

KIC 011620956

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})
011620956-01	OBS	No	0.954225	131.920886	47.3	4.840	8.1	9.6	0.75	5656	0.61	1621.40
011620956-02	OBS	No	488.493304	207.854435	2379.7	7.562	20.9	10.3	0.75	5656	3.72	0.40
011620956-05	OBS	No	155.461423	175.622791	288.0	1.746	11.6	2.1	0.75	5656	1.48	1.82
011620956-06	OBS	No	459.003247	165.754235	723.4	9.000	11.9	-1.0	0.75	5656	1.99	0.43
011620956-07	OBS	No	466.607749	172.580412	4166.4	17.220	11.4	8.6	0.75	5656	5.27	0.42
011620956-08	OBS	No	170.727948	270.243744	1899.4	9.418	10.9	8.0	0.75	5656	6.17	1.61
011620956-09	OBS	No	120.662292	229.959456	645.1	11.187	12.9	4.3	0.75	5656	1.97	2.56
011620956-10	OBS	No	358.792880	323.205031	516.2	10.500	10.9	-1.0	0.75	5656	1.68	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011620956-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011620956-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
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011620956-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011620956-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

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

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

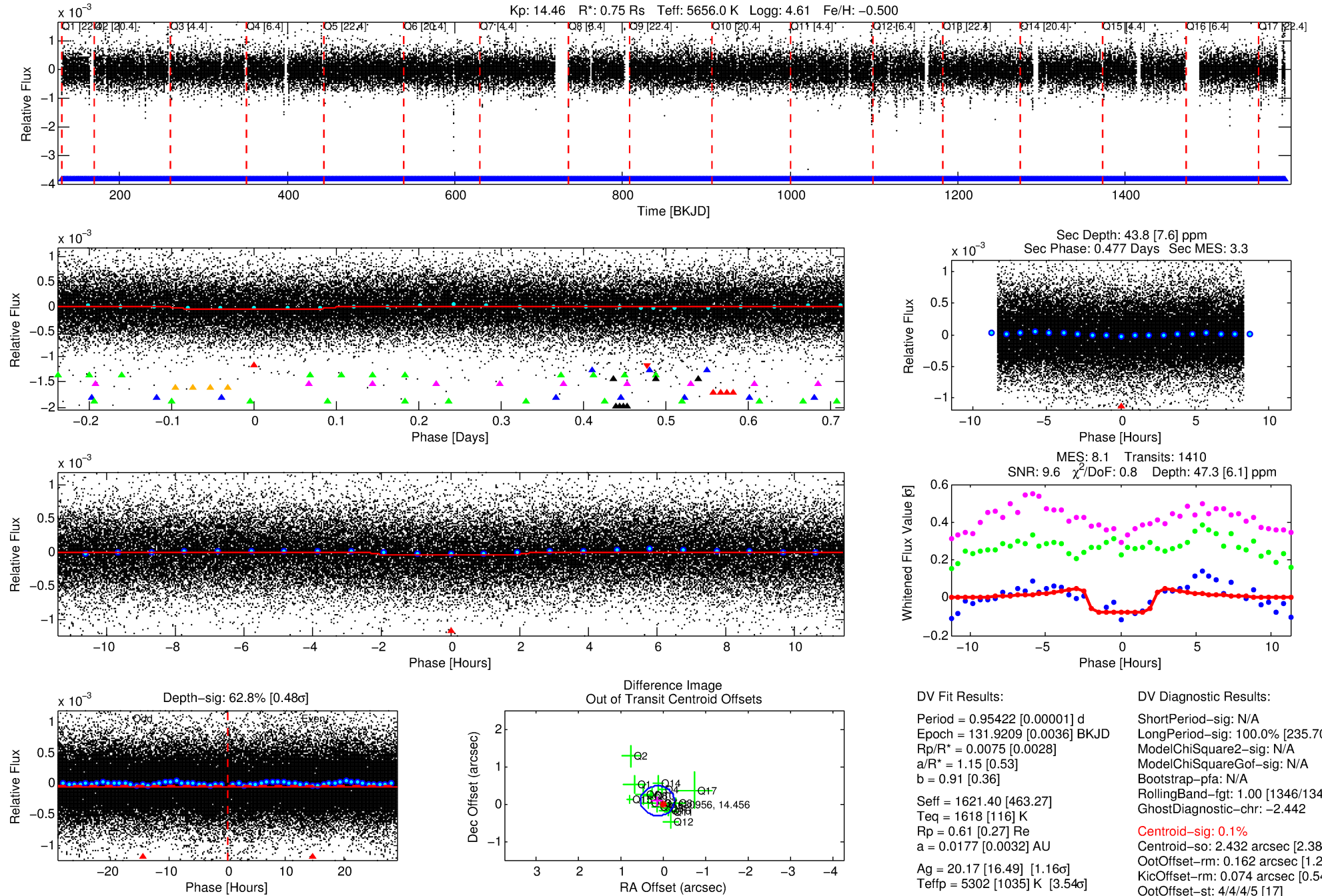
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011620956-01

No Significant Match Found

DV One-Page Summary

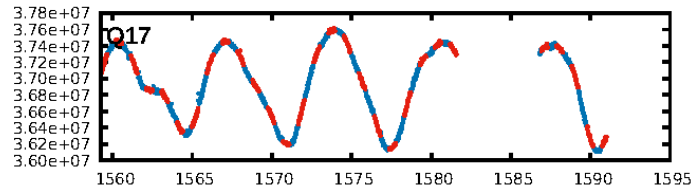
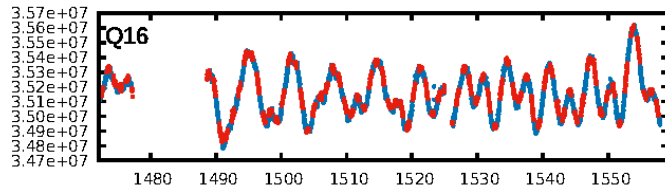
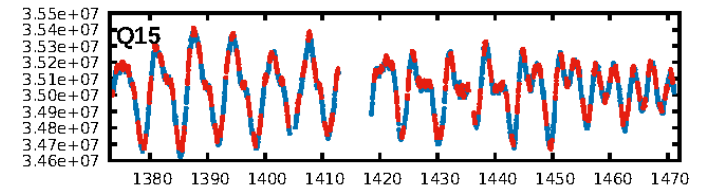
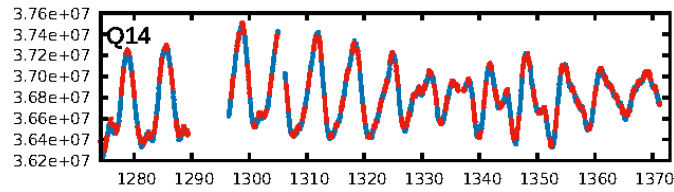
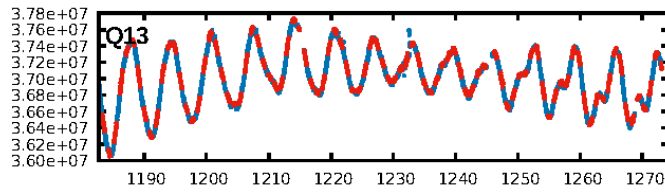
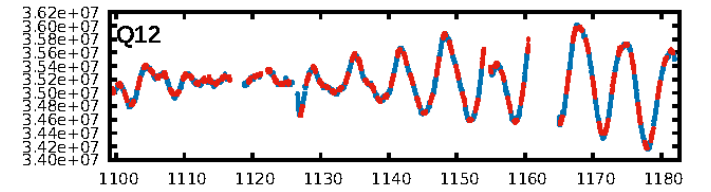
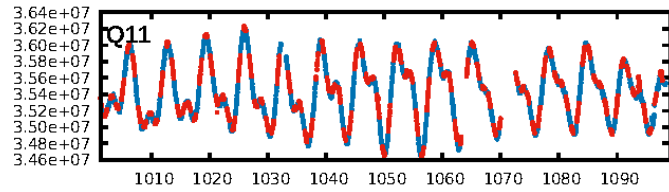
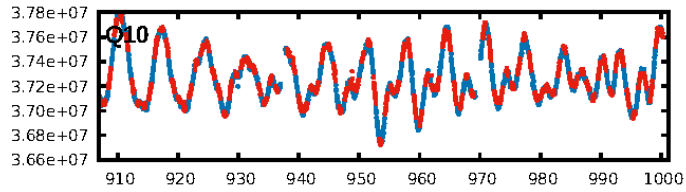
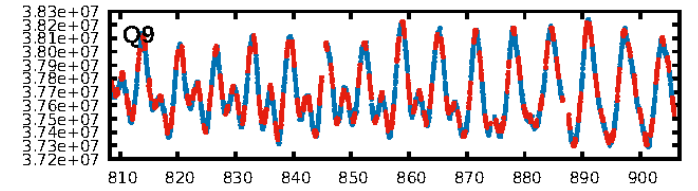
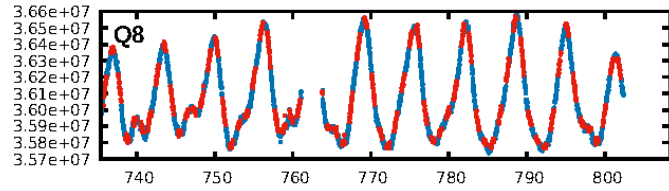
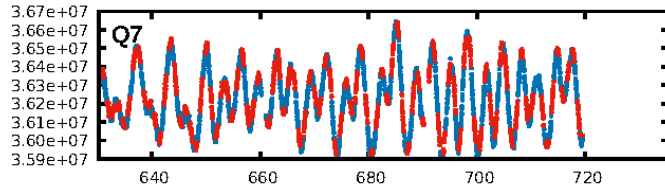
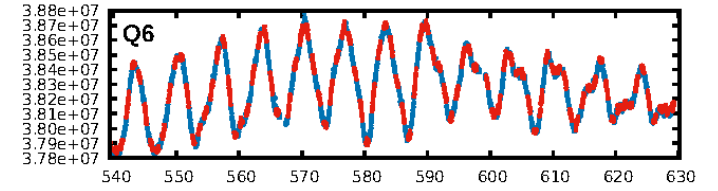
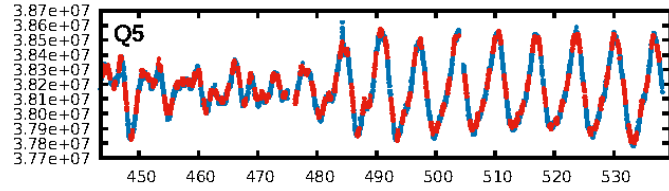
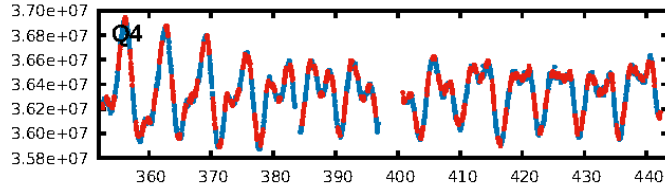
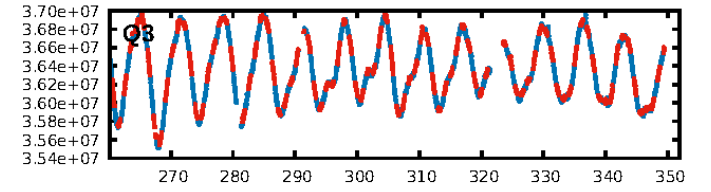
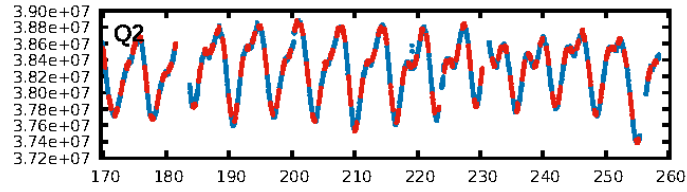
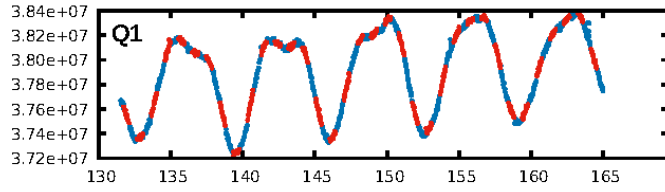
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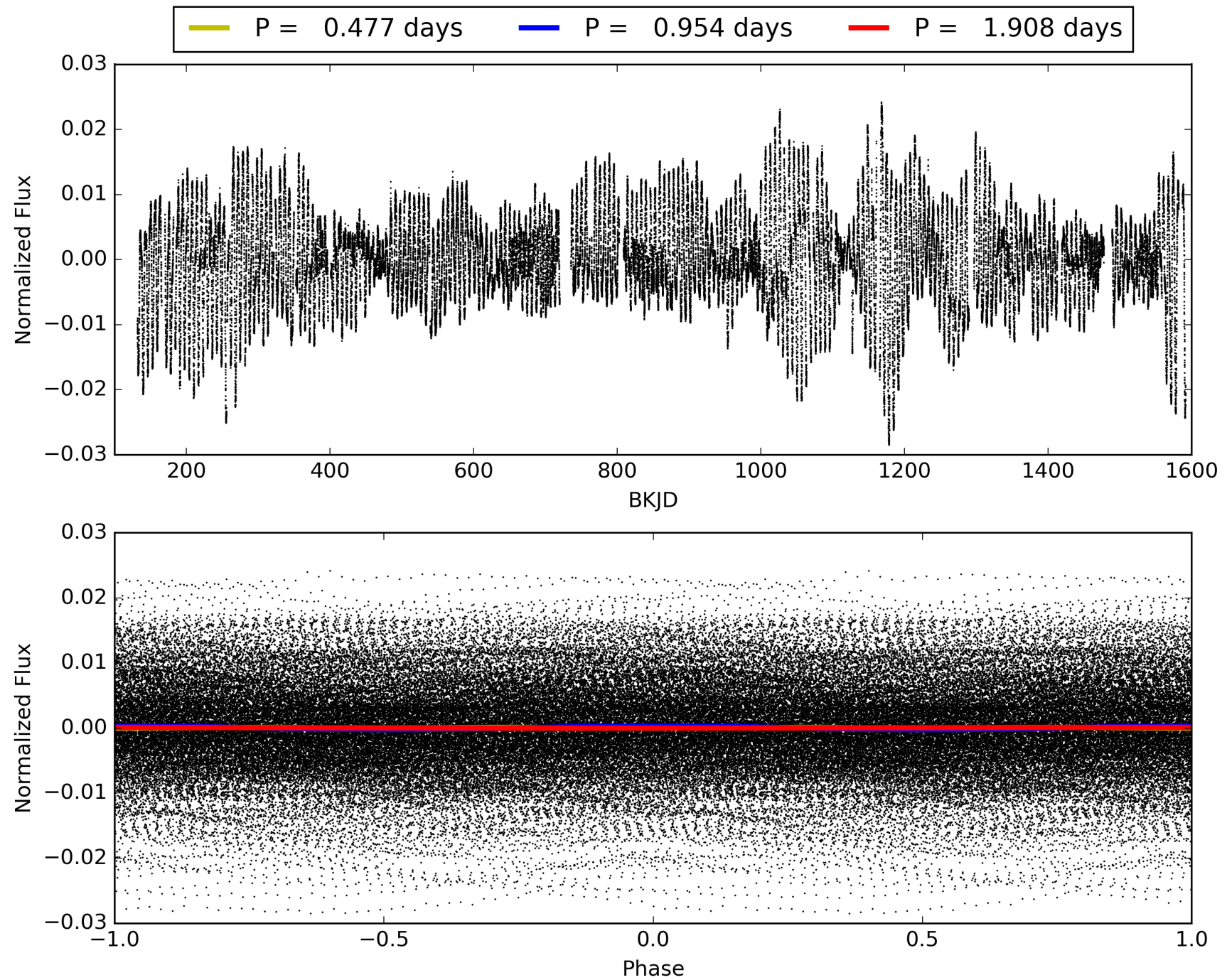
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011620956-01, PDC Light Curves

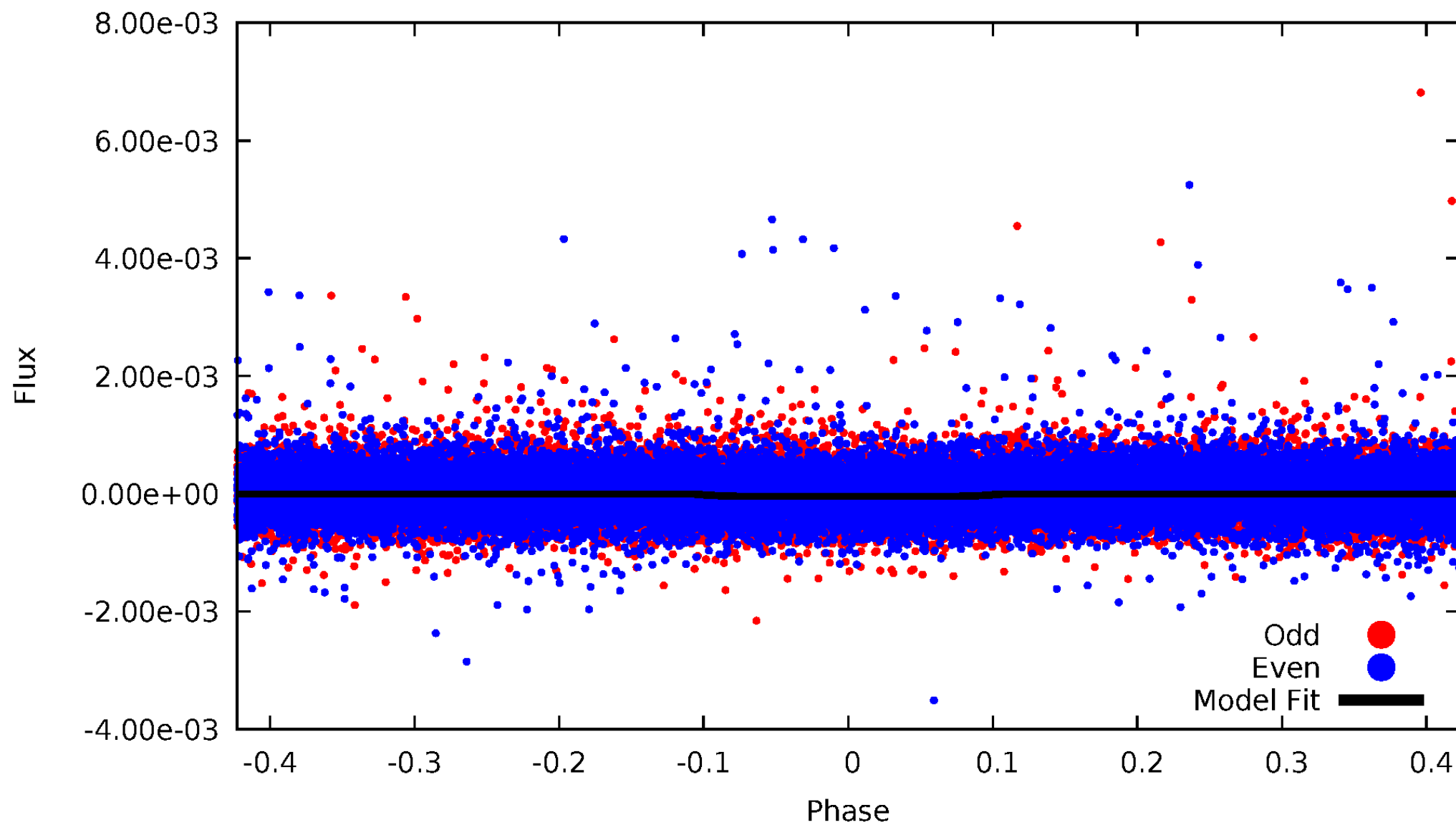


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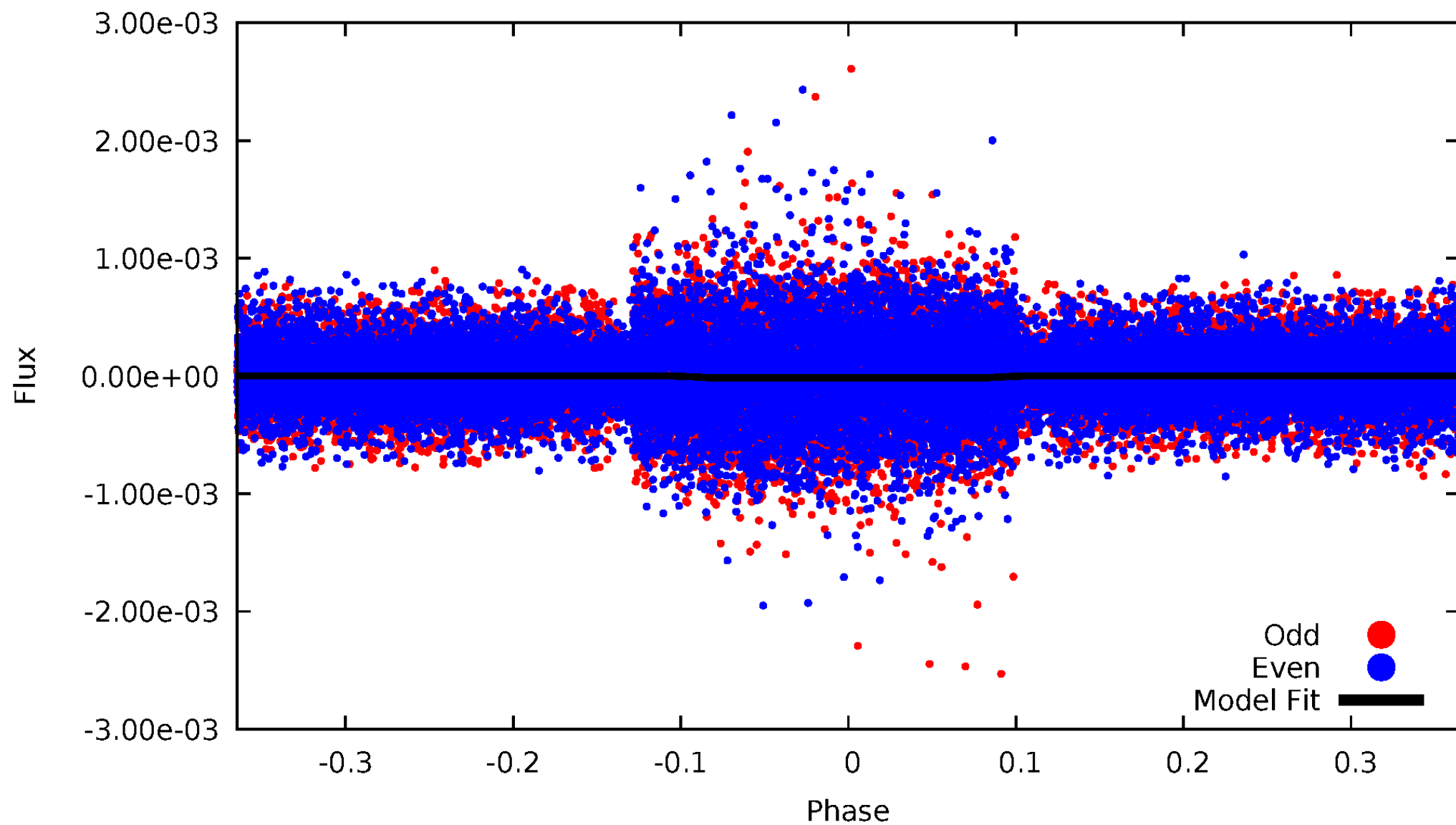
DV Odd/Even

TCE 011620956-01



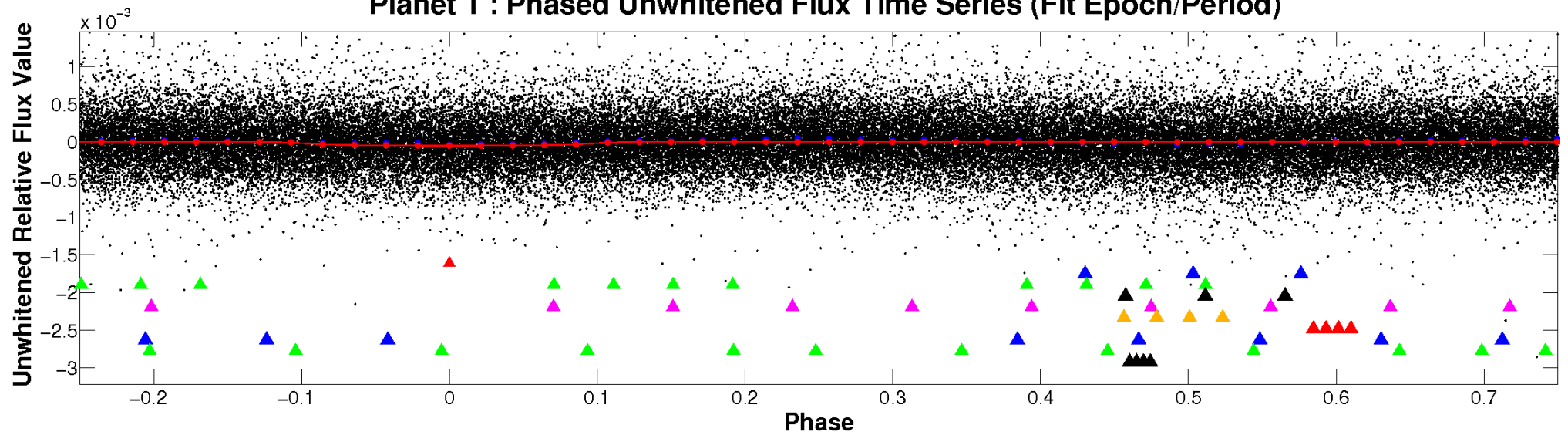
ALT Odd/Even

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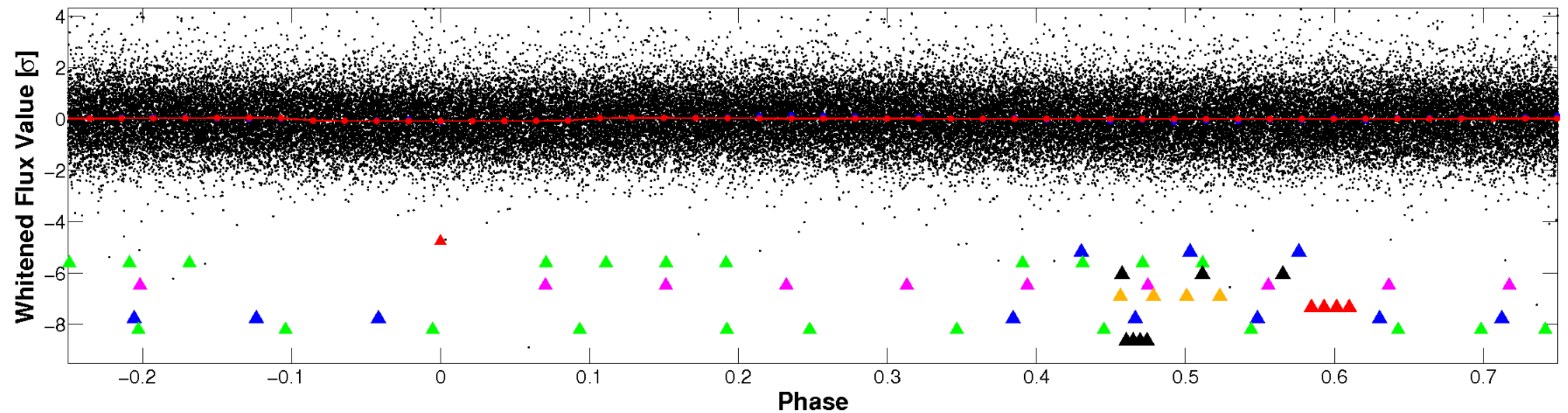


Non-Whitened Vs. Whitened Light Curve

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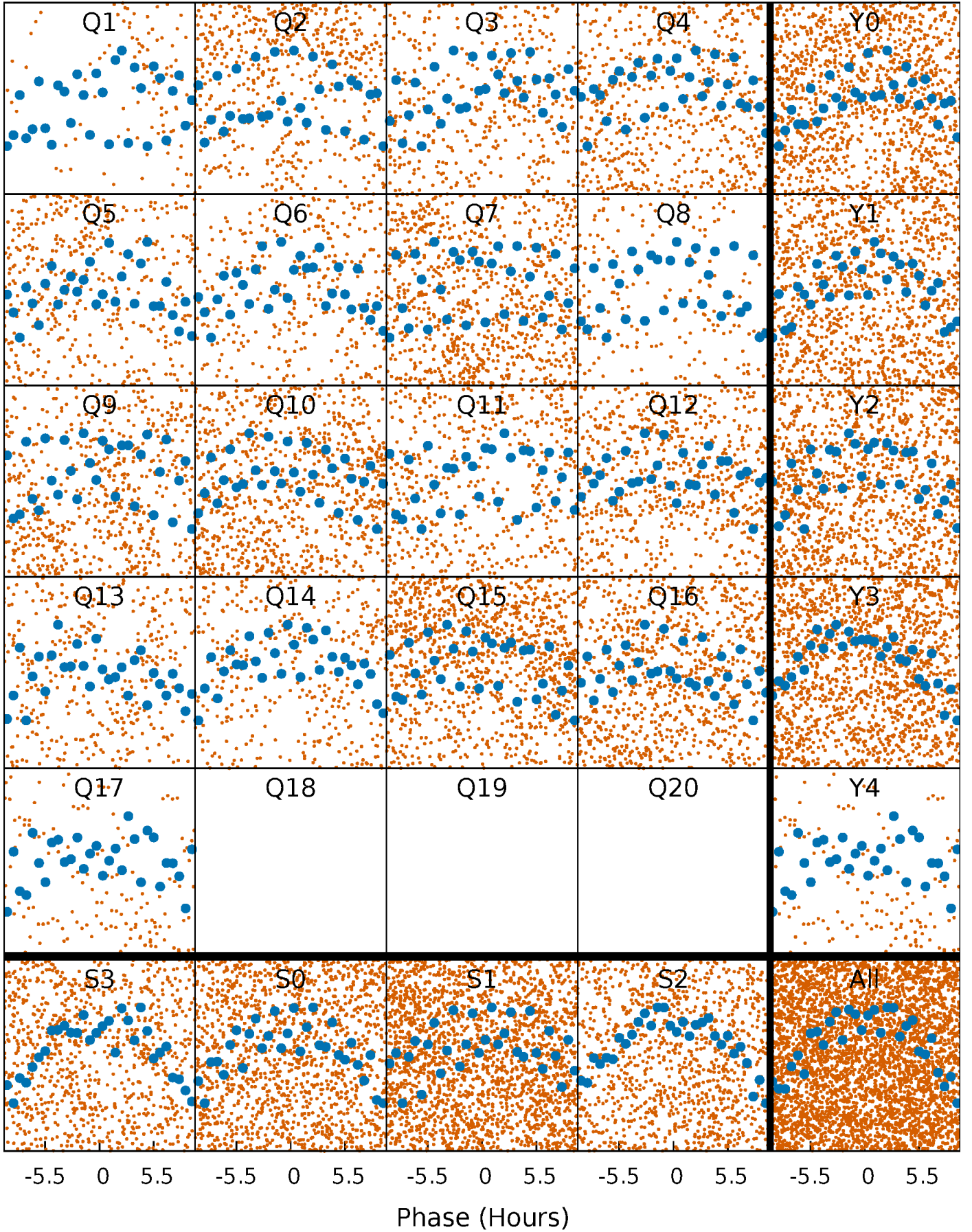


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



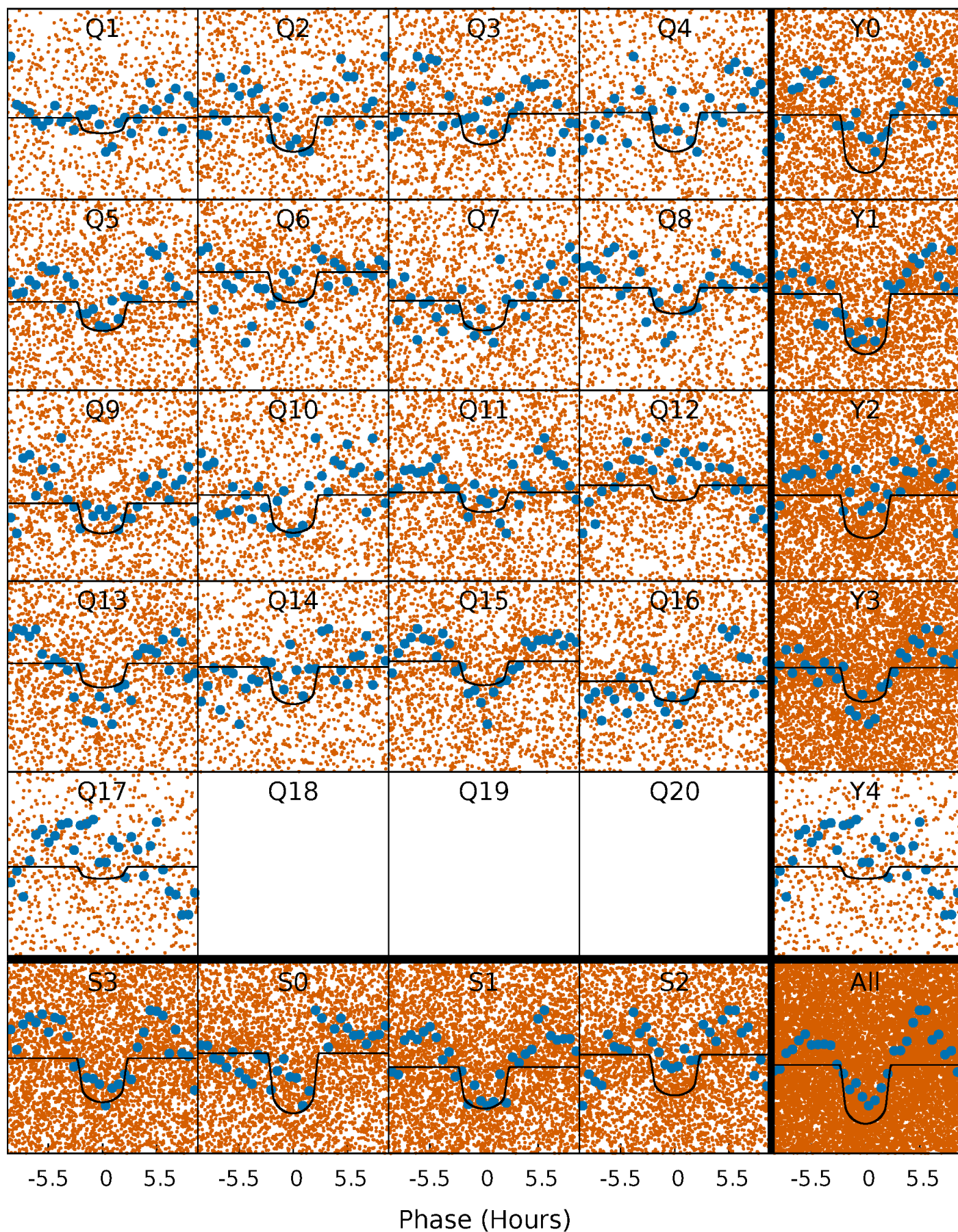
PDC Quarter-Phased Transit Curves

TCE 011620956-01 P= 0.954225 Days $T_0=131.920886$ (BKJD)



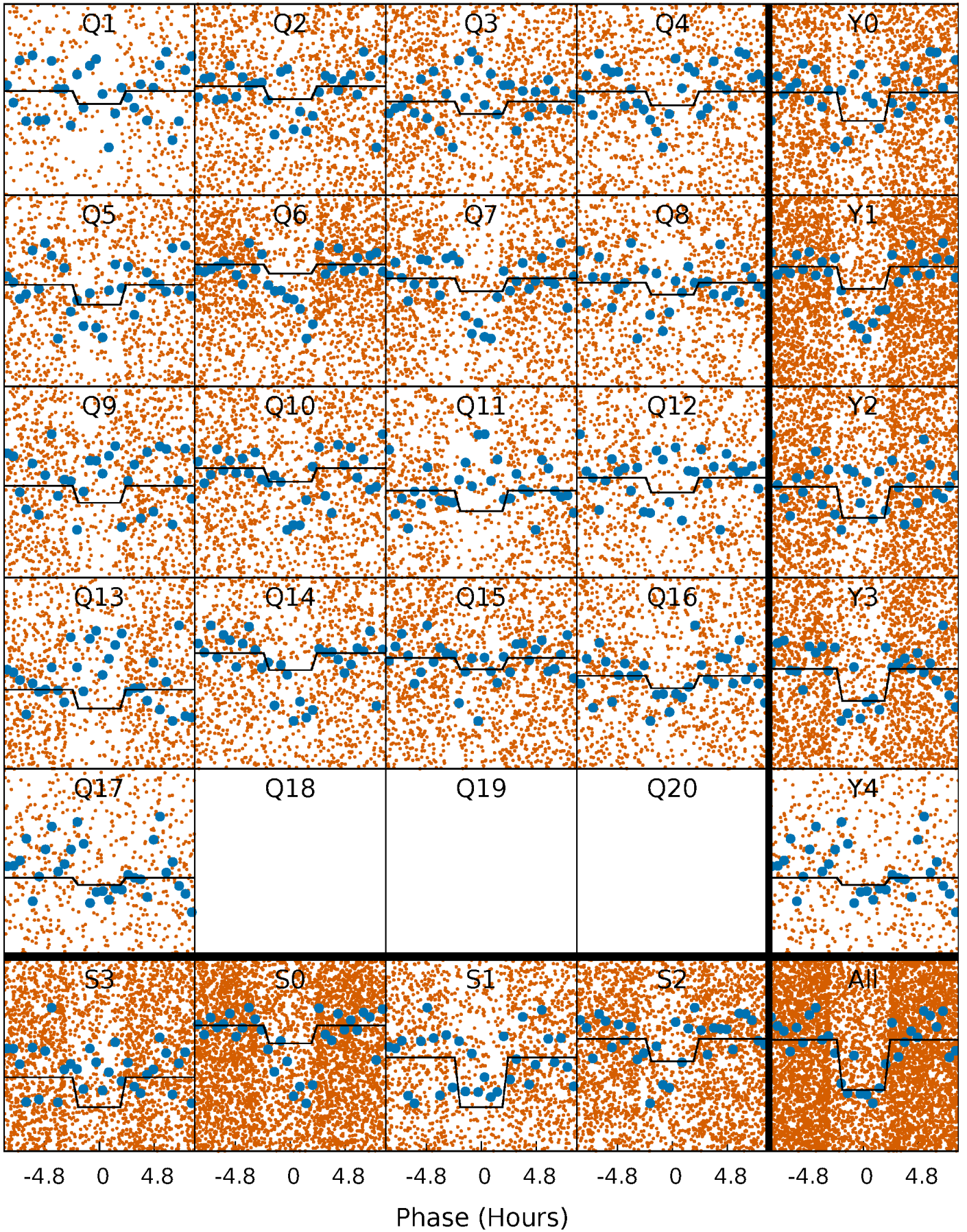
DV Quarter-Phased Transit Curves

TCE 011620956-01 P= 0.954225 Days $T_0=131.920886$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

