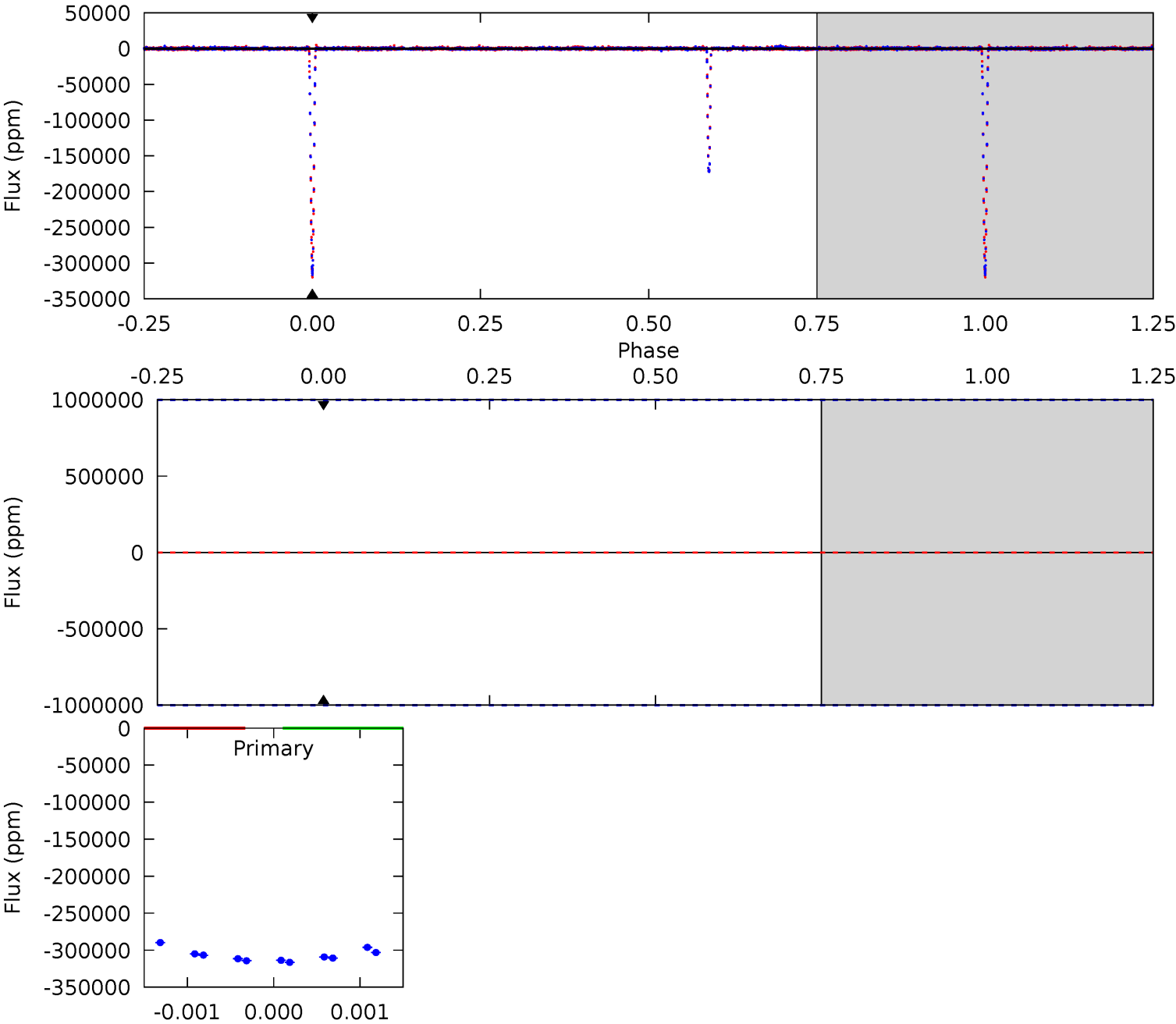
TCE 011966557-01 P= 60.299161 Days $T_0=161.851640$ (BKJD)



DV Model-Shift Uniqueness Test

011966557-01, P = 60.299161 Days, E = 161.851425 Days

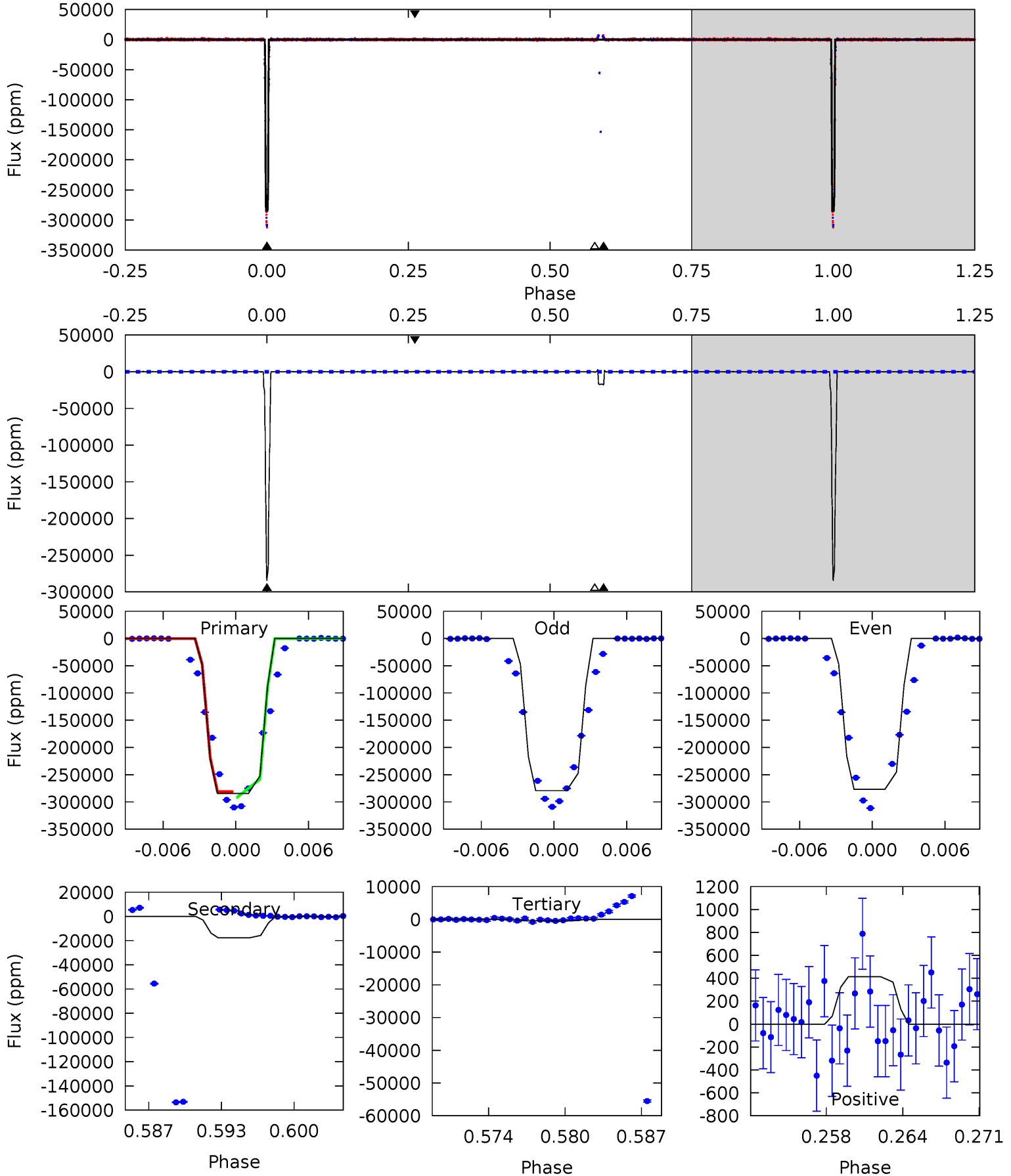
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011966557-01, P = 60.299161 Days, E = 161.851640 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1427	89.1	2.48	2.07	5.11	2.72	2.78	1424	1425	86.6	87.0	11.3	1.00	0.01	0



Stellar Parameters For KIC 011966557

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5995^{+180}_{-180}	$4.434^{+0.084}_{-0.196}$	$-0.280^{+0.300}_{-0.300}$	$0.977^{+0.285}_{-0.142}$	$0.946^{+0.132}_{-0.108}$	$1.428^{+0.628}_{-0.705}$
	+3%/-3%	+2%/-4%	+107%/-107%	+29%/-15%	+14%/-11%	+44%/-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 011966557-01 / KOI 7498.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$37.39^{+12.50}_{-11.76}$	685^{+50}_{-39}	2435^{+3613}_{-8308}	15^{+4485}_{-3467}
Alt.	-17766 ± 199	$62.46^{+13.88}_{-13.29}$	682^{+49}_{-35}	3435^{+254}_{-178}	223^{+132}_{-75}

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 $A_{obs} \gg 1.0$

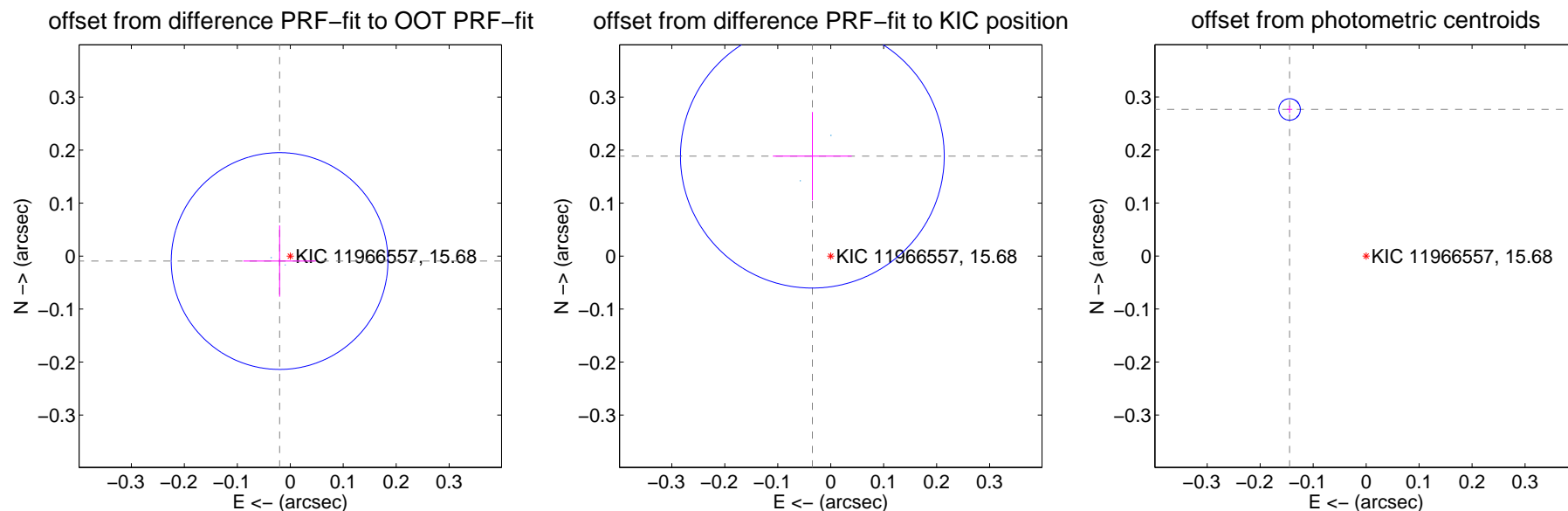
DV Centroid Data

Supplemental centroid analysis for 011966557-01. Kepler magnitude: 15.68. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.022 ± 0.068	0.33	0.020 ± 0.068	-0.009 ± 0.067
PRF-fit source offset from KIC position	0.192 ± 0.083	2.31	0.035 ± 0.074	0.189 ± 0.083
photometric centroid source offset	0.31 ± 0.01	46.09	0.14 ± 0.01	0.28 ± 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.

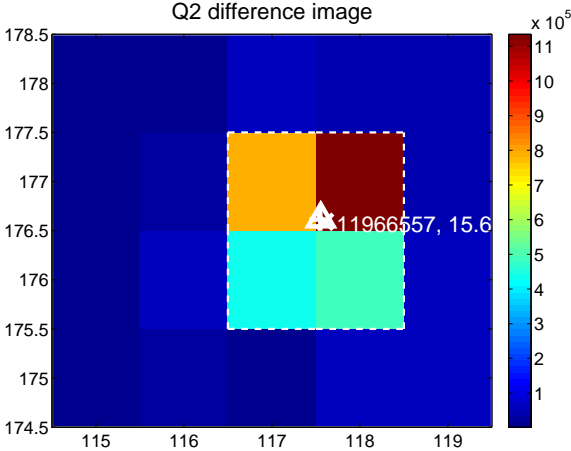
Q1 no difference image



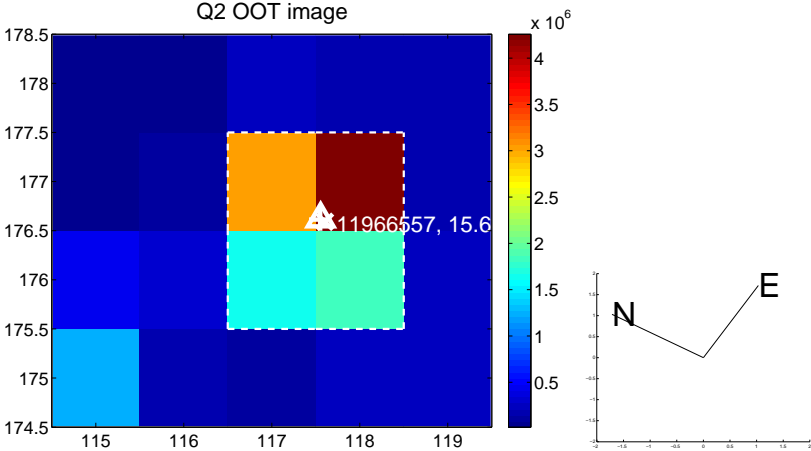
Q1 no OOT image



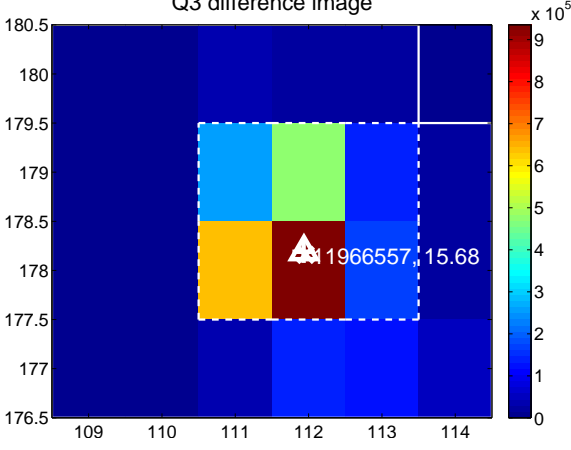
Q2 difference image



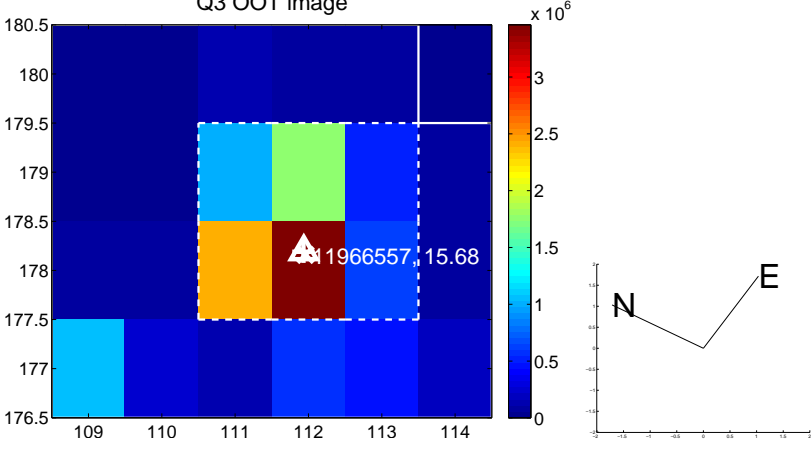
Q2 OOT image



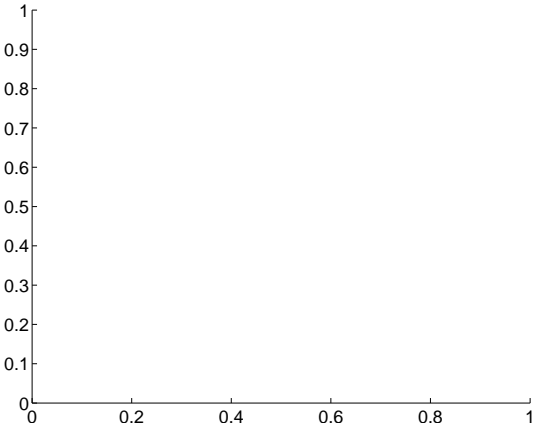
Q3 difference image



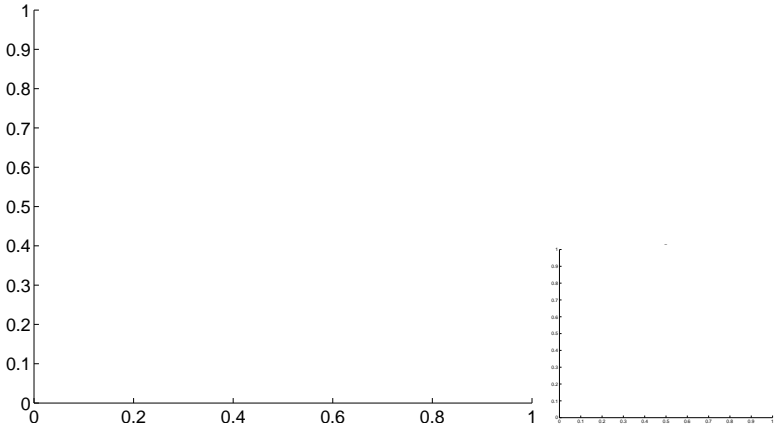
Q3 OOT image



Q4 no difference image



Q4 no OOT image



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



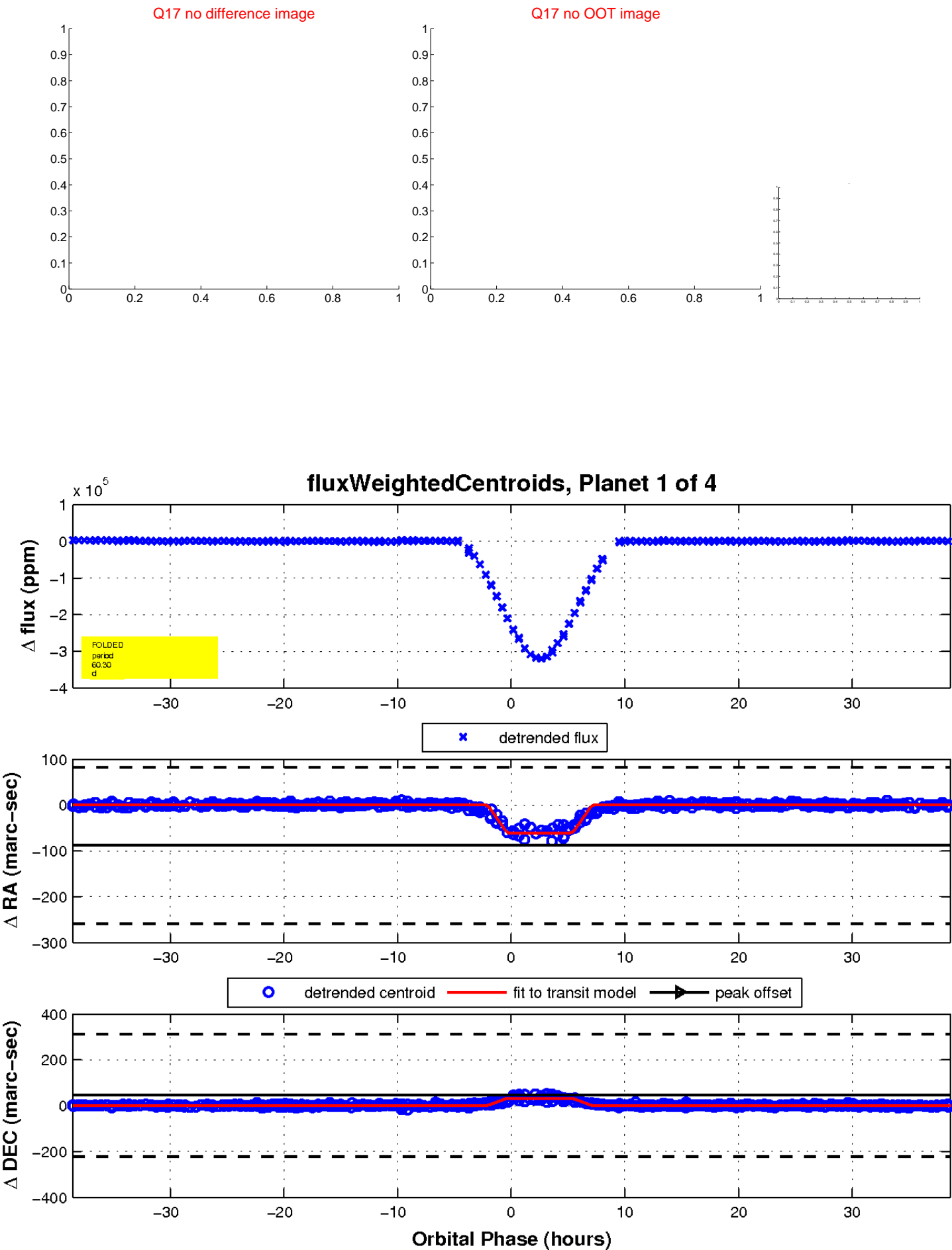
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

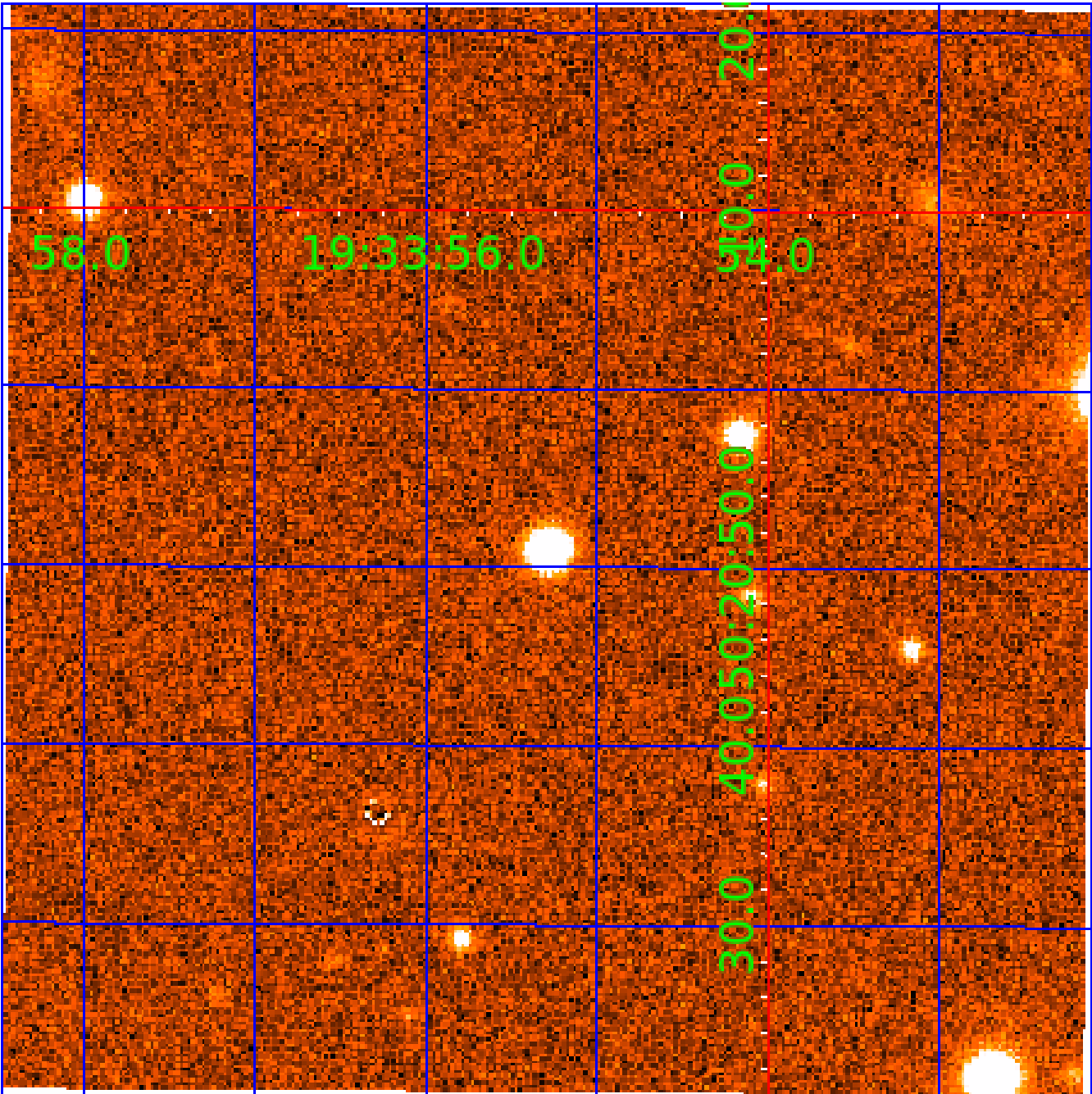


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011966557

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})
011966557-01	OBS	7498.01	60.299161	161.851425	318545.0	9.000	1302.8	-1.0	0.98	5995	35.77	12.65
011966557-02	OBS	No	37.483971	145.233102	3055.3	27.223	30.9	12.4	0.98	5995	6.69	23.85
011966557-03	OBS	No	40.197492	157.201747	79083.2	9.416	416.8	116.6	0.98	5995	38.94	21.73
011966557-04	OBS	No	39.001835	145.936533	2777.1	35.491	24.3	12.7	0.98	5995	9.55	22.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011966557-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—CENT_NOFITS
011966557-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011966557-03	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011966557-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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.

