

KIC 011520793

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})
011520793-01	OBS	No	2.148301	133.425754	7.1	7.310	15.4	15.4	2.19	7414	0.69	8520.69
011520793-02	OBS	No	2.148160	133.108700	7.4	8.773	12.1	8.5	2.19	7414	0.71	8521.44
011520793-03	OBS	No	164.054322	203.991267	22.6	8.735	12.4	3.7	2.19	7414	1.20	26.30
011520793-04	OBS	No	143.671167	238.029844	30.6	19.517	12.2	6.2	2.19	7414	1.34	31.39
011520793-05	OBS	No	463.815979	514.476384	34.3	13.680	7.9	5.0	2.19	7414	1.48	6.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011520793-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
011520793-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
011520793-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

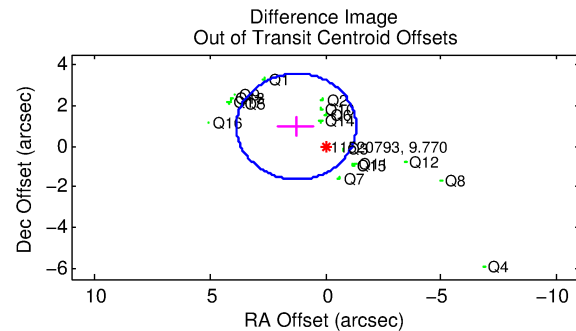
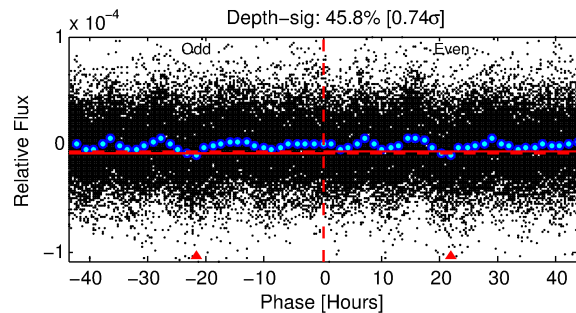
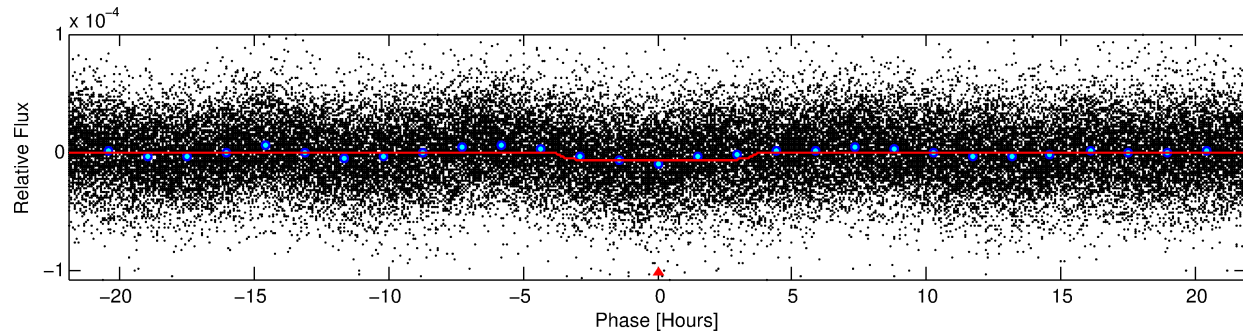
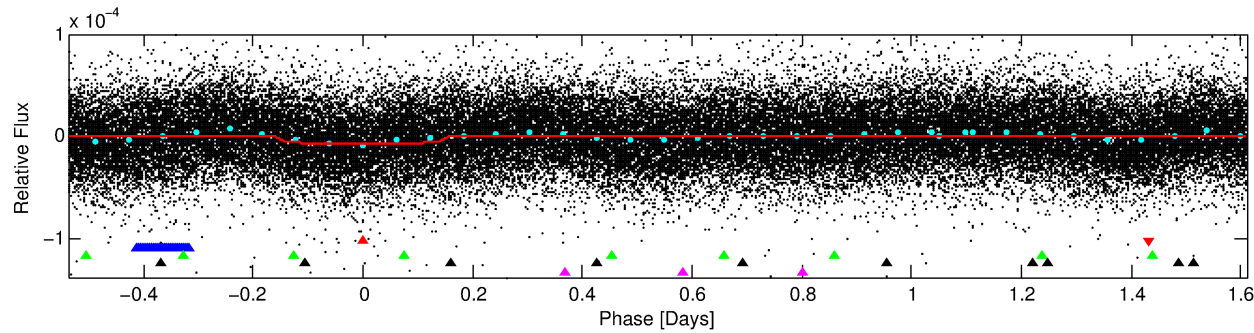
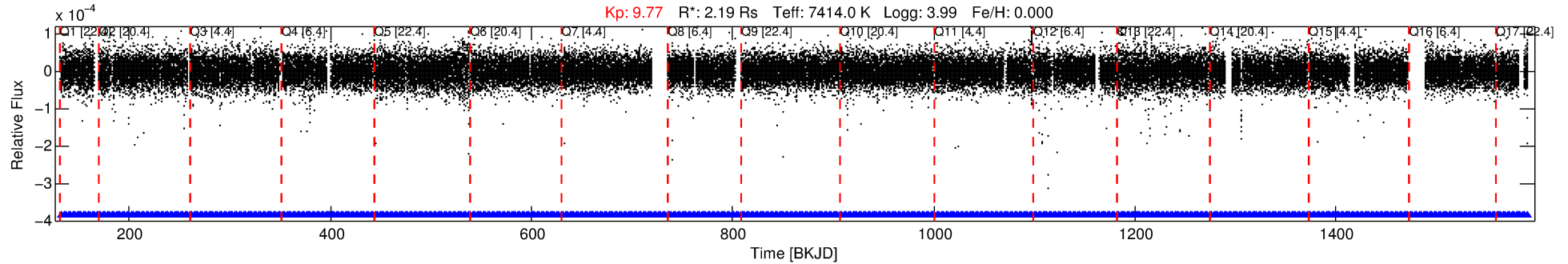
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011520793-01

No Significant Match Found

DV One-Page Summary

KIC: 11520793 Candidate: 1 of 5 Period: 2.148 d



DV Fit Results:

Period = 2.14830 [0.00001] d
Epoch = 133.4258 [0.0032] BKJD
Rp/R* = 0.0029 [0.0003]
a/R* = 1.31 [0.36]
b = 0.92 [0.11]
Seff = 8520.69 [3517.62]
Teff = 2450 [253] K
Rp = 0.69 [0.22] Re
a = 0.0390 [0.0099] AU
Ag = 10.33 [4.49] [2.08 σ]
Teffp = 6790 [494] K [7.82 σ]

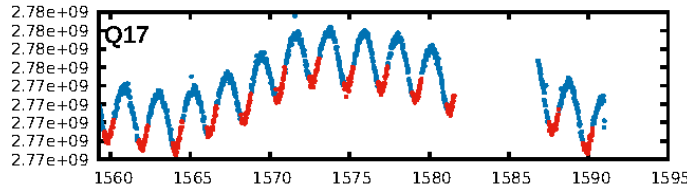
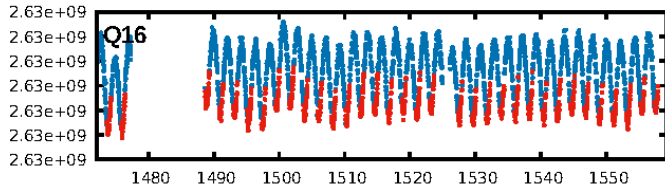
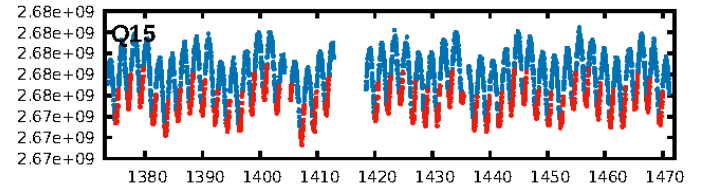
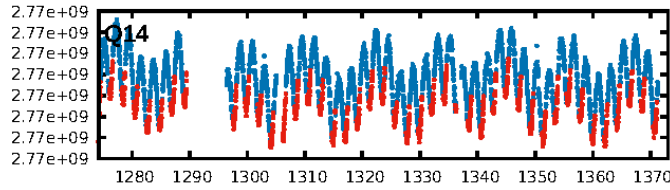
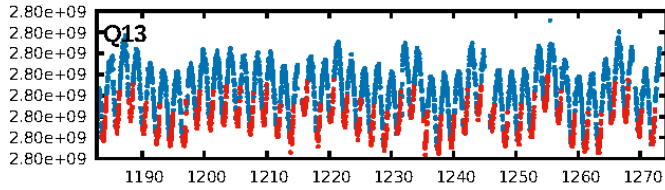
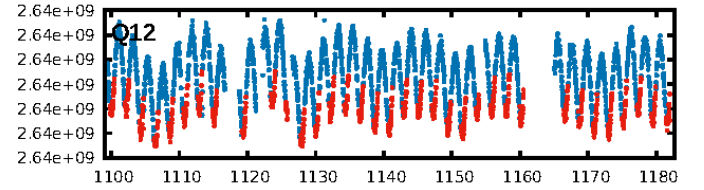
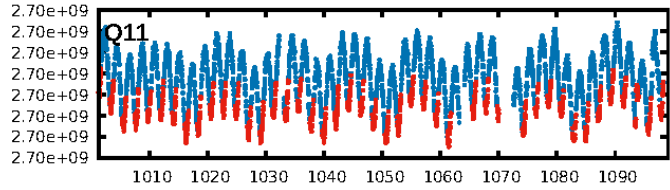
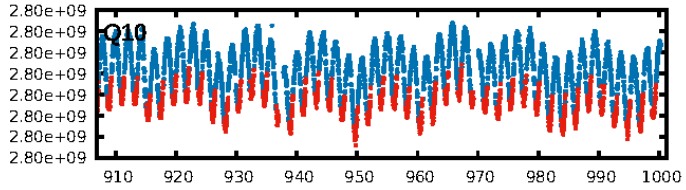
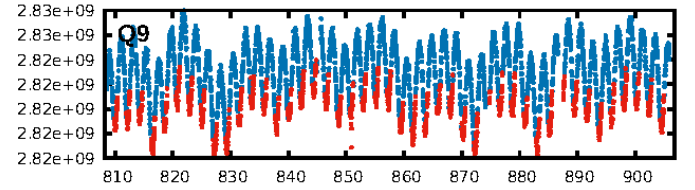
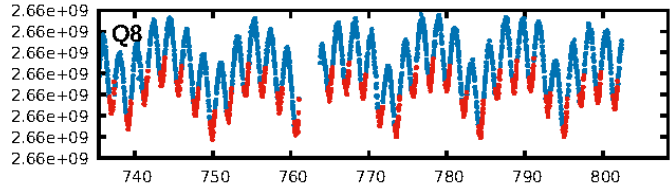
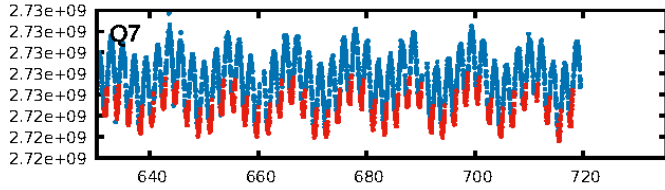
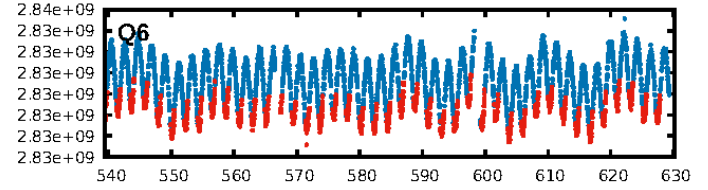
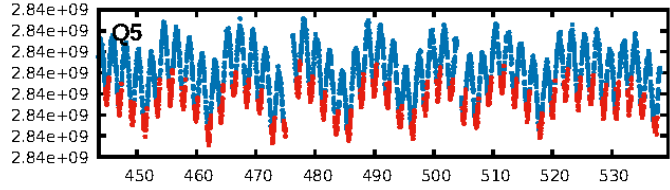
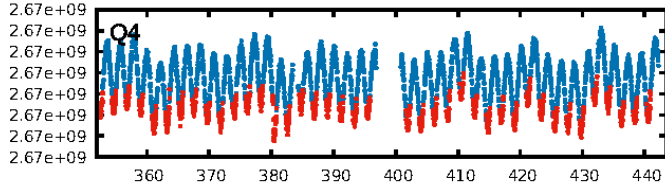
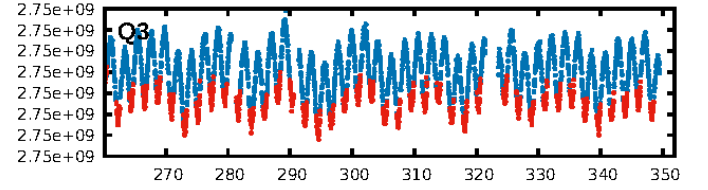
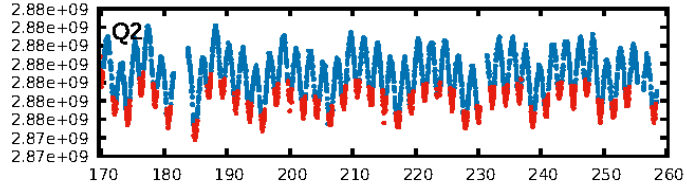
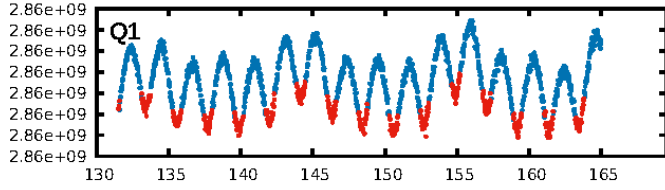
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [162.98 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.96e-35
RollingBand-fgt: 1.00 [602/602]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 6.866 arcsec [4.24 σ]
OotOffset-rm: 1.591 arcsec [1.84 σ]
KicOffset-rm: 1.118 arcsec [1.35 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.24 [4/17]
DiffImageOverlap-fno: 0.00 [0/17]

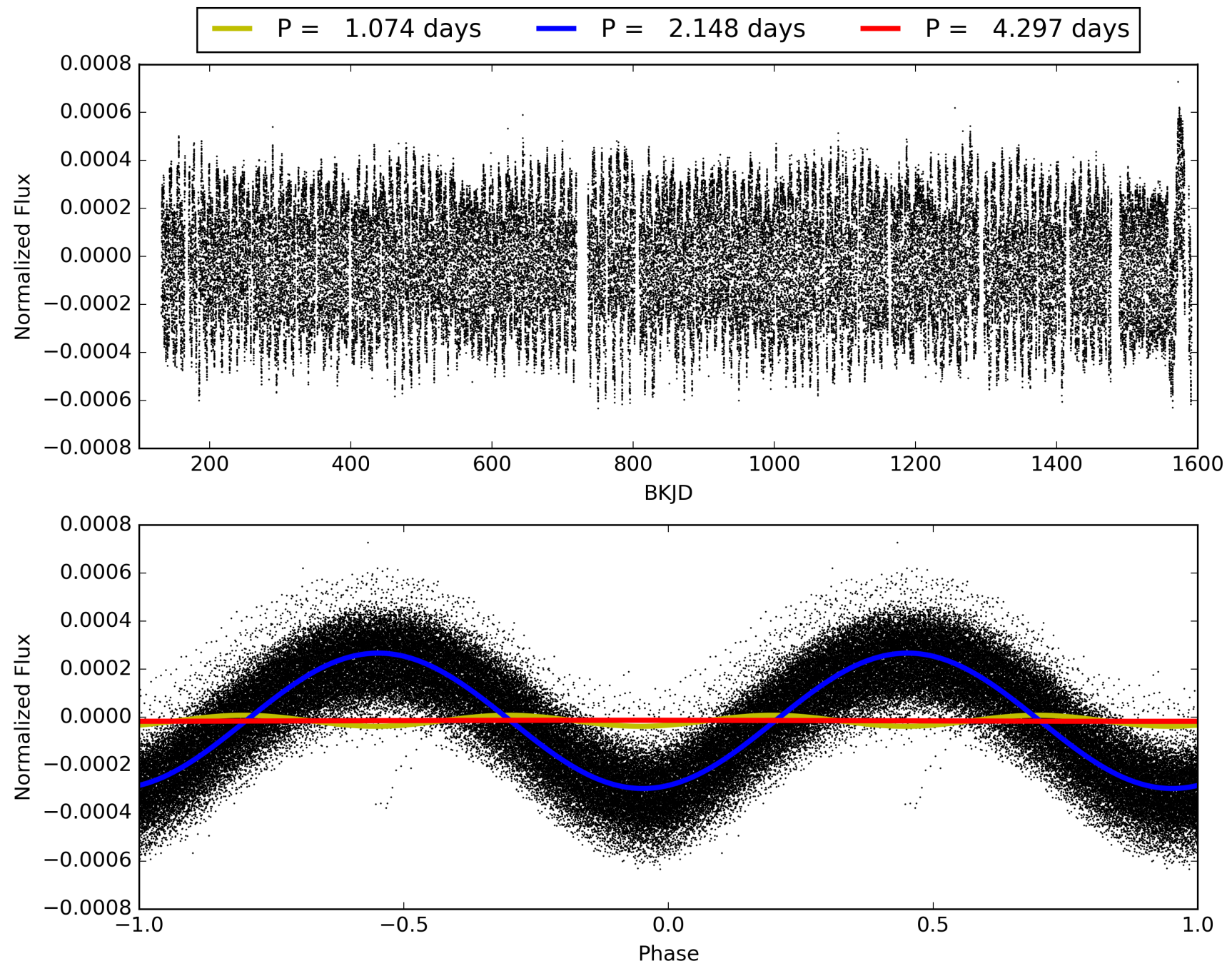
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011520793-01, PDC Light Curves

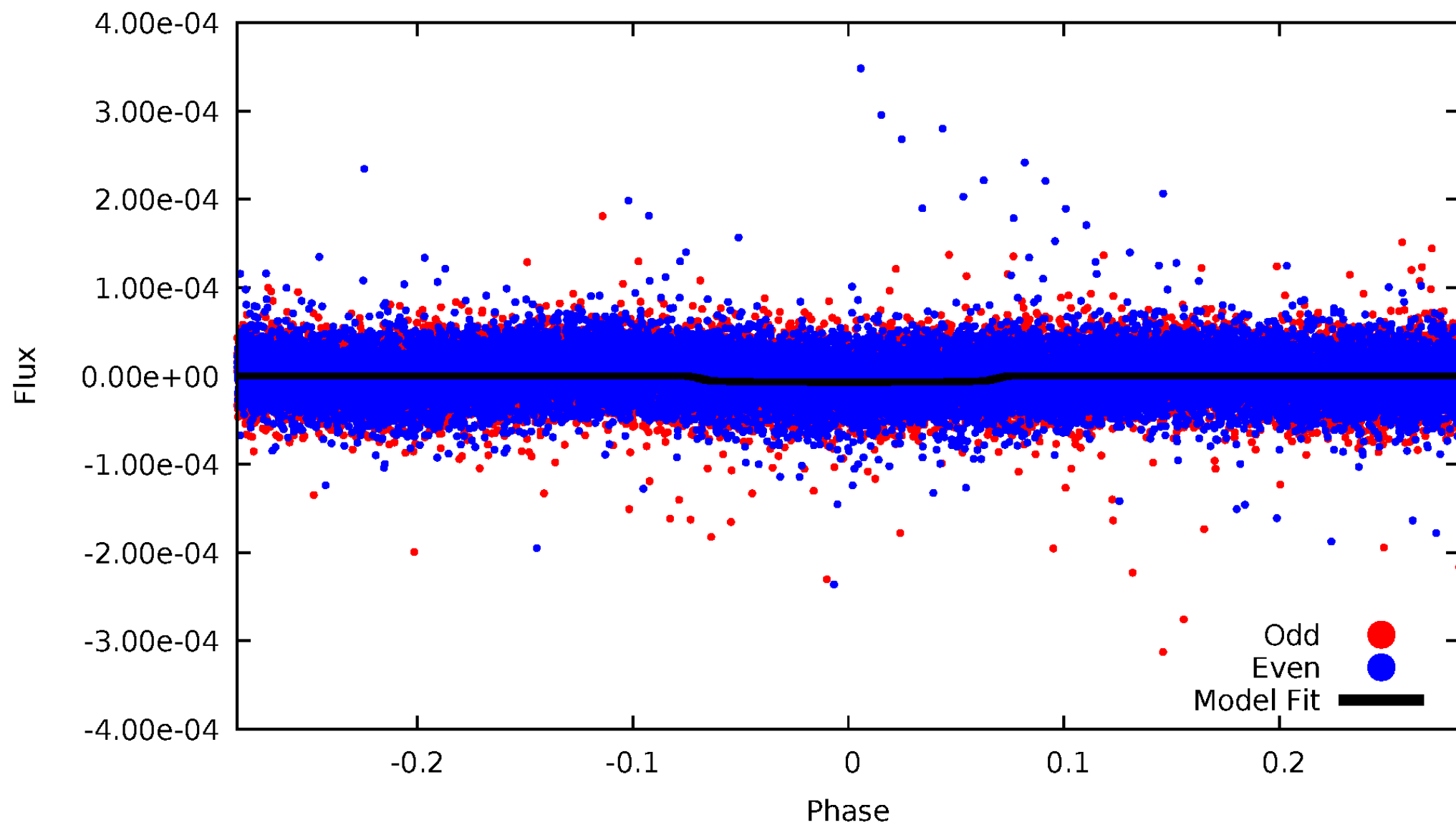


TCE 011520793-01



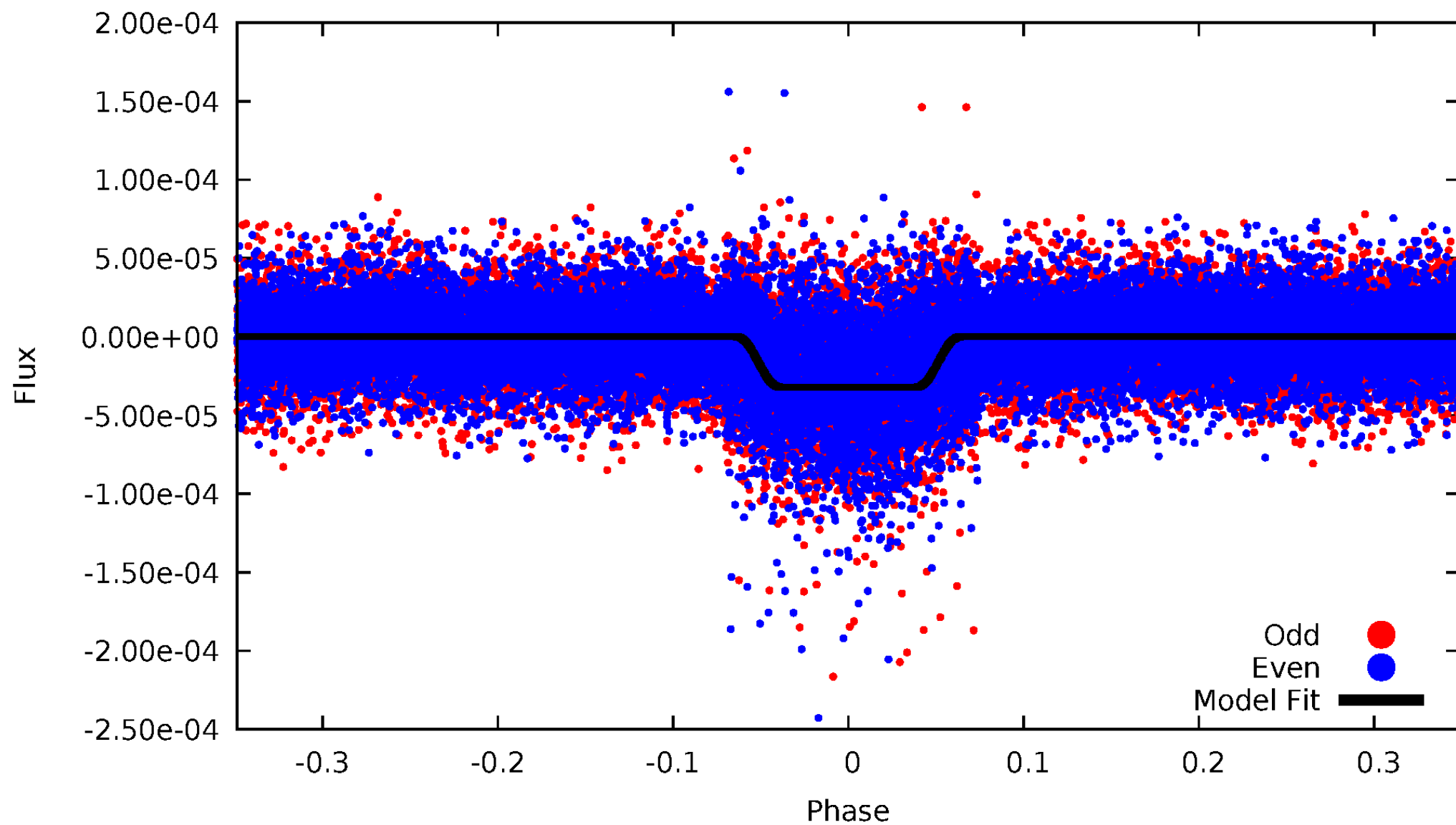
DV Odd/Even

TCE 011520793-01

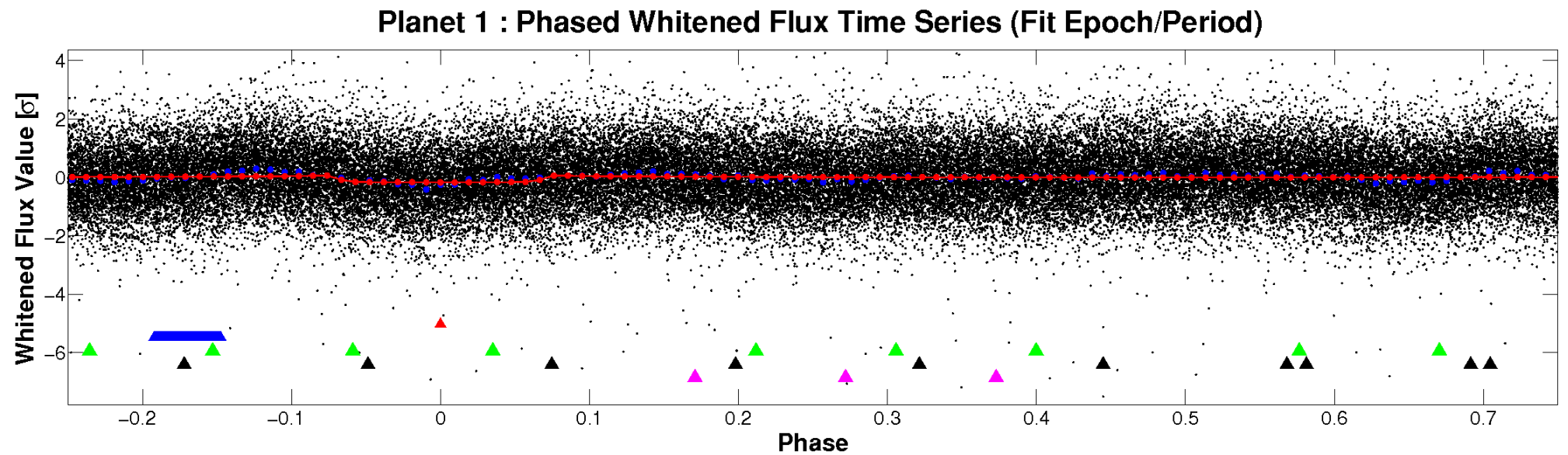
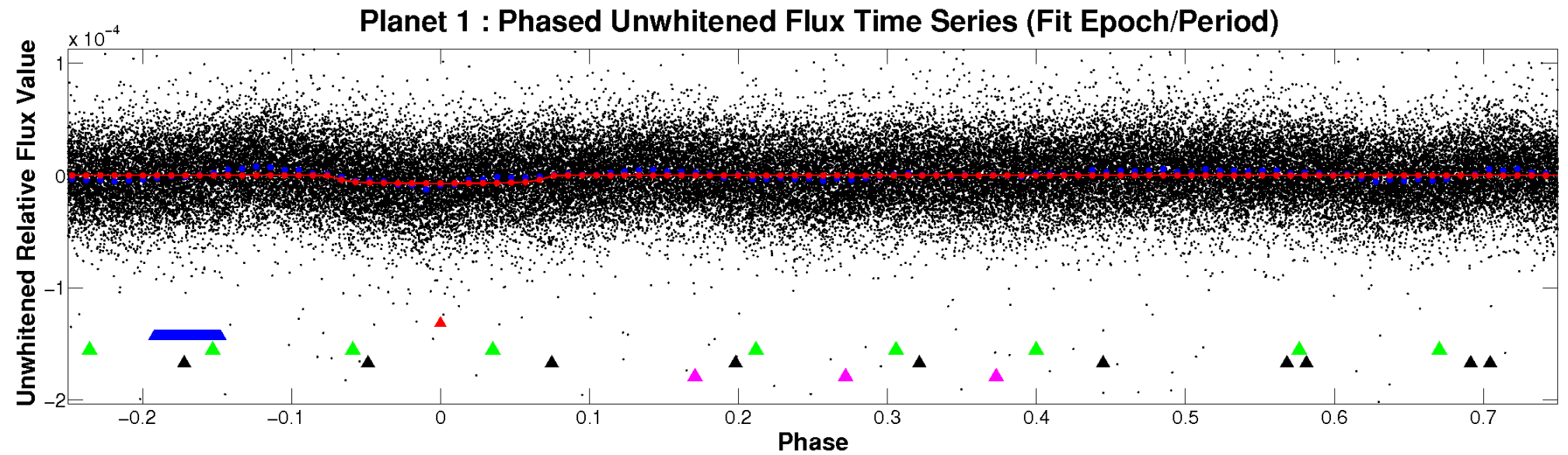


ALT Odd/Even

TCE 011520793-01

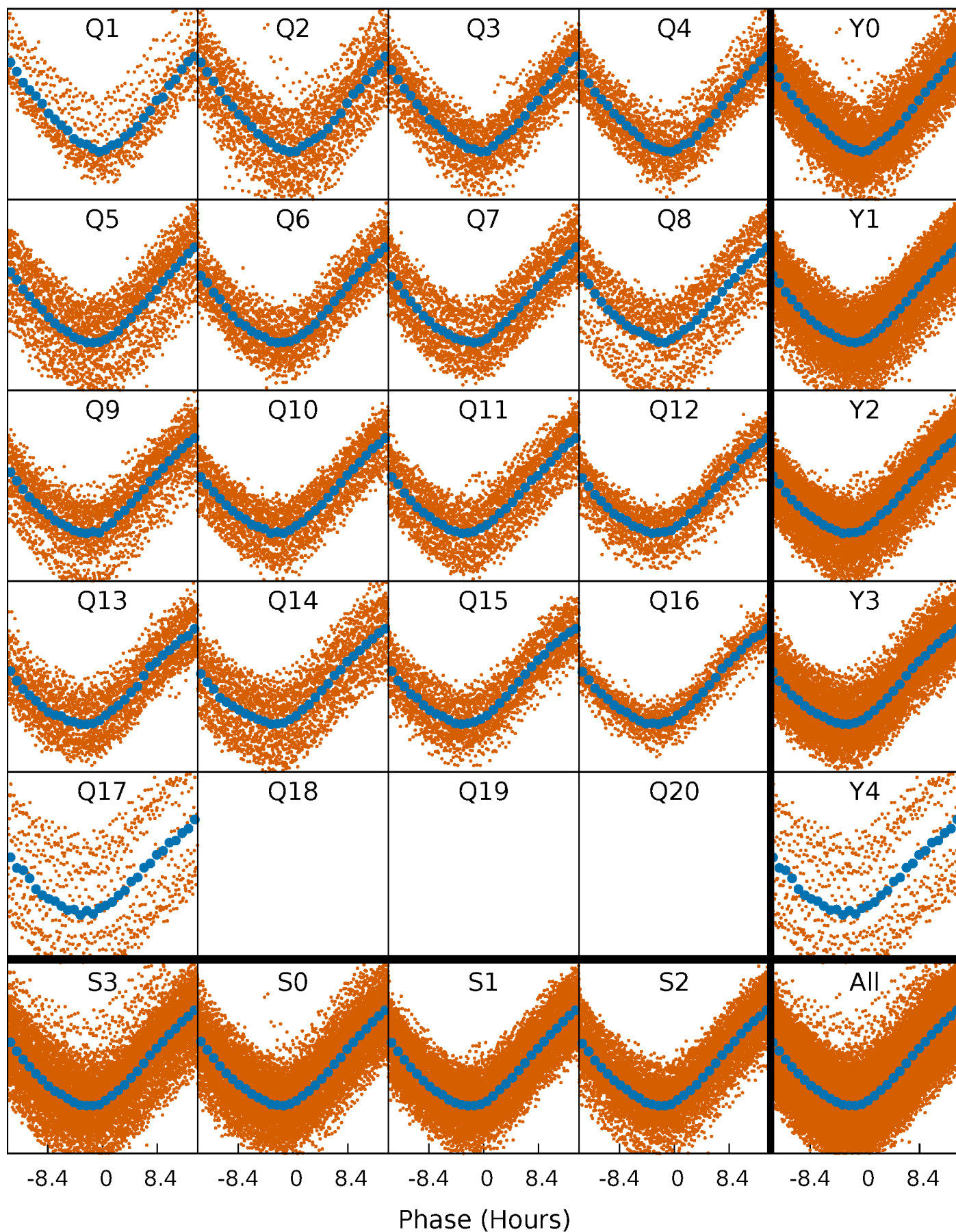


Non-Whitened Vs. Whitened Light Curve



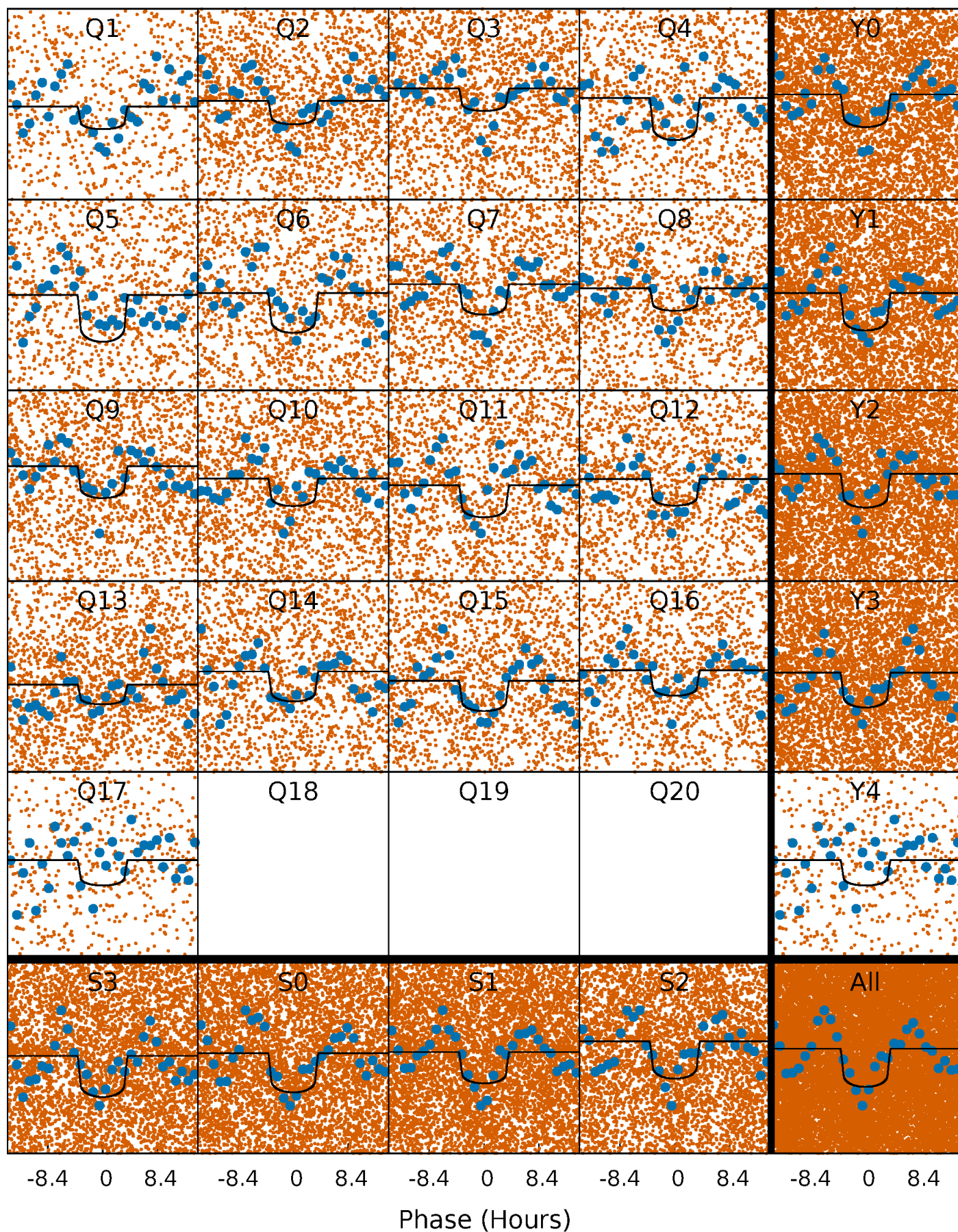
PDC Quarter-Phased Transit Curves

TCE 011520793-01 P= 2.148301 Days $T_0=133.425754$ (BKJD)



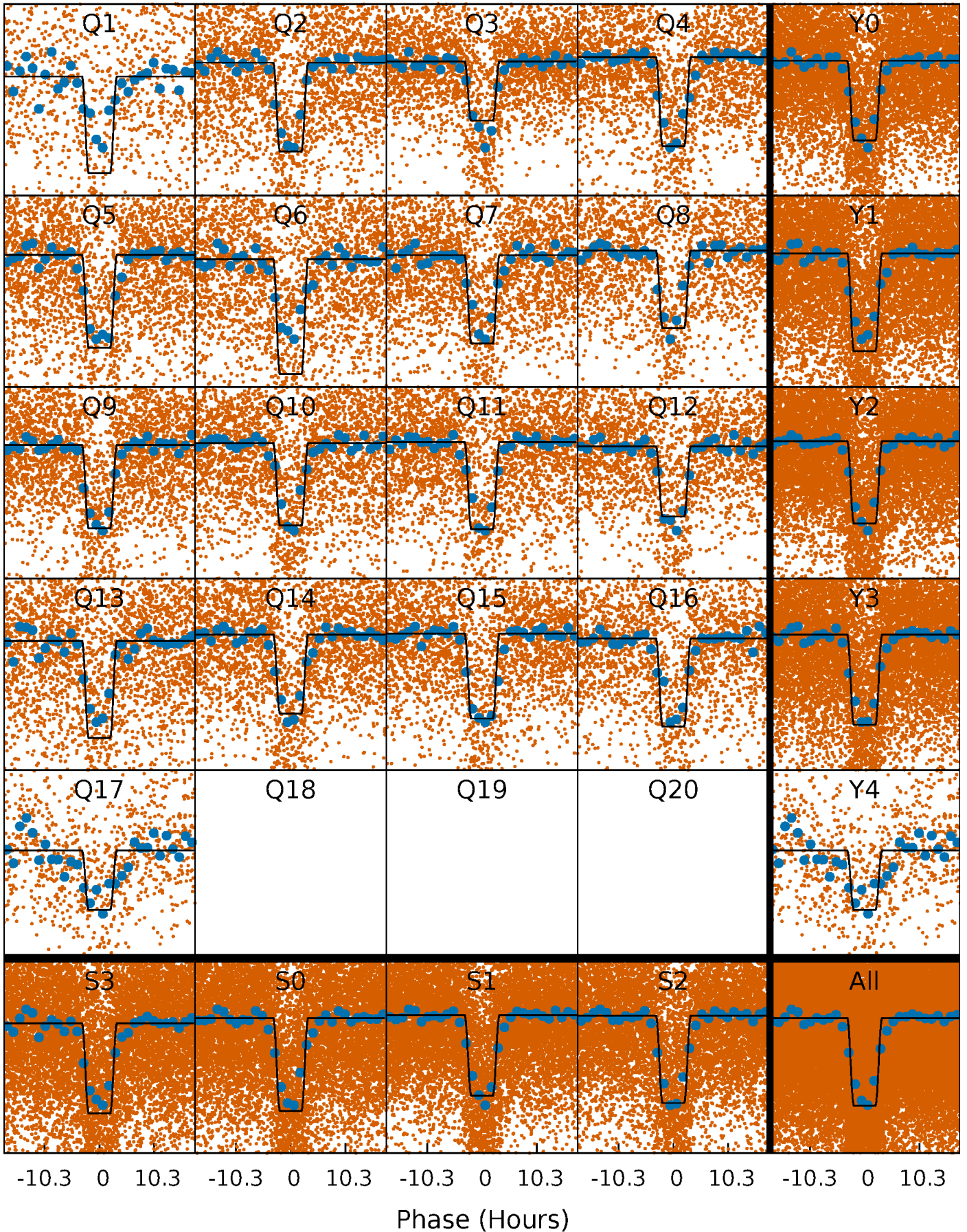
DV Quarter-Phased Transit Curves

TCE 011520793-01 P= 2.148301 Days $T_0=133.425754$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

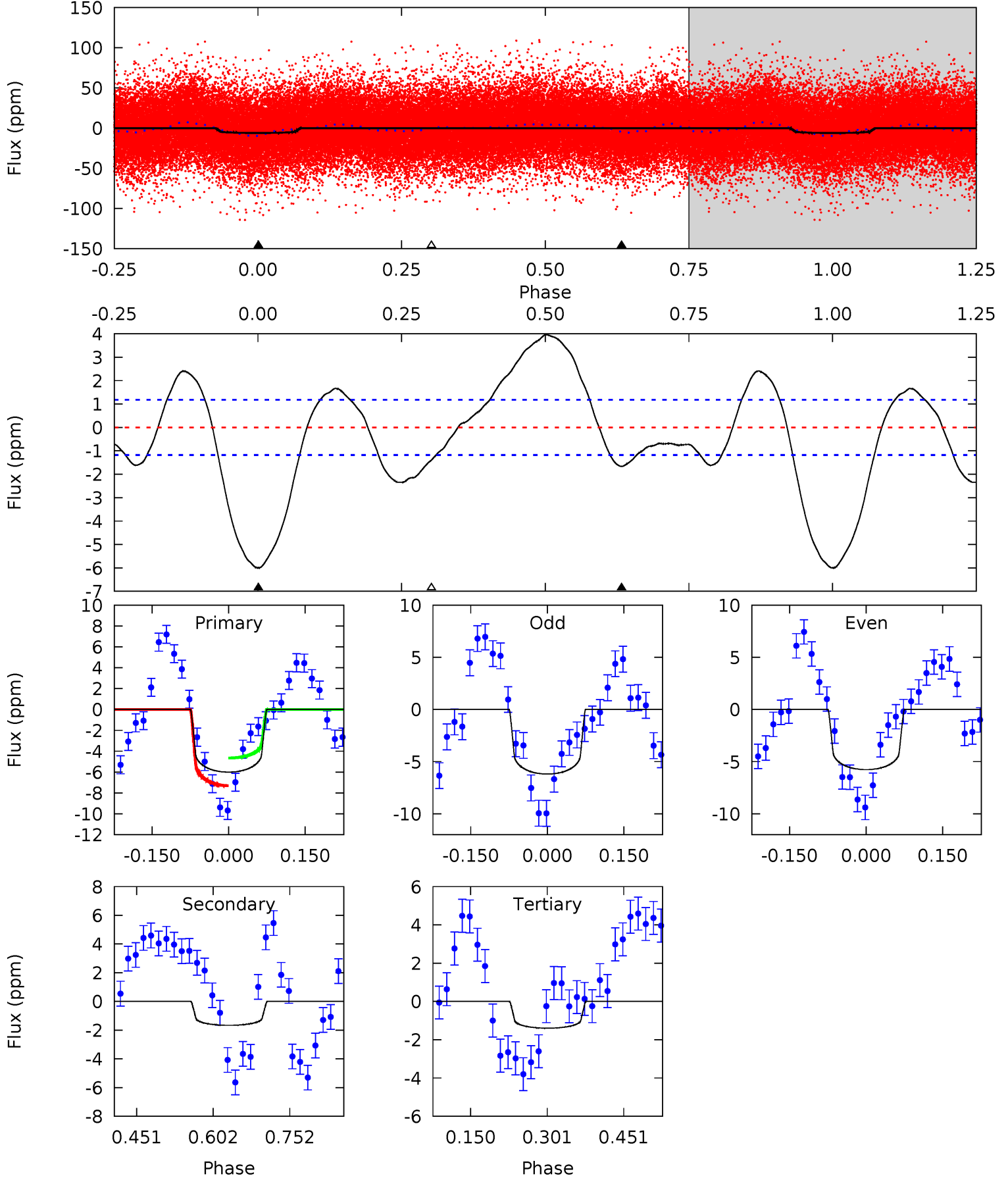
TCE 011520793-01 P= 2.148213 Days $T_0=133.408937$ (BKJD)



DV Model-Shift Uniqueness Test

011520793-01, P = 2.148301 Days, E = 131.277453 Days

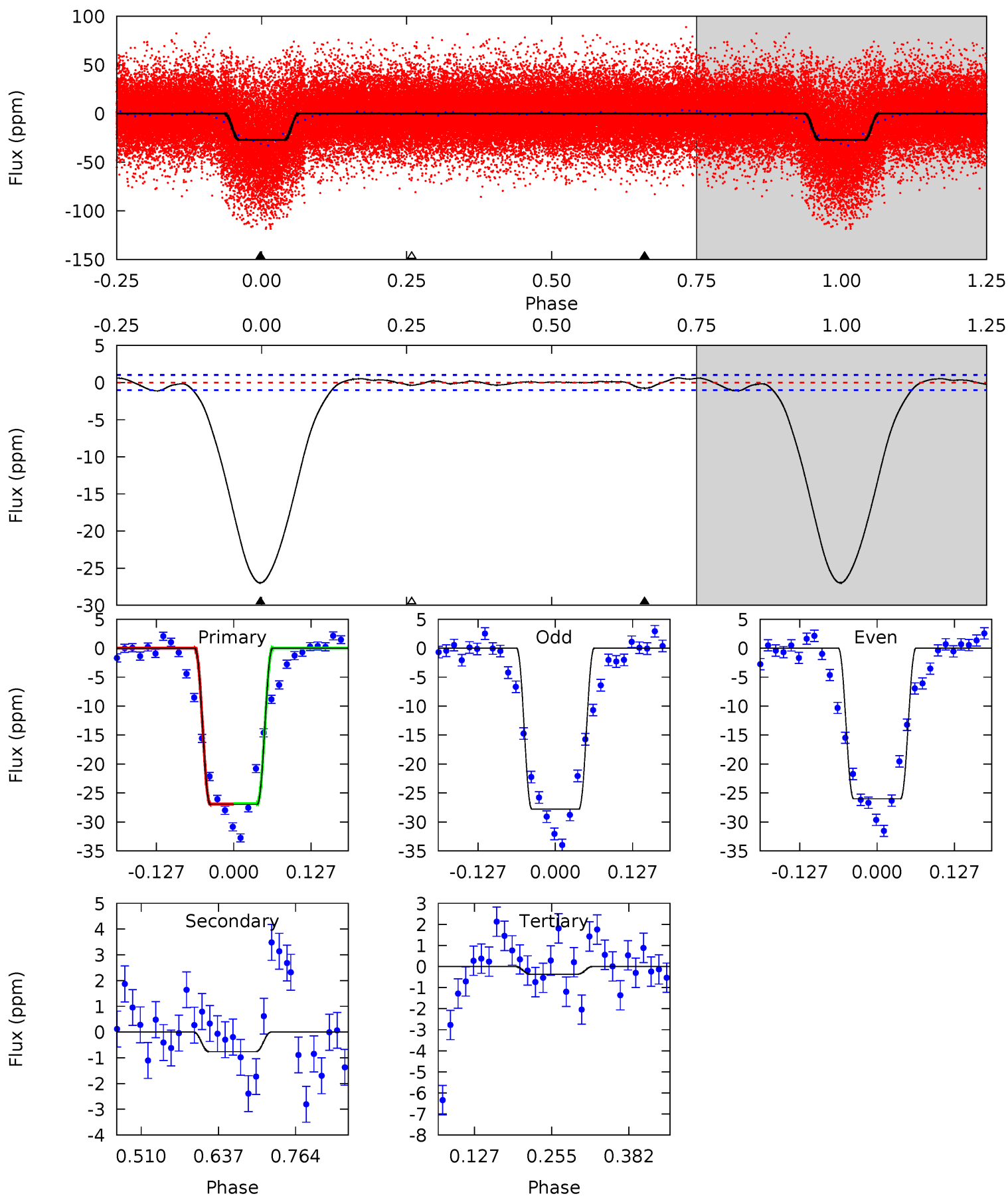
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	6.31	5.30	0	4.48	1.44	6.31	17.5	22.8	1.01	6.31	0.81	1.03	0.40	5.11