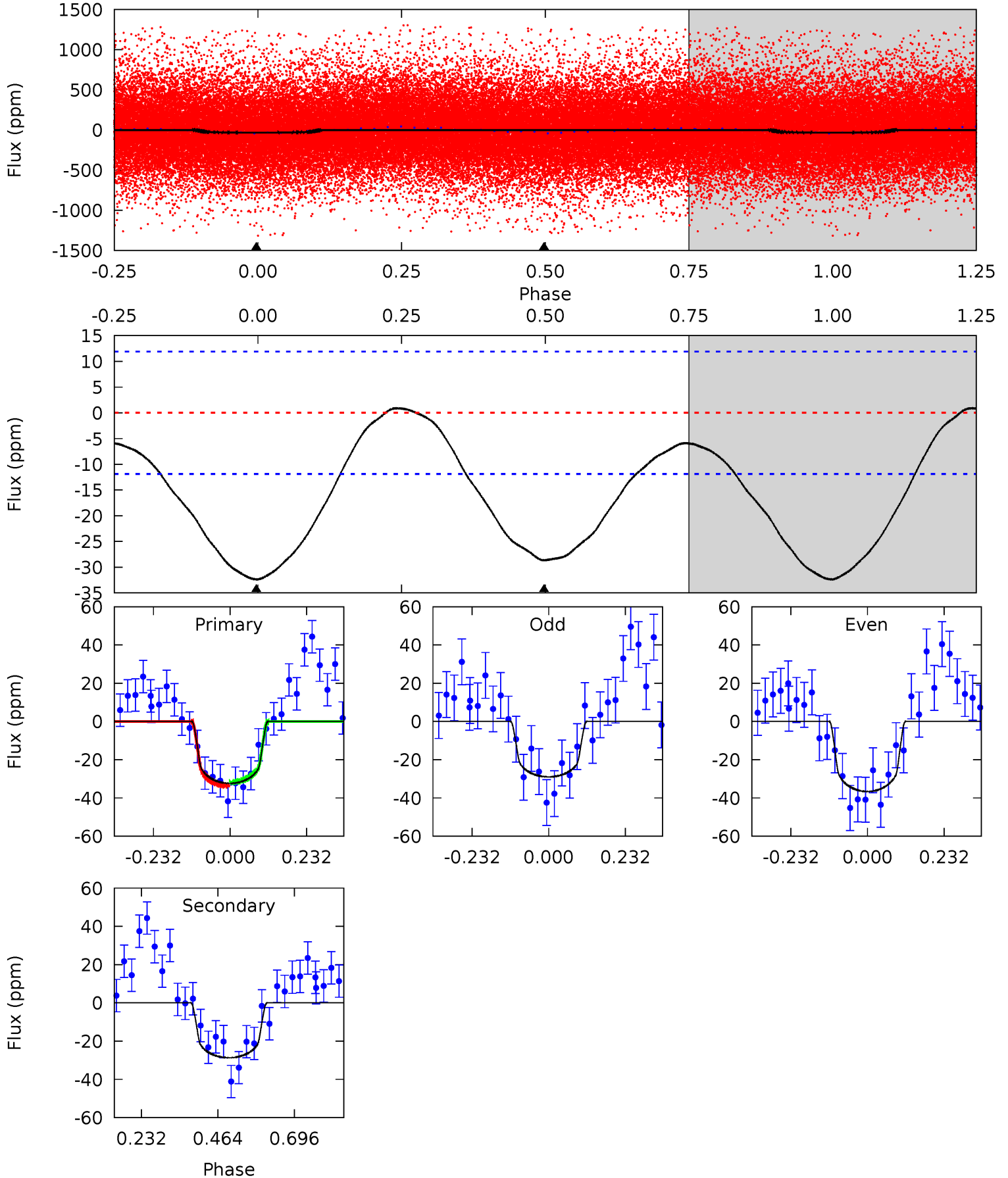
TCE 011620956-01 P= 0.954258 Days $T_0=131.892955$ (BKJD)



DV Model-Shift Uniqueness Test

011620956-01, P = 0.954225 Days, E = 130.966661 Days

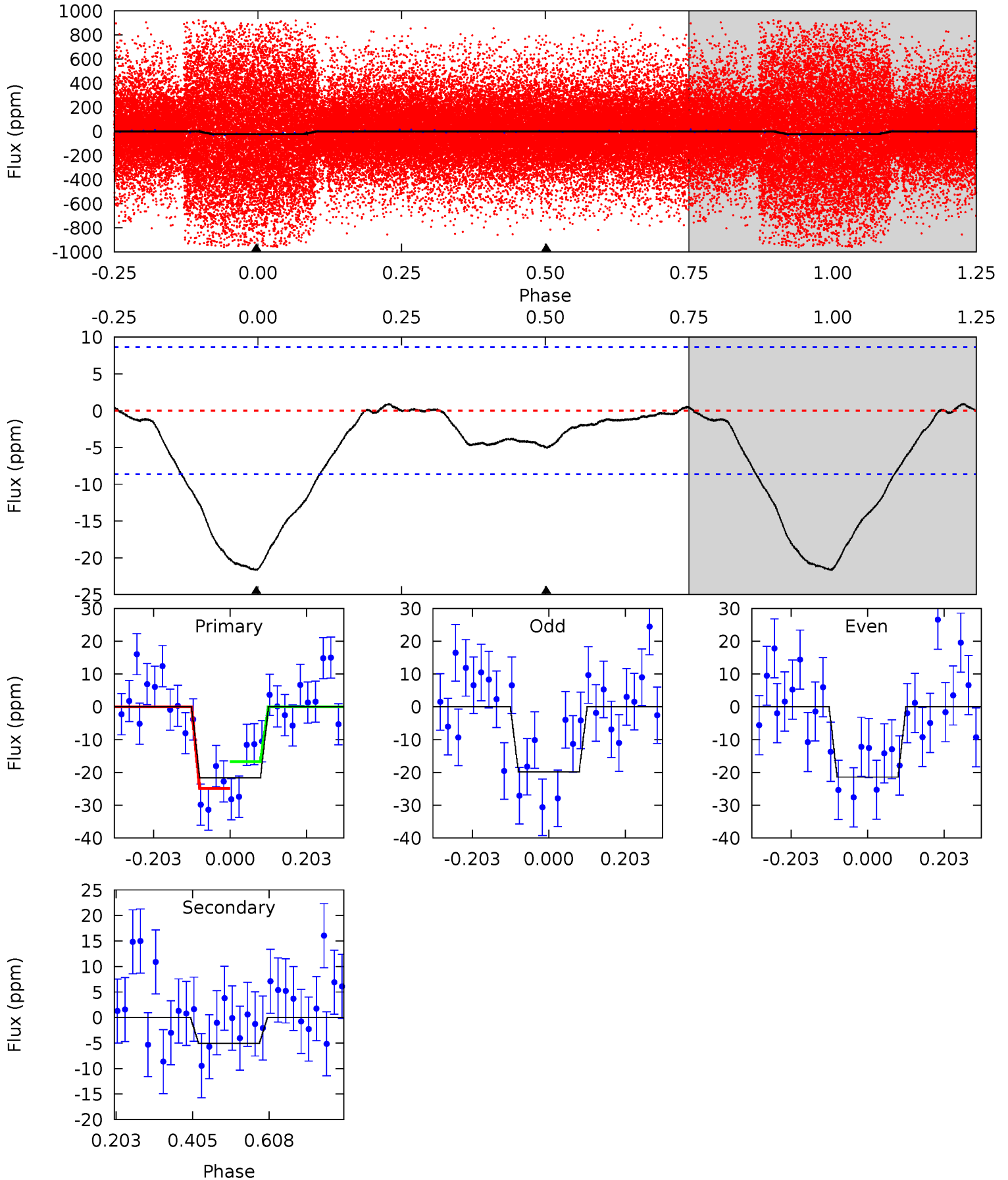
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	10.6	0	0	4.38	1.19	1.26	11.9	11.9	10.6	10.6	1.42	0.61	0.03	0.36



Alt Model-Shift Uniqueness Test

011620956-01, P = 0.954258 Days, E = 130.938697 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	2.58	0	0	4.41	1.27	0.26	11.1	11.1	2.58	2.58	0.41	1.53	0.04	2.10



Stellar Parameters For KIC 011620956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5656^{+152}_{-152}	$4.605^{+0.036}_{-0.144}$	$-0.500^{+0.300}_{-0.300}$	$0.746^{+0.163}_{-0.054}$	$0.834^{+0.079}_{-0.088}$	$2.827^{+0.527}_{-1.131}$
	+3%/-3%	+1%/-3%	+60%/-60%	+22%/-7%	+9%/-11%	+19%/-40%
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 011620956-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-29 ± 3	$0.62^{+0.27}_{-0.20}$	2300^{+122}_{-87}	4880^{+1045}_{-630}	13^{+17}_{-7}
Alt.	-5 ± 2	$0.36^{+0.23}_{-0.21}$	2299^{+118}_{-91}	4231^{+1991}_{-801}	$6.322^{+27.759}_{-4.270}$

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 $A_{obs} \gg 1.0$

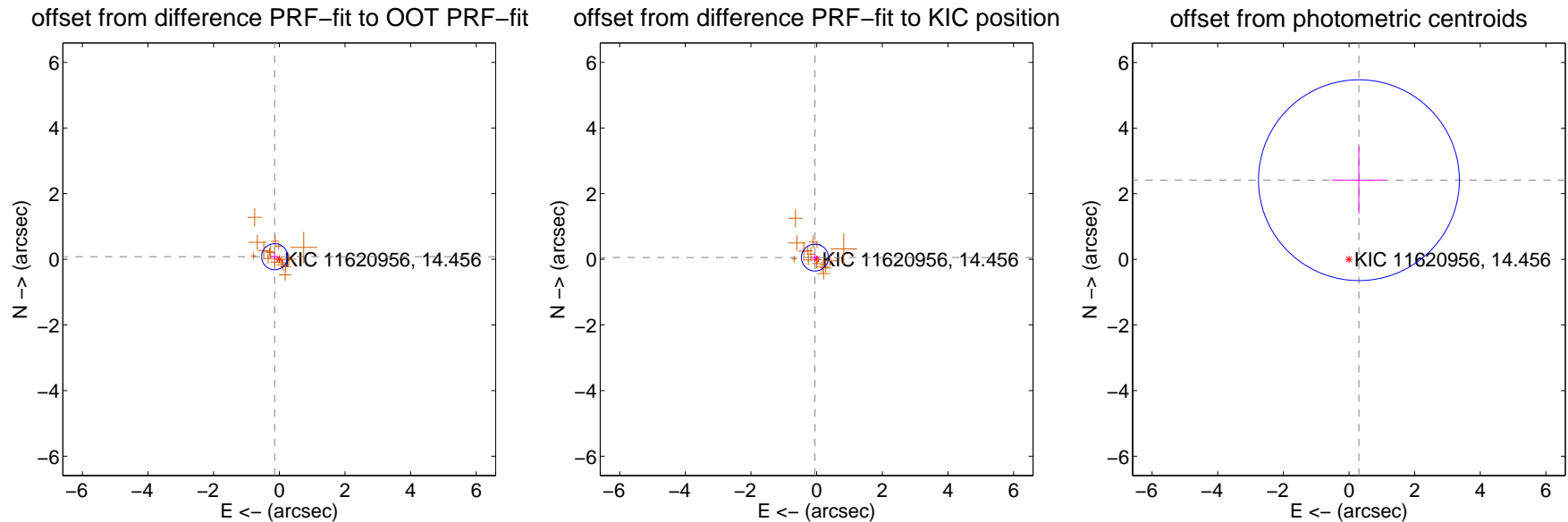
DV Centroid Data

Supplemental centroid analysis for 011620956-01. Kepler magnitude: 14.46. Transit SNR 9.56

There are 0 quarters with good PRF difference image offsets

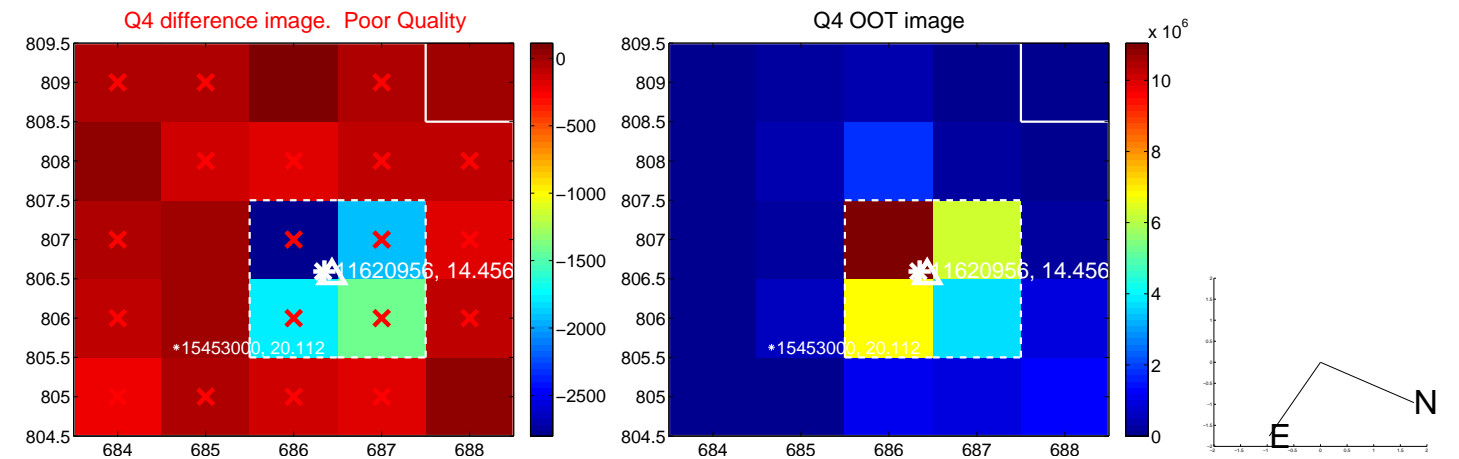
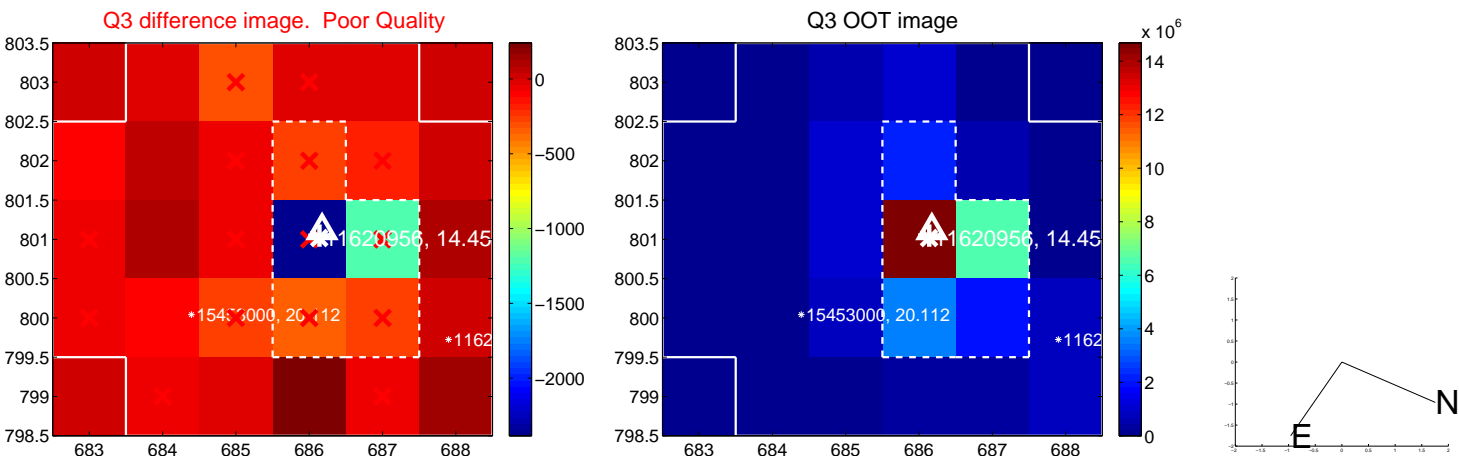
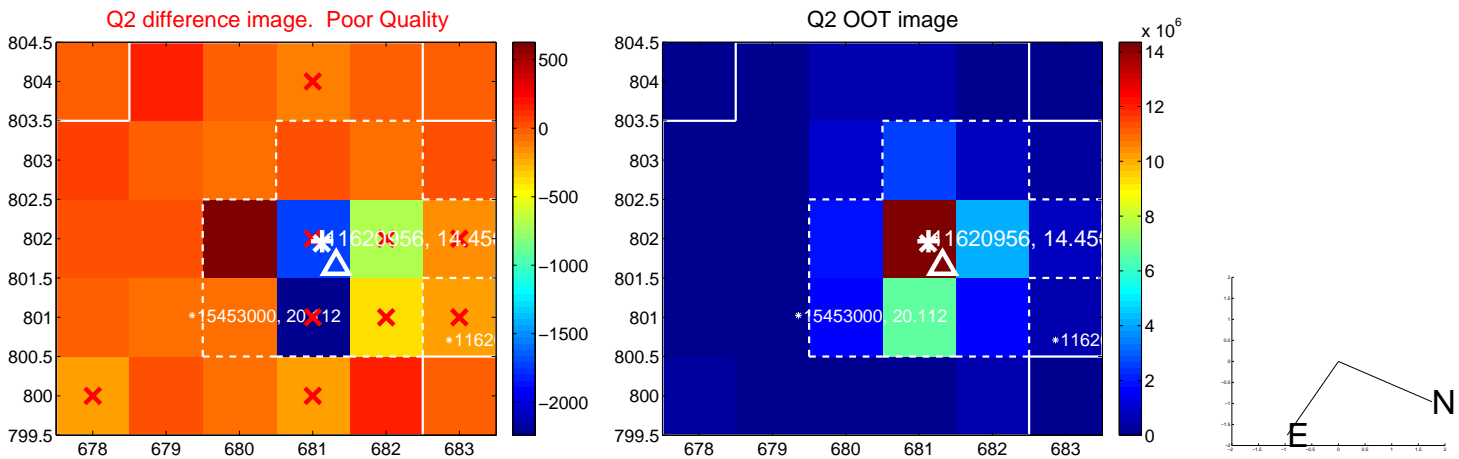
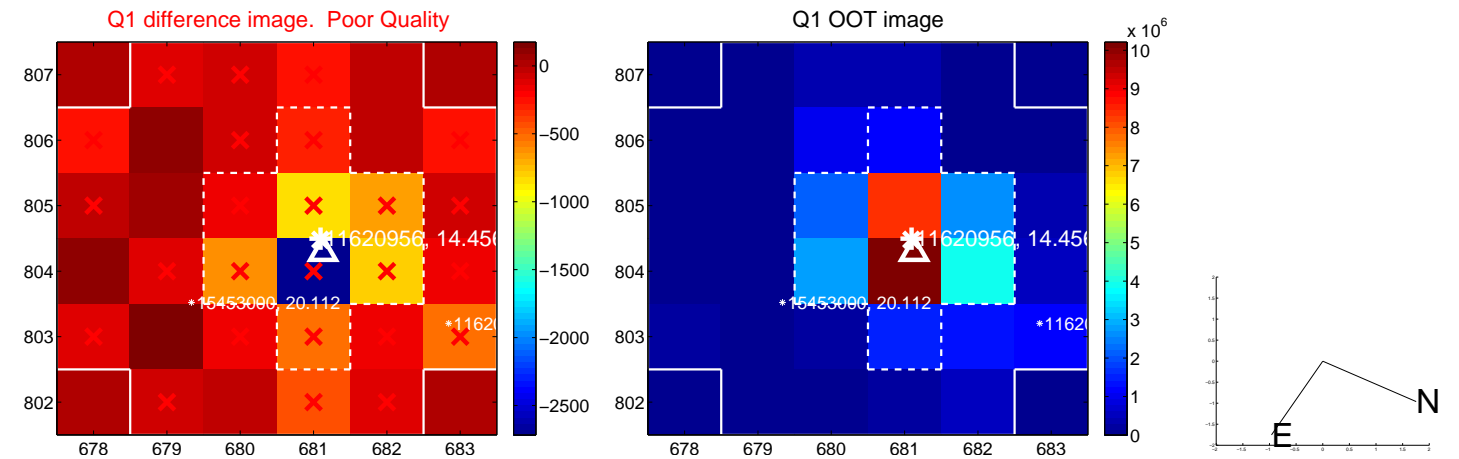
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.162 ± 0.133	1.22	0.141 ± 0.120	0.079 ± 0.115
PRF-fit source offset from KIC position	0.074 ± 0.137	0.54	0.052 ± 0.122	0.053 ± 0.114
photometric centroid source offset	2.43 ± 1.02	2.38	-0.30 ± 0.82	2.41 ± 1.02

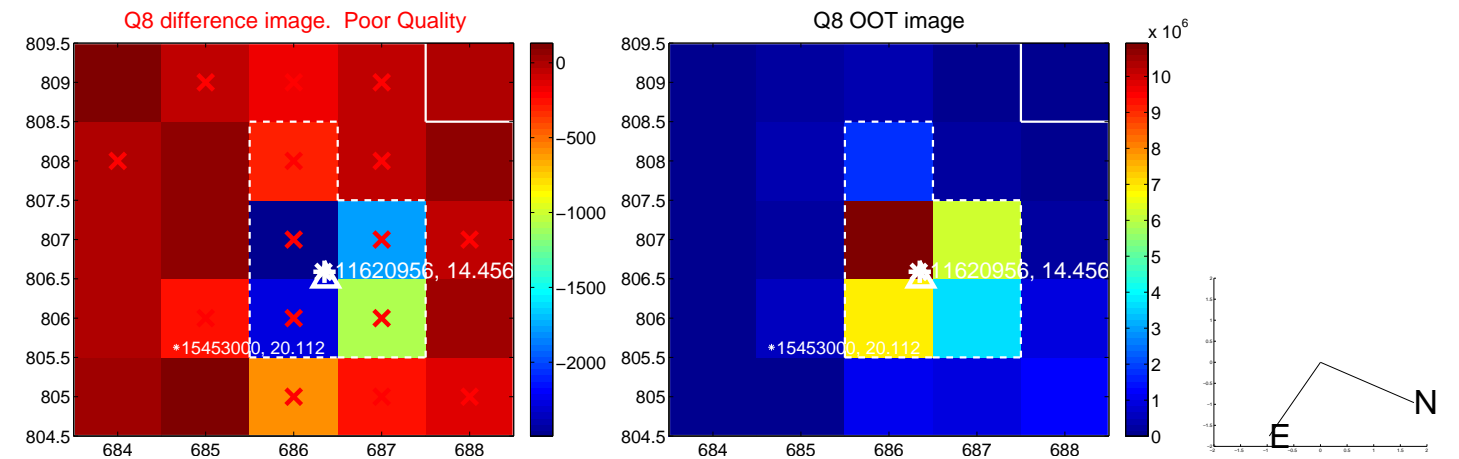
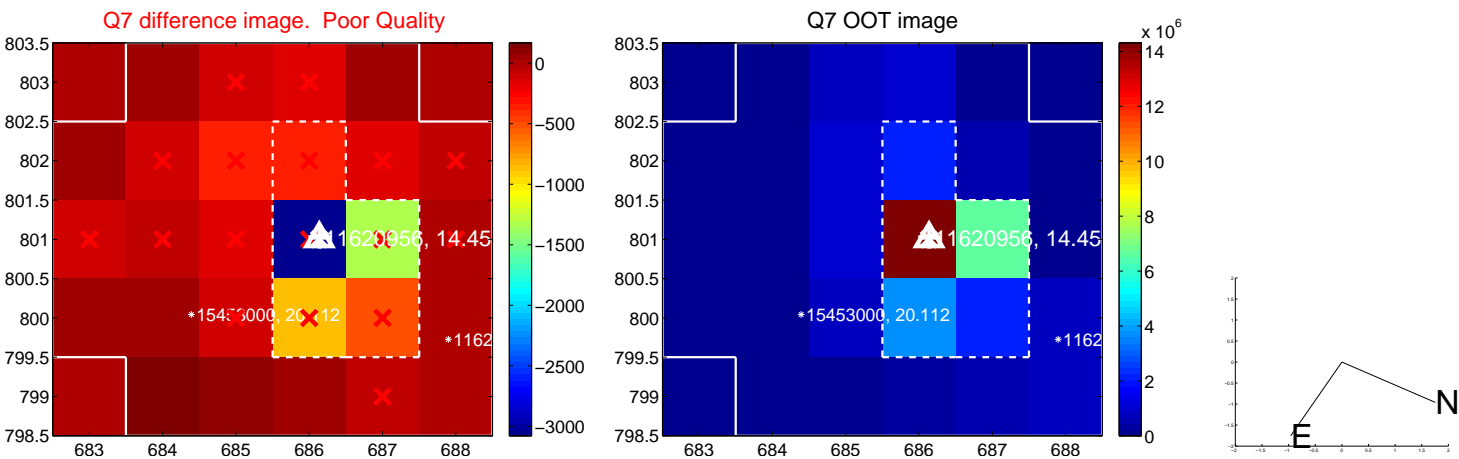
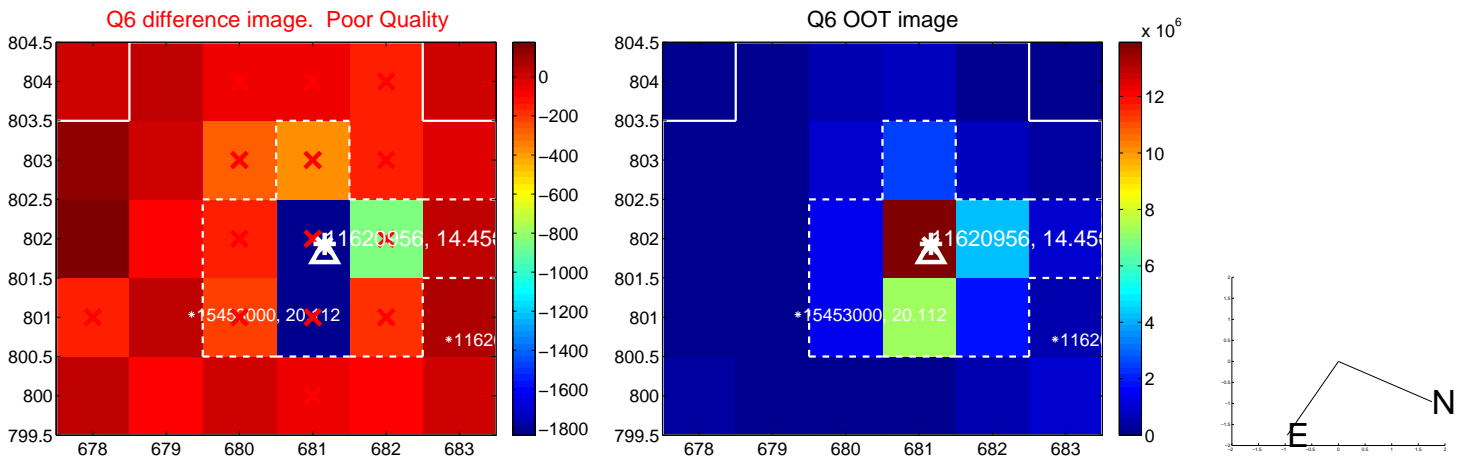
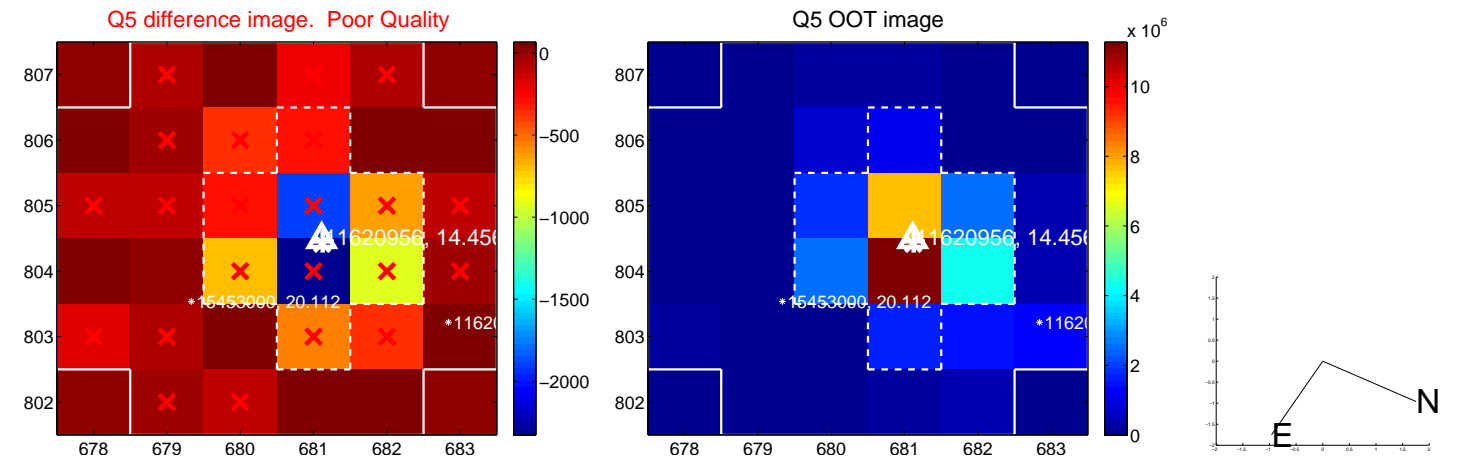


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

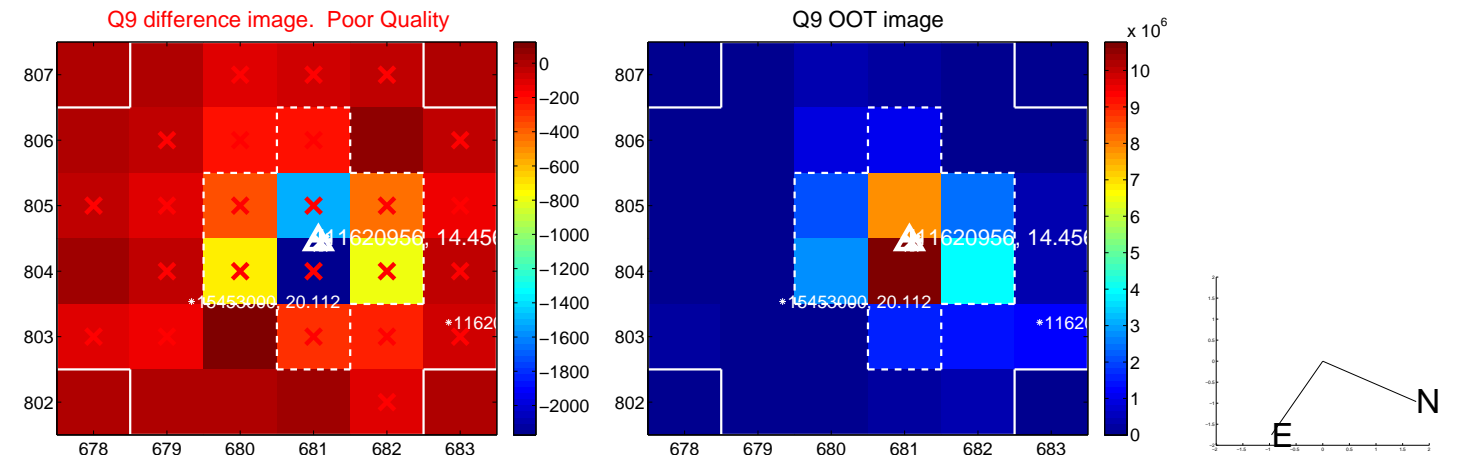
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