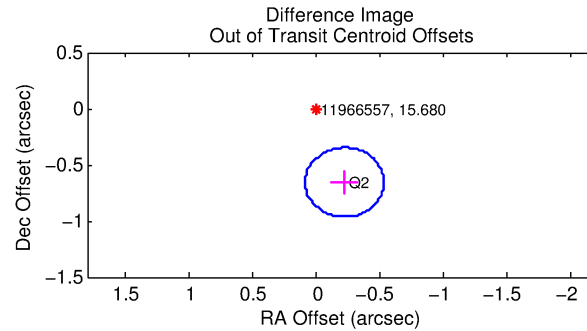
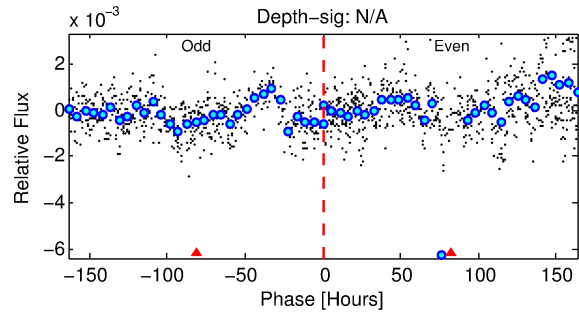
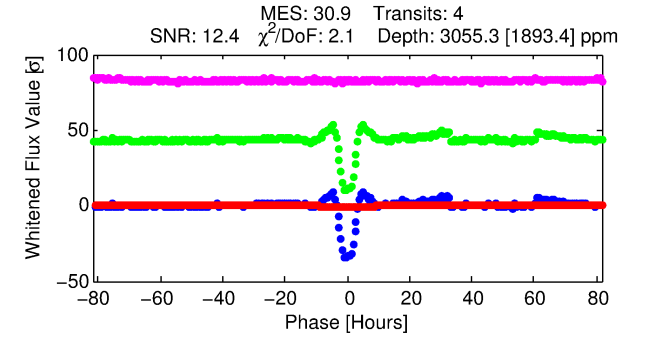
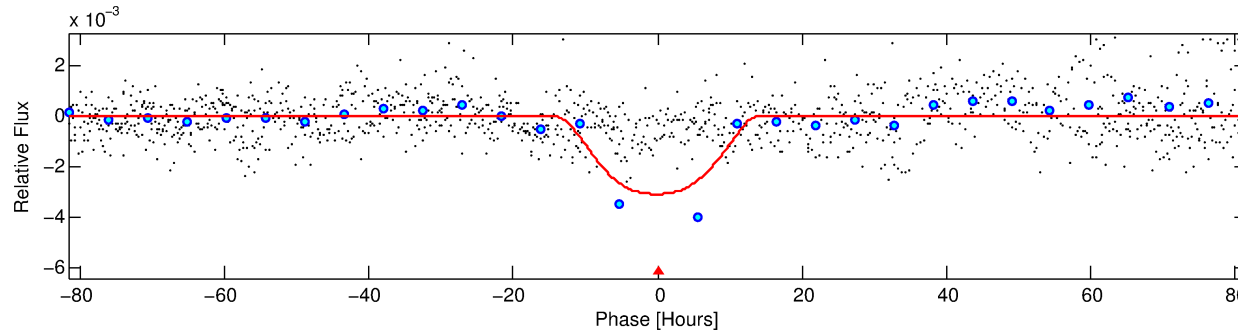
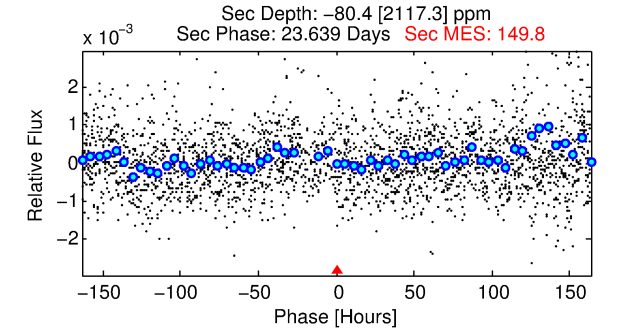
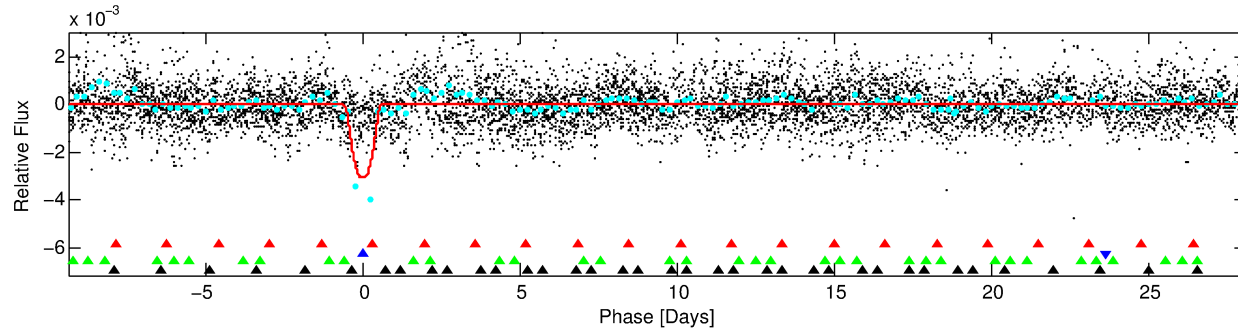
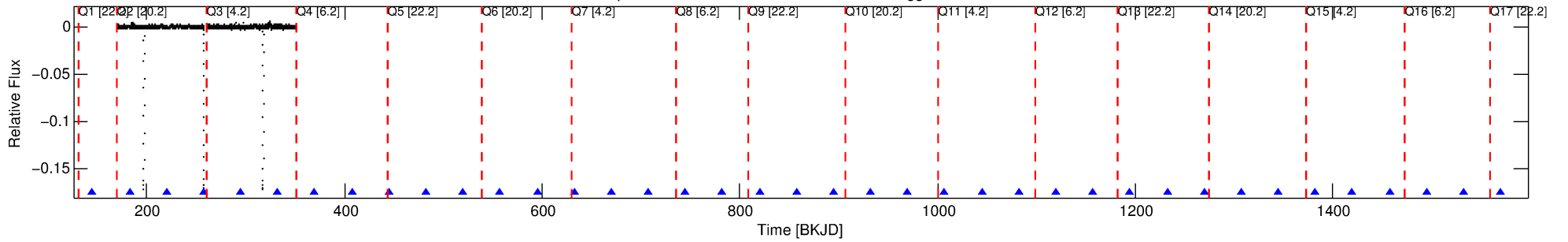
Ephemeris Match Information For 011966557-02

No Significant Match Found

DV One-Page Summary

KIC: 11966557 Candidate: 2 of 4 Period: 37.484 d
KOI: K07498 Corr: No Ephemeris Match

Kp: 15.68 R*: 0.98 Rs Teff: 5995.0 K Logg: 4.43 Fe/H: -0.280



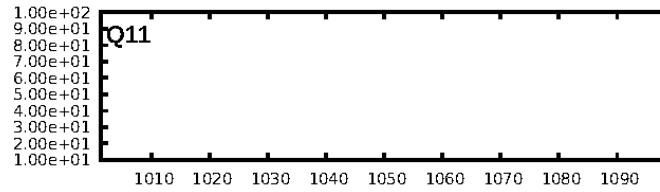
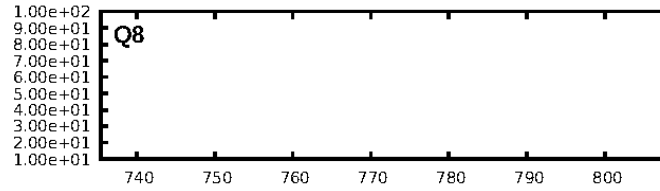
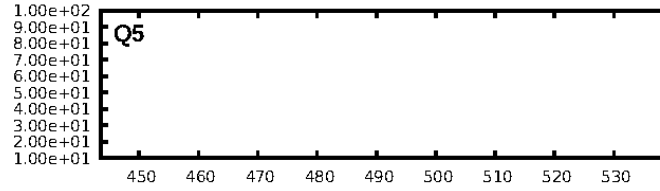
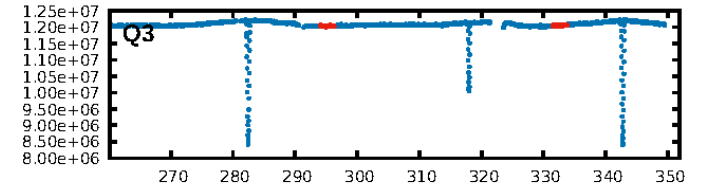
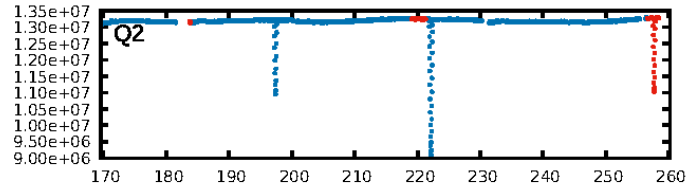
DV Fit Results:

Period = 37.48397 [0.13692] d
Epoch = 145.2331 [0.4368] BKJD
Rp/R* = 0.0628 [0.0290]
a/R* = 5.37 [3.11]
b = 0.94 [0.10]
Seff = 23.85 [9.01]
Teq = 564 [53] K
Rp = 6.69 [3.66] Re
a = 0.2152 [0.0529] AU
Ag = N/A
Teffp = N/A

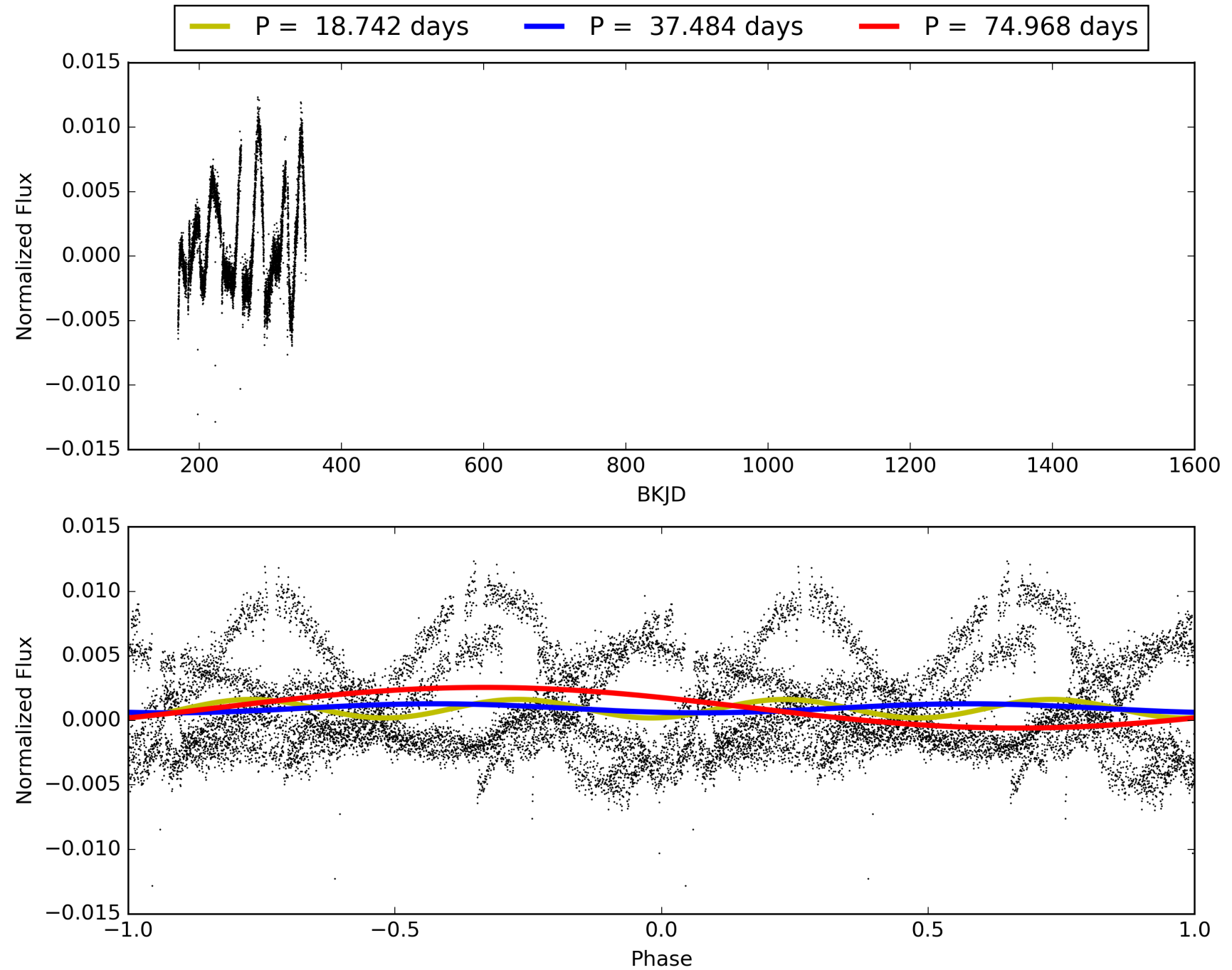
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 58.5% [0.81σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 90.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.4552
Centroid-sig: 0.1%
Centroid-so: 1.229 arcsec [3.32σ]
OotOffset-rm: 0.694 arcsec [6.74σ]
KicOffset-rm: 0.489 arcsec [4.75σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.50 [1/2]