Alt Model-Shift Uniqueness Test

011520793-01, P = 2.148213 Days, E = 131.260724 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
119.4	3.37	1.62	0	4.51	1.52	1.55	117.8	119.4	1.75	3.37	4.00	1.09	0.02	0.18



Stellar Parameters For KIC 011520793

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7414^{+207}_{-337}	$3.992^{+0.204}_{-0.167}$	$0.000^{+0.200}_{-0.350}$	$2.189^{+0.533}_{-0.651}$	$1.716^{+0.201}_{-0.327}$	$0.231^{+0.305}_{-0.099}$
	+3%/-5%	+5%/-4%	+inf%/-inf%	+24%/-30%	+12%/-19%	+132%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011520793-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2 ± 0	$0.68^{+0.13}_{-0.12}$	3420^{+252}_{-271}	4871^{+331}_{-330}	$2.921^{+1.428}_{-0.848}$
Alt.	-1 ± 0	$1.34^{+0.22}_{-0.20}$	3396^{+254}_{-283}	2537^{+561}_{-5356}	$0.346^{+0.183}_{-0.132}$

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 $A_{obs} \gg 1.0$

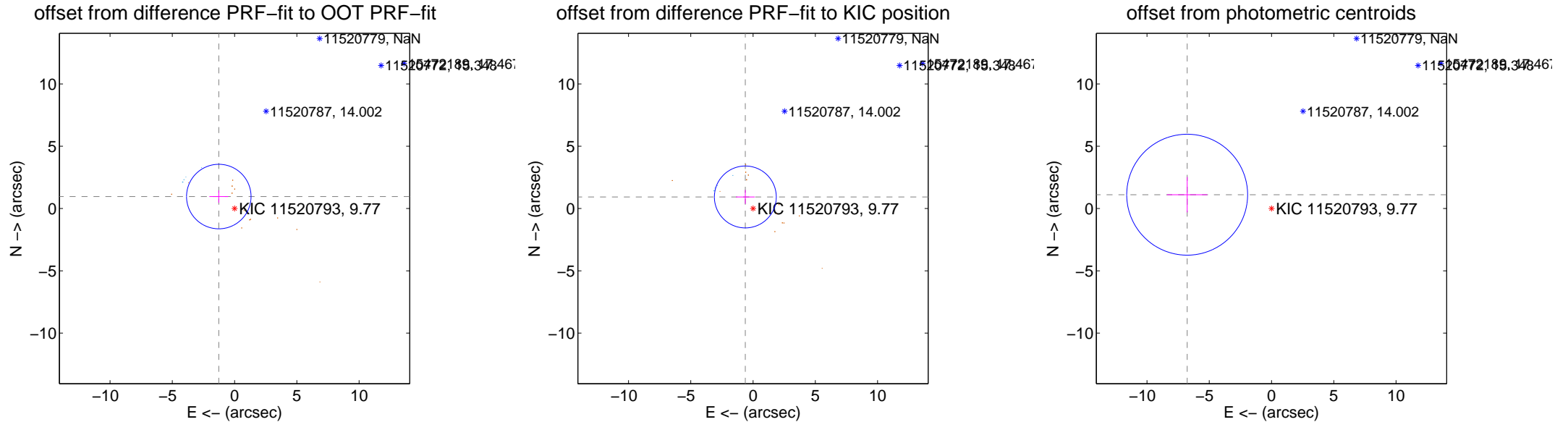
DV Centroid Data

Supplemental centroid analysis for 011520793-01. **Kepler magnitude: 9.77.** Transit SNR 15.36

There are 4 quarters with good PRF difference image offsets

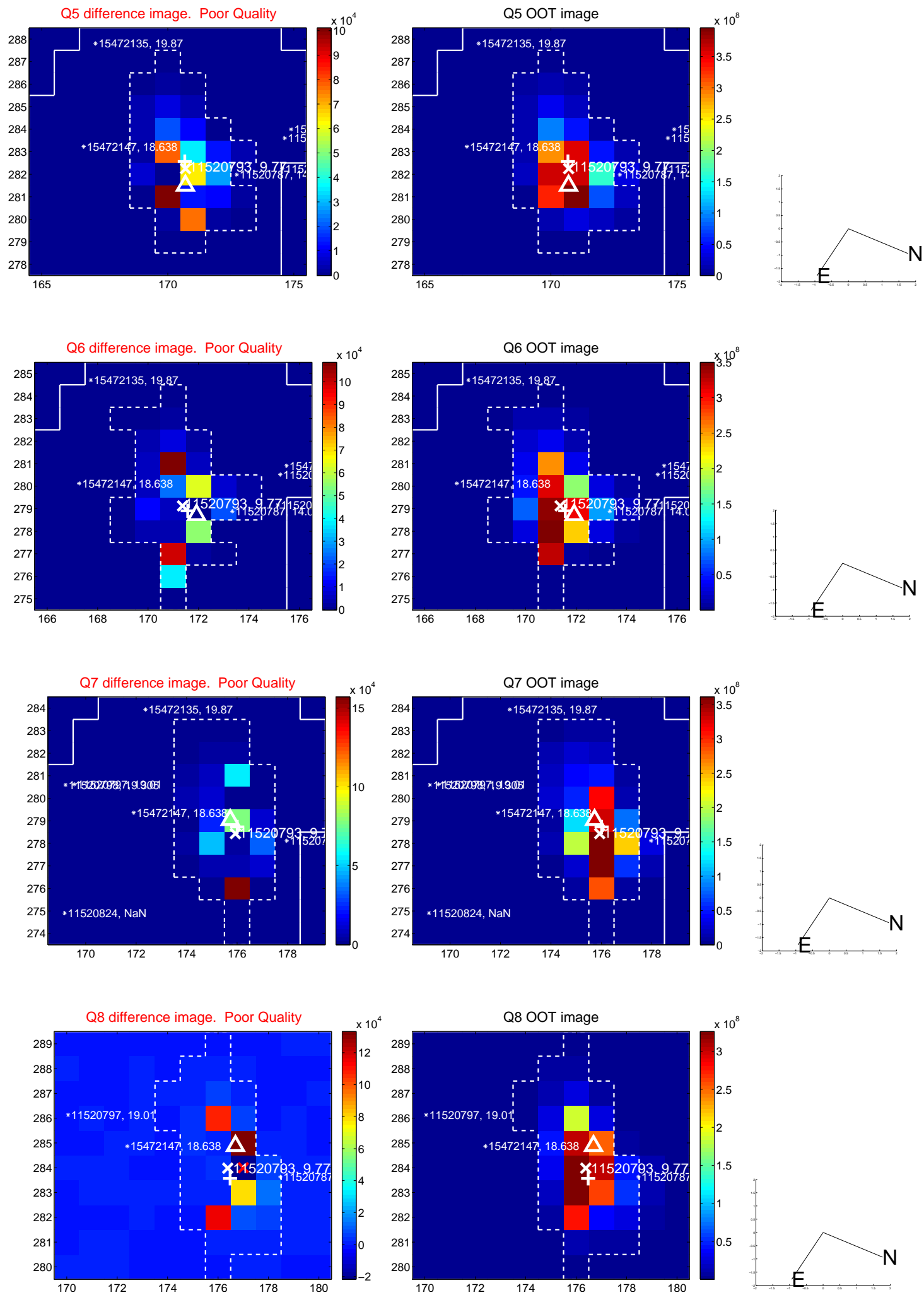
The direct PRF centroid is offset from the target star catalog position by about 1.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.591 ± 0.863	1.84	1.268 ± 0.758	0.962 ± 0.494
PRF-fit source offset from KIC position	1.118 ± 0.829	1.35	0.620 ± 0.749	0.930 ± 0.556
photometric centroid source offset	6.87 ± 1.62	4.24	6.78 ± 1.62	1.11 ± 1.42

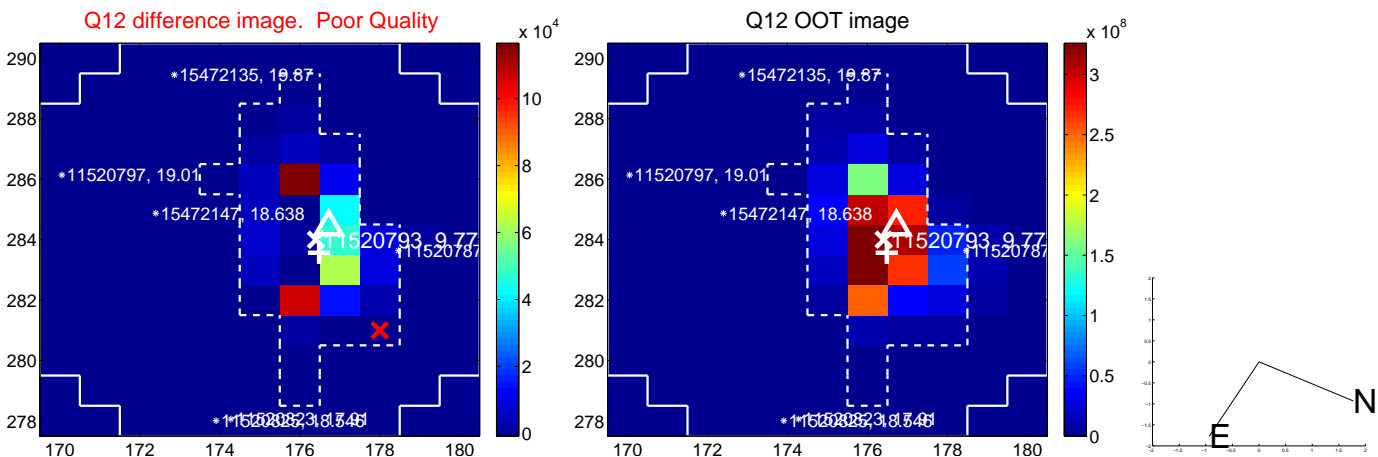
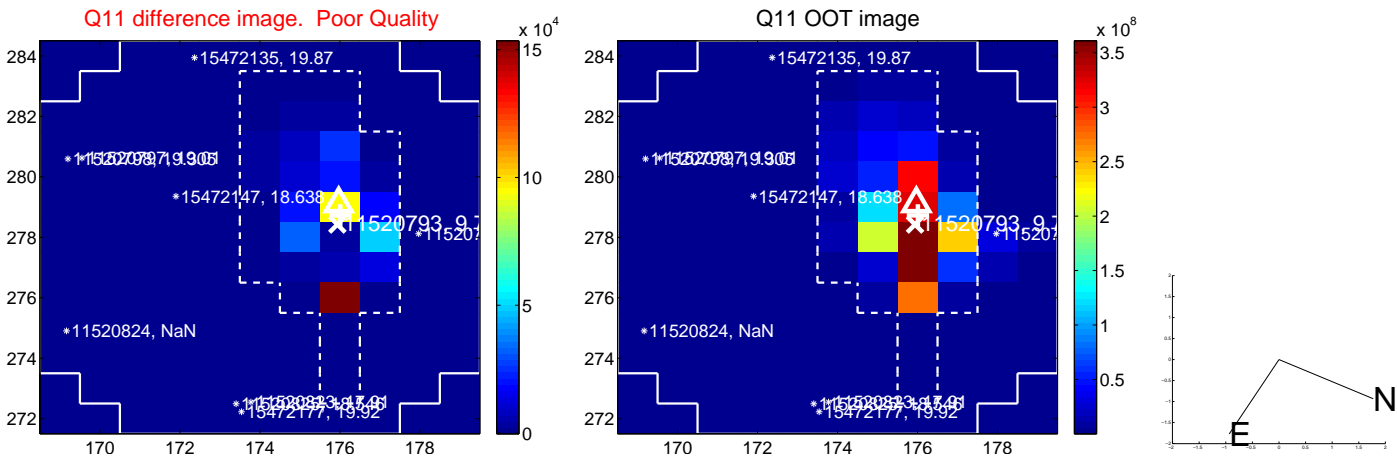
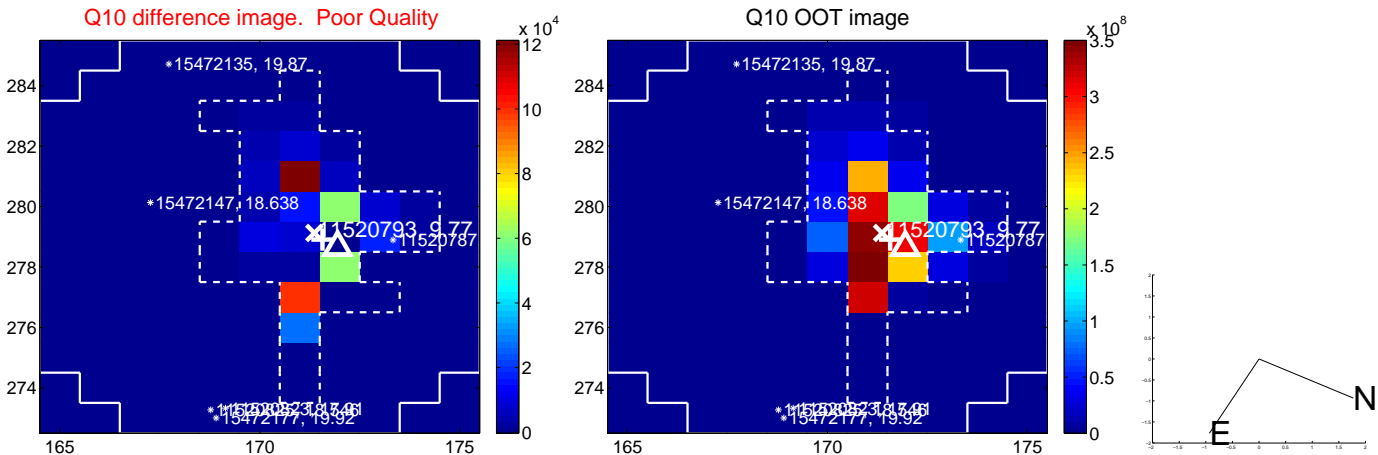
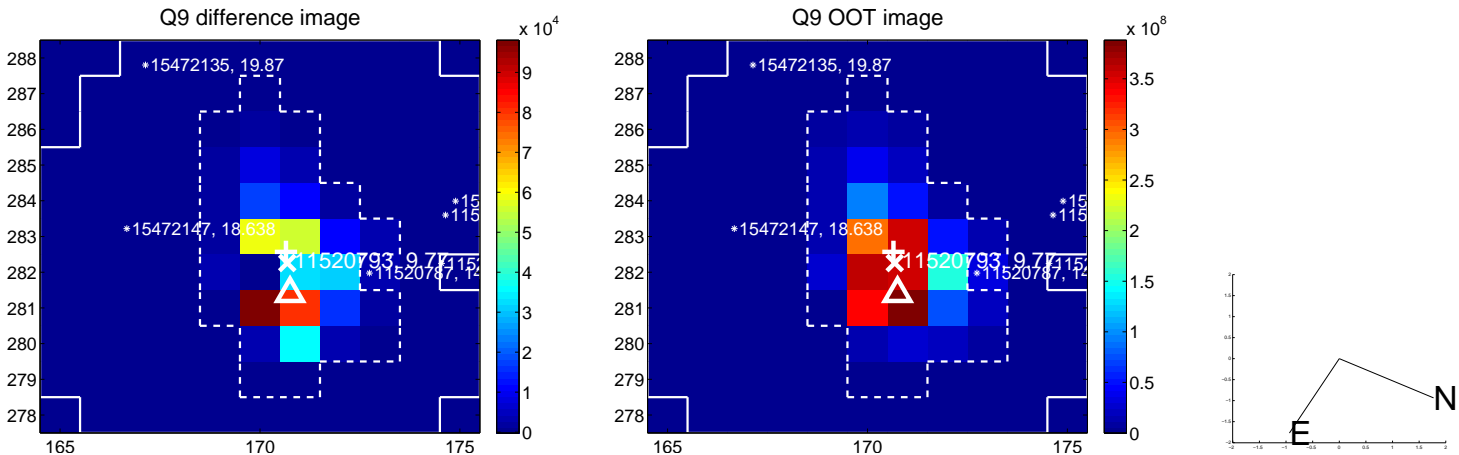


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

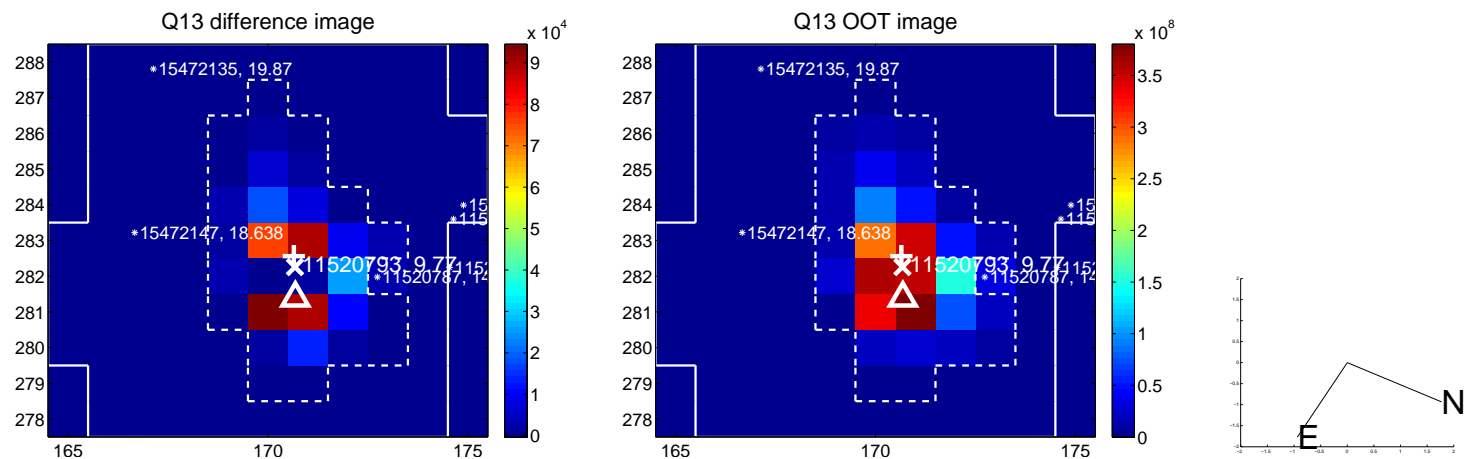
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



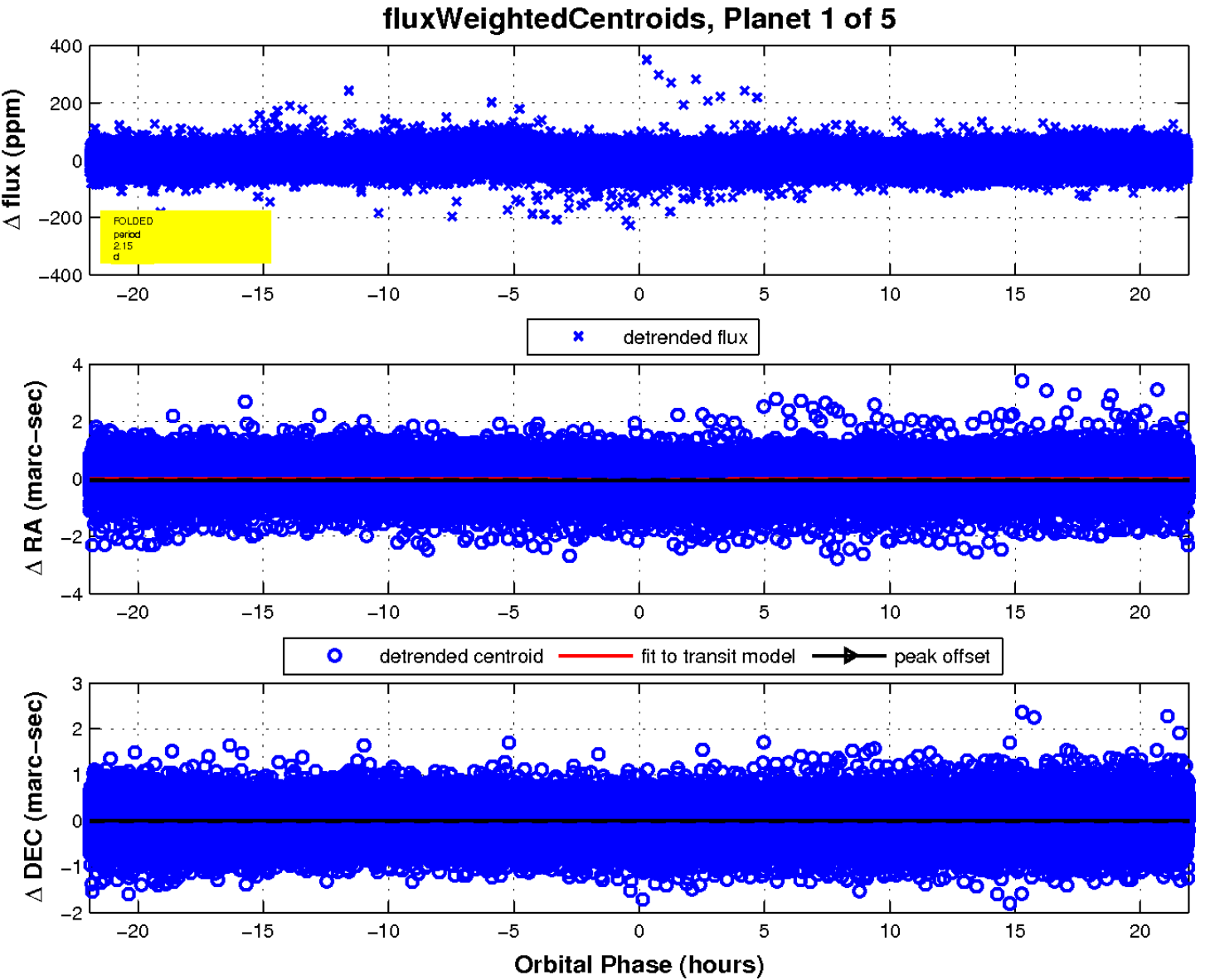
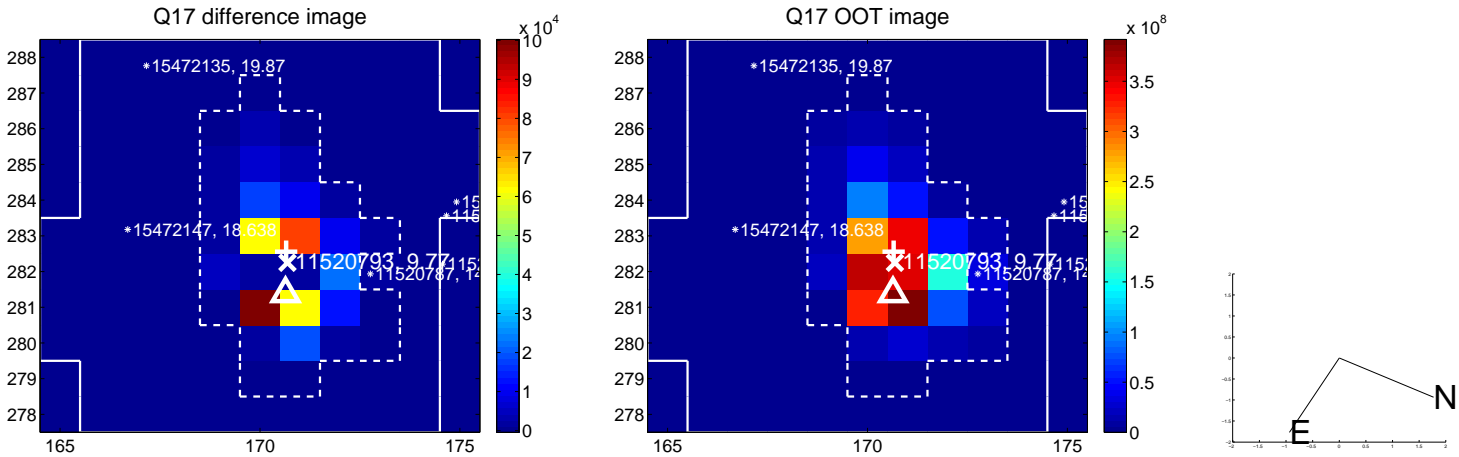
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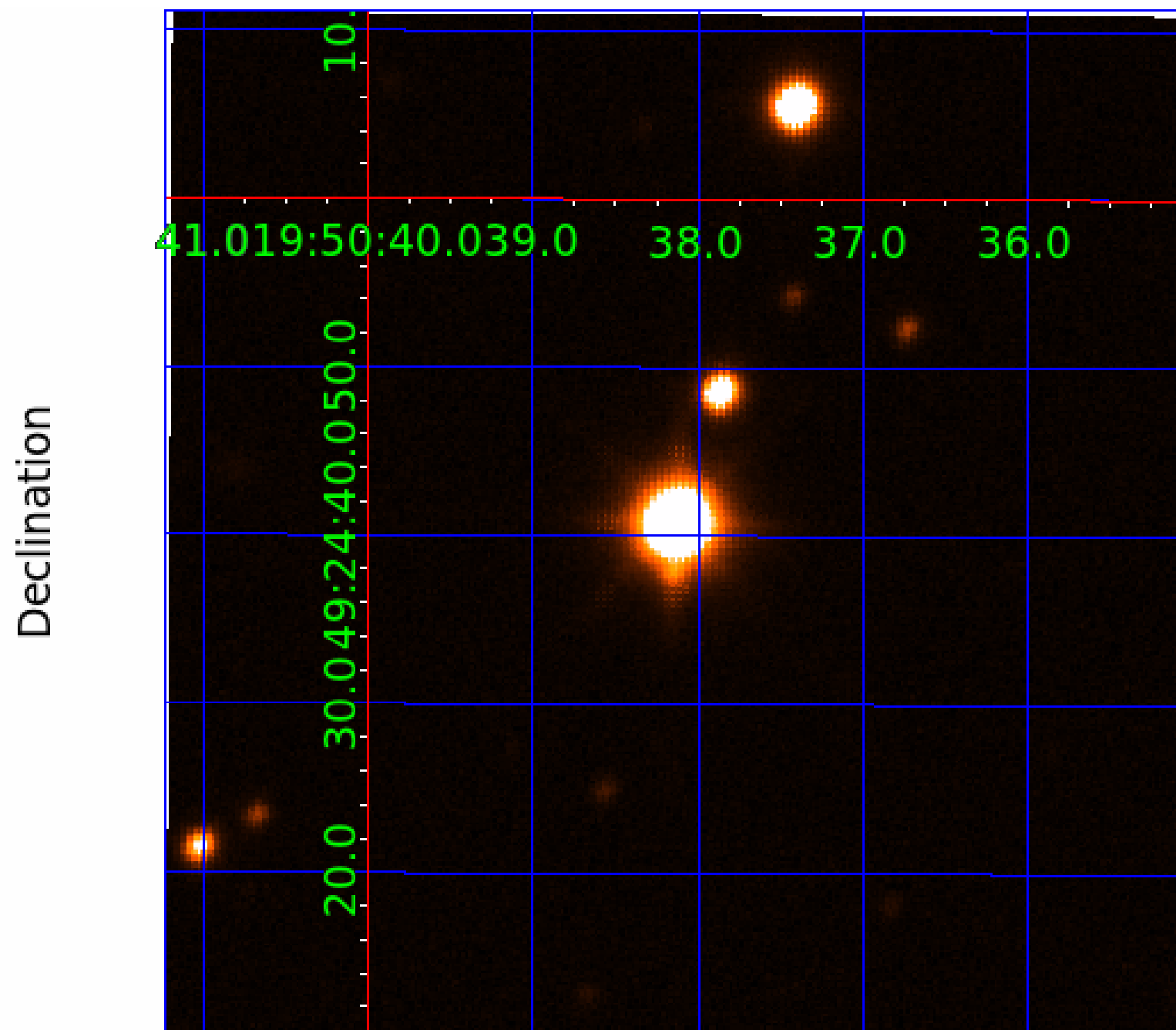
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UKIRT Image



KIC 011520793

Q1-17 DR25 TCE Parameters

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011520793-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

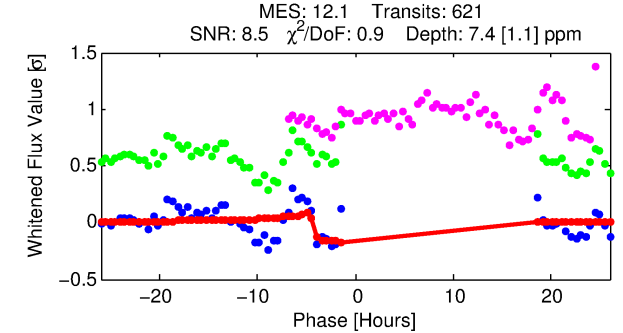
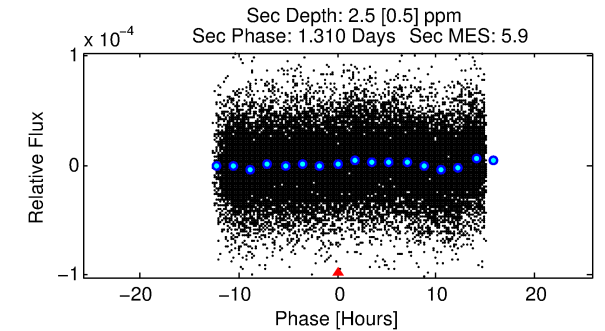
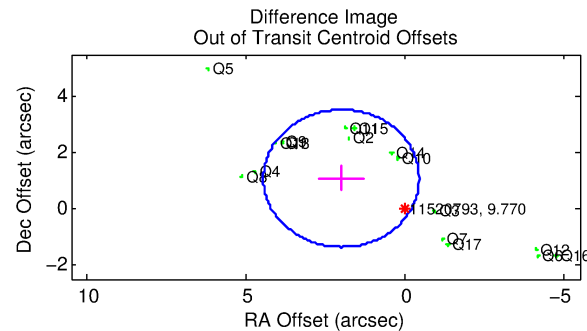
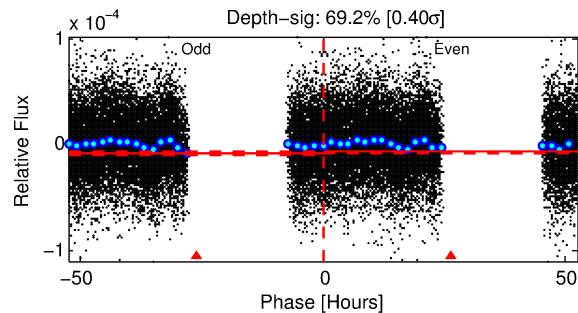
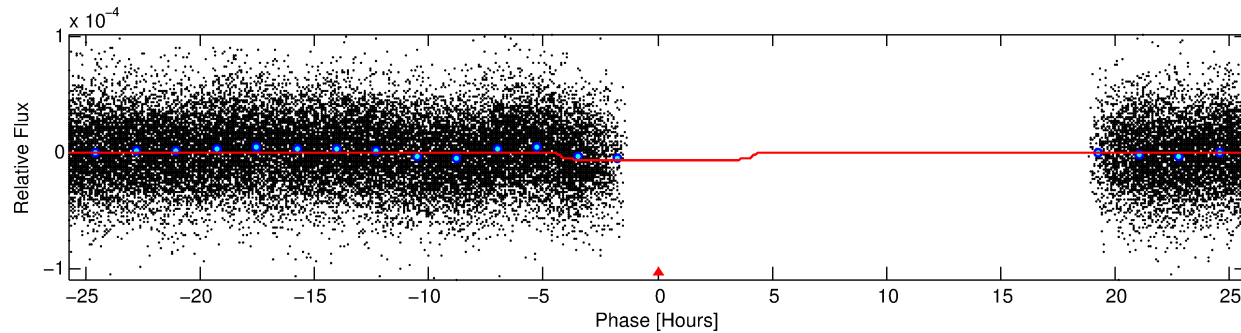
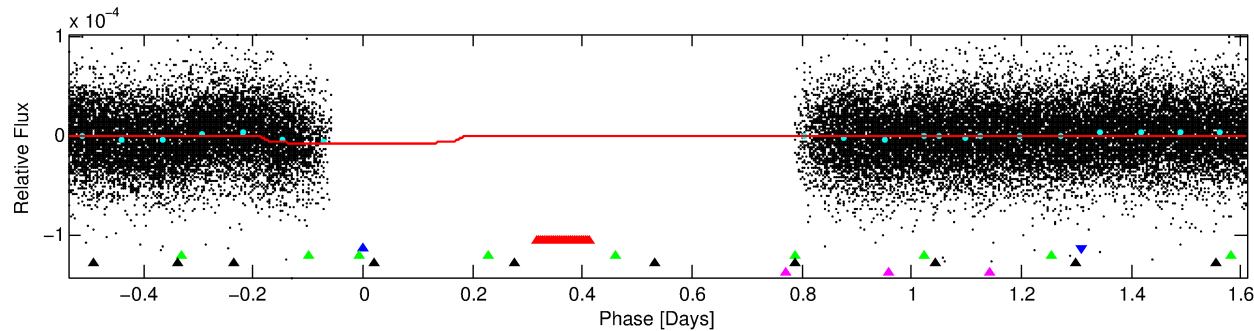
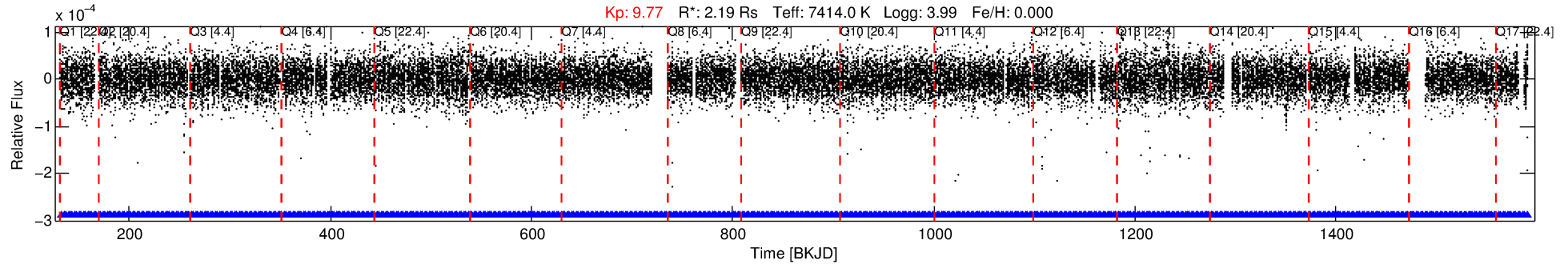
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011520793-02

No Significant Match Found

DV One-Page Summary

KIC: 11520793 Candidate: 2 of 5 Period: 2.148 d



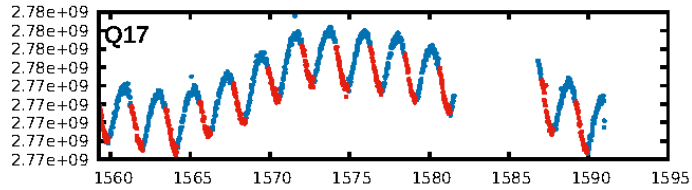
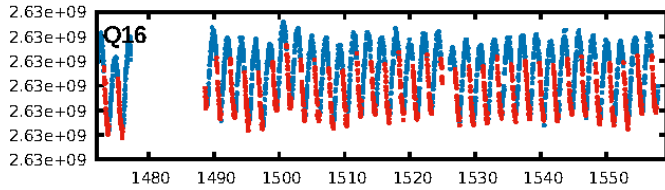
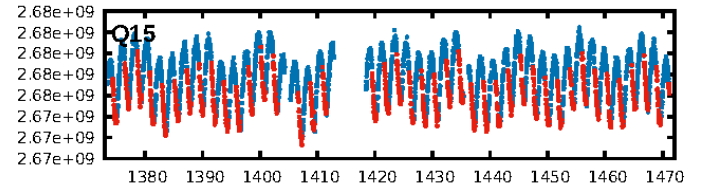
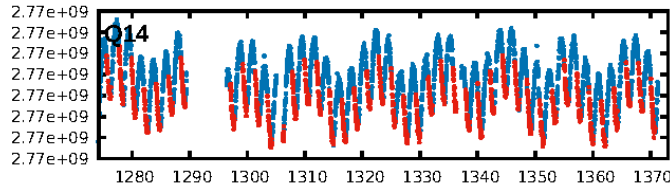
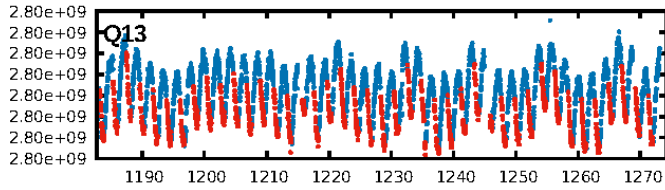
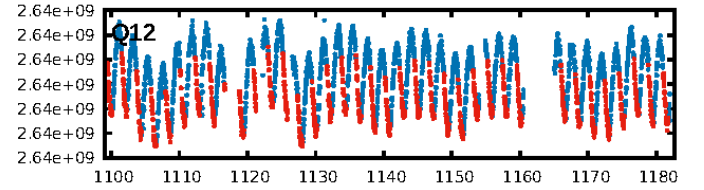
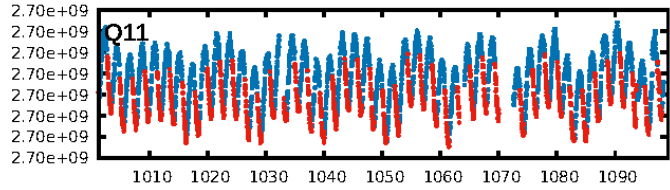
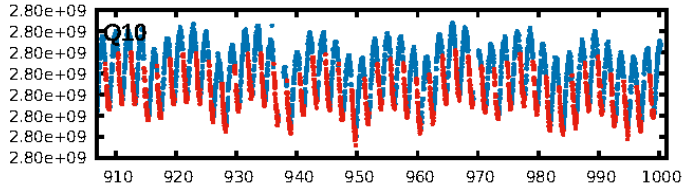
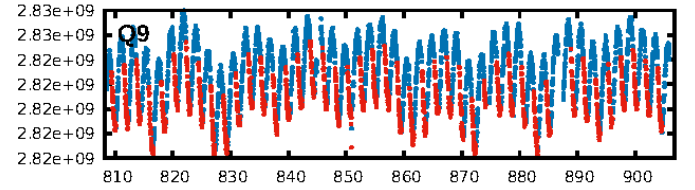
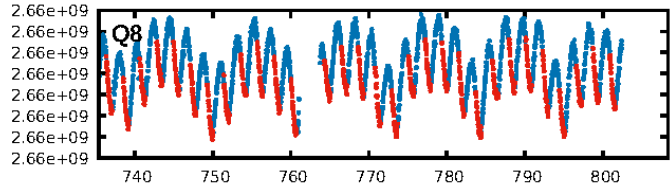
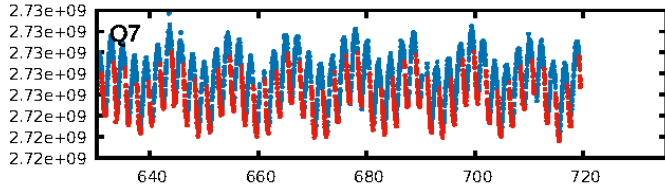
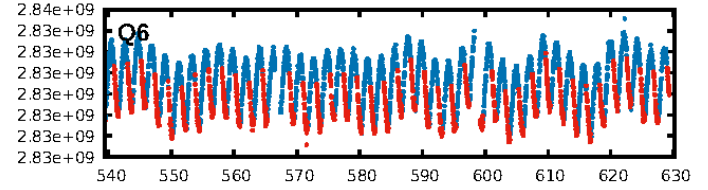
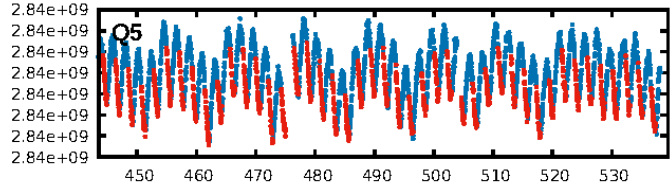
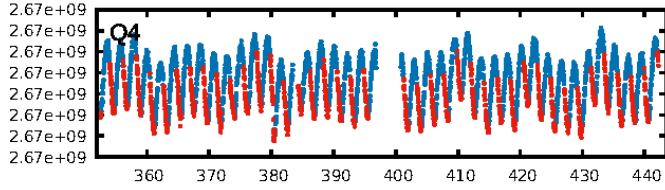
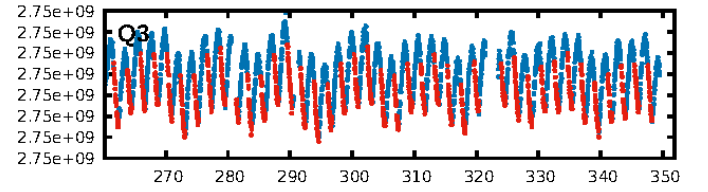
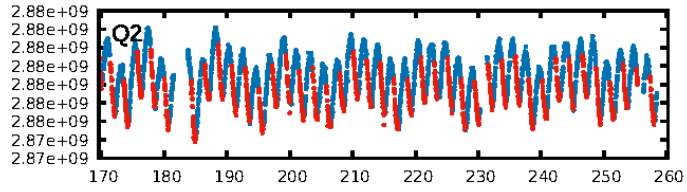
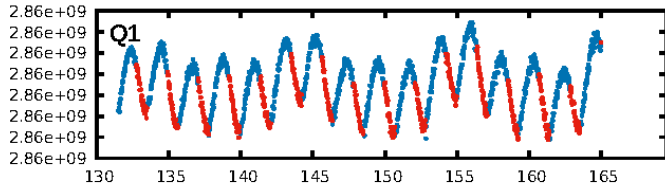
DV Fit Results:

Period = 2.14816 [0.00002] d
Epoch = 133.1087 [0.0336] BKJD
Rp/R* = 0.0030 [0.0006]
a/R* = 1.16 [0.34]
b = 0.94 [0.16]
Seff = 8521.44 [3517.92]
Teq = 2450 [253] K
Rp = 0.71 [0.25] Re
a = 0.0390 [0.0099] AU
Ag = 4.11 [2.39] [1.30 σ]
Teffp = 5394 [651] K [4.22 σ]

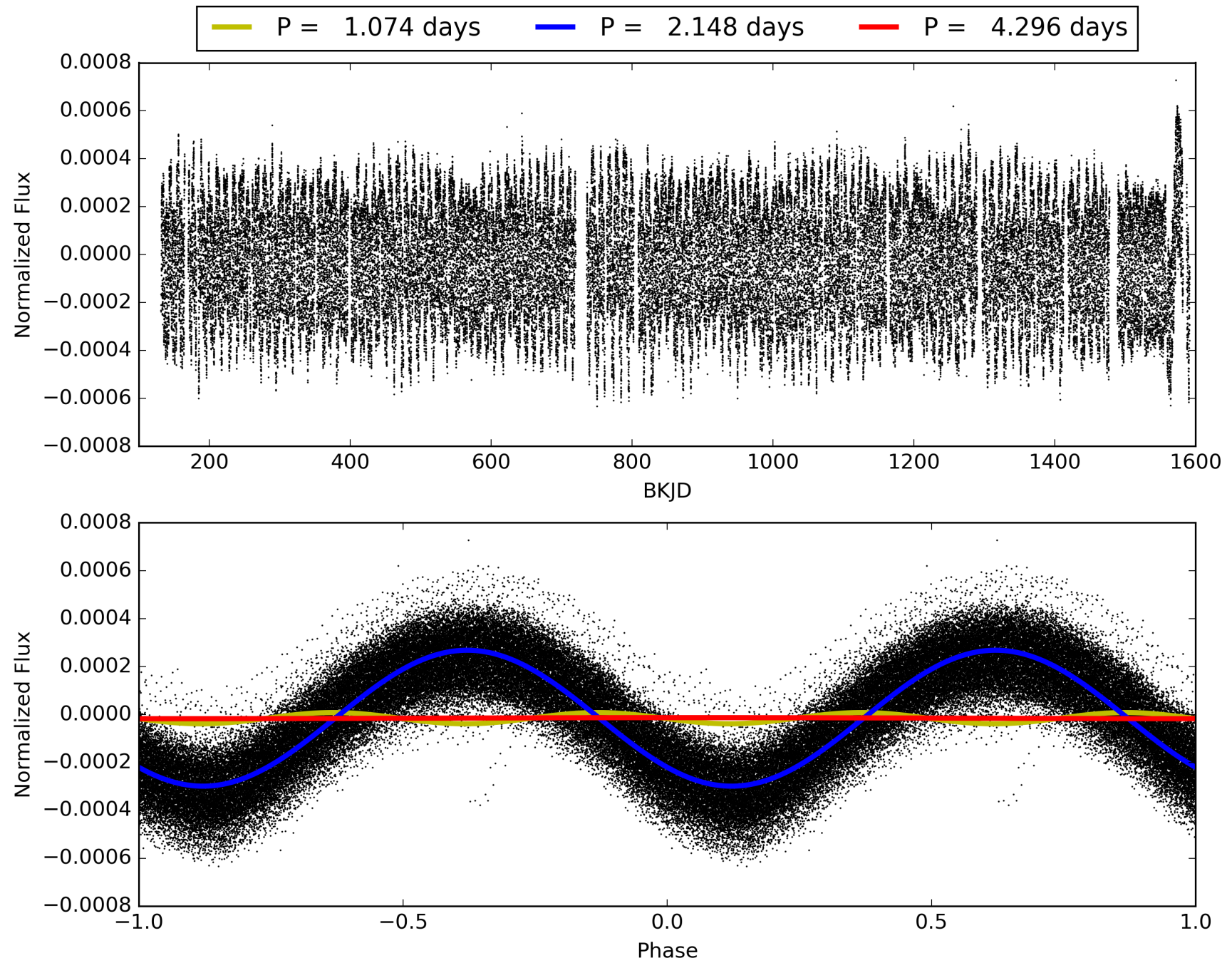
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.92e-23
RollingBand-fgt: 1.00 [593/593]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 7.422 arcsec [4.91 σ]
OotOffset-rm: 2.276 arcsec [2.79 σ]
KicOffset-rm: 2.057 arcsec [2.56 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.18 [3/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 011520793-02, PDC Light Curves