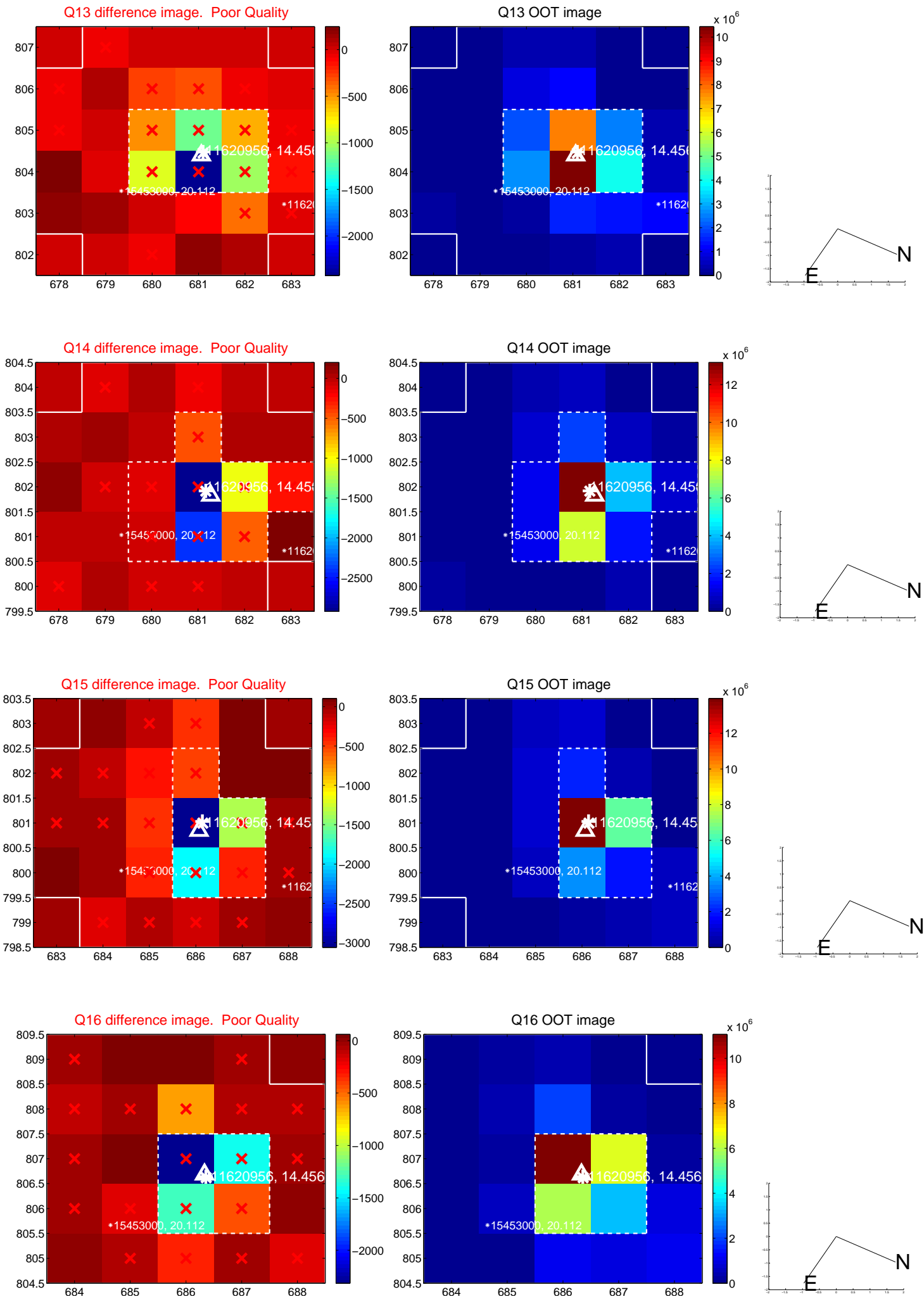
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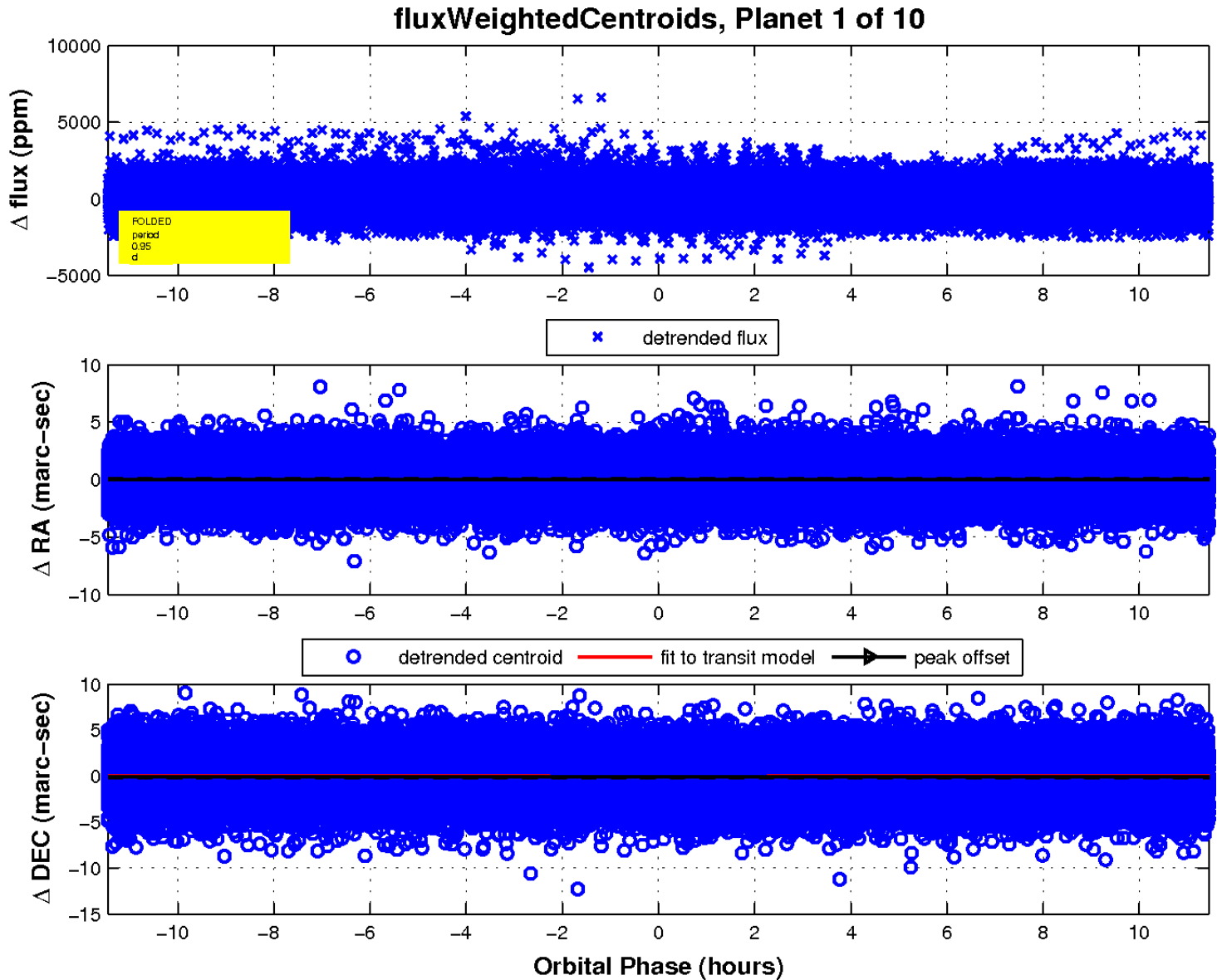
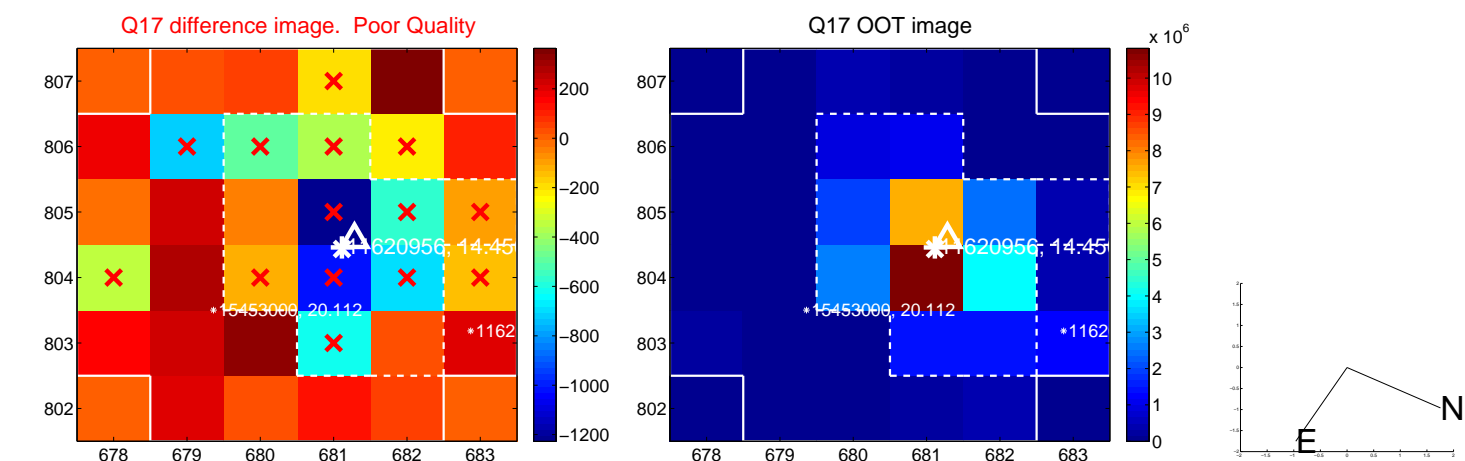
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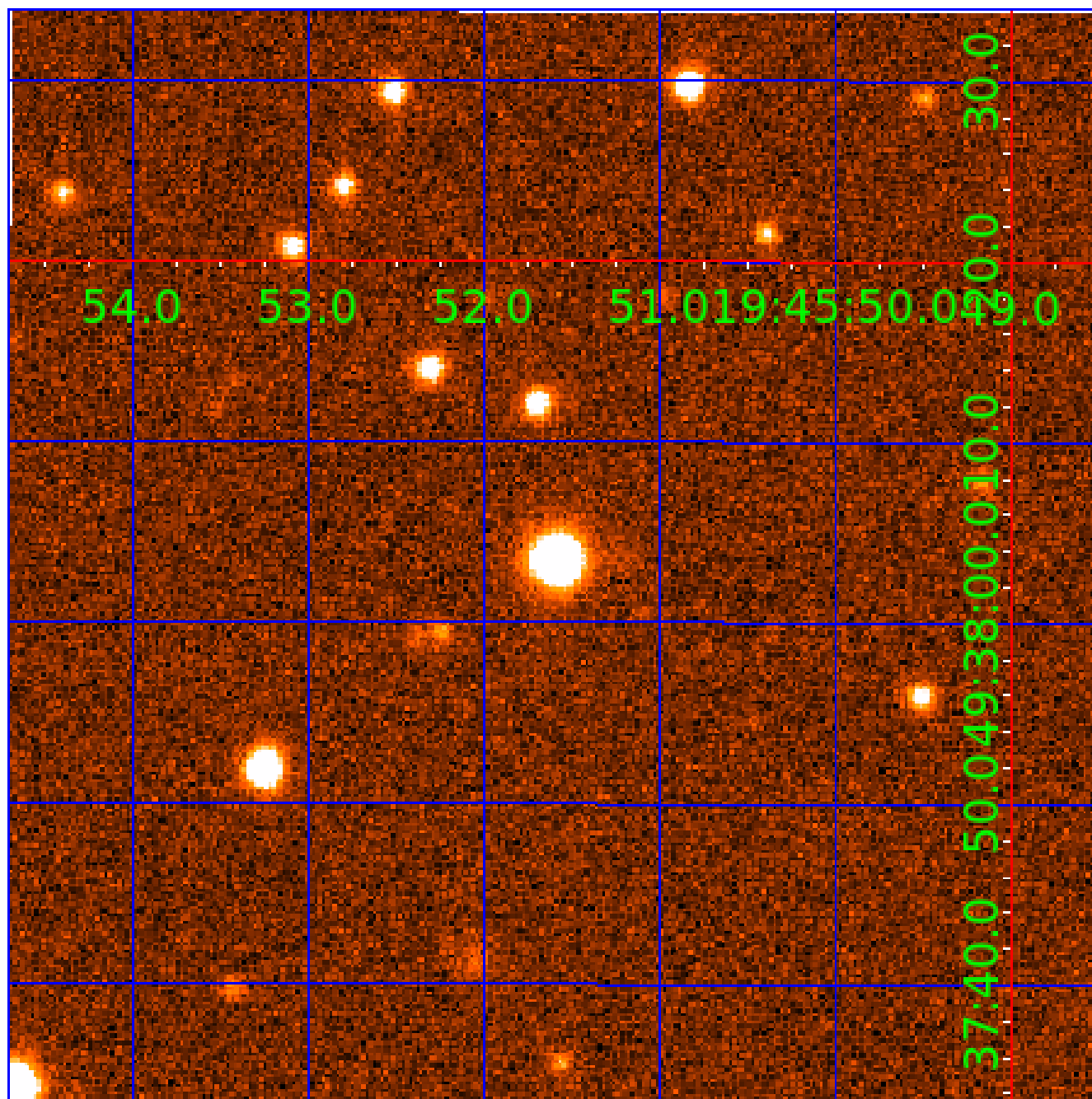


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UKIRT Image

Declination



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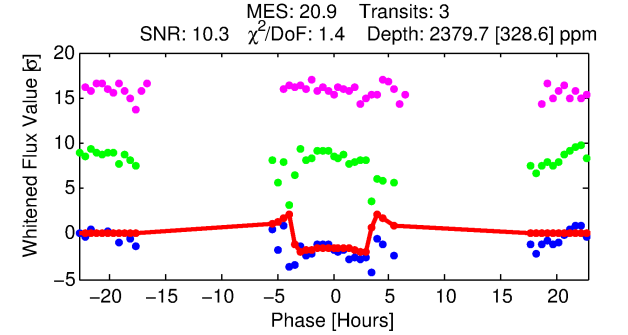
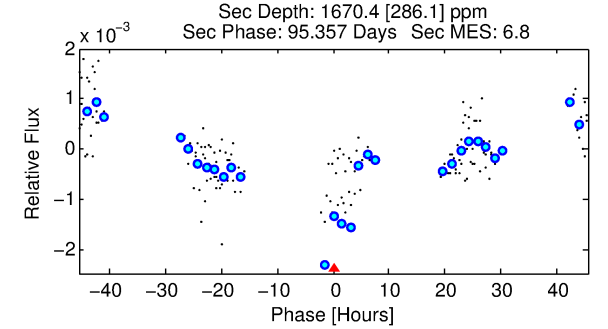
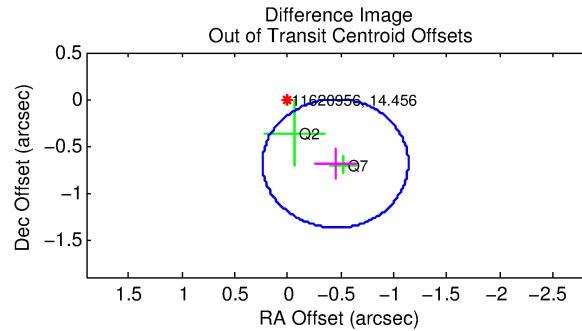
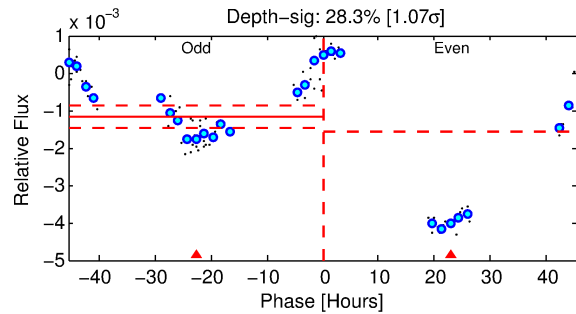
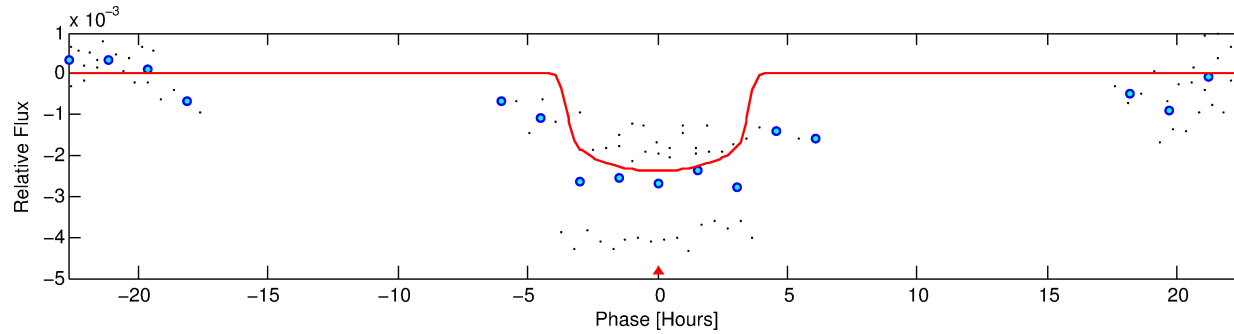
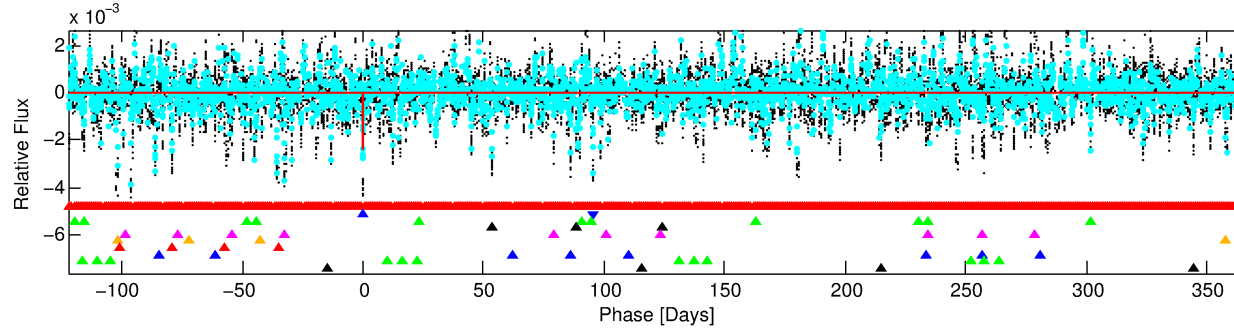
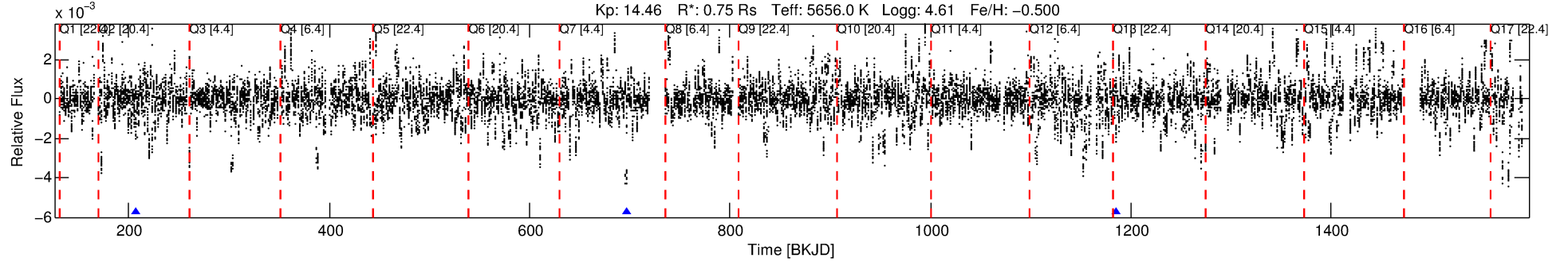
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011620956-02

No Significant Match Found

DV One-Page Summary

KIC: 11620956 Candidate: 2 of 10 Period: 488.493 d



DV Fit Results:

Period = 488.49330 [0.00847] d
Epoch = 207.8544 [0.0093] BKJD
Rp/R* = 0.0457 [0.0150]
a/R* = 458.21 [645.90]
b = 0.48 [2.30]
Seff = 0.40 [0.11]
Teq = 202 [14] K
Rp = 3.72 [1.47] Re
a = 1.1353 [0.2076] AU
Ag = 85693.64 [62537.68] [1.37 σ]
Teffp = 5351 [921] K [5.59 σ]

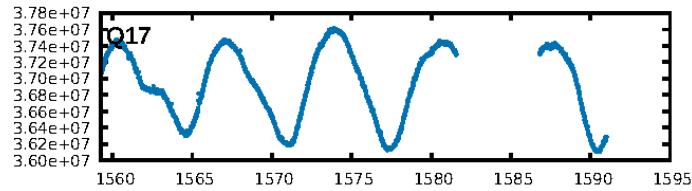
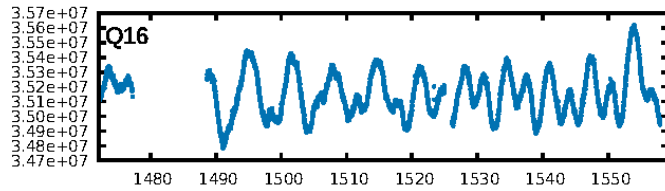
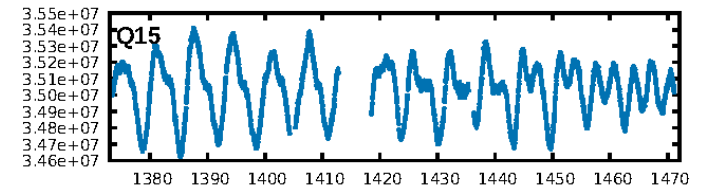
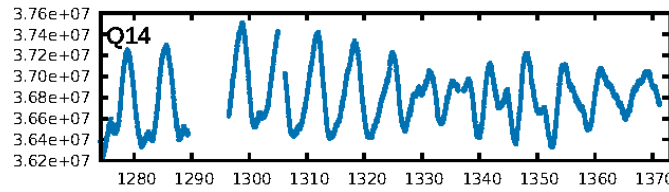
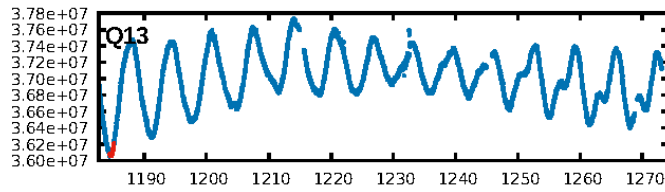
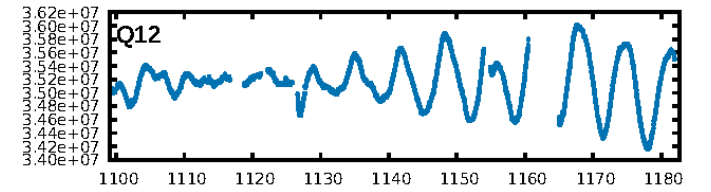
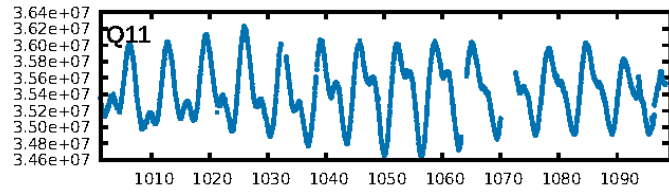
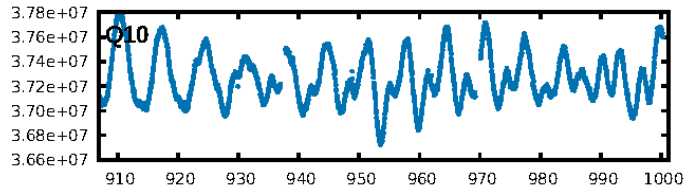
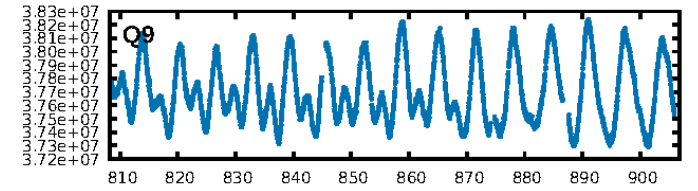
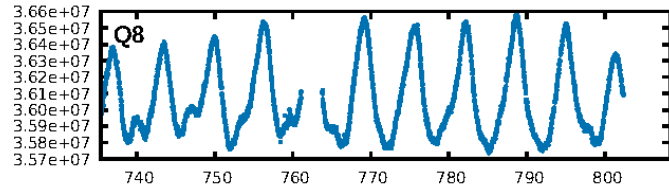
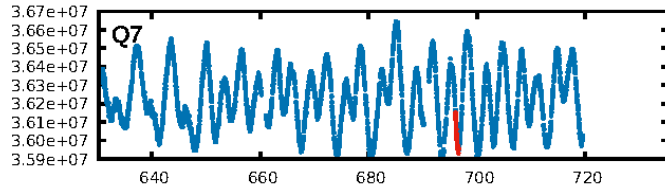
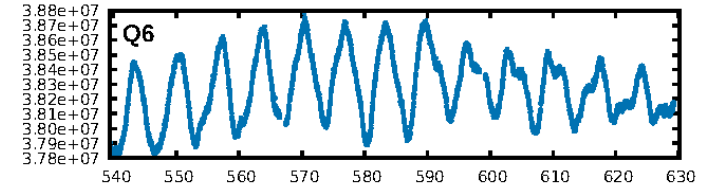
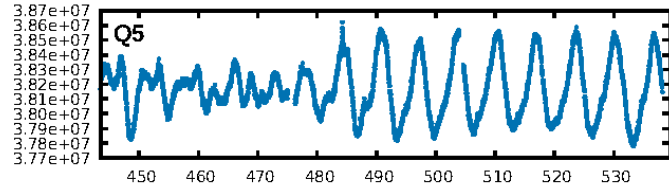
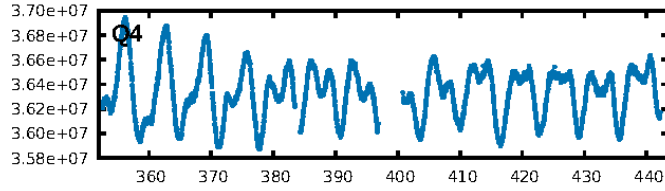
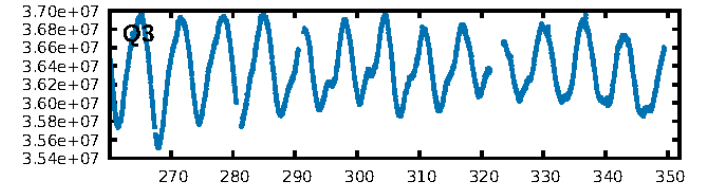
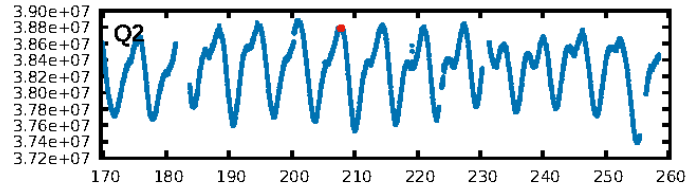
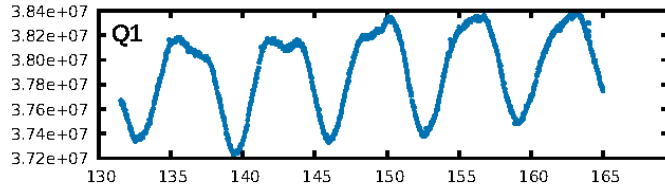
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [27.93 σ]
LongPeriod-sig: 100.0% [50.81 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 89.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.597
Centroid-sig: 47.1%
Centroid-so: 0.669 arcsec [1.70 σ]
OotOffset-rm: 0.823 arcsec [3.59 σ]
KicOffset-rm: 0.910 arcsec [4.95 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

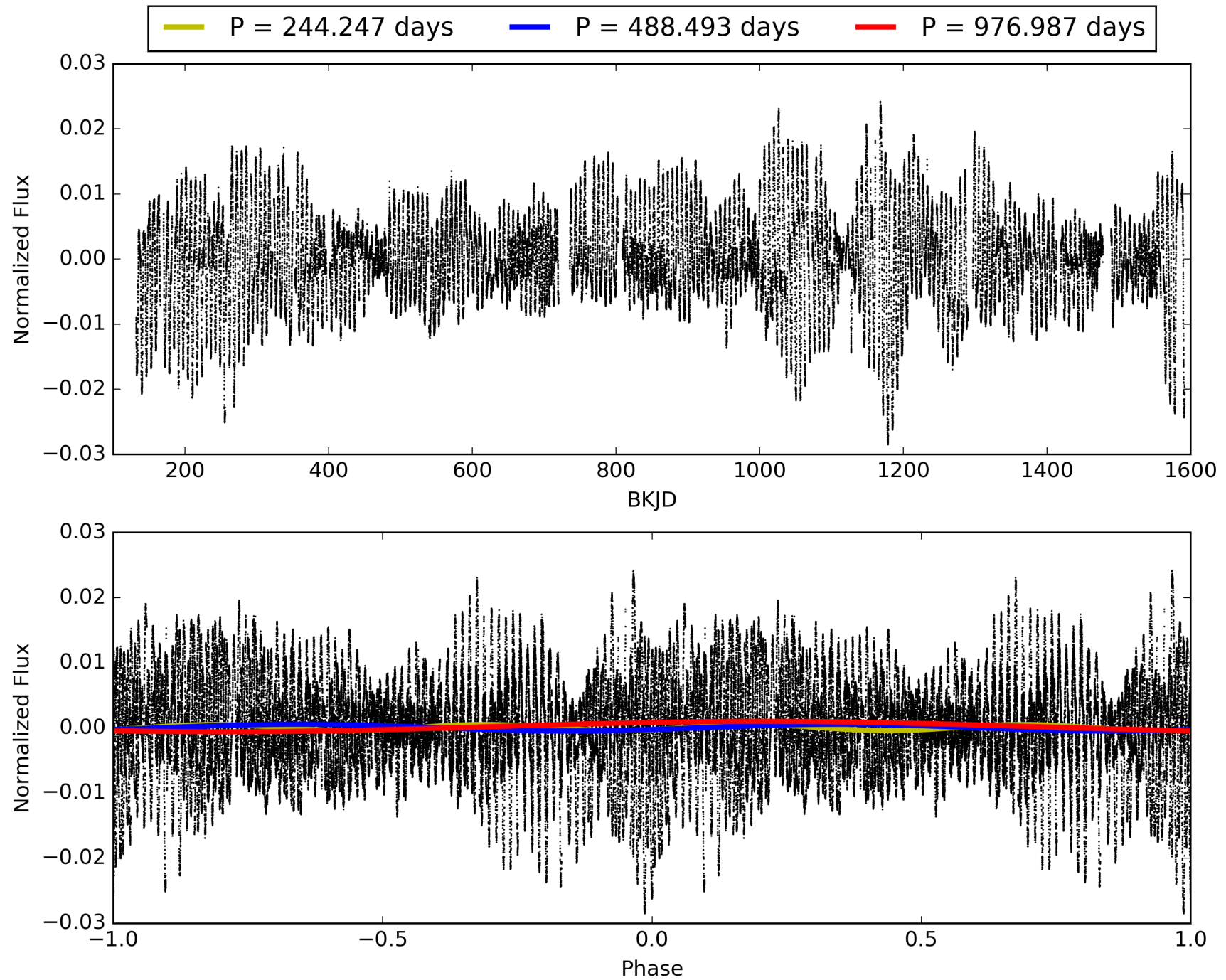
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:47:37 Z