TCE 011966557-02, PDC Light Curves

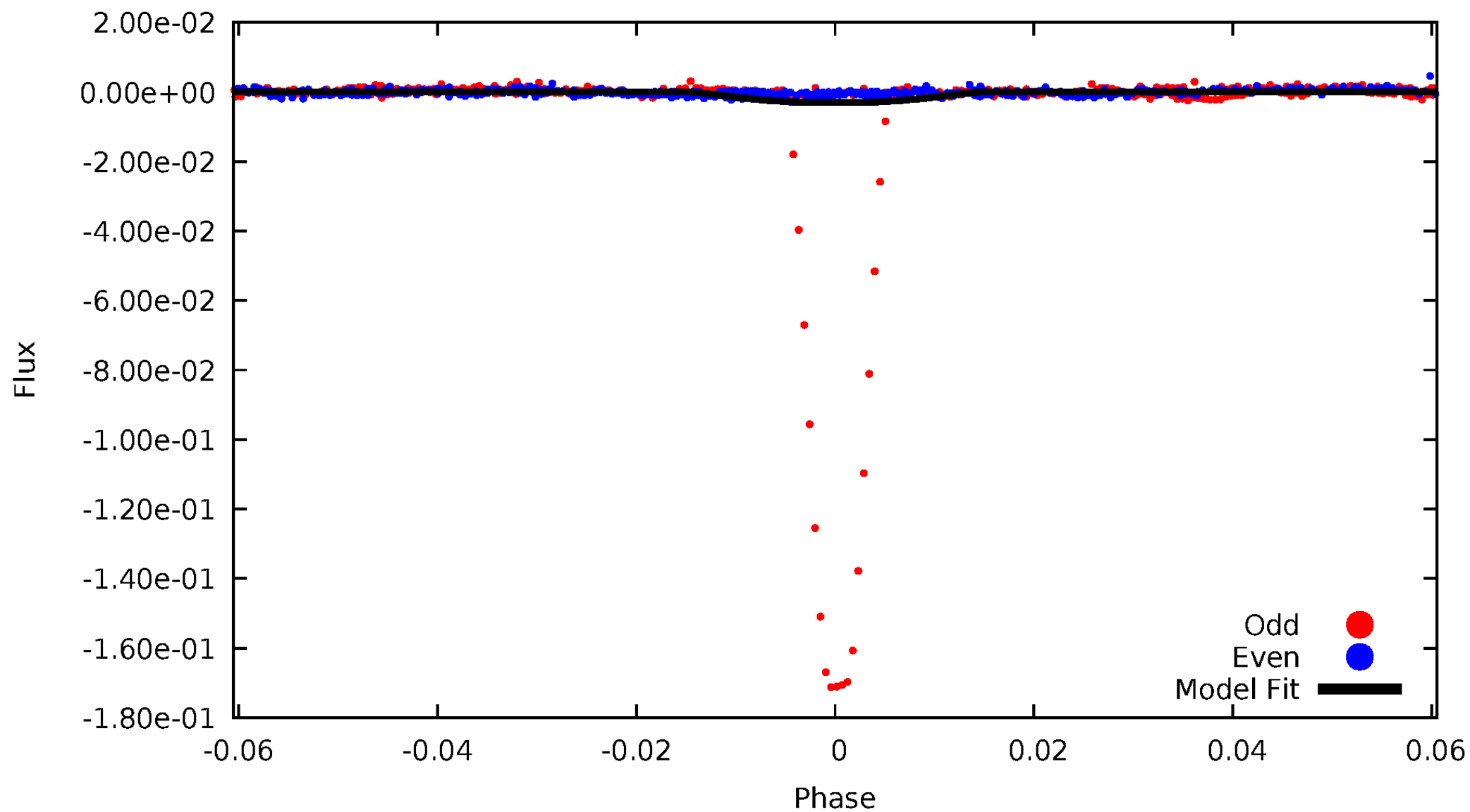


TCE 011966557-02



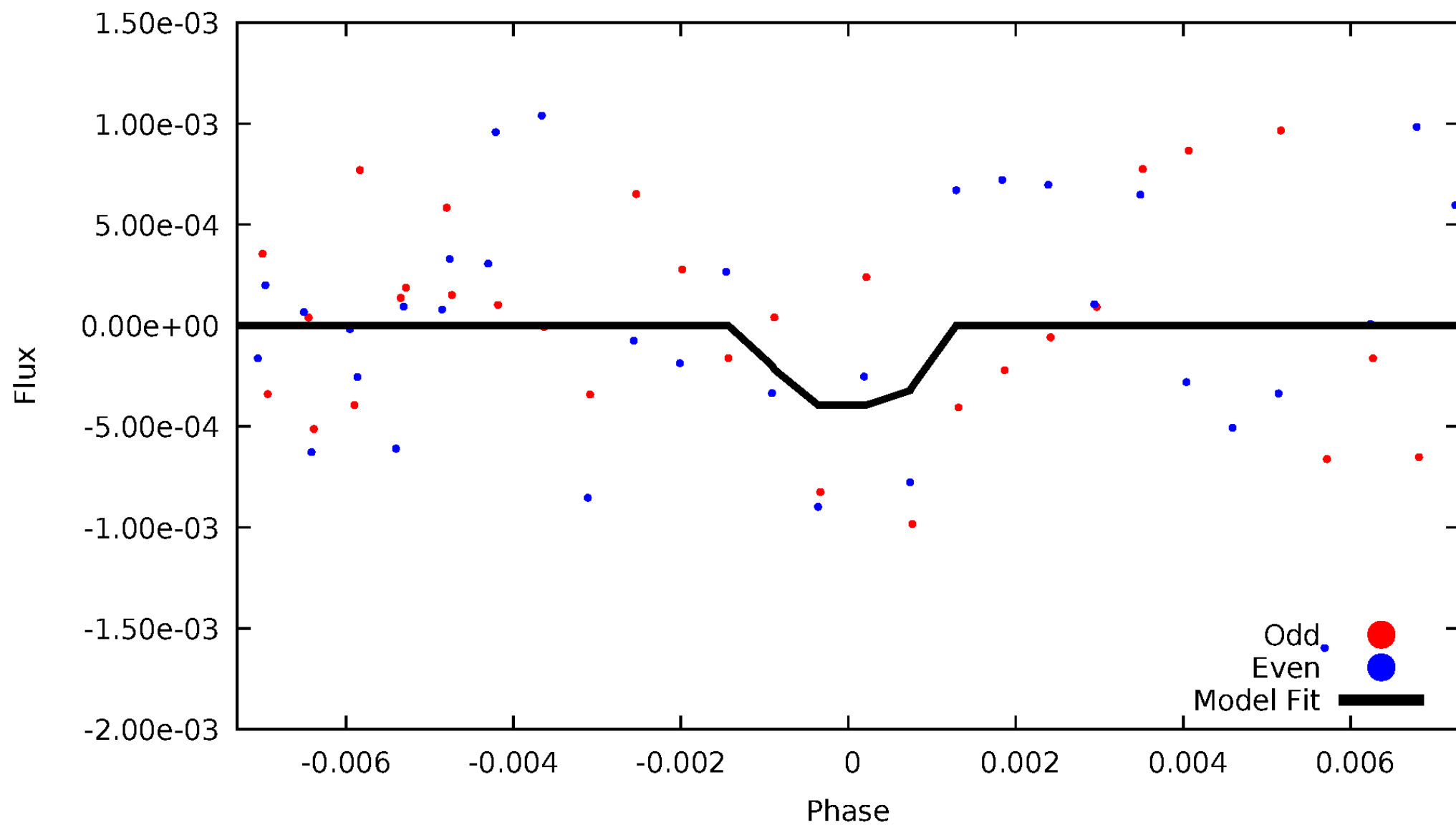
DV Odd/Even

TCE 011966557-02



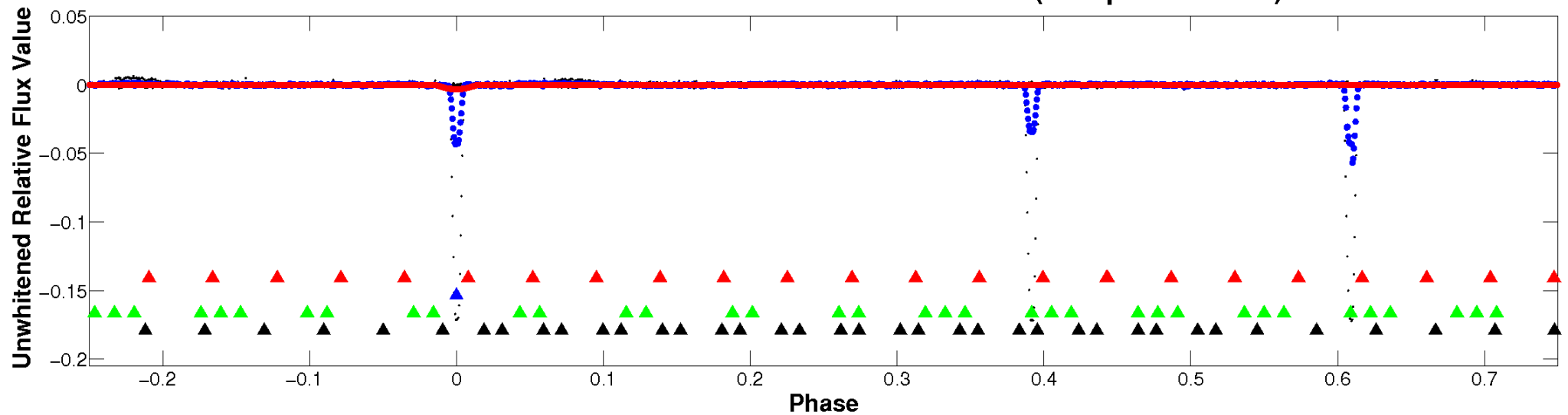
ALT Odd/Even

TCE 011966557-02

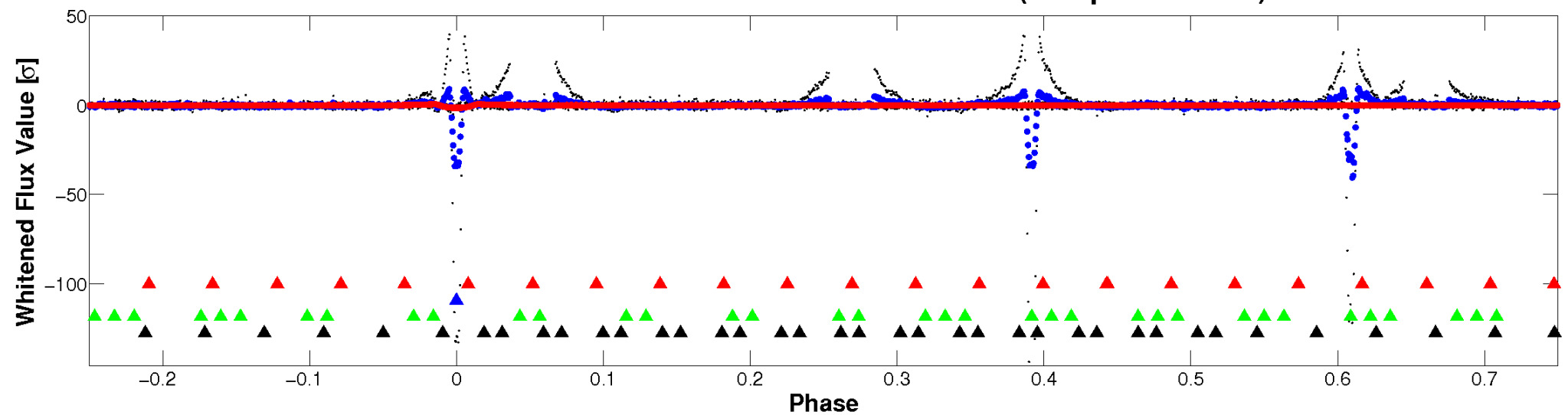


Non-Whitened Vs. Whitened Light Curve

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

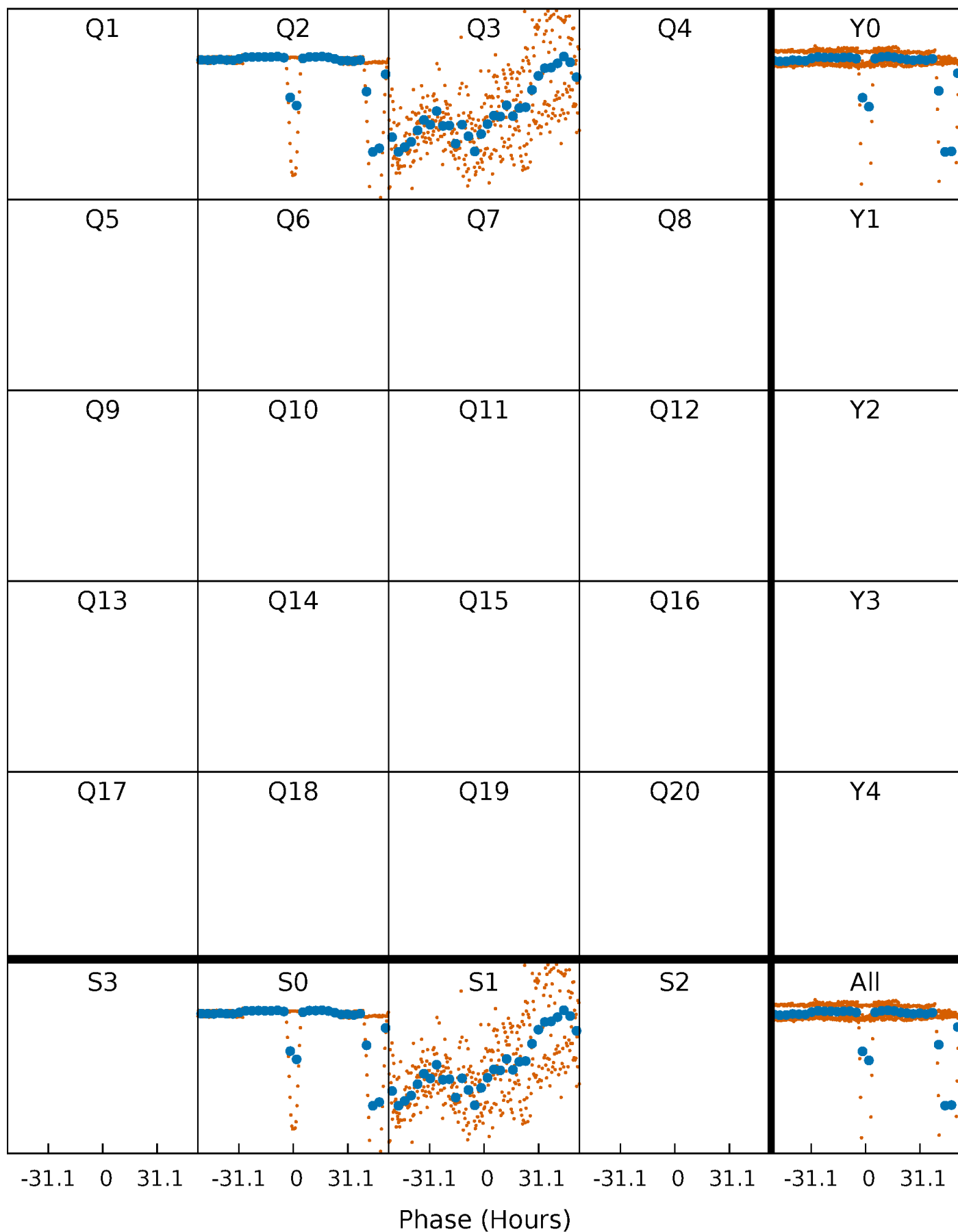


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



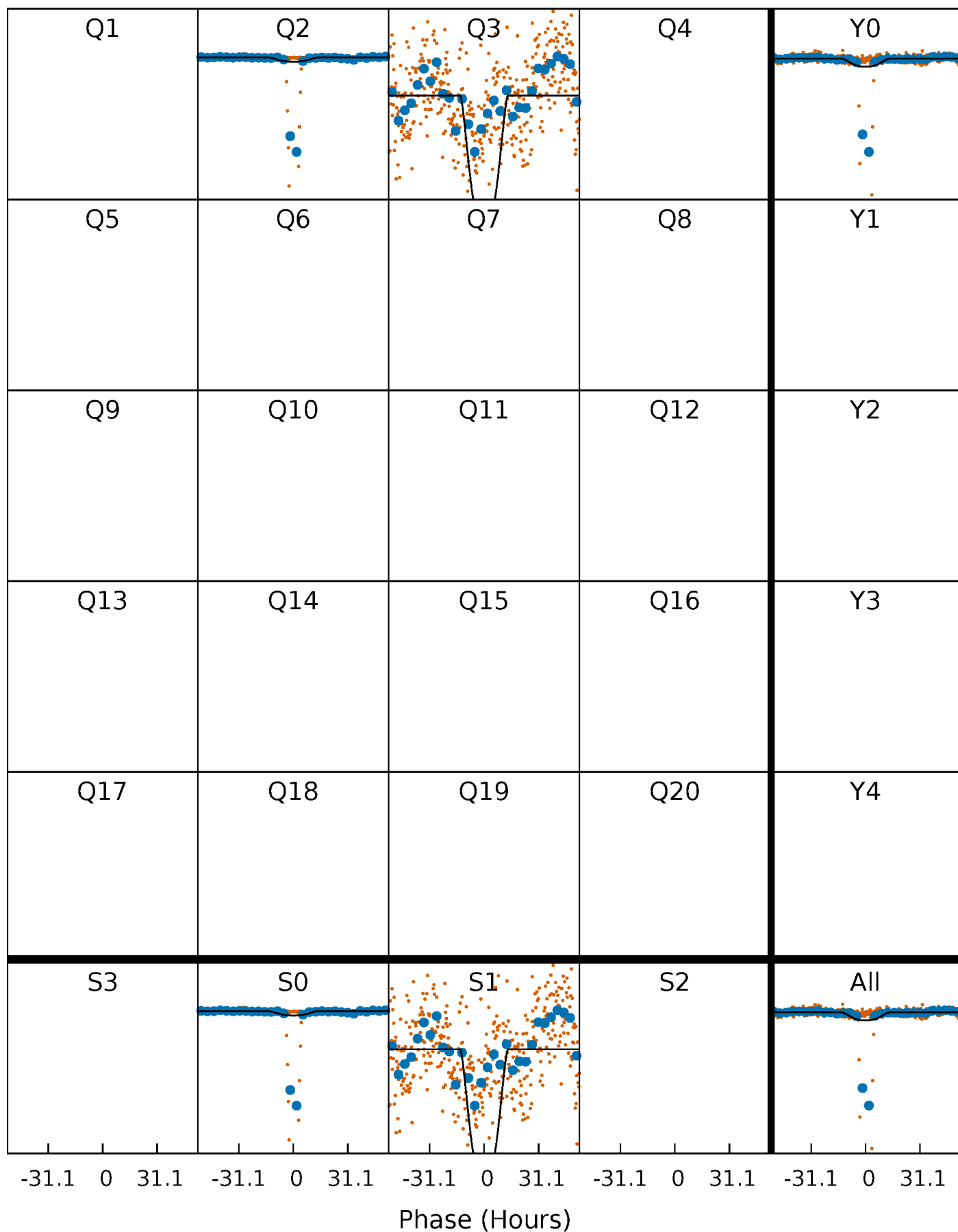
PDC Quarter-Phased Transit Curves

TCE 011966557-02 $P = 37.483971$ Days $T_0 = 145.233102$ (BKJD)



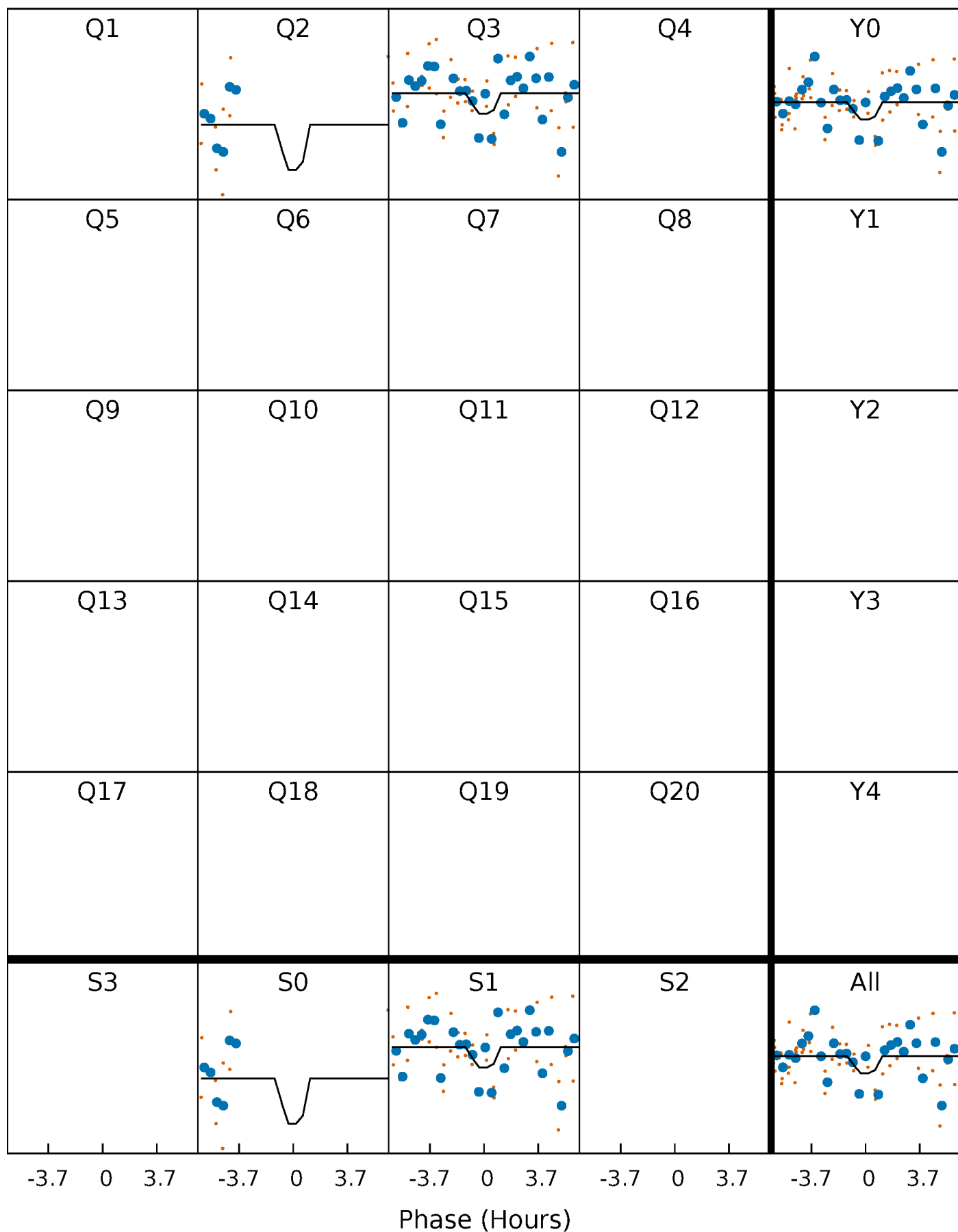
DV Quarter-Phased Transit Curves

TCE 011966557-02 P= 37.483971 Days $T_0=145.233102$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

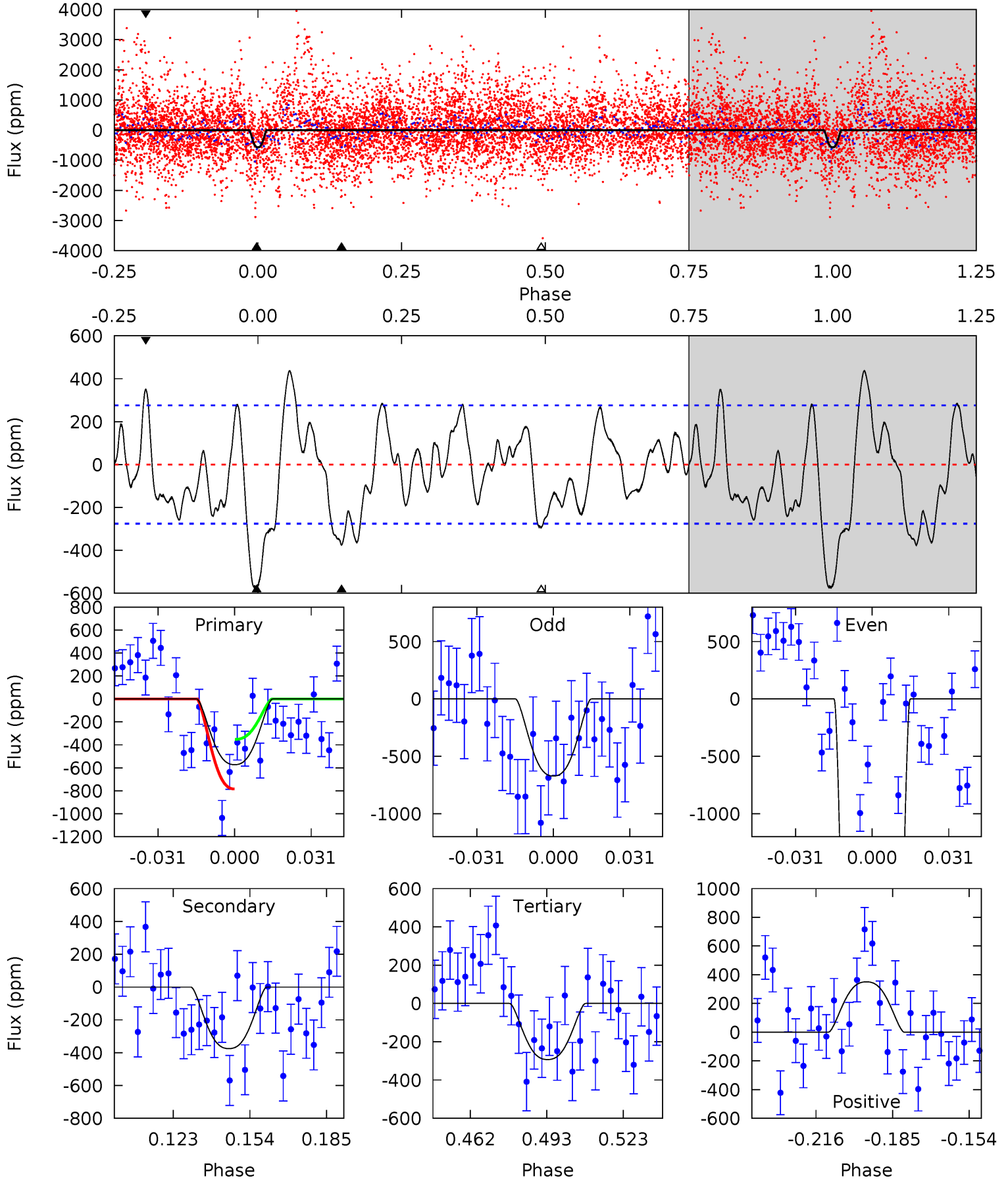
TCE 011966557-02 P= 37.145984 Days $T_0=146.206431$ (BKJD)



DV Model-Shift Uniqueness Test

011966557-02, P = 37.483971 Days, E = 145.233102 Days

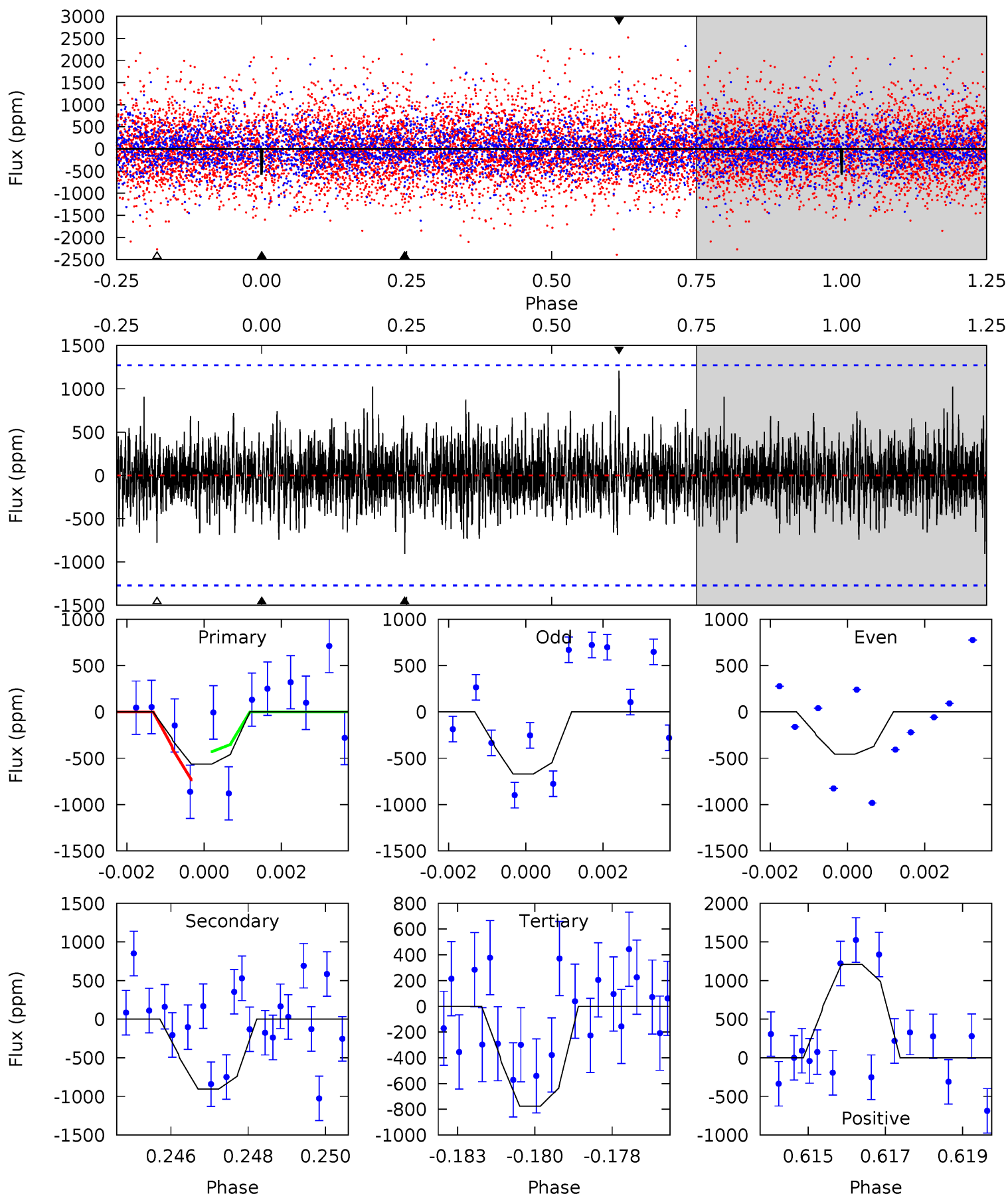
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.97	6.53	5.10	6.10	4.81	2.16	2.64	4.87	3.87	1.43	0.43	68.4	22.5	0.43	3.74



Alt Model-Shift Uniqueness Test

011966557-02, $P = 37.145984$ Days, $E = 146.206431$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.35	3.78	3.24	5.05	5.31	3.07	1.03	-0.90	-2.70	0.53	-1.27	0.45	1.00	0.57	0.60



Stellar Parameters For KIC 011966557

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5995^{+180}_{-180}	$4.434^{+0.084}_{-0.196}$	$-0.280^{+0.300}_{-0.300}$	$0.977^{+0.285}_{-0.142}$	$0.946^{+0.132}_{-0.108}$	$1.428^{+0.628}_{-0.705}$
	+3%/-3%	+2%/-4%	+107%/-107%	+29%/-15%	+14%/-11%	+44%/-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 011966557-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-375 ± 57	$7.24^{+3.58}_{-3.00}$	801^{+54}_{-43}	3698^{+768}_{-445}	185^{+359}_{-106}
Alt.	-905 ± 239	$3.08^{+2.99}_{-1.99}$	803^{+56}_{-38}	6104^{+5922}_{-1488}	2207^{+15345}_{-1636}

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 $A_{obs} \gg 1.0$

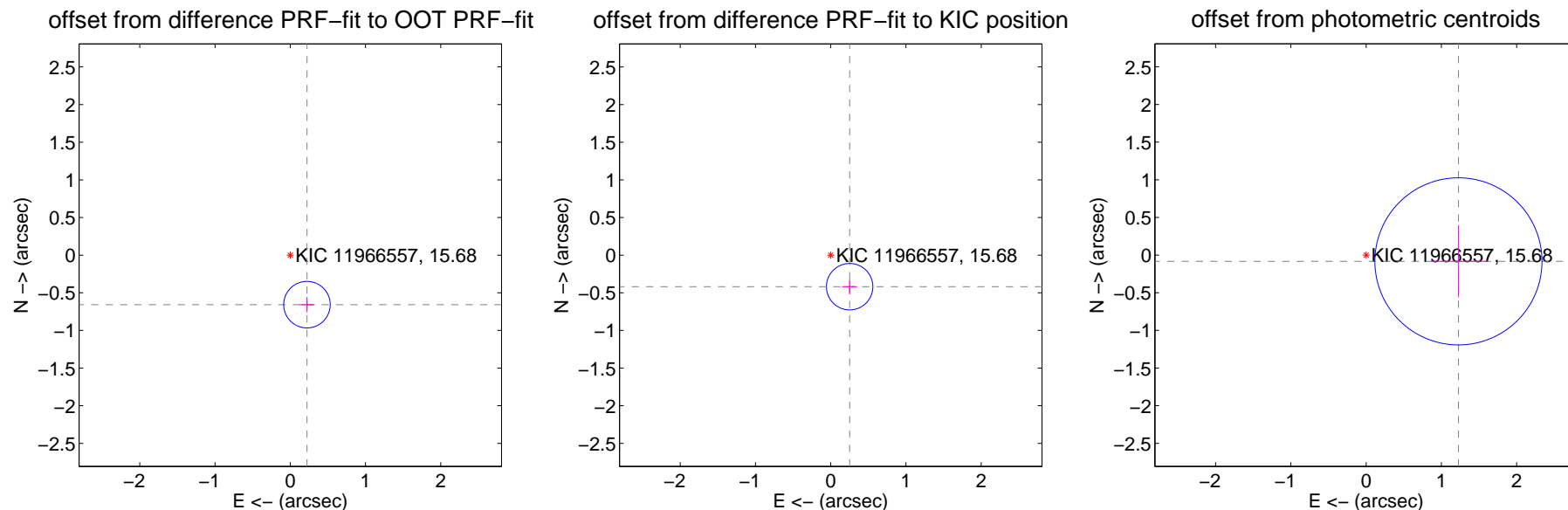
DV Centroid Data

Supplemental centroid analysis for 011966557-02. Kepler magnitude: 15.68. Transit SNR 12.44

There are 0 quarters with good PRF difference image offsets

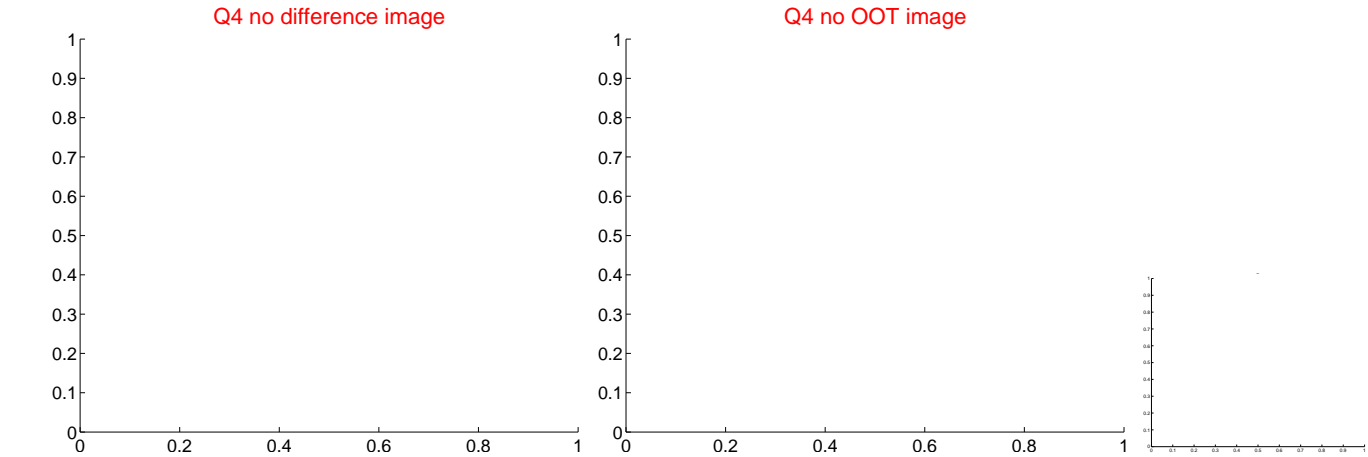
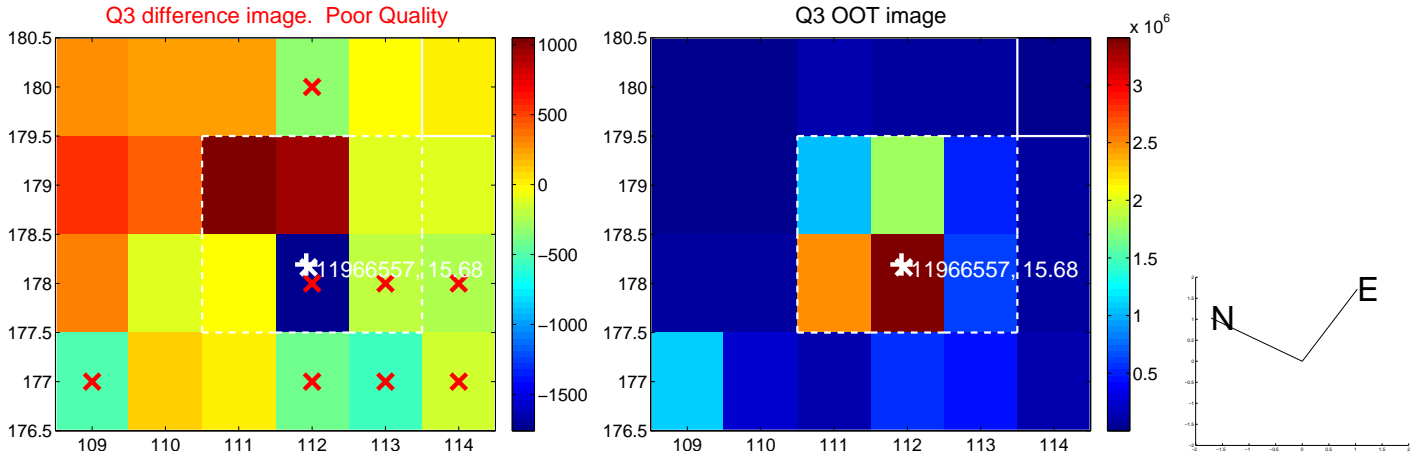
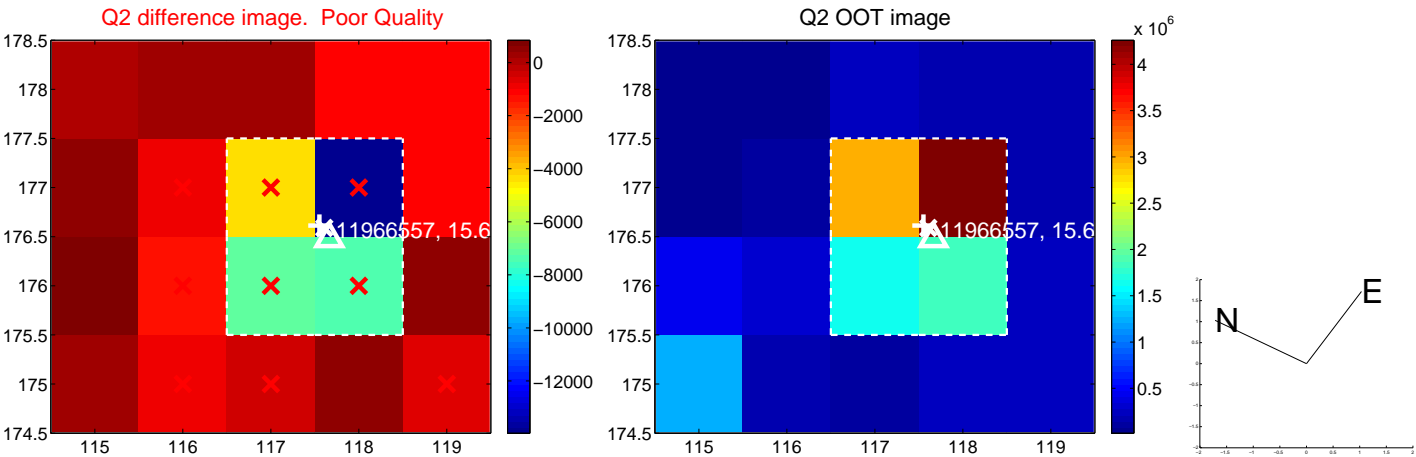
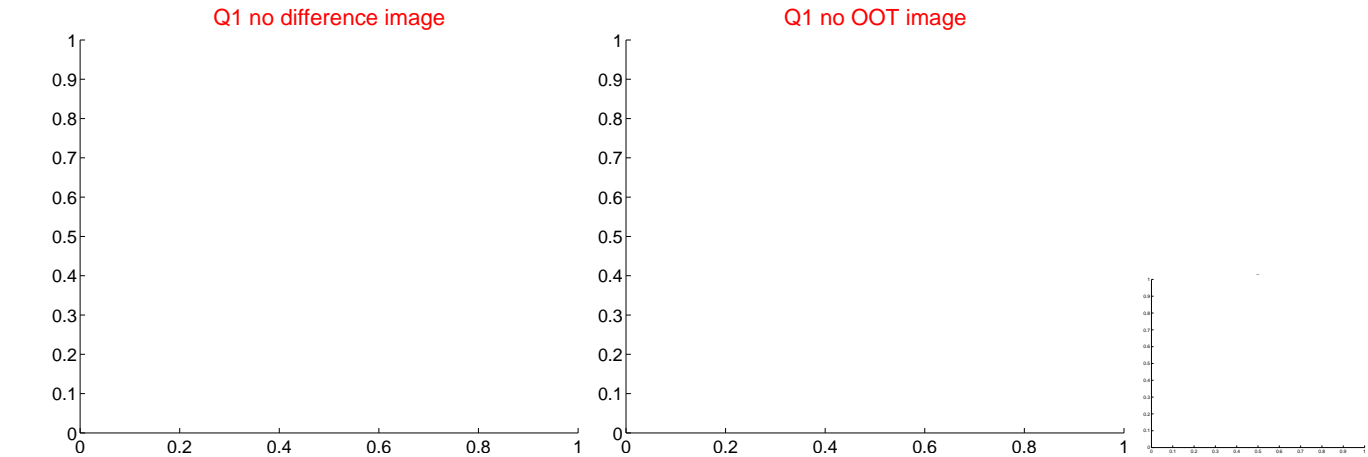
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.694 ± 0.103	6.74	-0.222 ± 0.102	-0.658 ± 0.103
PRF-fit source offset from KIC position	0.489 ± 0.103	4.75	-0.252 ± 0.102	-0.419 ± 0.103
photometric centroid source offset	1.23 ± 0.37	3.32	-1.23 ± 0.37	-0.08 ± 0.48