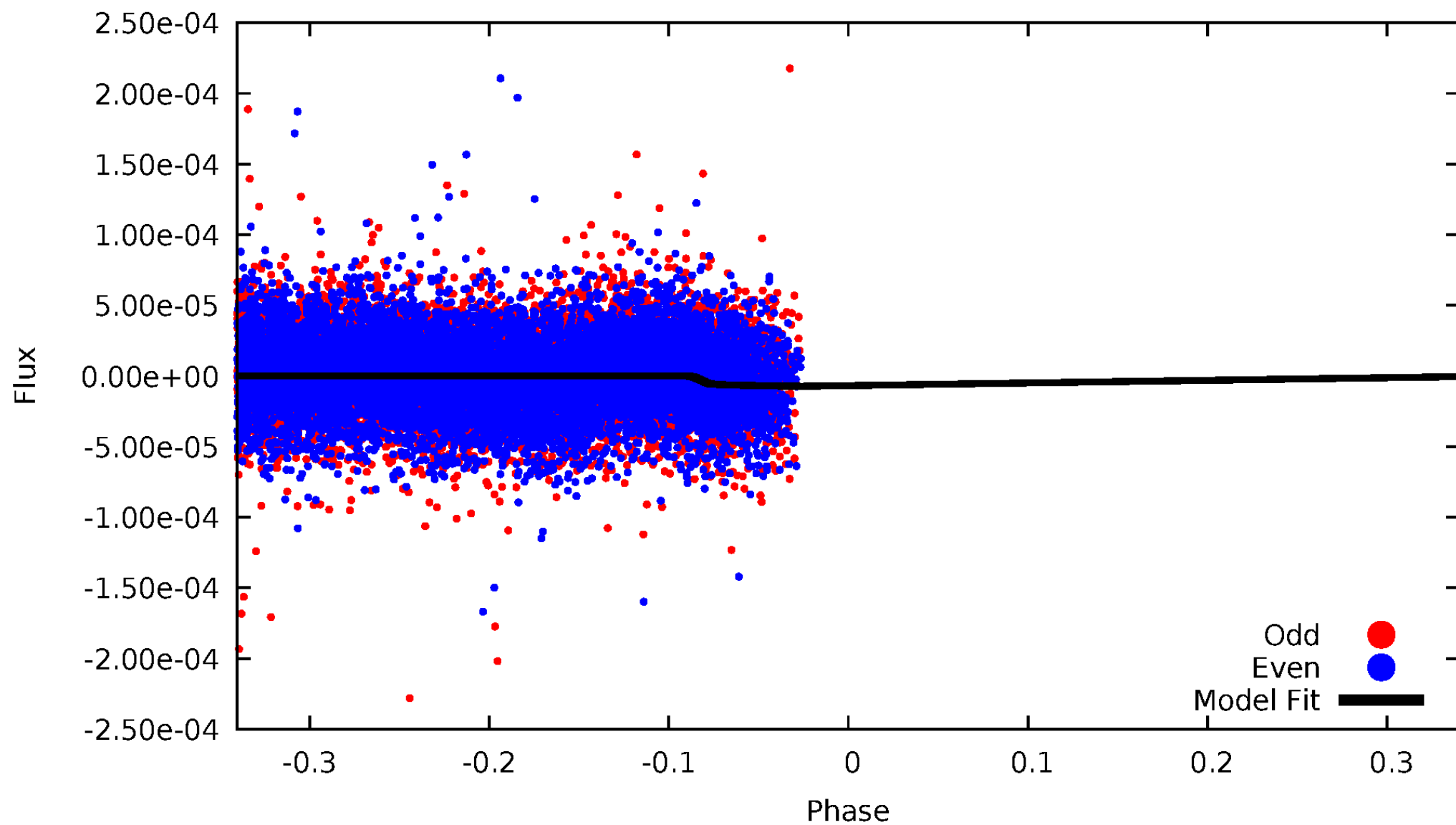


TCE 011520793-02



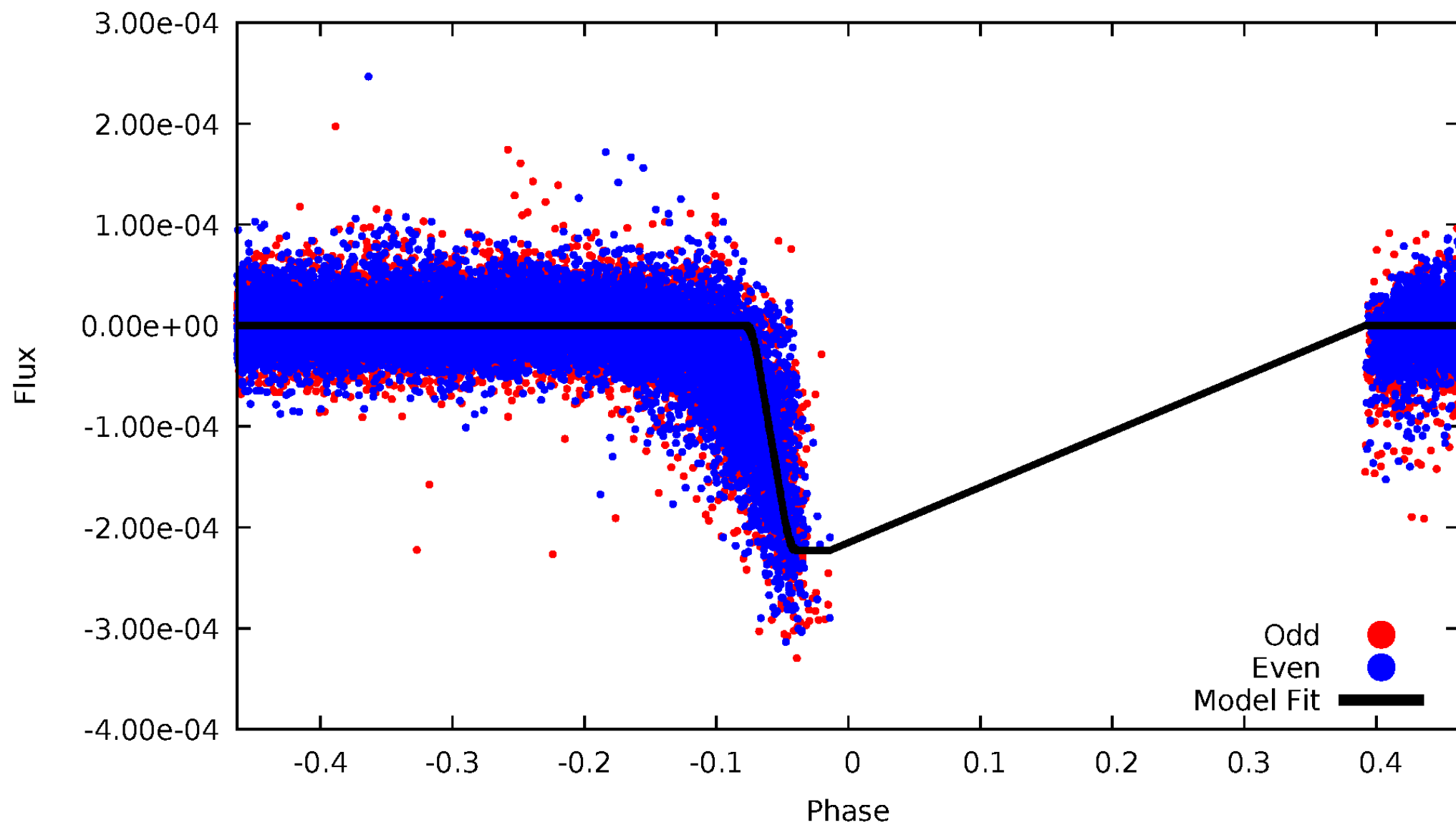
DV Odd/Even

TCE 011520793-02



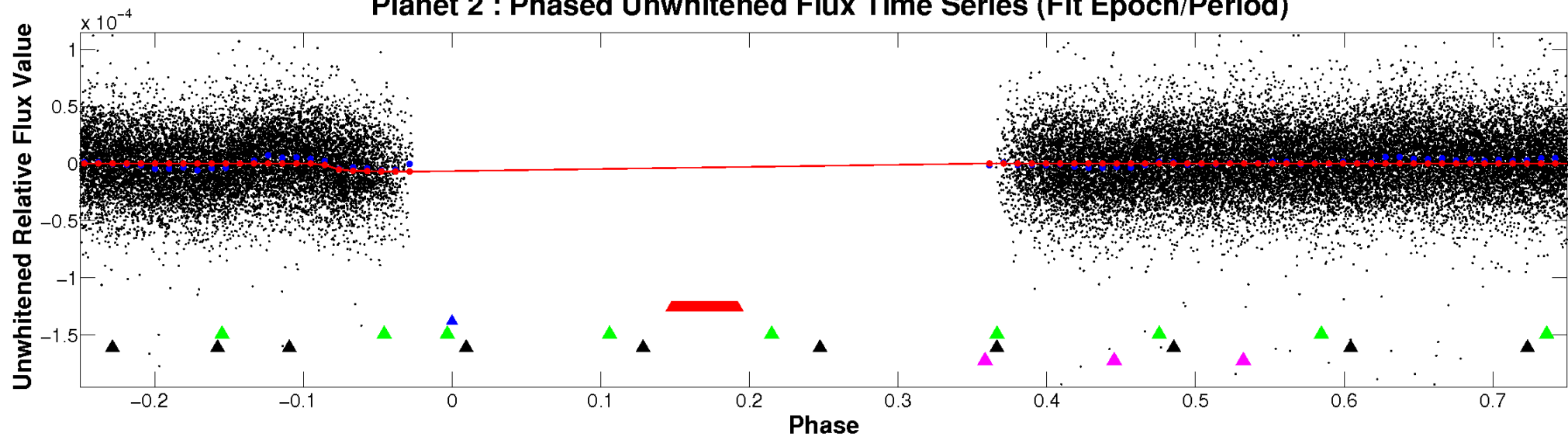
ALT Odd/Even

TCE 011520793-02

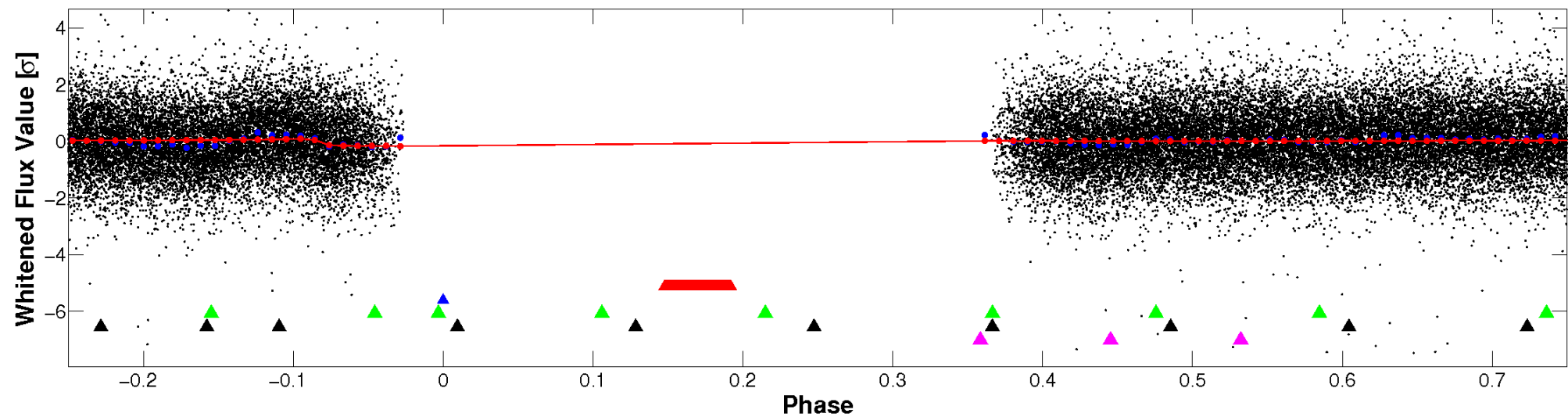


Non-Whitened Vs. Whitened Light Curve

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

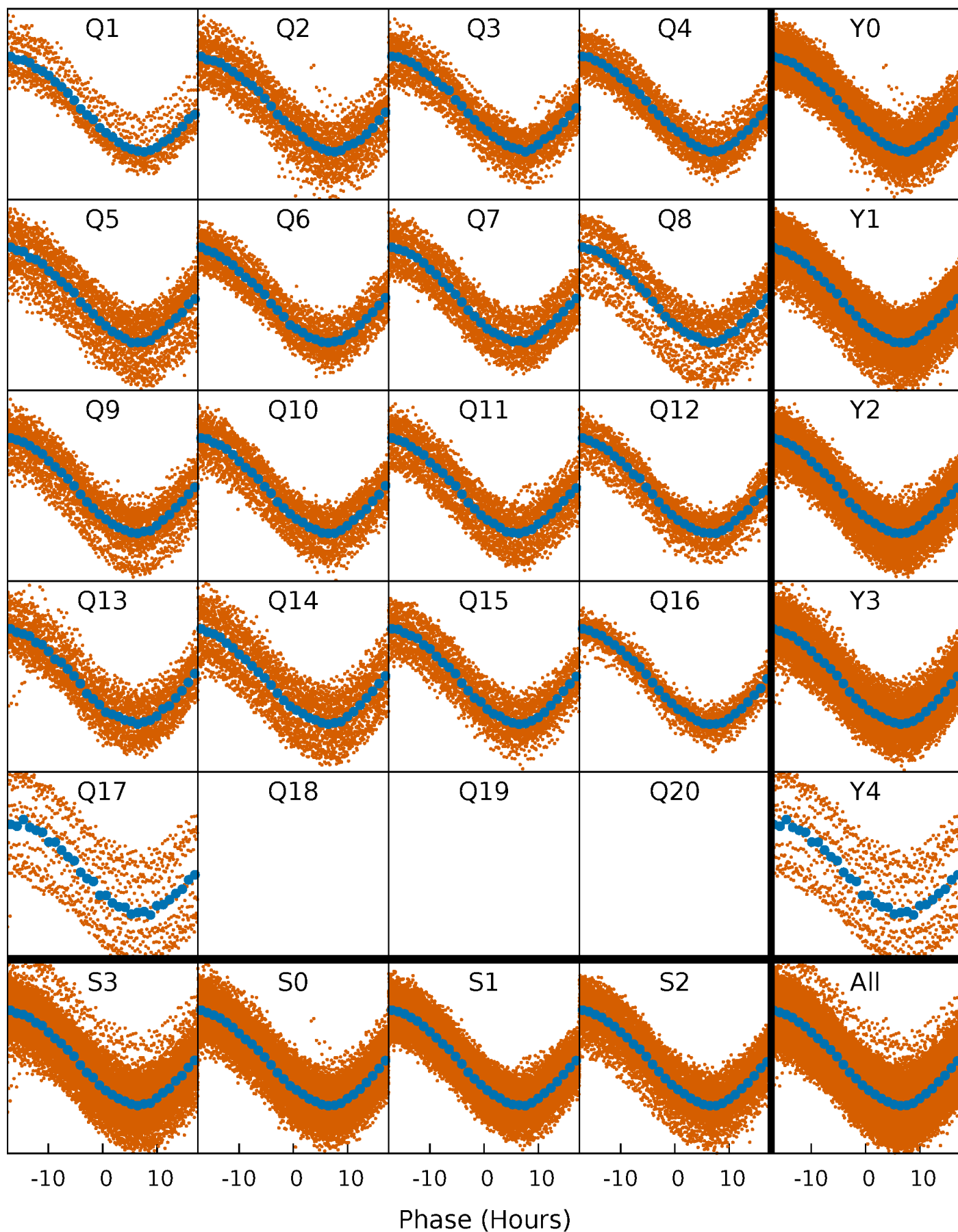


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



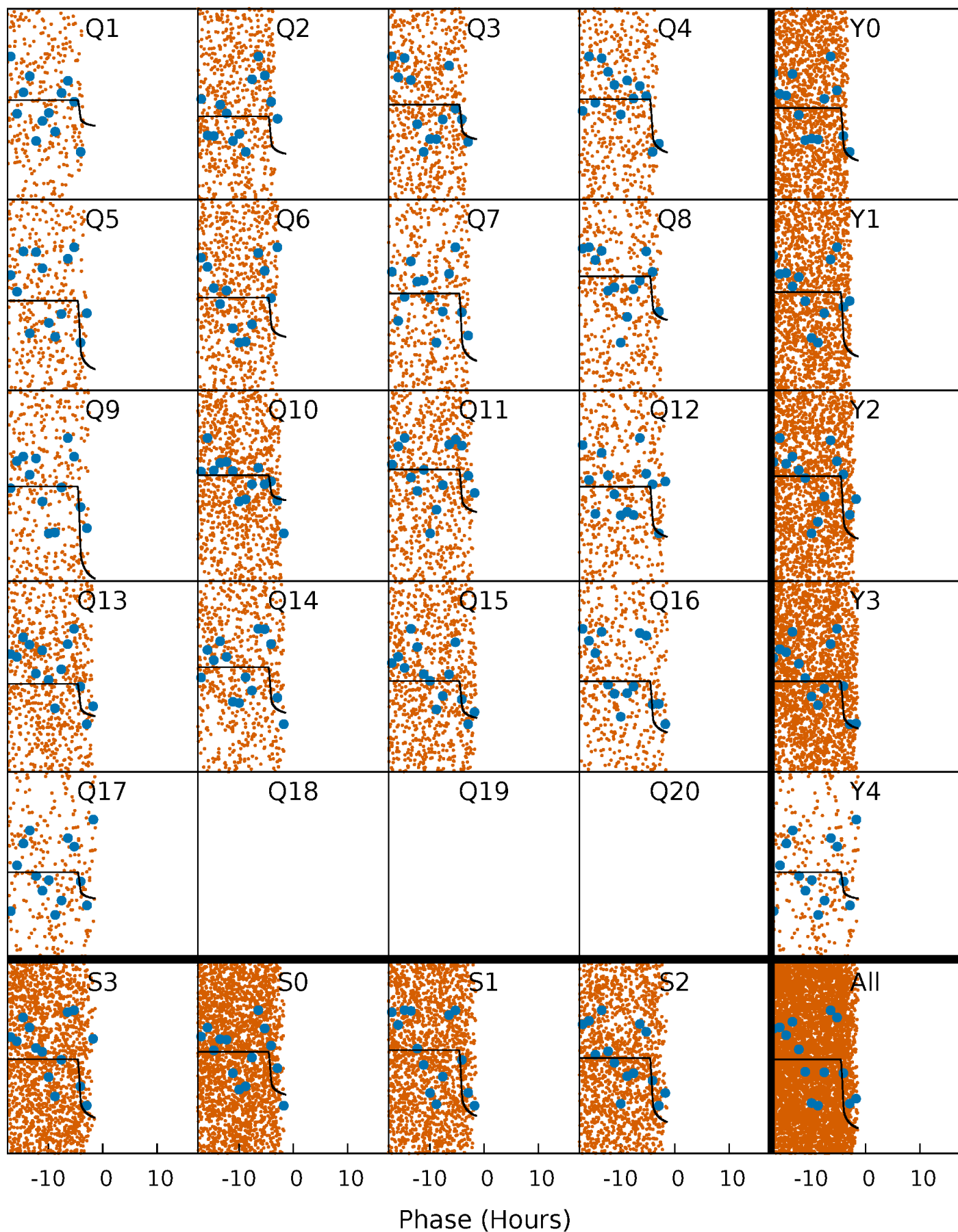
PDC Quarter-Phased Transit Curves

TCE 011520793-02 P= 2.148160 Days $T_0=133.108700$ (BKJD)



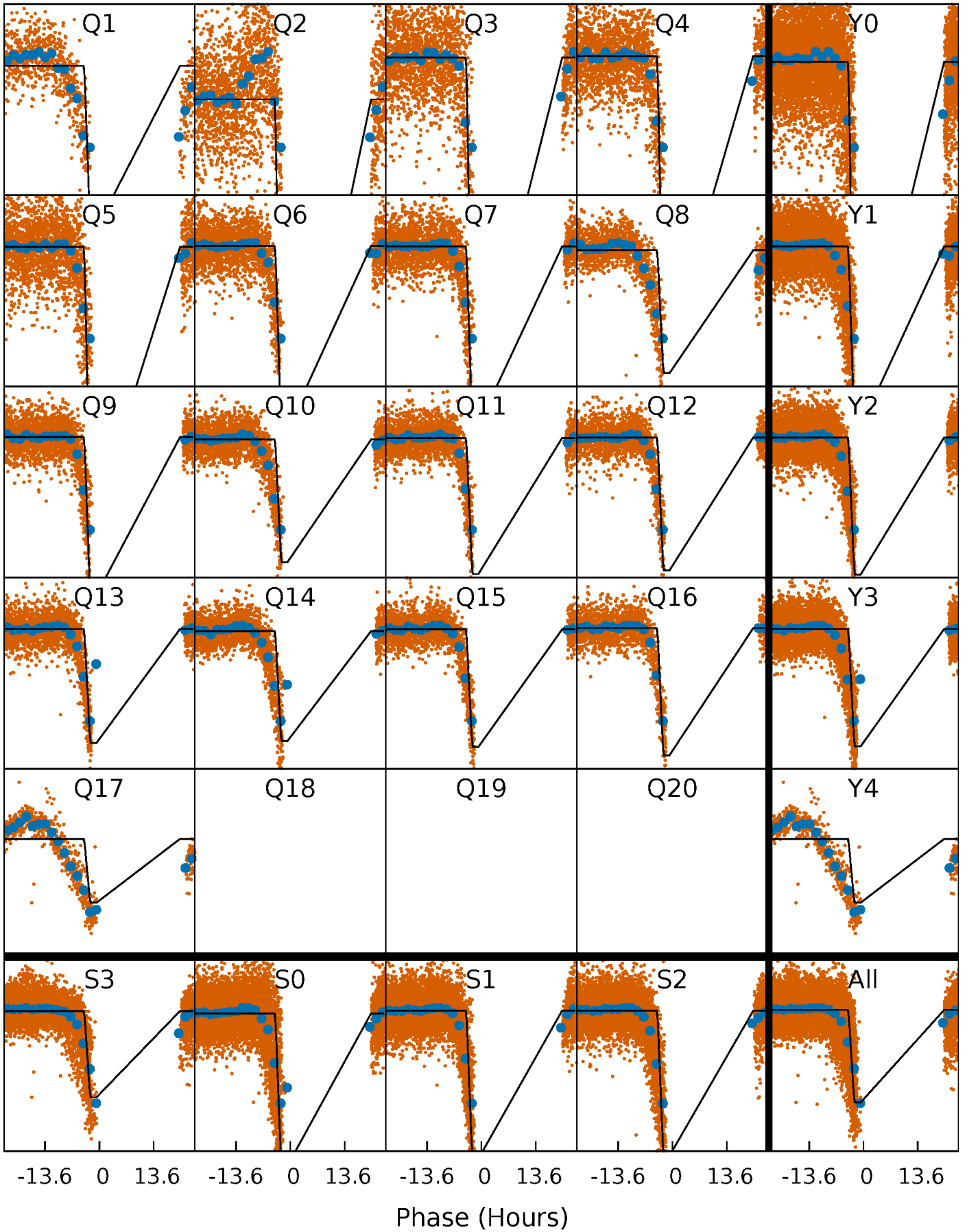
DV Quarter-Phased Transit Curves

TCE 011520793-02 P= 2.148160 Days $T_0=133.108700$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

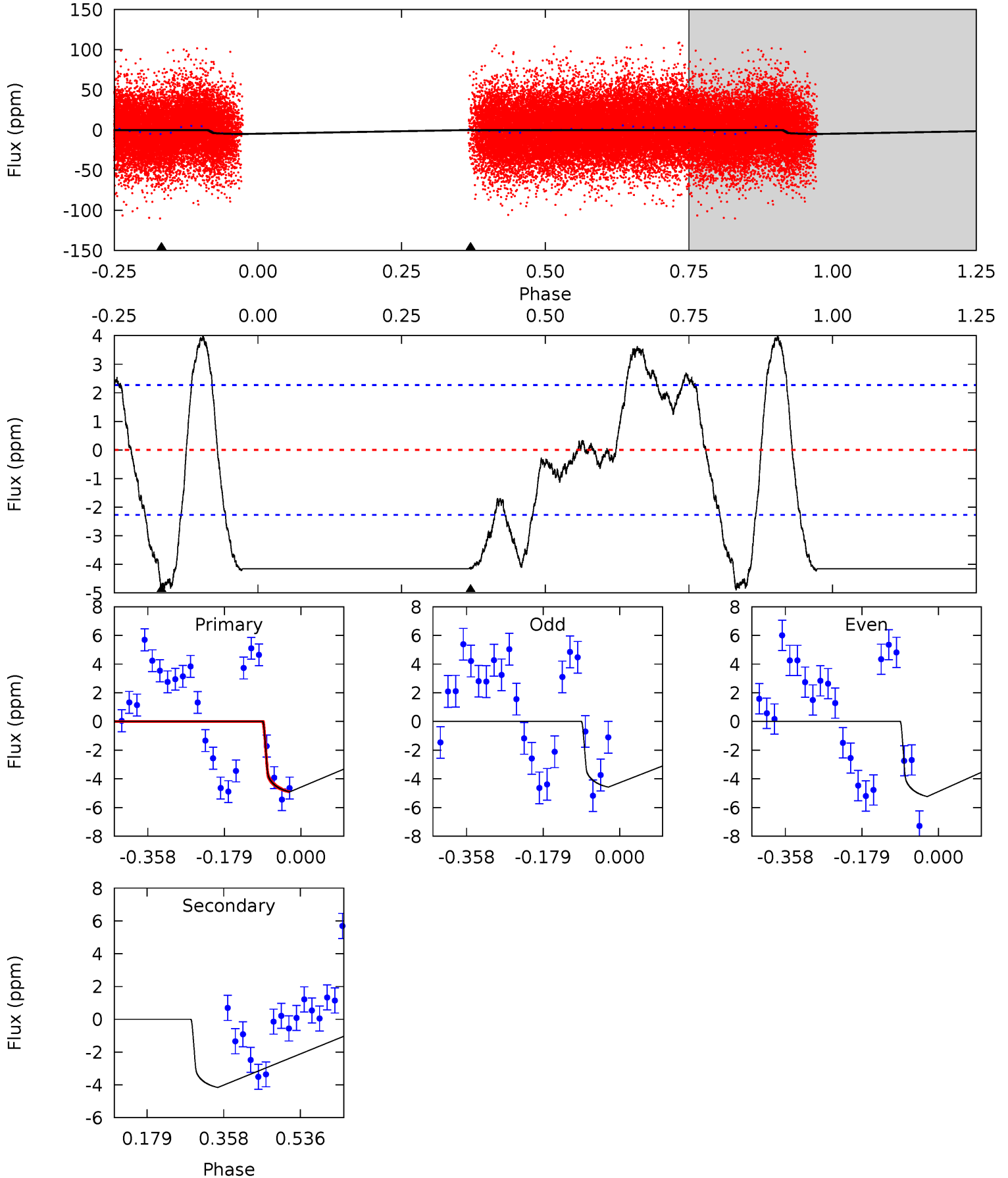
TCE 011520793-02 P= 2.148204 Days $T_0=133.052723$ (BKJD)



DV Model-Shift Uniqueness Test

011520793-02, P = 2.148160 Days, E = 130.960540 Days

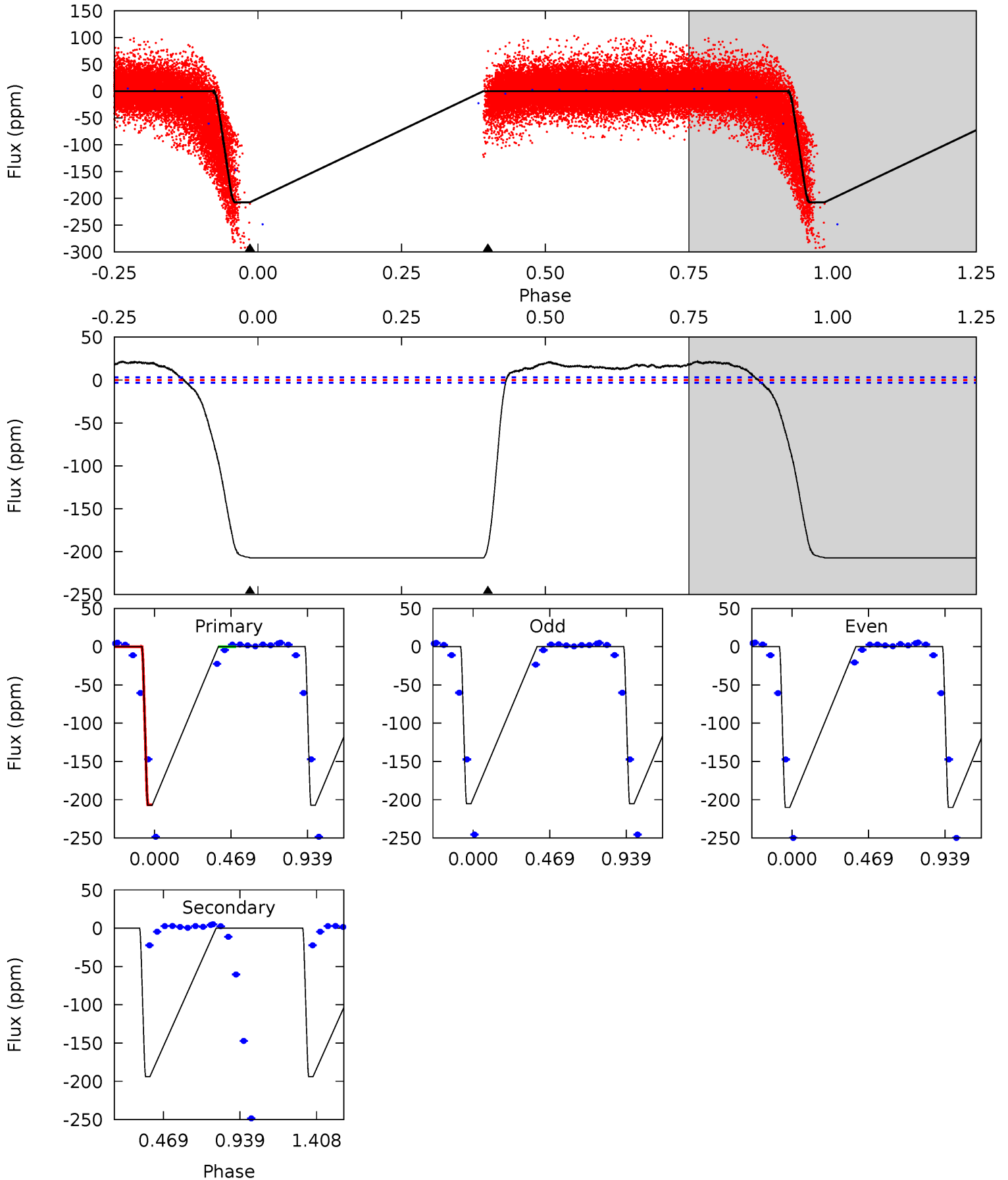
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.61	8.14	0	0	4.44	1.34	2.13	9.61	9.61	8.14	8.14	0.64	0	0.45	0



Alt Model-Shift Uniqueness Test

011520793-02, P = 2.148204 Days, E = 130.904519 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
282.9	264.6	0	0	4.23	0.72	13.4	282.9	282.9	264.6	264.6	3.28	0	0.09	0



Stellar Parameters For KIC 011520793

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7414^{+207}_{-337}	$3.992^{+0.204}_{-0.167}$	$0.000^{+0.200}_{-0.350}$	$2.189^{+0.533}_{-0.651}$	$1.716^{+0.201}_{-0.327}$	$0.231^{+0.305}_{-0.099}$
	+3%/-5%	+5%/-4%	+inf%/-inf%	+24%/-30%	+12%/-19%	+132%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011520793-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 1	$0.71^{+0.18}_{-0.17}$	3397^{+251}_{-269}	5913^{+796}_{-564}	$6.779^{+5.123}_{-2.423}$
Alt.	-194 ± 1	$3.55^{+0.57}_{-0.55}$	3419^{+248}_{-279}	7060^{+274}_{-311}	13^{+4}_{-3}

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

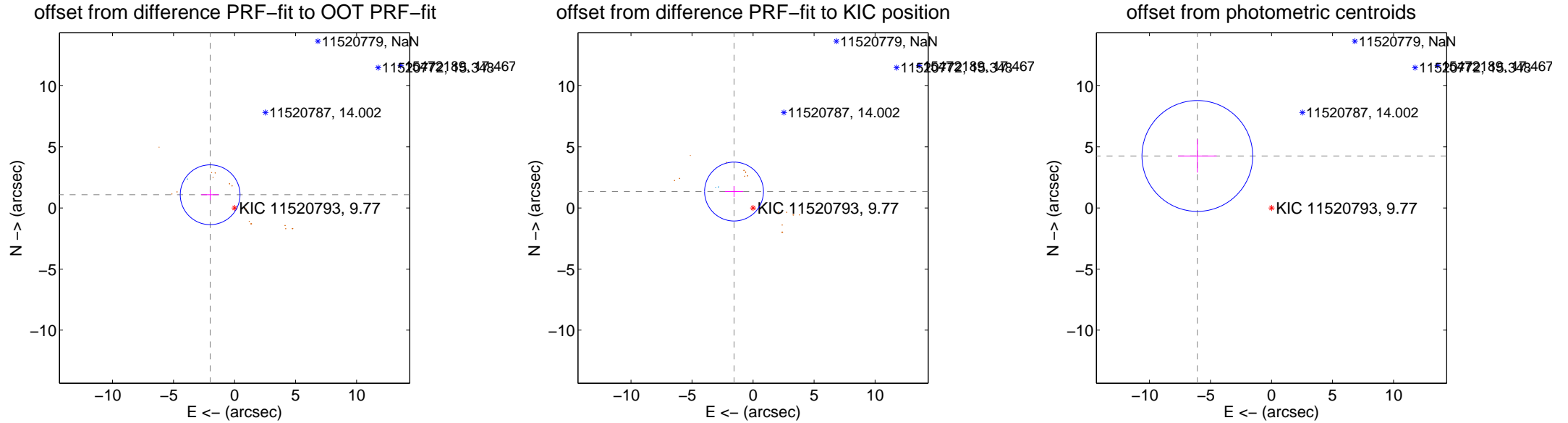
DV Centroid Data

Supplemental centroid analysis for 011520793-02. **Kepler magnitude: 9.77.** Transit SNR 8.45

There are 3 quarters with good PRF difference image offsets

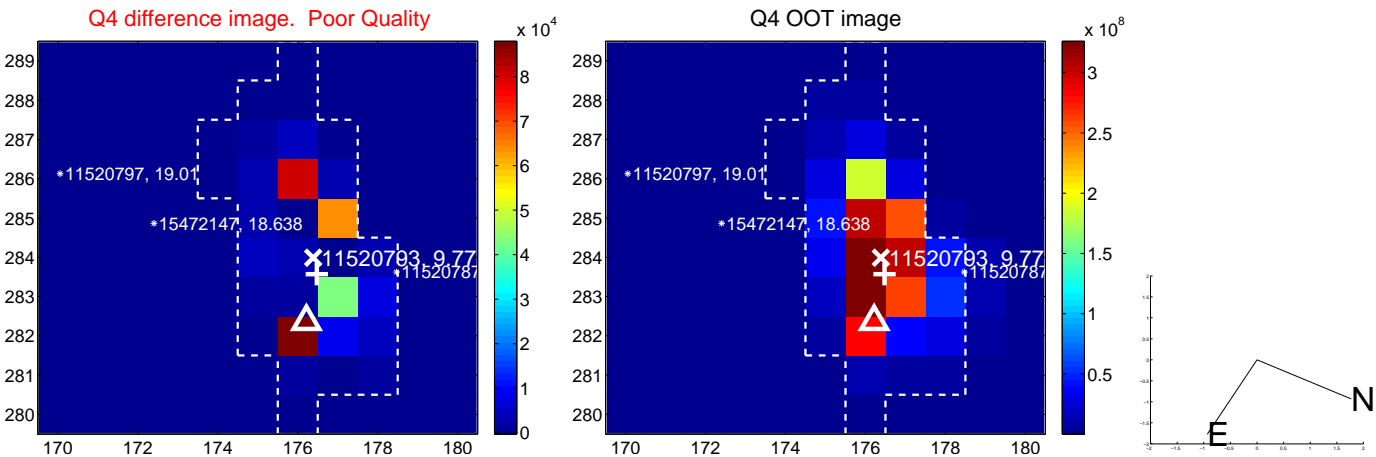
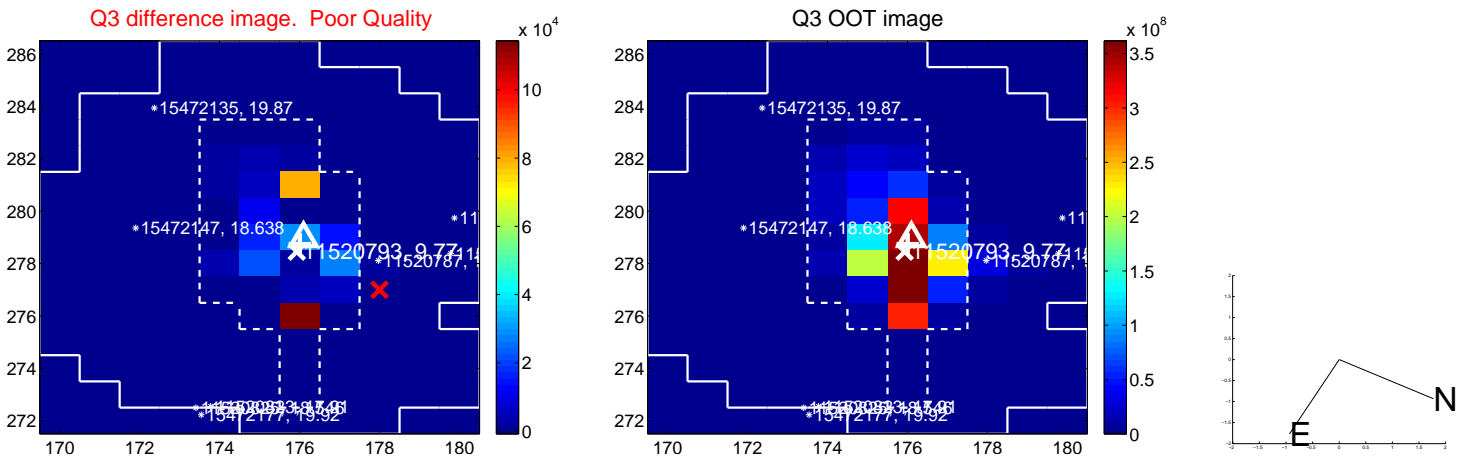
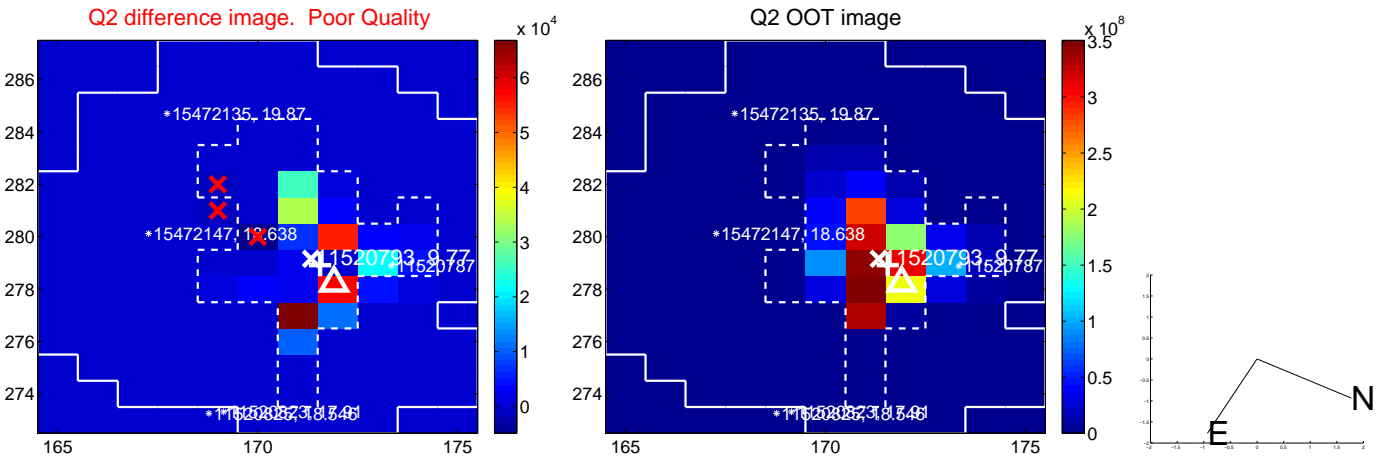
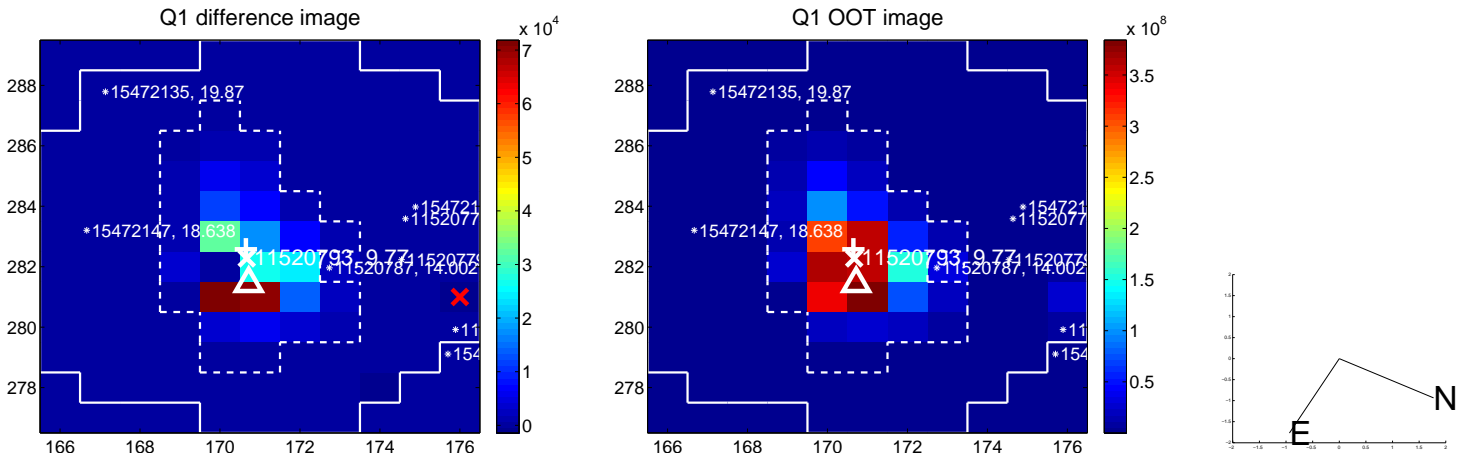
The direct PRF centroid is offset from the target star catalog position by about 1.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.276 ± 0.816	2.79	2.003 ± 0.725	1.081 ± 0.436
PRF-fit source offset from KIC position	2.057 ± 0.804	2.56	1.559 ± 0.745	1.343 ± 0.444
photometric centroid source offset	7.42 ± 1.51	4.91	6.08 ± 1.58	4.26 ± 1.36

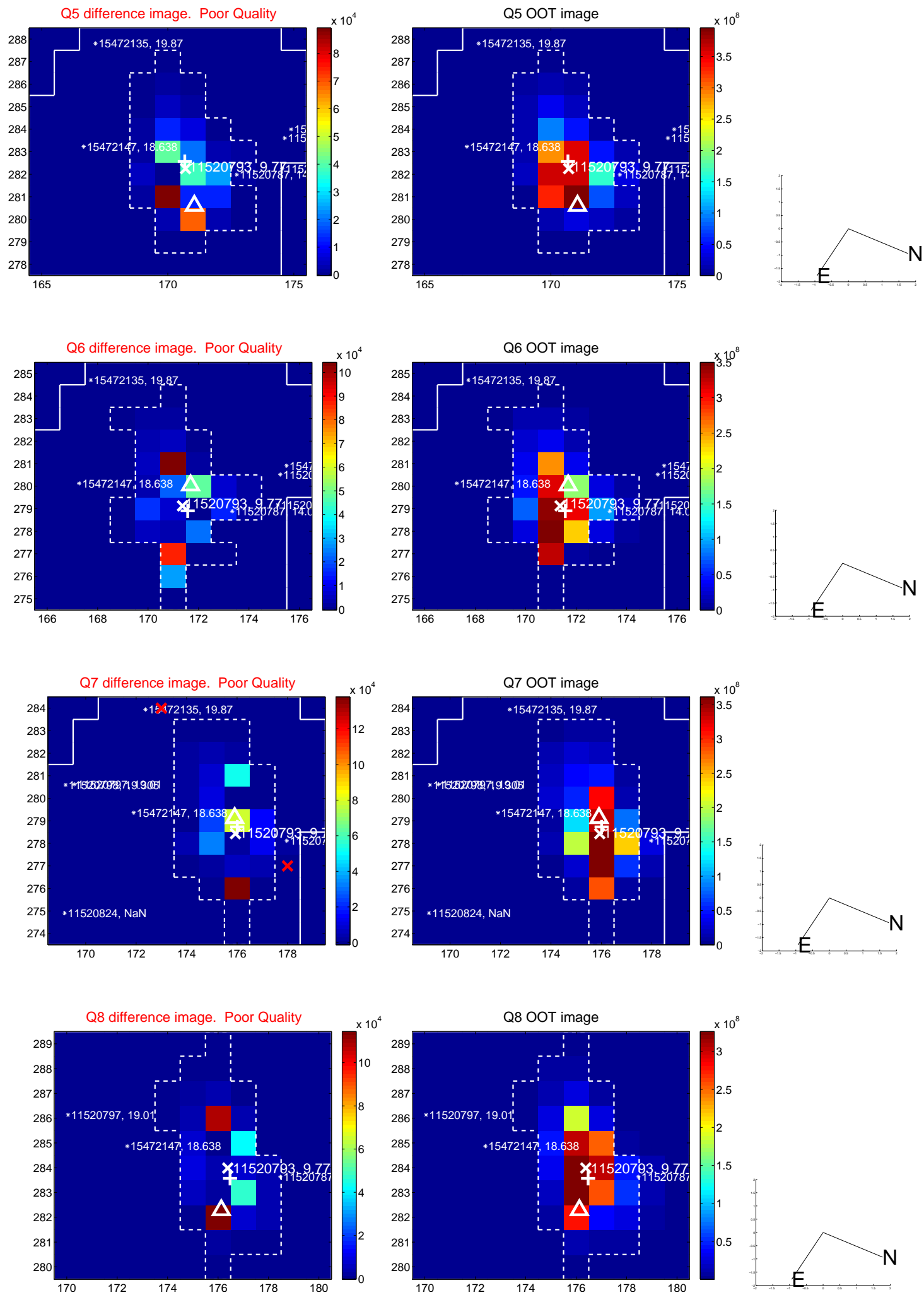


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

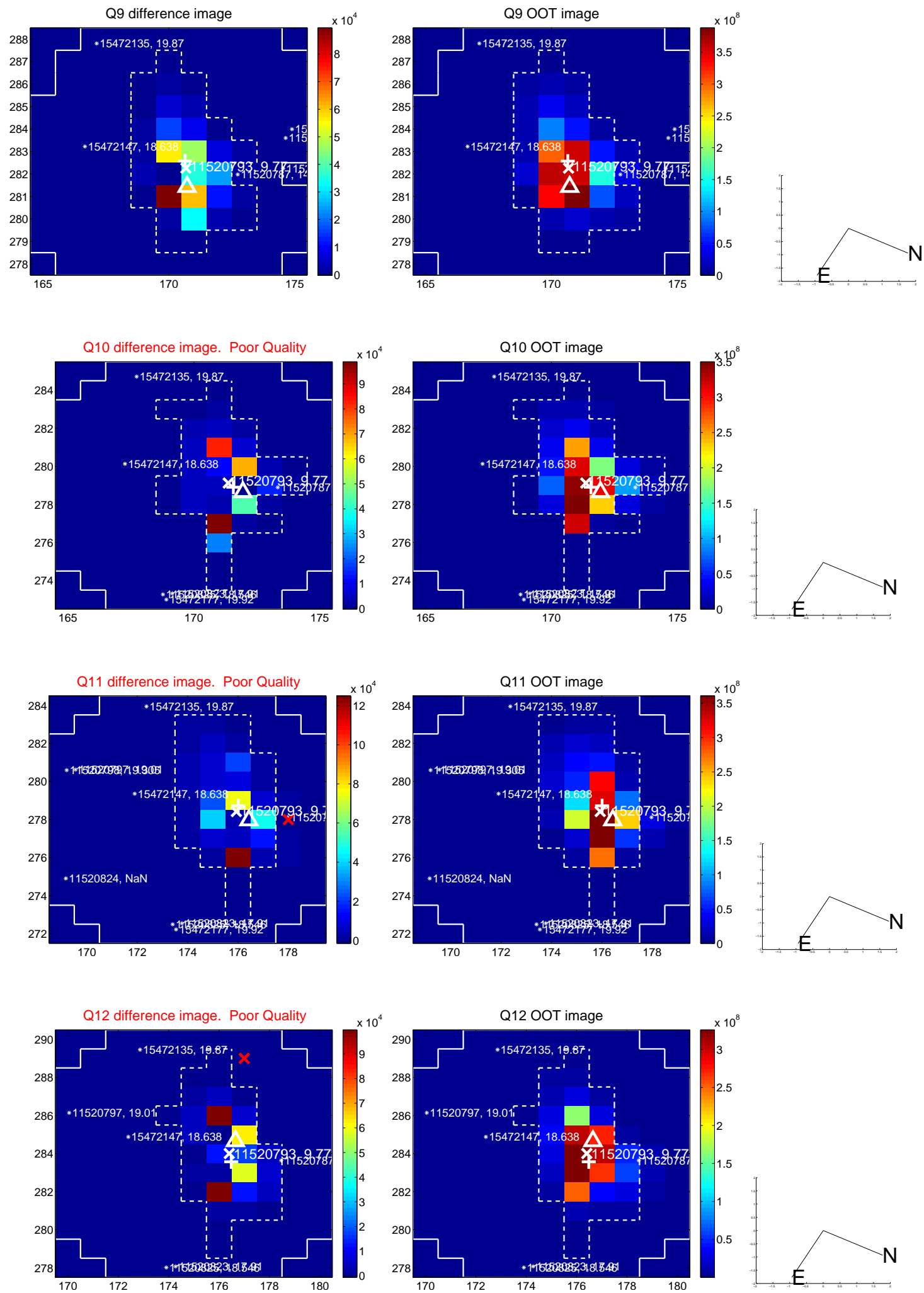
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