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

TCE 011620956-02, PDC Light Curves

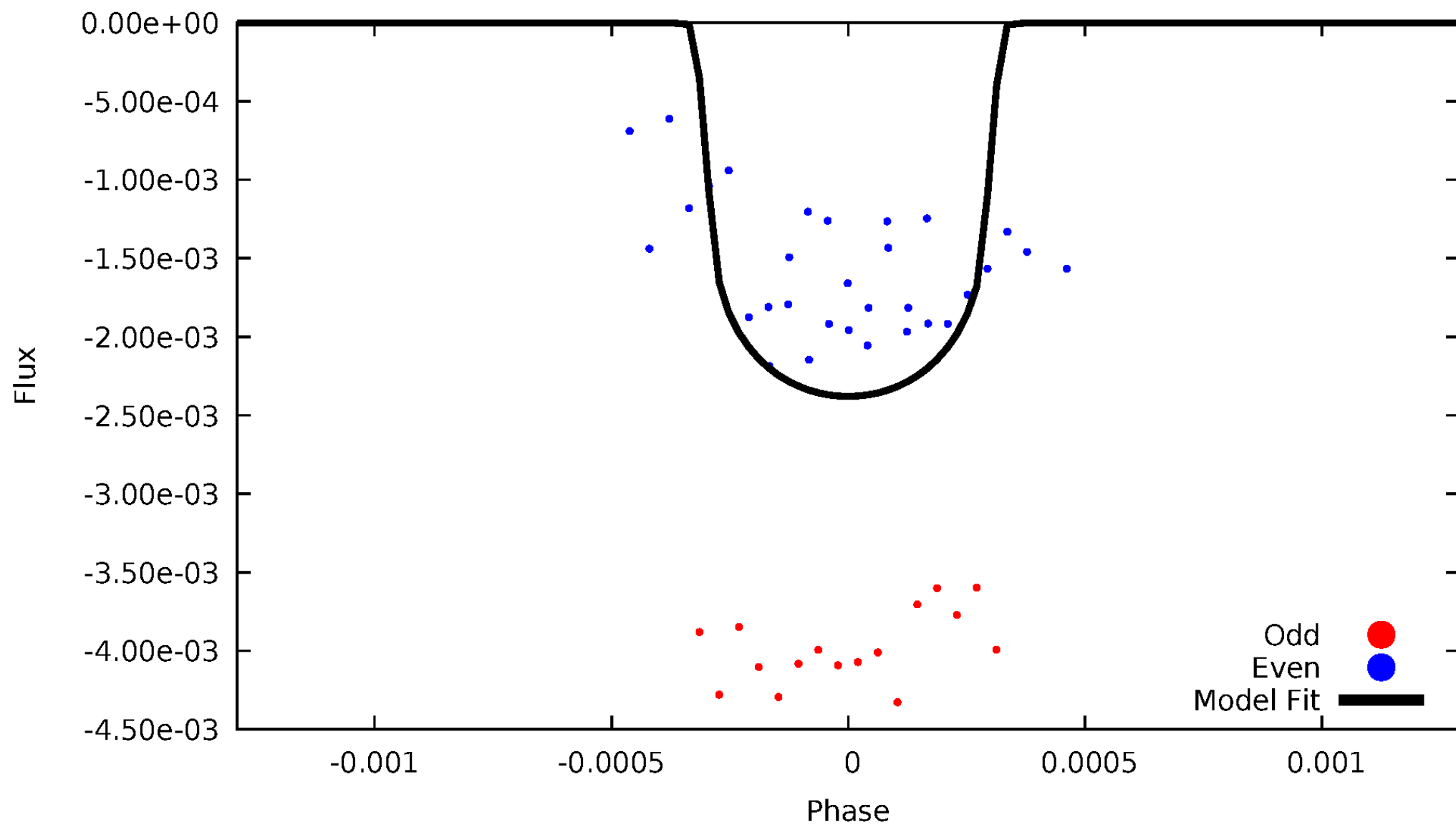


TCE 011620956-02



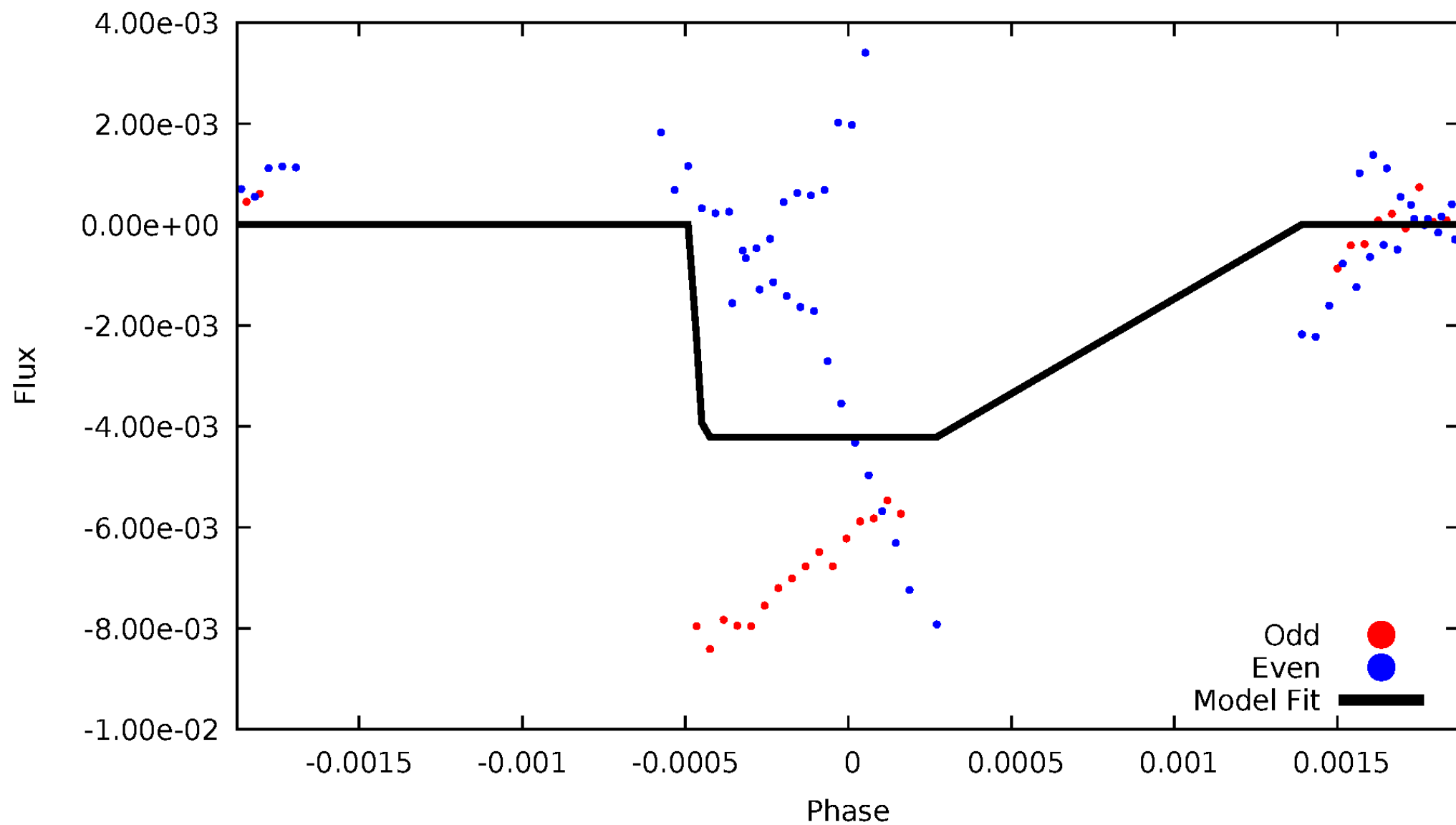
DV Odd/Even

TCE 011620956-02



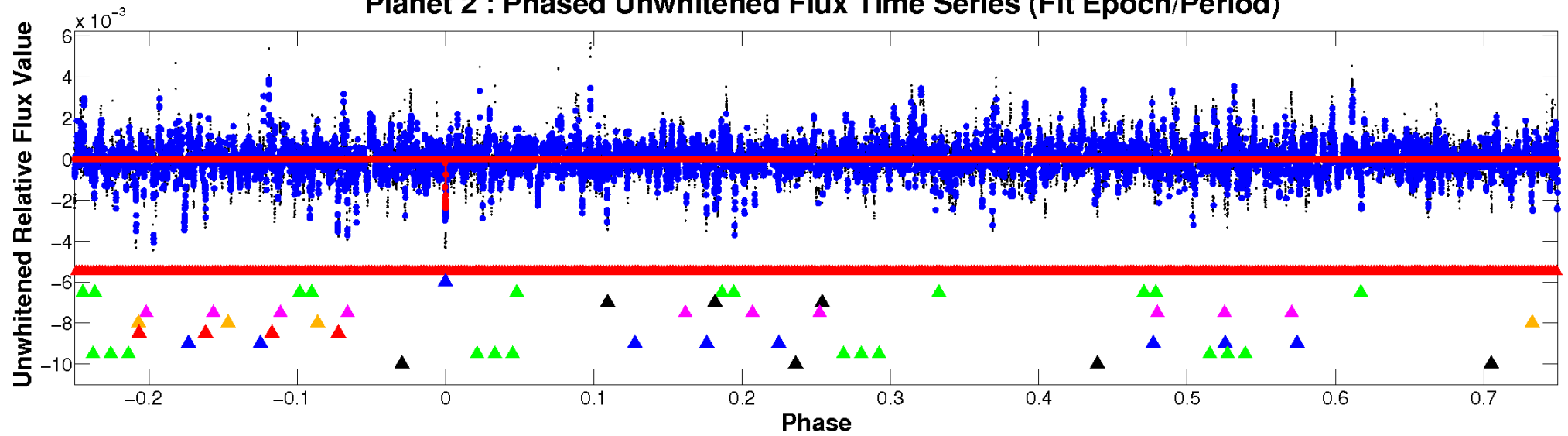
ALT Odd/Even

TCE 011620956-02

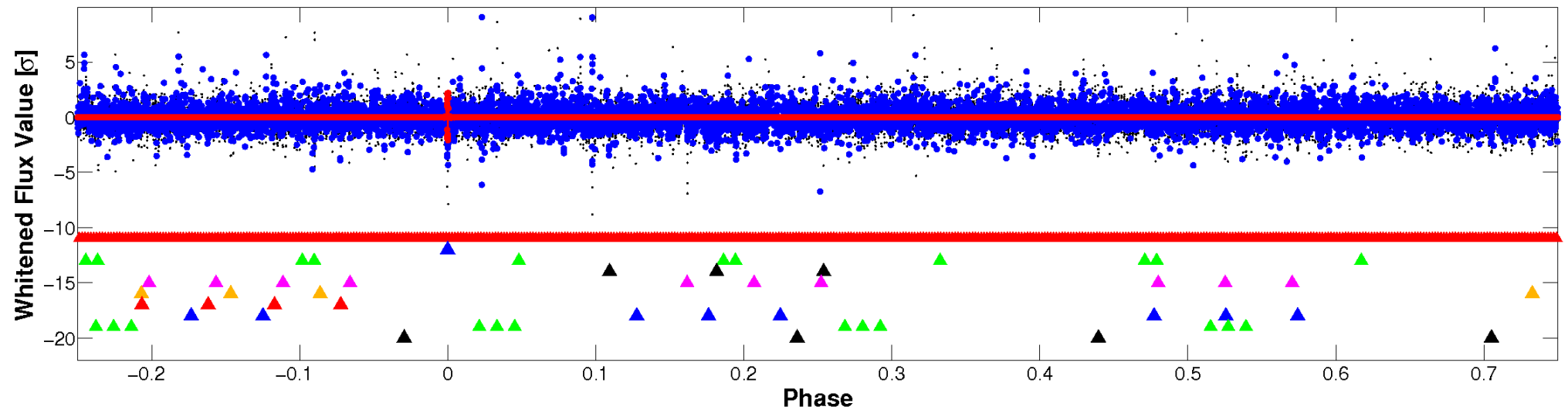


Non-Whitened Vs. Whitened Light Curve

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

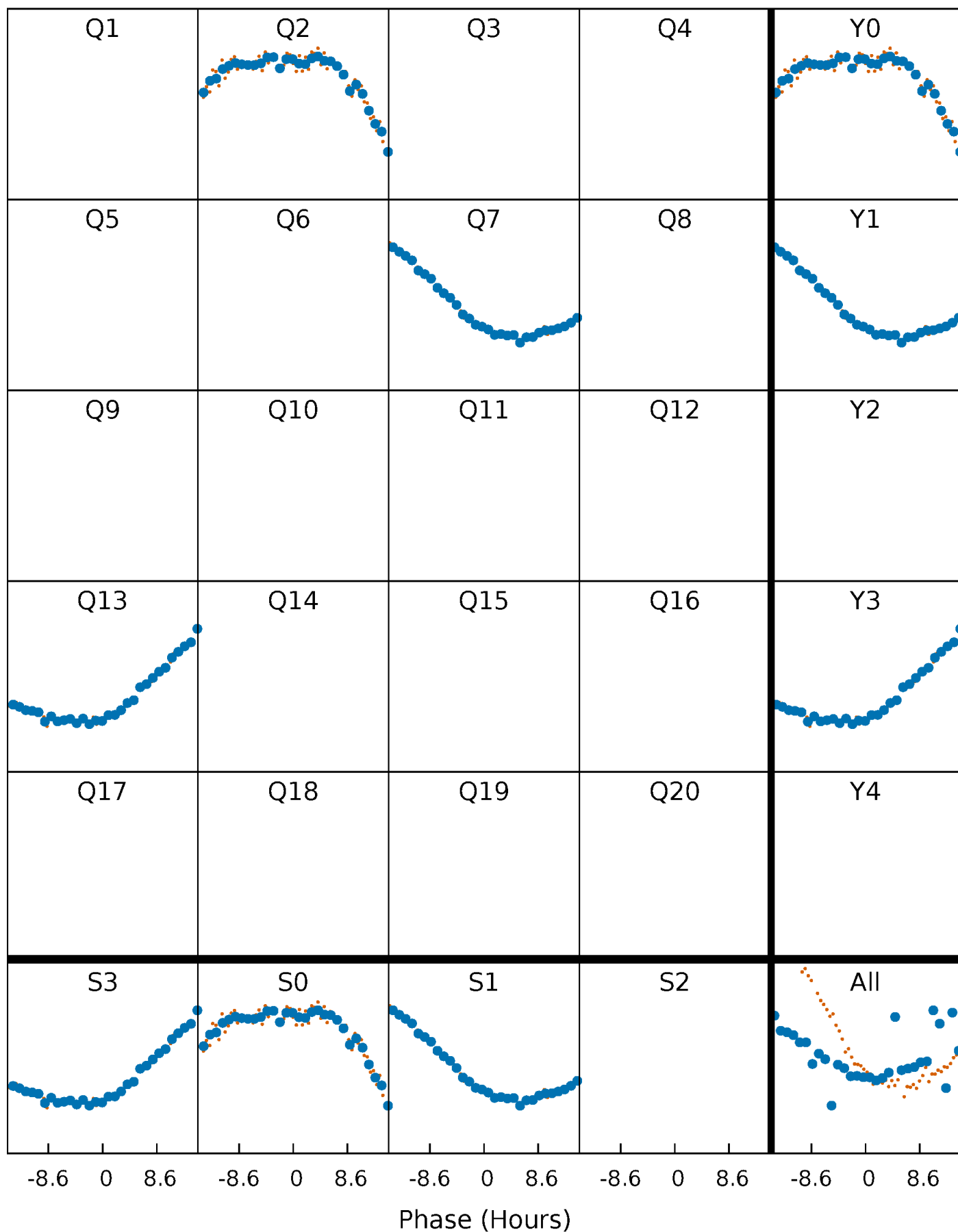


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



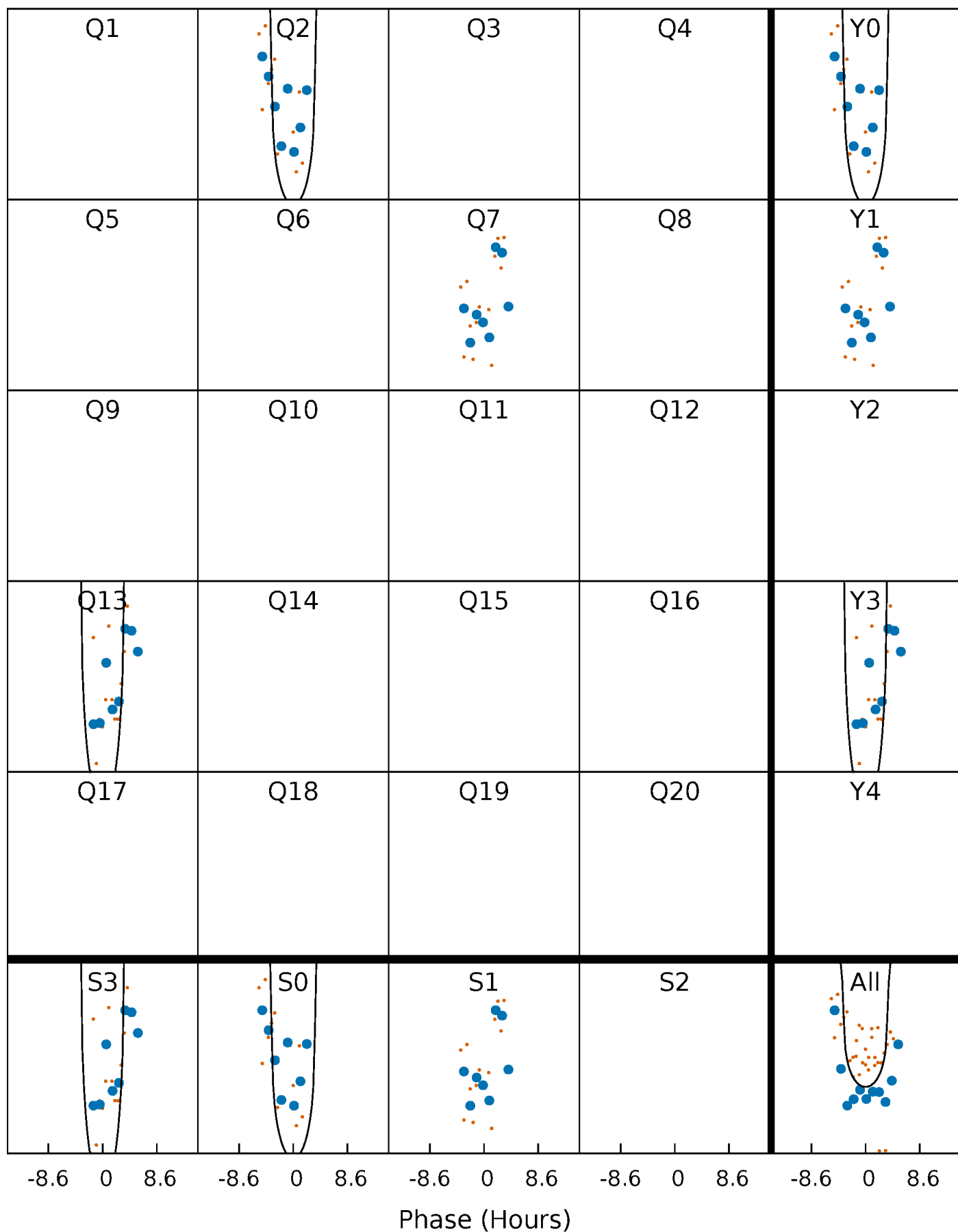
PDC Quarter-Phased Transit Curves

TCE 011620956-02 P=488.493304 Days $T_0=207.854434$ (BKJD)



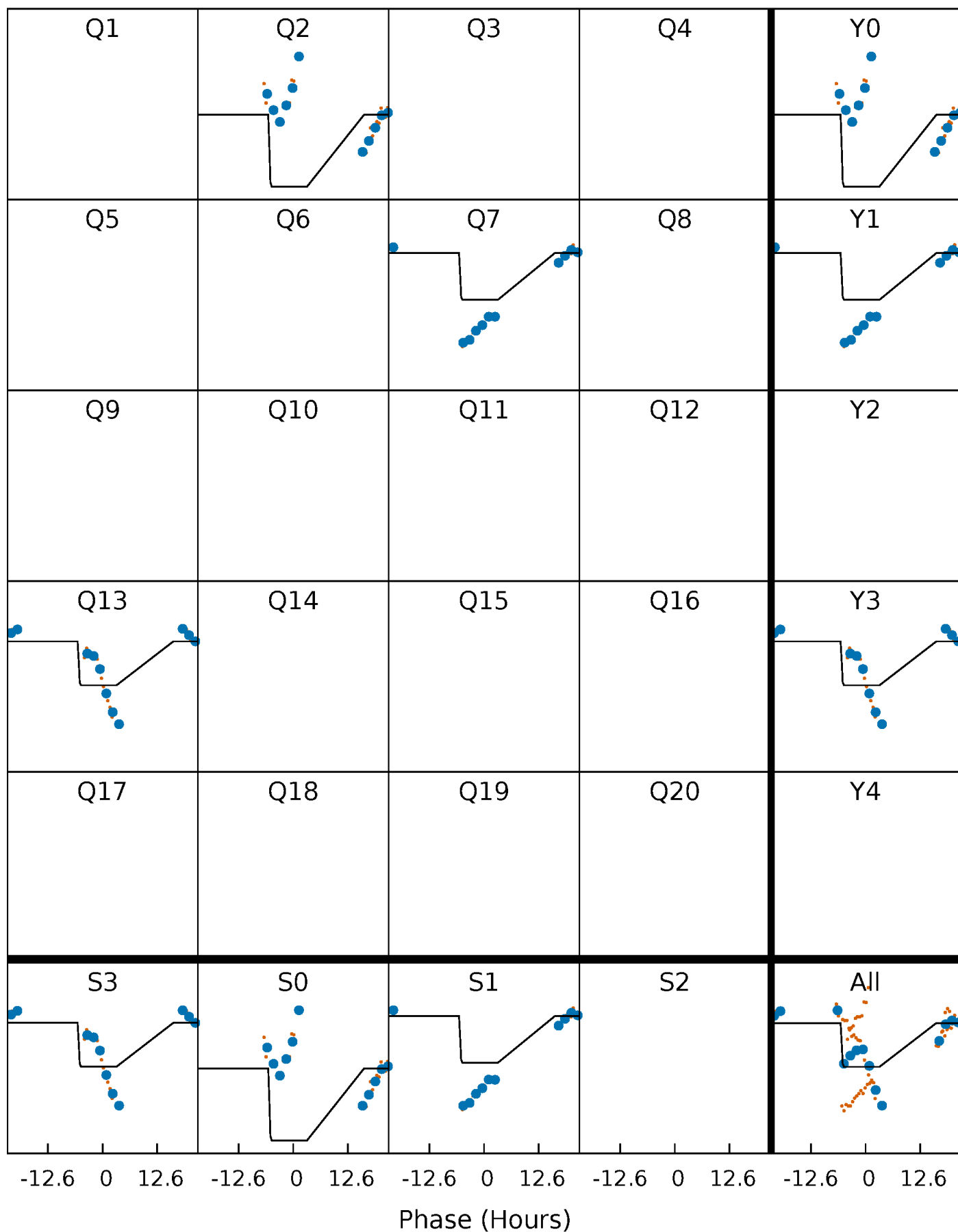
DV Quarter-Phased Transit Curves

TCE 011620956-02 P=488.493304 Days $T_0=207.854434$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

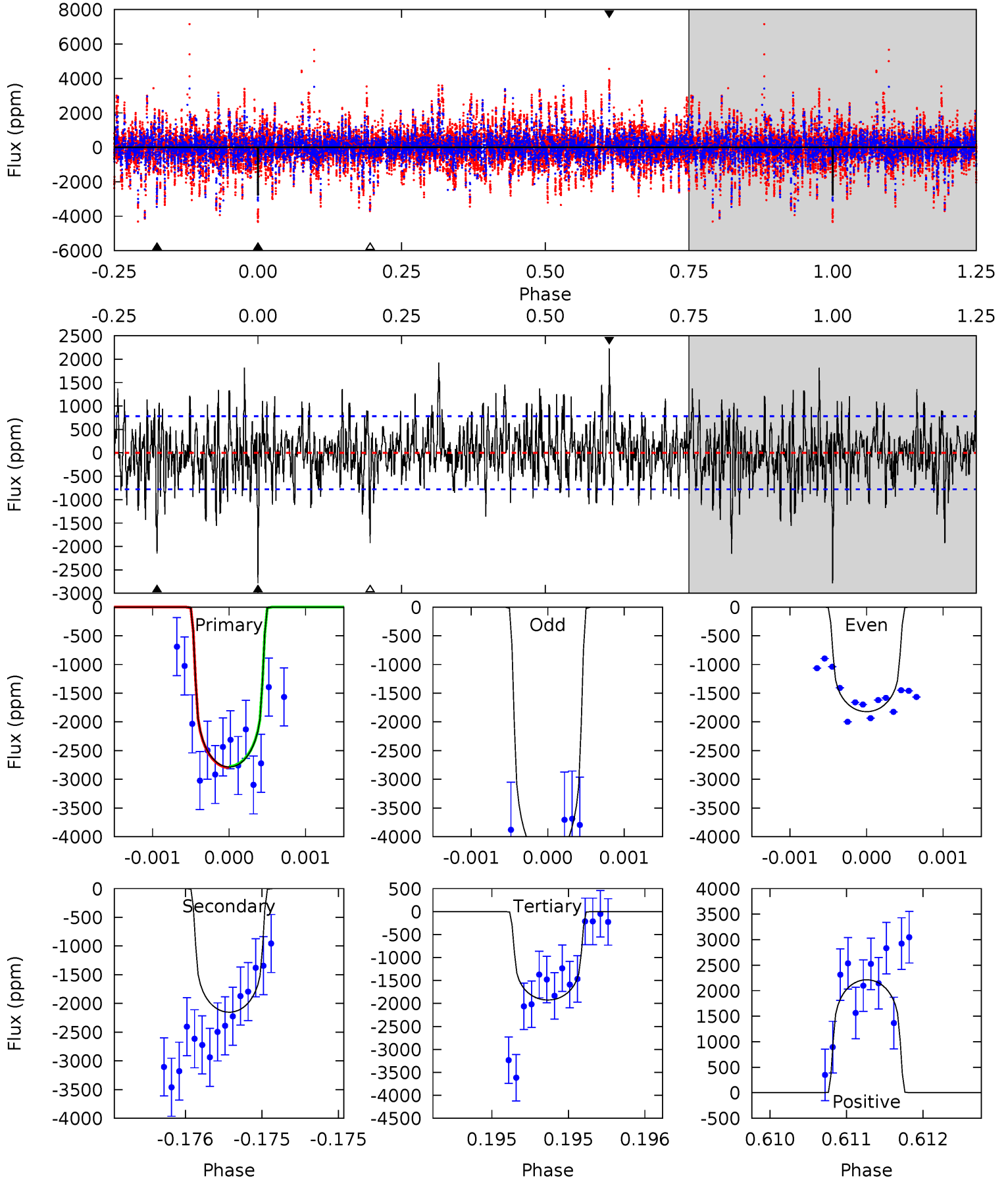
TCE 011620956-02 P=488.511930 Days $T_0=207.909774$ (BKJD)



DV Model-Shift Uniqueness Test

011620956-02, P = 488.493304 Days, E = 207.854434 Days

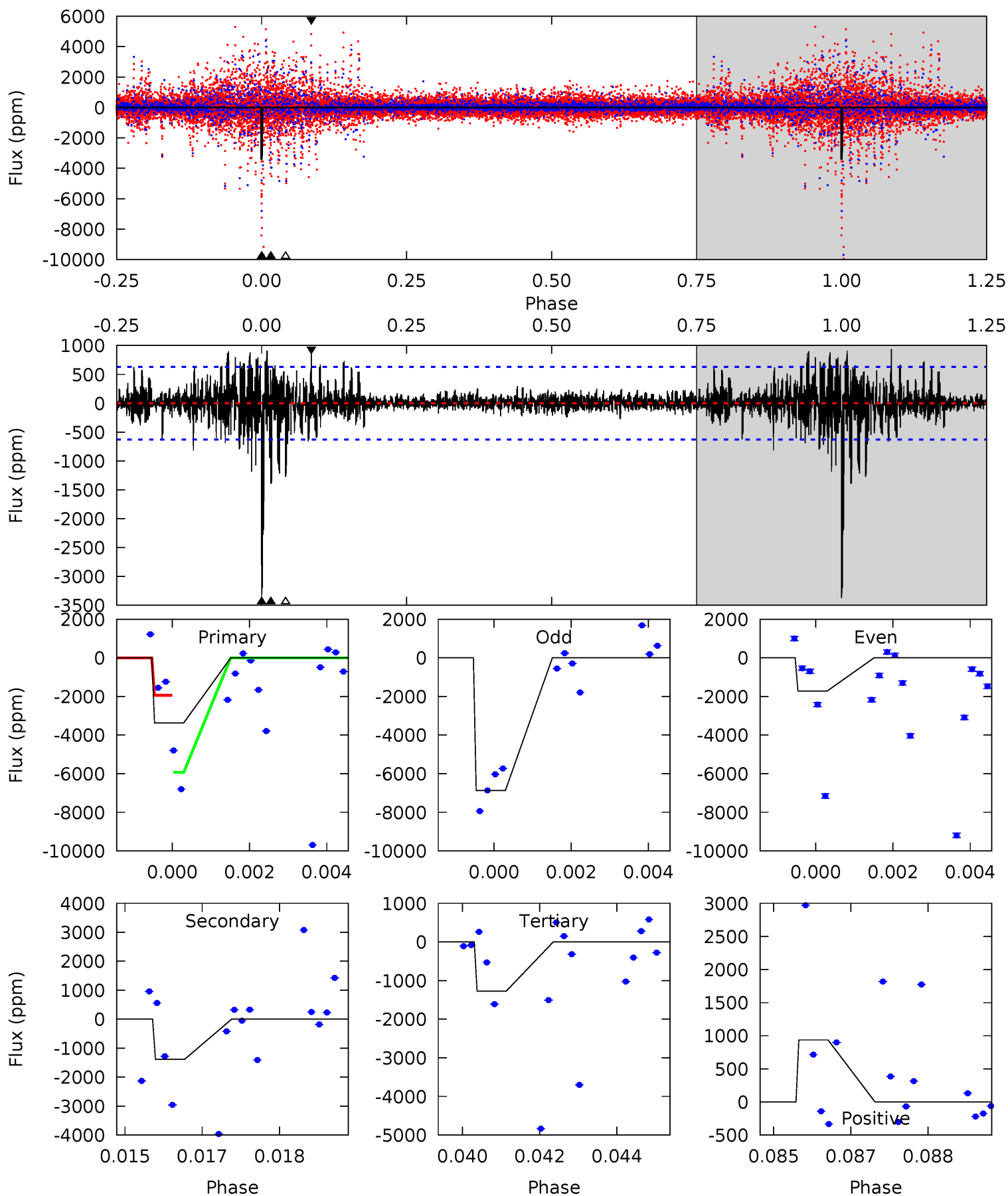
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	15.2	13.6	15.7	5.52	3.40	3.48	6.09	4.05	1.61	-0.43	9.04	1.36	0.44	0.07



Alt Model-Shift Uniqueness Test

011620956-02, P = 488.511930 Days, E = 207.909774 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.6	11.8	10.8	7.94	5.34	3.11	1.55	17.8	20.6	0.97	3.81	26.4	0.94	0.22	16.6



Stellar Parameters For KIC 011620956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5656^{+152}_{-152}	$4.605^{+0.036}_{-0.144}$	$-0.500^{+0.300}_{-0.300}$	$0.746^{+0.163}_{-0.054}$	$0.834^{+0.079}_{-0.088}$	$2.827^{+0.527}_{-1.131}$
	+3%/-3%	+1%/-3%	+60%/-60%	+22%/-7%	+9%/-11%	+19%/-40%
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 011620956-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2153 ± 141	$3.80^{+1.42}_{-1.30}$	288^{+17}_{-11}	5756^{+1378}_{-712}	$101713^{+136846}_{-45977}$
Alt.	-1386 ± 118	$5.51^{+1.47}_{-1.35}$	288^{+15}_{-11}	4490^{+468}_{-360}	32601^{+23727}_{-12256}

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

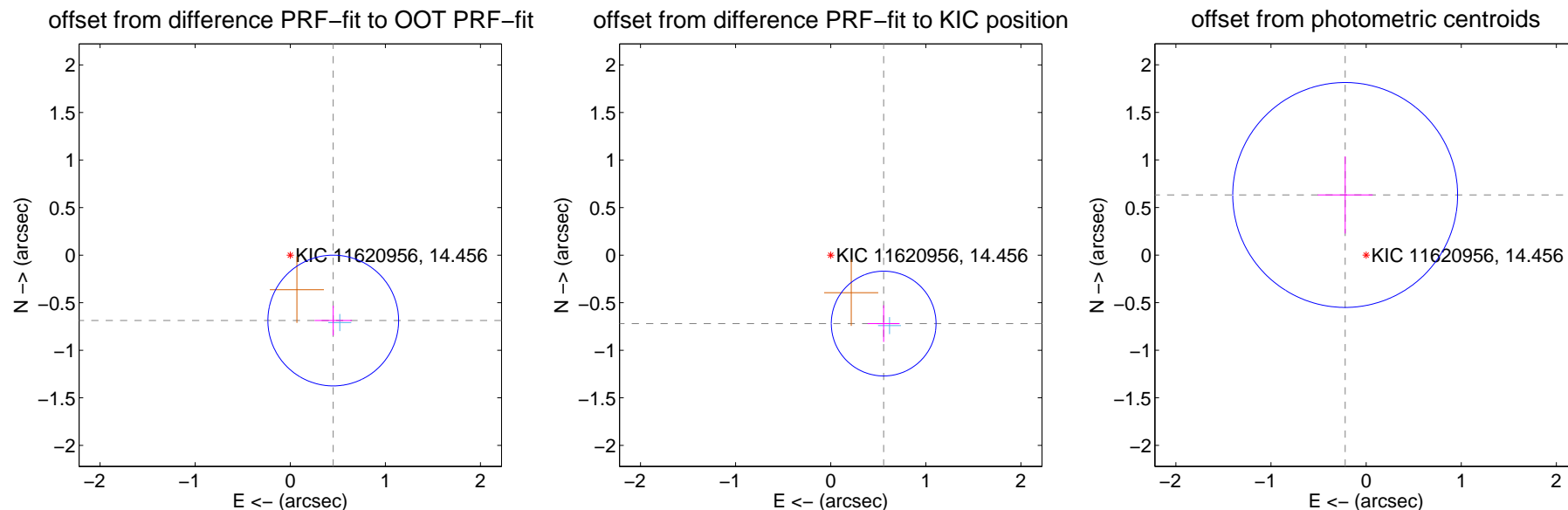
DV Centroid Data

Supplemental centroid analysis for 011620956-02. Kepler magnitude: 14.46. Transit SNR 10.29

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

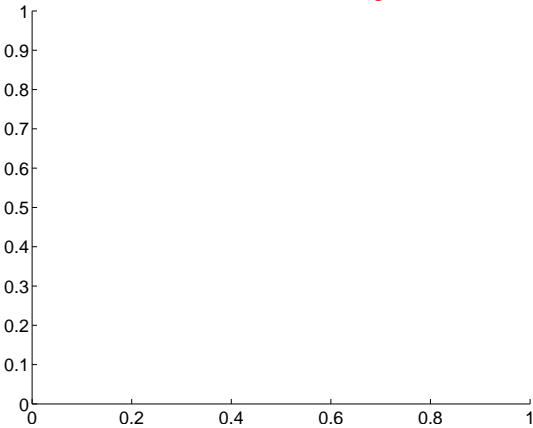
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.823 ± 0.229	3.59	-0.452 ± 0.196	-0.687 ± 0.156
PRF-fit source offset from KIC position	0.910 ± 0.184	4.95	-0.557 ± 0.168	-0.719 ± 0.192
photometric centroid source offset	0.67 ± 0.39	1.70	0.22 ± 0.29	0.63 ± 0.40



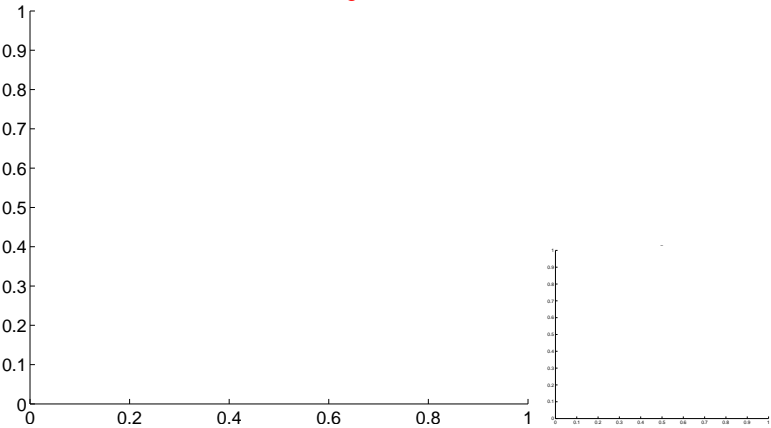
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

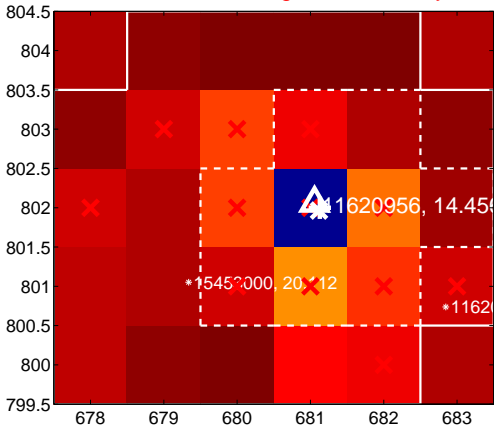
Q1 no difference image



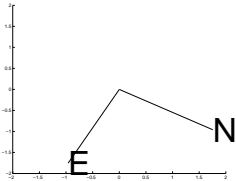
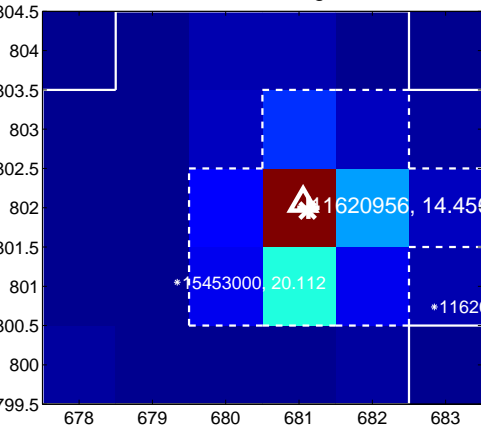
Q1 no OOT image



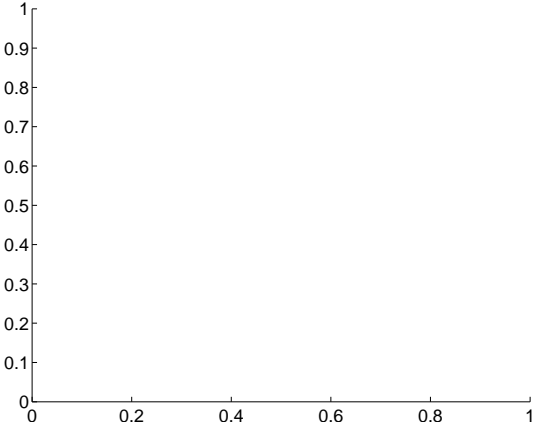
Q2 difference image. Poor Quality



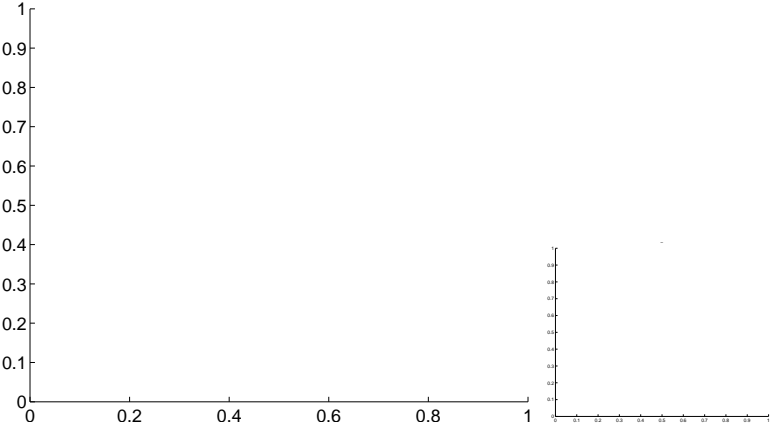
Q2 OOT image



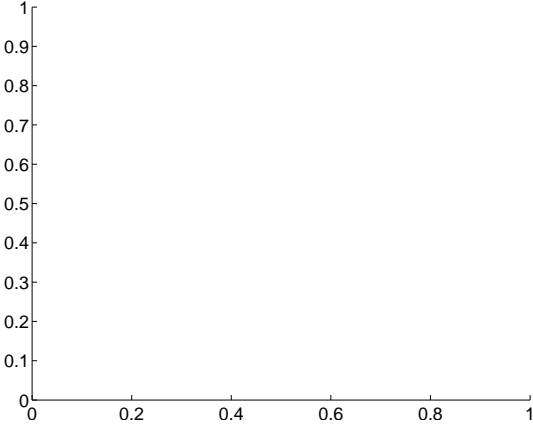
Q3 no difference image



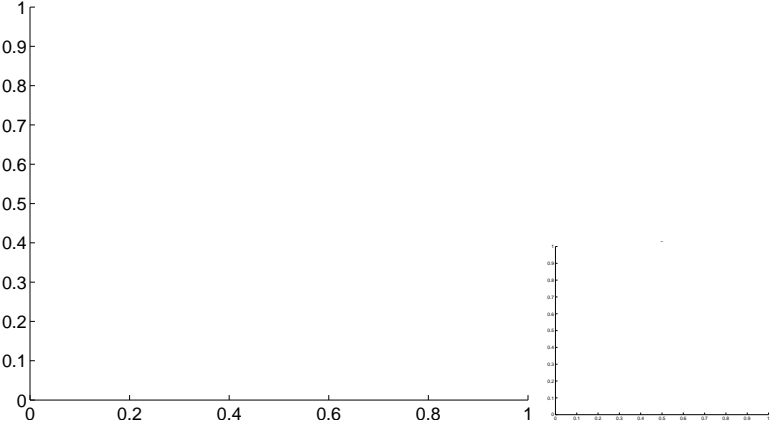
Q3 no OOT image



Q4 no difference image

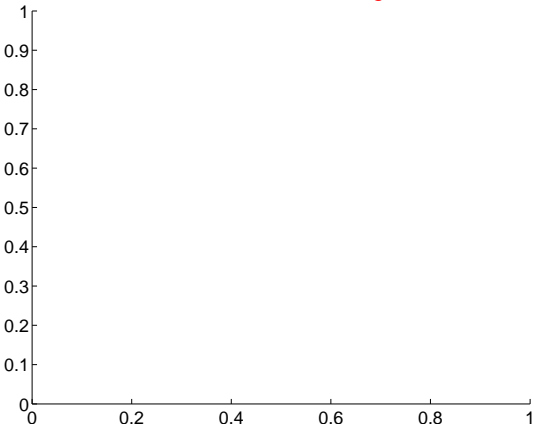


Q4 no OOT image

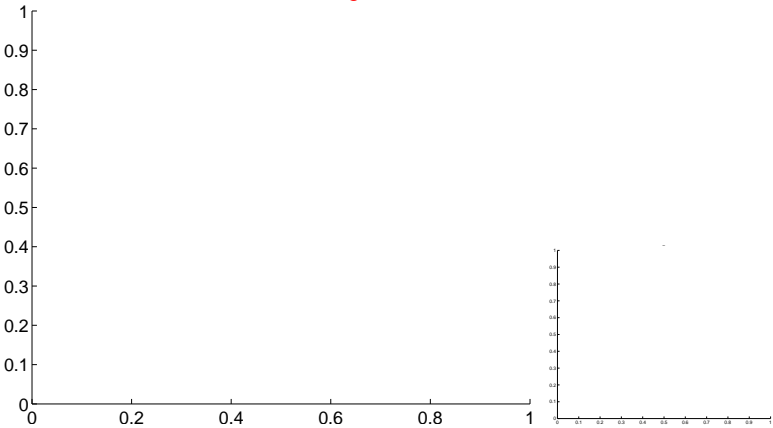


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

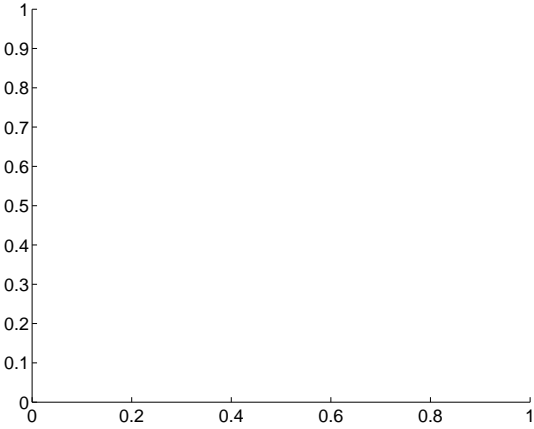
Q5 no difference image



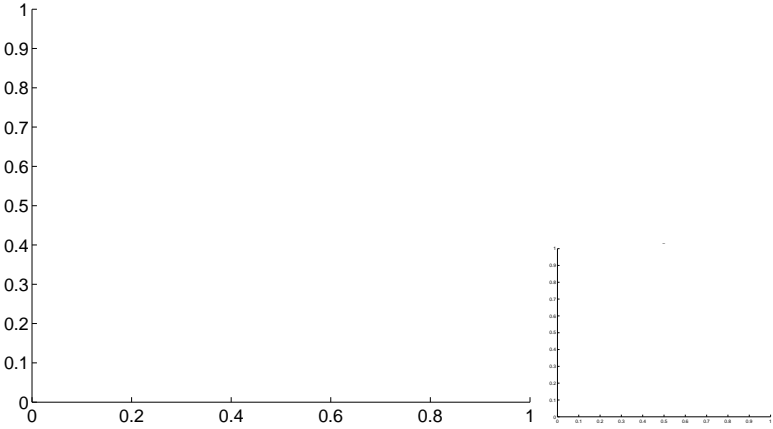
Q5 no OOT image



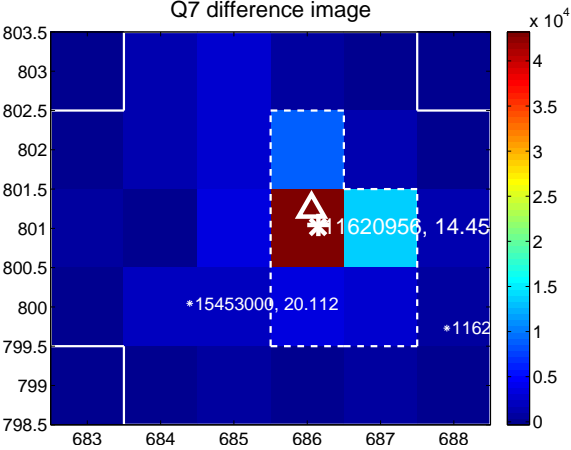
Q6 no difference image



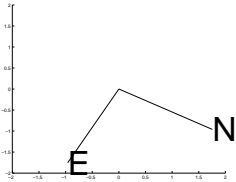
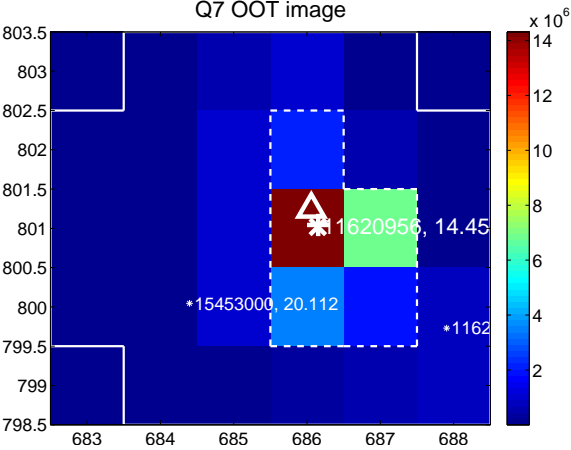
Q6 no OOT image