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.



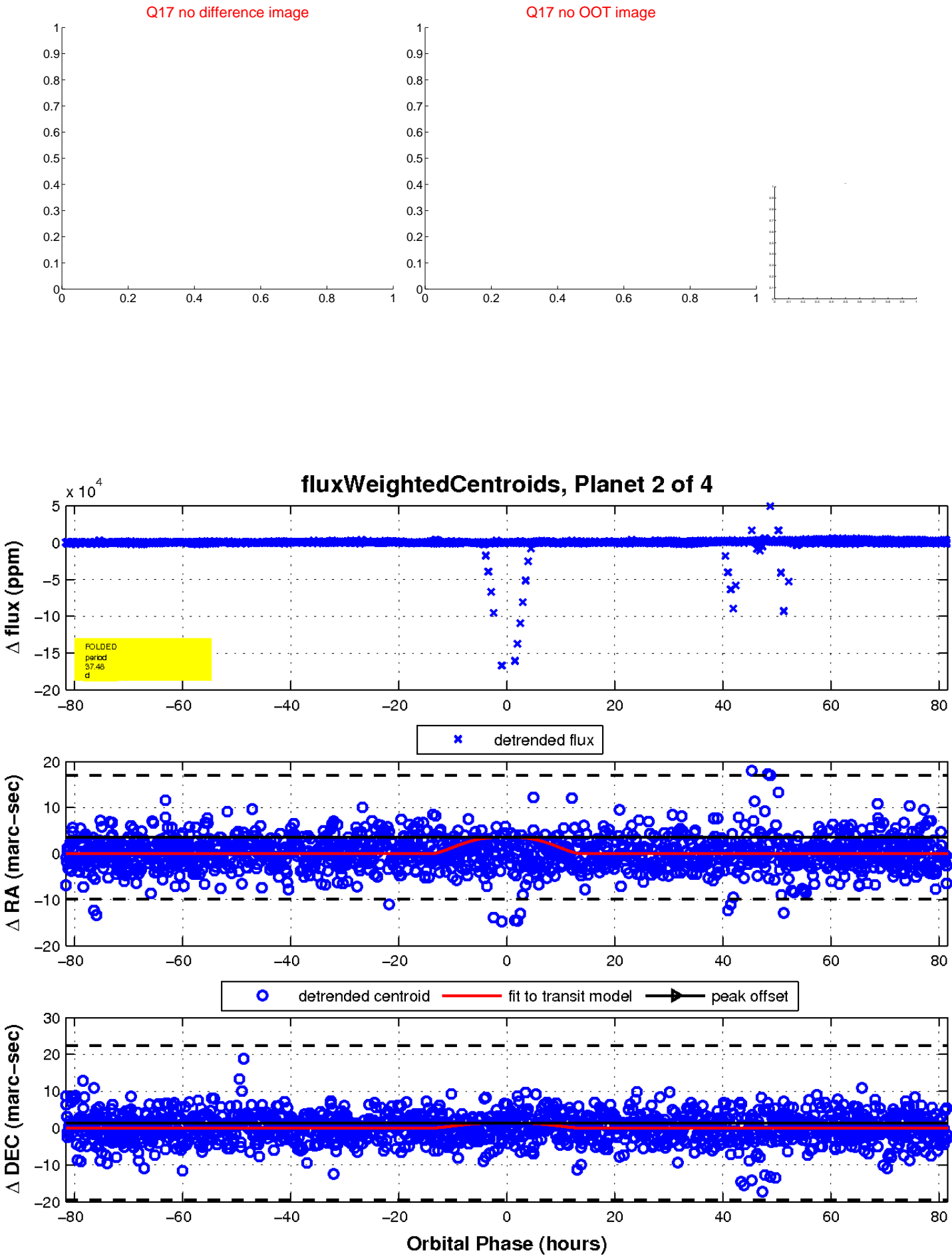
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

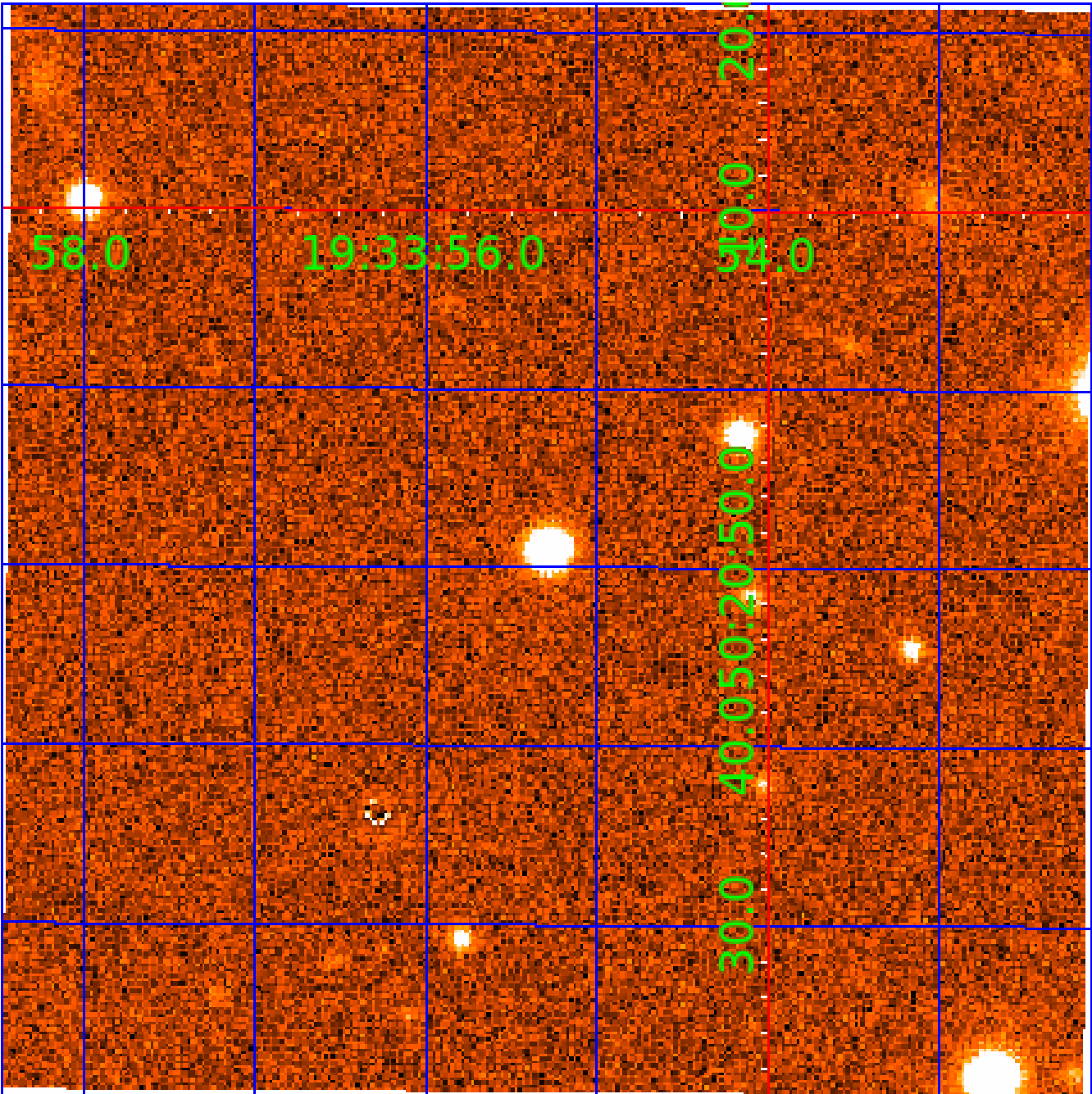


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011966557

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})
011966557-01	OBS	7498.01	60.299161	161.851425	318545.0	9.000	1302.8	-1.0	0.98	5995	35.77	12.65
011966557-02	OBS	No	37.483971	145.233102	3055.3	27.223	30.9	12.4	0.98	5995	6.69	23.85
011966557-03	OBS	No	40.197492	157.201747	79083.2	9.416	416.8	116.6	0.98	5995	38.94	21.73
011966557-04	OBS	No	39.001835	145.936533	2777.1	35.491	24.3	12.7	0.98	5995	9.55	22.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011966557-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—CENT_NOFITS
011966557-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011966557-03	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011966557-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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.

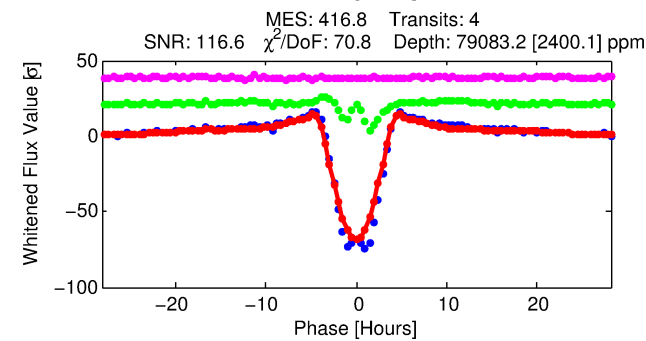
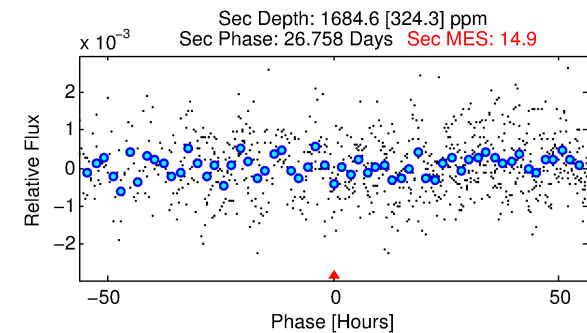
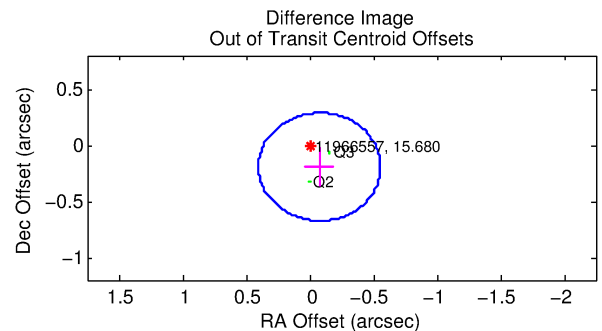
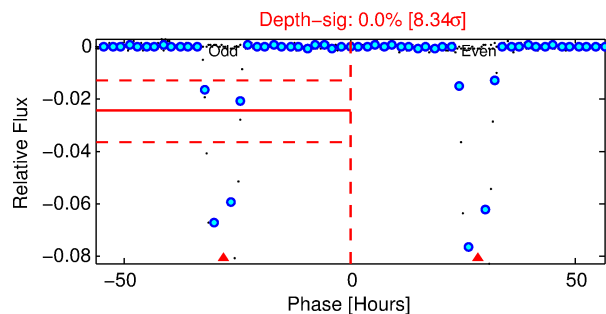
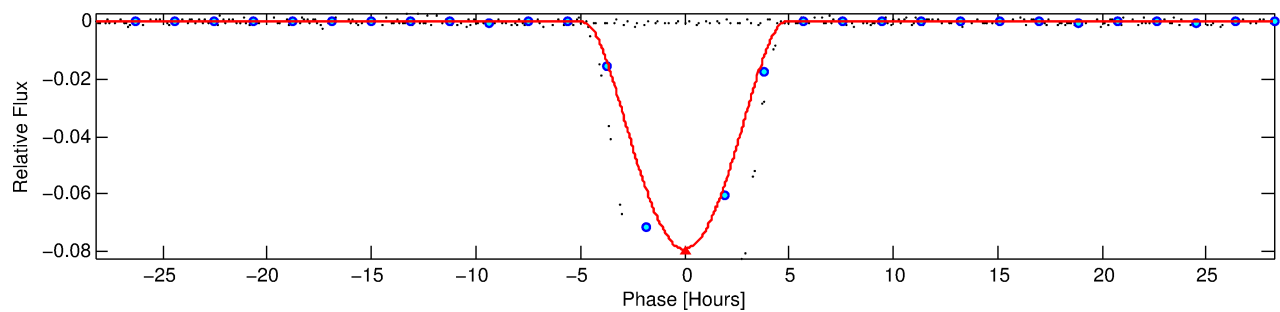
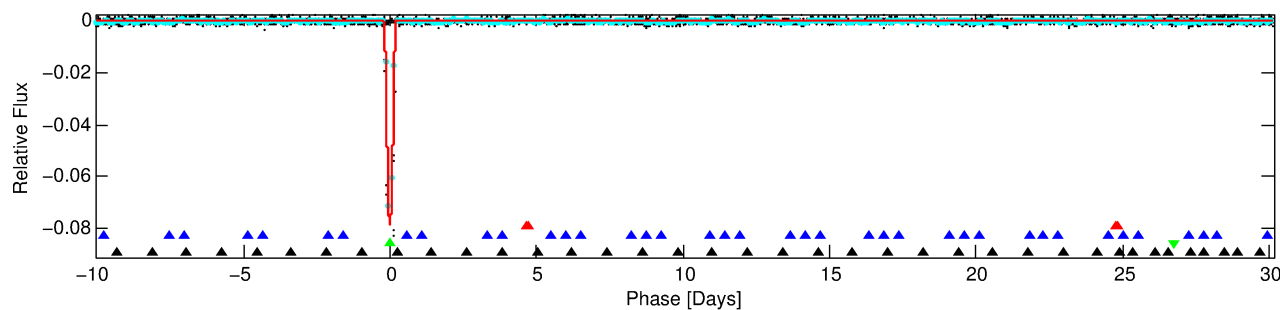
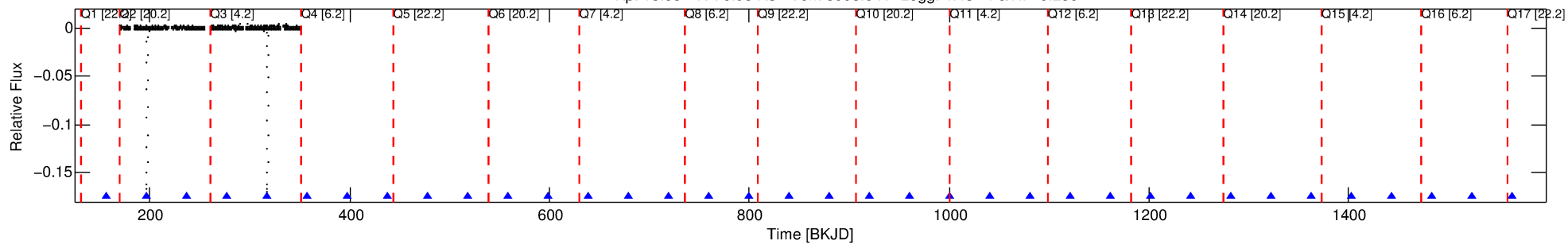
Ephemeris Match Information For 011966557-03

No Significant Match Found

DV One-Page Summary

KIC: 11966557 Candidate: 3 of 4 Period: 40.197 d
KOI: K07498 Corr: No Ephemeris Match

Kp: 15.68 R*: 0.98 Rs Teff: 5995.0 K Logg: 4.43 Fe/H: -0.280



DV Fit Results:

Period = 40.19749 [0.00251] d
Epoch = 157.2017 [0.0061] BKJD
Rp/R* = 0.3652 [0.3616]
a/R* = 33.60 [1.32]
b = 0.90 [0.56]
Seff = 21.73 [8.21]
Teff = 551 [52] K
Rp = 38.93 [40.19] Re
a = 0.2255 [0.0554] AU
Ag = 31.08 [62.83] [0.48σ]
Teffp = 2010 [1002] K [1.46σ]

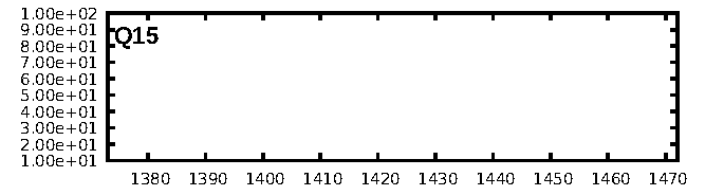
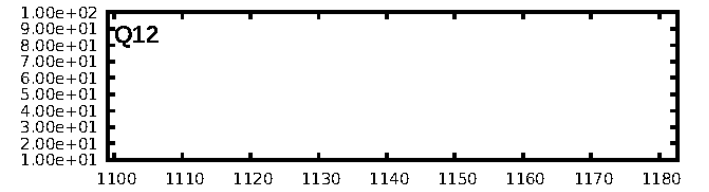
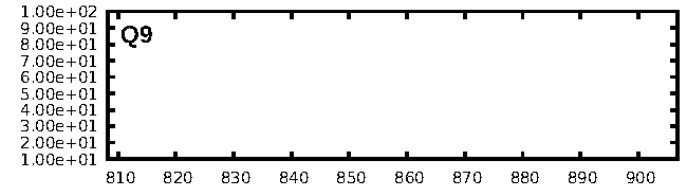
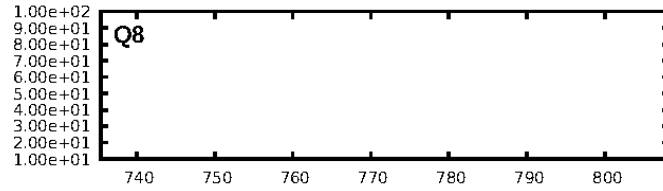
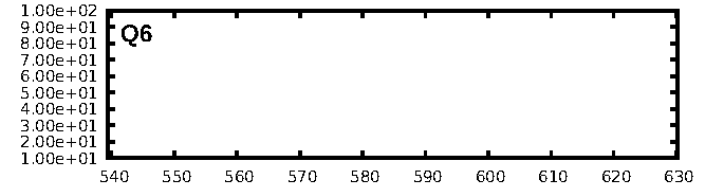
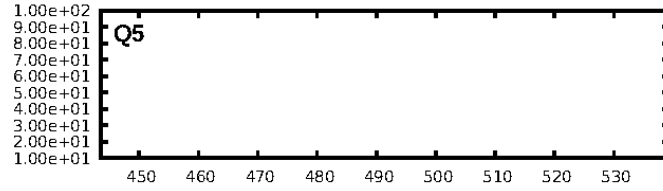
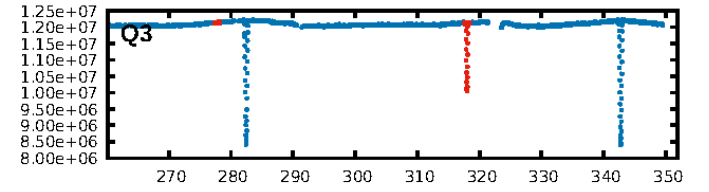
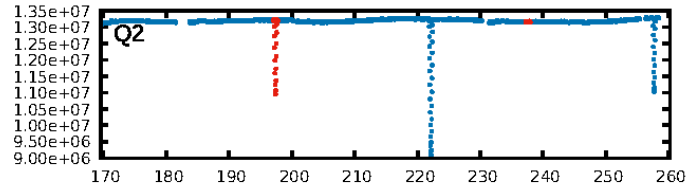
DV Diagnostic Results:

ShortPeriod-sig: 56.5% [0.78σ]
LongPeriod-sig: 100.0% [37.04σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.422
Centroid-sig: 0.0%
Centroid-so: 0.356 arcsec [12.36σ]
OotOffset-rm: 0.208 arcsec [1.30σ]
KicOffset-rm: 0.069 arcsec [0.87σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

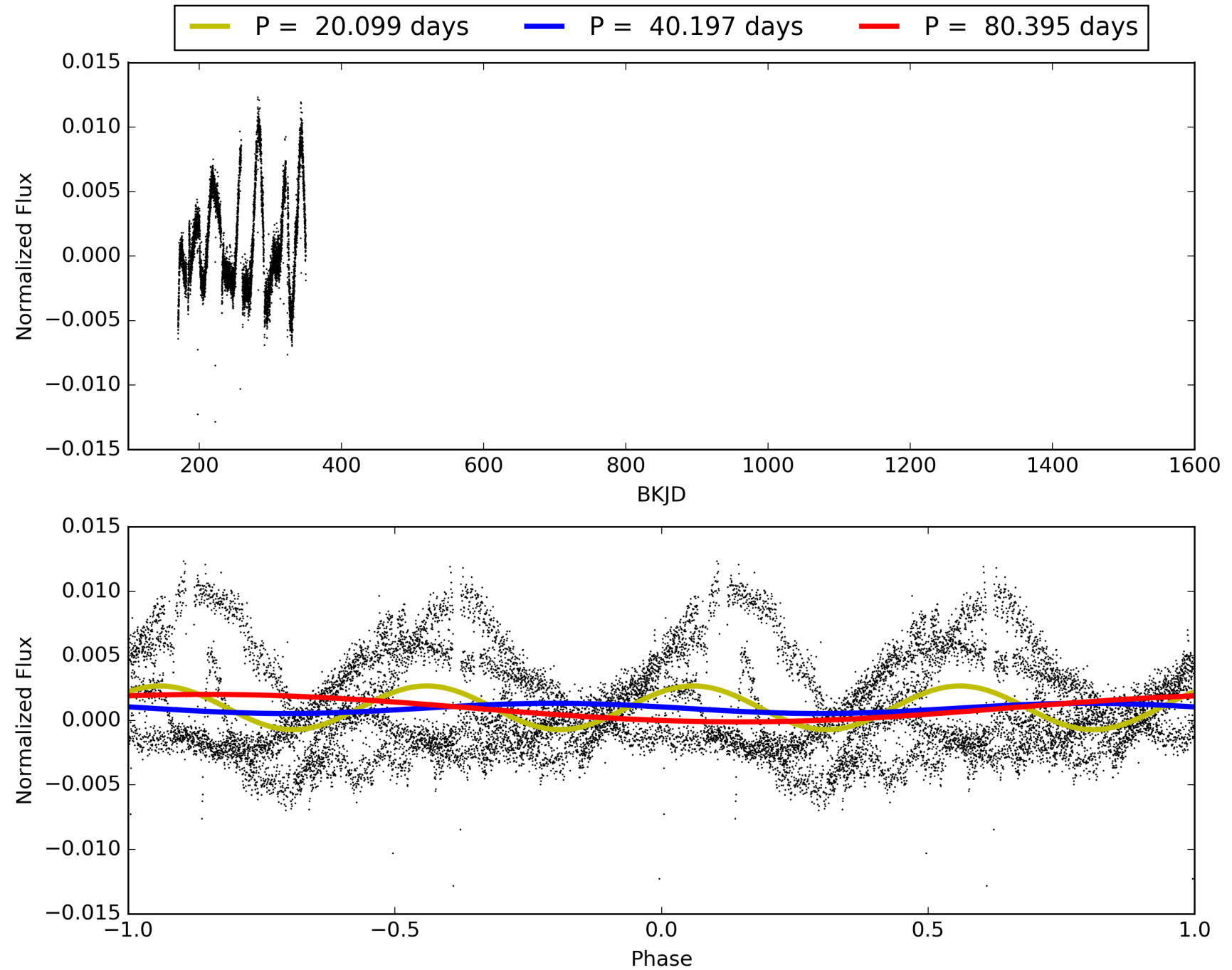
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:46:31 Z