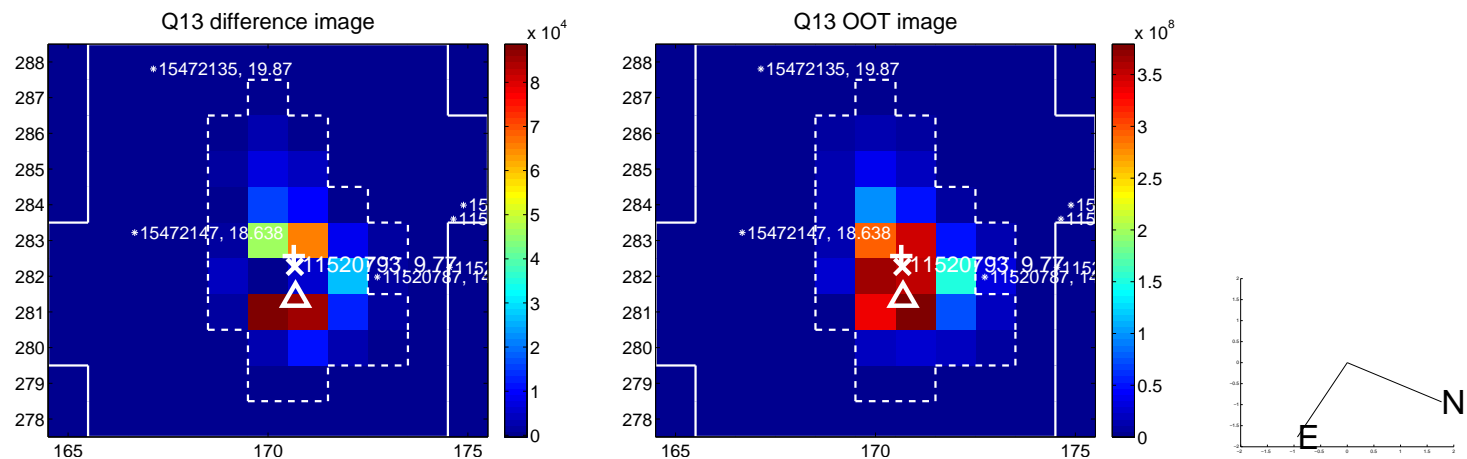
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



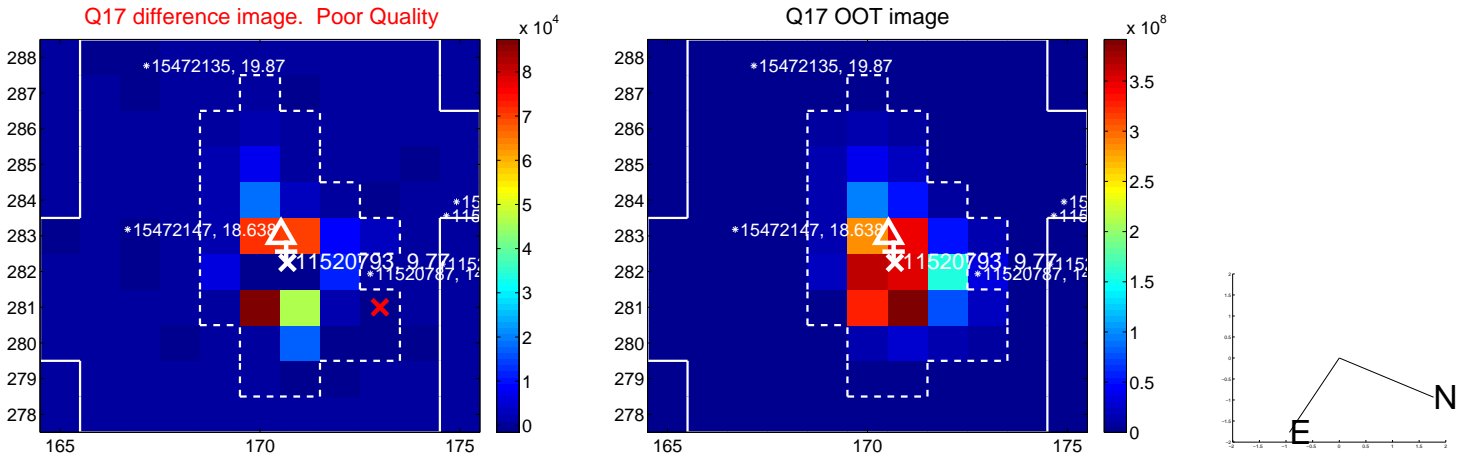
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



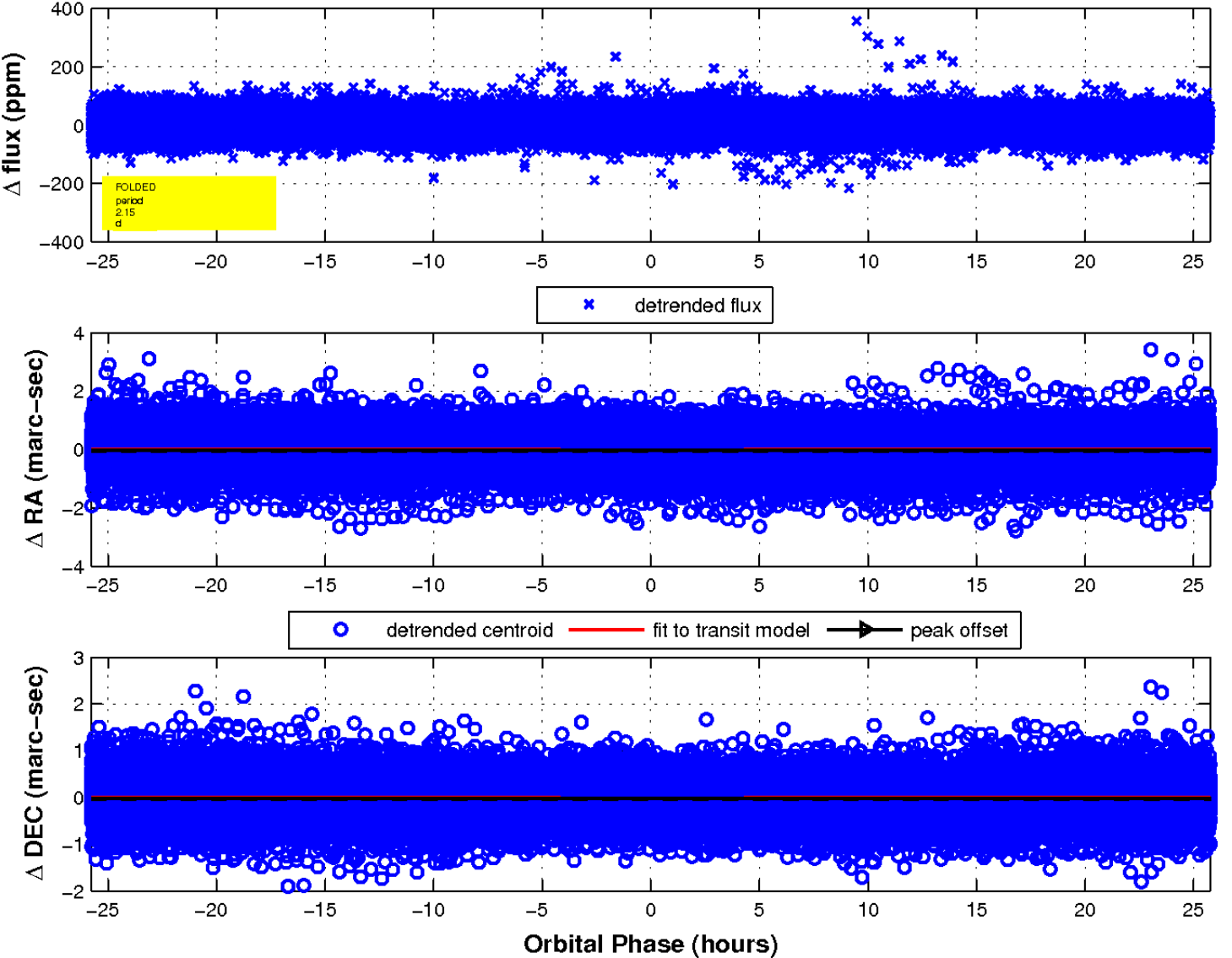
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



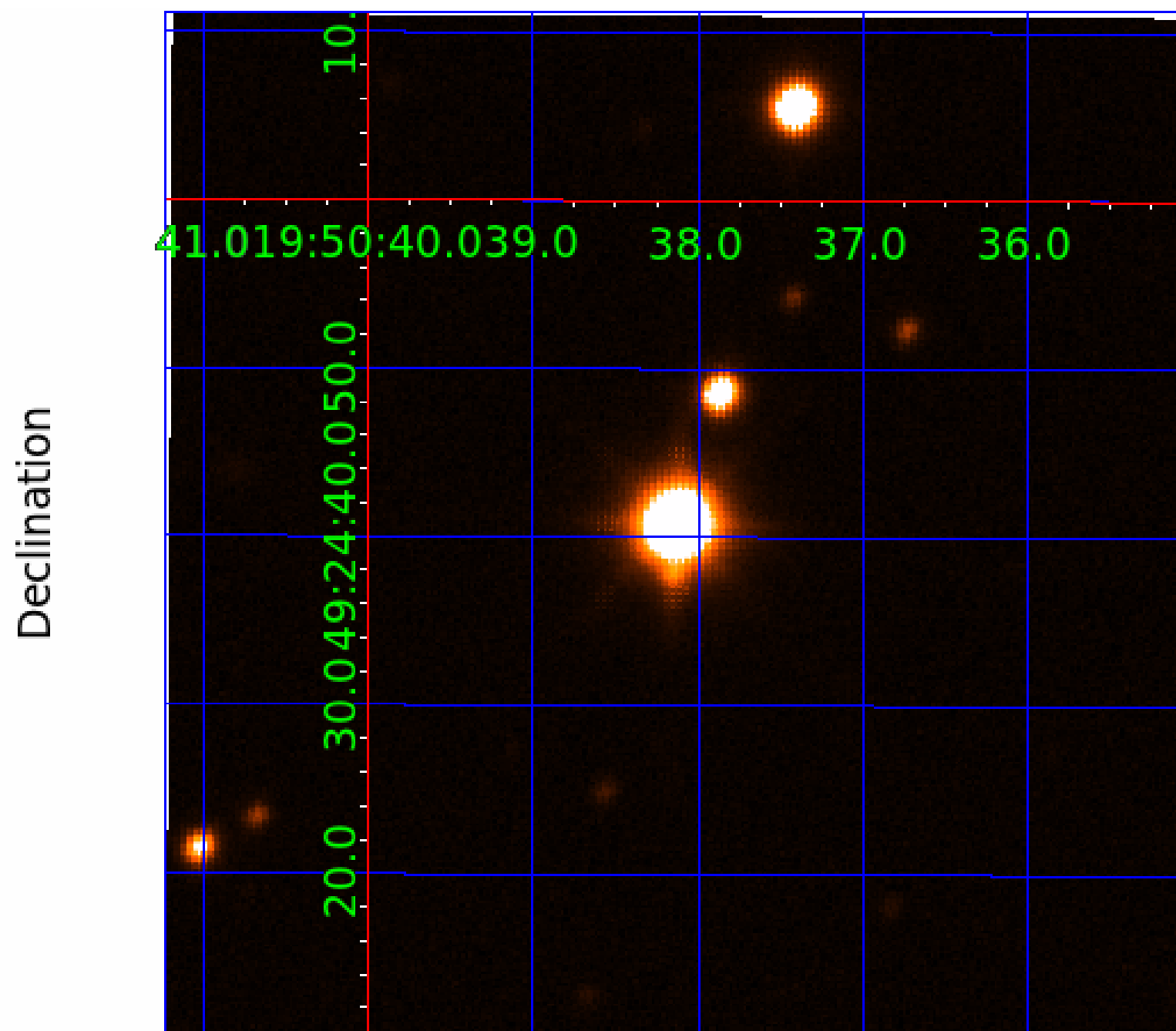
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 5



UKIRT Image



KIC 011520793

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})
011520793-01	OBS	No	2.148301	133.425754	7.1	7.310	15.4	15.4	2.19	7414	0.69	8520.69
011520793-02	OBS	No	2.148160	133.108700	7.4	8.773	12.1	8.5	2.19	7414	0.71	8521.44
011520793-03	OBS	No	164.054322	203.991267	22.6	8.735	12.4	3.7	2.19	7414	1.20	26.30
011520793-04	OBS	No	143.671167	238.029844	30.6	19.517	12.2	6.2	2.19	7414	1.34	31.39
011520793-05	OBS	No	463.815979	514.476384	34.3	13.680	7.9	5.0	2.19	7414	1.48	6.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011520793-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
011520793-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
011520793-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

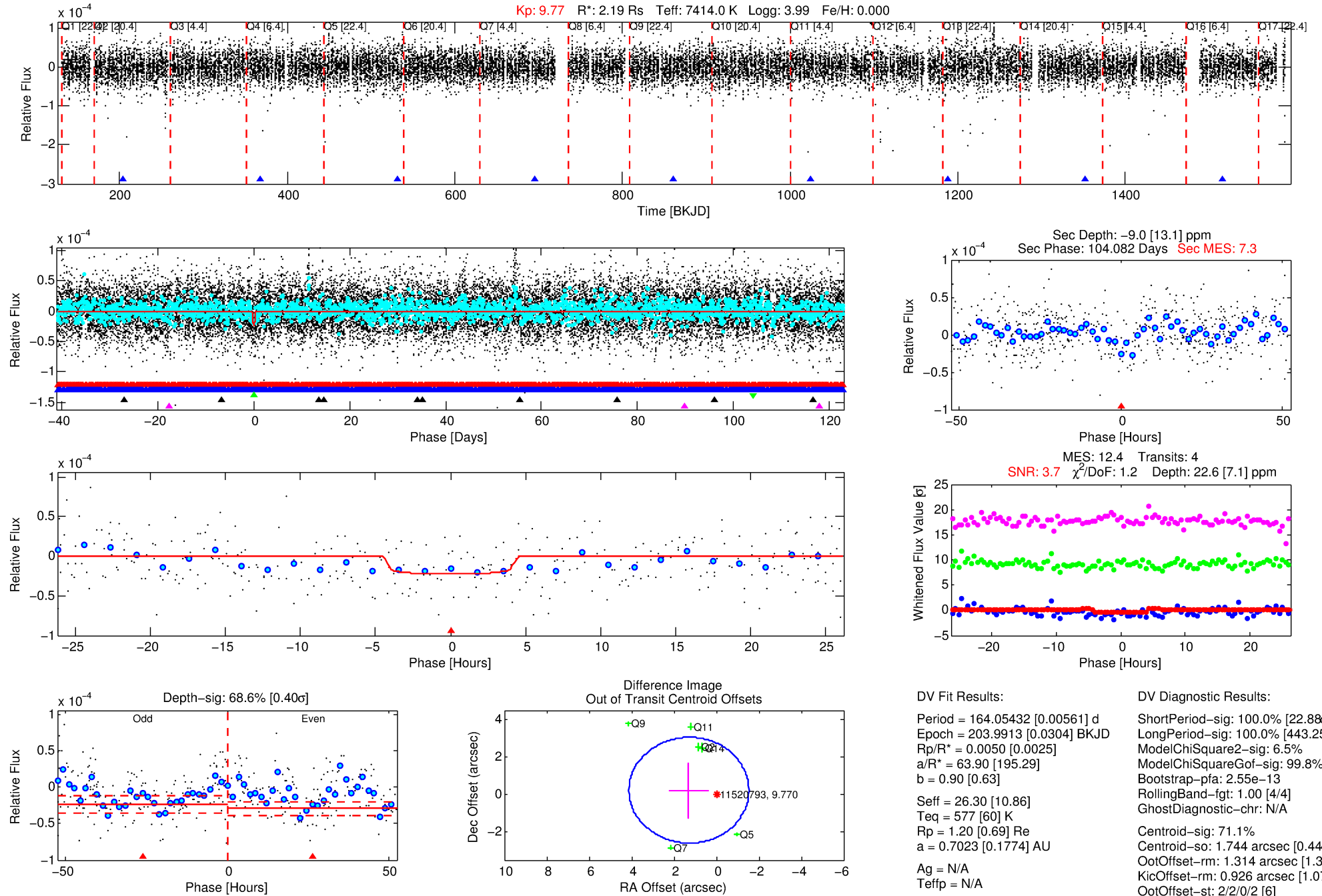
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011520793-03

No Significant Match Found

DV One-Page Summary

KIC: 11520793 Candidate: 3 of 5 Period: 164.054 d



DV Fit Results:

Period = 164.05432 [0.00561] d
Epoch = 203.9913 [0.0304] BKJD
 $R_p/R^* = 0.0050 [0.0025]$
 $a/R^* = 63.90 [195.29]$
 $b = 0.90 [0.63]$
 $\text{Seff} = 26.30 [10.86]$
 $\text{Teq} = 577 [60] \text{ K}$
 $R_p = 1.20 [0.69] R_e$
 $a = 0.7023 [0.1774] \text{ AU}$
 $\text{Ag} = \text{N/A}$
 $\text{Teffp} = \text{N/A}$

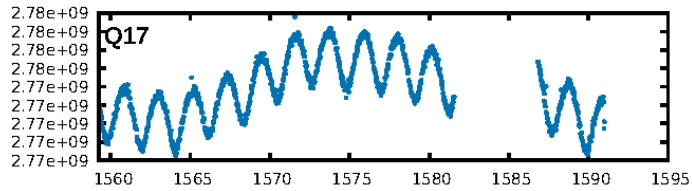
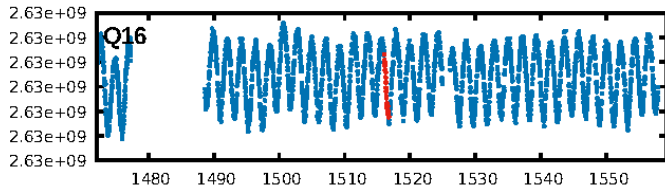
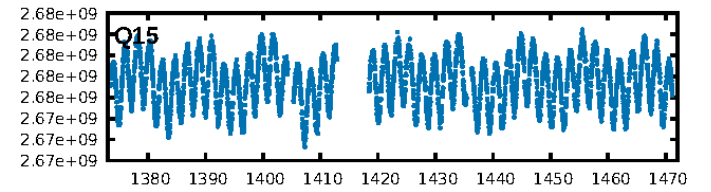
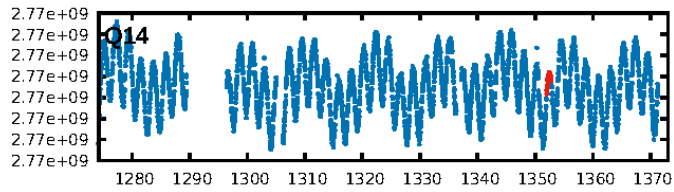
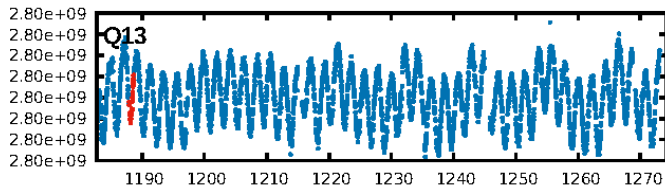
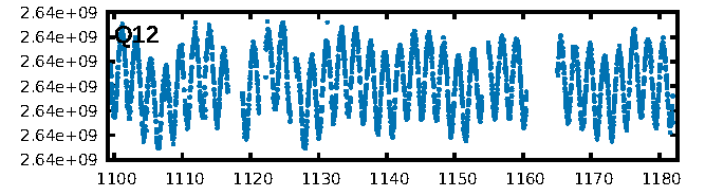
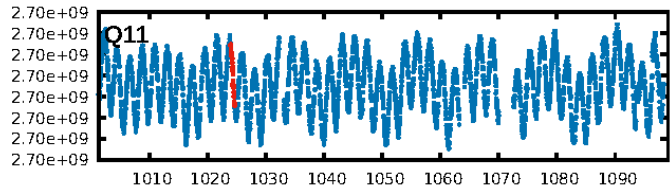
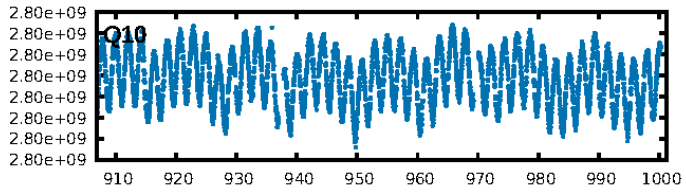
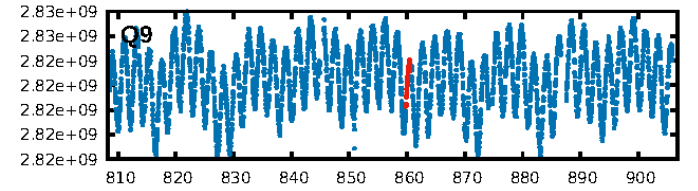
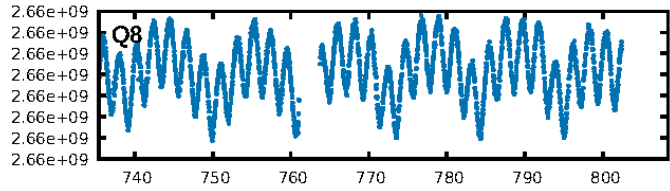
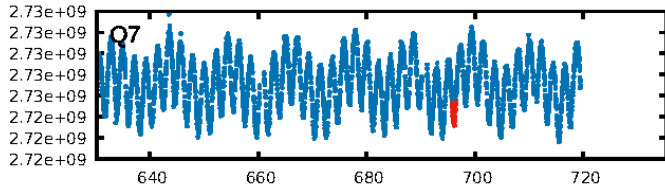
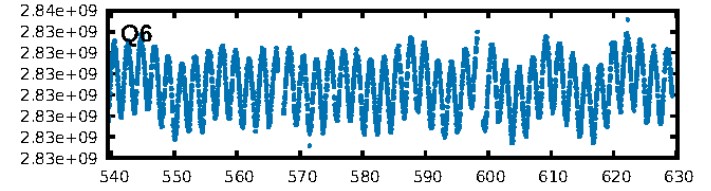
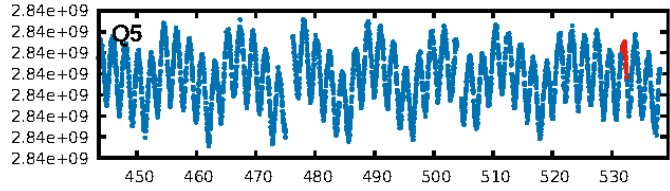
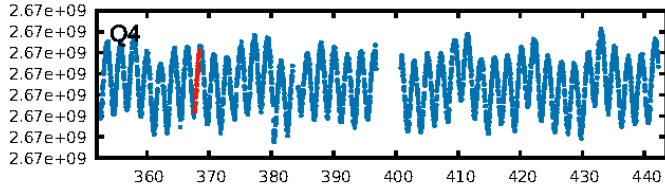
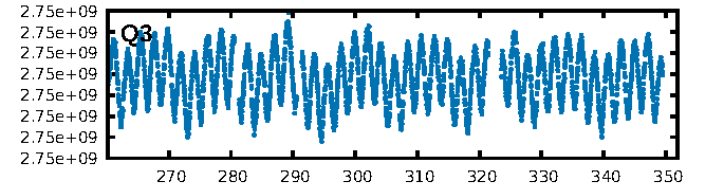
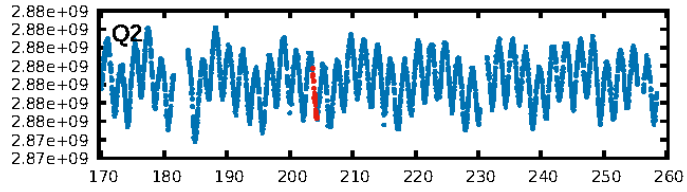
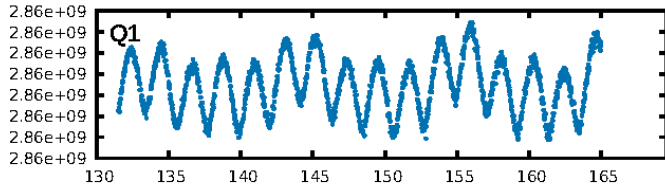
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.88]
LongPeriod-sig: 100.0% [443.25]
ModelChiSquare2-sig: 6.5%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 2.55e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: N/A
Centroid-sig: 71.1%
Centroid-so: 1.744 arcsec [0.44]
OotOffset-rm: 1.314 arcsec [1.39]
KicOffset-rm: 0.926 arcsec [1.07]
OotOffset-st: 2/2/0/2 [6]
KicOffset-st: 2/2/0/2 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.14 [1/7]

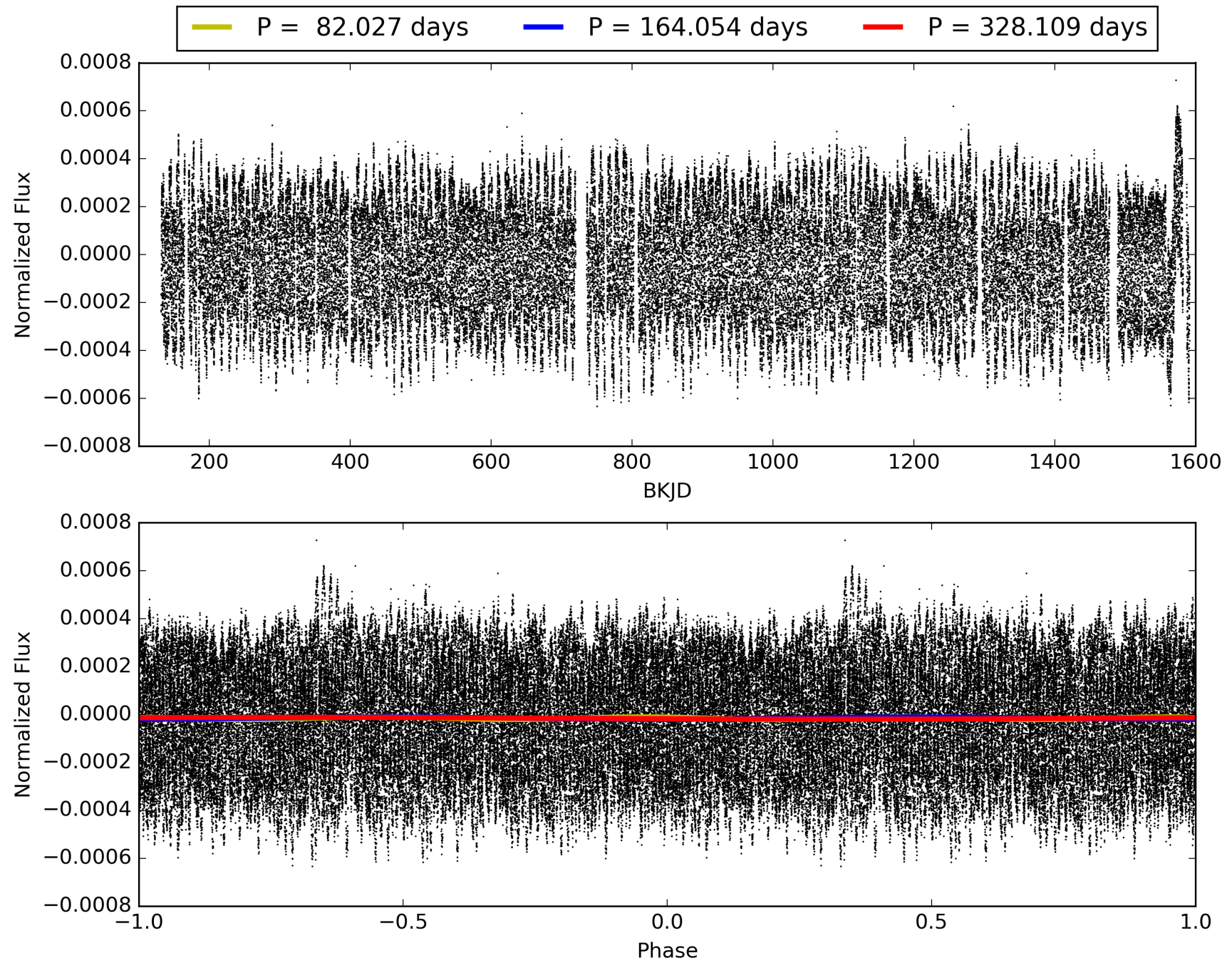
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:45:50 Z

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

TCE 011520793-03, PDC Light Curves

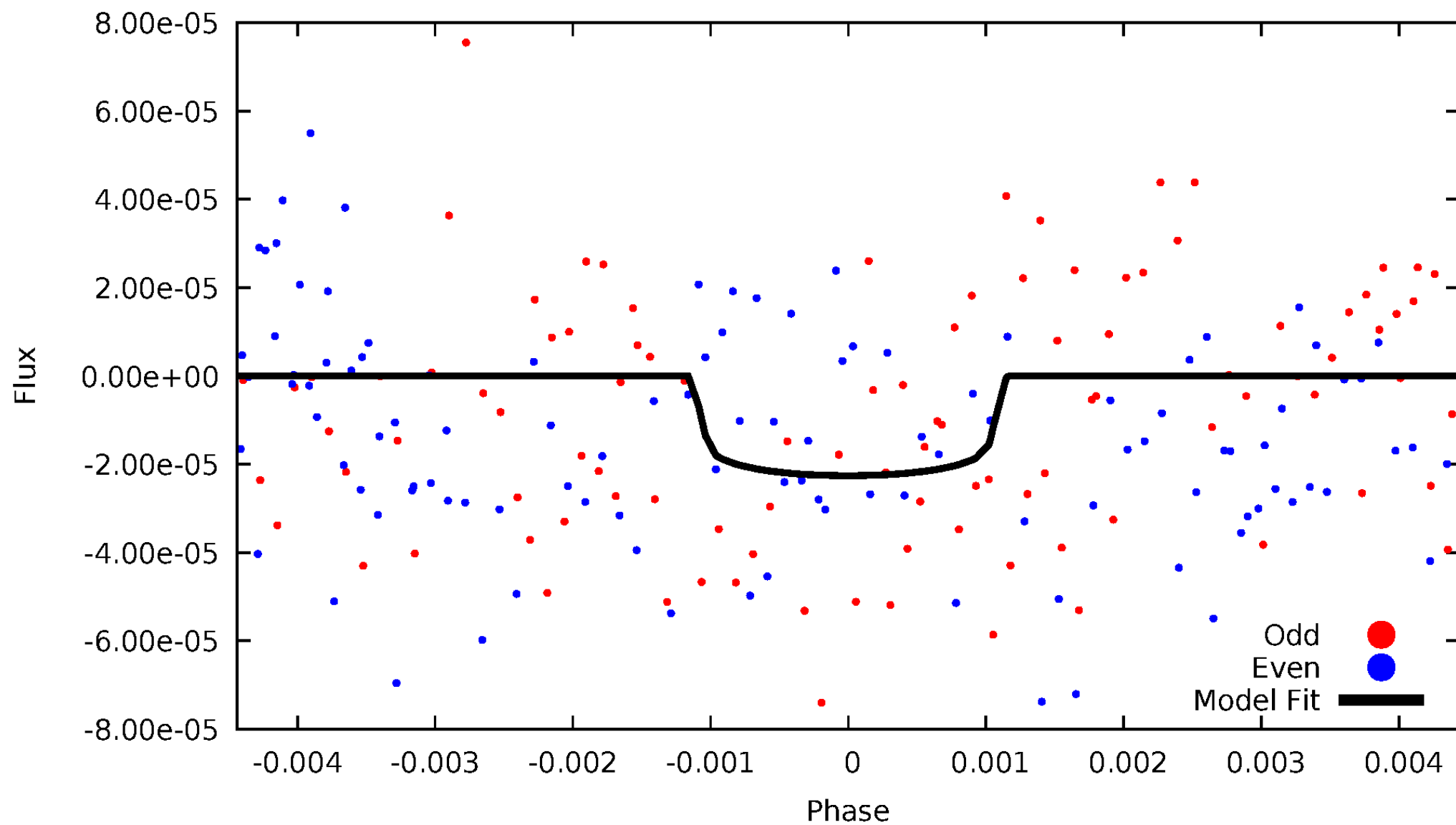


TCE 011520793-03



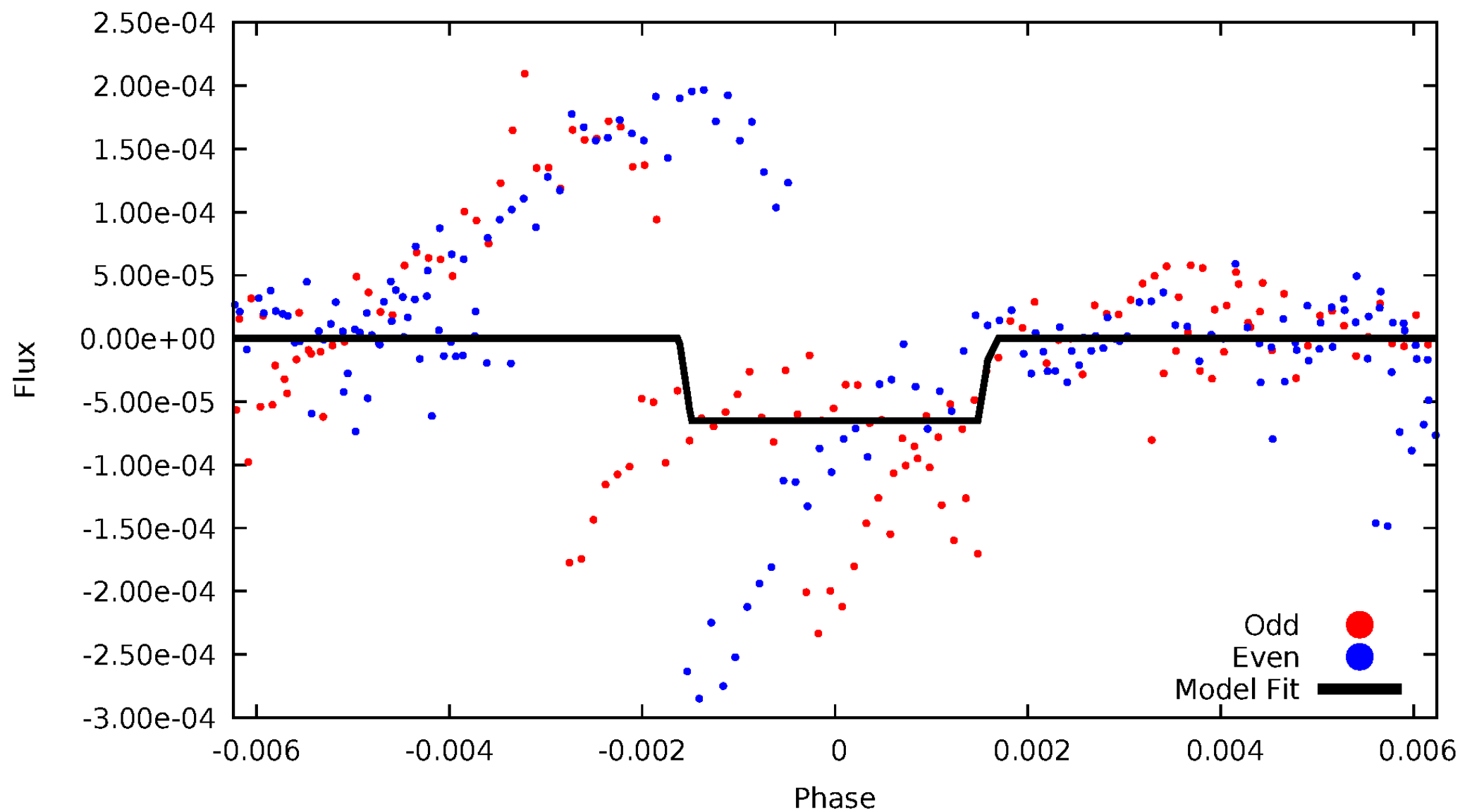
DV Odd/Even

TCE 011520793-03



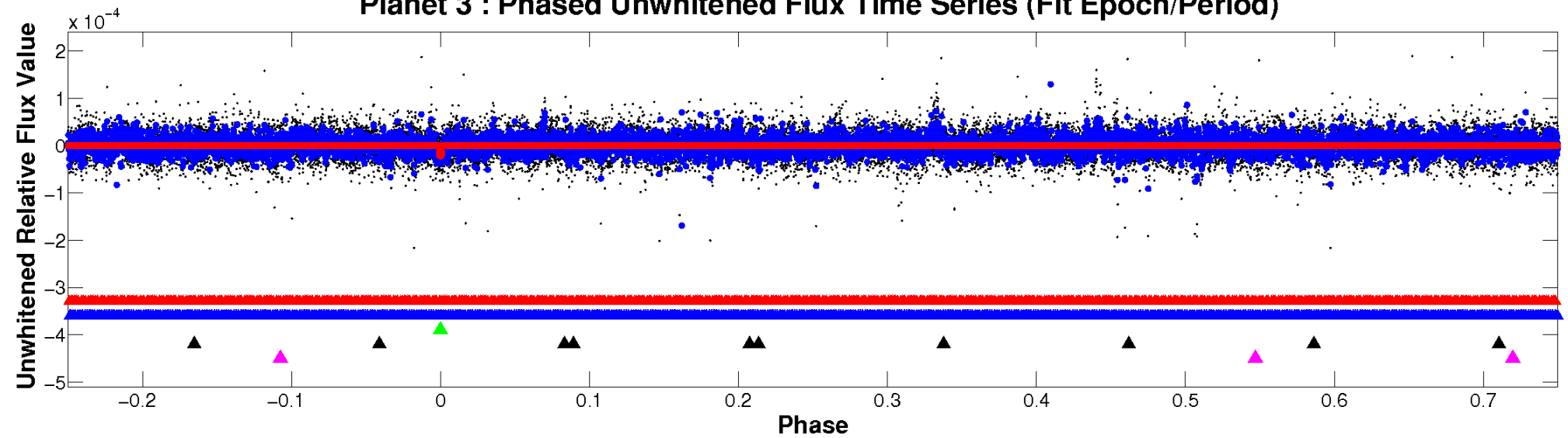
ALT Odd/Even

TCE 011520793-03

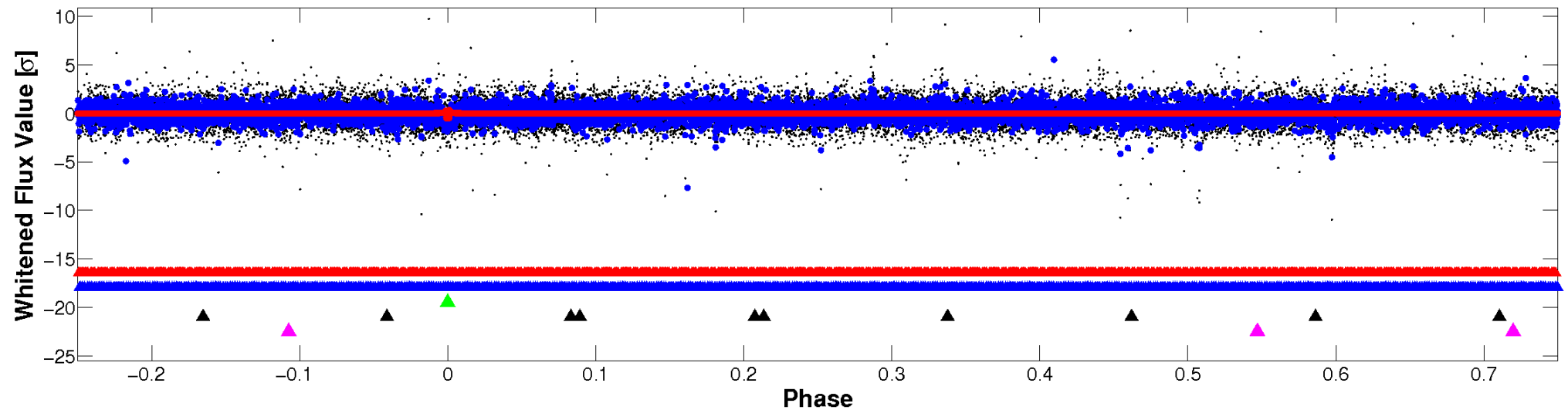


Non-Whitened Vs. Whitened Light Curve

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

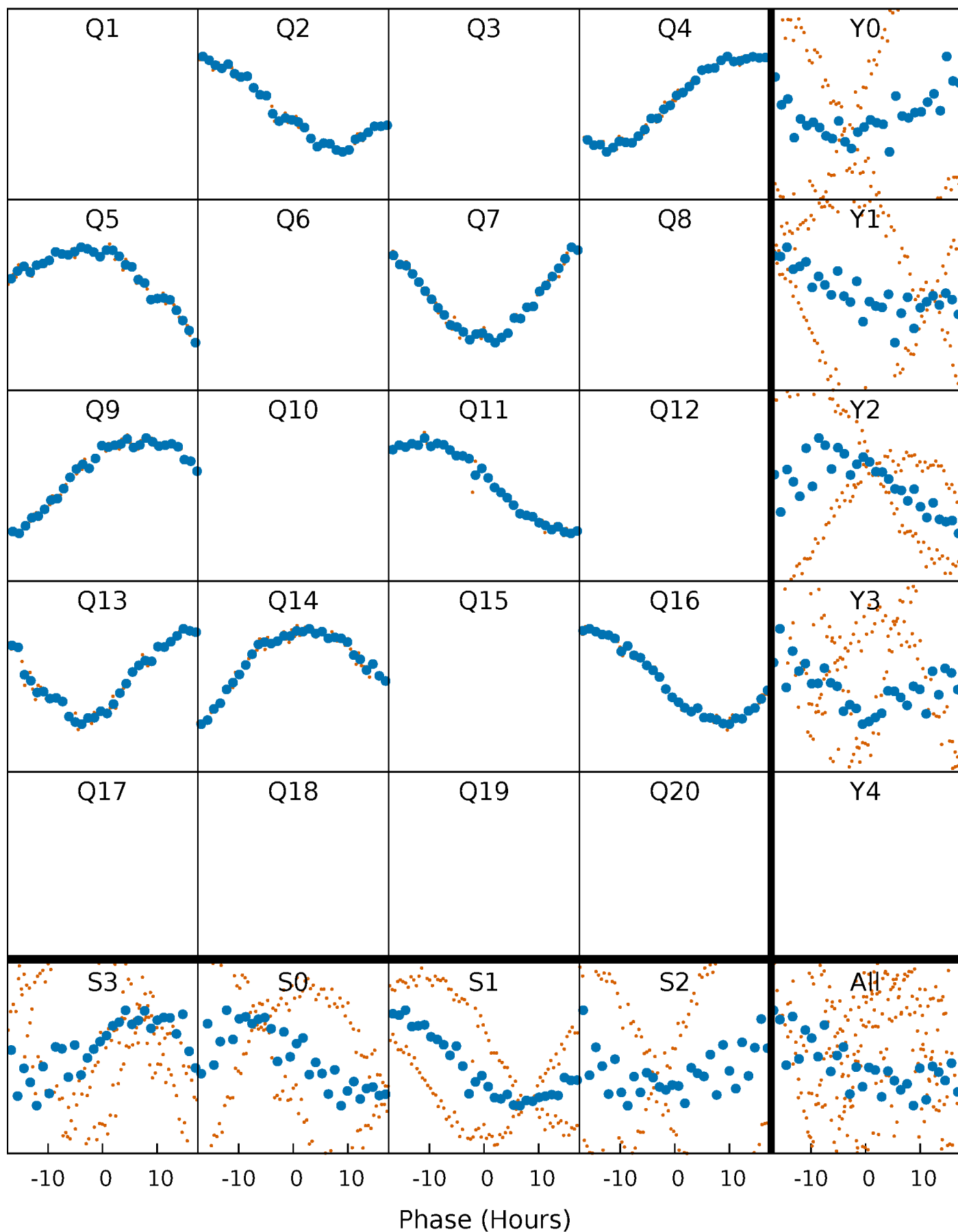


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



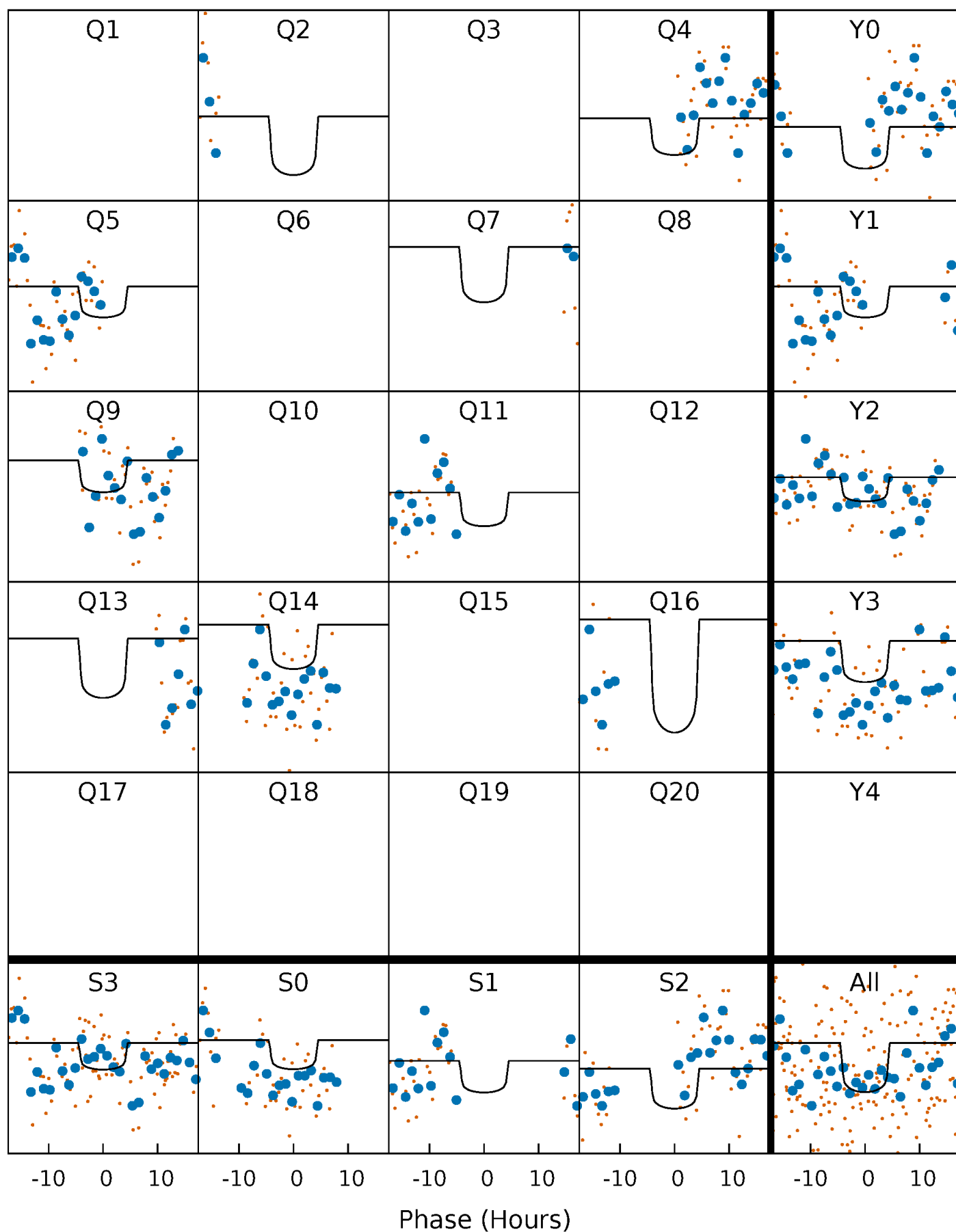
PDC Quarter-Phased Transit Curves

TCE 011520793-03 P=164.054322 Days $T_0=203.991267$ (BKJD)