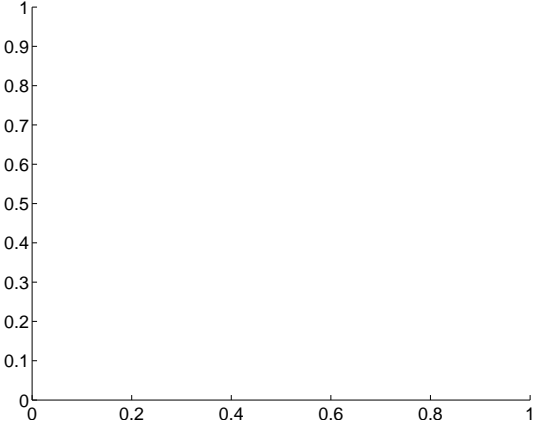
Q7 difference image



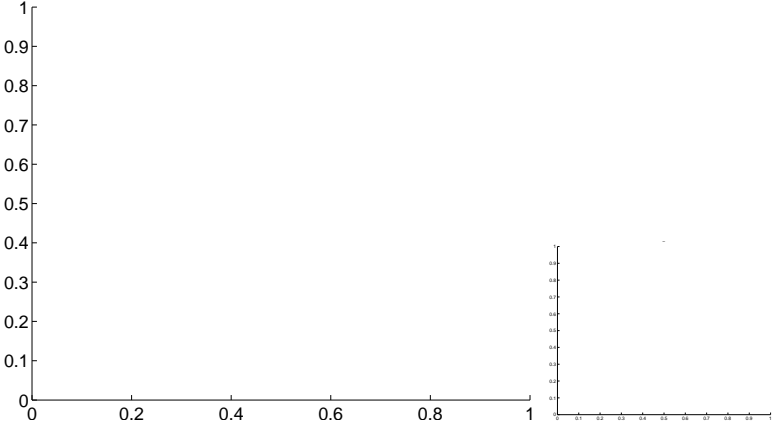
Q7 OOT image



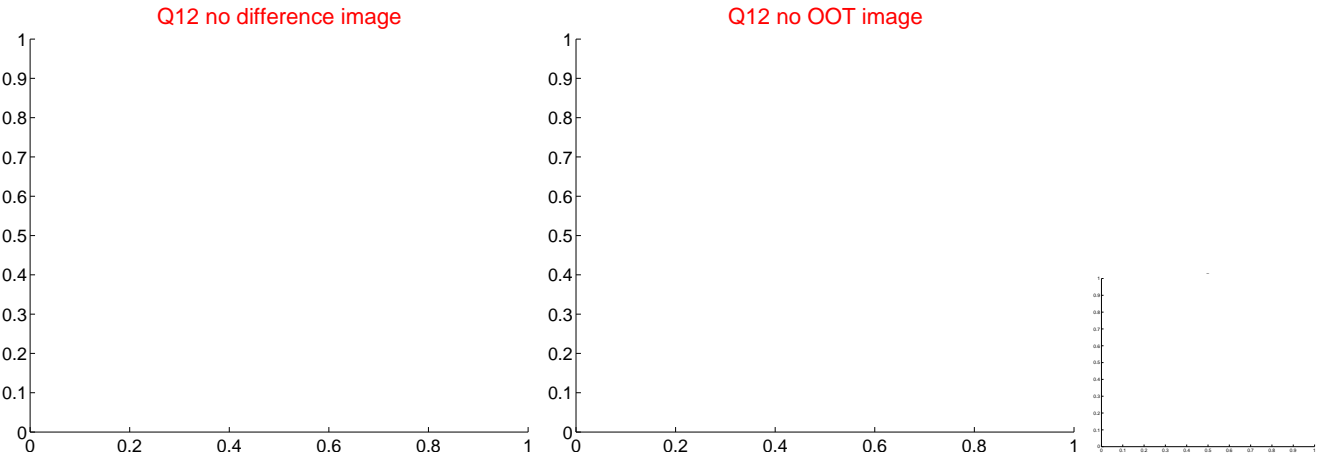
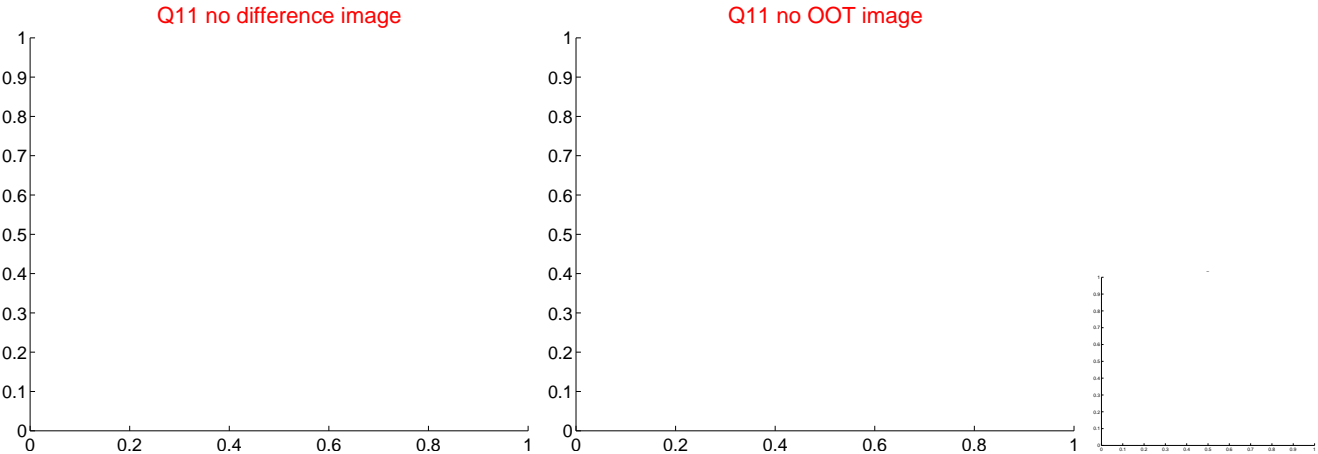
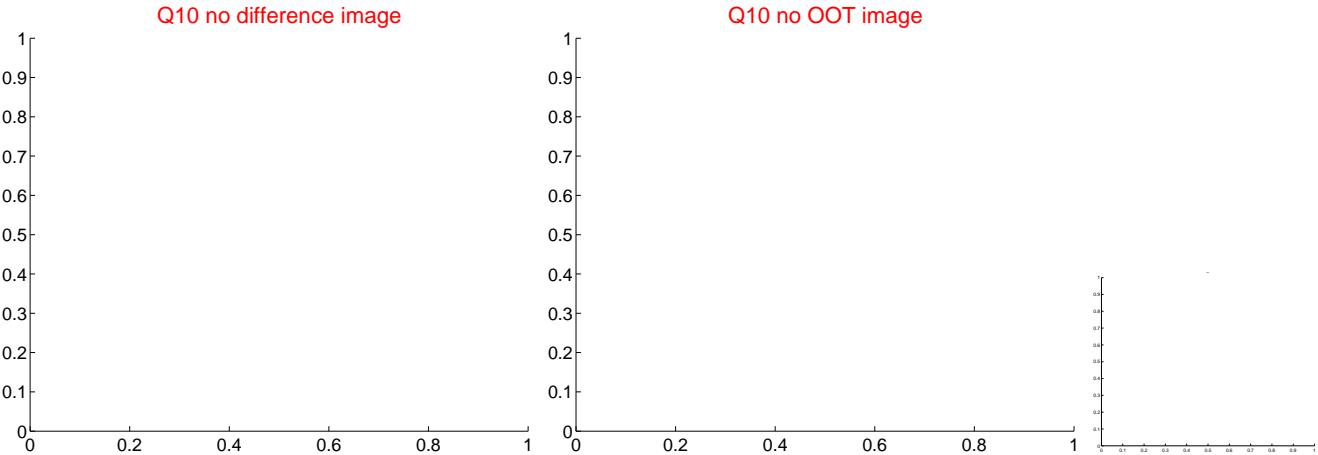
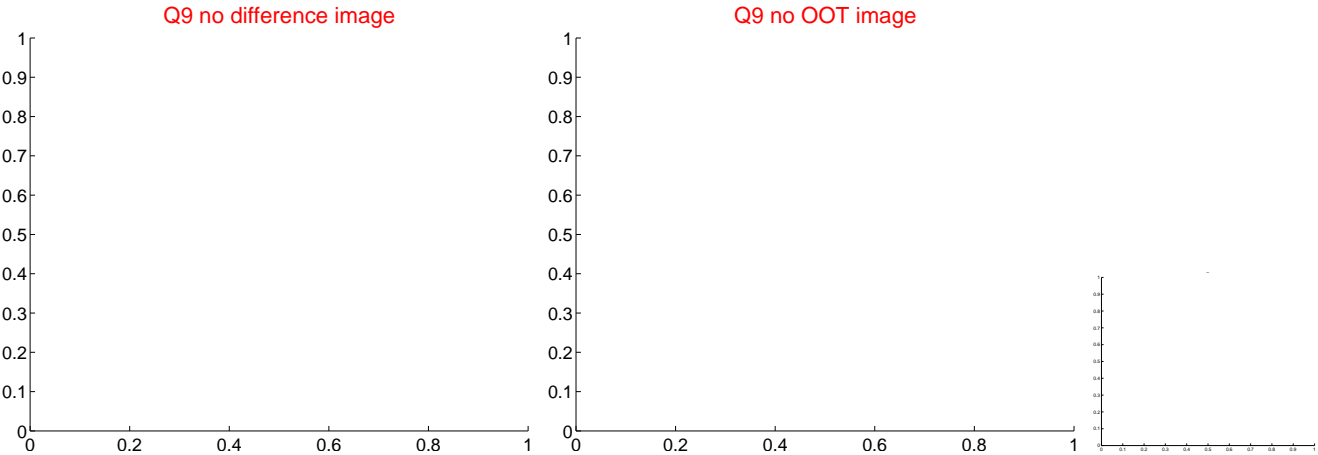
Q8 no difference image



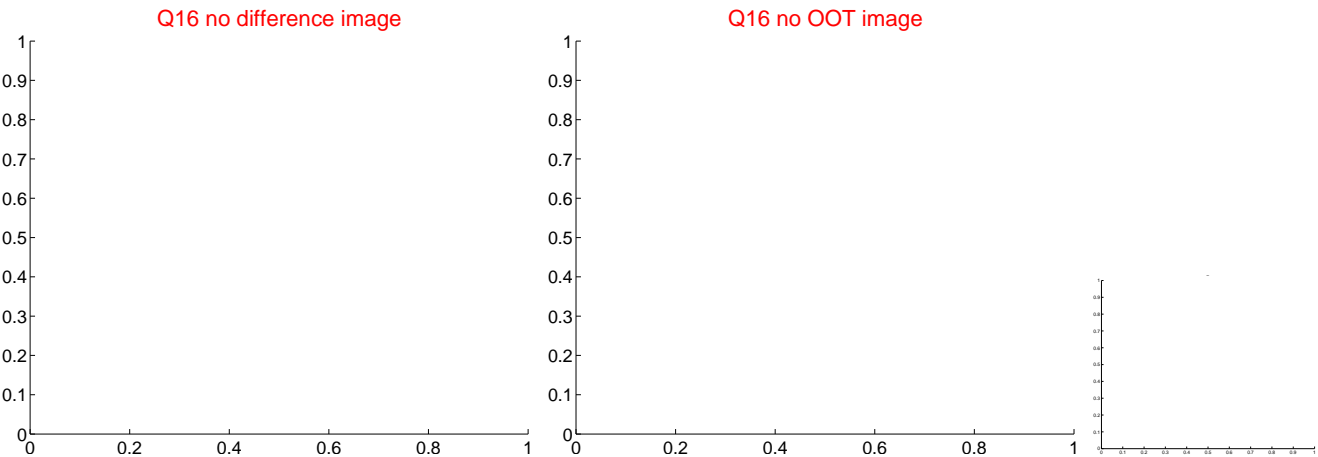
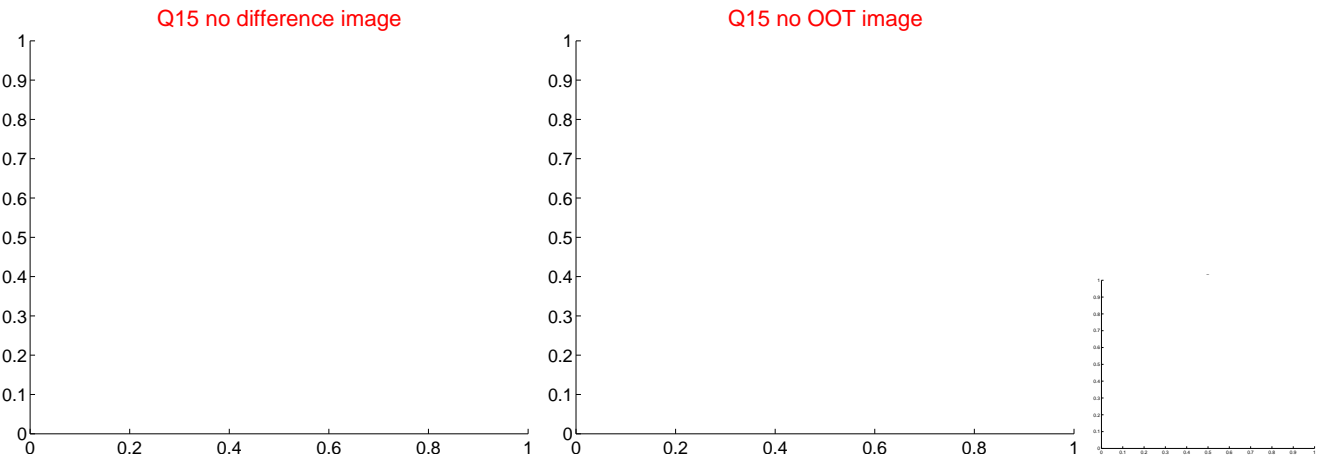
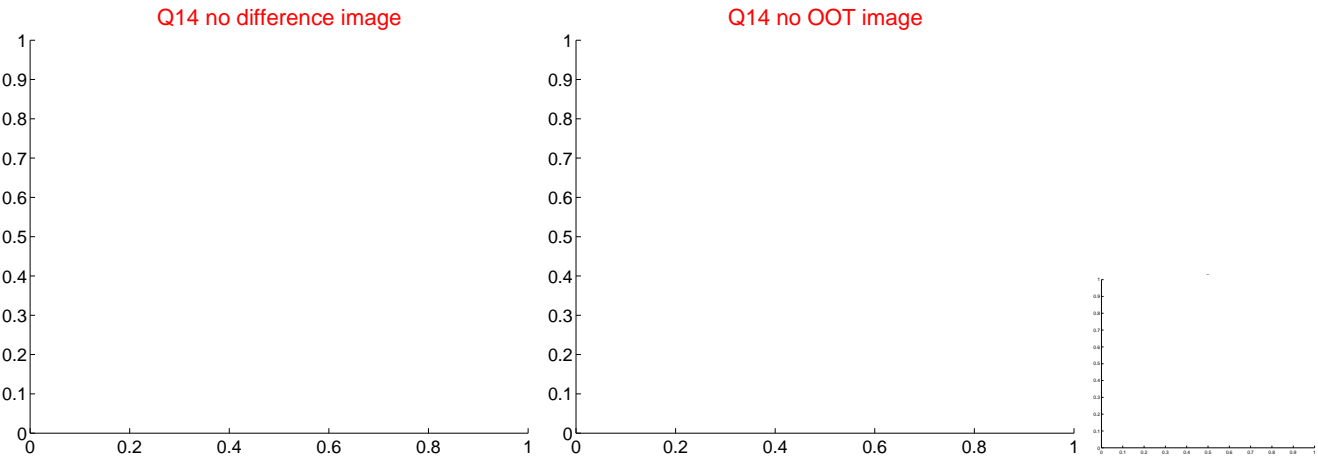
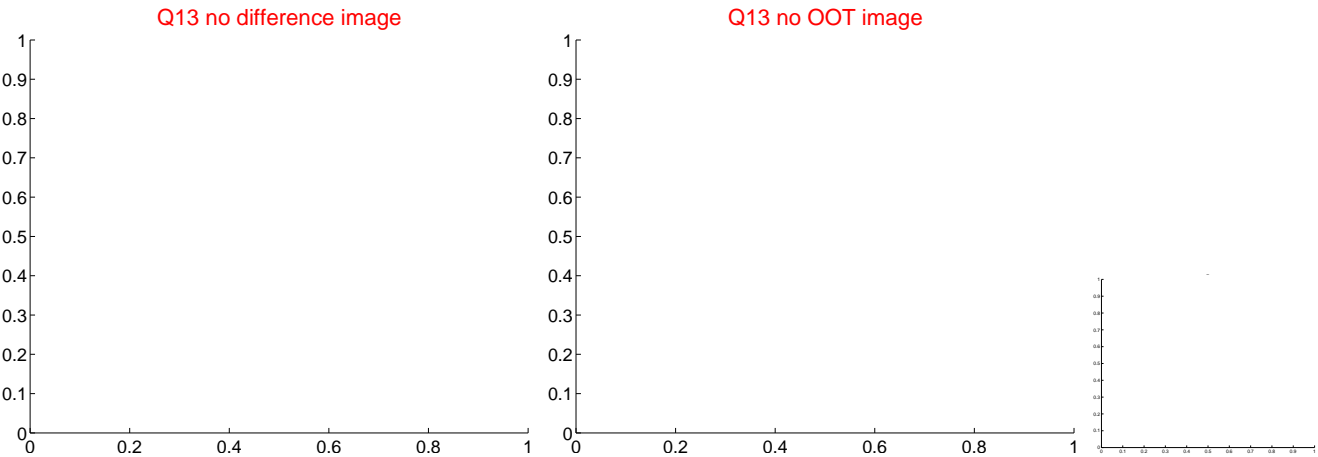
Q8 no OOT image



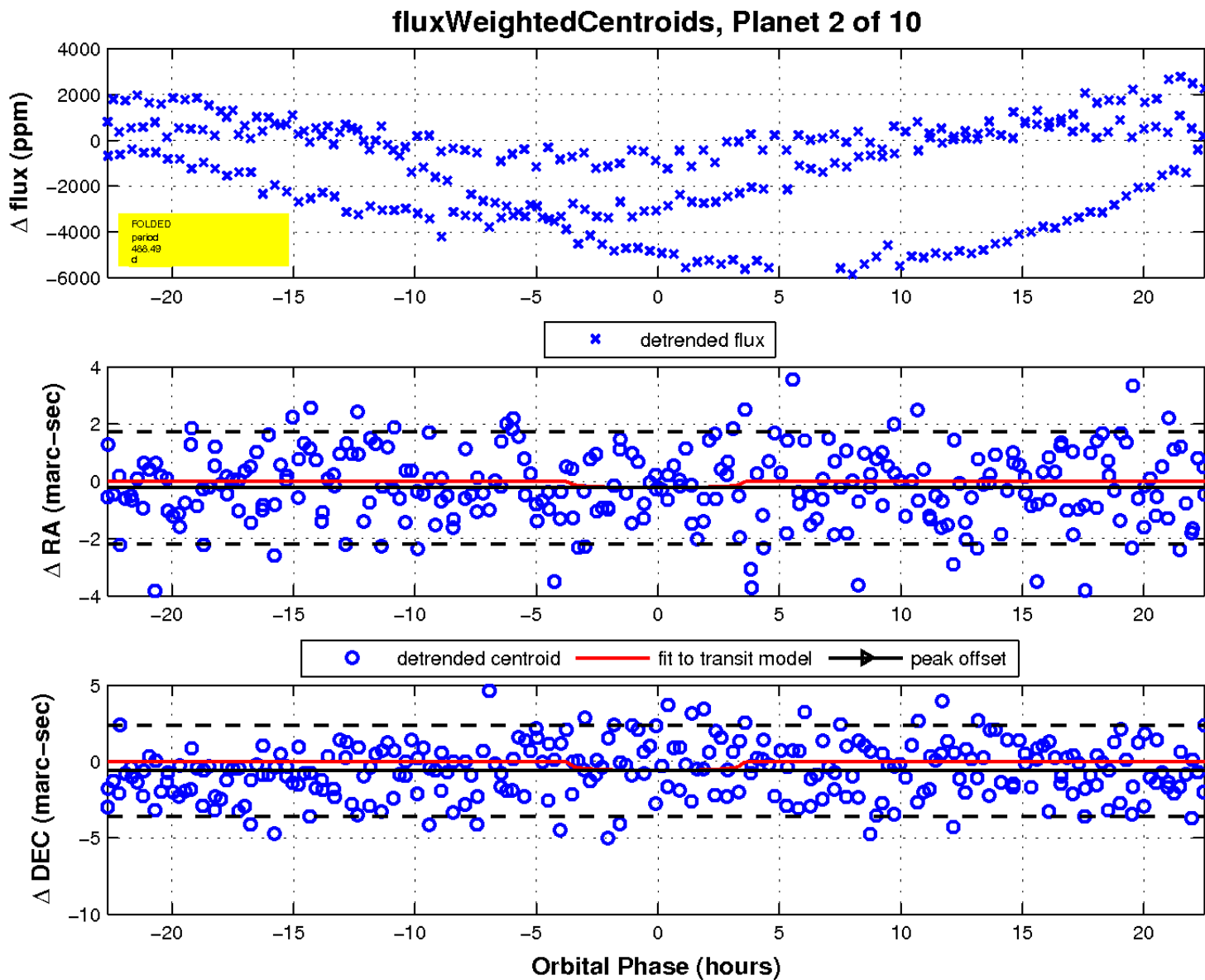
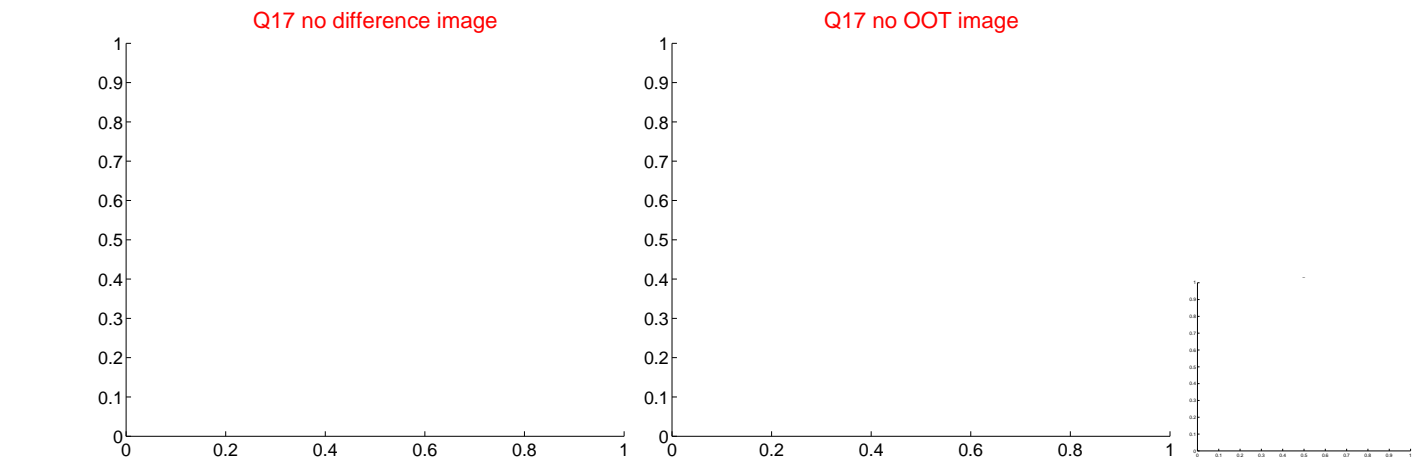
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

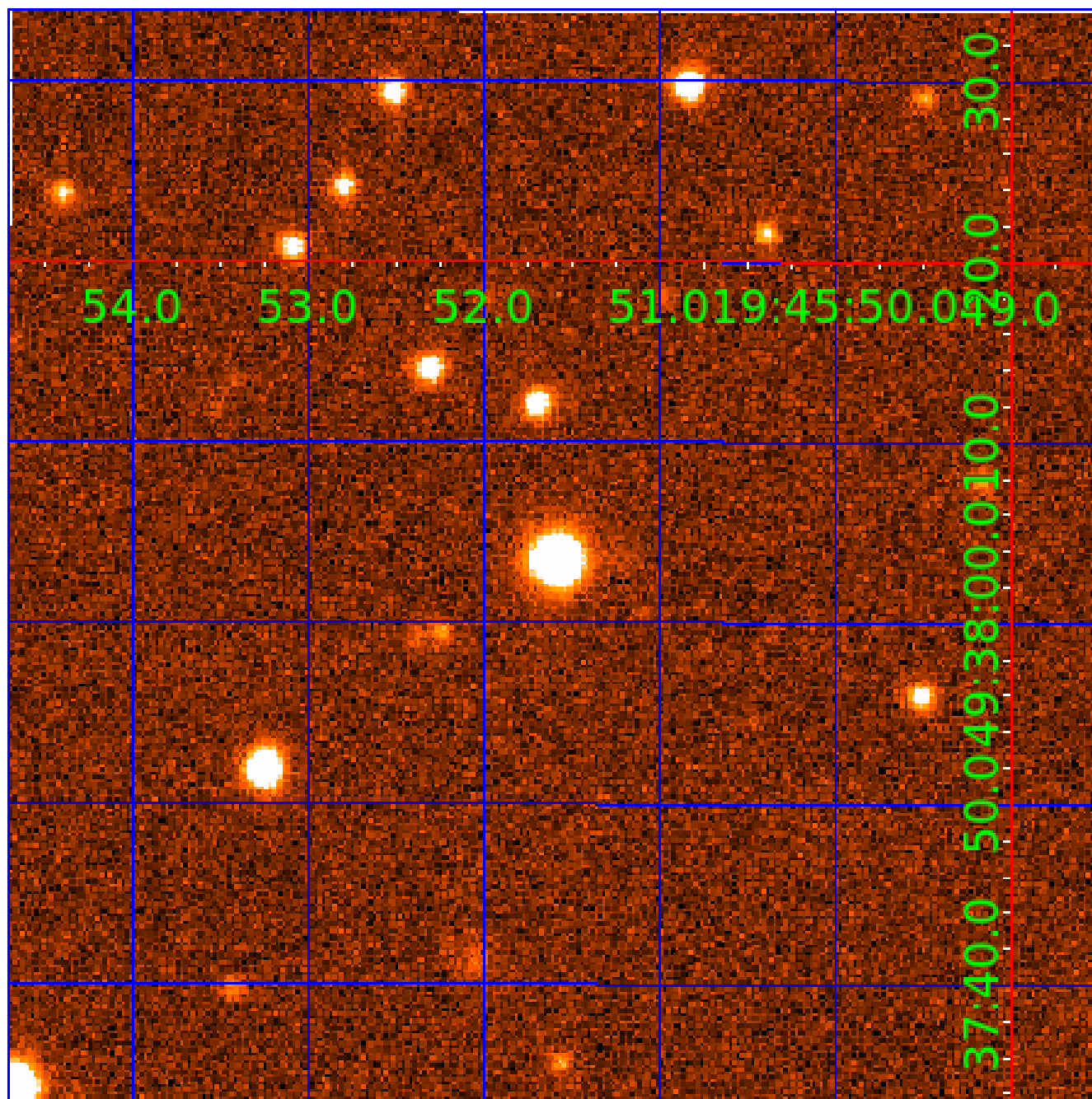


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011620956

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})
011620956-01	OBS	No	0.954225	131.920886	47.3	4.840	8.1	9.6	0.75	5656	0.61	1621.40
011620956-02	OBS	No	488.493304	207.854435	2379.7	7.562	20.9	10.3	0.75	5656	3.72	0.40
011620956-05	OBS	No	155.461423	175.622791	288.0	1.746	11.6	2.1	0.75	5656	1.48	1.82
011620956-06	OBS	No	459.003247	165.754235	723.4	9.000	11.9	-1.0	0.75	5656	1.99	0.43
011620956-07	OBS	No	466.607749	172.580412	4166.4	17.220	11.4	8.6	0.75	5656	5.27	0.42
011620956-08	OBS	No	170.727948	270.243744	1899.4	9.418	10.9	8.0	0.75	5656	6.17	1.61
011620956-09	OBS	No	120.662292	229.959456	645.1	11.187	12.9	4.3	0.75	5656	1.97	2.56
011620956-10	OBS	No	358.792880	323.205031	516.2	10.500	10.9	-1.0	0.75	5656	1.68	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011620956-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011620956-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
011620956-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
011620956-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011620956-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

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

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

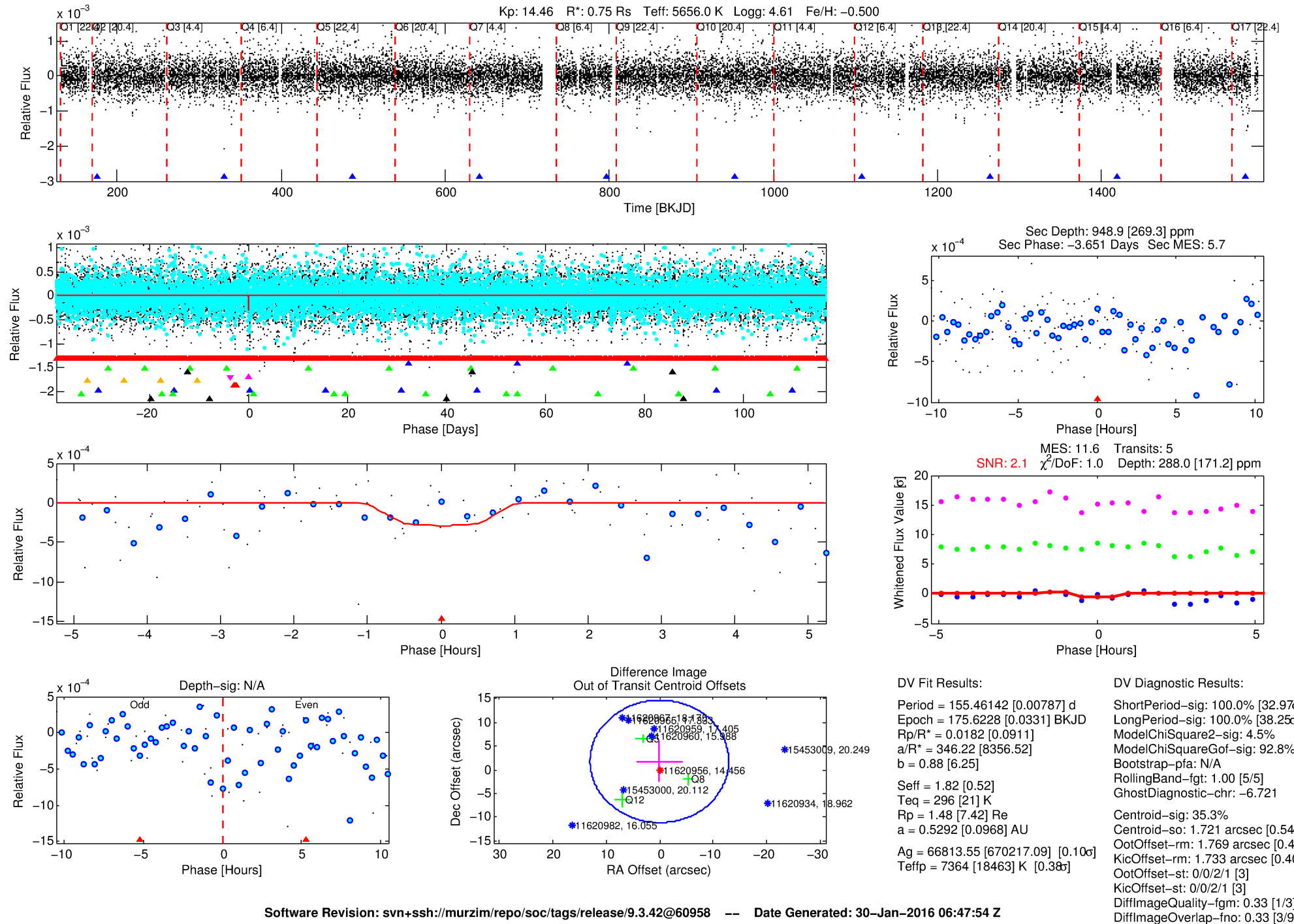
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011620956-05

No Significant Match Found

DV One-Page Summary

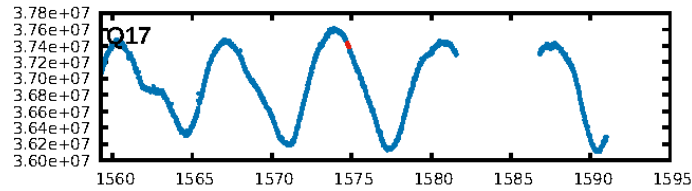
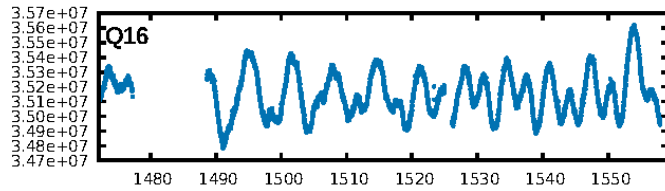
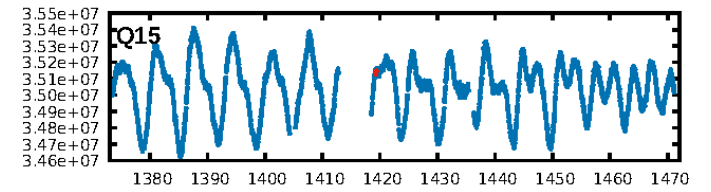
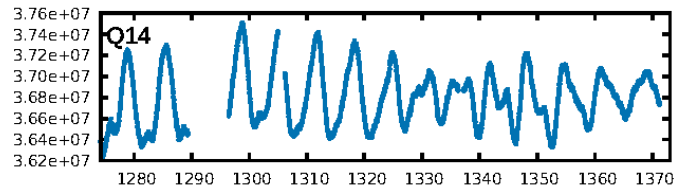
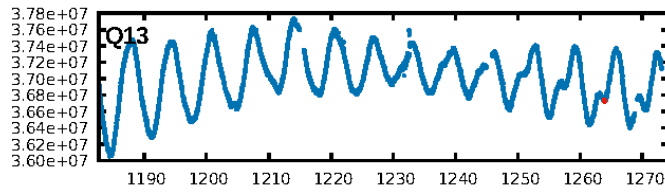
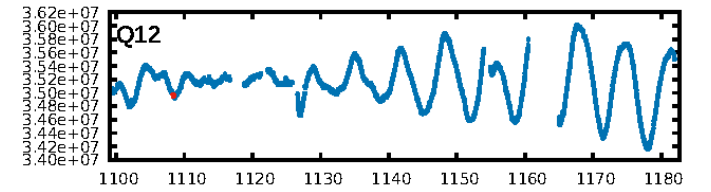
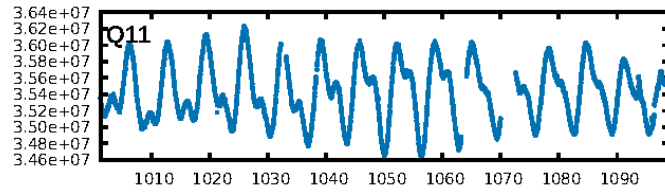
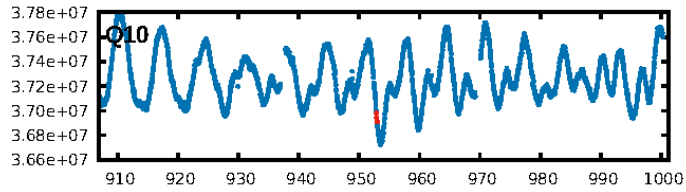
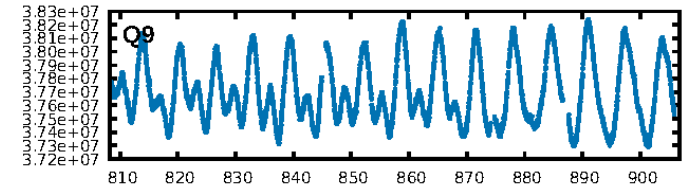
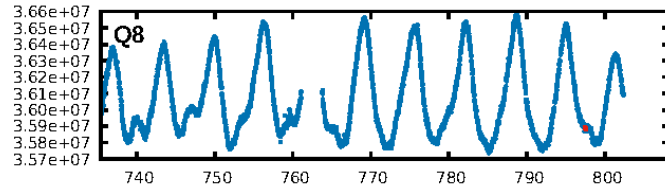
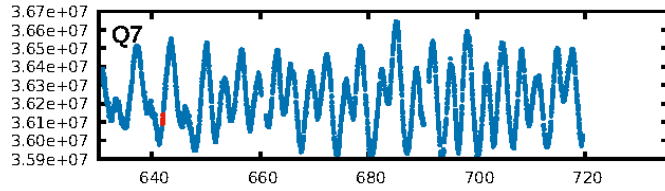
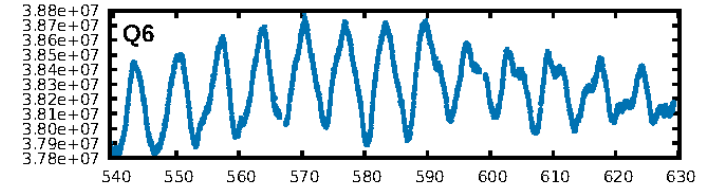
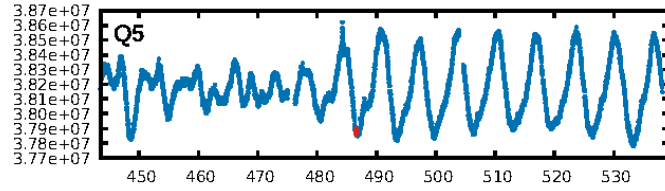
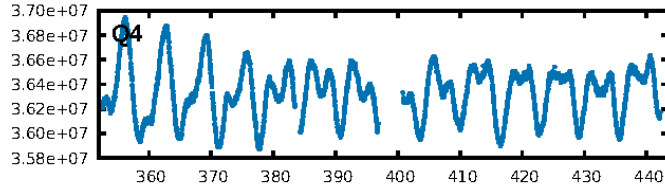
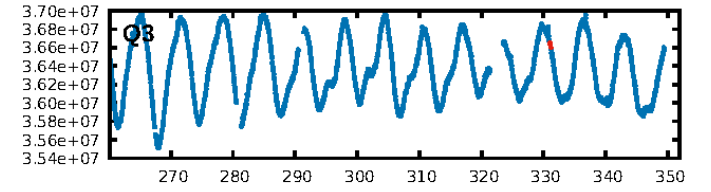
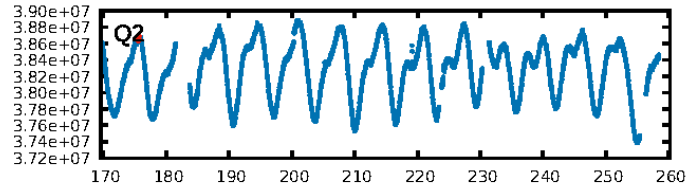
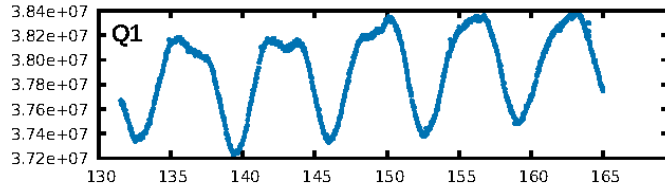
KIC: 11620956 Candidate: 5 of 10 Period: 155.461 d