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

TCE 011966557-03, PDC Light Curves

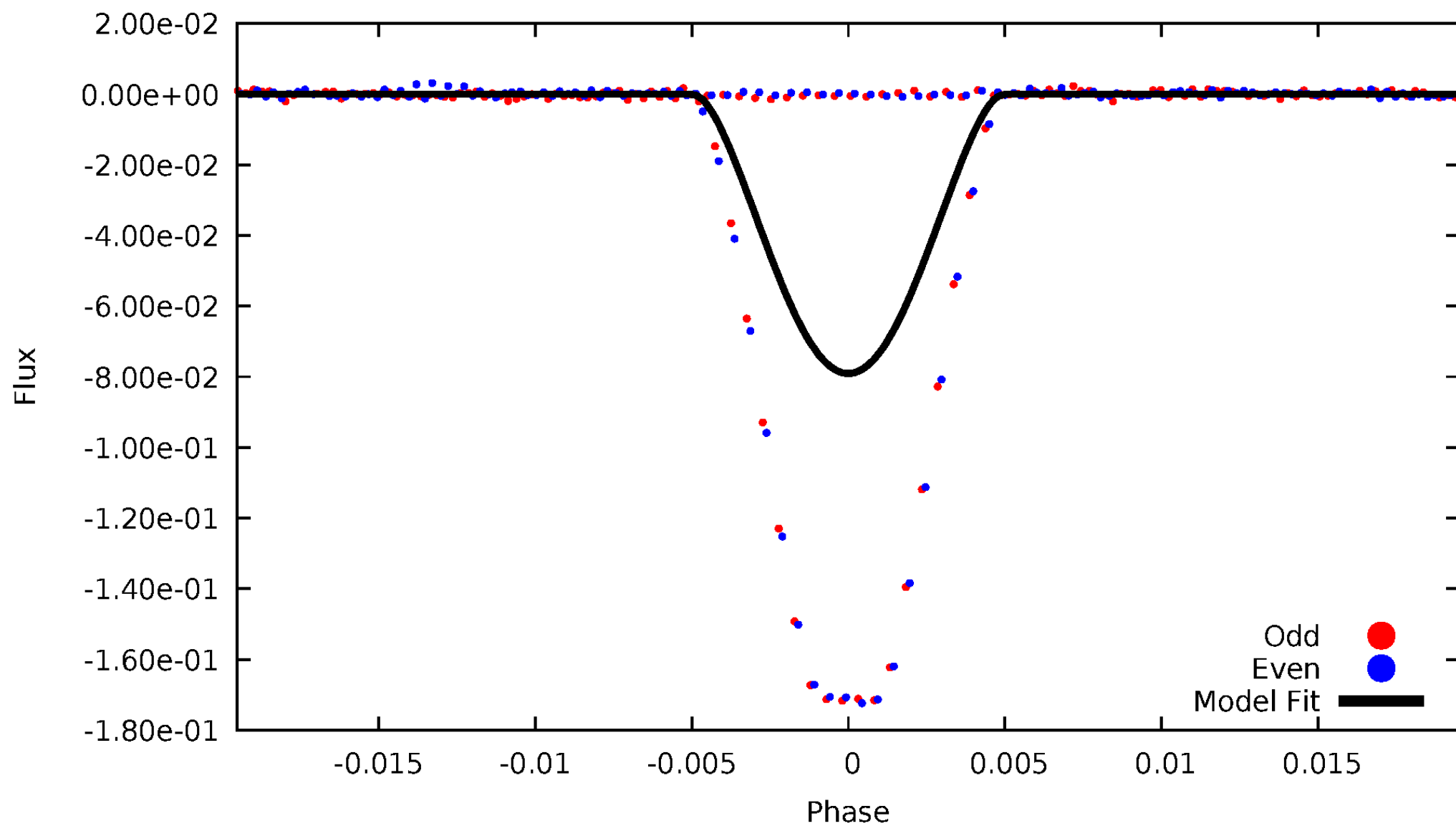


TCE 011966557-03



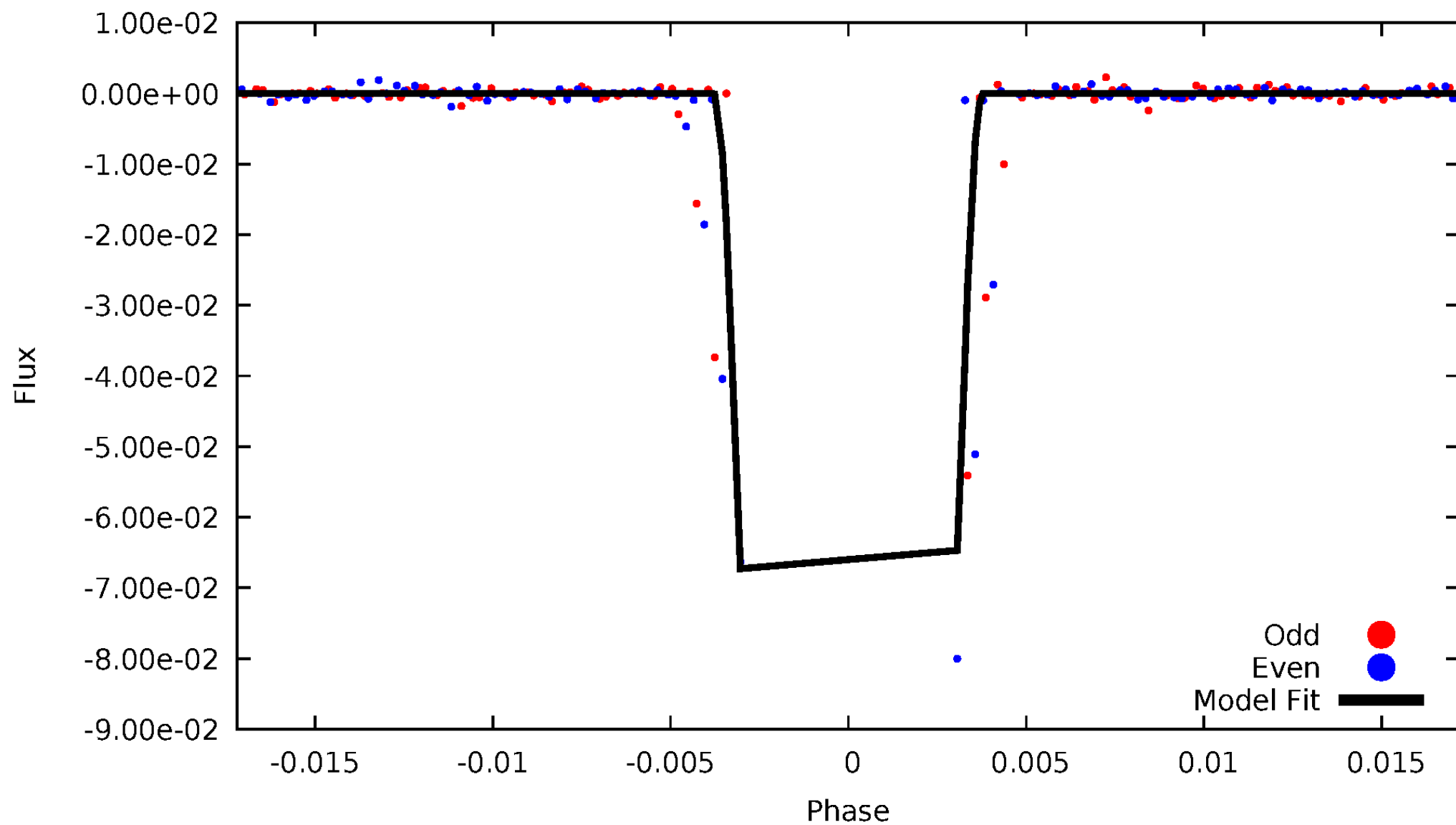
DV Odd/Even

TCE 011966557-03



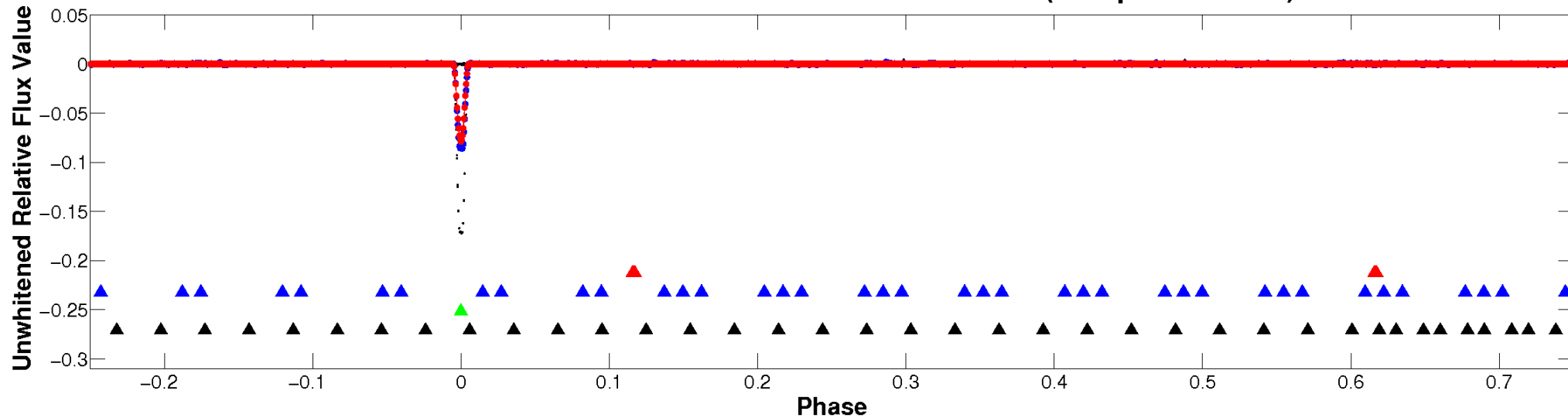
ALT Odd/Even

TCE 011966557-03

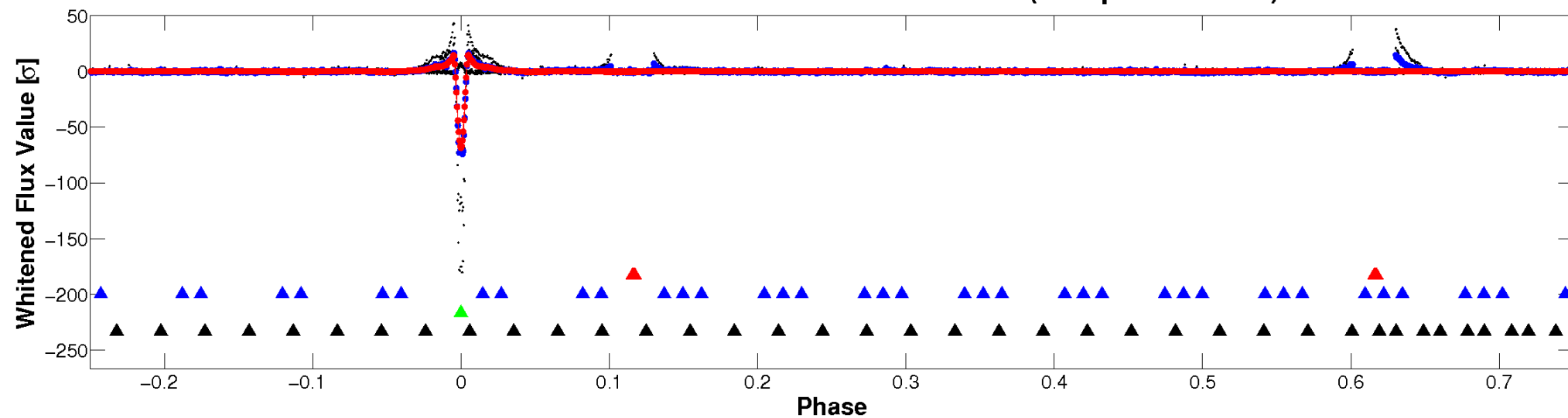


Non-Whitened Vs. Whitened Light Curve

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

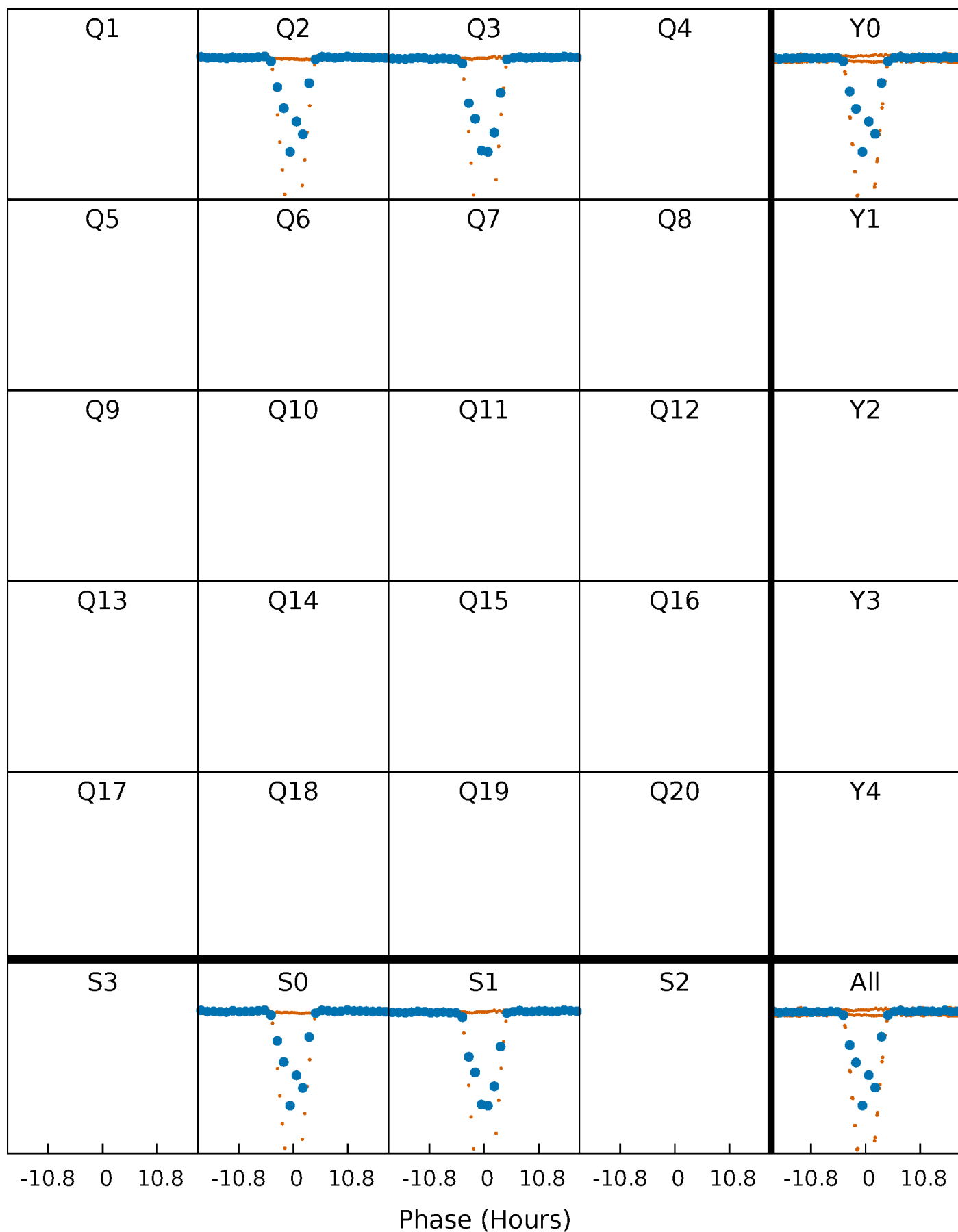


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



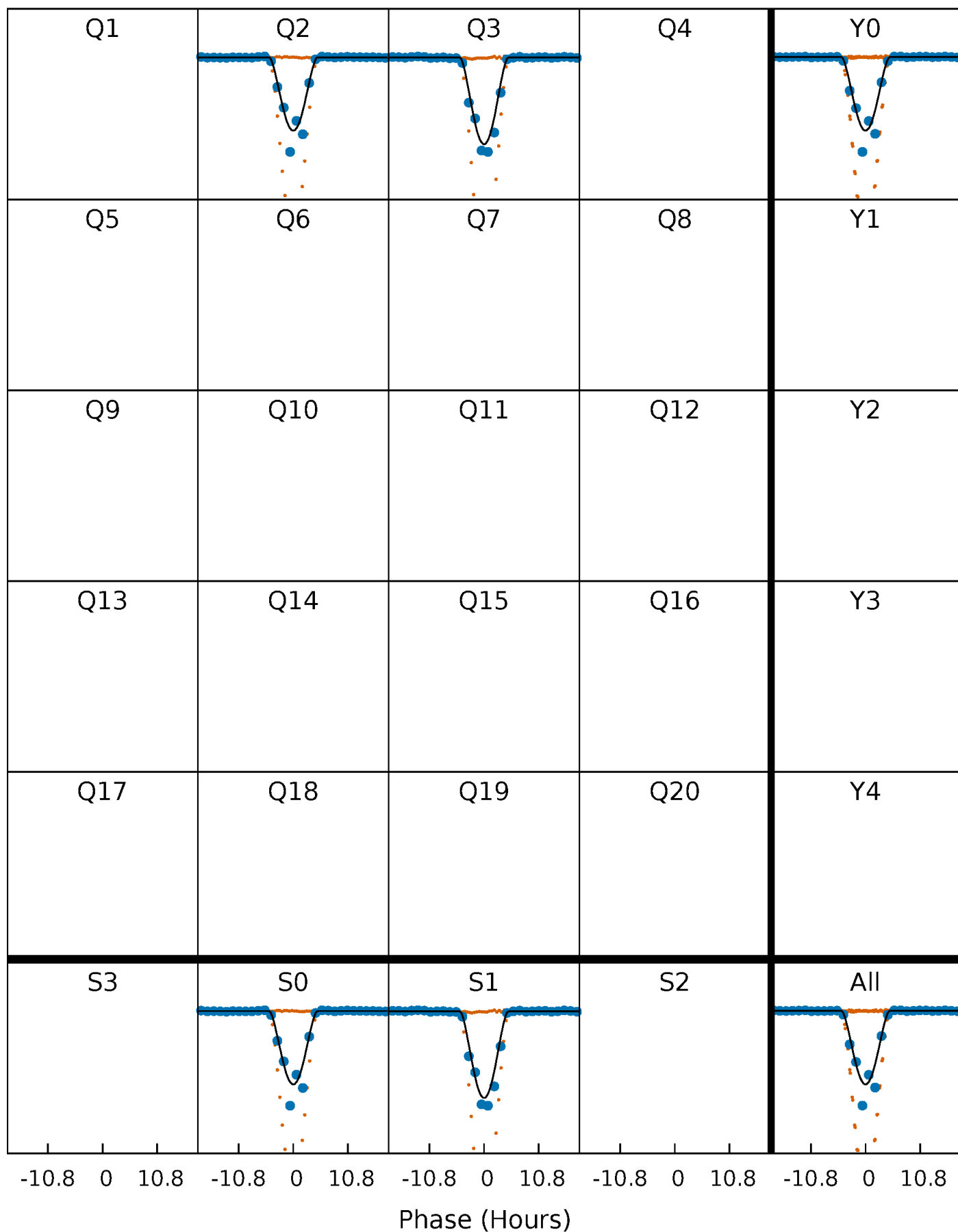
PDC Quarter-Phased Transit Curves

TCE 011966557-03 P= 40.197492 Days $T_0=157.201747$ (BKJD)



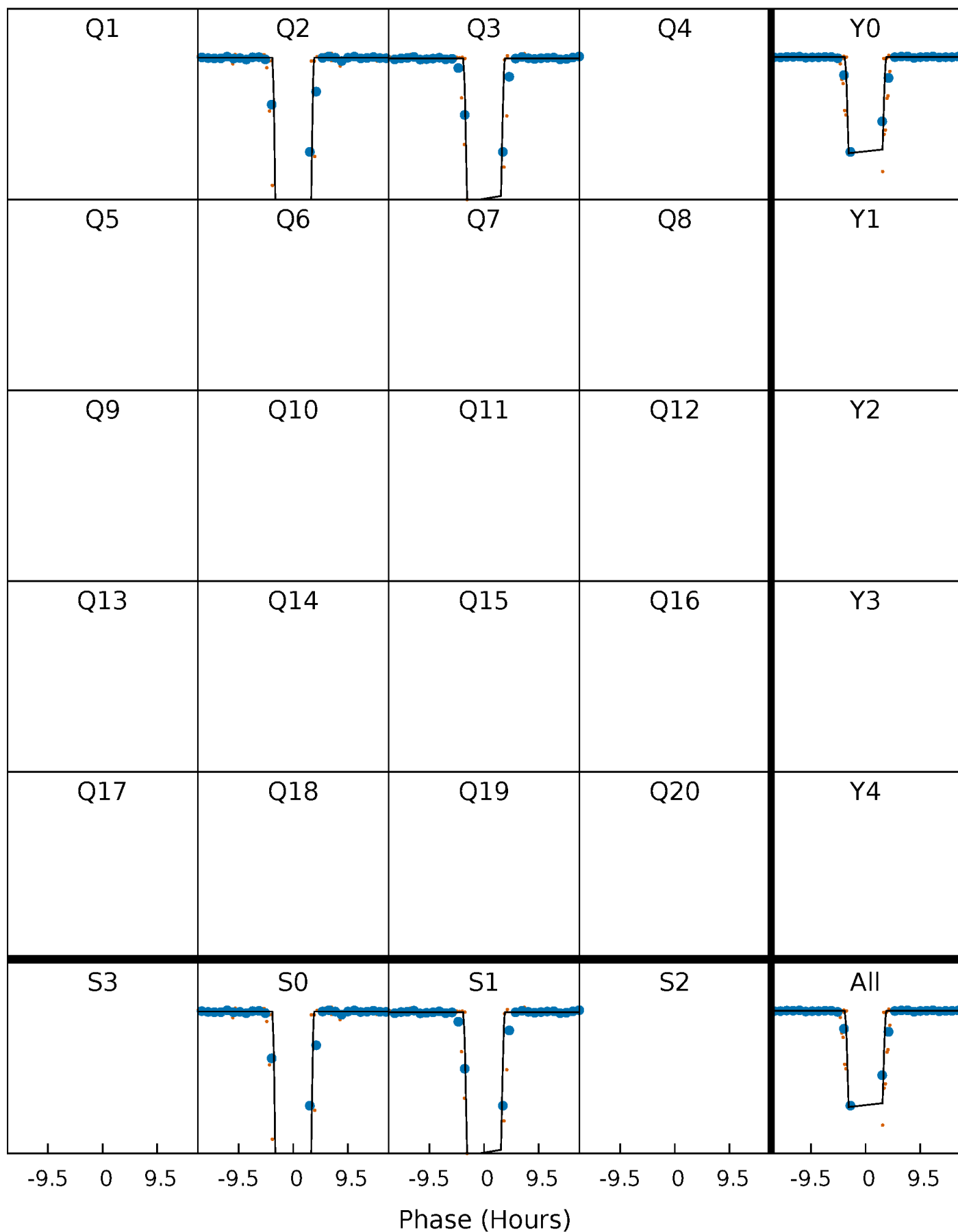
DV Quarter-Phased Transit Curves

TCE 011966557-03 P= 40.197492 Days $T_0=157.201747$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