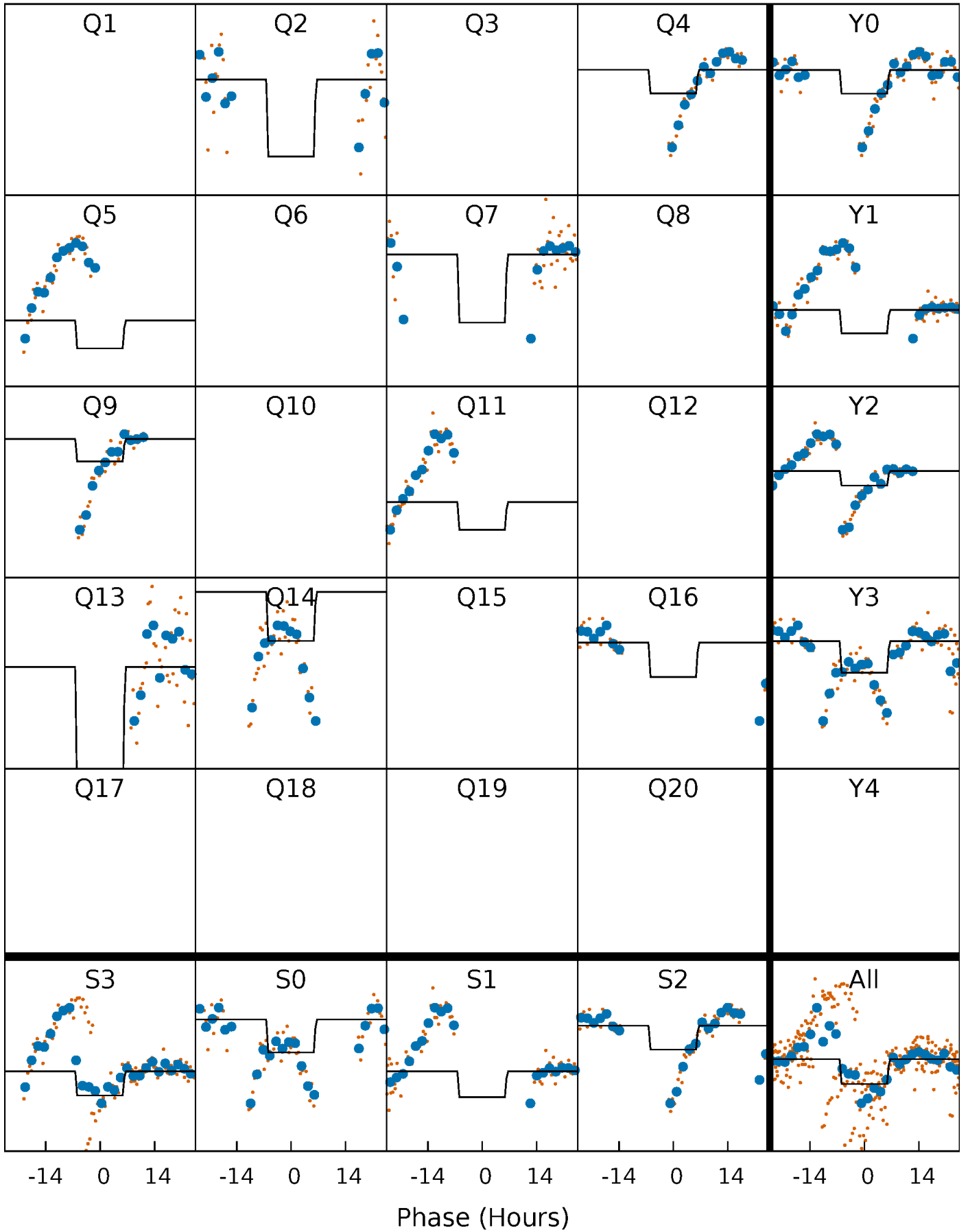
DV Quarter-Phased Transit Curves

TCE 011520793-03 P=164.054322 Days $T_0=203.991267$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

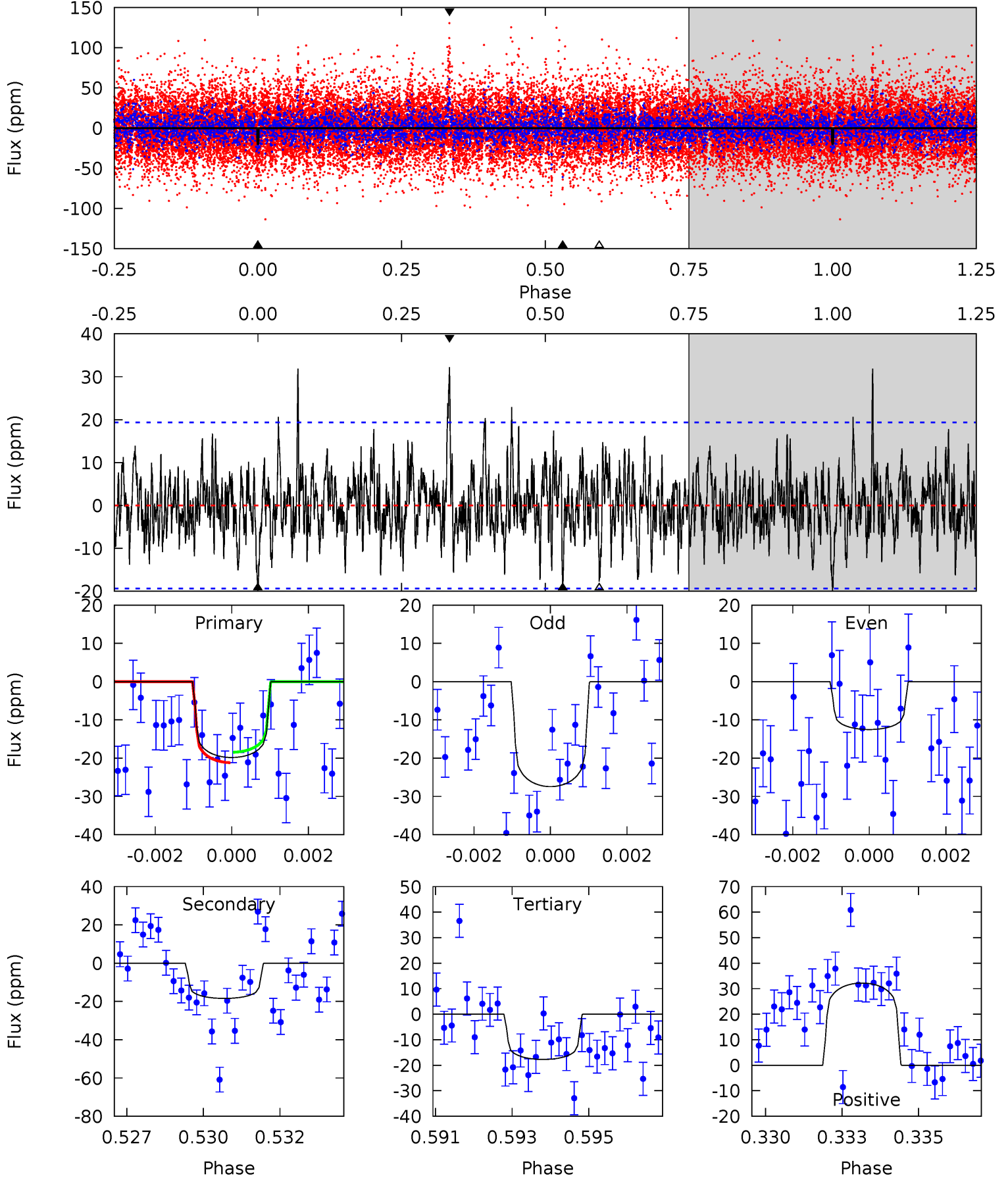
TCE 011520793-03 $P=164.054242$ Days $T_0=204.064602$ (BKJD)



DV Model-Shift Uniqueness Test

011520793-03, $P = 164.054322$ Days, $E = 39.936945$ Days

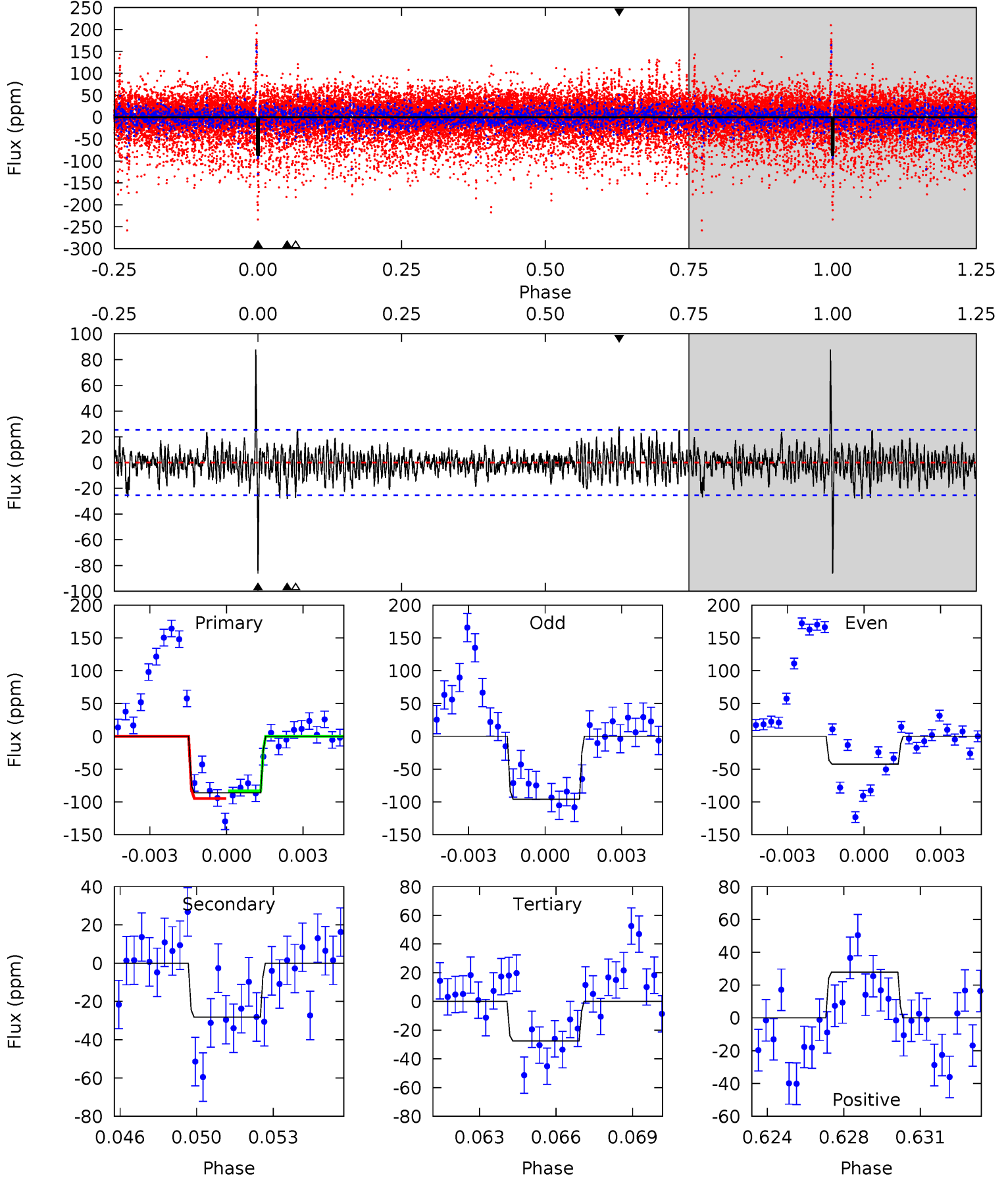
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.43	5.05	4.86	8.83	5.30	3.05	1.77	0.58	-3.39	0.19	-3.78	2.03	1.46	0.62	0.38



Alt Model-Shift Uniqueness Test

011520793-03, P = 164.054242 Days, E = 40.010360 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	5.80	5.66	5.74	5.23	2.94	1.73	12.1	12.0	0.14	0.06	5.37	0.41	0.50	1.12



Stellar Parameters For KIC 011520793

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7414^{+207}_{-337}	$3.992^{+0.204}_{-0.167}$	$0.000^{+0.200}_{-0.350}$	$2.189^{+0.533}_{-0.651}$	$1.716^{+0.201}_{-0.327}$	$0.231^{+0.305}_{-0.099}$
	+3%/-5%	+5%/-4%	+inf%/-inf%	+24%/-30%	+12%/-19%	+132%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011520793-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18 ± 4	$1.17^{+0.61}_{-0.55}$	800^{+62}_{-65}	6665^{+3308}_{-1195}	3553^{+8818}_{-2110}
Alt.	-28 ± 5	$1.92^{+0.71}_{-0.63}$	802^{+57}_{-61}	5861^{+1257}_{-715}	2027^{+2533}_{-961}

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 $A_{obs} \gg 1.0$

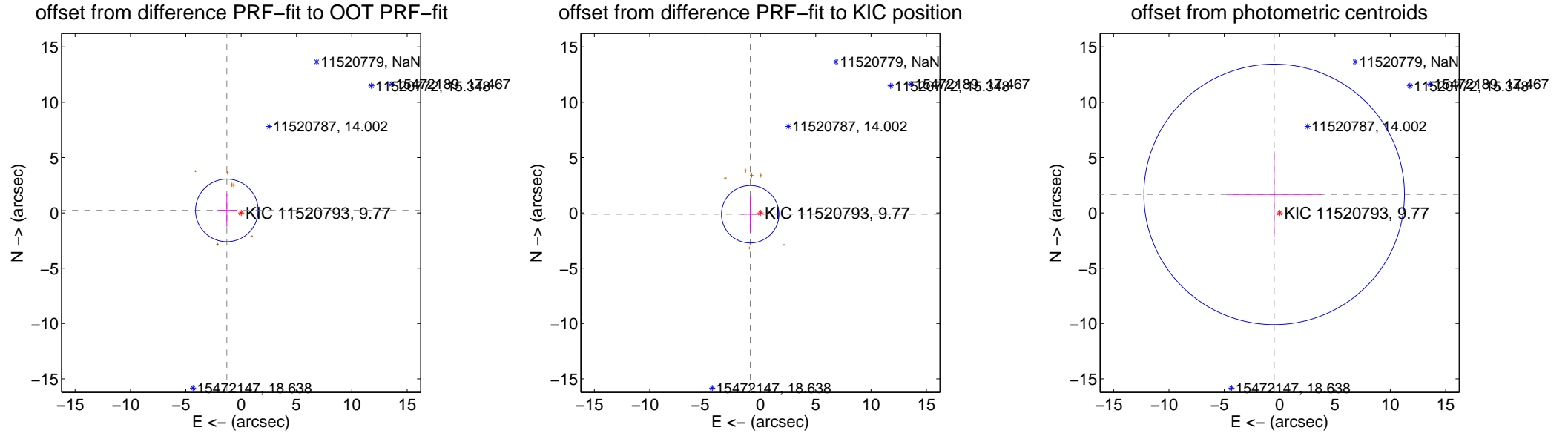
DV Centroid Data

Supplemental centroid analysis for 011520793-03. **Kepler magnitude: 9.77.** Transit SNR 3.73

There are 0 quarters with good PRF difference image offsets

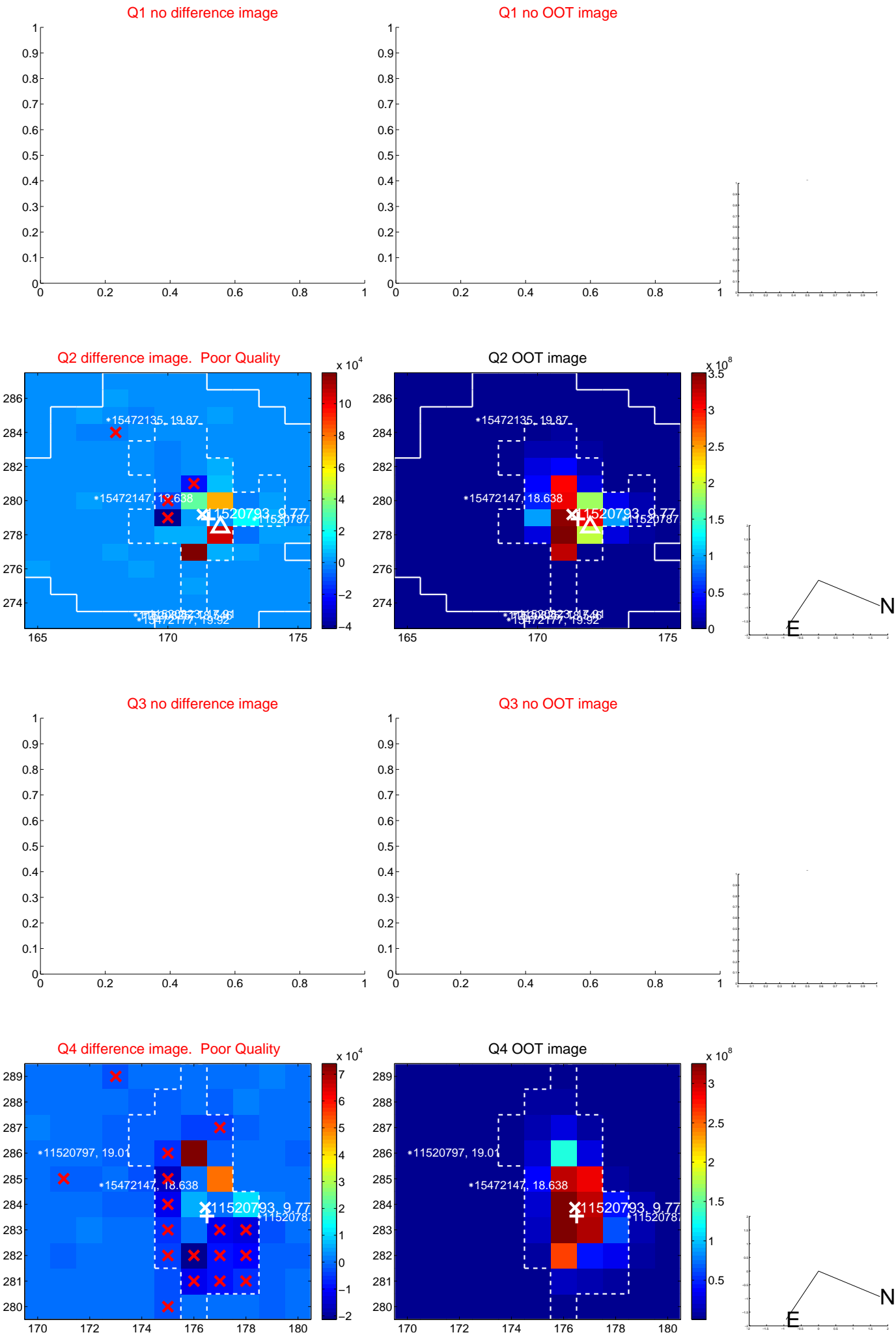
The direct PRF centroid is offset from the target star catalog position by about 0.91 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.314 ± 0.943	1.39	1.294 ± 0.922	0.225 ± 1.475
PRF-fit source offset from KIC position	0.926 ± 0.865	1.07	0.917 ± 0.845	-0.122 ± 1.641
photometric centroid source offset	1.74 ± 3.92	0.44	0.49 ± 4.29	1.67 ± 3.89

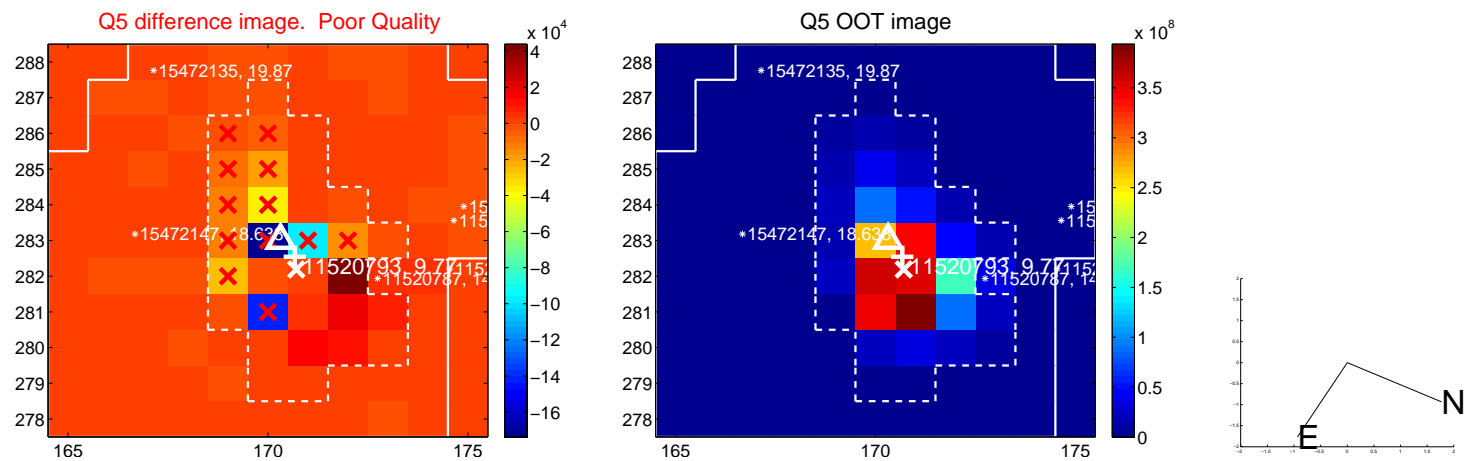


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

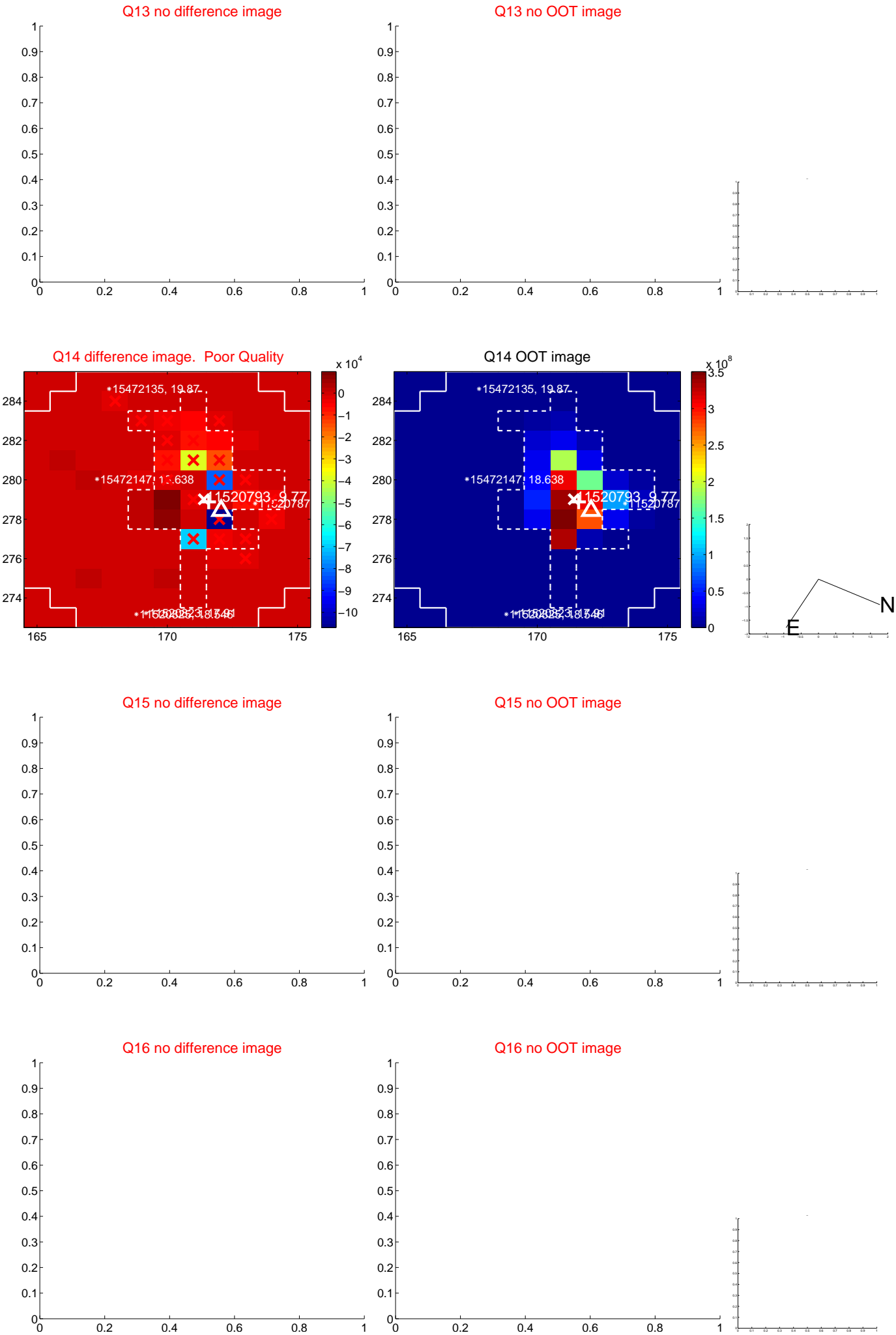
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



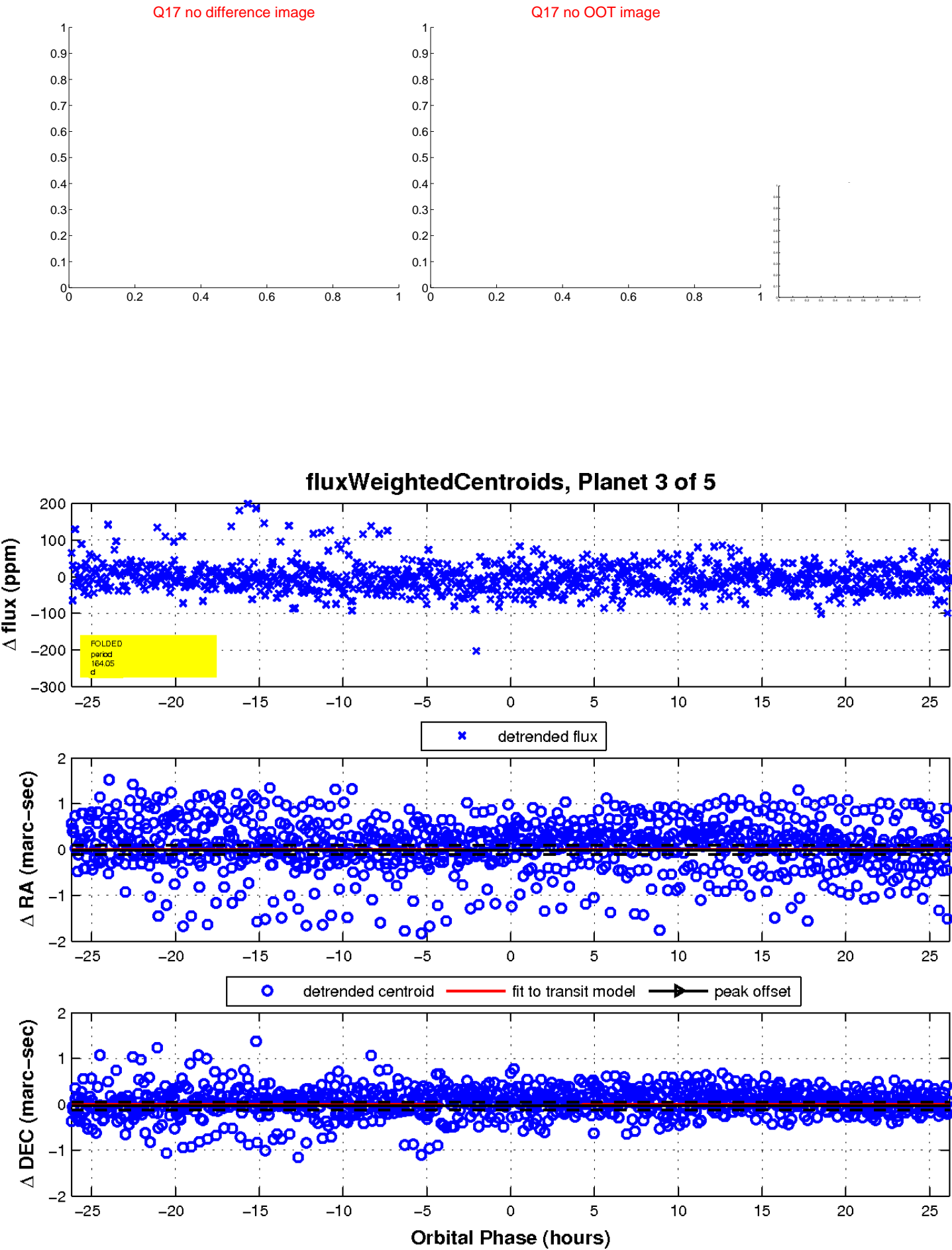
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



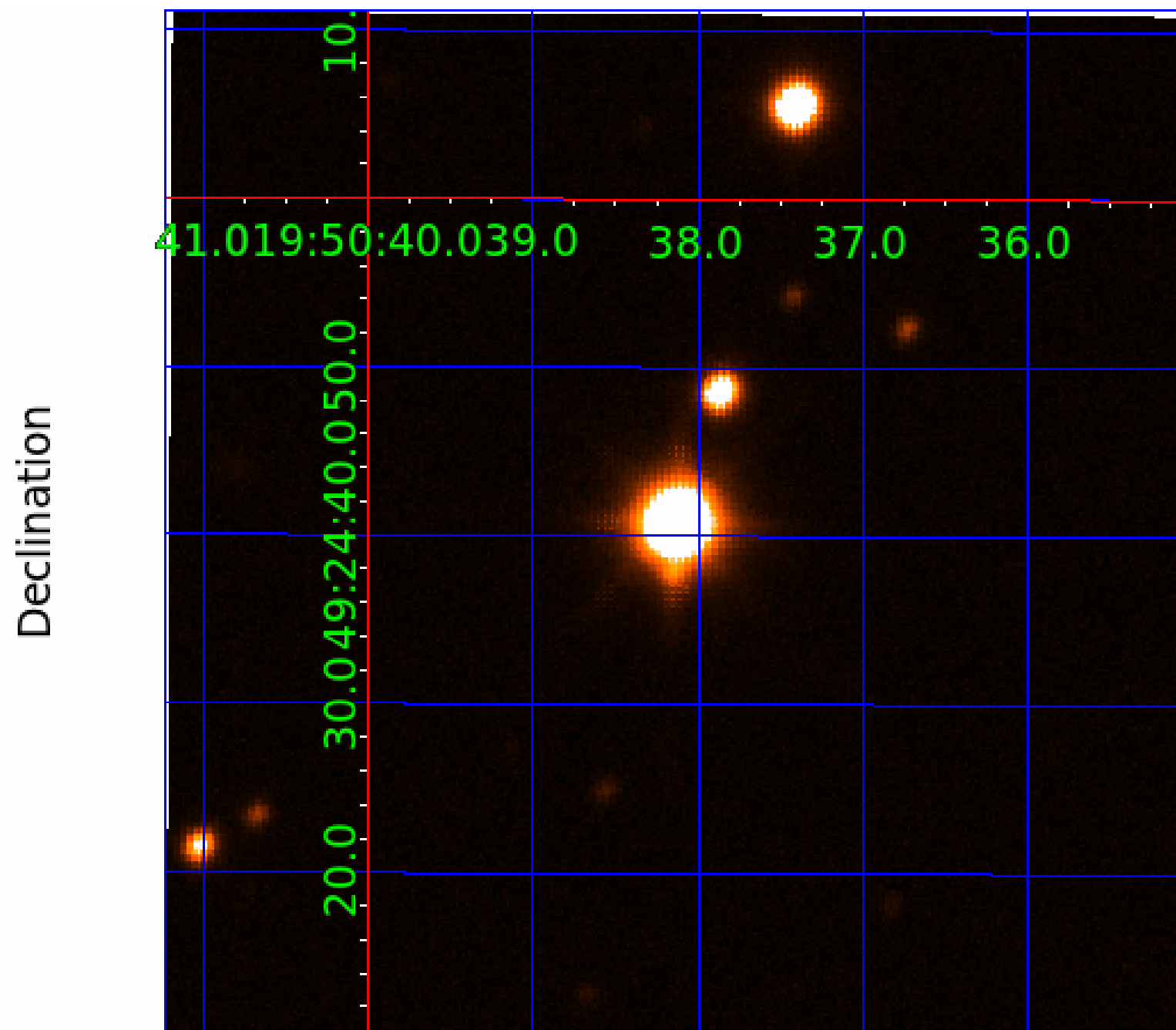
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011520793

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})
011520793-01	OBS	No	2.148301	133.425754	7.1	7.310	15.4	15.4	2.19	7414	0.69	8520.69
011520793-02	OBS	No	2.148160	133.108700	7.4	8.773	12.1	8.5	2.19	7414	0.71	8521.44
011520793-03	OBS	No	164.054322	203.991267	22.6	8.735	12.4	3.7	2.19	7414	1.20	26.30
011520793-04	OBS	No	143.671167	238.029844	30.6	19.517	12.2	6.2	2.19	7414	1.34	31.39
011520793-05	OBS	No	463.815979	514.476384	34.3	13.680	7.9	5.0	2.19	7414	1.48	6.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011520793-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
011520793-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
011520793-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

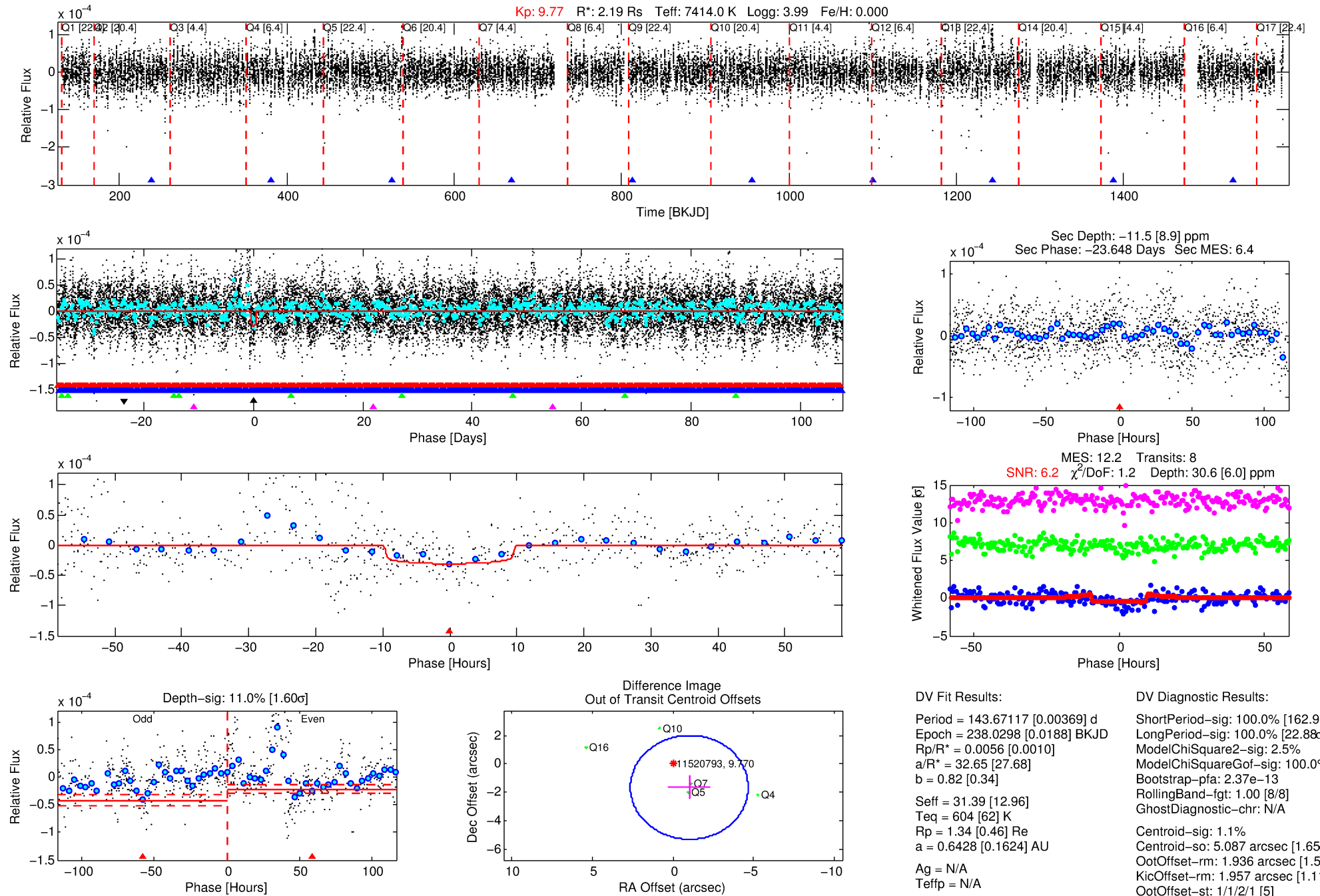
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011520793-04

No Significant Match Found

DV One-Page Summary

KIC: 11520793 Candidate: 4 of 5 Period: 143.671 d



DV Fit Results:

Period = 143.67117 [0.00369] d
Epoch = 238.0298 [0.0188] BKJD
 $R_p/R^* = 0.0056 [0.0010]$
 $a/R^* = 32.65 [27.68]$
 $b = 0.82 [0.34]$
 $\text{Seff} = 31.39 [12.96]$
 $T_{\text{eq}} = 604 [62] \text{ K}$
 $R_p = 1.34 [0.46] R_e$
 $a = 0.6428 [0.1624] \text{ AU}$
 $\text{Ag} = \text{N/A}$
 $\text{Teffp} = \text{N/A}$

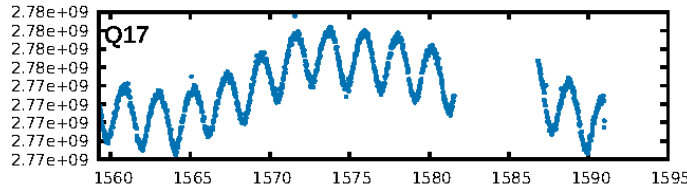
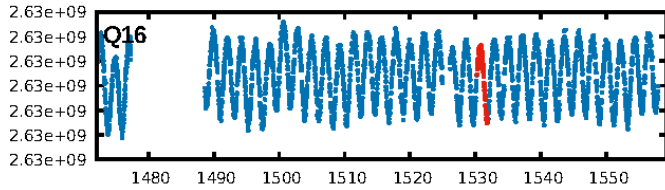
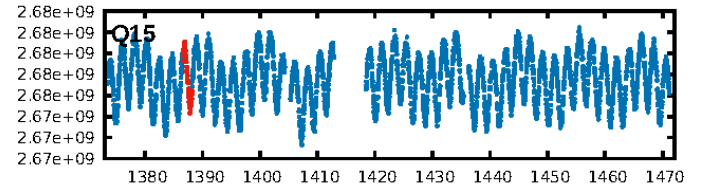
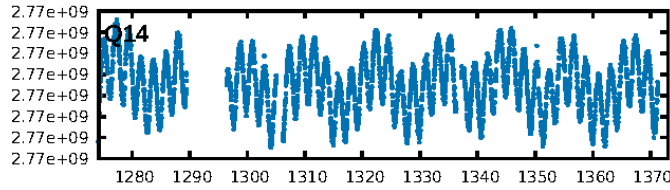
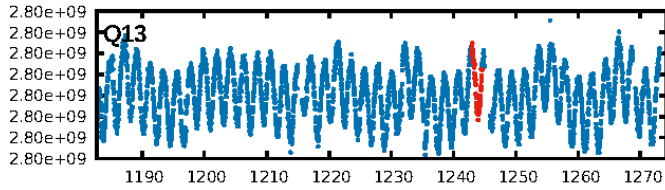
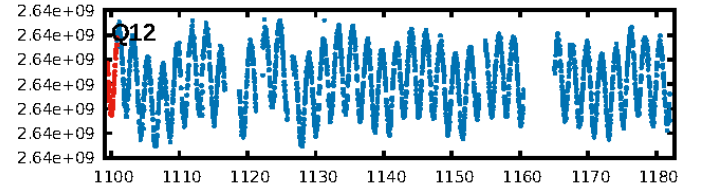
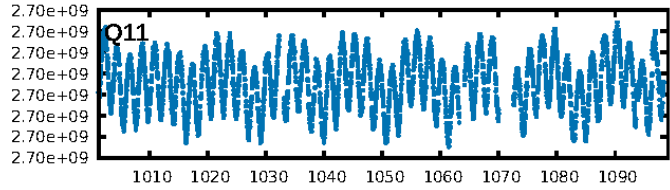
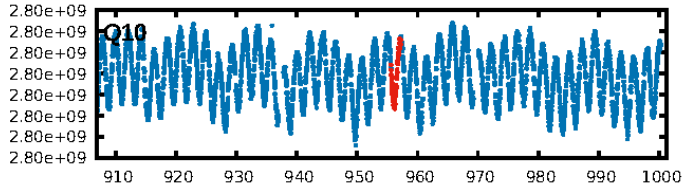
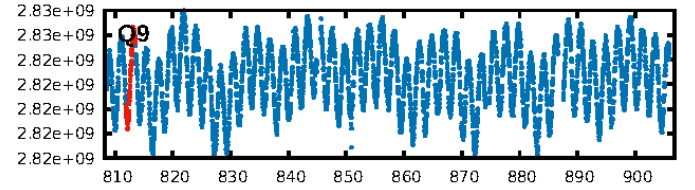
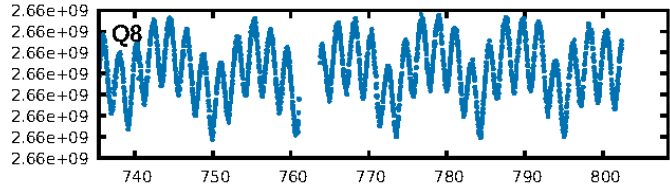
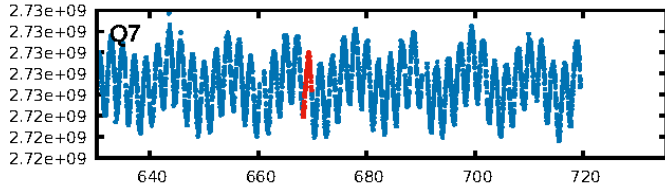
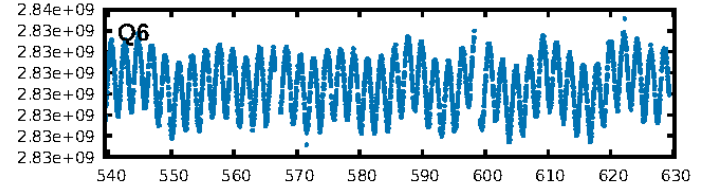
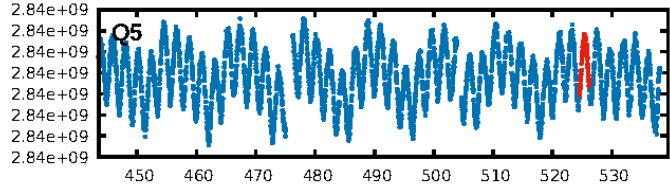
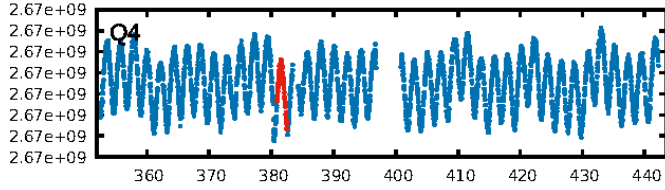
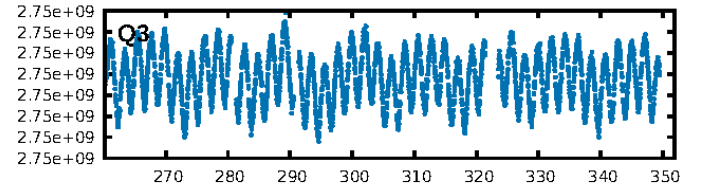
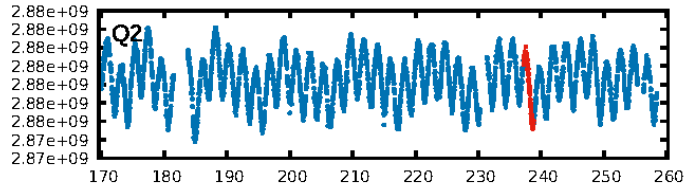
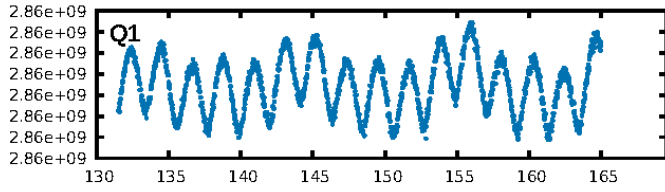
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [162.98]
LongPeriod-sig: 100.0% [22.88]
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: $2.37e-13$
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: N/A
Centroid-sig: 1.1%
Centroid-so: 5.087 arcsec [1.65]
OotOffset-rm: 1.936 arcsec [1.59]
KicOffset-rm: 1.957 arcsec [1.11]
OotOffset-st: 1/1/2/1 [5]
KicOffset-st: 1/1/2/1 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 0.00 [0/7]