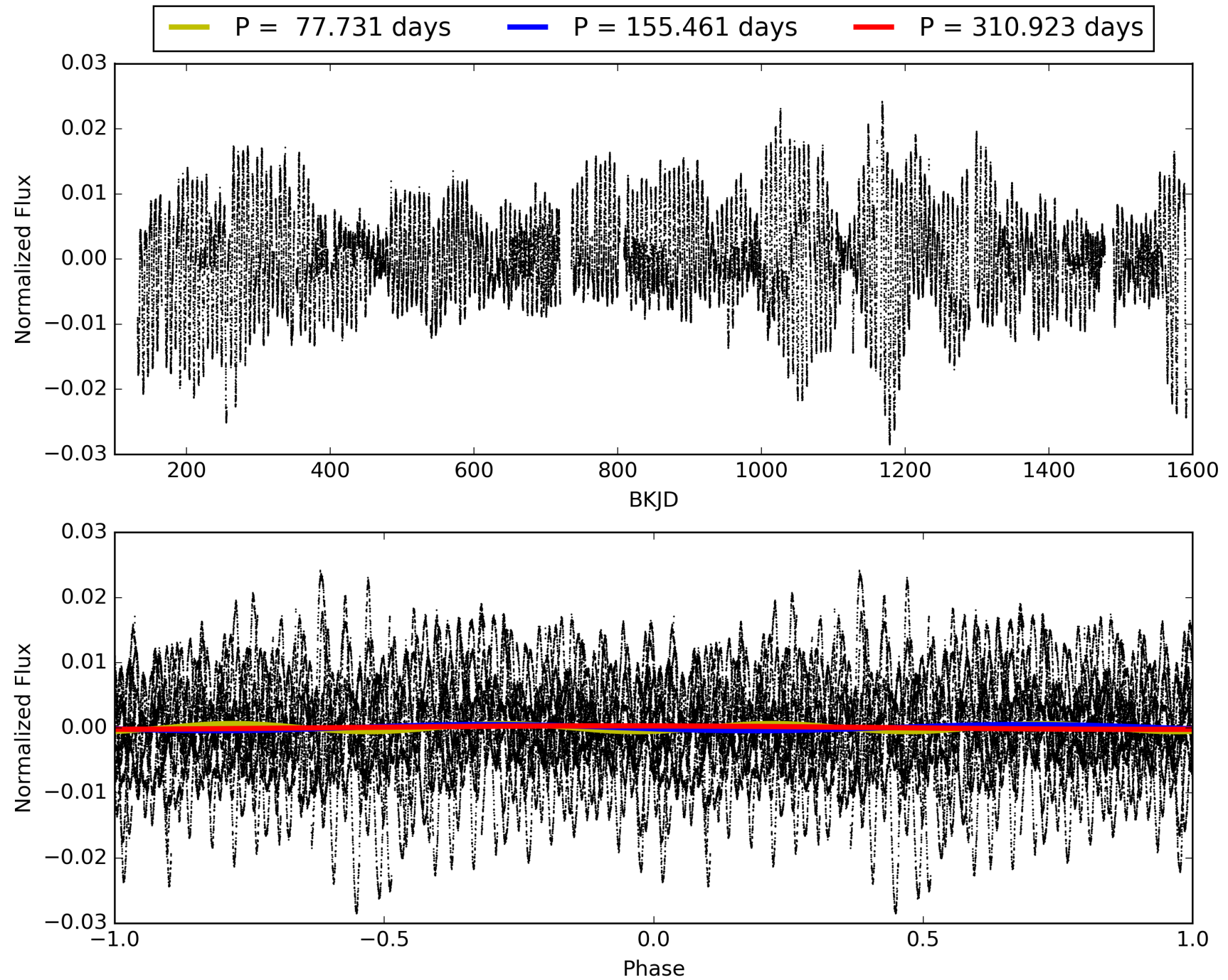
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:47:54 Z

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

TCE 011620956-05, PDC Light Curves

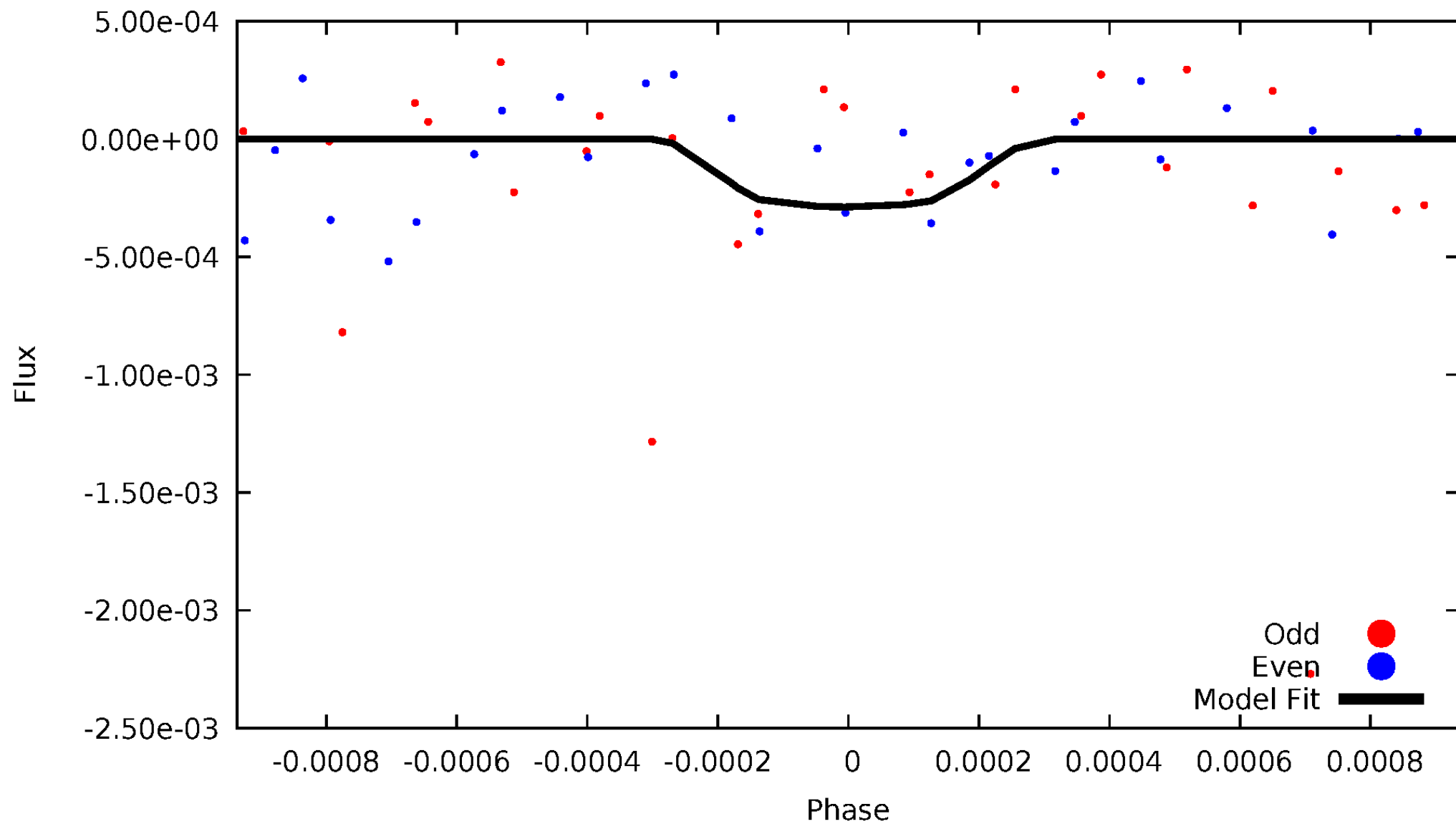


TCE 011620956-05



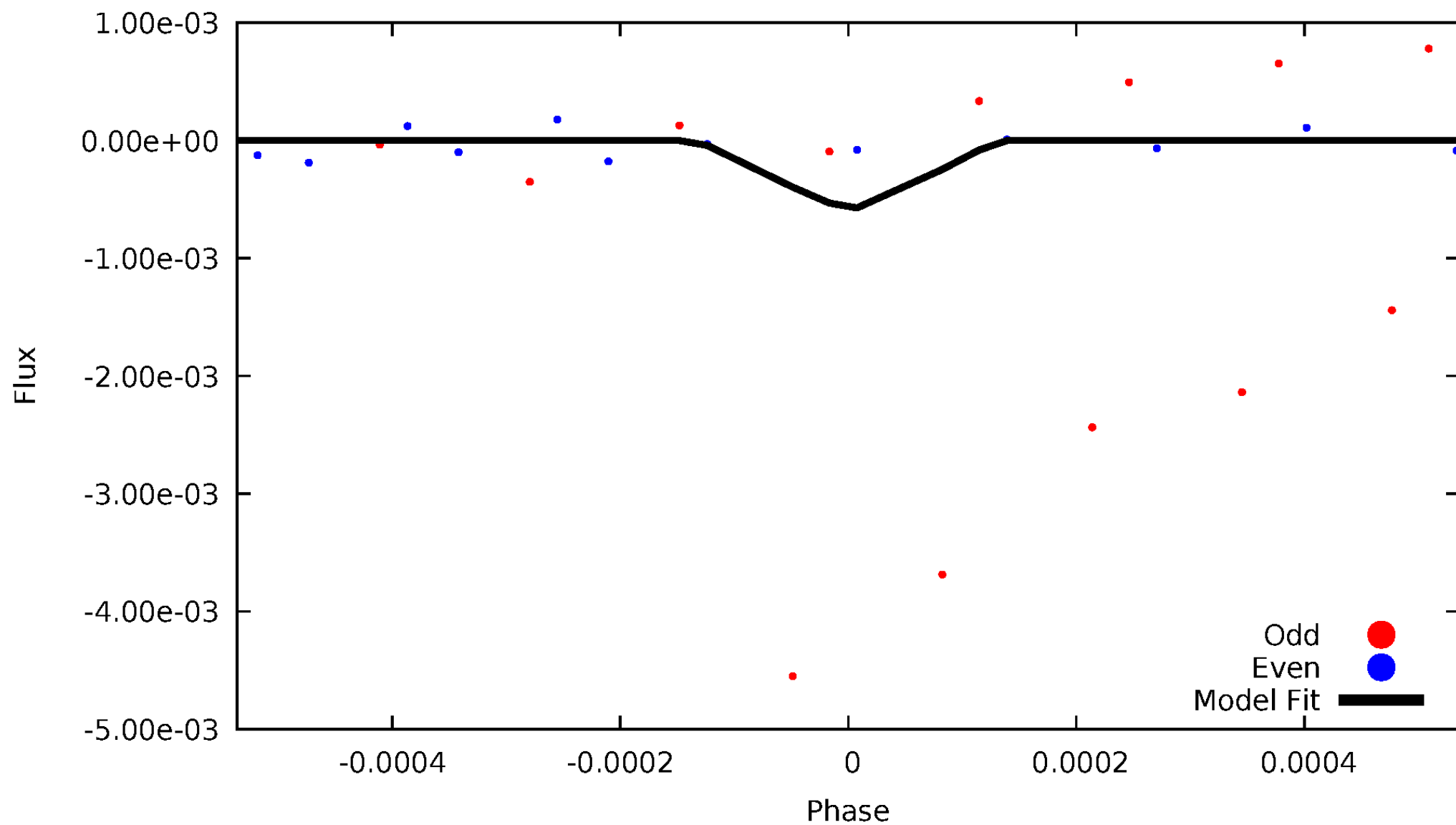
DV Odd/Even

TCE 011620956-05



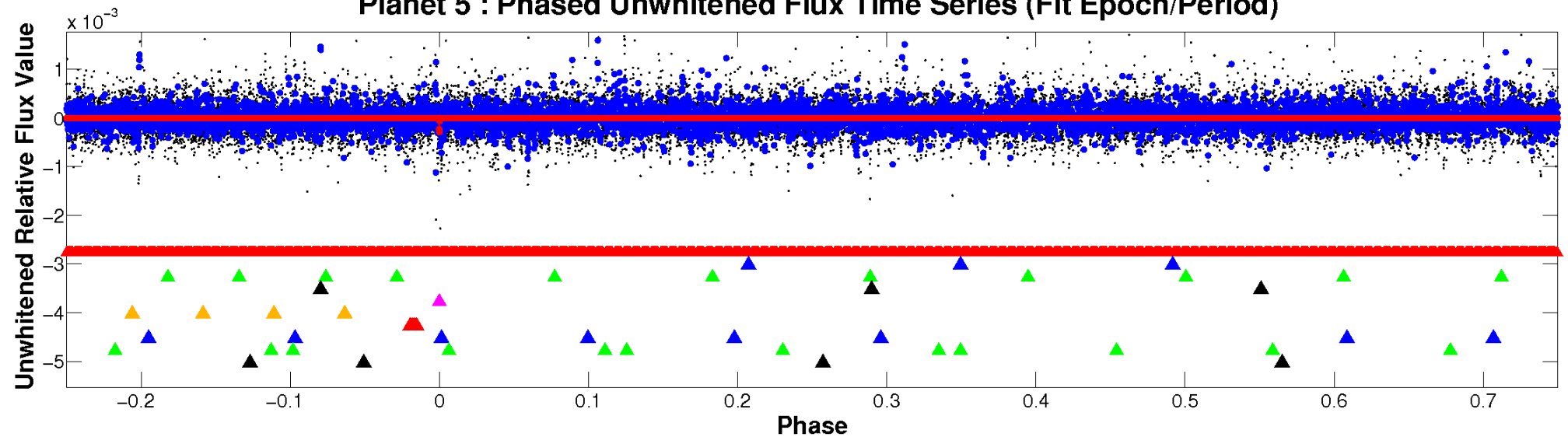
ALT Odd/Even

TCE 011620956-05

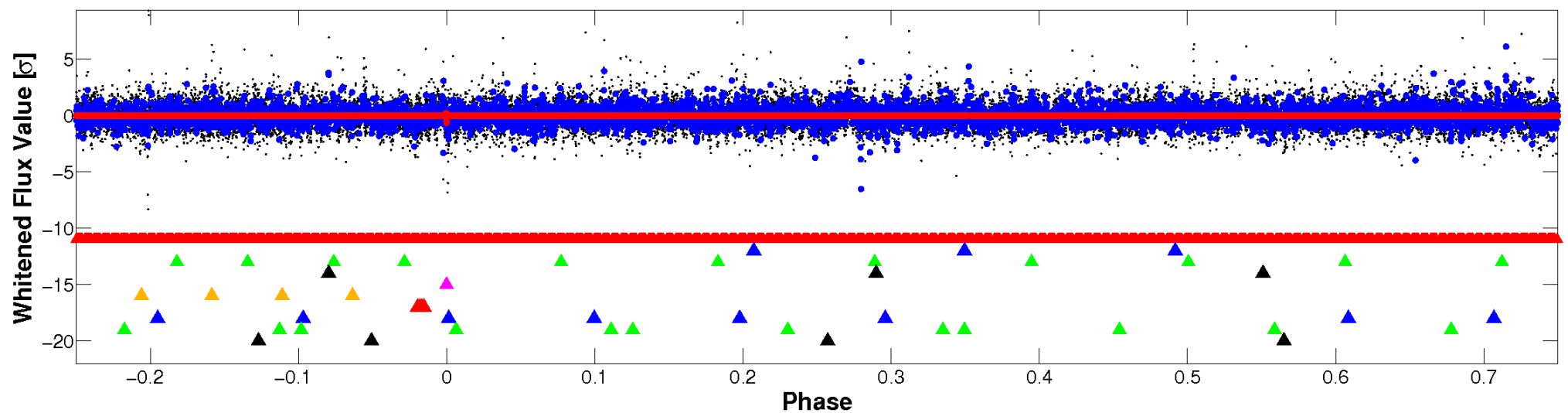


Non-Whitened Vs. Whitened Light Curve

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

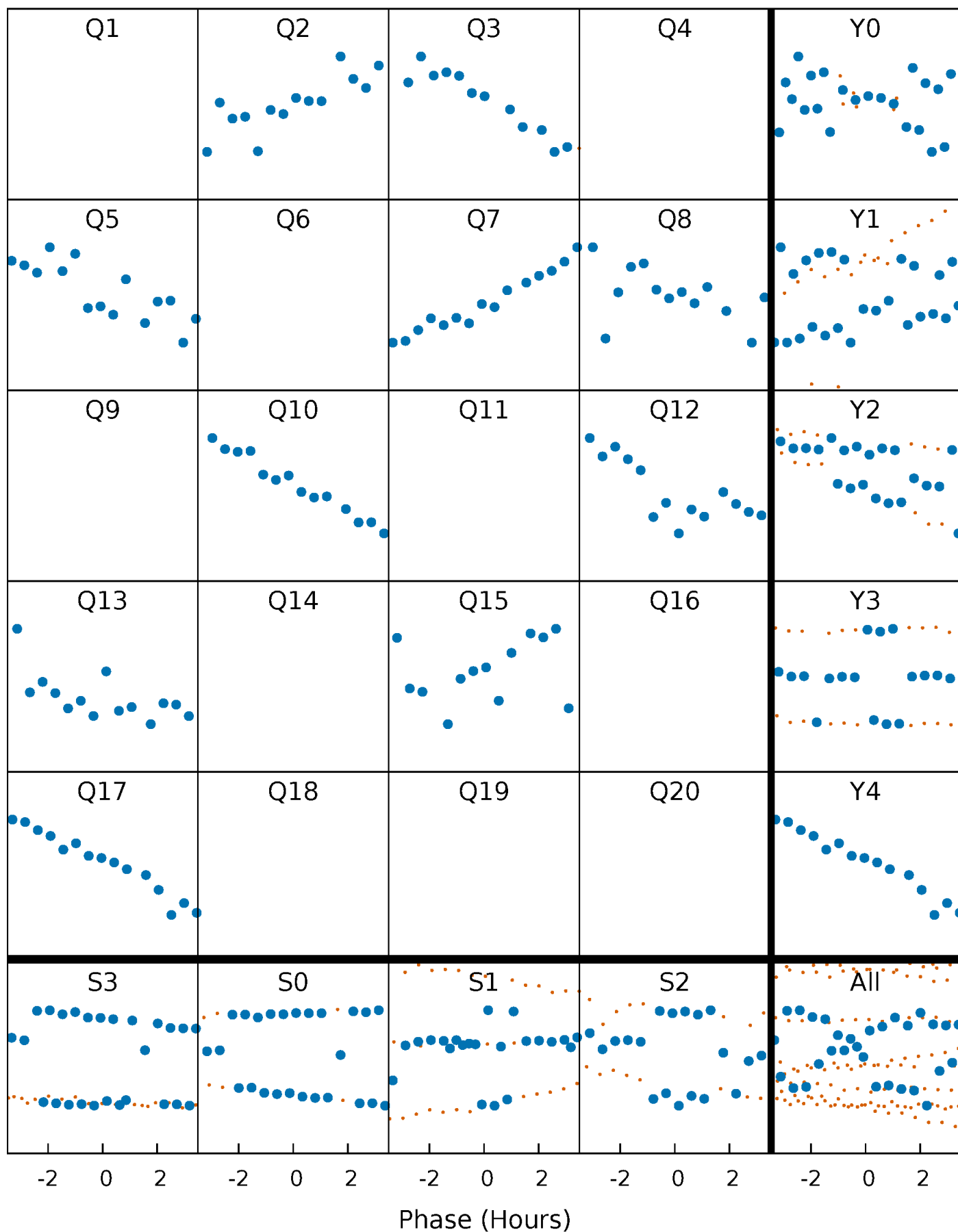


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



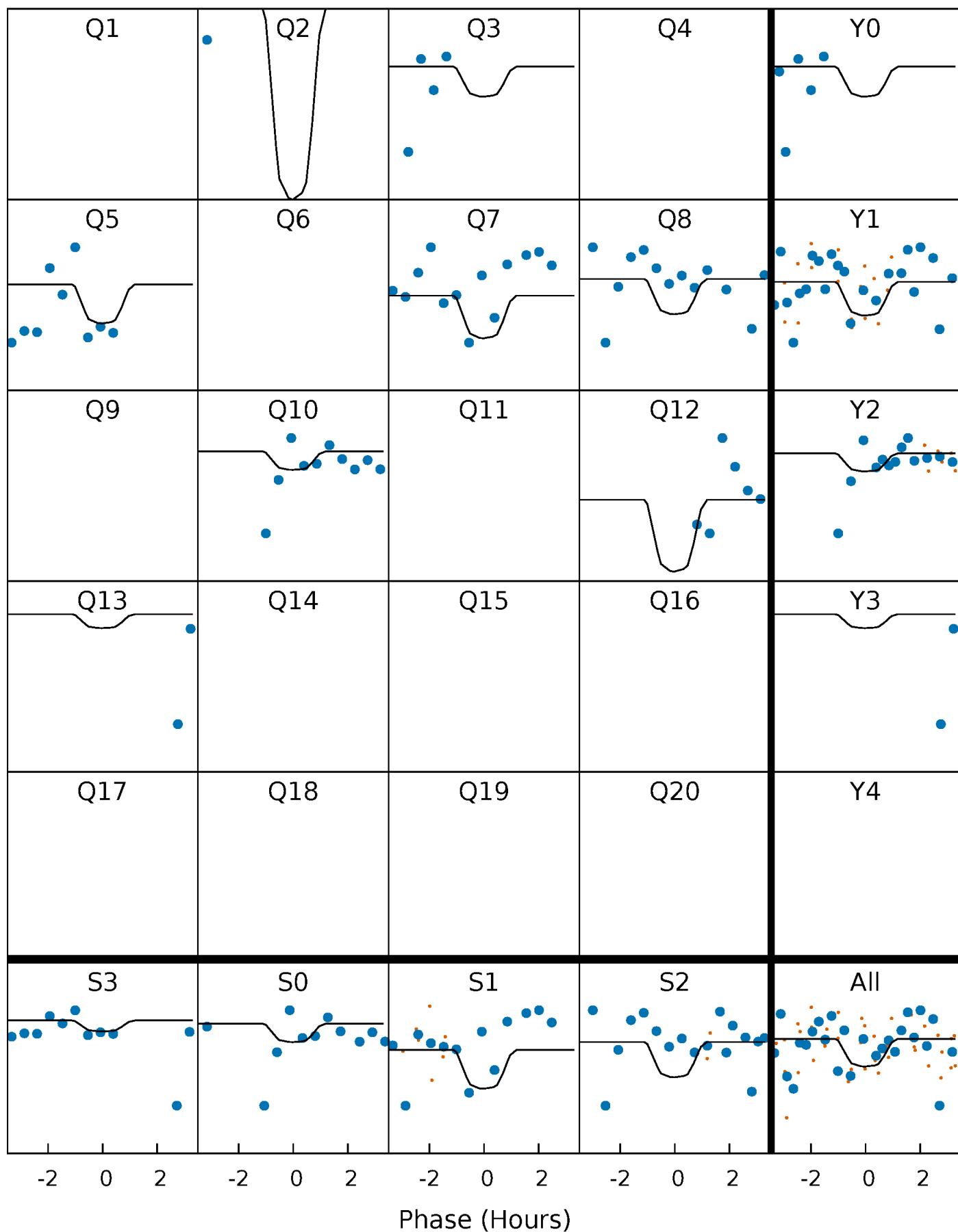
PDC Quarter-Phased Transit Curves

TCE 011620956-05 $P=155.461422$ Days $T_0=175.622791$ (BKJD)



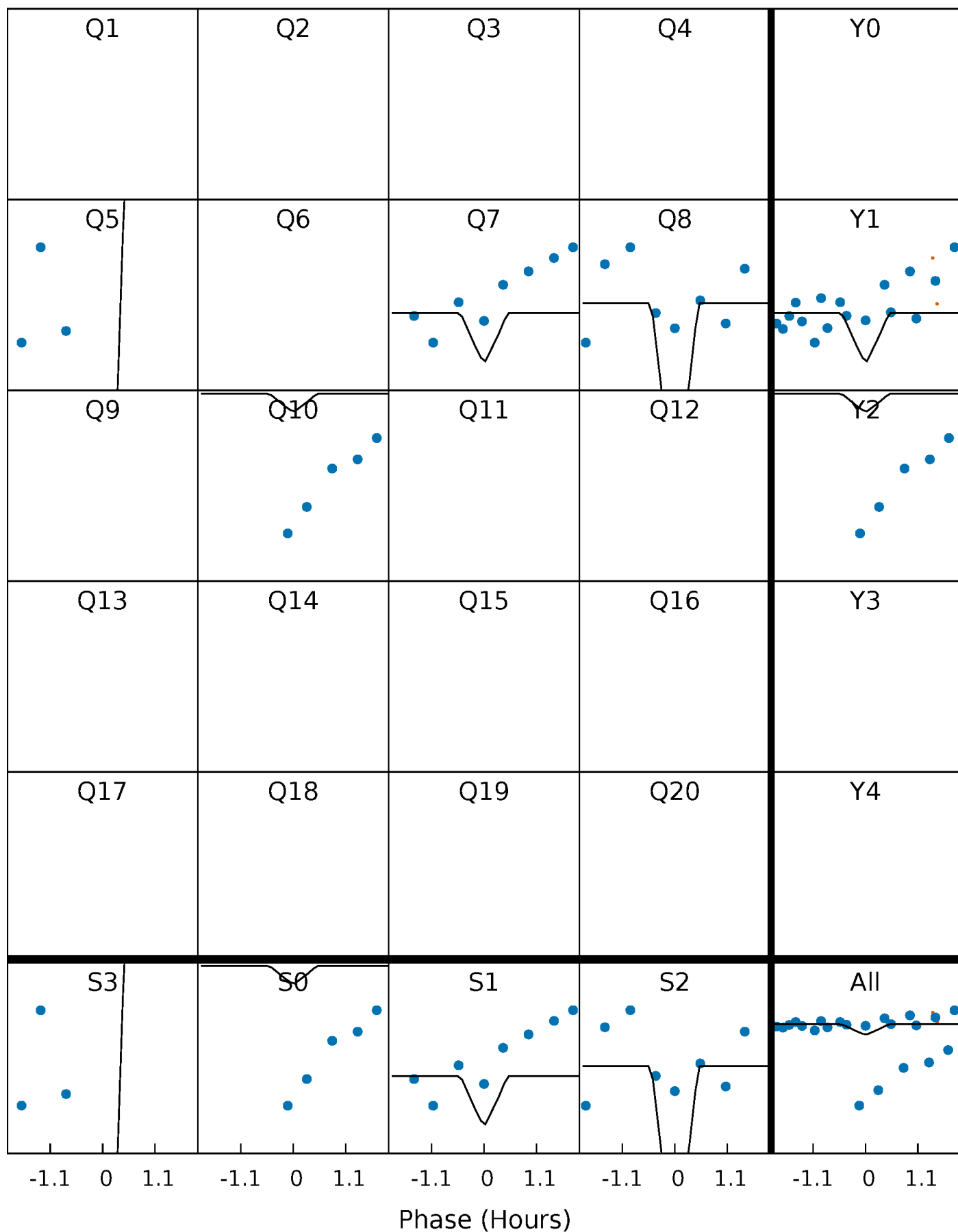
DV Quarter-Phased Transit Curves

TCE 011620956-05 $P=155.461422$ Days $T_0=175.622791$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

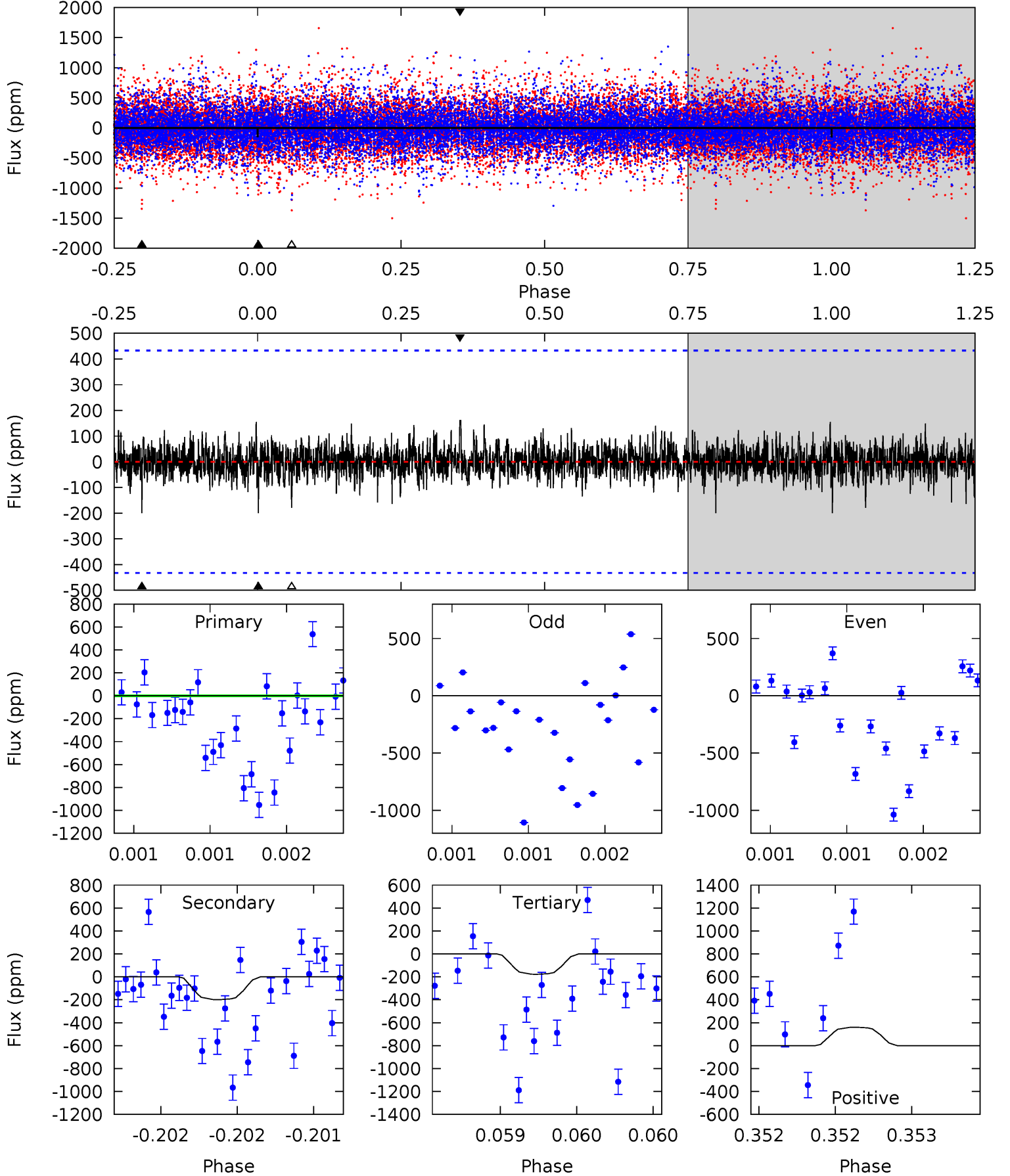
TCE 011620956-05 P=155.430904 Days $T_0=175.736292$ (BKJD)



DV Model-Shift Uniqueness Test

011620956-05, $P = 155.461422$ Days, $E = 20.161369$ Days

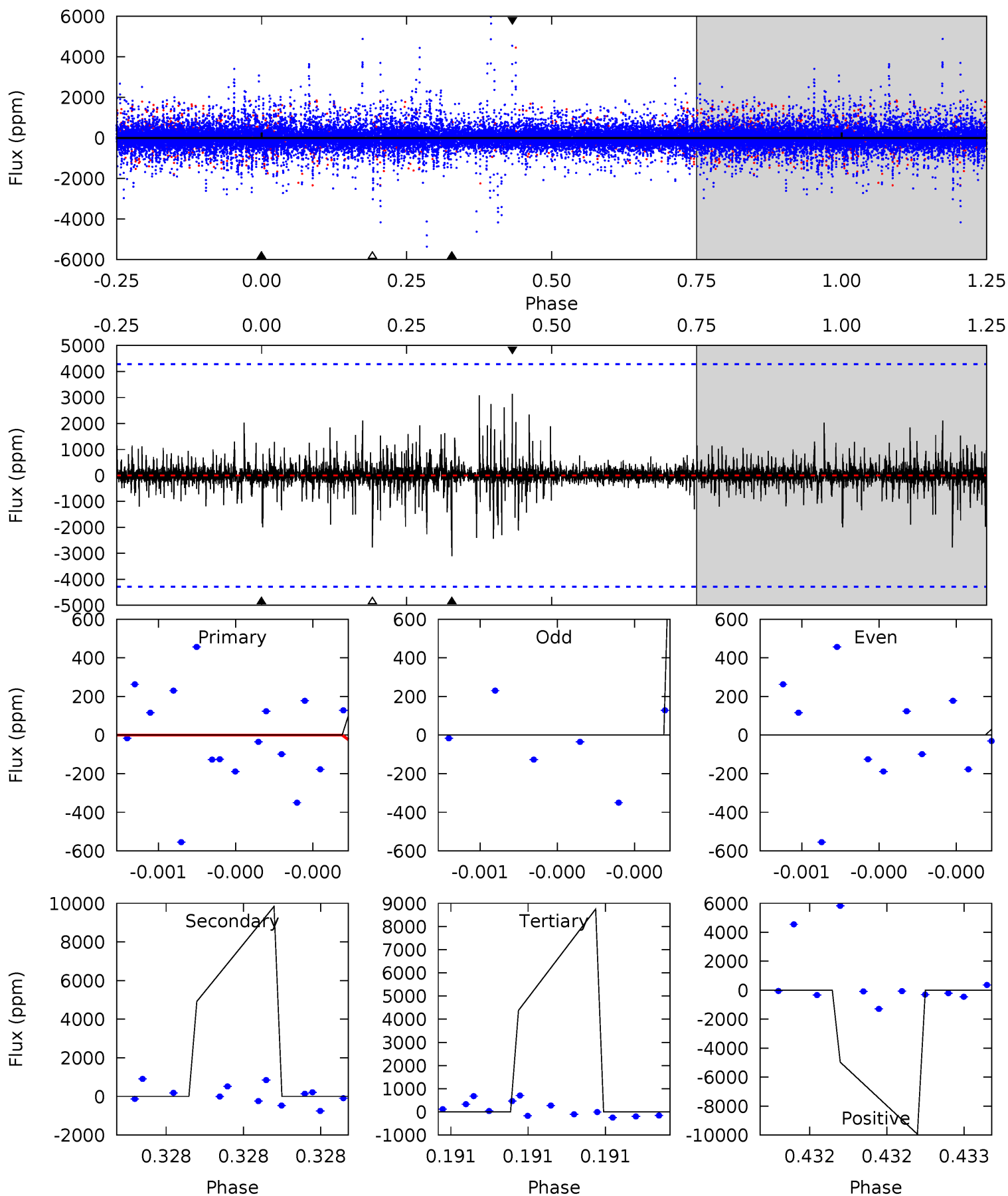
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.99	2.57	2.29	2.06	5.55	3.44	0.53	-0.30	-0.07	0.28	0.51	0.39	1.22	0.45	0.28