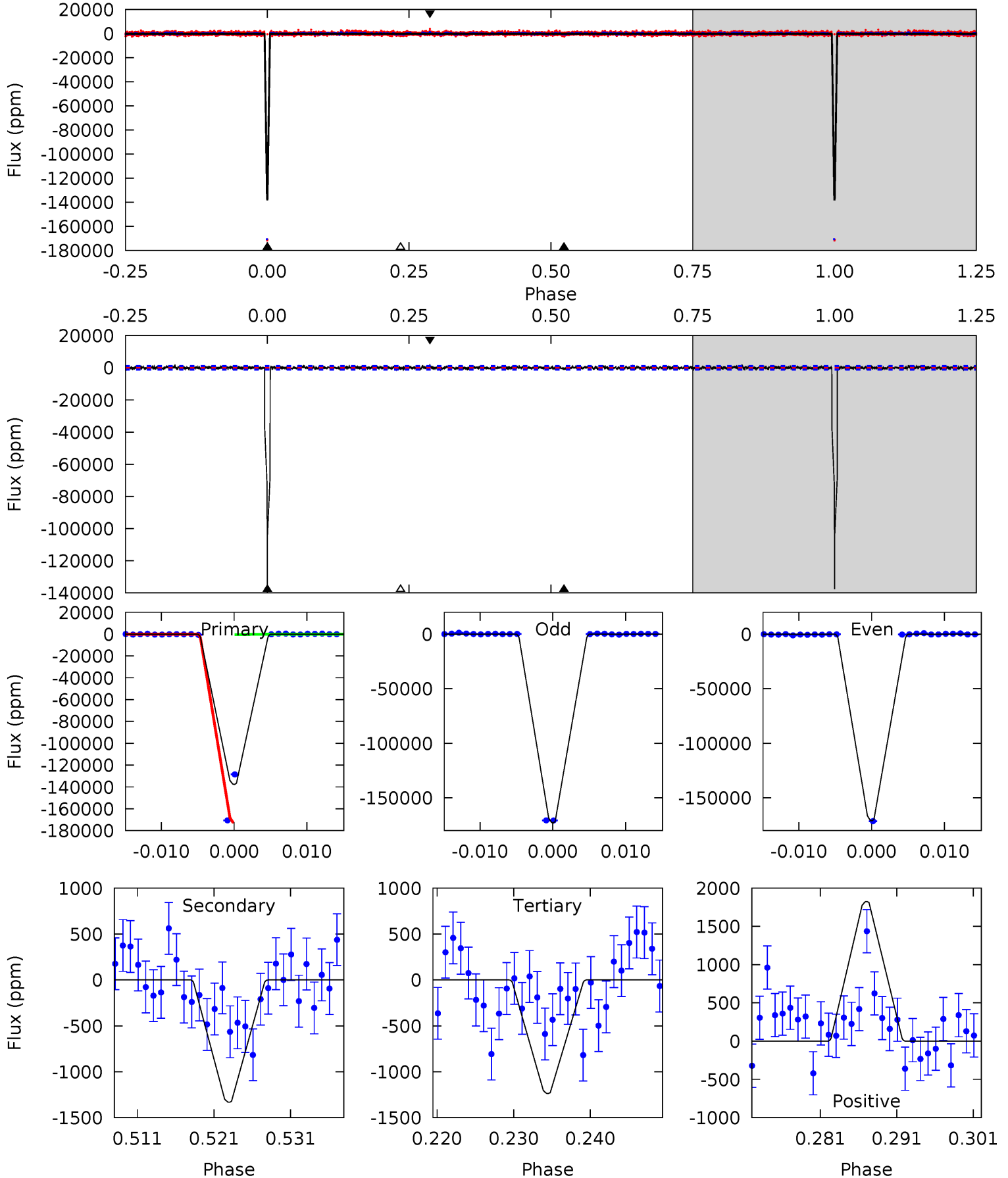
TCE 011966557-03 P= 40.196187 Days $T_0=157.203402$ (BKJD)



DV Model-Shift Uniqueness Test

011966557-03, P = 40.197492 Days, E = 157.201747 Days

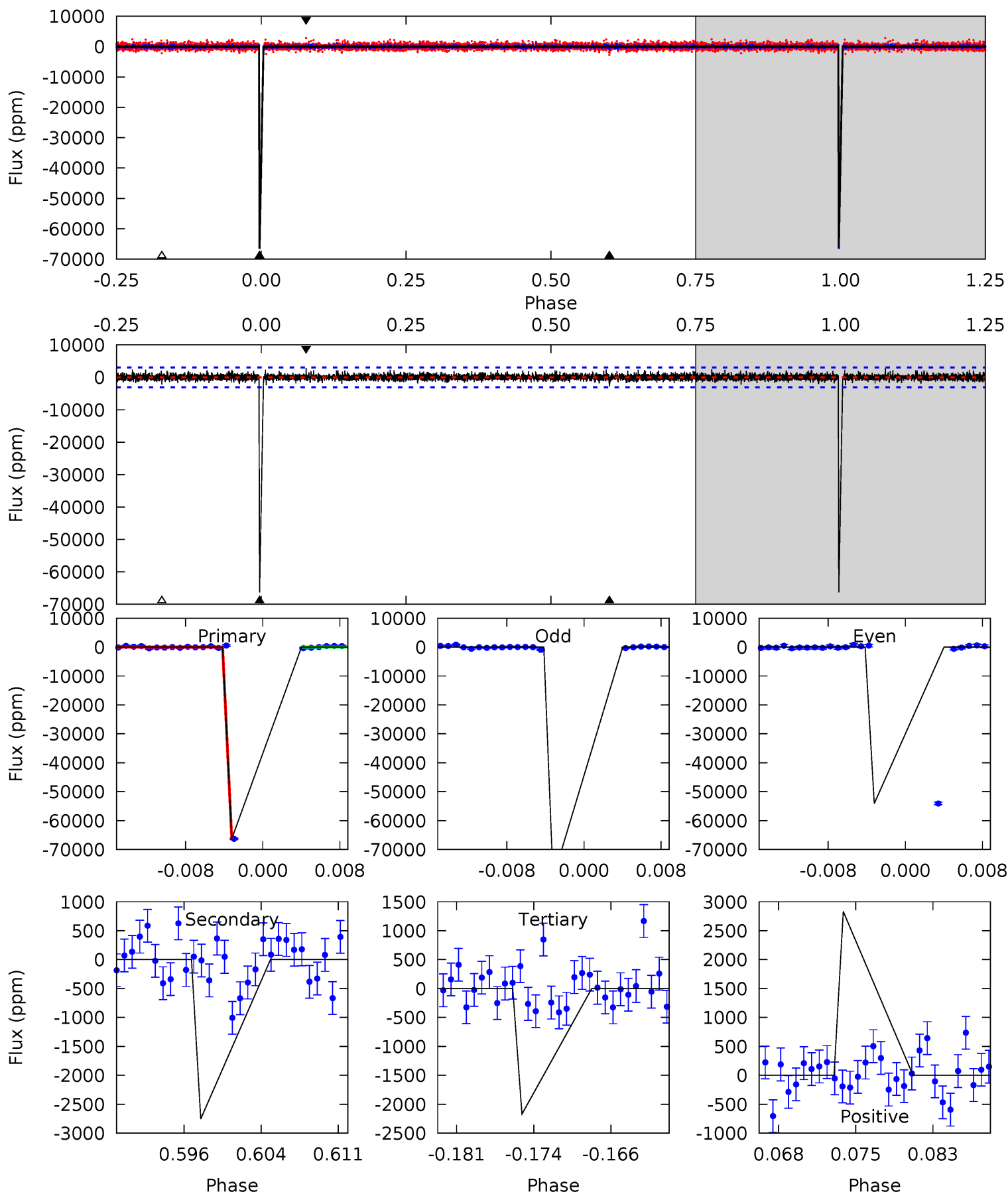
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
610.7	5.91	5.49	8.09	5.03	2.58	1.63	605.2	602.6	0.42	-2.18	3.93	1.00	0.01	359.5



Alt Model-Shift Uniqueness Test

011966557-03, P = 40.196187 Days, E = 157.203402 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
109.7	4.56	3.59	4.68	5.08	2.67	1.00	106.2	105.1	0.97	-0.13	30.5	0.91	0.04	0



Stellar Parameters For KIC 011966557

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5995^{+180}_{-180}	$4.434^{+0.084}_{-0.196}$	$-0.280^{+0.300}_{-0.300}$	$0.977^{+0.285}_{-0.142}$	$0.946^{+0.132}_{-0.108}$	$1.428^{+0.628}_{-0.705}$
	+3%/-3%	+2%/-4%	+107%/-107%	+29%/-15%	+14%/-11%	+44%/-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 011966557-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1333 ± 225	$46.13^{+37.15}_{-29.30}$	783^{+55}_{-41}	2593^{+852}_{-354}	18^{+113}_{-13}
Alt.	-2754 ± 604	$42.71^{+36.45}_{-29.17}$	784^{+53}_{-44}	2919^{+1192}_{-429}	43^{+336}_{-31}

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

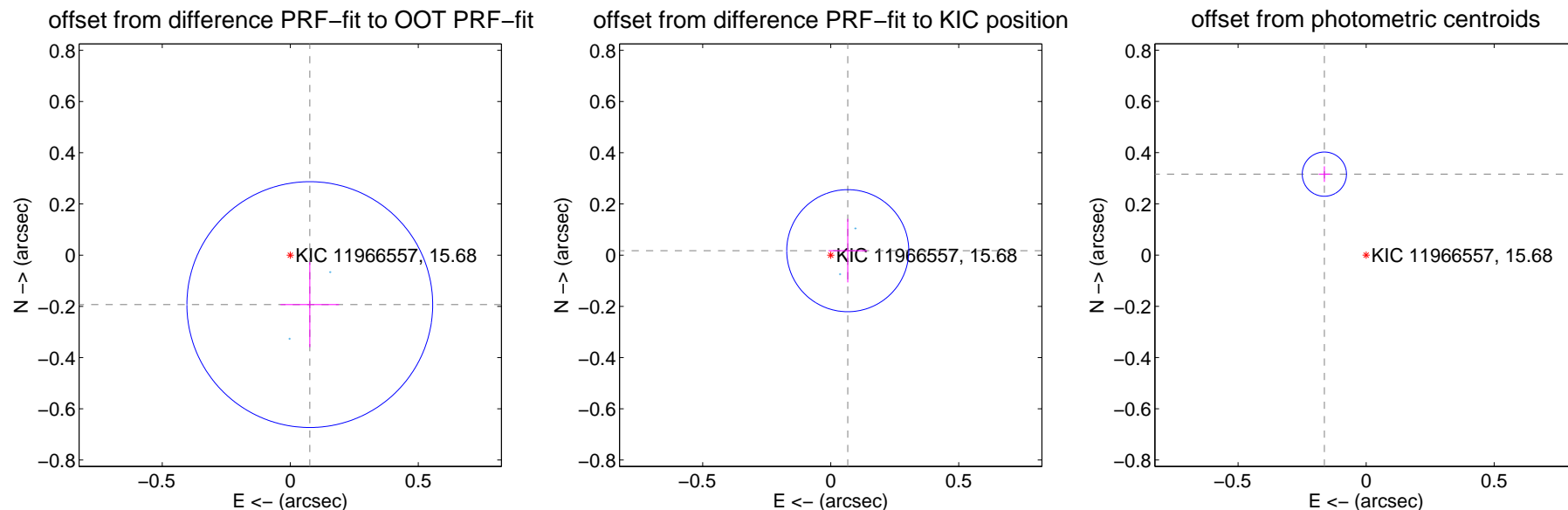
DV Centroid Data

Supplemental centroid analysis for 011966557-03. Kepler magnitude: 15.68. Transit SNR 116.60

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.208 ± 0.160	1.30	-0.076 ± 0.114	-0.193 ± 0.166
PRF-fit source offset from KIC position	0.069 ± 0.079	0.87	-0.067 ± 0.075	0.017 ± 0.124
photometric centroid source offset	0.36 ± 0.03	12.36	0.16 ± 0.02	0.32 ± 0.03



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

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

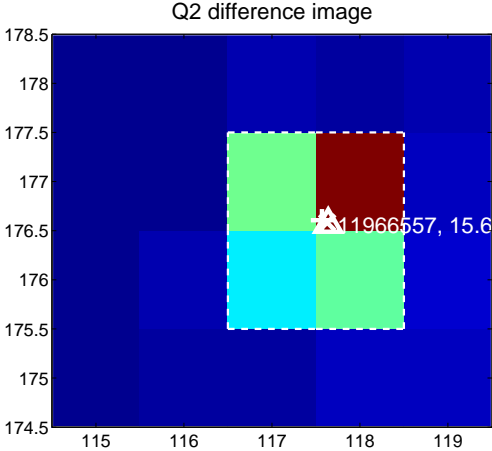
Q1 no difference image



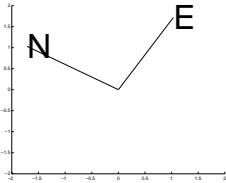
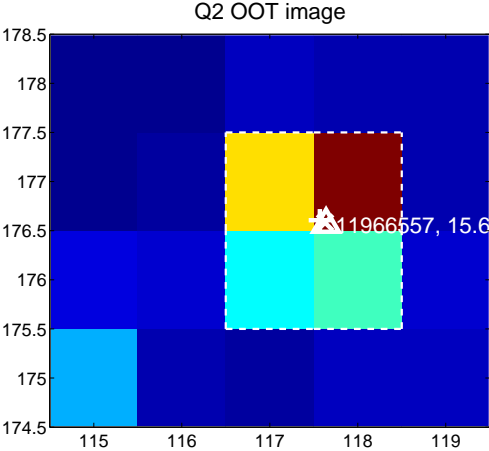
Q1 no OOT image



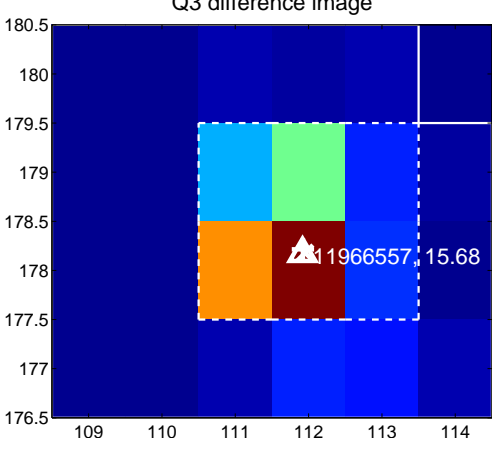
Q2 difference image



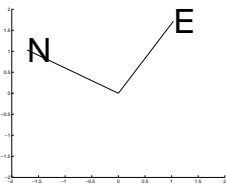
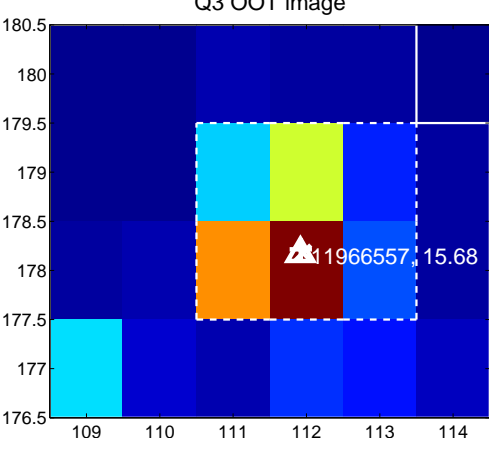
Q2 OOT image



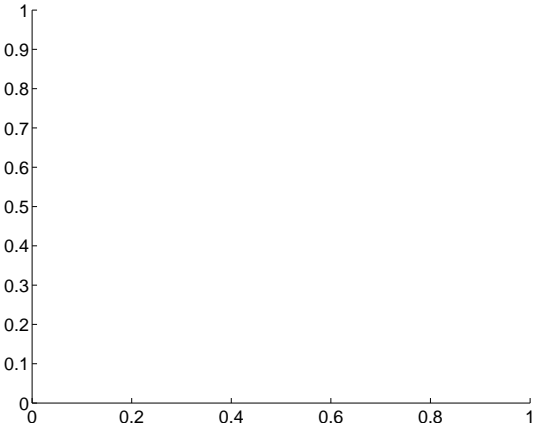
Q3 difference image



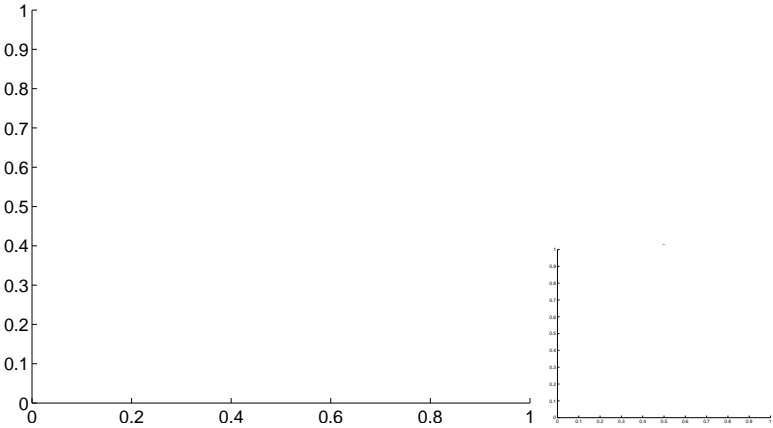
Q3 OOT image



Q4 no difference image



Q4 no OOT image



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



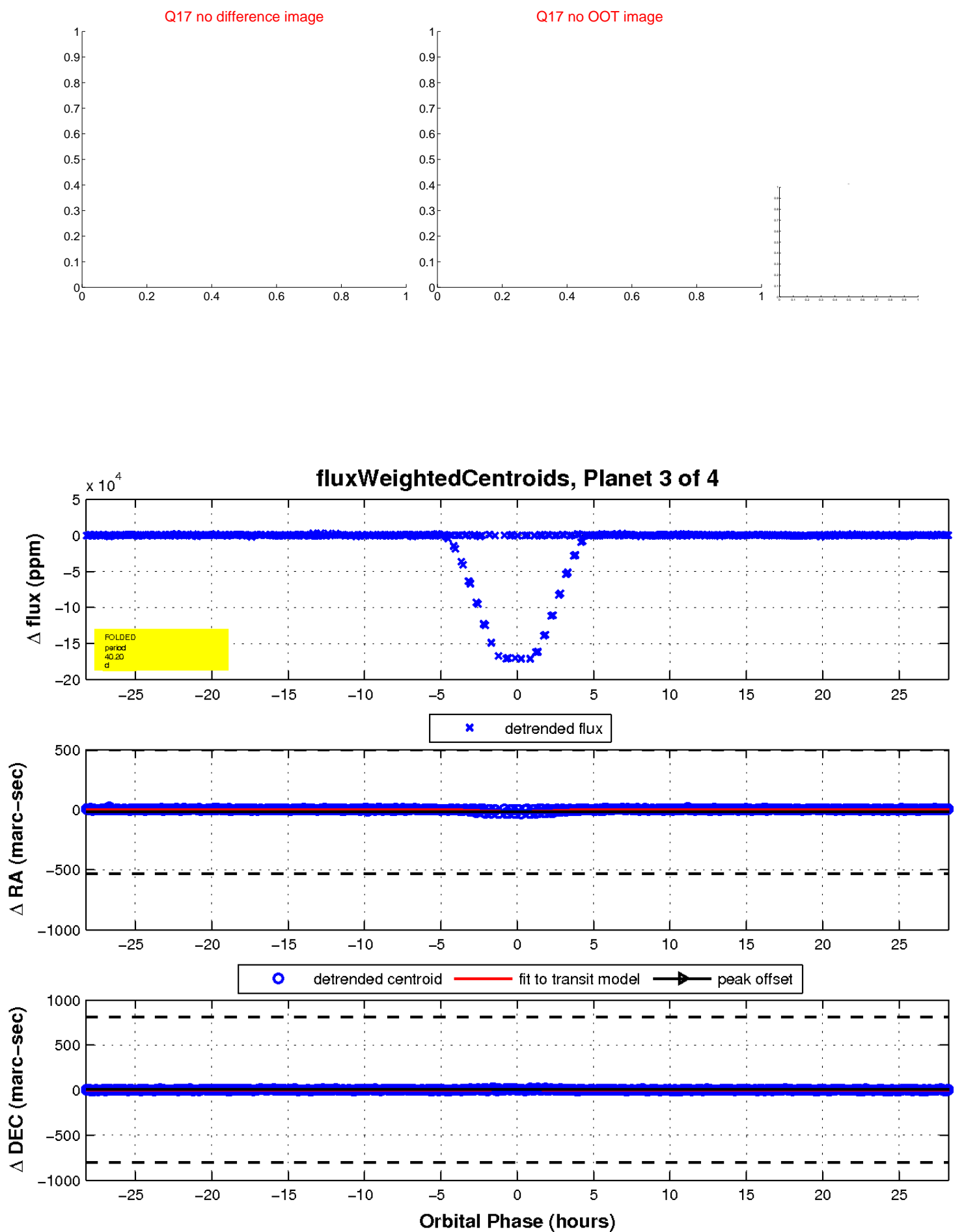
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

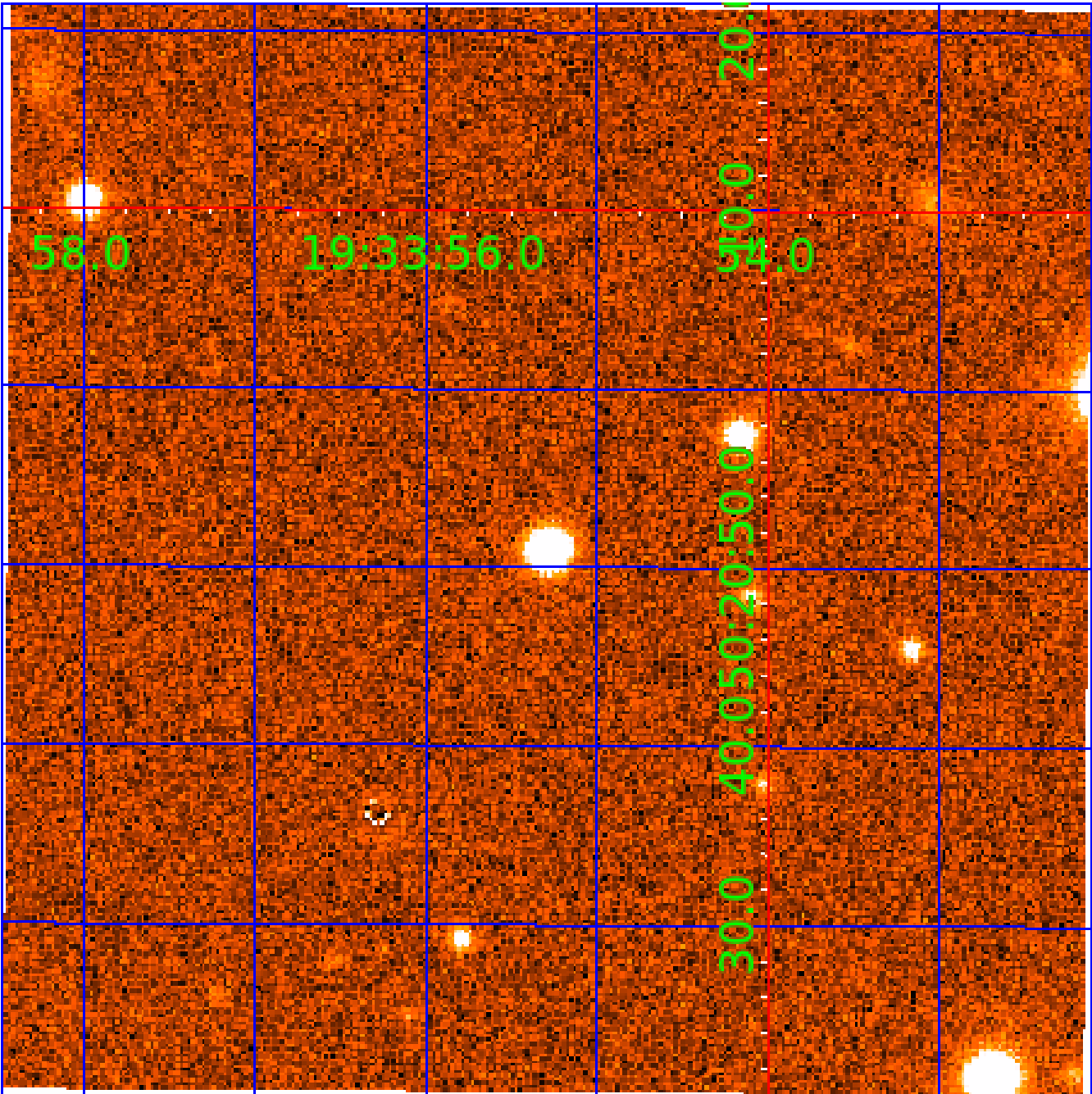


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011966557

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})
011966557-01	OBS	7498.01	60.299161	161.851425	318545.0	9.000	1302.8	-1.0	0.98	5995	35.77	12.65
011966557-02	OBS	No	37.483971	145.233102	3055.3	27.223	30.9	12.4	0.98	5995	6.69	23.85
011966557-03	OBS	No	40.197492	157.201747	79083.2	9.416	416.8	116.6	0.98	5995	38.94	21.73
011966557-04	OBS	No	39.001835	145.936533	2777.1	35.491	24.3	12.7	0.98	5995	9.55	22.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011966557-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—CENT_NOFITS
011966557-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011966557-03	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011966557-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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 011966557-04