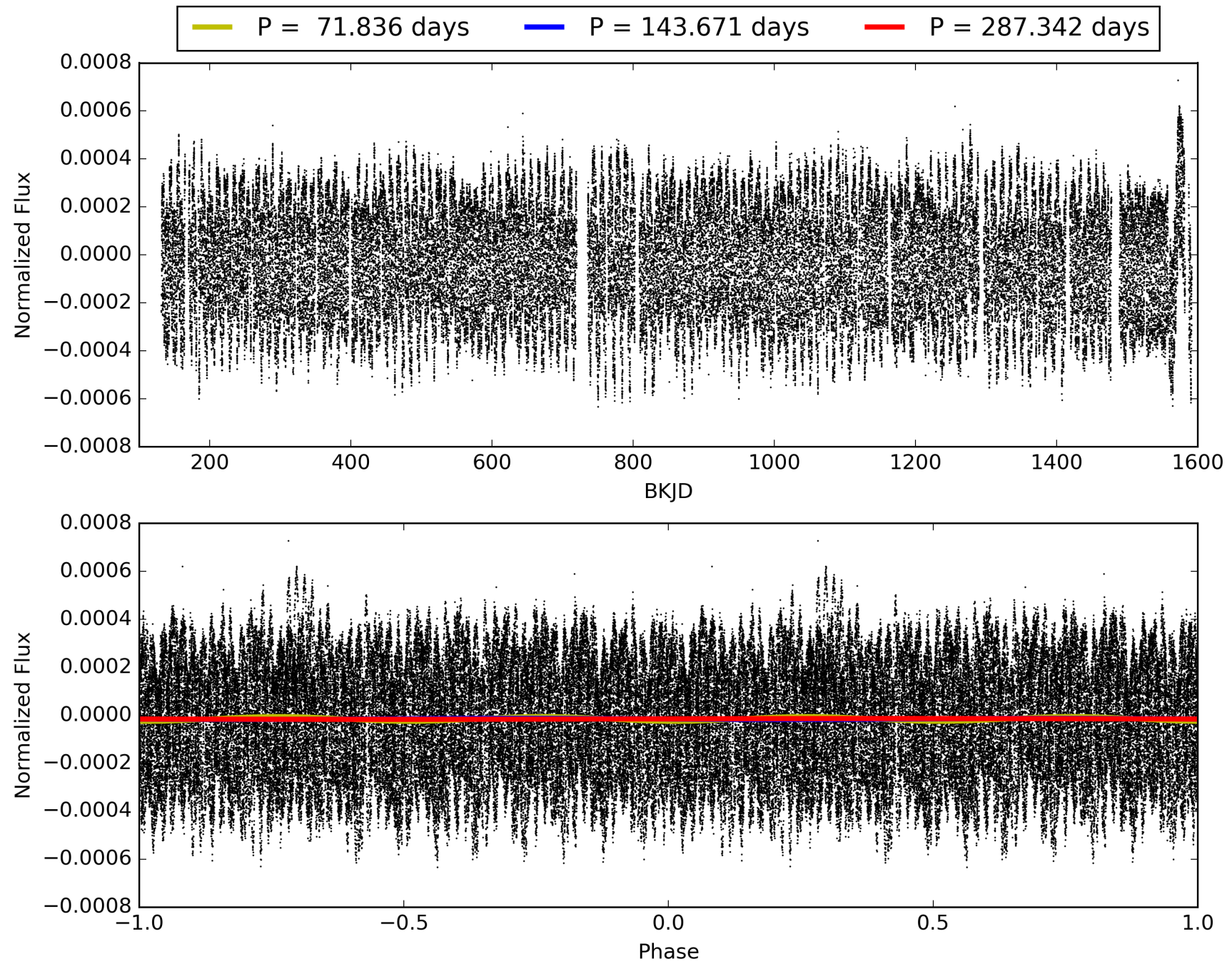
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:45:54 Z

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

TCE 011520793-04, PDC Light Curves

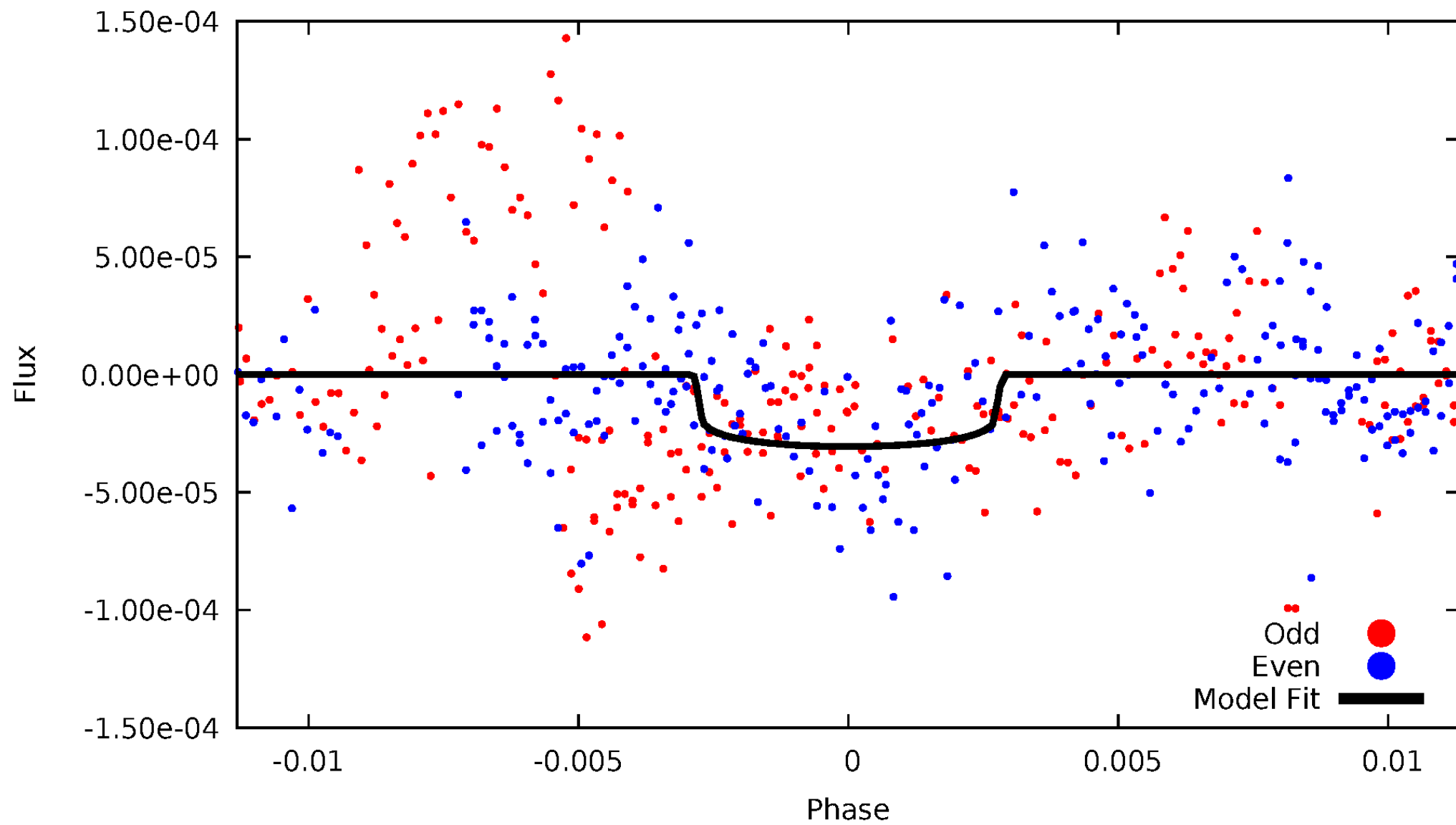


TCE 011520793-04



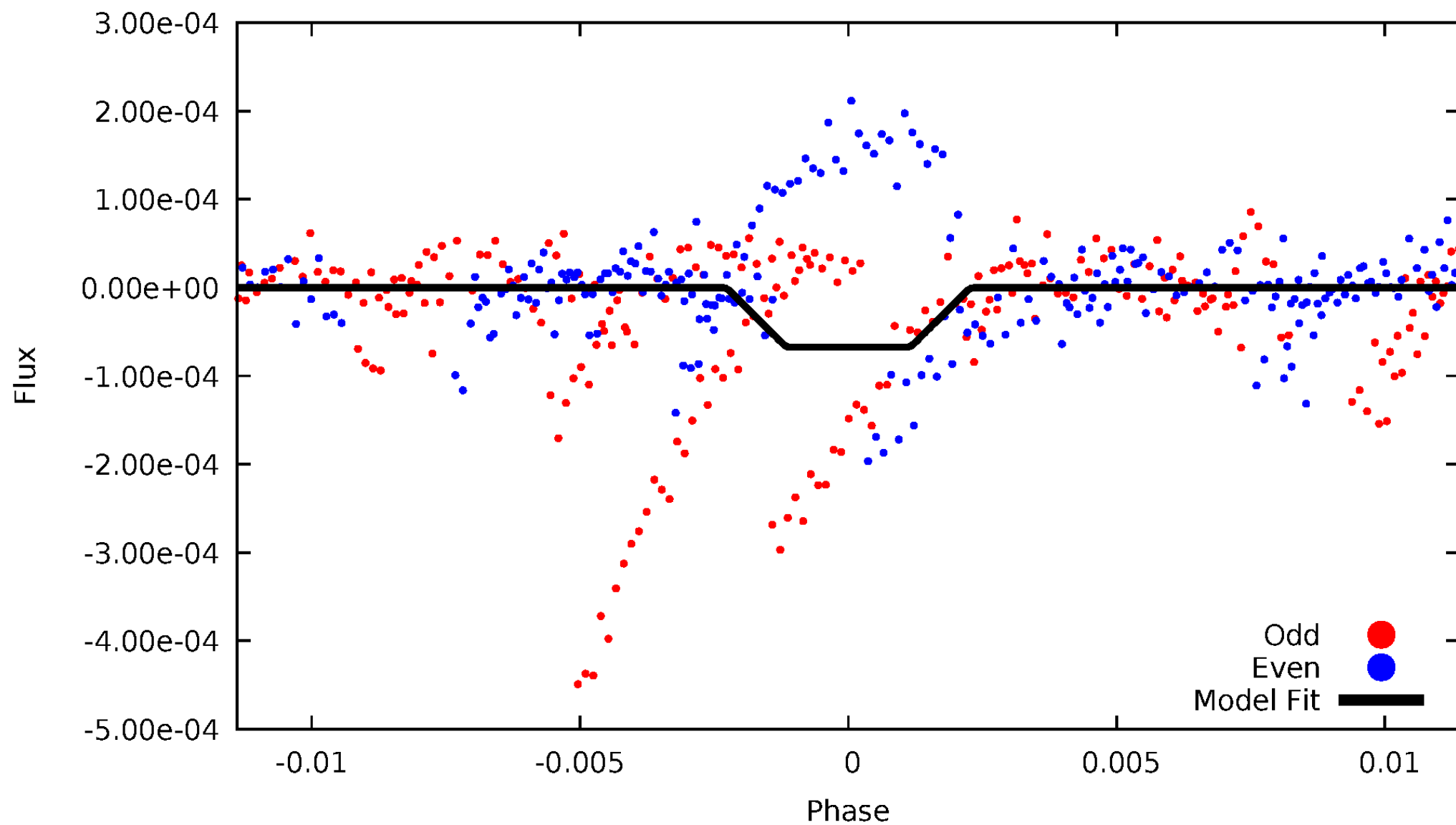
DV Odd/Even

TCE 011520793-04



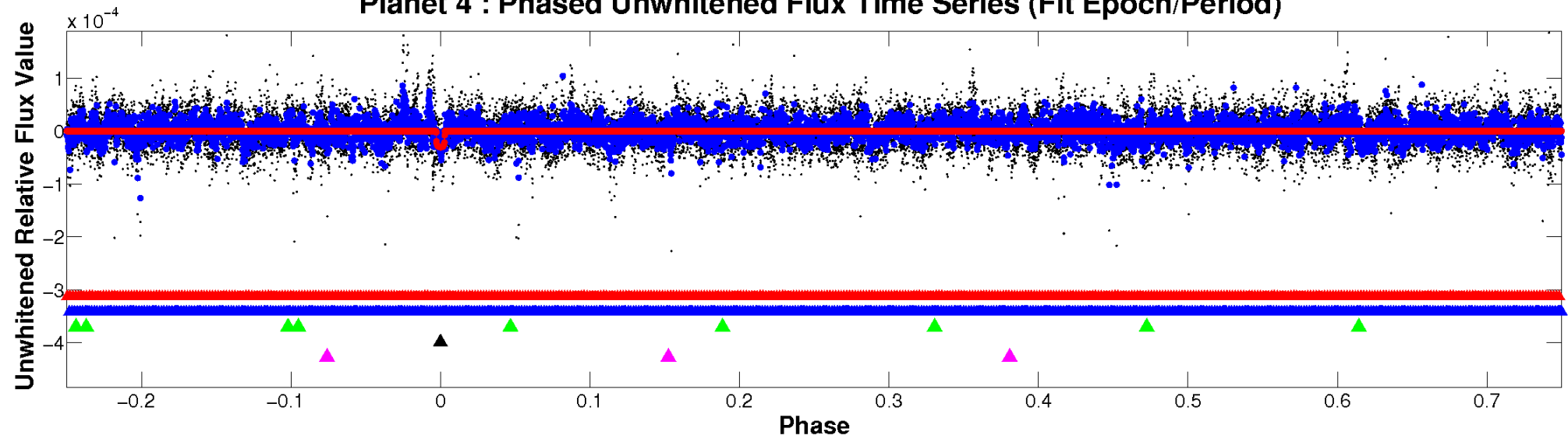
ALT Odd/Even

TCE 011520793-04

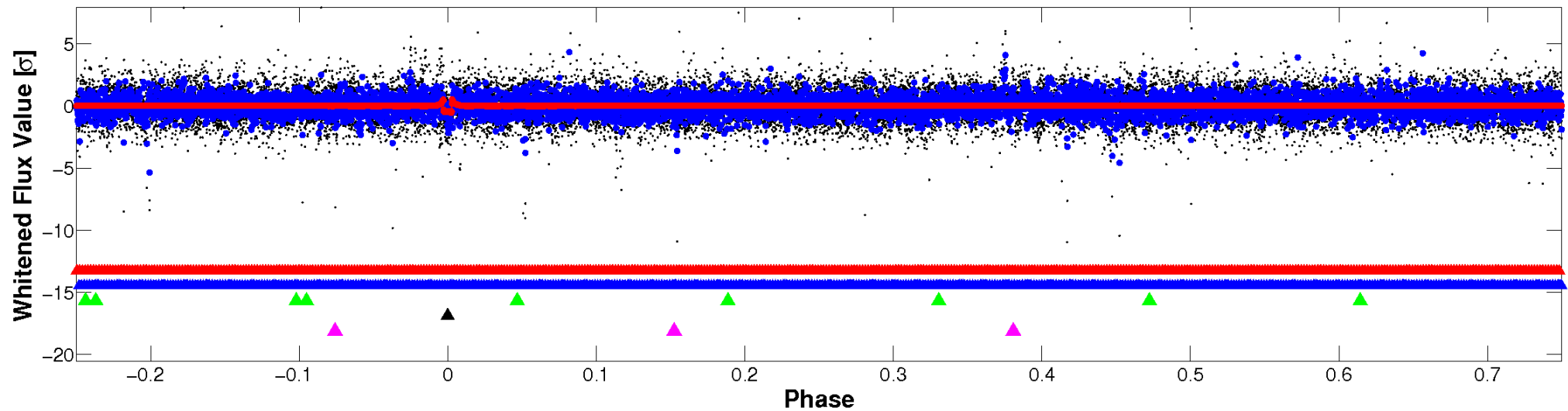


Non-Whitened Vs. Whitened Light Curve

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

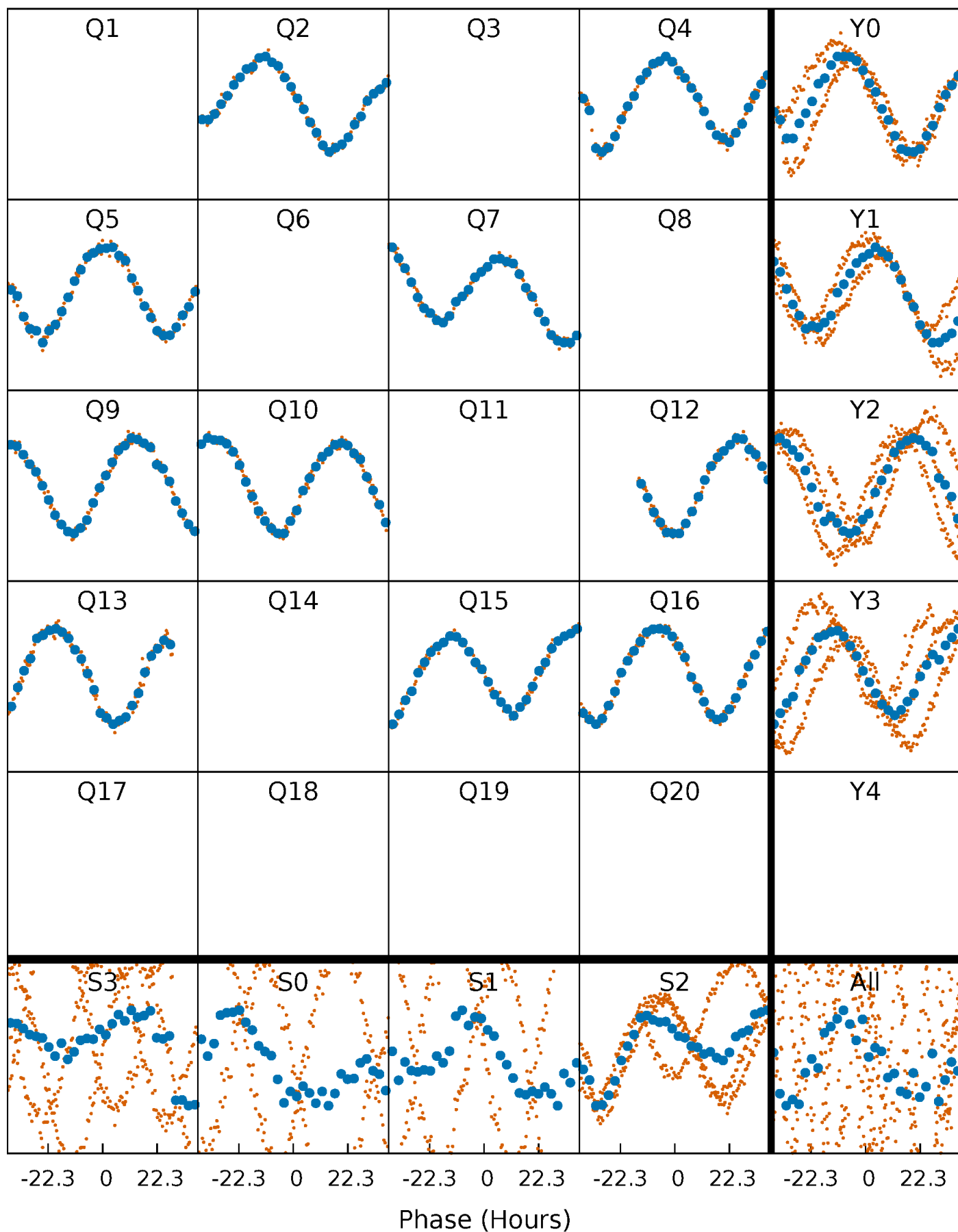


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



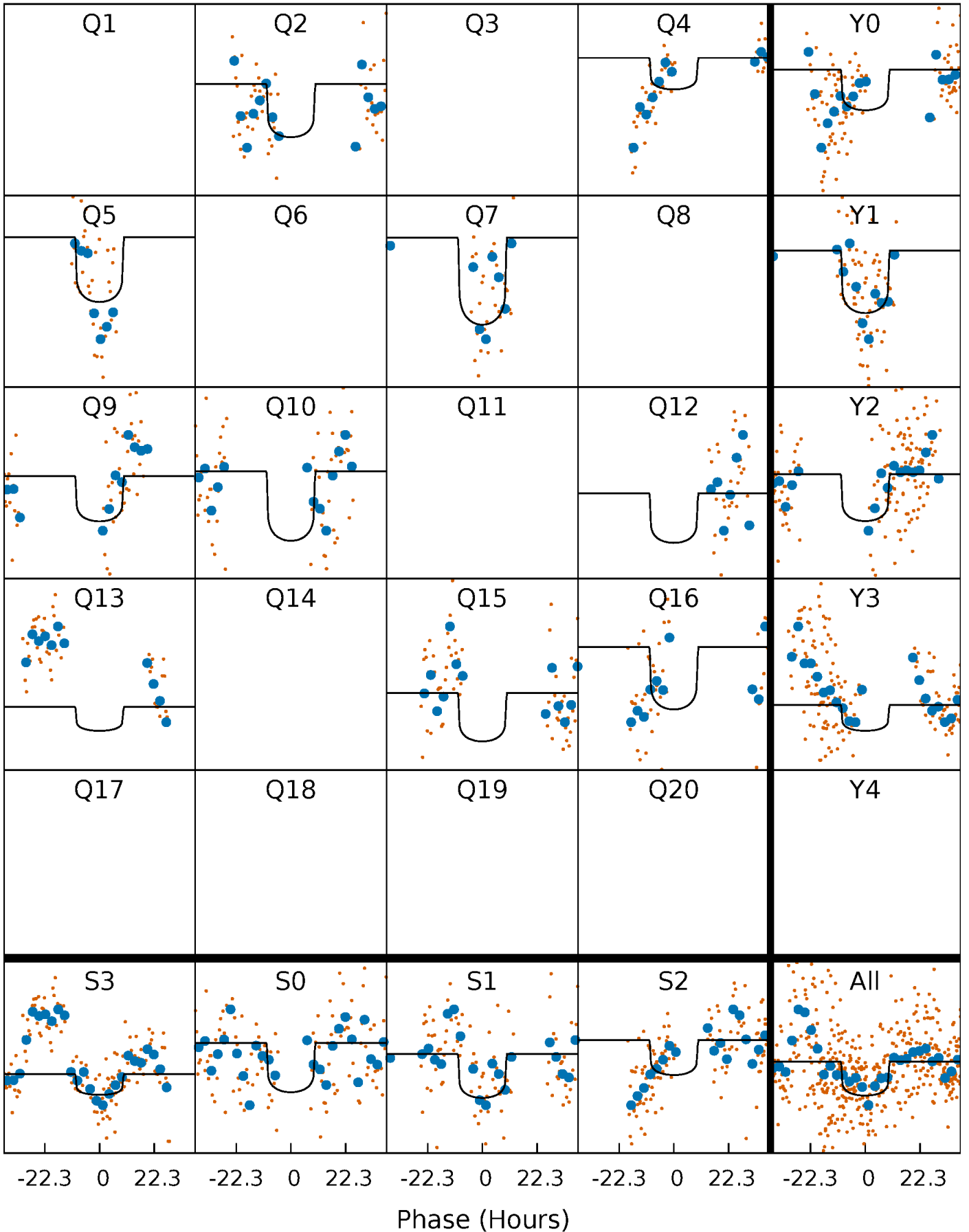
PDC Quarter-Phased Transit Curves

TCE 011520793-04 P=143.671167 Days $T_0=238.029843$ (BKJD)



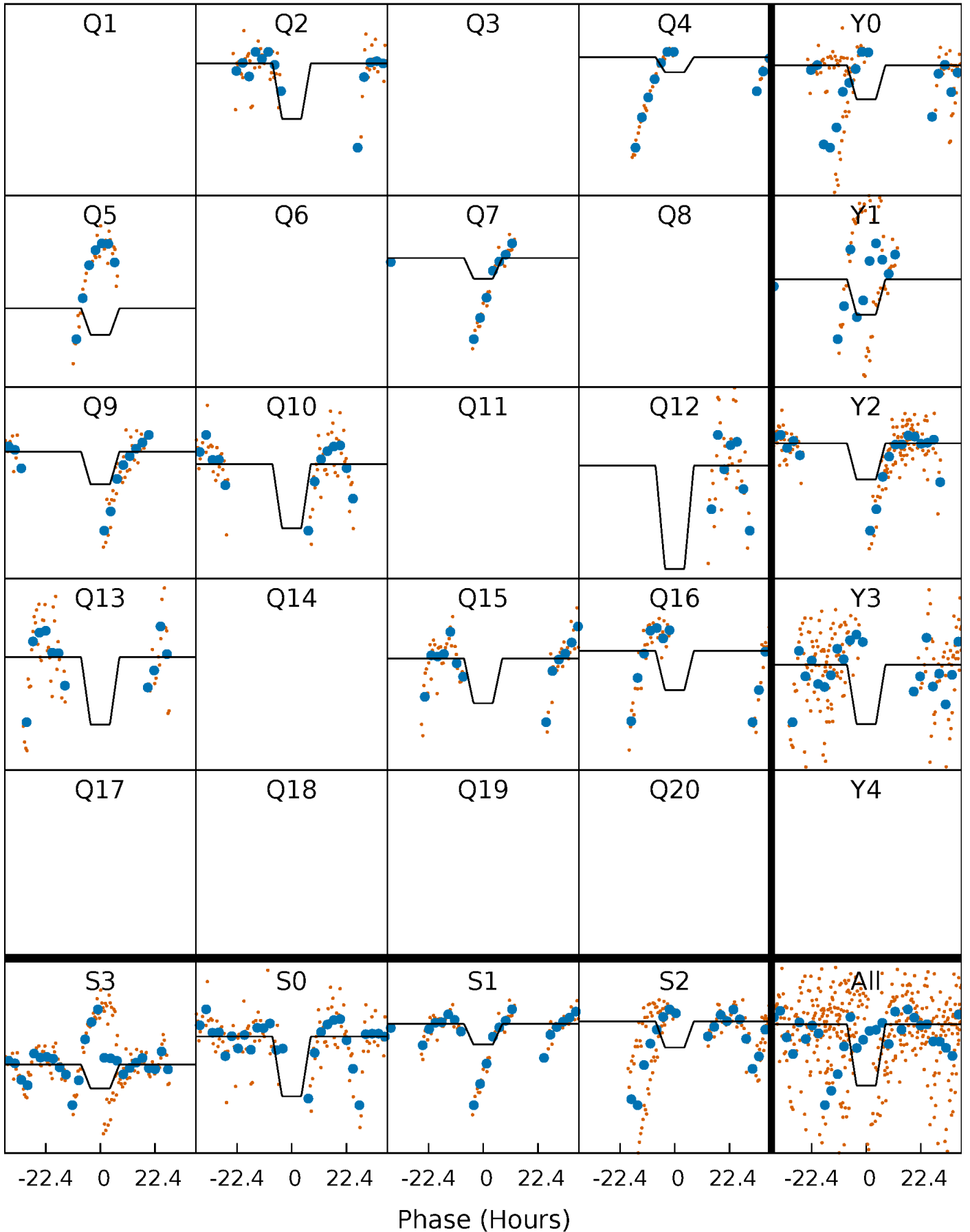
DV Quarter-Phased Transit Curves

TCE 011520793-04 P=143.671167 Days $T_0=238.029843$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

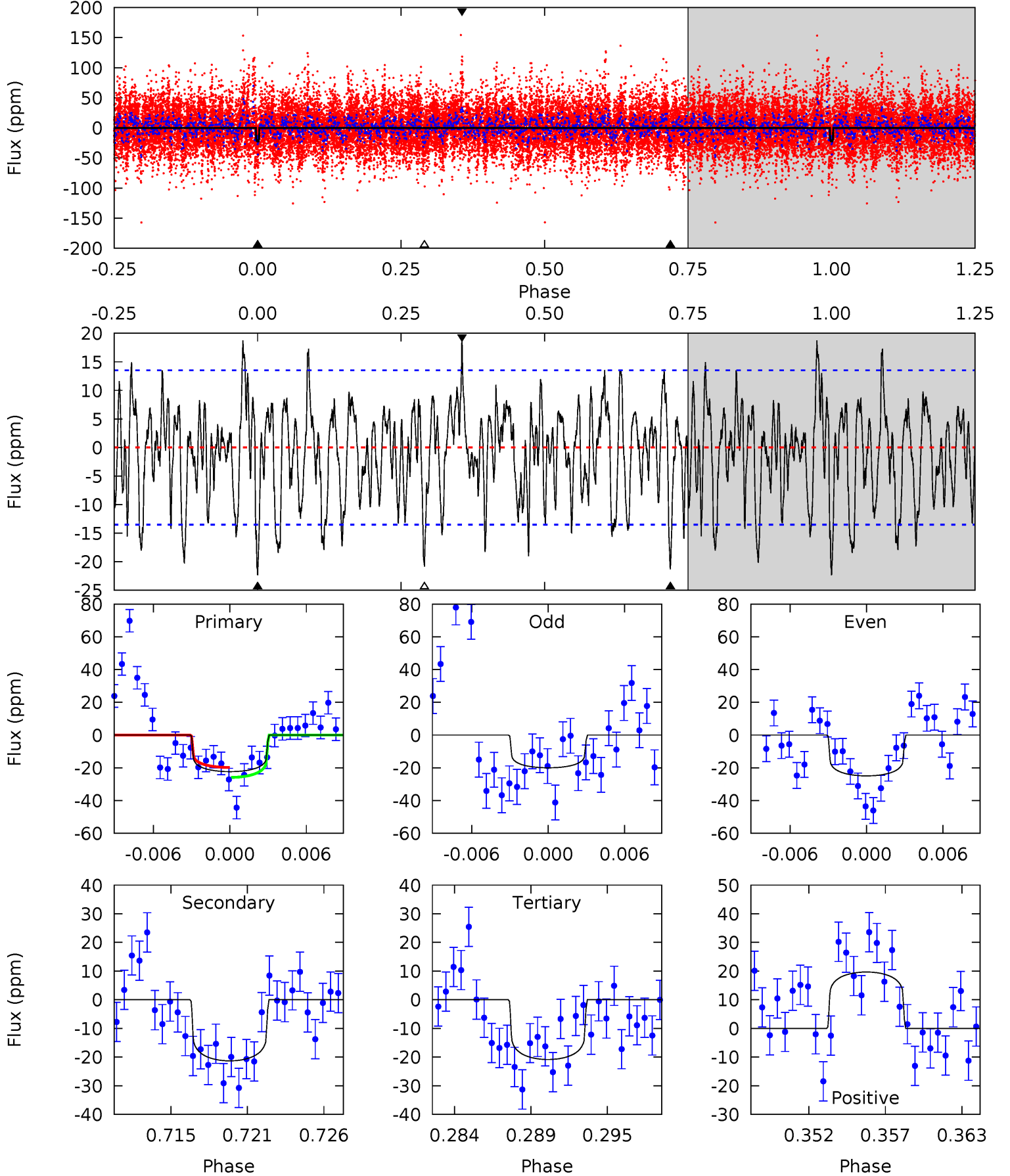
TCE 011520793-04 $P=143.675172$ Days $T_0=238.012126$ (BKJD)



DV Model-Shift Uniqueness Test

011520793-04, P = 143.671167 Days, E = 94.358676 Days

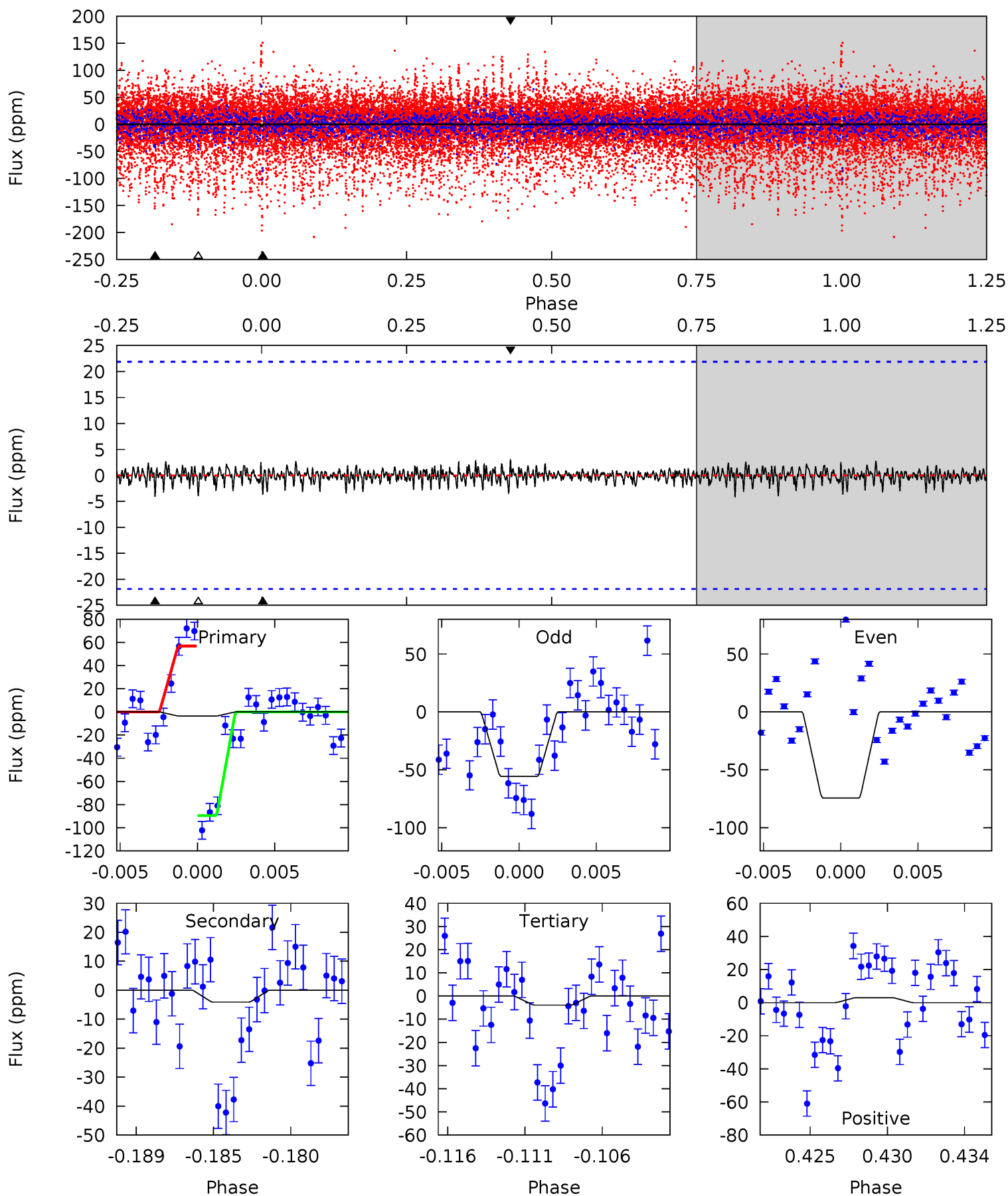
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.49	8.09	7.91	7.47	5.13	2.77	2.74	0.58	1.02	0.18	0.62	0.93	0.88	0.47	1.14



Alt Model-Shift Uniqueness Test

011520793-04, P = 143.675172 Days, E = 94.336954 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.85	0.97	0.93	0.70	5.17	2.83	0.23	-0.08	0.15	0.04	0.26	2.28	2.88	0.42	3.86



Stellar Parameters For KIC 011520793

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7414^{+207}_{-337}	$3.992^{+0.204}_{-0.167}$	$0.000^{+0.200}_{-0.350}$	$2.189^{+0.533}_{-0.651}$	$1.716^{+0.201}_{-0.327}$	$0.231^{+0.305}_{-0.099}$
	+3%/-5%	+5%/-4%	+inf%/-inf%	+24%/-30%	+12%/-19%	+132%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011520793-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21 ± 3	$1.34^{+0.36}_{-0.29}$	842^{+64}_{-67}	6597^{+830}_{-616}	2663^{+1797}_{-978}
Alt.	-4 ± 4	$1.96^{+0.38}_{-0.38}$	839^{+68}_{-61}	3934^{+639}_{-6380}	227^{+321}_{-239}

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

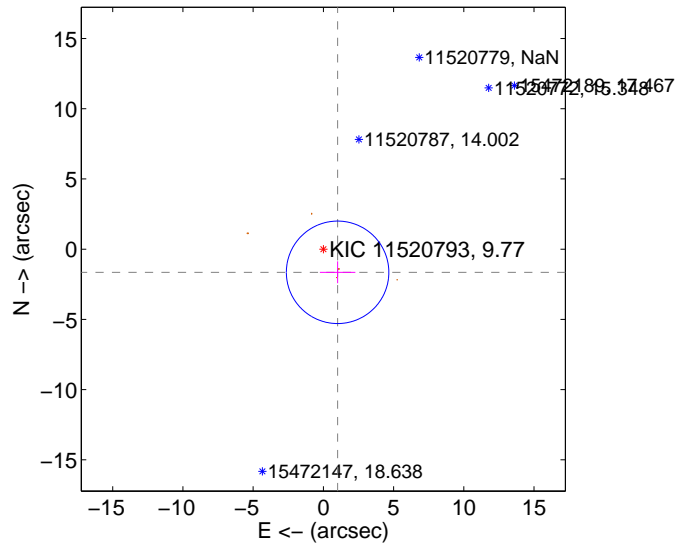
Supplemental centroid analysis for 011520793-04. **Kepler magnitude: 9.77.** Transit SNR 6.21

There are 0 quarters with good PRF difference image offsets

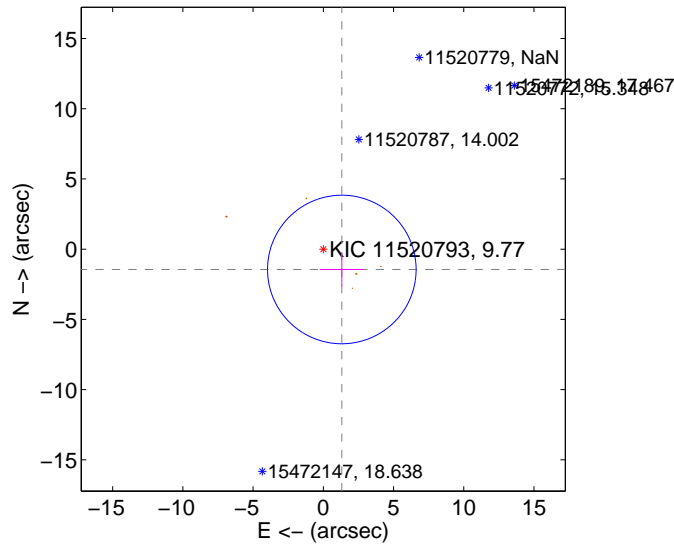
The direct PRF centroid is offset from the target star catalog position by about 1.93 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.936 ± 1.216	1.59	-1.013 ± 1.266	-1.649 ± 0.781
PRF-fit source offset from KIC position	1.957 ± 1.763	1.11	-1.318 ± 1.576	-1.447 ± 1.194
photometric centroid source offset	5.09 ± 3.09	1.65	-1.46 ± 3.50	4.87 ± 3.05

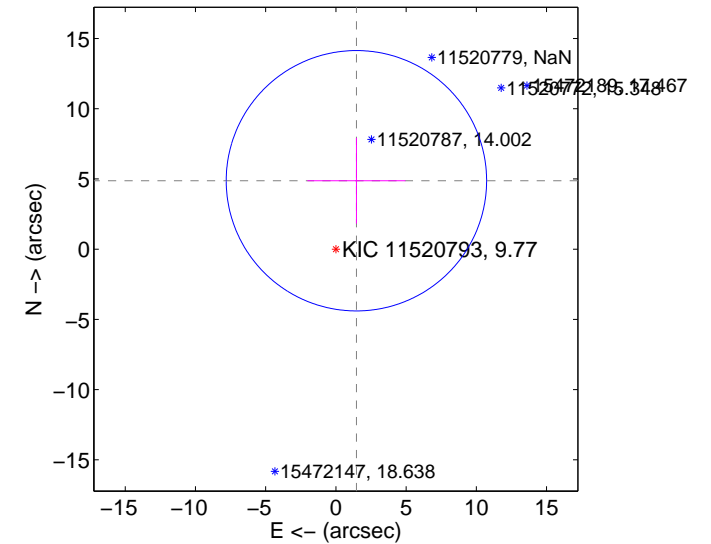
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