Alt Model-Shift Uniqueness Test

011620956-05, P = 155.430904 Days, E = 20.305388 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.11	4.14	3.68	4.18	5.70	3.67	0.44	-3.57	-4.07	0.46	-0.04	3.30	29.9	0.50	0



Stellar Parameters For KIC 011620956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5656^{+152}_{-152}	$4.605^{+0.036}_{-0.144}$	$-0.500^{+0.300}_{-0.300}$	$0.746^{+0.163}_{-0.054}$	$0.834^{+0.079}_{-0.088}$	$2.827^{+0.527}_{-1.131}$
	+3%/-3%	+1%/-3%	+60%/-60%	+22%/-7%	+9%/-11%	+19%/-40%
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 011620956-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-200 ± 78	$6.05^{+5.63}_{-4.19}$	422^{+21}_{-17}	3098^{+1429}_{-535}	788^{+7123}_{-603}
Alt.	-9838 ± 752	$5.89^{+6.20}_{-4.25}$	421^{+22}_{-16}	6883^{+11090}_{-2057}	$44798^{+502212}_{-34402}$

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

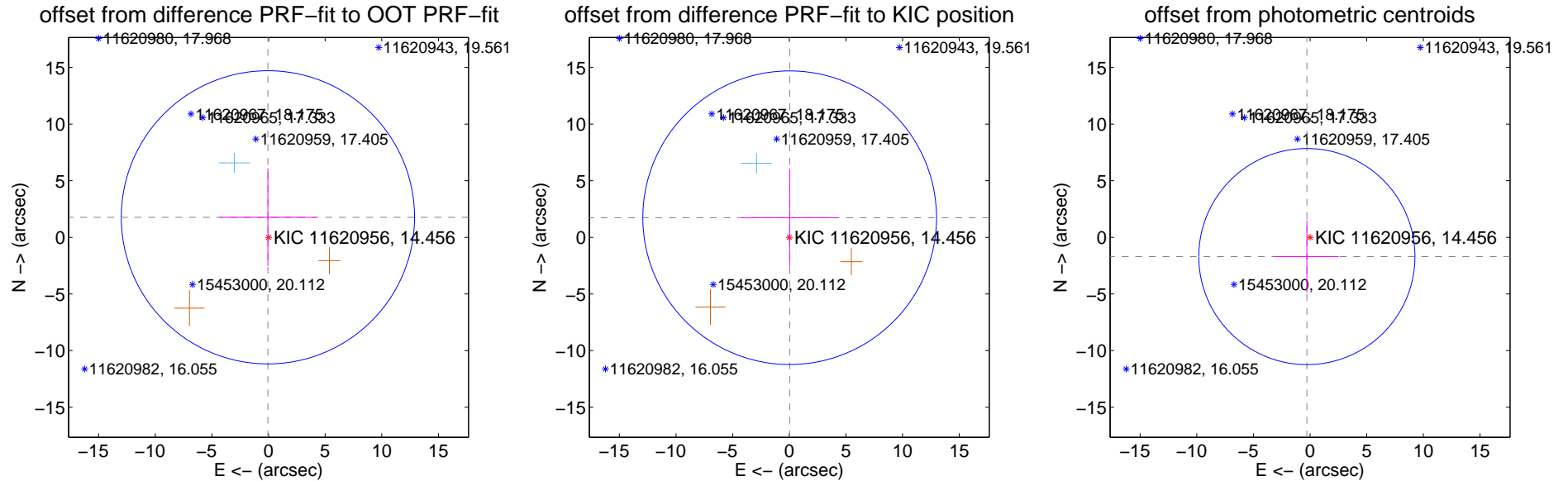
DV Centroid Data

Supplemental centroid analysis for 011620956-05. Kepler magnitude: 14.46. Transit SNR 2.14

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

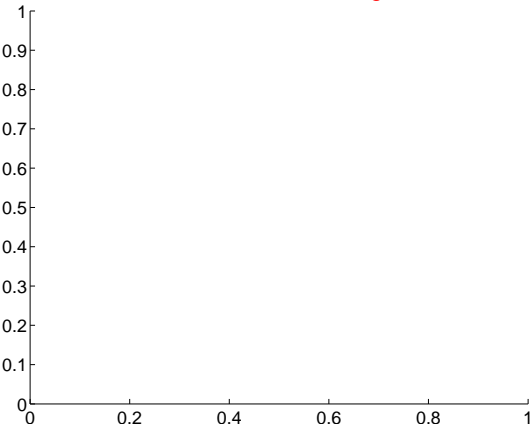
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.769 ± 4.315	0.41	0.054 ± 4.274	1.768 ± 4.315
PRF-fit source offset from KIC position	1.733 ± 4.321	0.40	-0.035 ± 4.284	1.733 ± 4.321
photometric centroid source offset	1.72 ± 3.18	0.54	0.28 ± 2.81	-1.70 ± 3.19



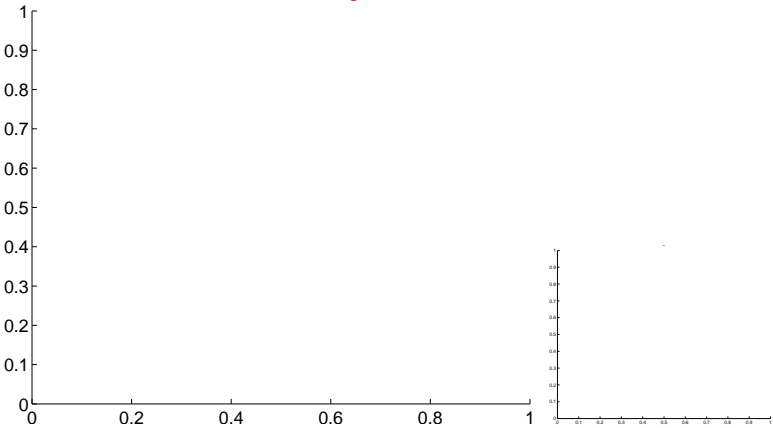
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

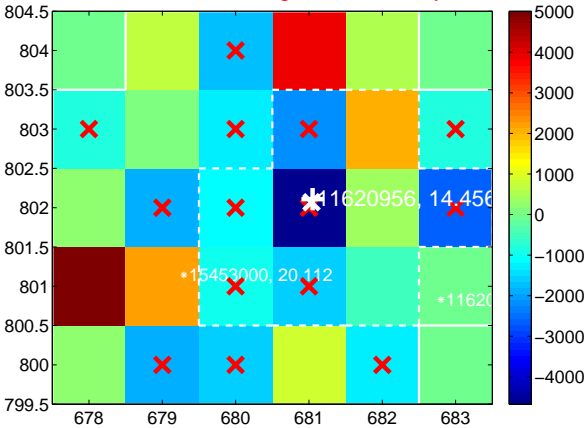
Q1 no difference image



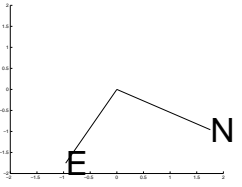
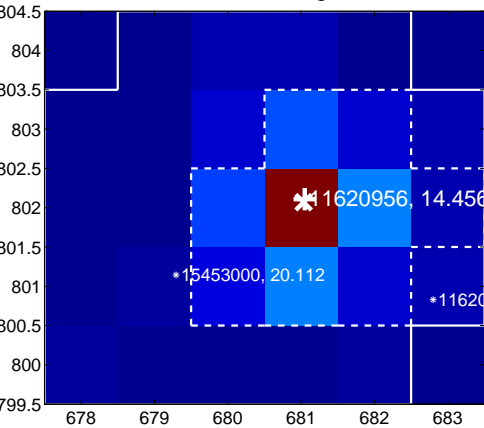
Q1 no OOT image



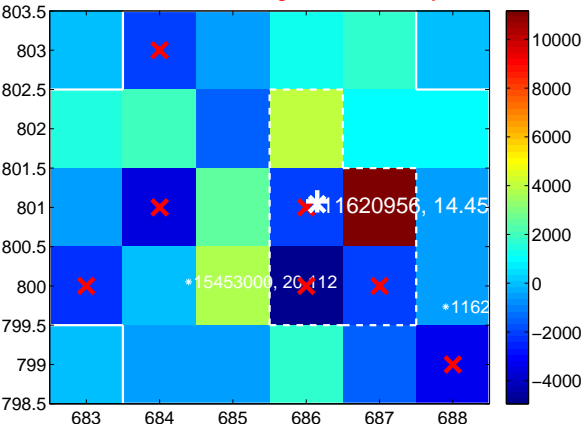
Q2 difference image. Poor Quality



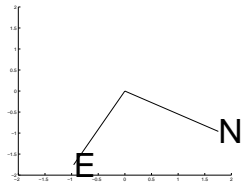
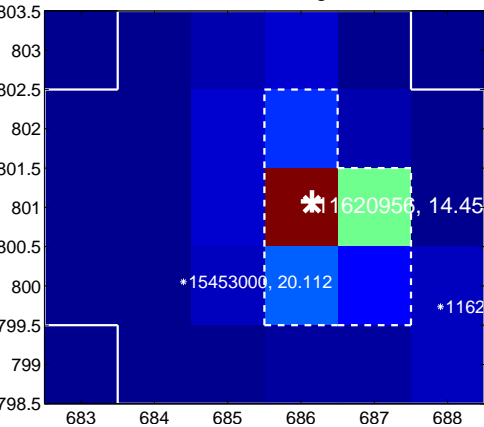
Q2 OOT image



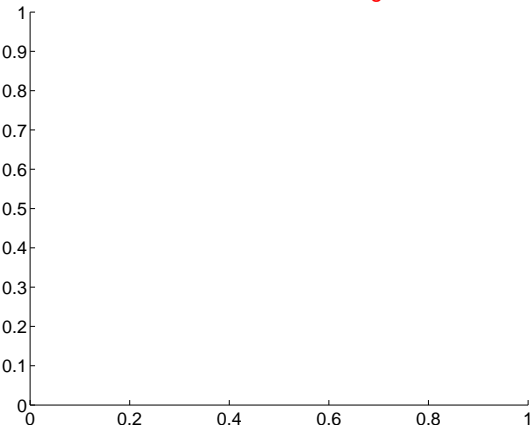
Q3 difference image. Poor Quality



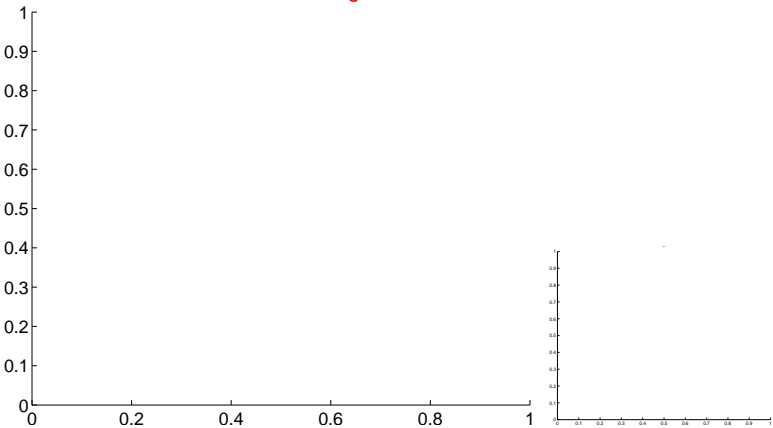
Q3 OOT image



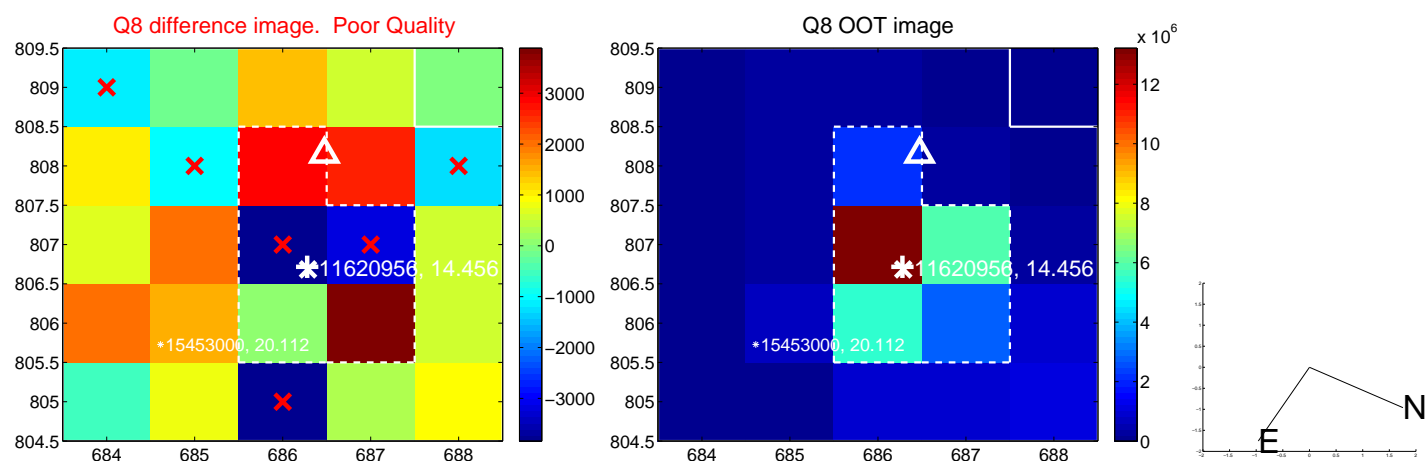
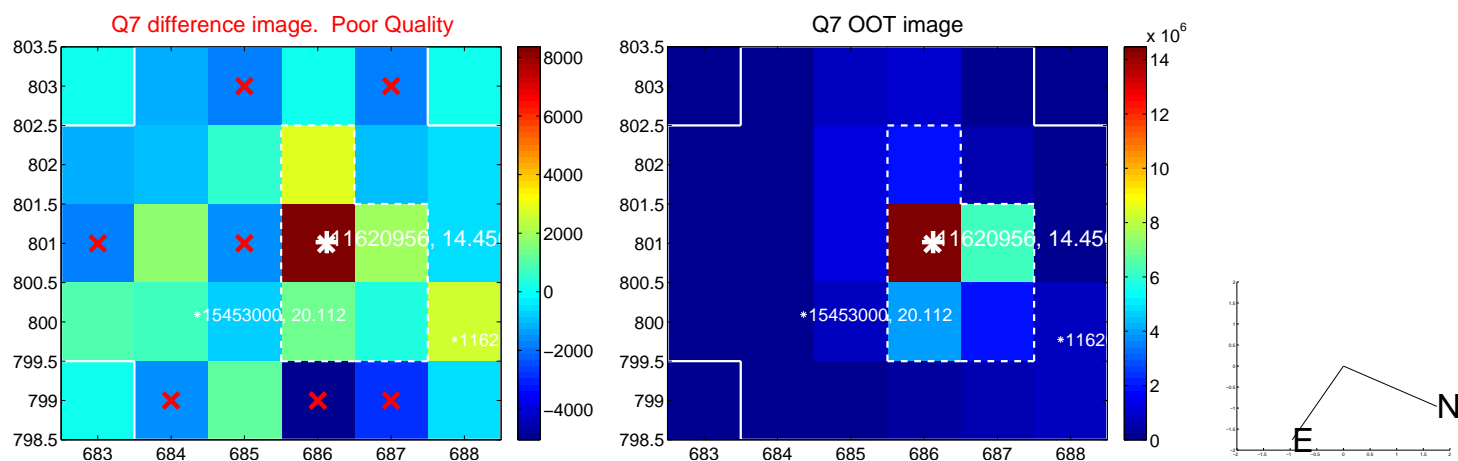
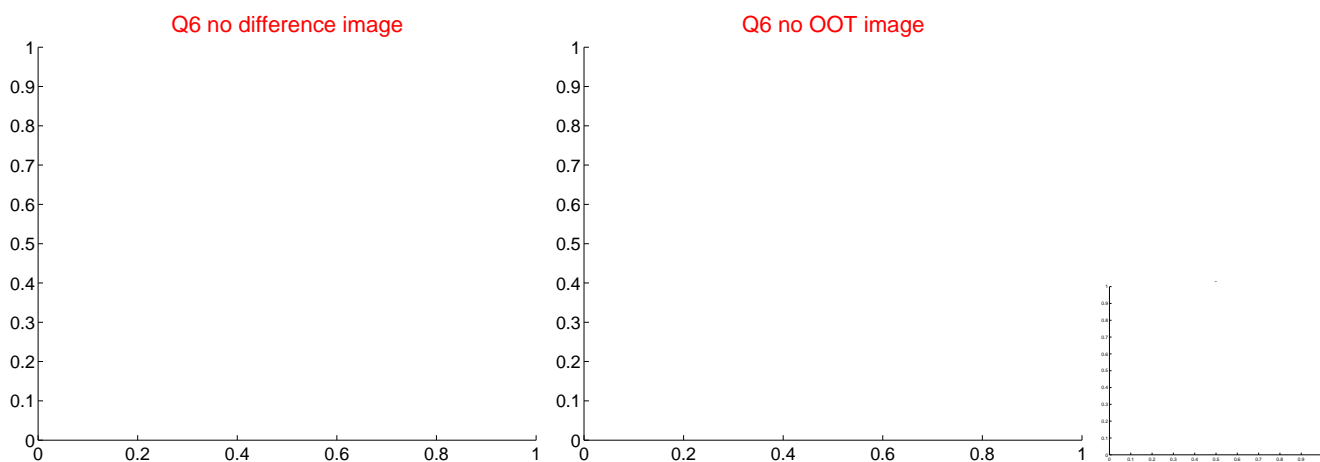
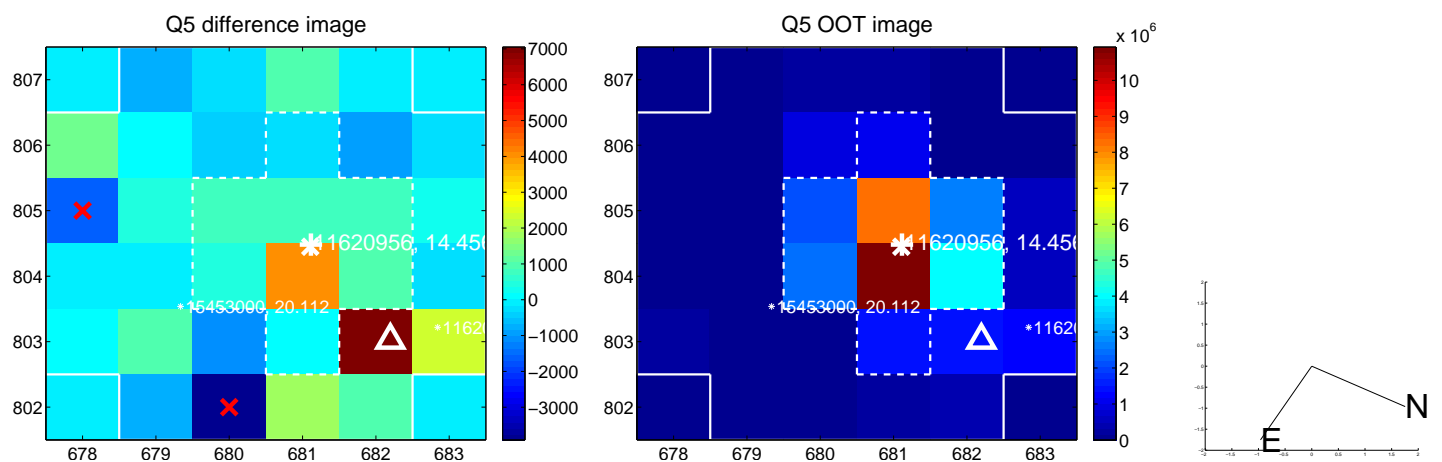
Q4 no difference image



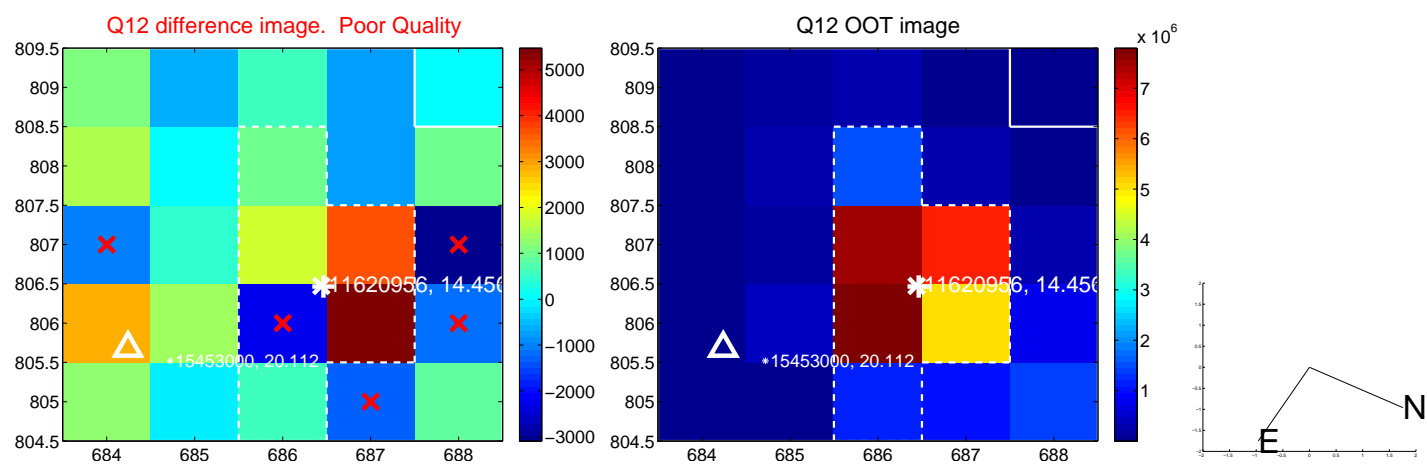
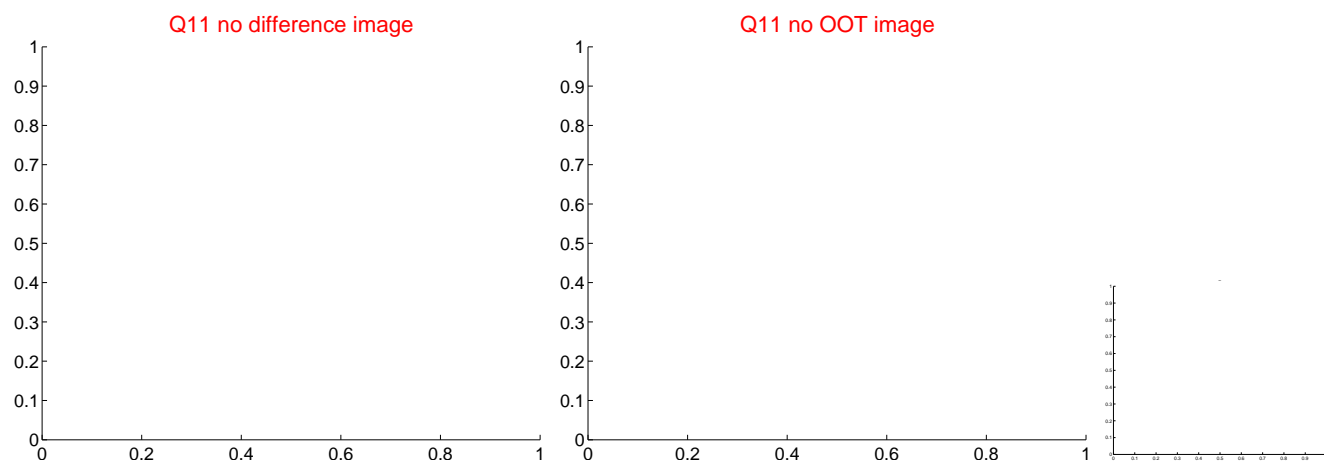
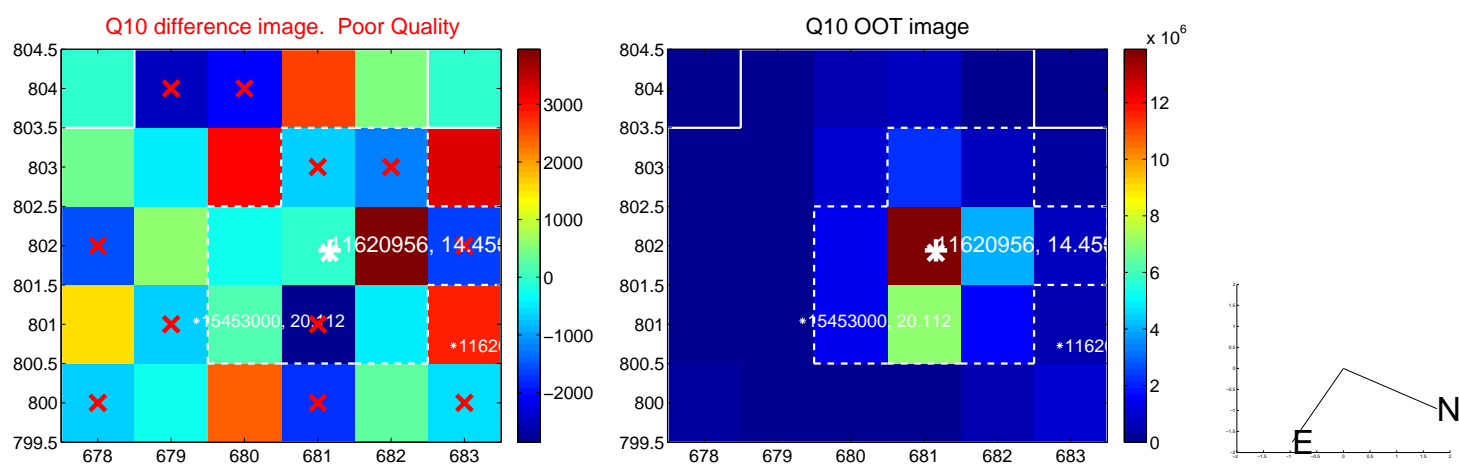
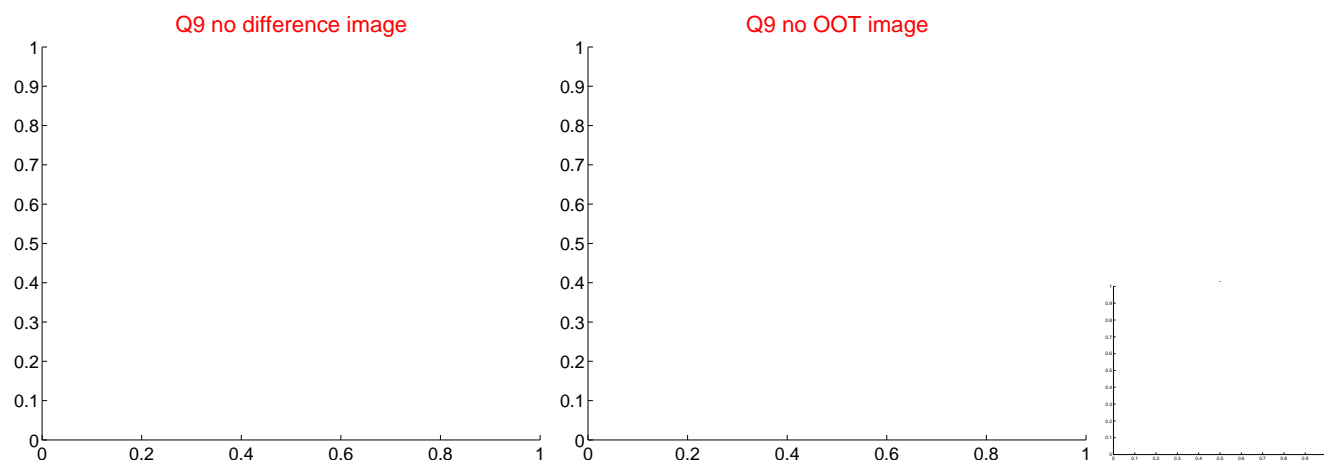
Q4 no OOT image



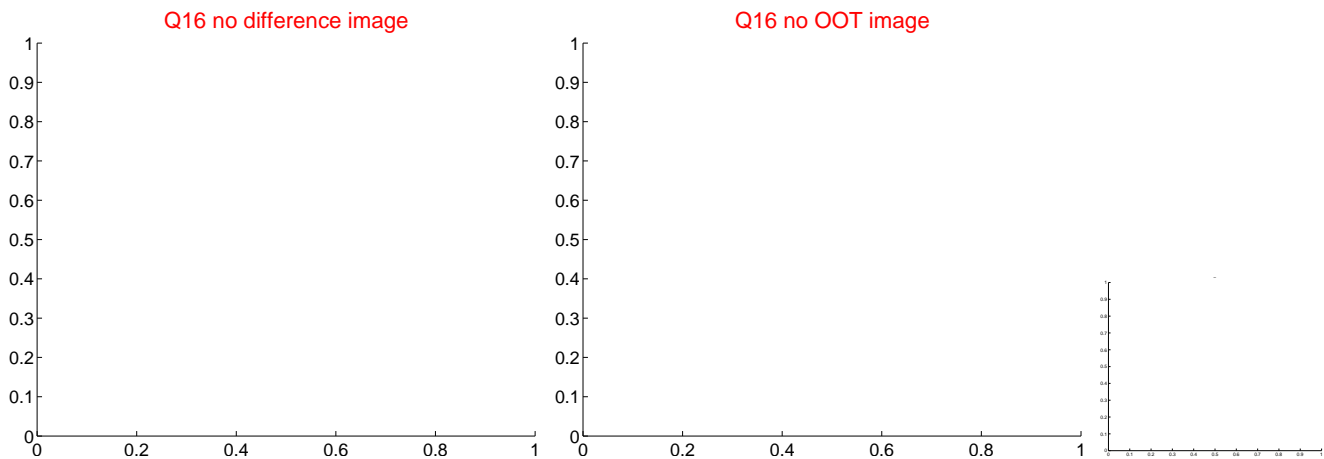
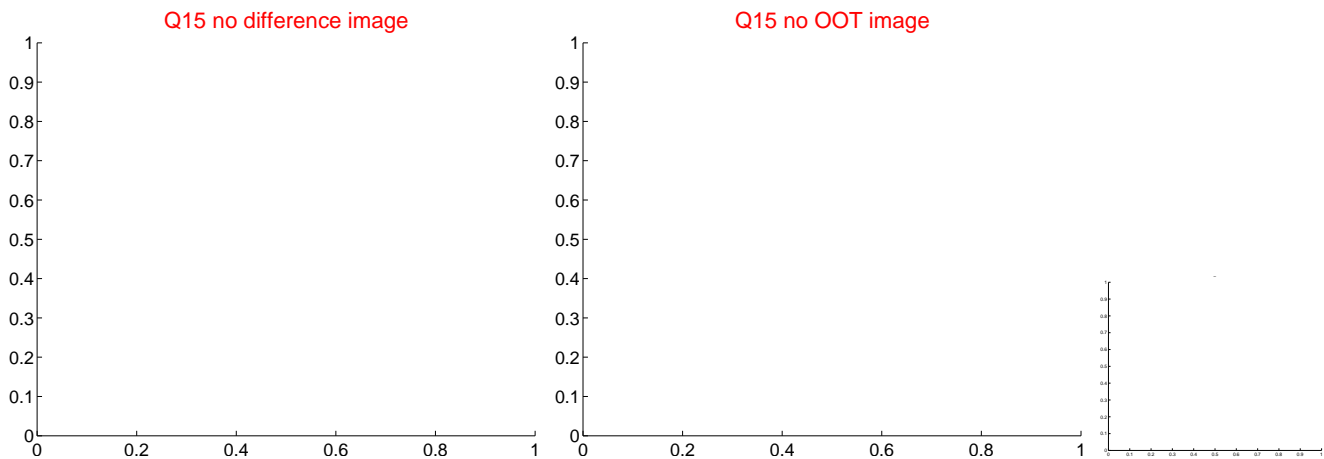
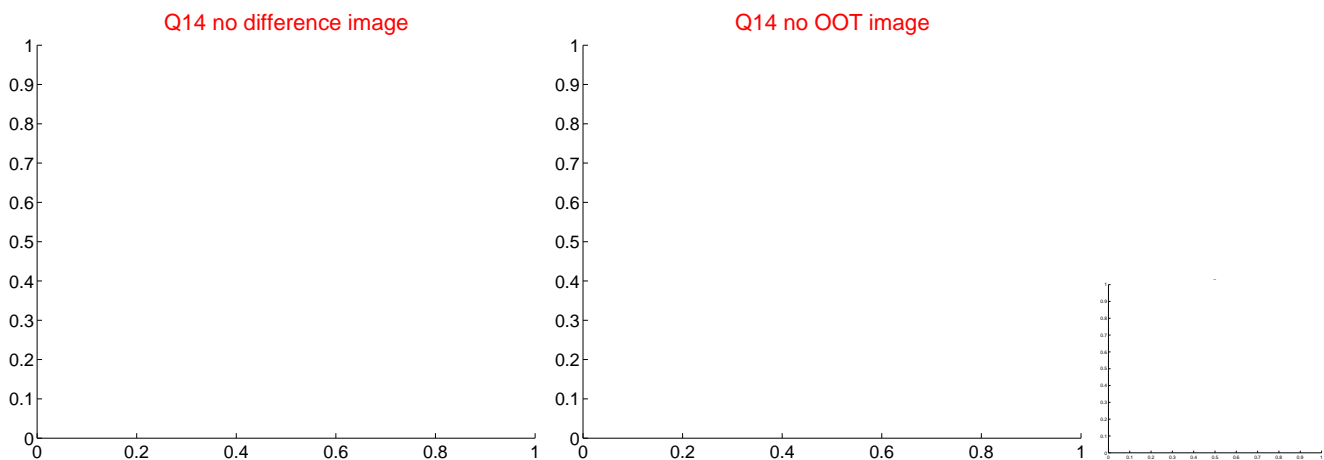
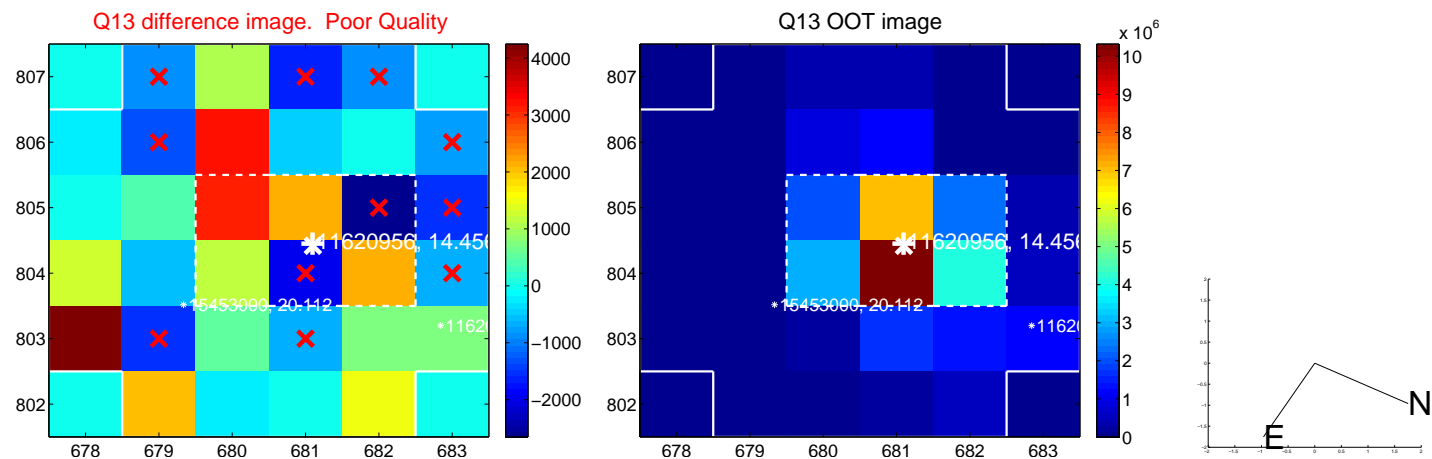
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