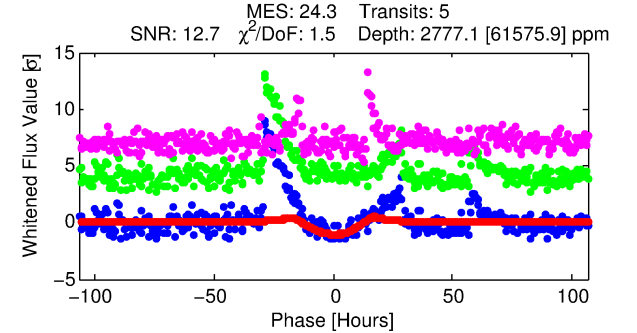
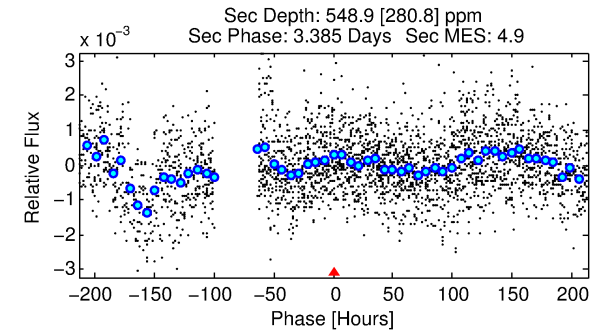
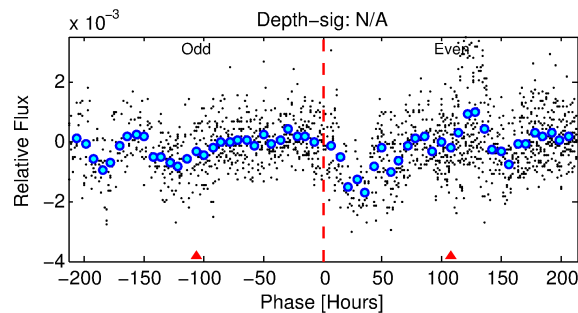
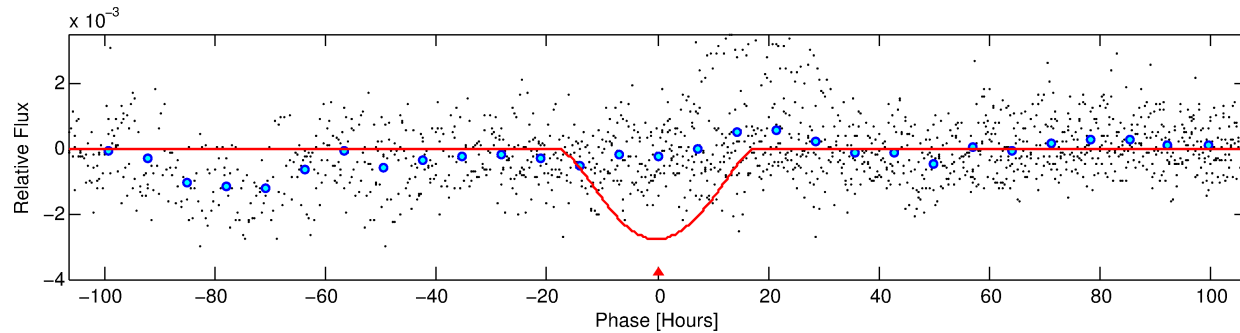
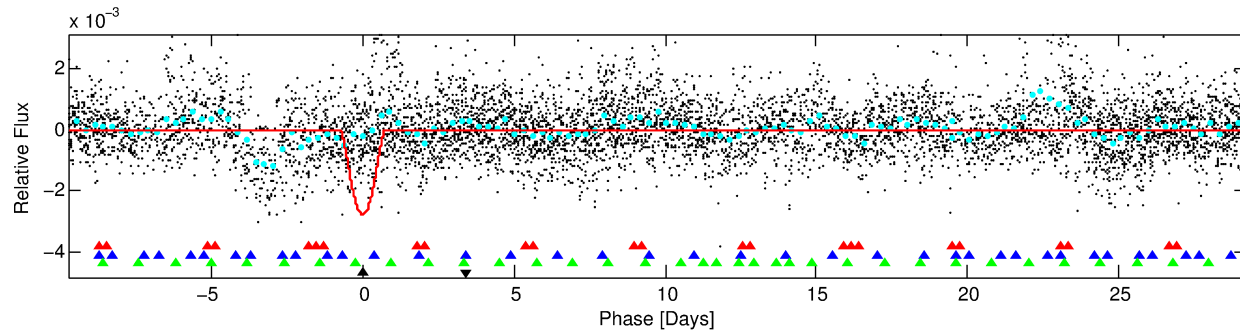
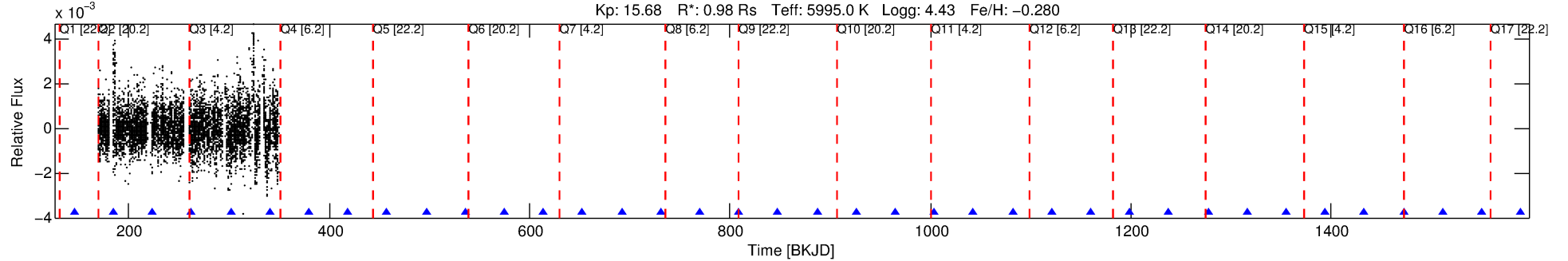
No Significant Match Found

DV One-Page Summary

KIC: 11966557 Candidate: 4 of 4 Period: 39.002 d

KOI: K07498 Corr: No Ephemeris Match

Kp: 15.68 R*: 0.98 Rs Teff: 5995.0 K Logg: 4.43 Fe/H: -0.280



DV Fit Results:

Period = 39.00184 [0.02775] d
Epoch = 145.9365 [0.0813] BKJD
Rp/R* = 0.0896 [0.2368]
a/R* = 3.78 [1.83]
b = 1.00 [1.00]
Seff = 22.62 [8.55]
Teq = 556 [53] K
Rp = 9.55 [25.40] Re
a = 0.2210 [0.0543] AU
Ag = 161.52 [859.56] [0.19σ]
Teffp = 3065 [4070] K [0.62σ]

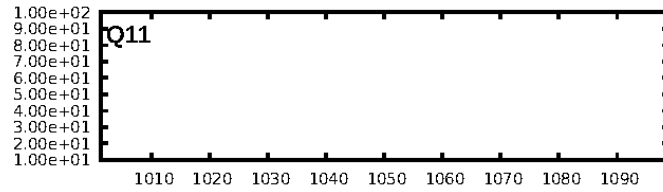
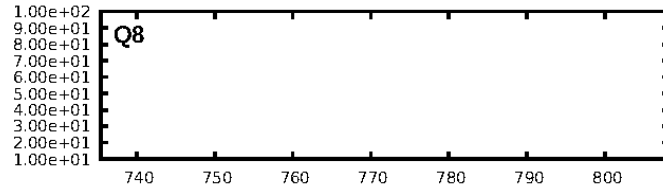
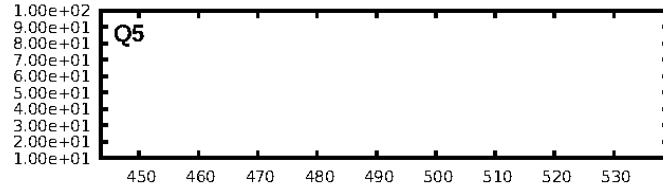
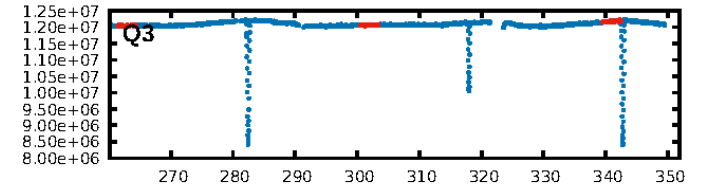
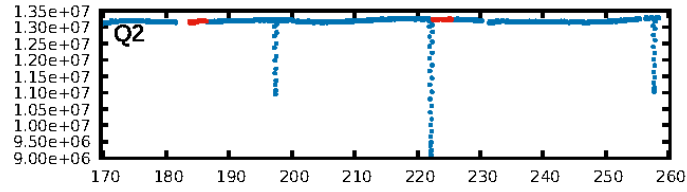
DV Diagnostic Results:

ShortPeriod-sig: 58.5% [0.81σ]
LongPeriod-sig: 56.5% [0.78σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 58.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -1.212
Centroid-sig: 28.9%
Centroid-so: 0.331 arcsec [0.90σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [1/1]

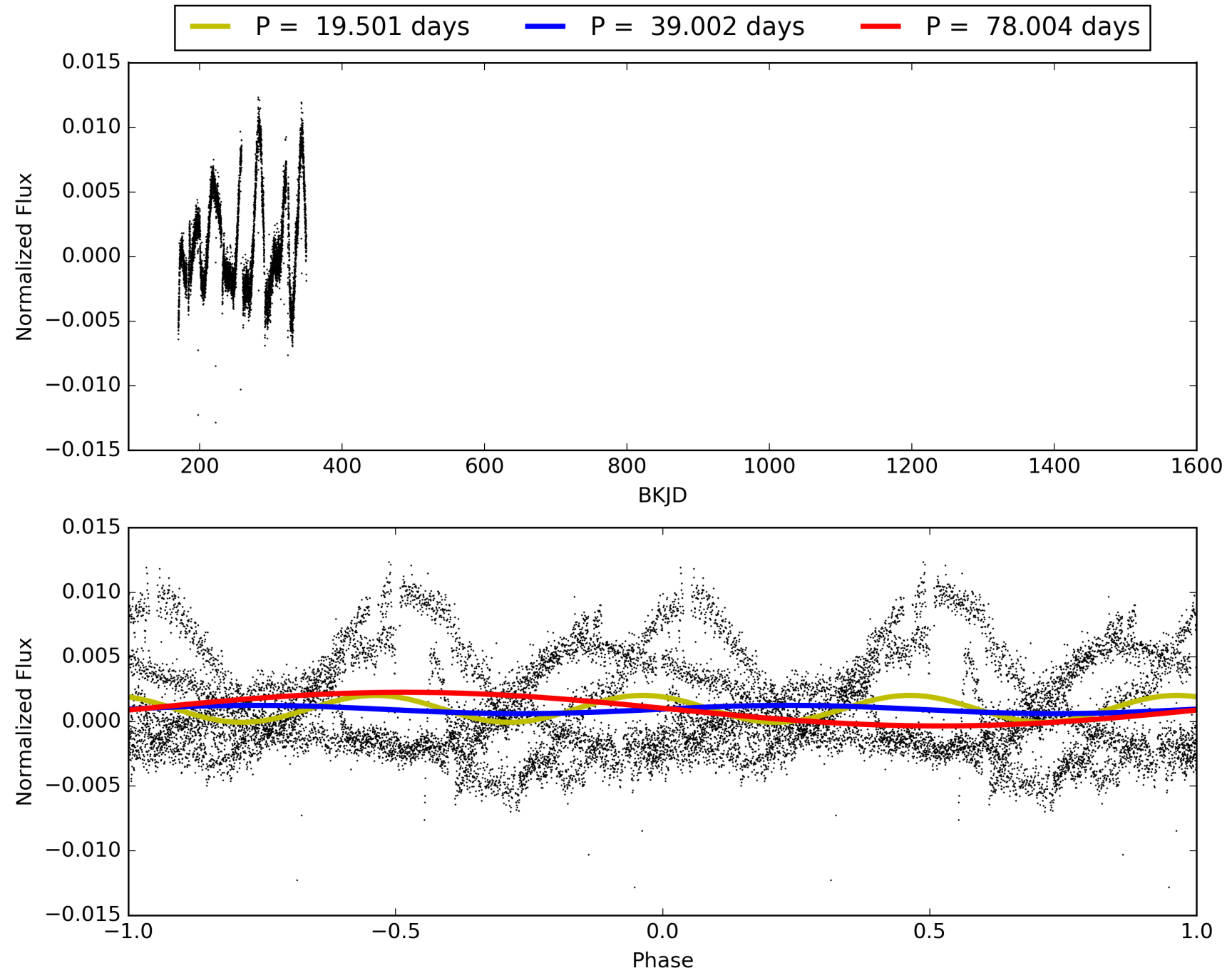
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:46:35 Z

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

TCE 011966557-04, PDC Light Curves

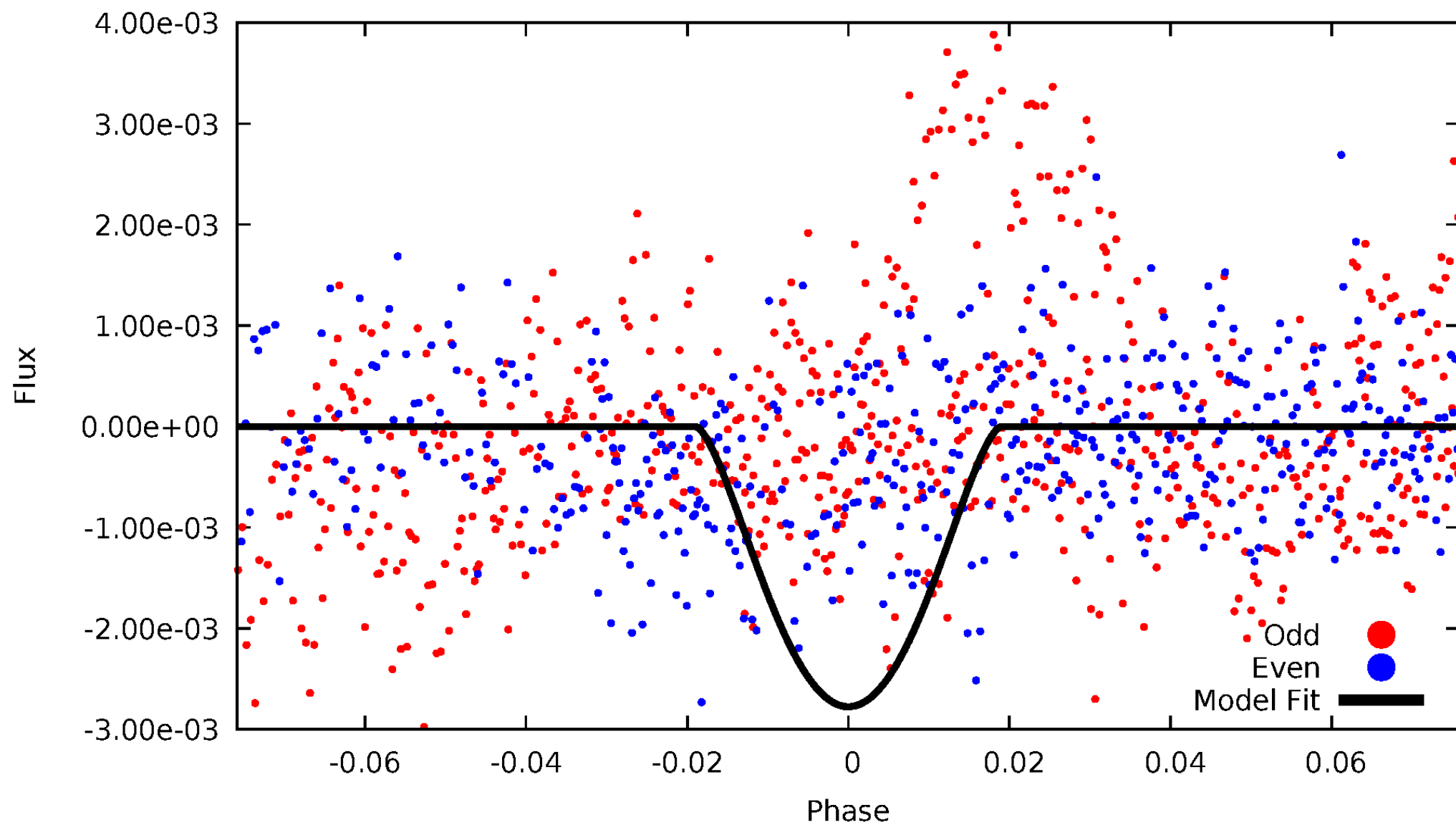


TCE 011966557-04



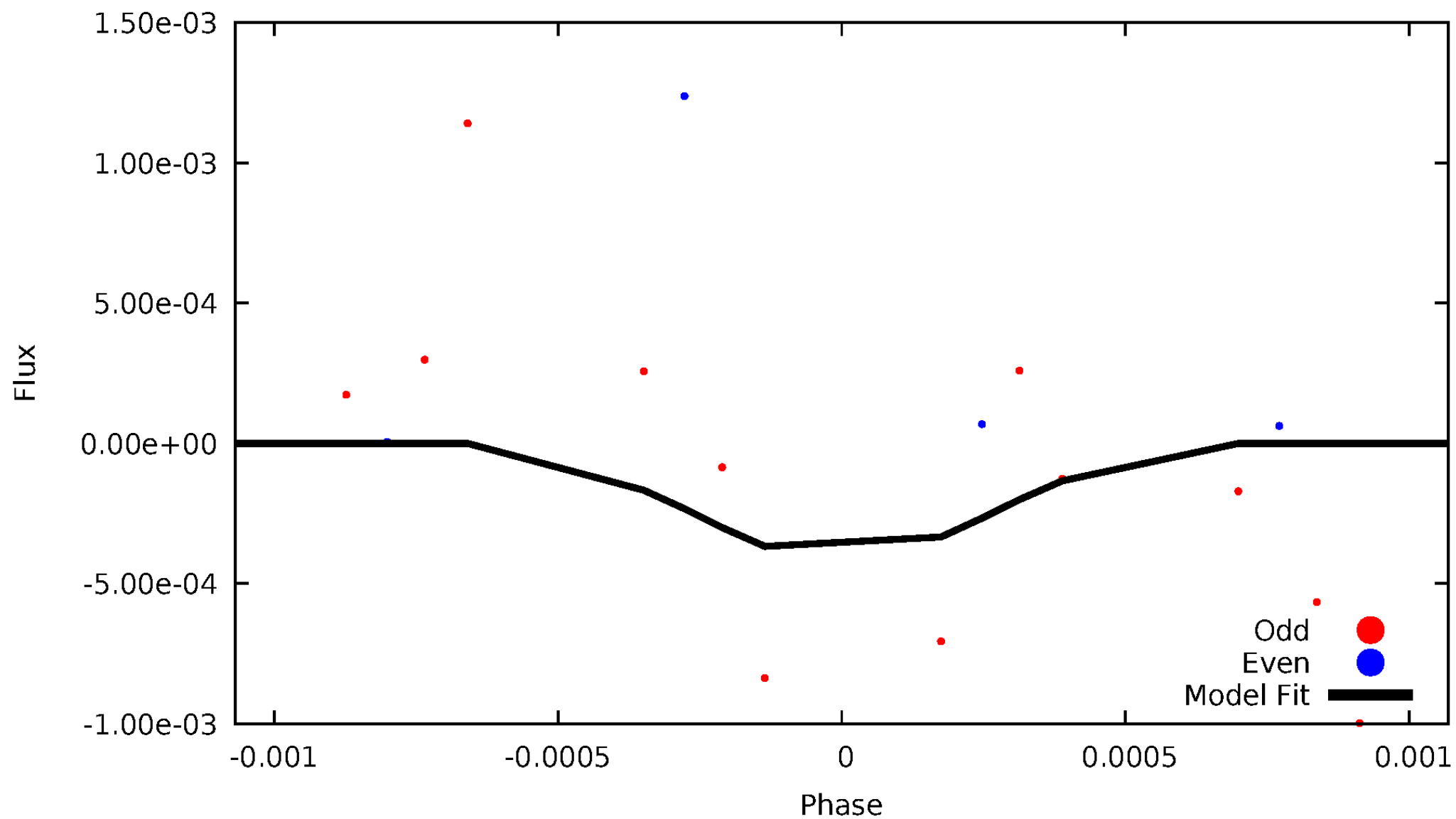
DV Odd/Even

TCE 011966557-04



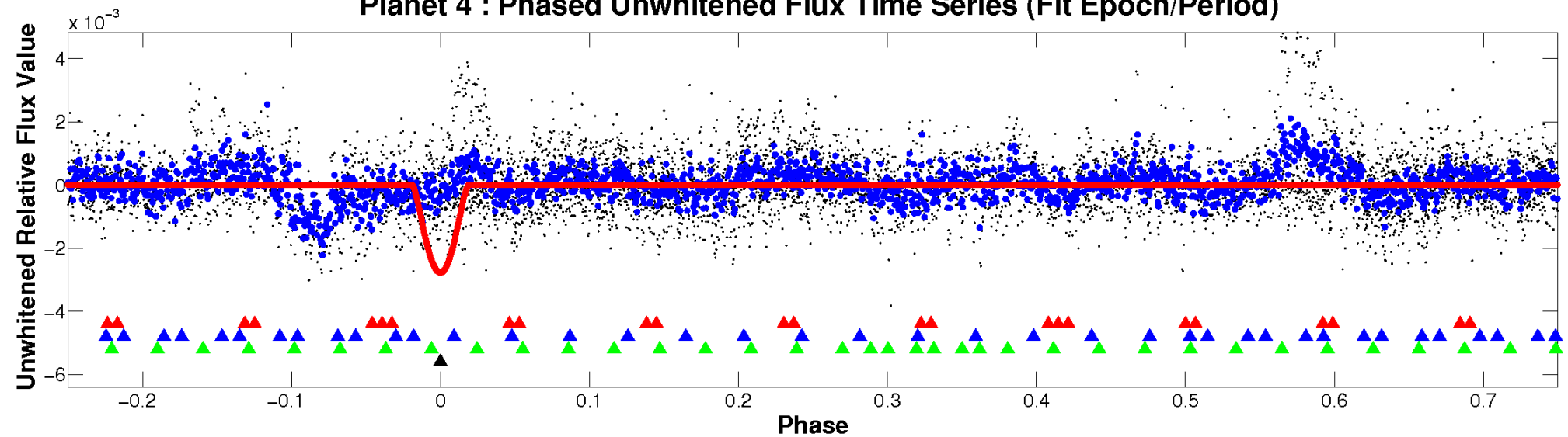
ALT Odd/Even

TCE 011966557-04

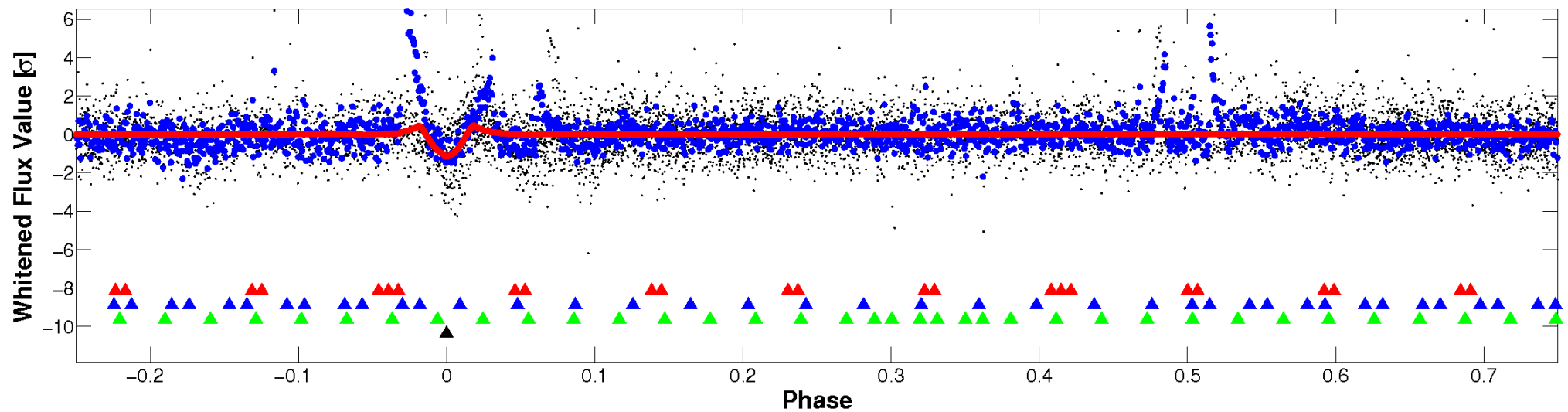


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

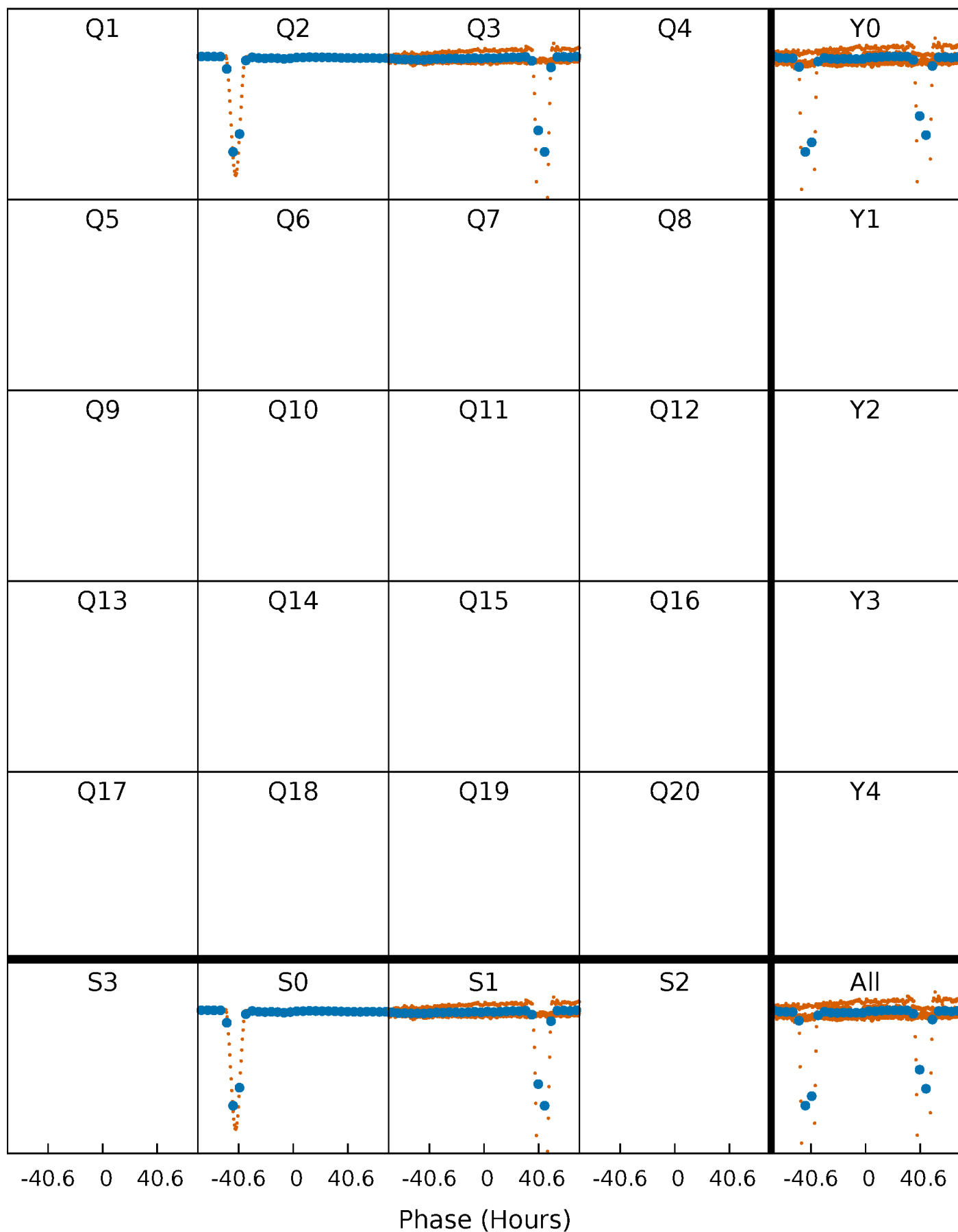


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



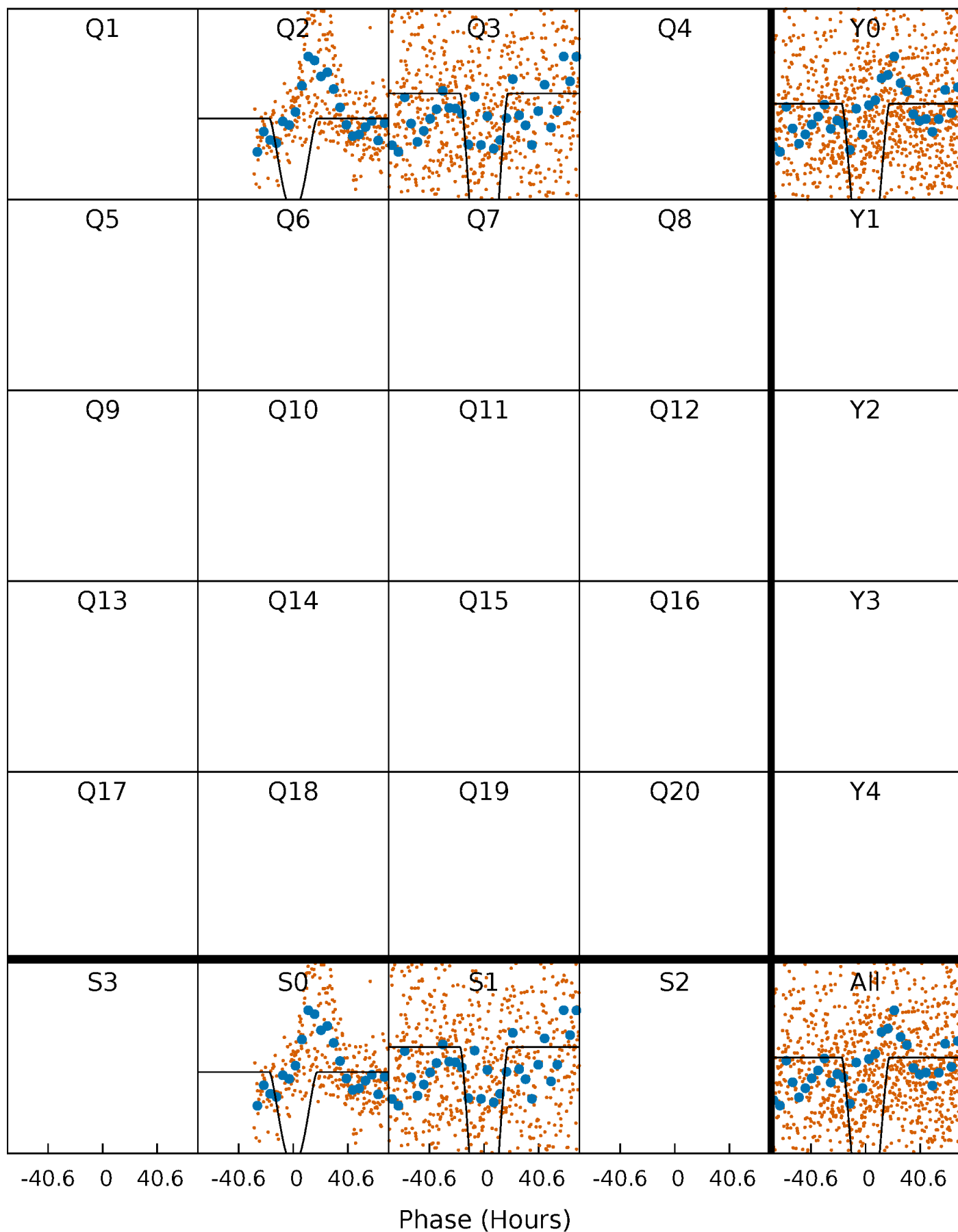
PDC Quarter-Phased Transit Curves

TCE 011966557-04 P= 39.001835 Days $T_0=145.936533$ (BKJD)