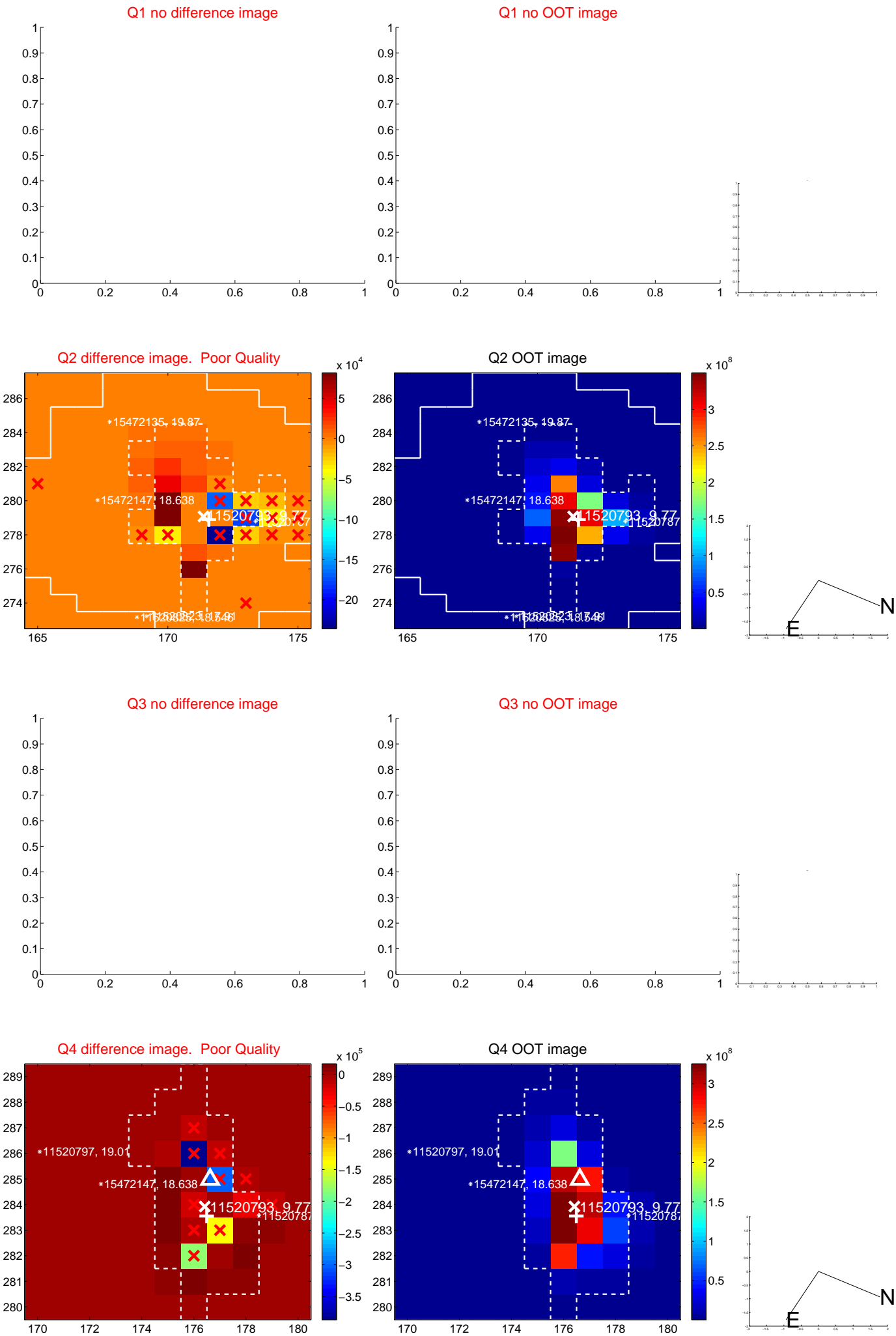


offset from photometric centroids

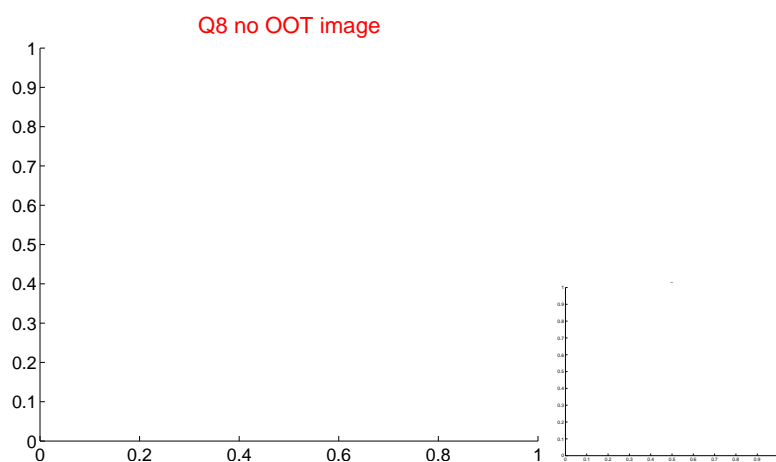
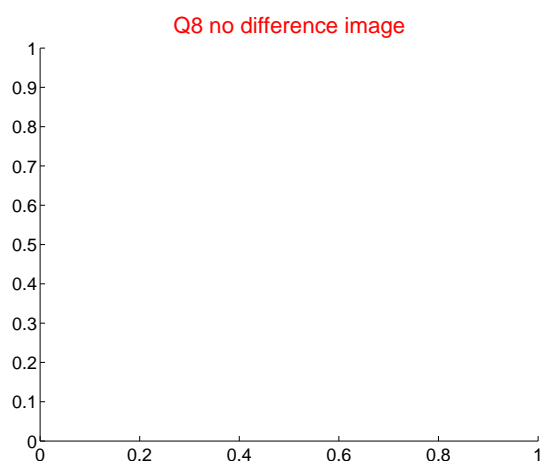
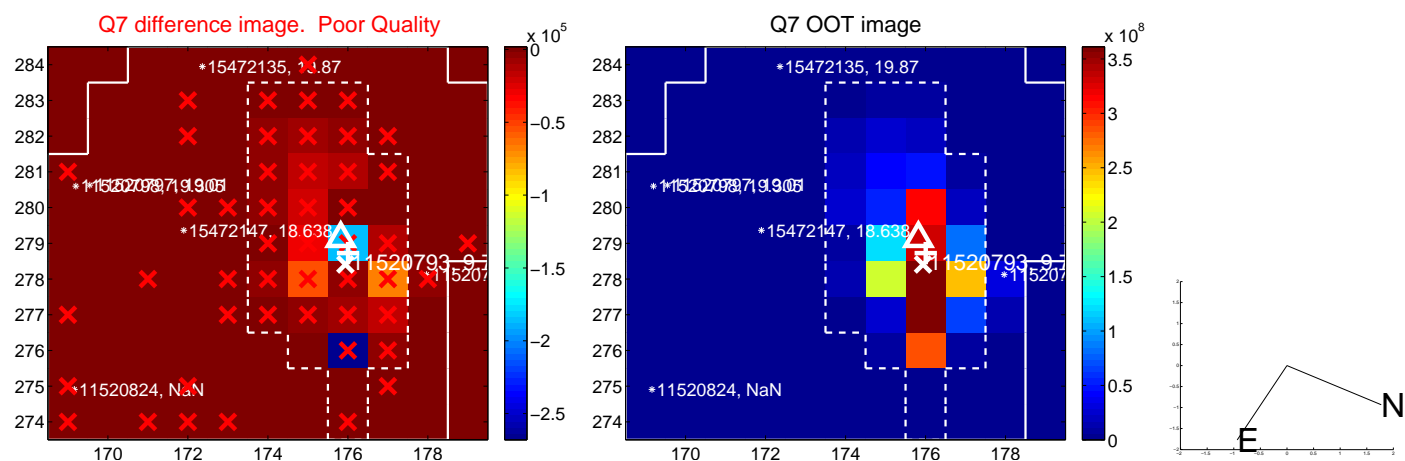
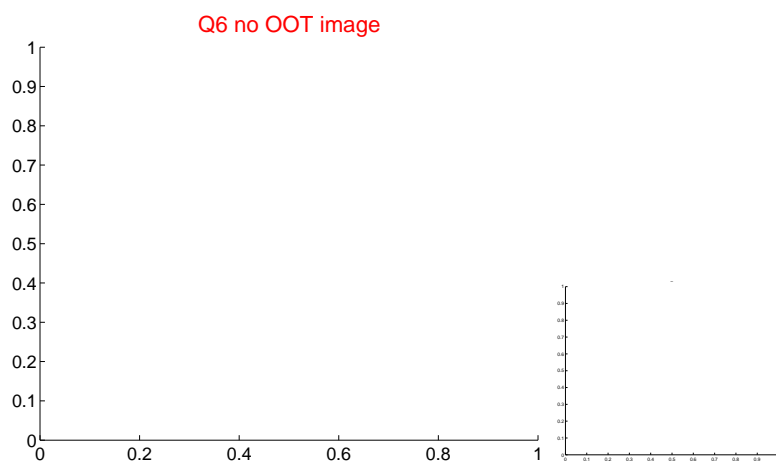
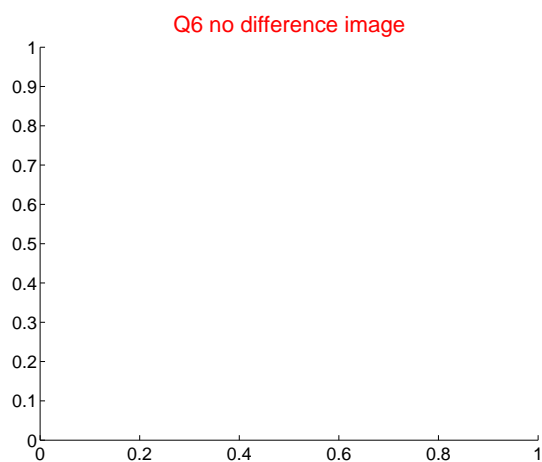
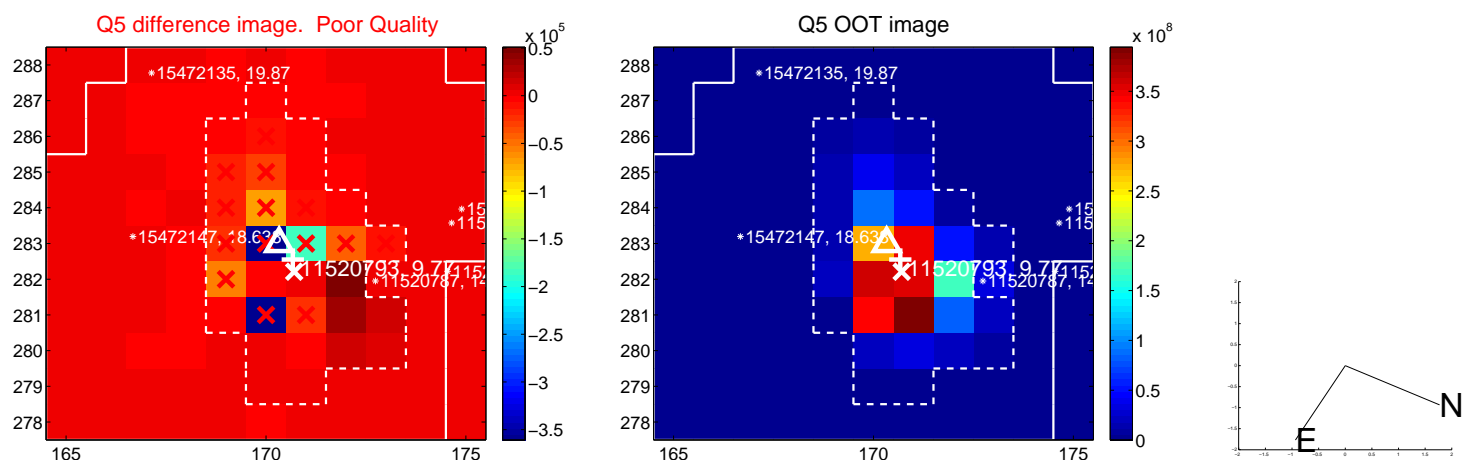


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

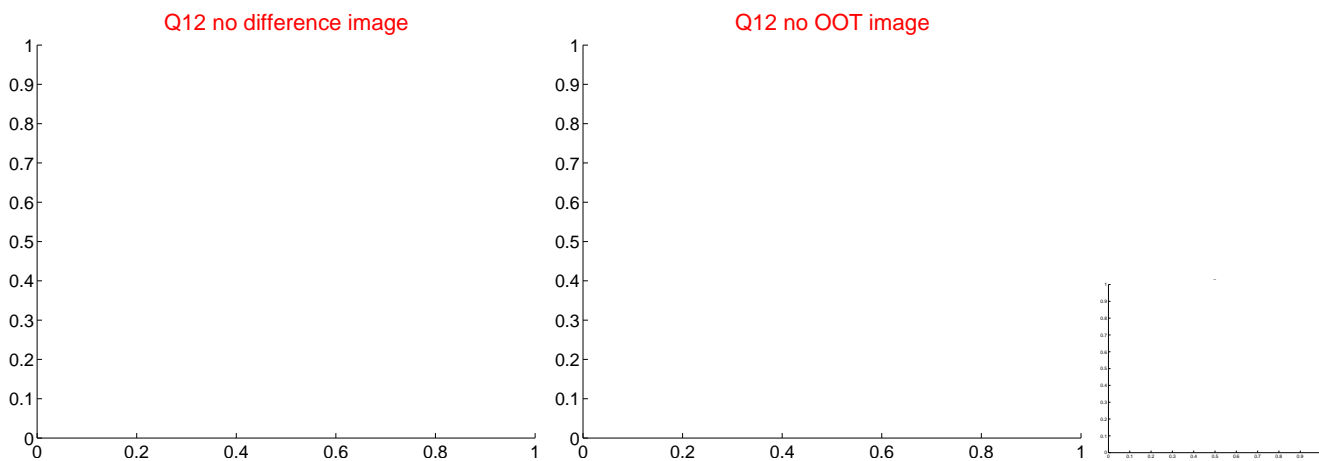
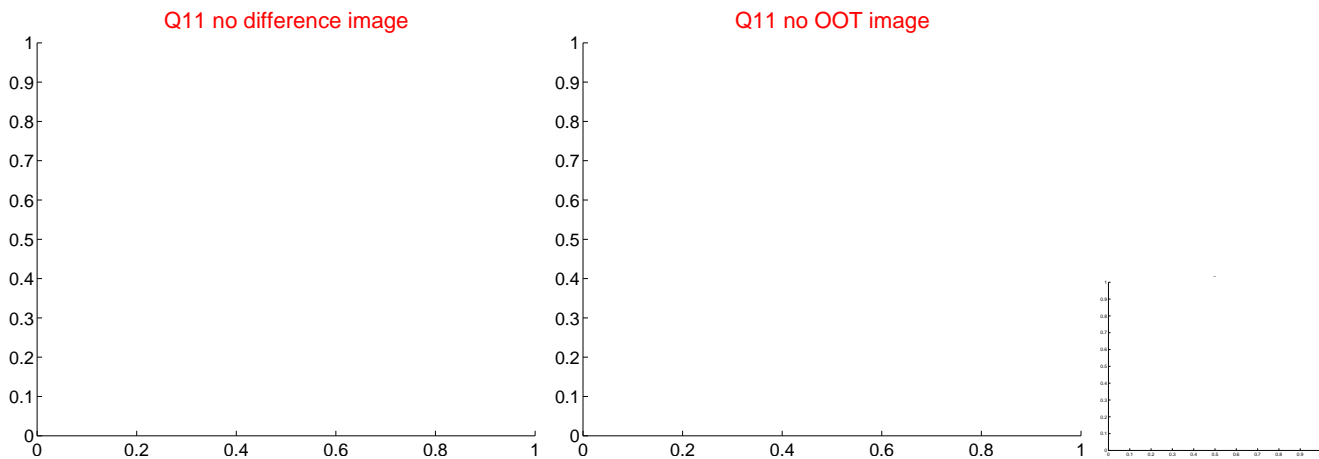
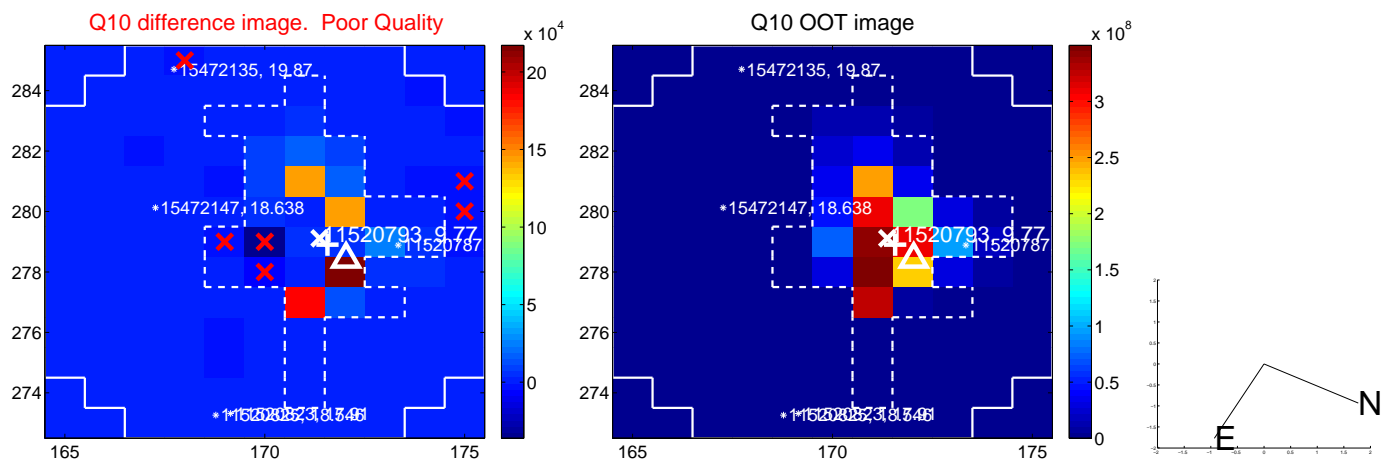
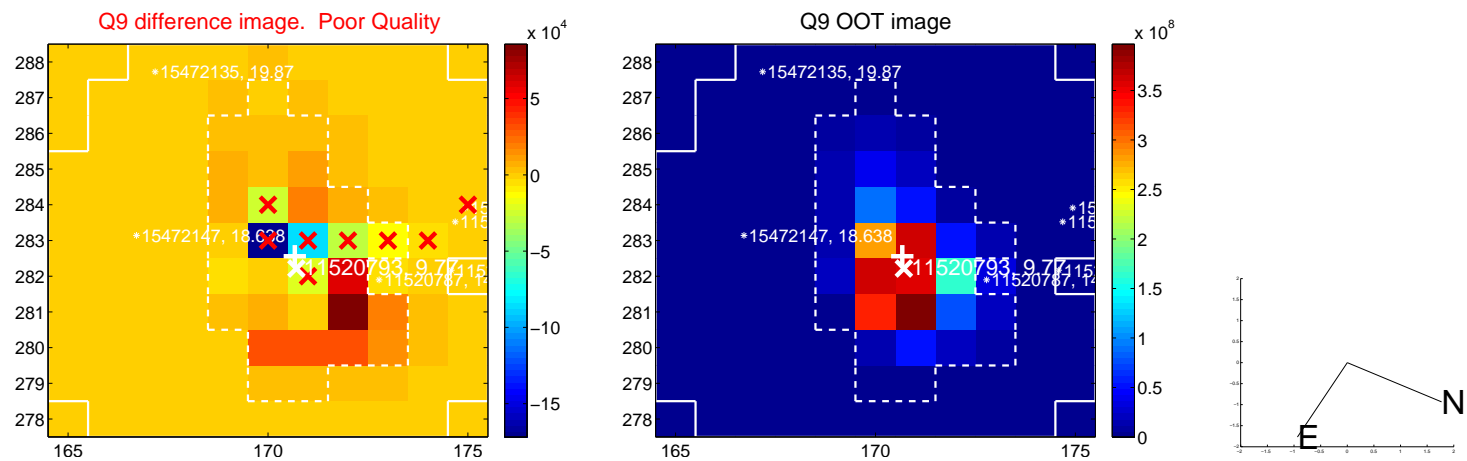
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



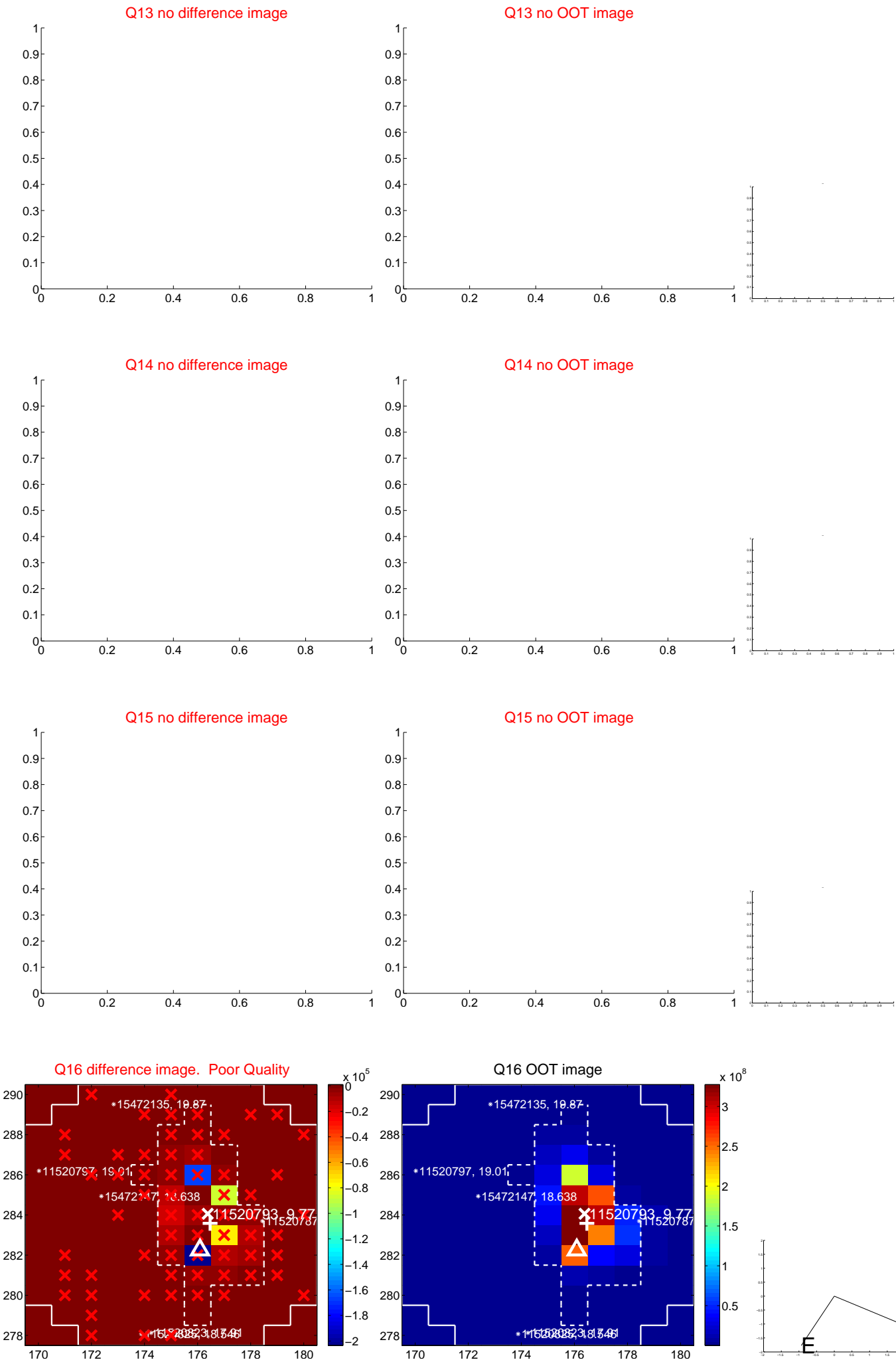
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



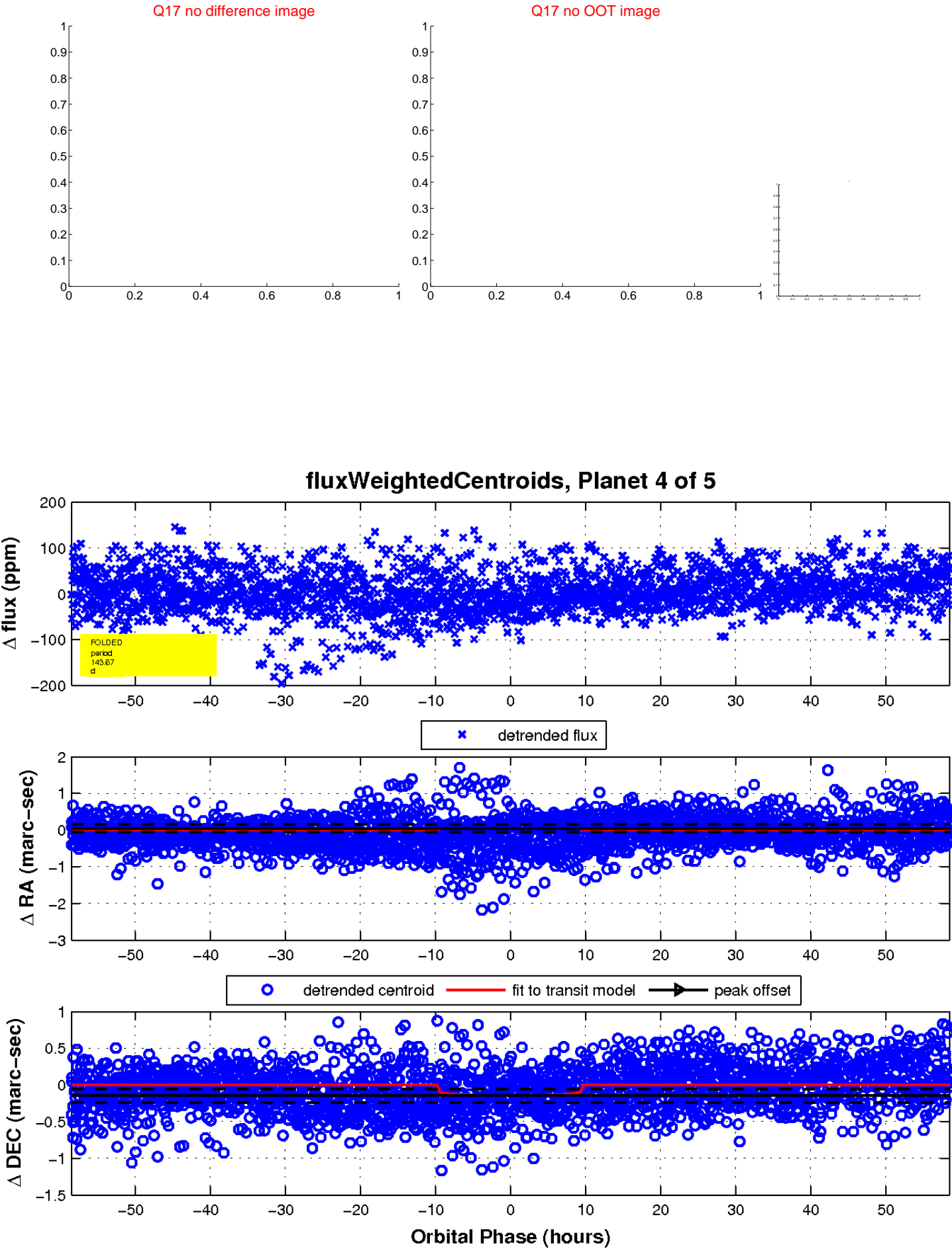
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



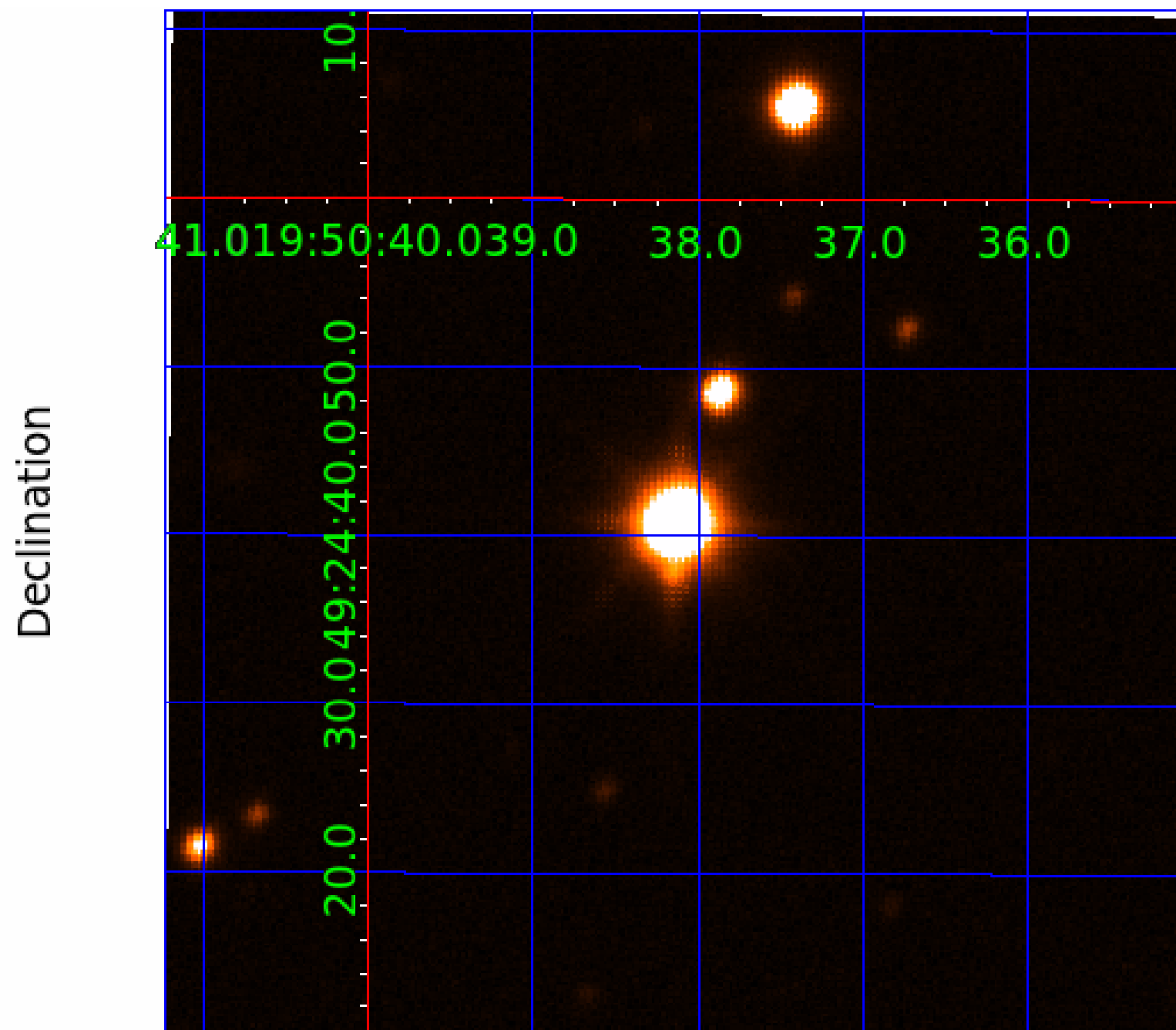
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011520793

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})
011520793-01	OBS	No	2.148301	133.425754	7.1	7.310	15.4	15.4	2.19	7414	0.69	8520.69
011520793-02	OBS	No	2.148160	133.108700	7.4	8.773	12.1	8.5	2.19	7414	0.71	8521.44
011520793-03	OBS	No	164.054322	203.991267	22.6	8.735	12.4	3.7	2.19	7414	1.20	26.30
011520793-04	OBS	No	143.671167	238.029844	30.6	19.517	12.2	6.2	2.19	7414	1.34	31.39
011520793-05	OBS	No	463.815979	514.476384	34.3	13.680	7.9	5.0	2.19	7414	1.48	6.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011520793-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
011520793-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
011520793-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011520793-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

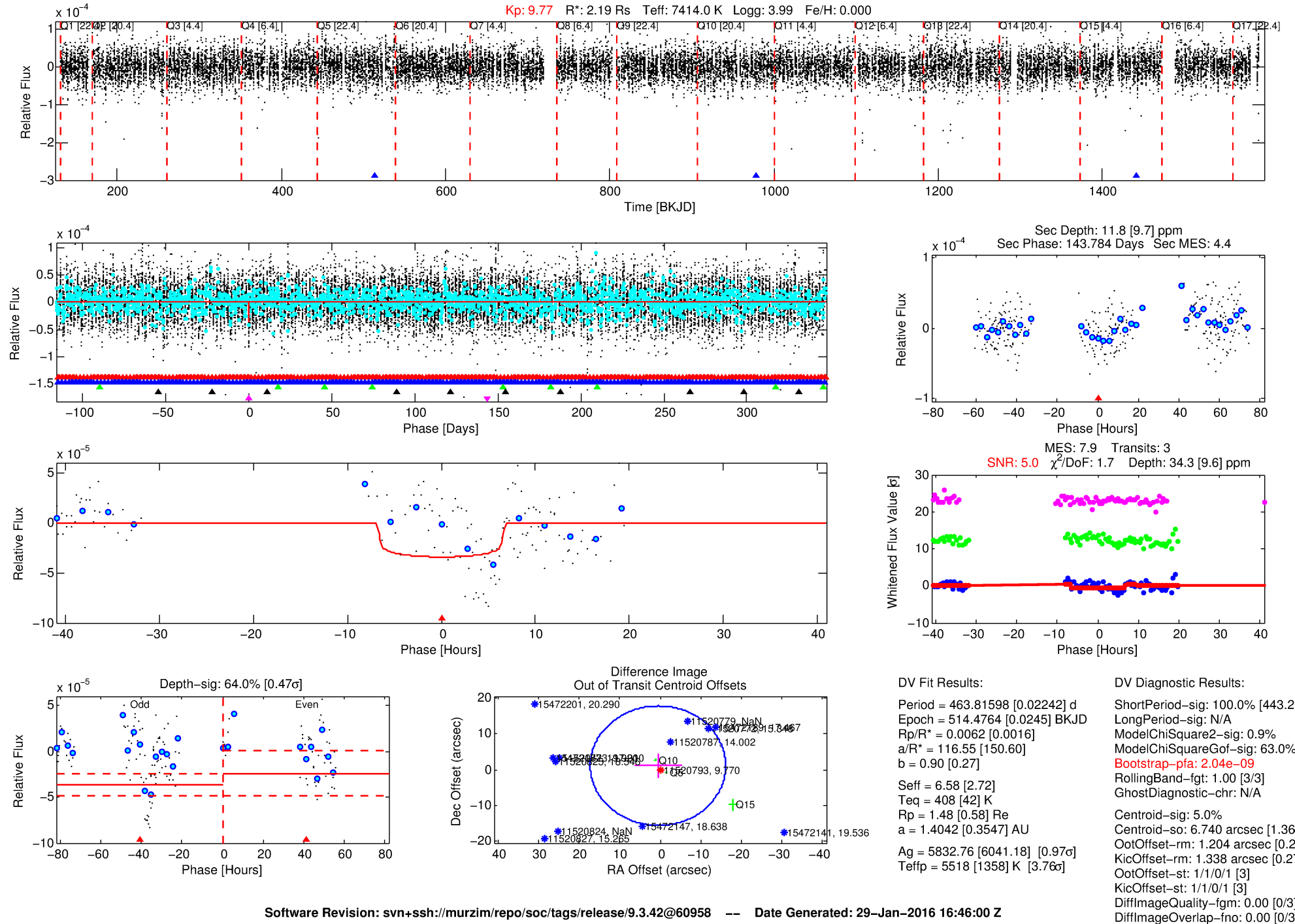
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011520793-05

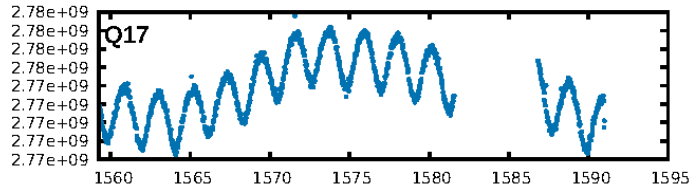
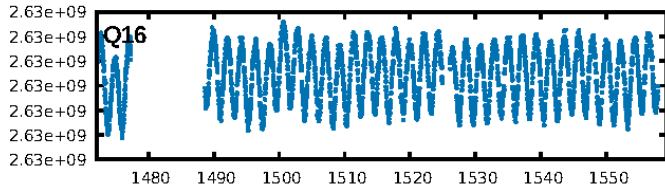
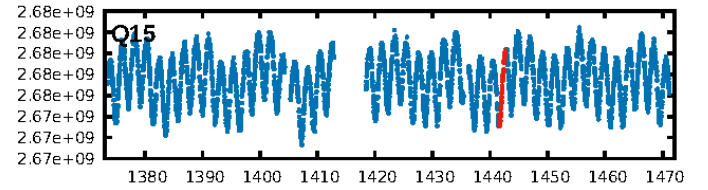
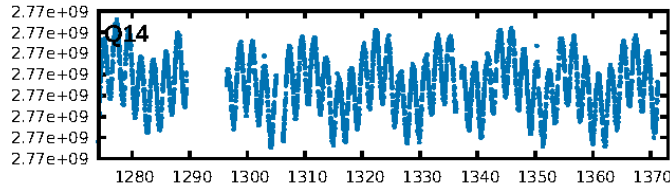
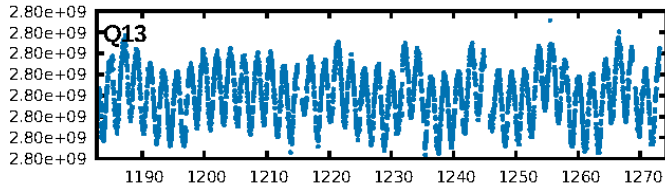
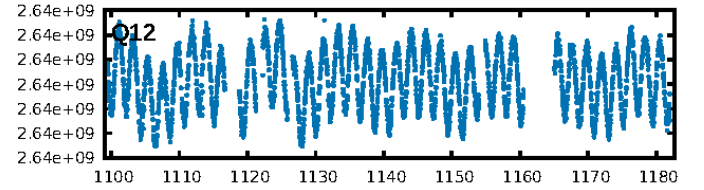
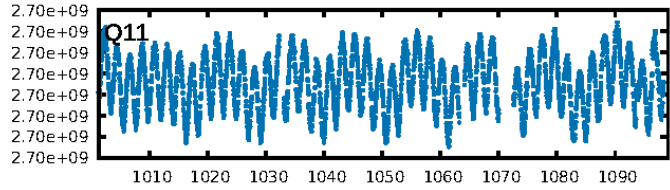
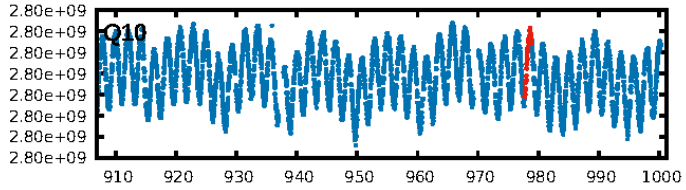
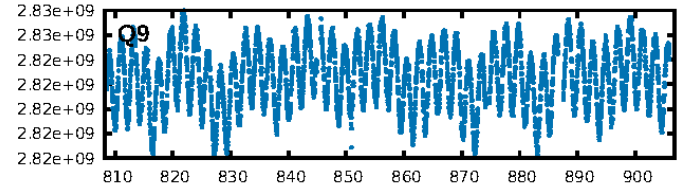
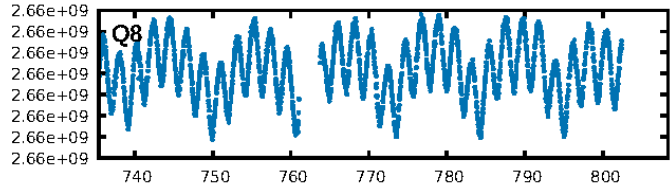
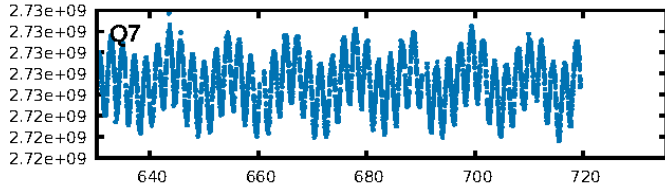
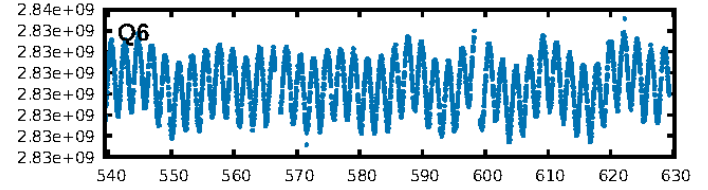
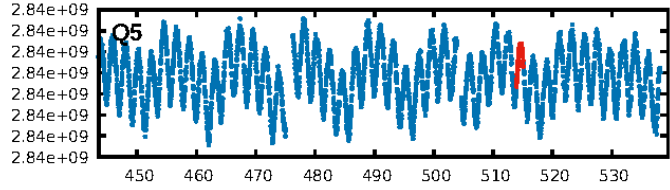
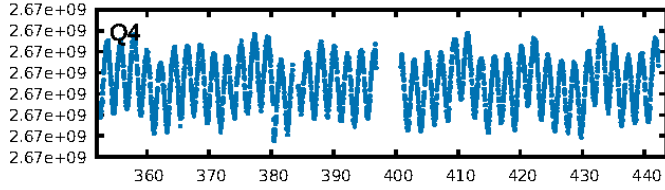
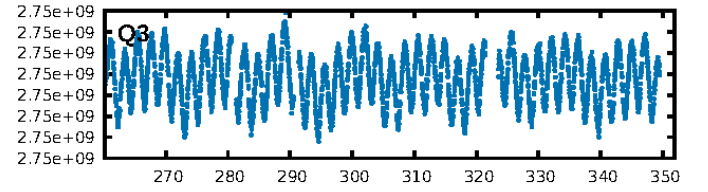
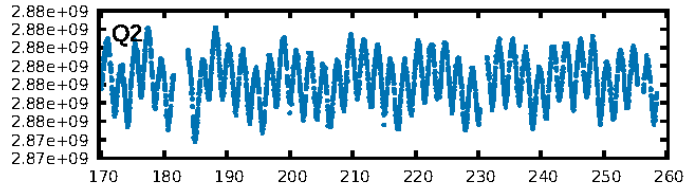
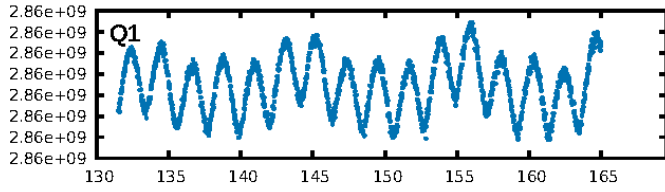
No Significant Match Found

DV One-Page Summary

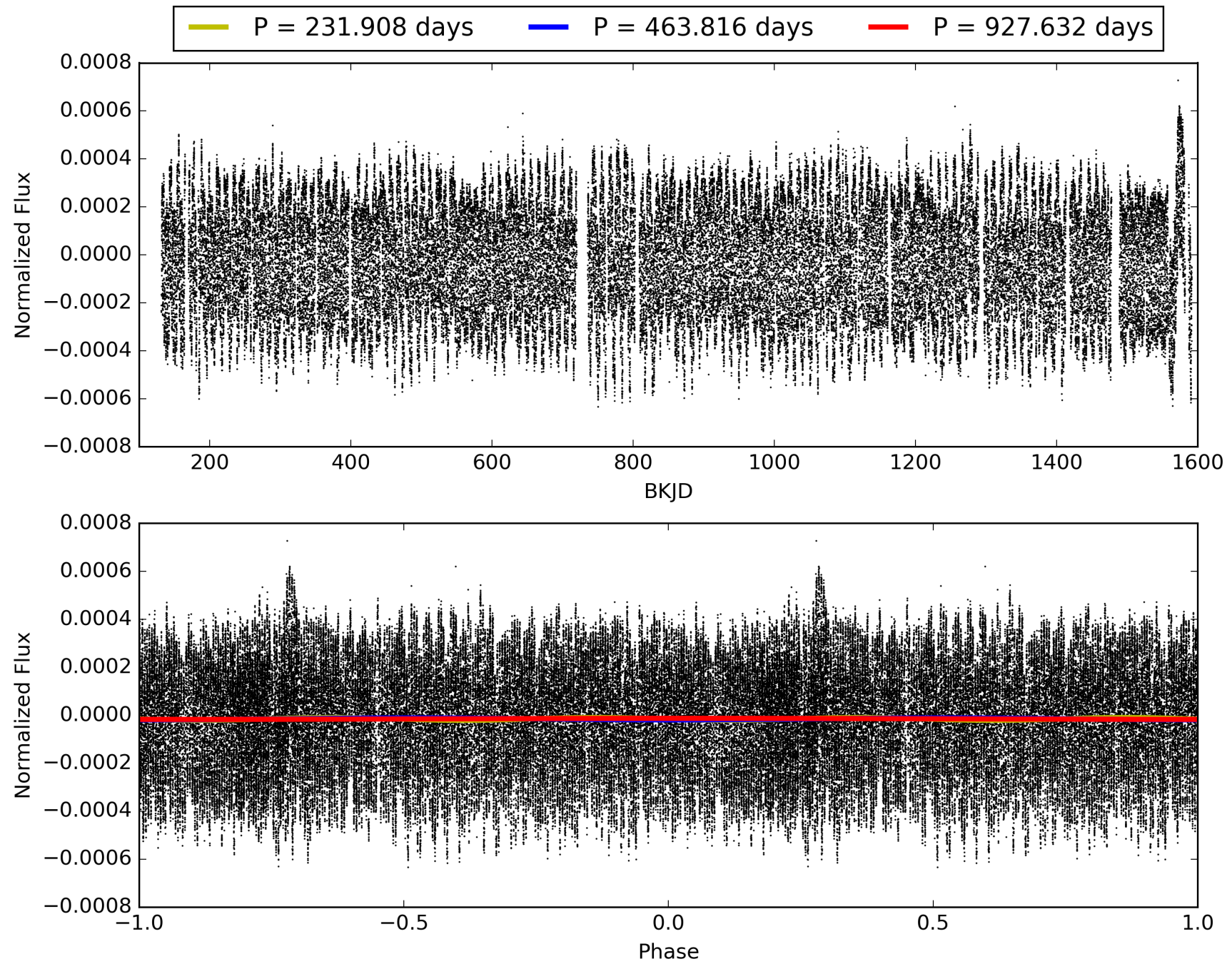
KIC: 11520793 Candidate: 5 of 5 Period: 463.816 d