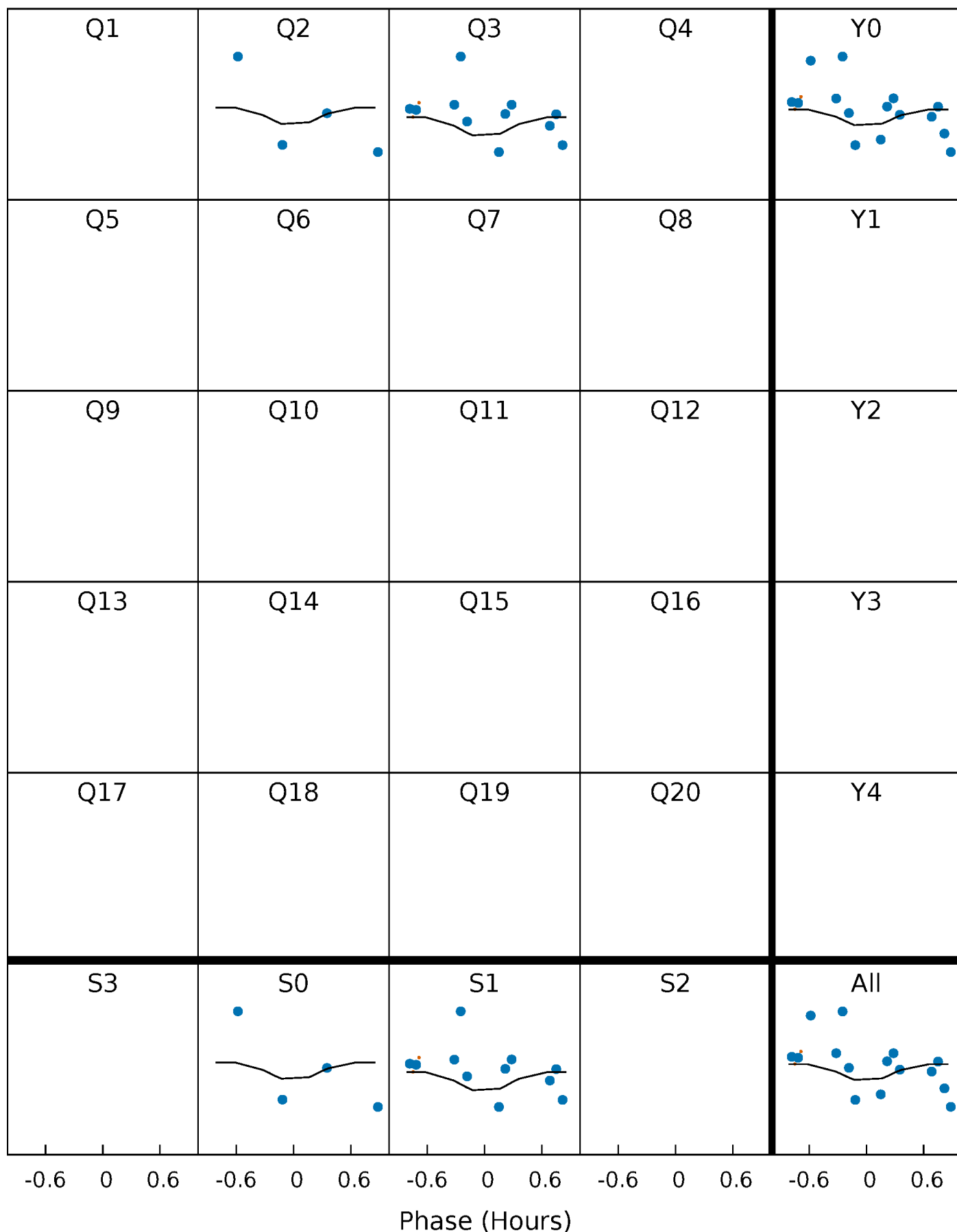
DV Quarter-Phased Transit Curves

TCE 011966557-04 P= 39.001835 Days $T_0=145.936533$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

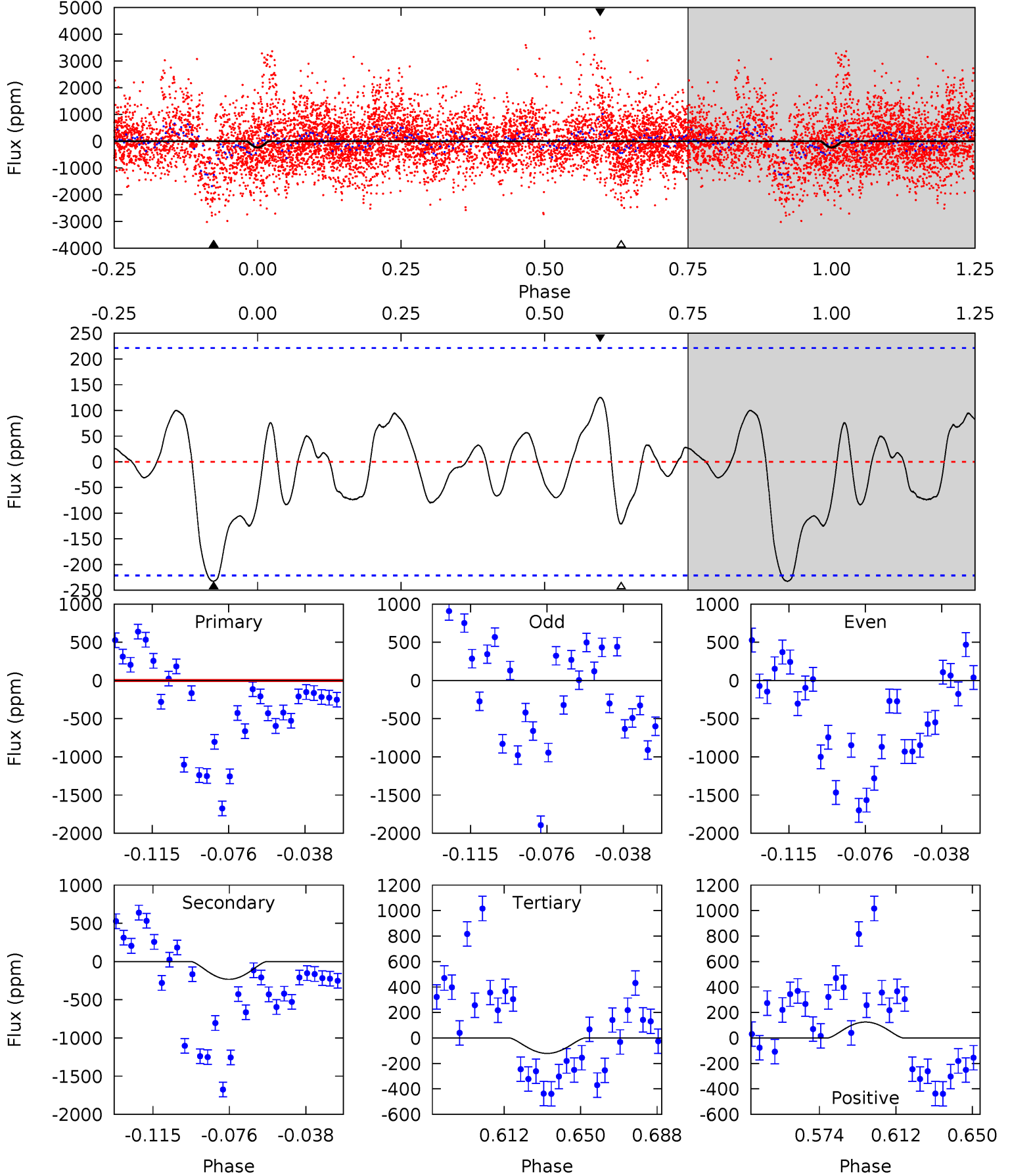
TCE 011966557-04 P= 39.009215 Days $T_0=145.779811$ (BKJD)



DV Model-Shift Uniqueness Test

011966557-04, P = 39.001835 Days, E = 145.936533 Days

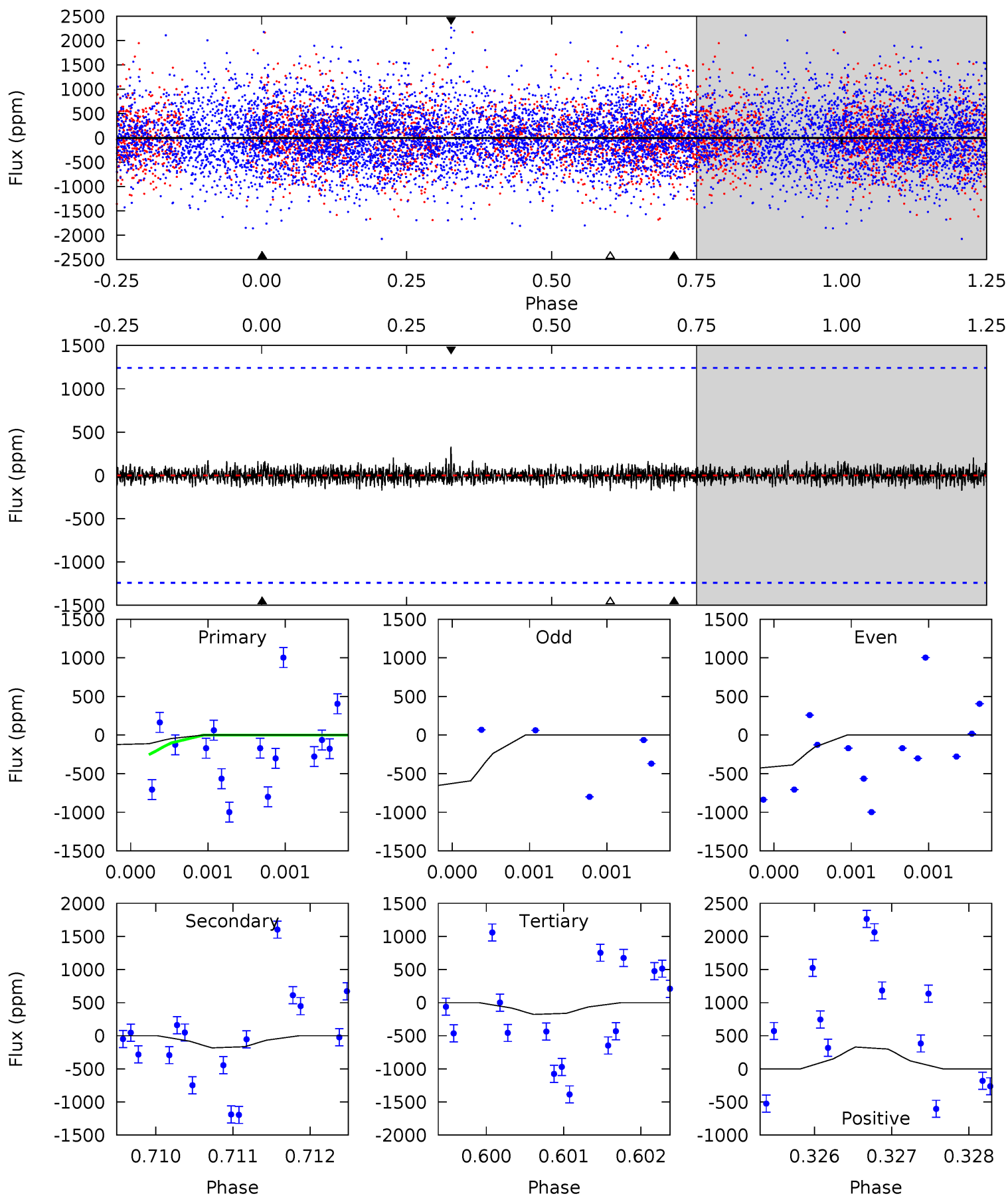
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.00	5.00	2.61	2.69	4.76	2.07	1.24	2.39	2.30	2.39	2.31	5.51	-0.73	0.35	3.88



Alt Model-Shift Uniqueness Test

011966557-04, P = 39.009215 Days, E = 145.779811 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.54	0.81	0.79	1.46	5.51	3.38	0.24	-0.25	-0.92	0.02	-0.65	0.47	0.36	0.64	0.56



Stellar Parameters For KIC 011966557

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5995^{+180}_{-180}	$4.434^{+0.084}_{-0.196}$	$-0.280^{+0.300}_{-0.300}$	$0.977^{+0.285}_{-0.142}$	$0.946^{+0.132}_{-0.108}$	$1.428^{+0.628}_{-0.705}$
	+3%/-3%	+2%/-4%	+107%/-107%	+29%/-15%	+14%/-11%	+44%/-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 011966557-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-232 ± 46	$21.86^{+22.50}_{-14.83}$	786^{+55}_{-40}	2491^{+963}_{-377}	12^{+118}_{-9}
Alt.	-183 ± 225	$18.73^{+20.03}_{-13.36}$	789^{+56}_{-40}	2407^{+1109}_{-4491}	$8.796^{+117.022}_{-10.998}$

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 $A_{obs} \gg 1.0$

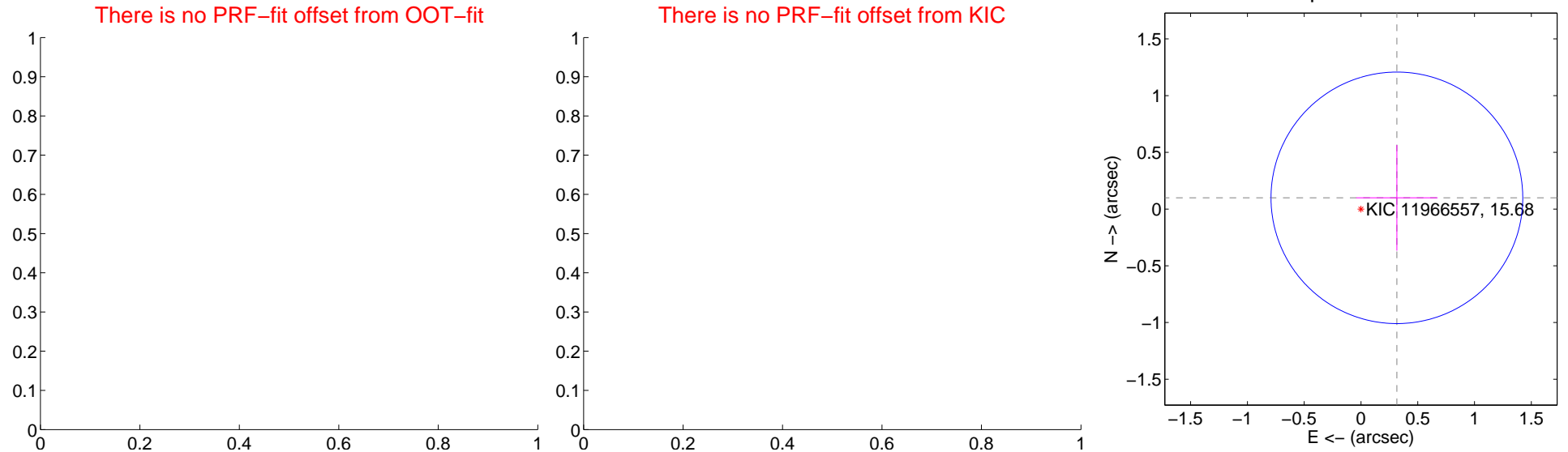
DV Centroid Data

Supplemental centroid analysis for 011966557-04. Kepler magnitude: 15.68. Transit SNR 12.67

There are 0 quarters with good PRF difference image offsets

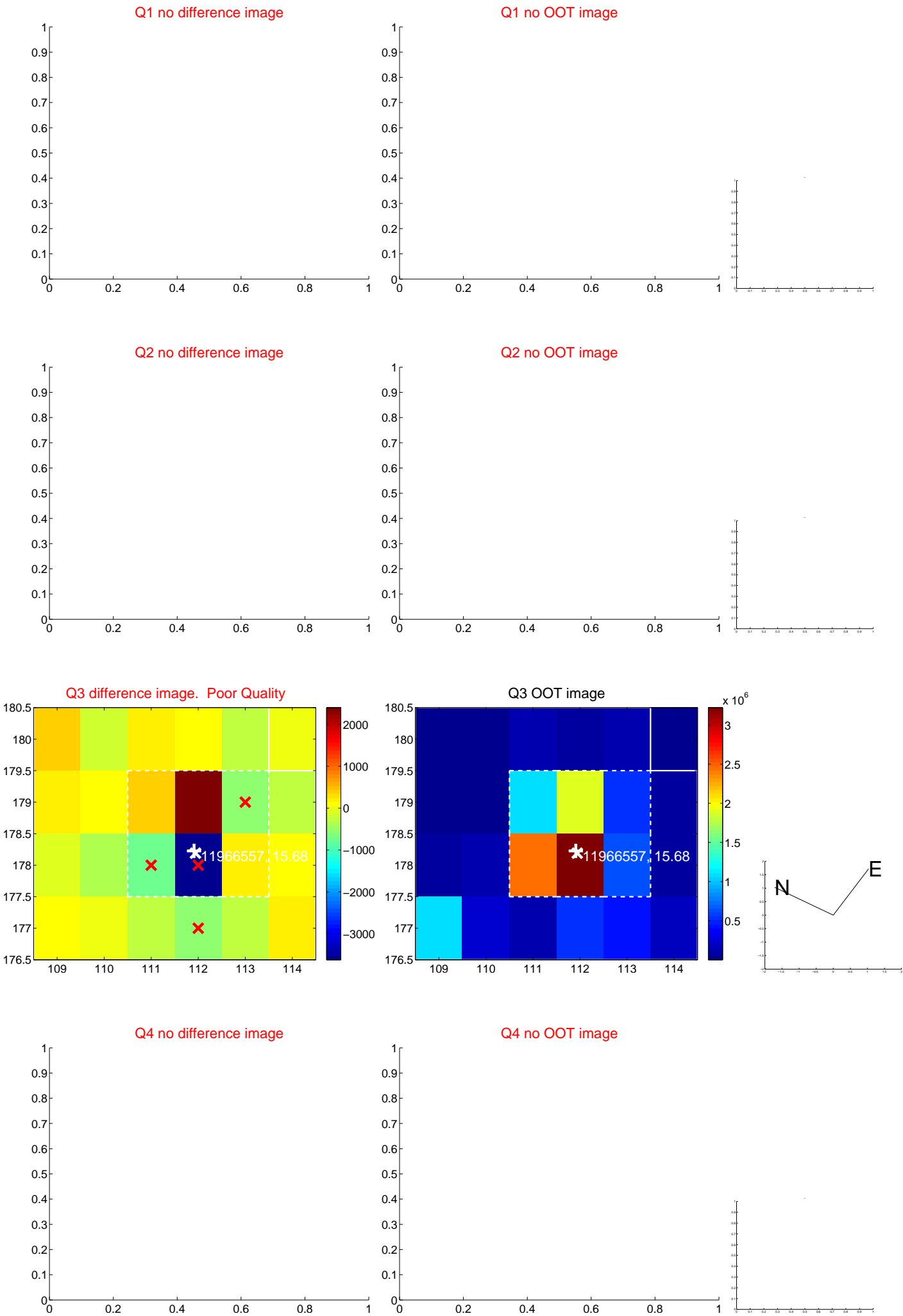
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.33 ± 0.37	0.90	-0.32 ± 0.36	0.10 ± 0.47



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



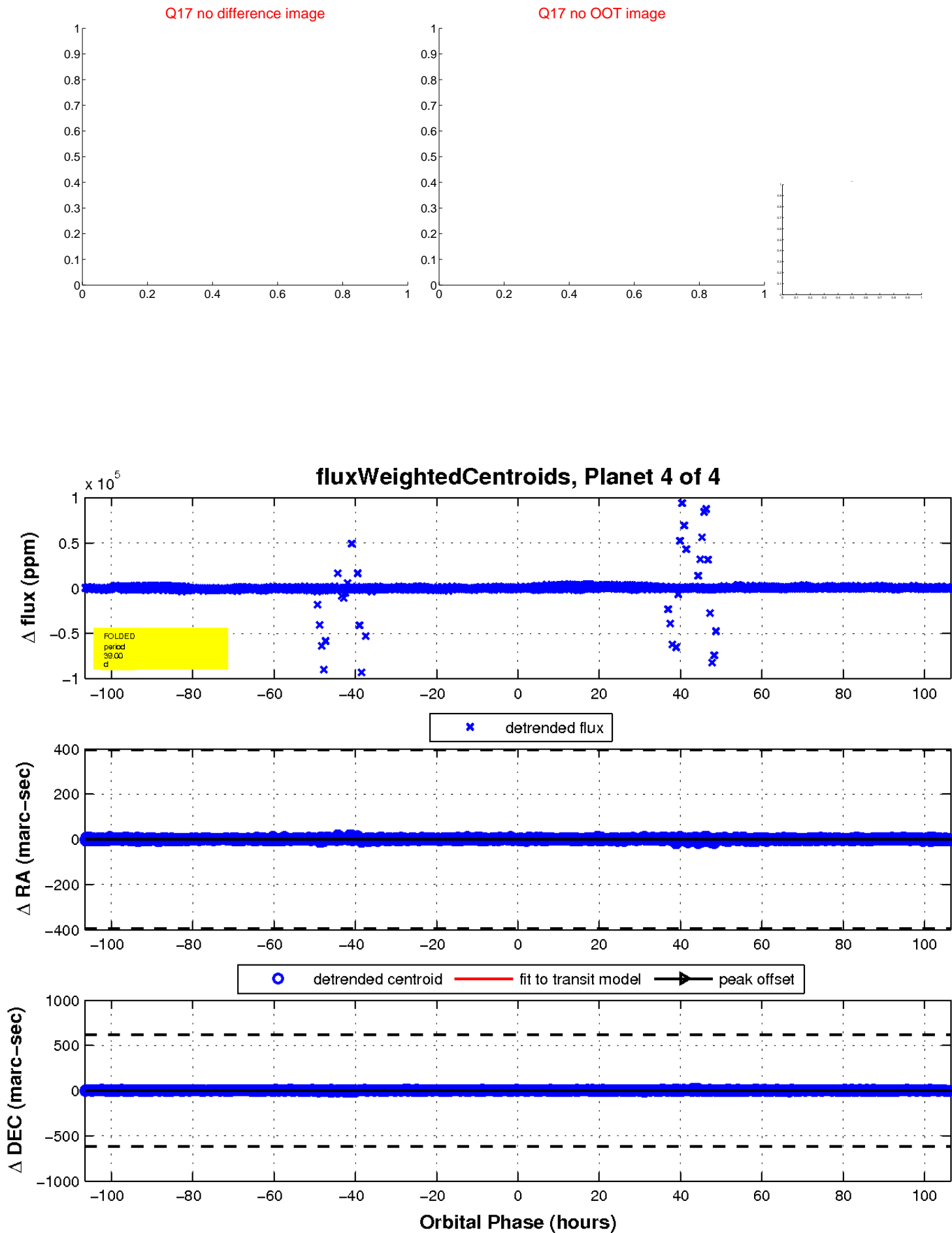
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