TCE 011520793-05, PDC Light Curves

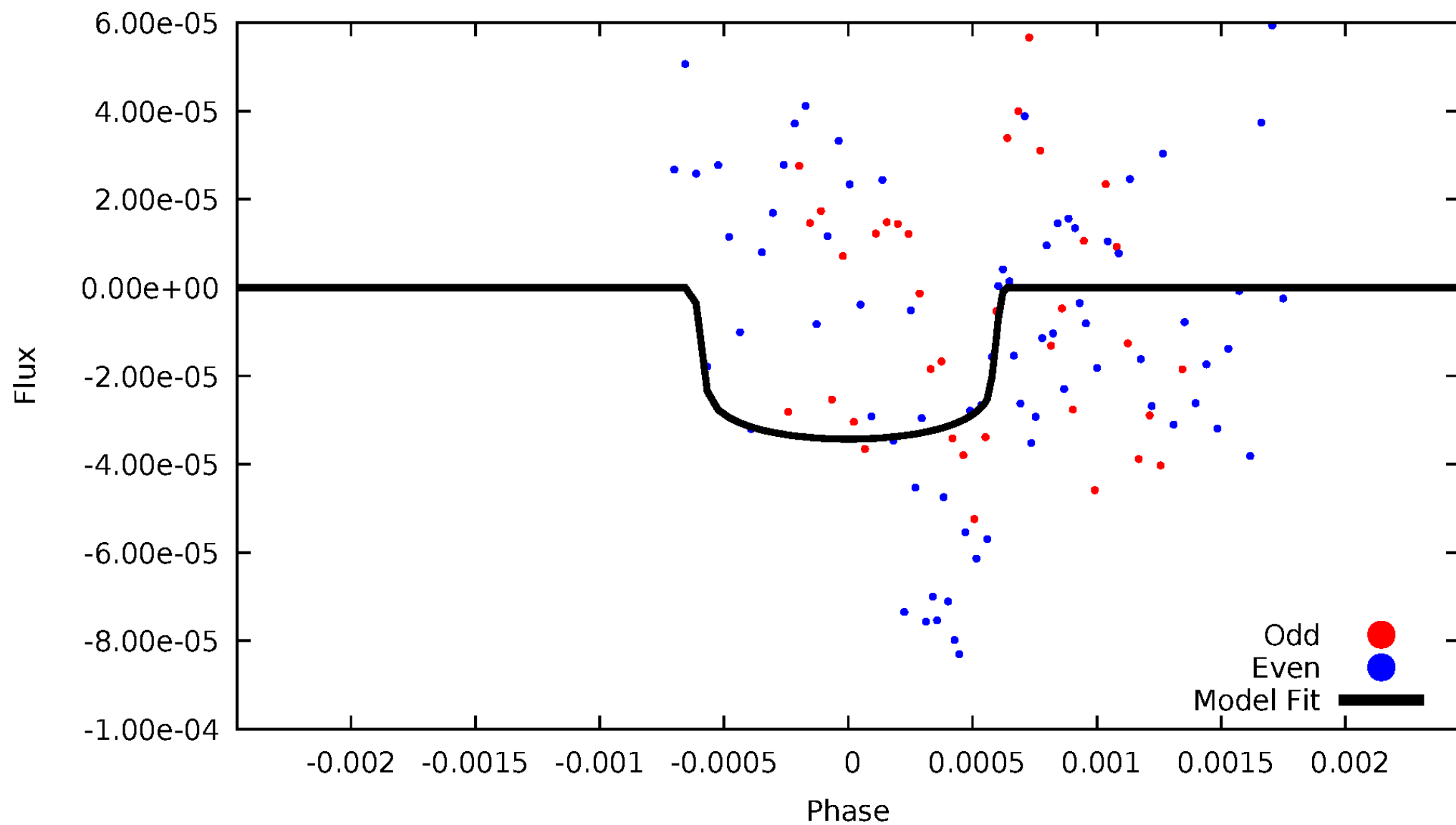


TCE 011520793-05



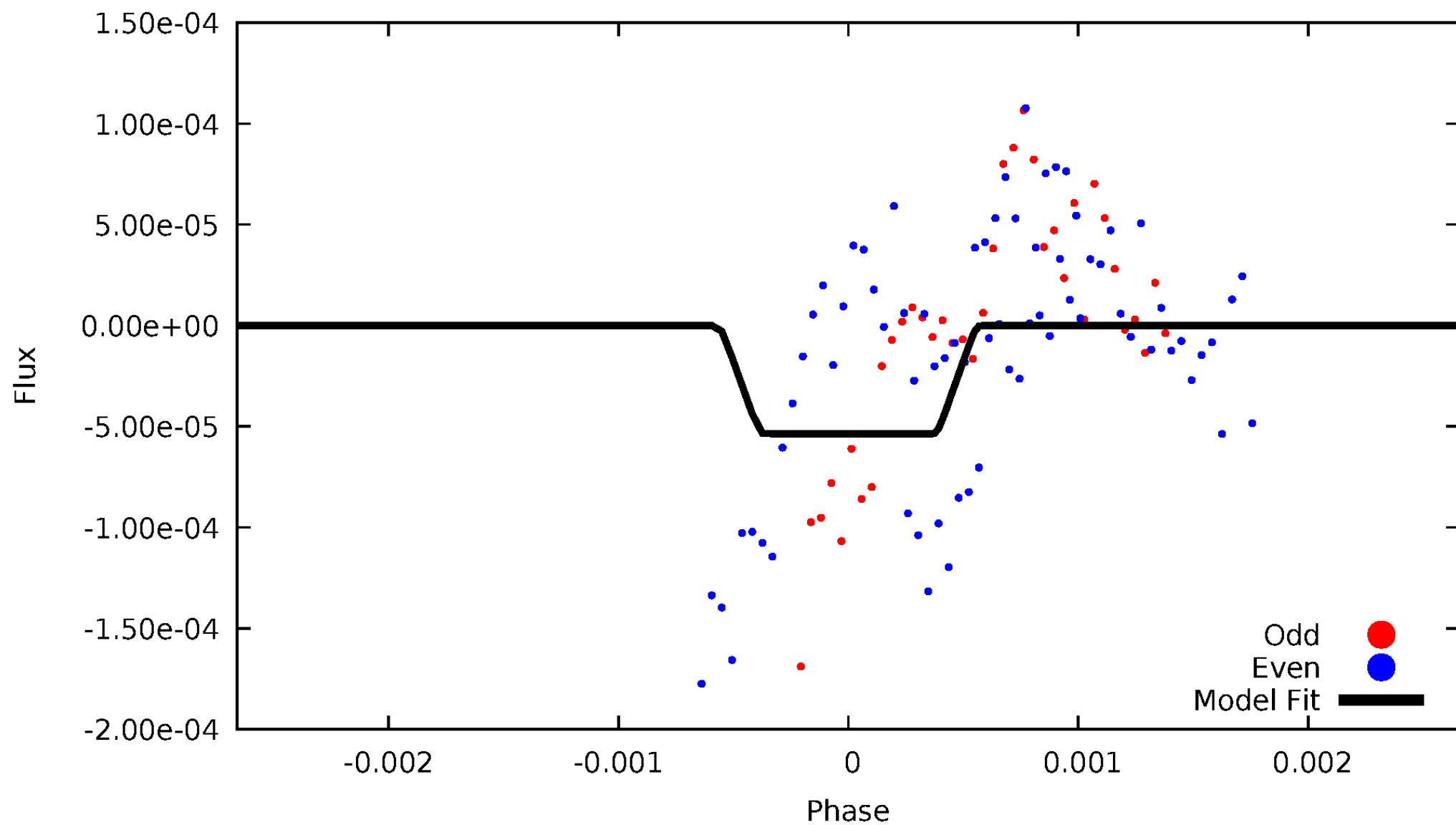
DV Odd/Even

TCE 011520793-05



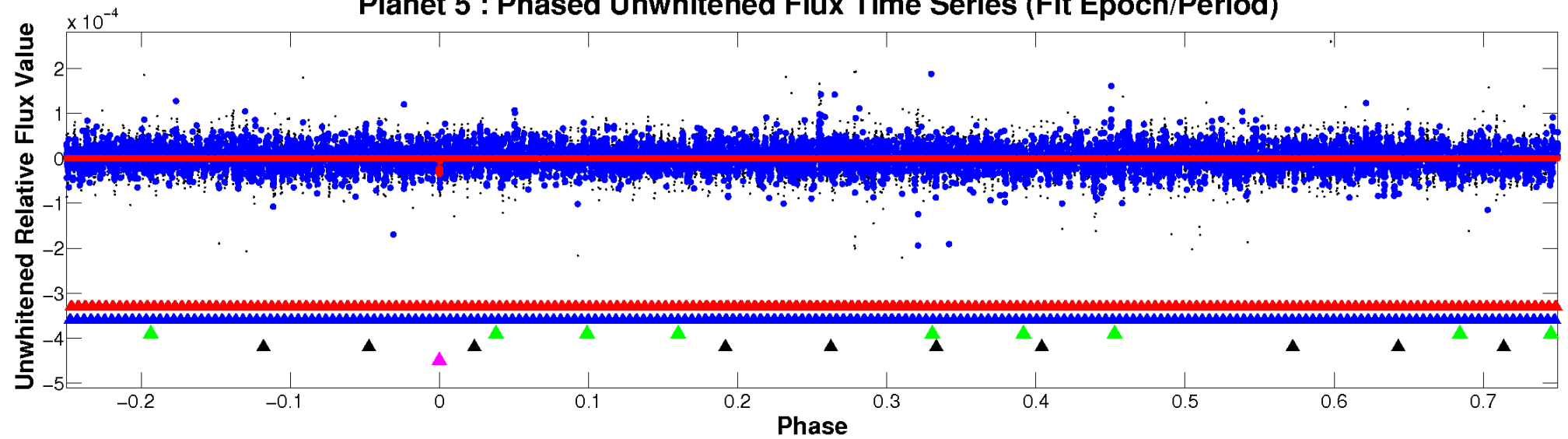
ALT Odd/Even

TCE 011520793-05

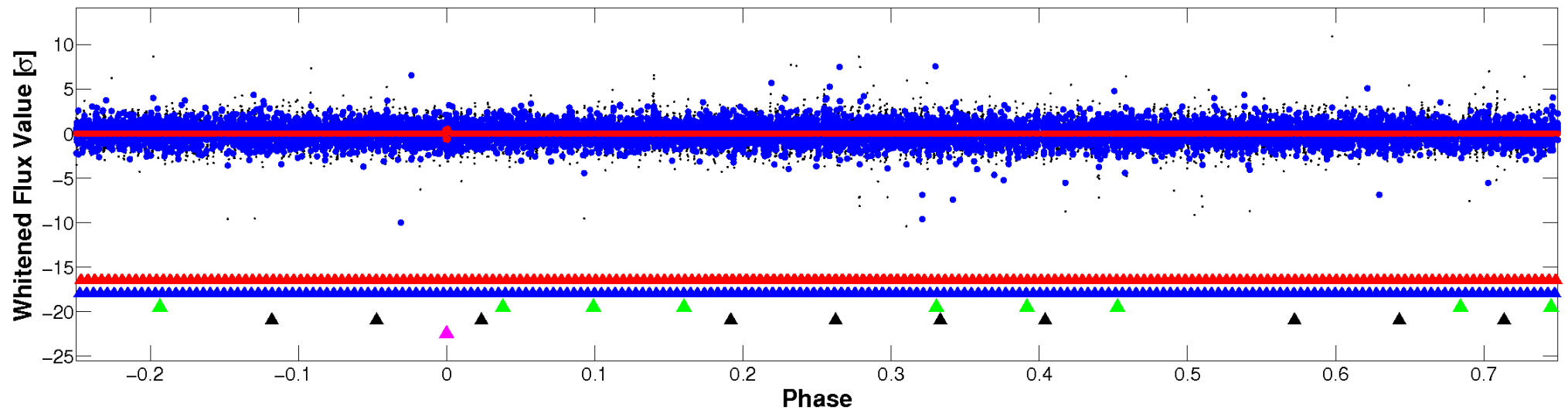


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

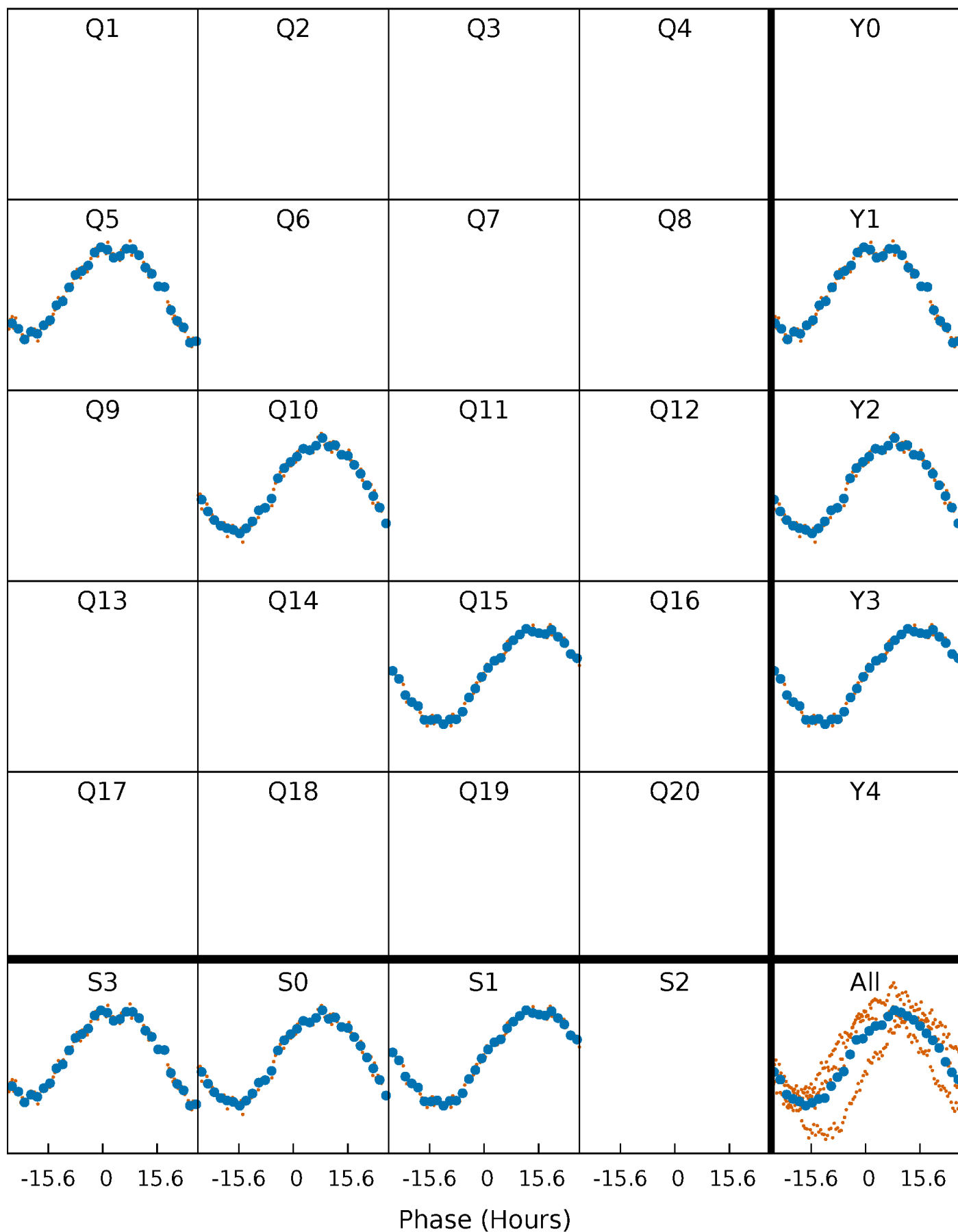


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



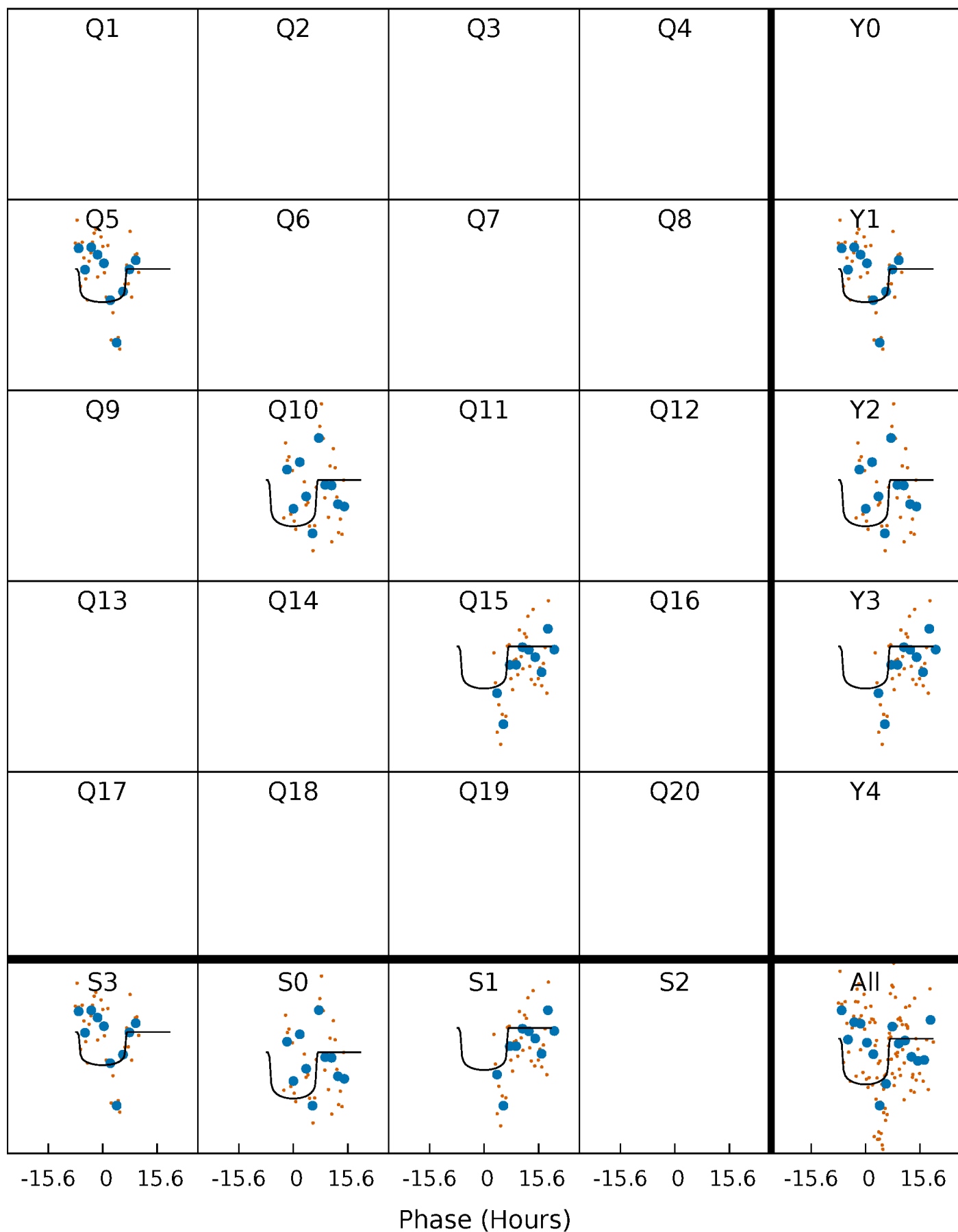
PDC Quarter-Phased Transit Curves

TCE 011520793-05 $P=463.815979$ Days $T_0=514.476384$ (BKJD)



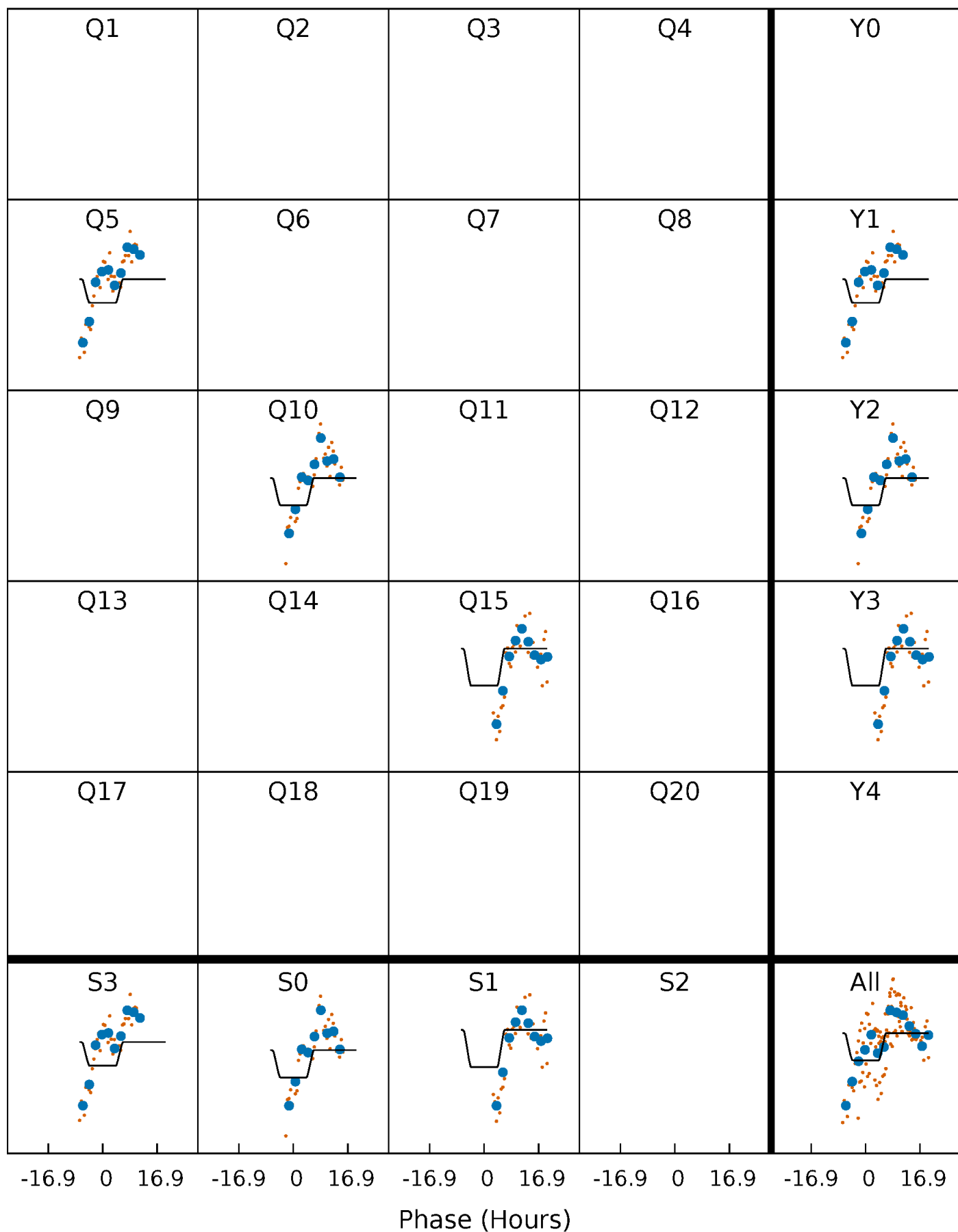
DV Quarter-Phased Transit Curves

TCE 011520793-05 $P=463.815979$ Days $T_0=514.476384$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

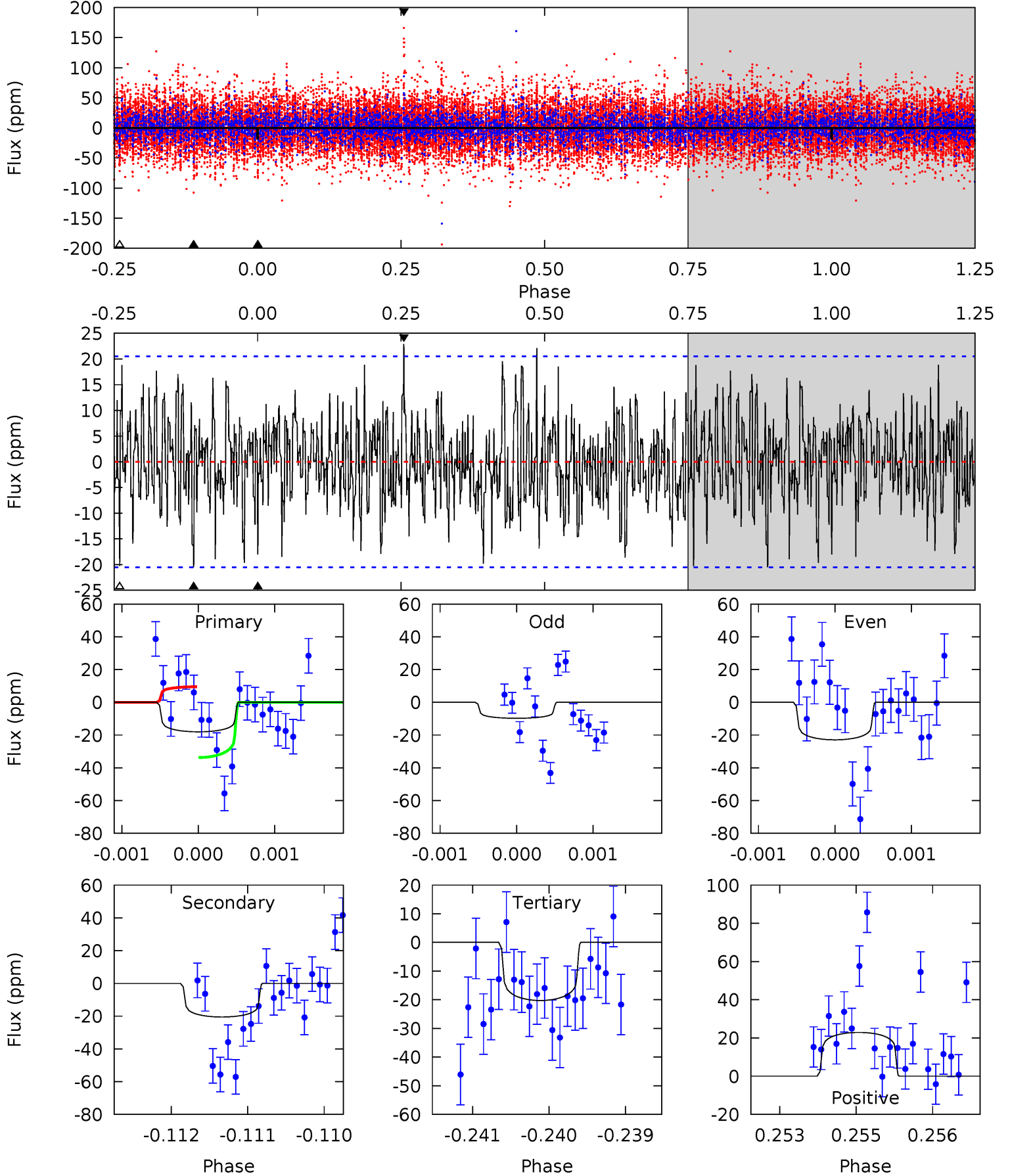
TCE 011520793-05 P=463.828190 Days $T_0=514.447831$ (BKJD)



DV Model-Shift Uniqueness Test

011520793-05, P = 463.815979 Days, E = 50.660405 Days

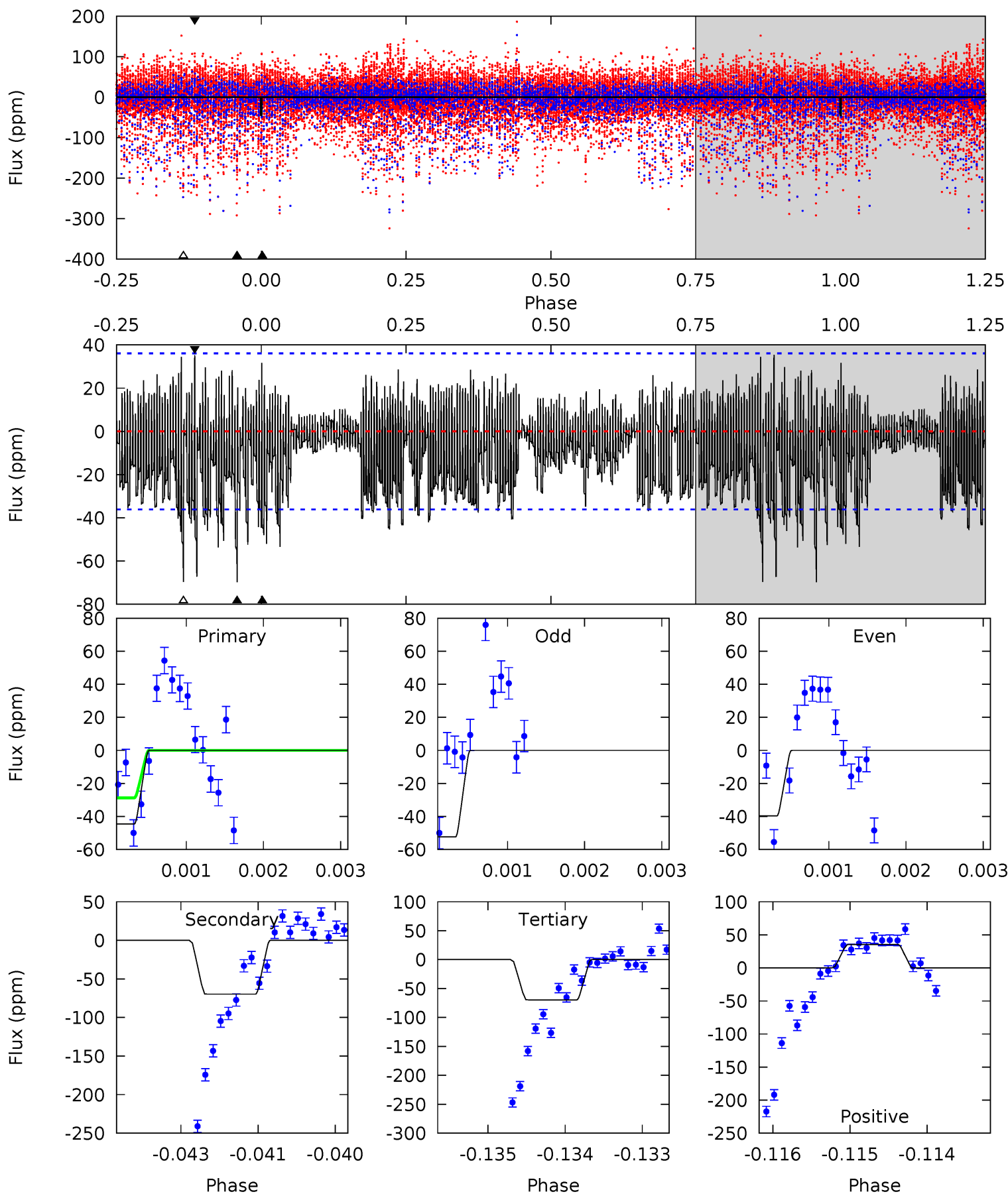
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.76	5.42	5.35	6.05	5.42	3.24	1.78	-0.59	-1.29	0.07	-0.63	1.65	1.89	0.53	2.98



Alt Model-Shift Uniqueness Test

011520793-05, P = 463.828190 Days, E = 50.619641 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.70	10.5	10.5	5.31	5.43	3.26	2.39	-3.77	1.39	0.02	5.18	0.91	1.24	0.34	2.98



Stellar Parameters For KIC 011520793

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7414^{+207}_{-337}	$3.992^{+0.204}_{-0.167}$	$0.000^{+0.200}_{-0.350}$	$2.189^{+0.533}_{-0.651}$	$1.716^{+0.201}_{-0.327}$	$0.231^{+0.305}_{-0.099}$
	+3%/-5%	+5%/-4%	+inf%/-inf%	+24%/-30%	+12%/-19%	+132%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011520793-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-21 ± 4	$1.49^{+0.44}_{-0.41}$	569^{+45}_{-43}	6188^{+1104}_{-728}	9976^{+8567}_{-4200}
Alt.	-70 ± 7	$1.73^{+0.45}_{-0.44}$	568^{+40}_{-43}	7981^{+1424}_{-942}	25160^{+19460}_{-9734}

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

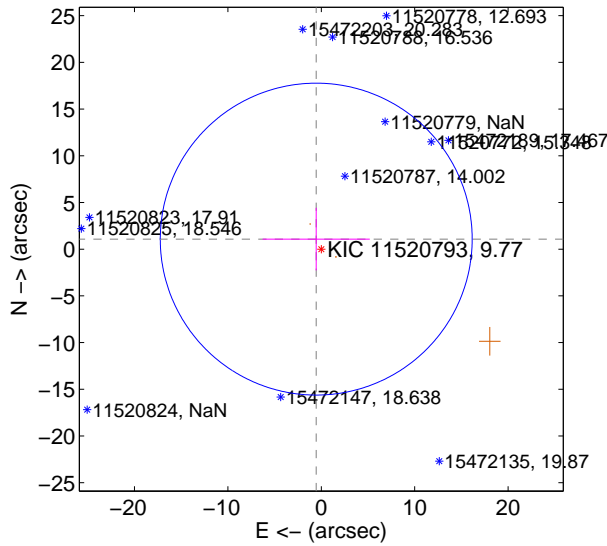
Supplemental centroid analysis for 011520793-05. **Kepler magnitude: 9.77.** Transit SNR 5.04

There are 0 quarters with good PRF difference image offsets

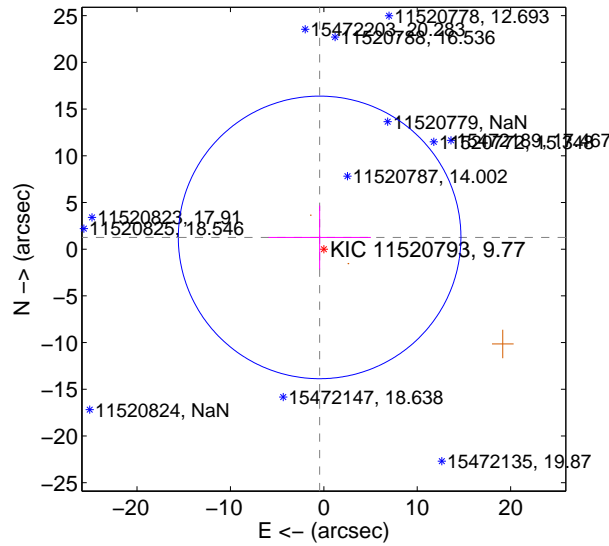
The direct PRF centroid is offset from the target star catalog position by about 1.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.204 ± 5.564	0.22	0.541 ± 5.736	1.076 ± 3.349
PRF-fit source offset from KIC position	1.338 ± 5.041	0.27	0.452 ± 5.479	1.260 ± 3.406
photometric centroid source offset	6.74 ± 4.95	1.36	0.90 ± 5.53	-6.68 ± 4.94

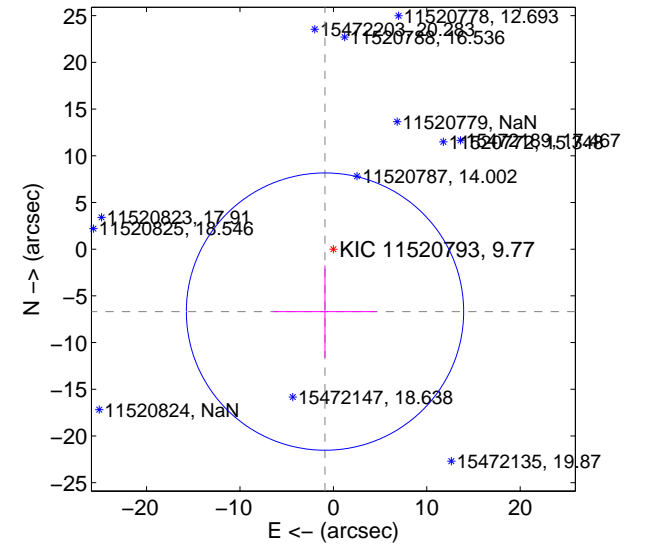
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

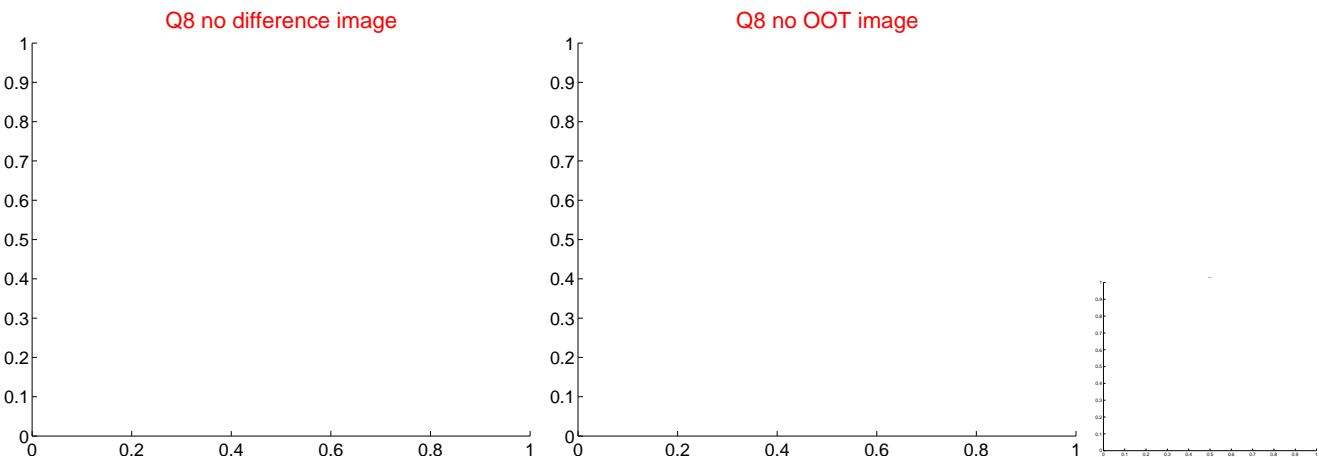
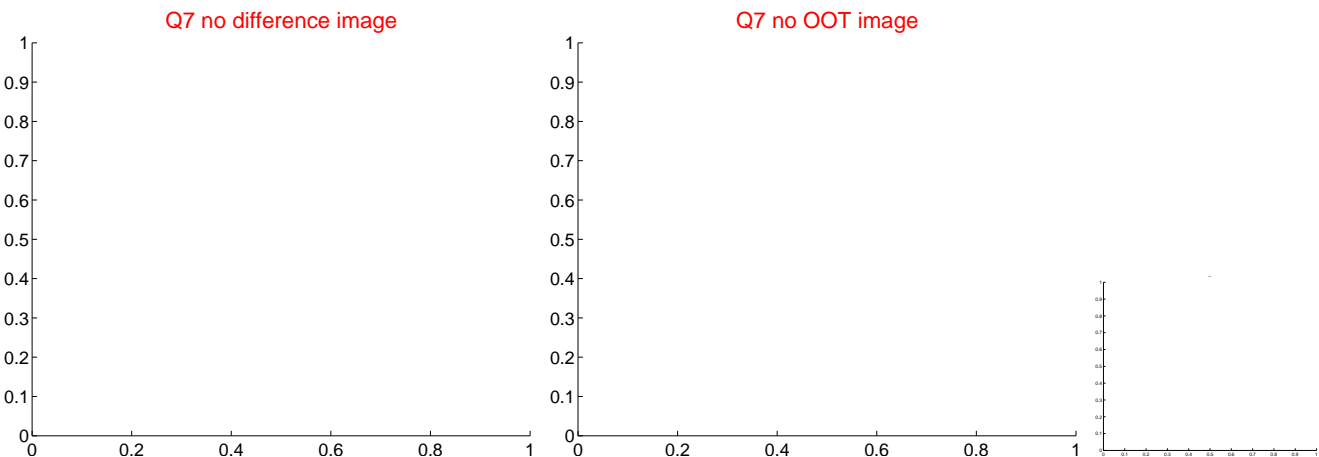
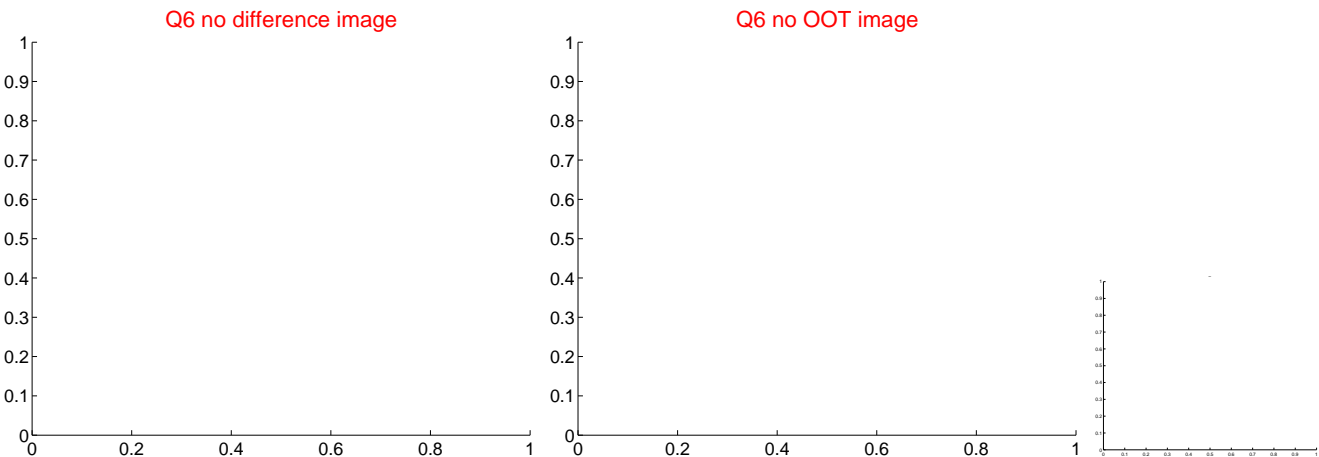
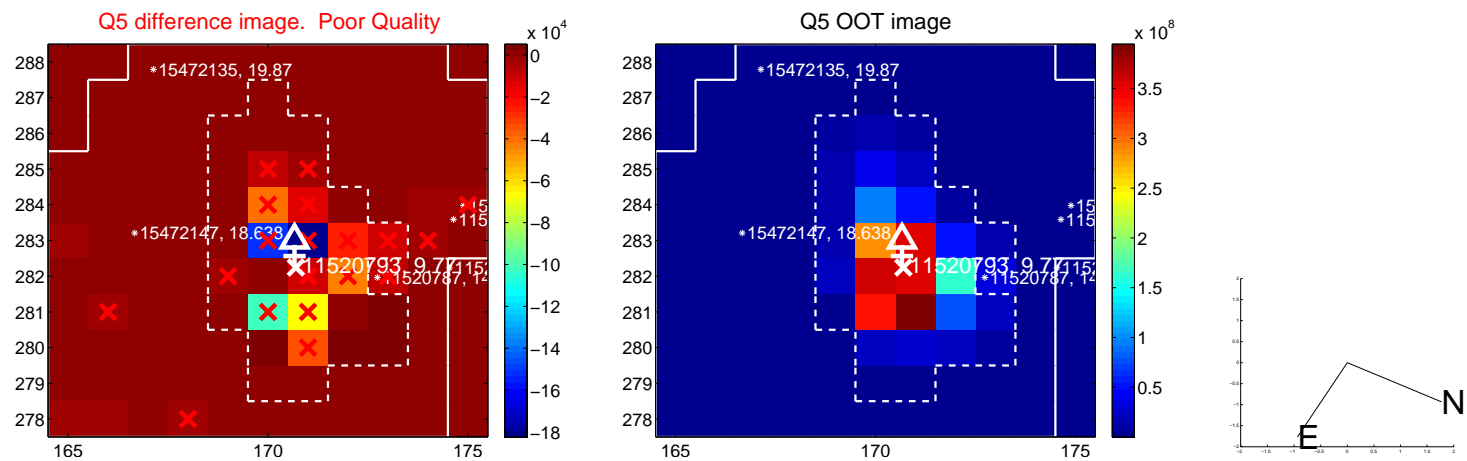


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

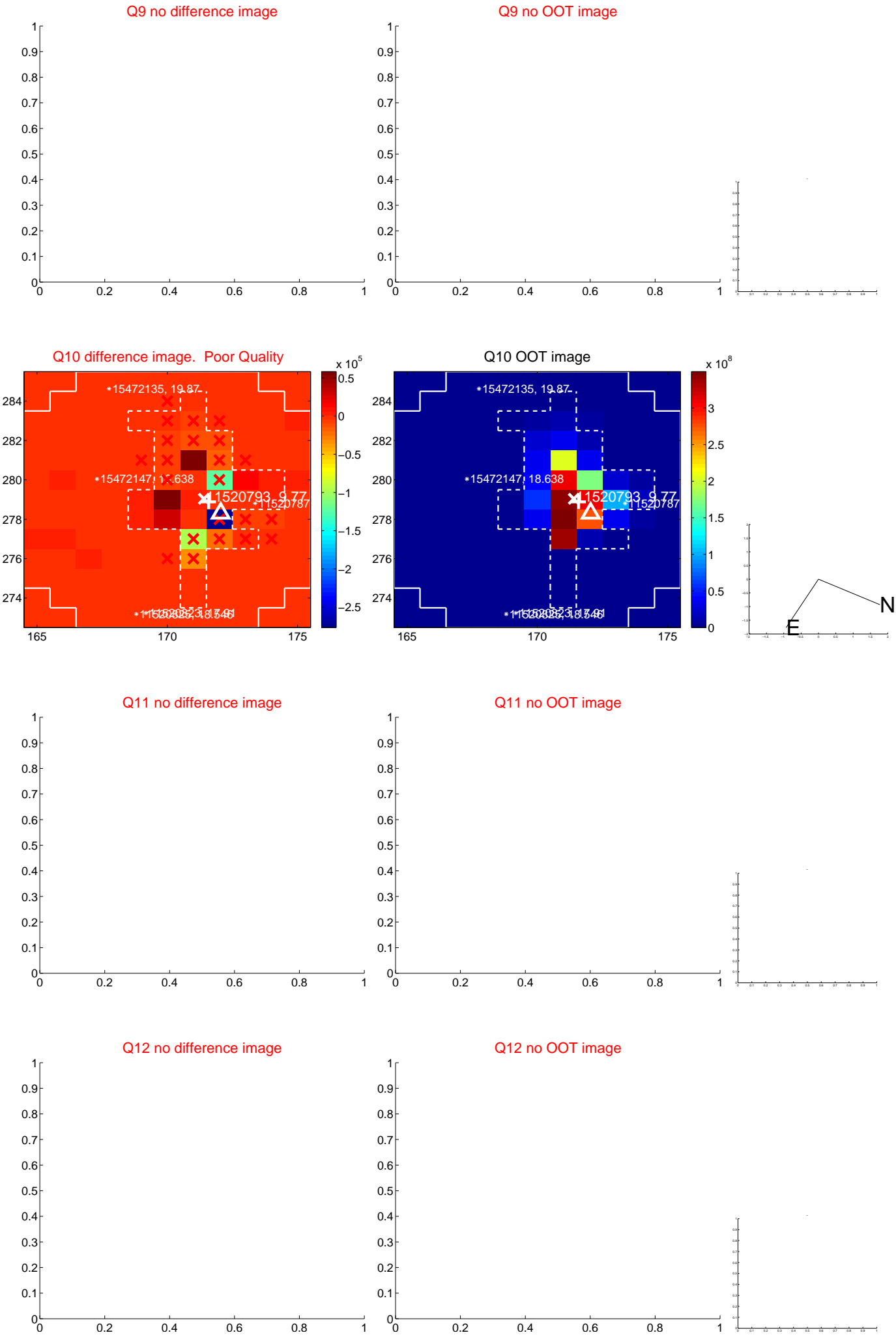
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



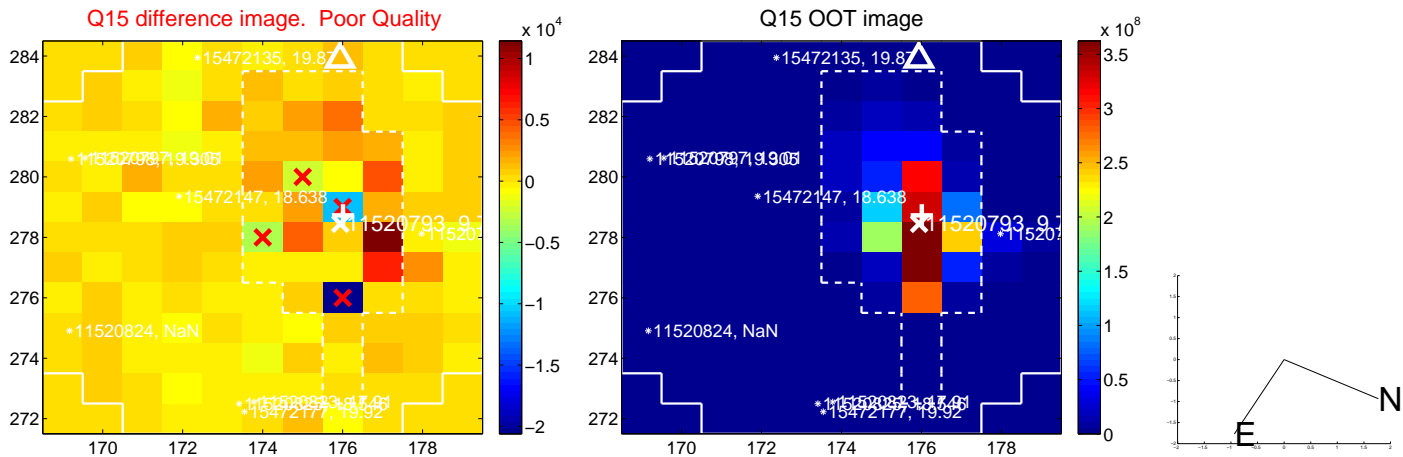
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



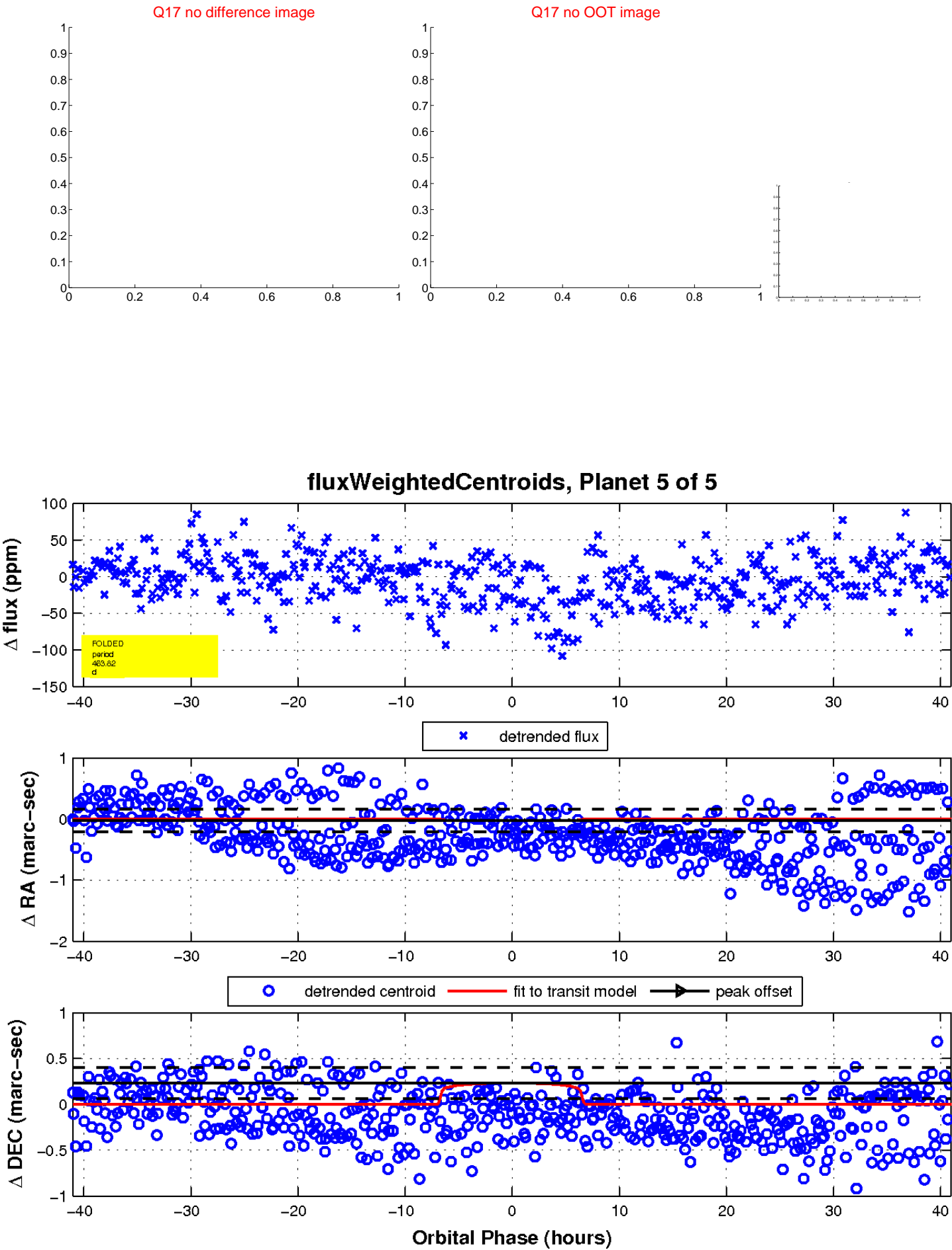
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