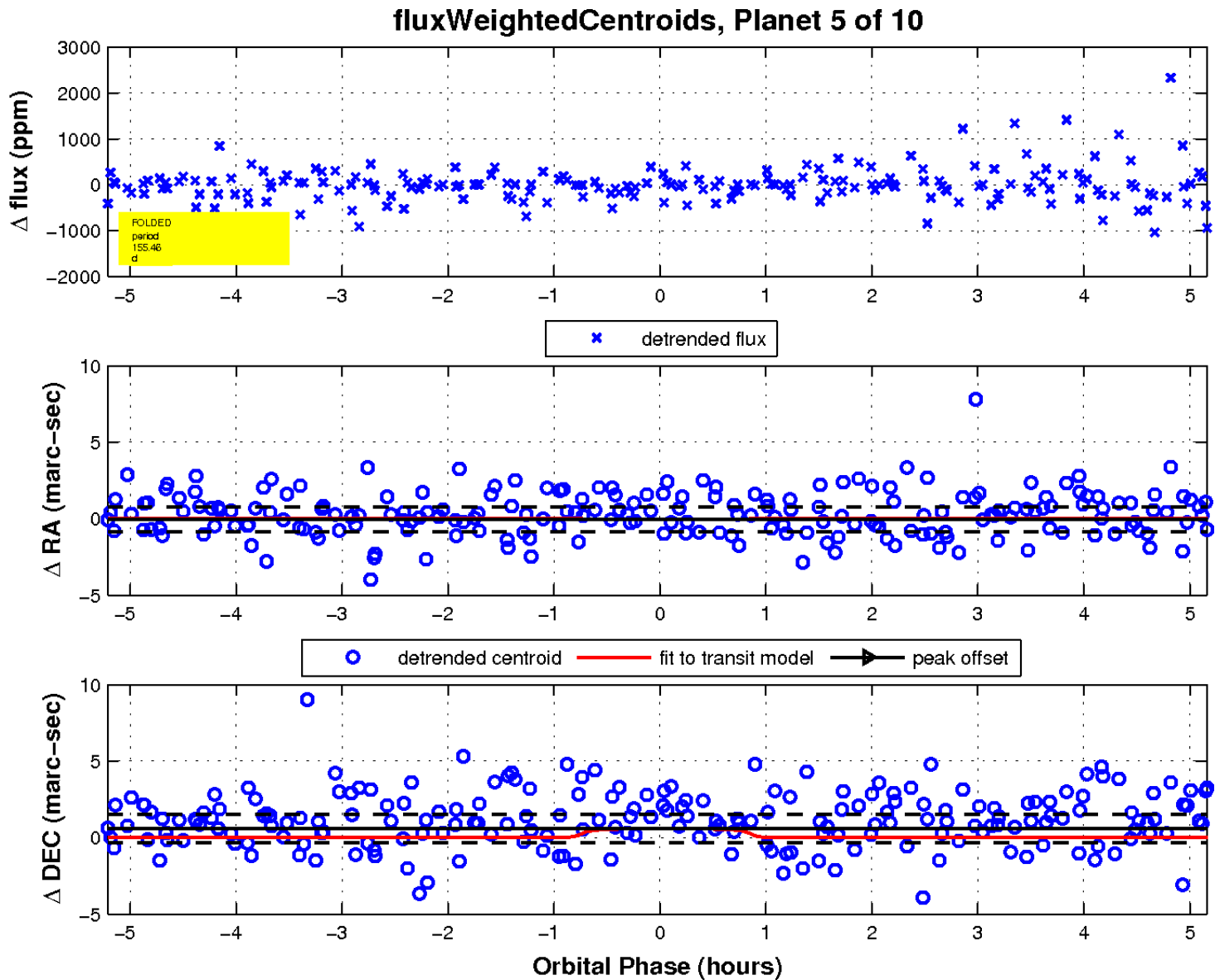
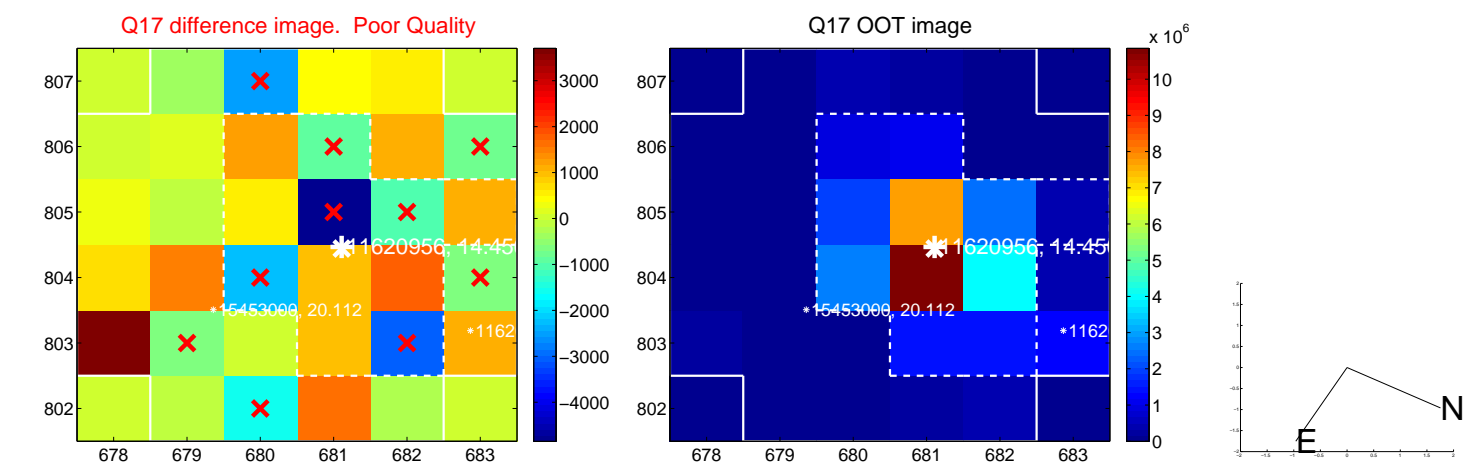
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

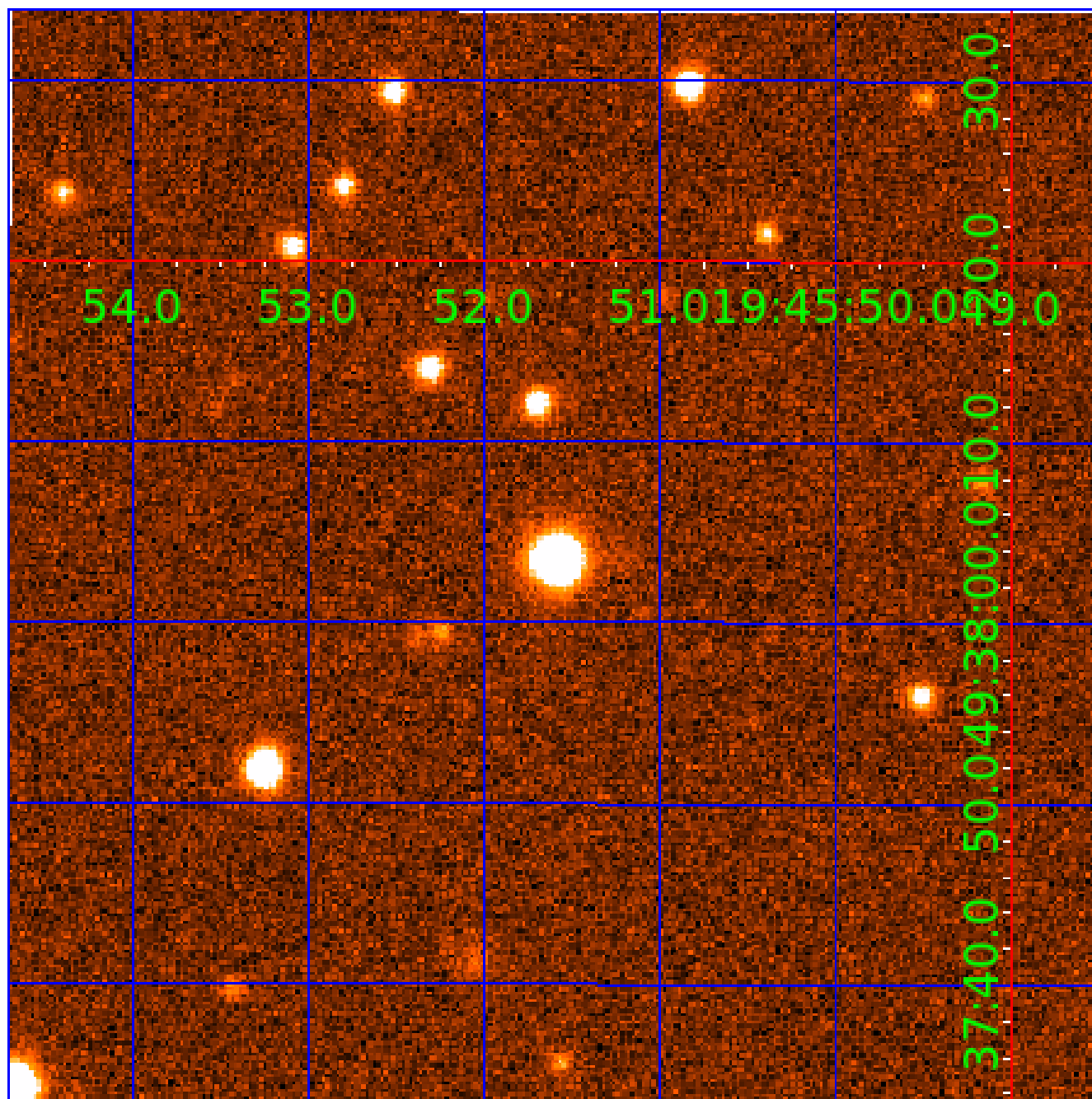


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011620956

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})
011620956-01	OBS	No	0.954225	131.920886	47.3	4.840	8.1	9.6	0.75	5656	0.61	1621.40
011620956-02	OBS	No	488.493304	207.854435	2379.7	7.562	20.9	10.3	0.75	5656	3.72	0.40
011620956-05	OBS	No	155.461423	175.622791	288.0	1.746	11.6	2.1	0.75	5656	1.48	1.82
011620956-06	OBS	No	459.003247	165.754235	723.4	9.000	11.9	-1.0	0.75	5656	1.99	0.43
011620956-07	OBS	No	466.607749	172.580412	4166.4	17.220	11.4	8.6	0.75	5656	5.27	0.42
011620956-08	OBS	No	170.727948	270.243744	1899.4	9.418	10.9	8.0	0.75	5656	6.17	1.61
011620956-09	OBS	No	120.662292	229.959456	645.1	11.187	12.9	4.3	0.75	5656	1.97	2.56
011620956-10	OBS	No	358.792880	323.205031	516.2	10.500	10.9	-1.0	0.75	5656	1.68	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011620956-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011620956-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
011620956-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
011620956-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011620956-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

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

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

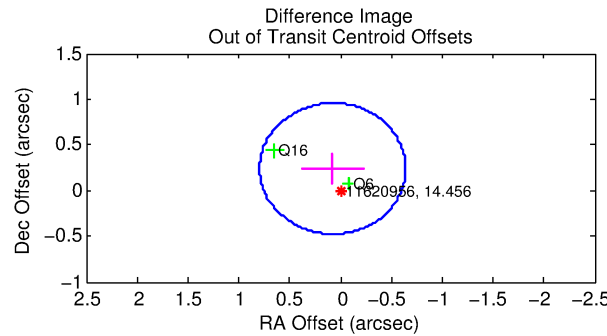
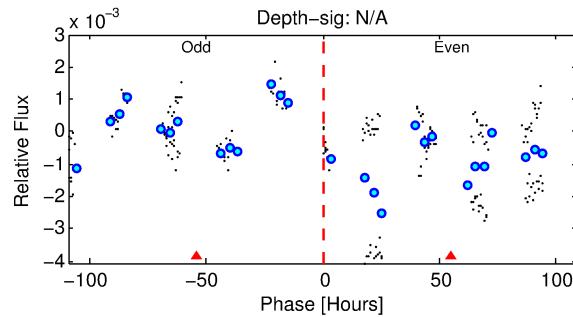
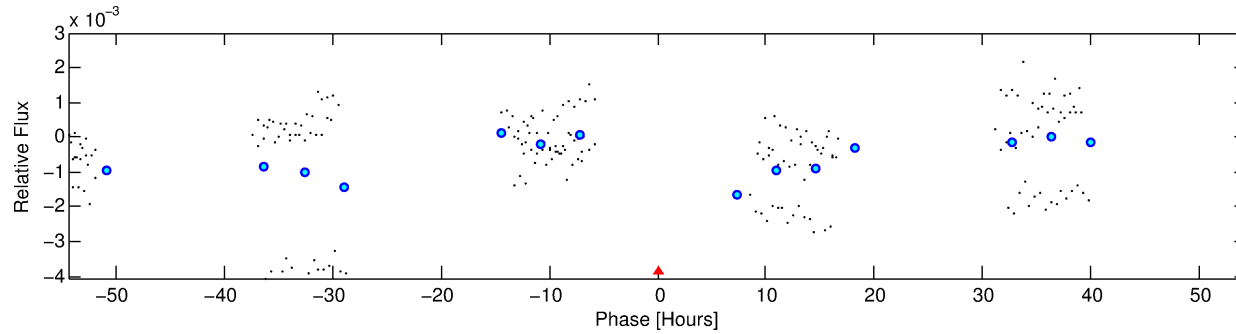
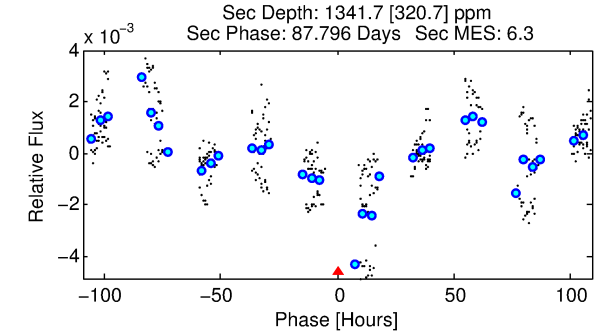
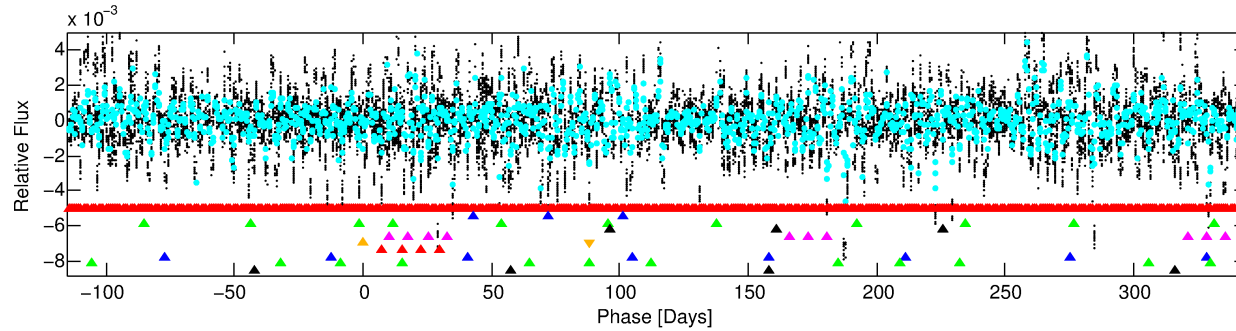
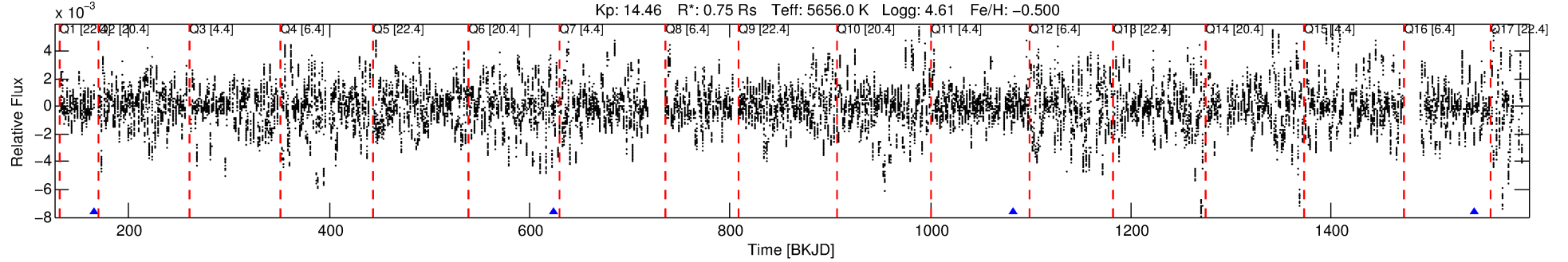
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011620956-06

No Significant Match Found

DV One-Page Summary

KIC: 11620956 Candidate: 6 of 10 Period: 459.003 d



TPS TCE Results:

Period = 459.00325 d
Epoch = 165.7542 BKJD

DV fit results are unavailable

DV Diagnostic Results:

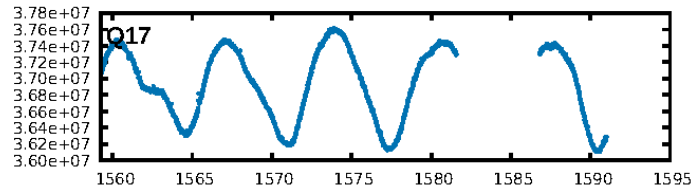
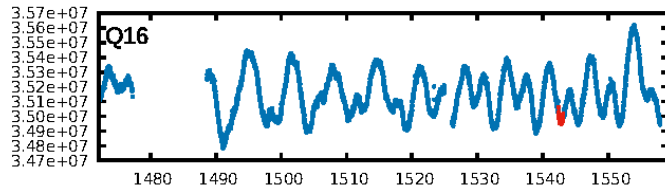
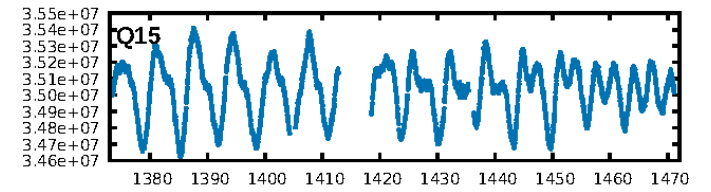
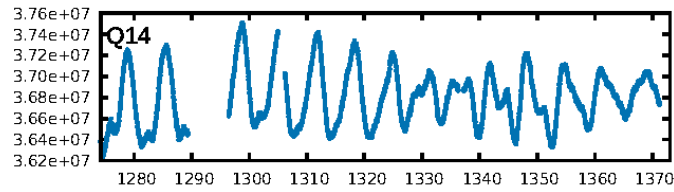
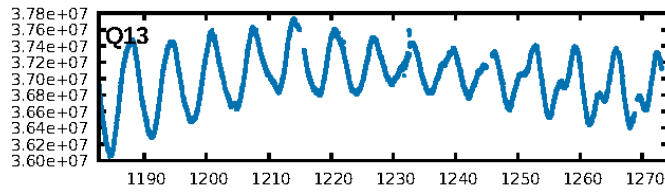
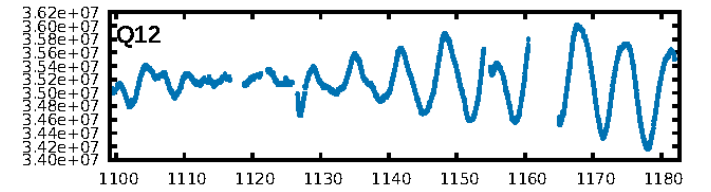
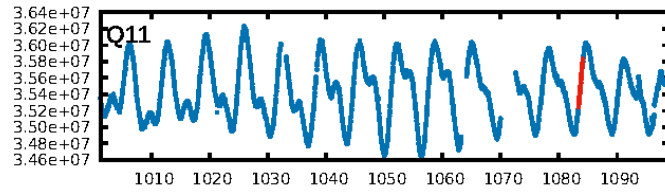
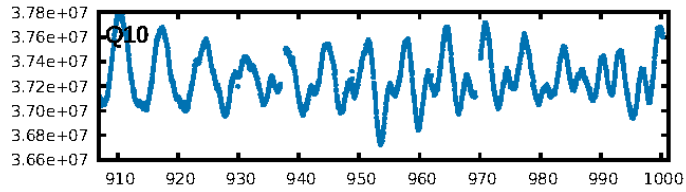
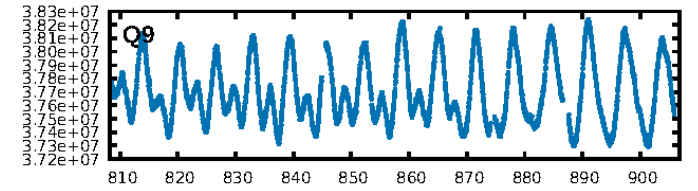
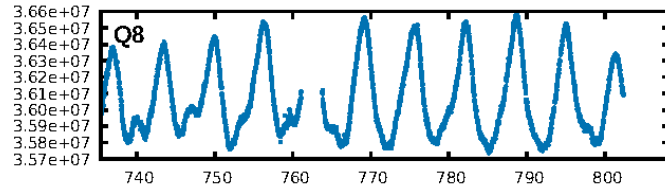
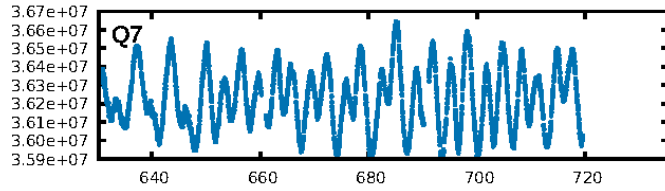
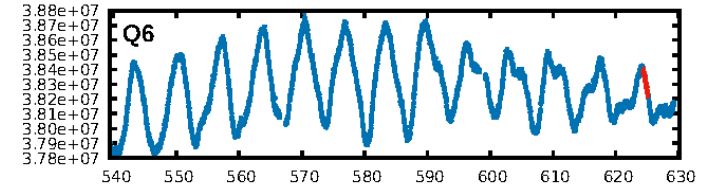
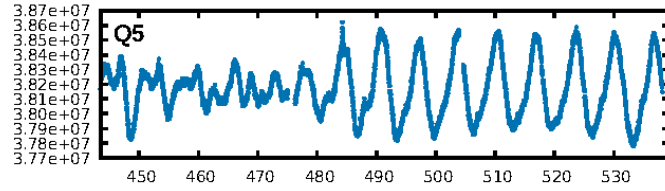
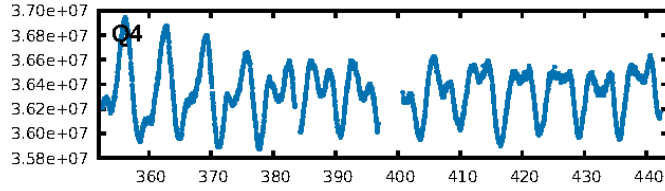
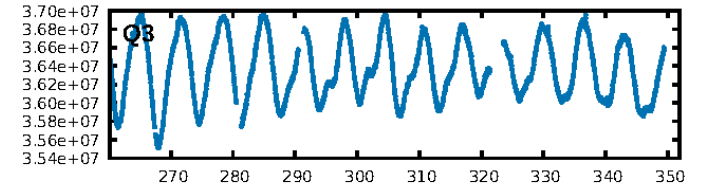
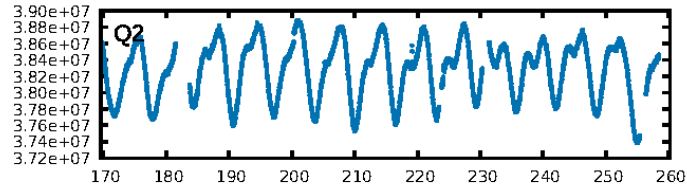
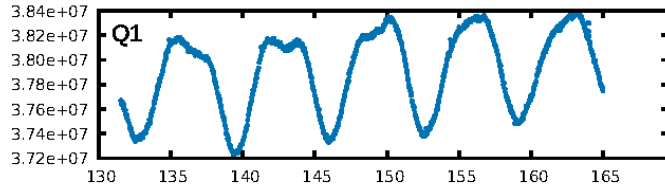
ShortPeriod-sig: 100.0% [173.91 σ]
LongPeriod-sig: 100.0% [9.39 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.2487

Centroid-sig: 93.1%
Centroid-so: 0.206 arcsec [0.08 σ]
OotOffset-rm: 0.253 arcsec [1.06 σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-rm: 0.183 arcsec [1.18 σ]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

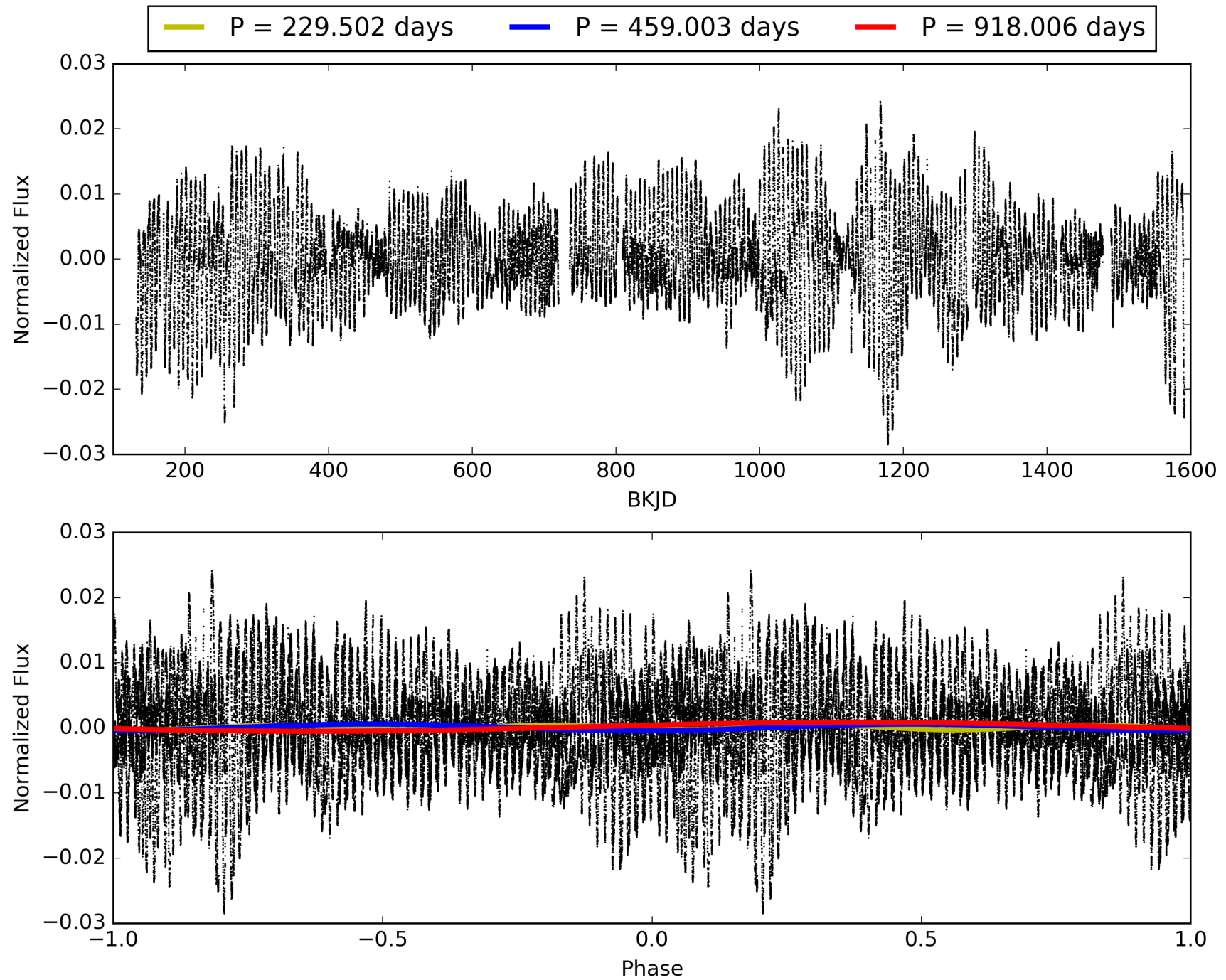
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:47:59 Z

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

TCE 011620956-06, PDC Light Curves

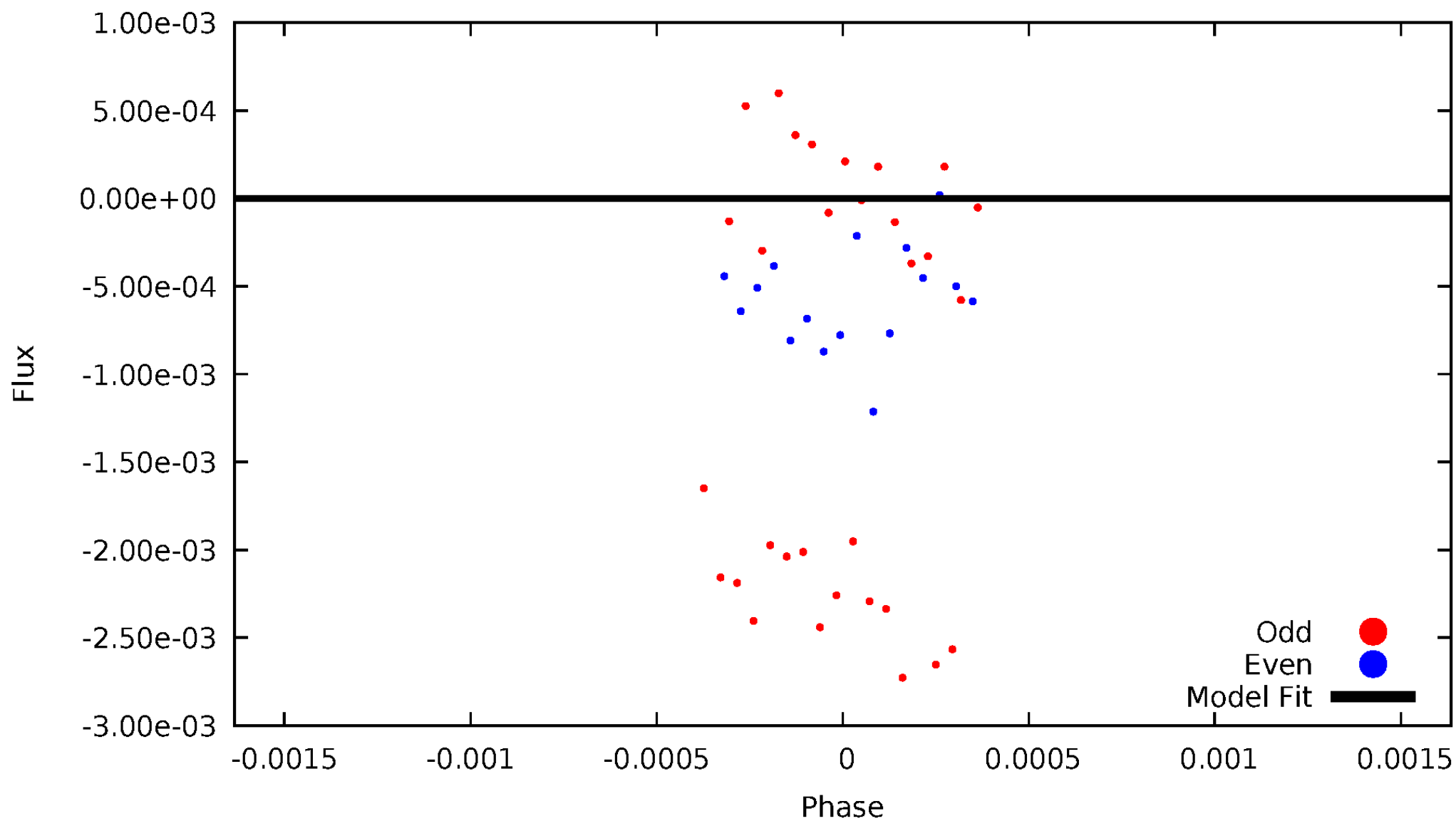


TCE 011620956-06



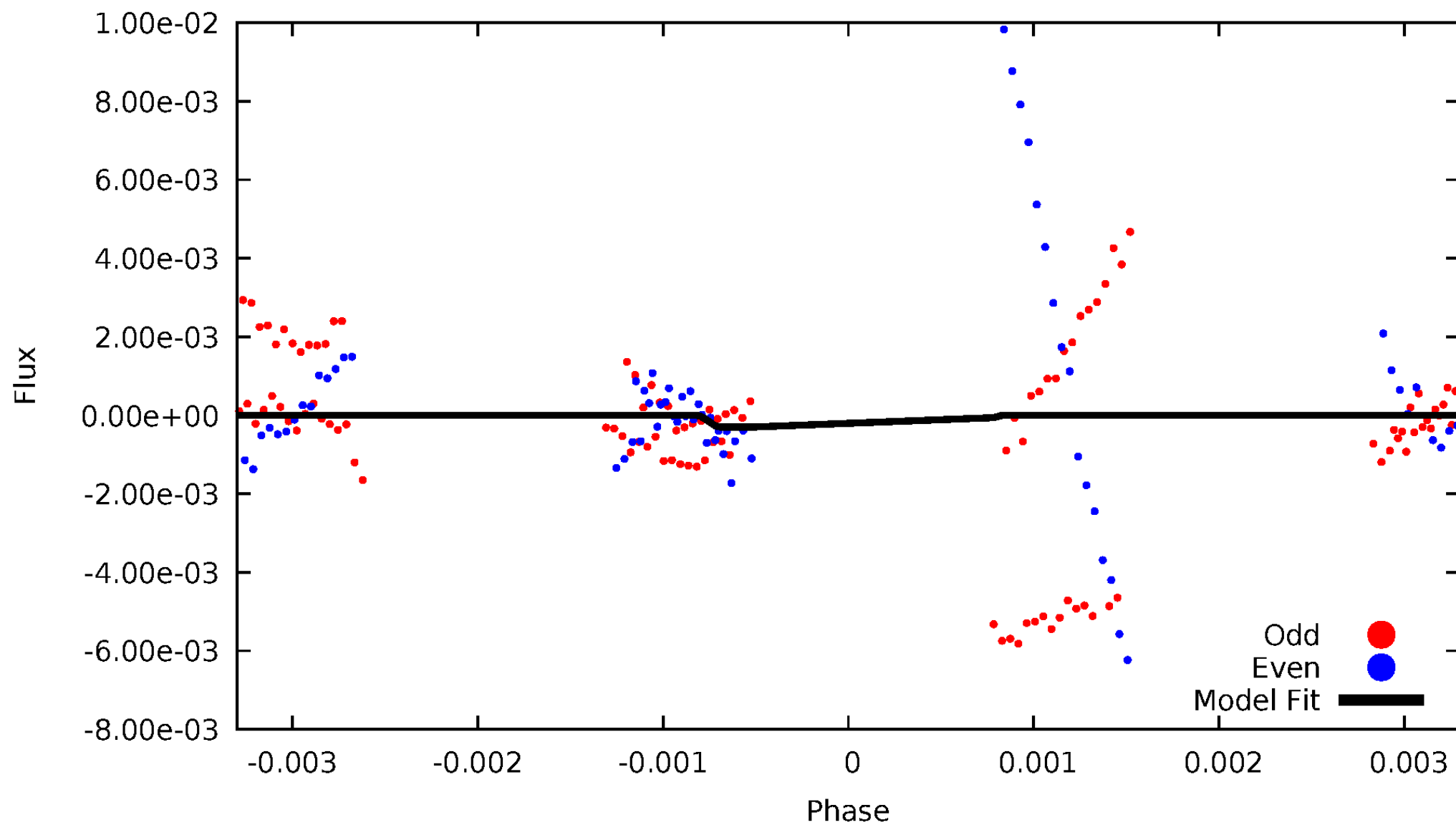
DV Odd/Even

TCE 011620956-06



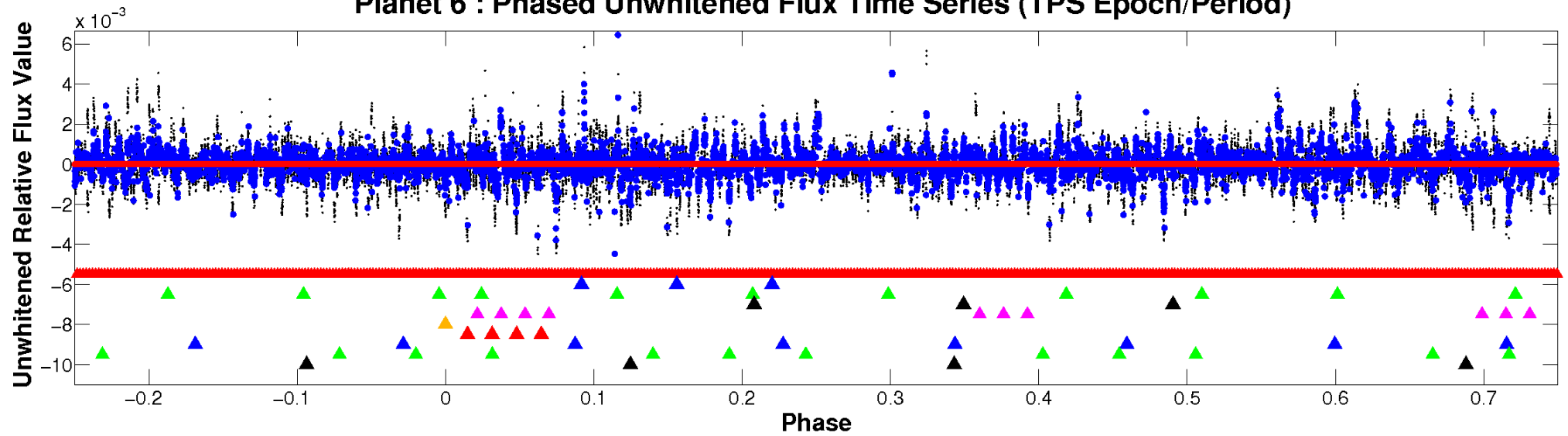
ALT Odd/Even

TCE 011620956-06

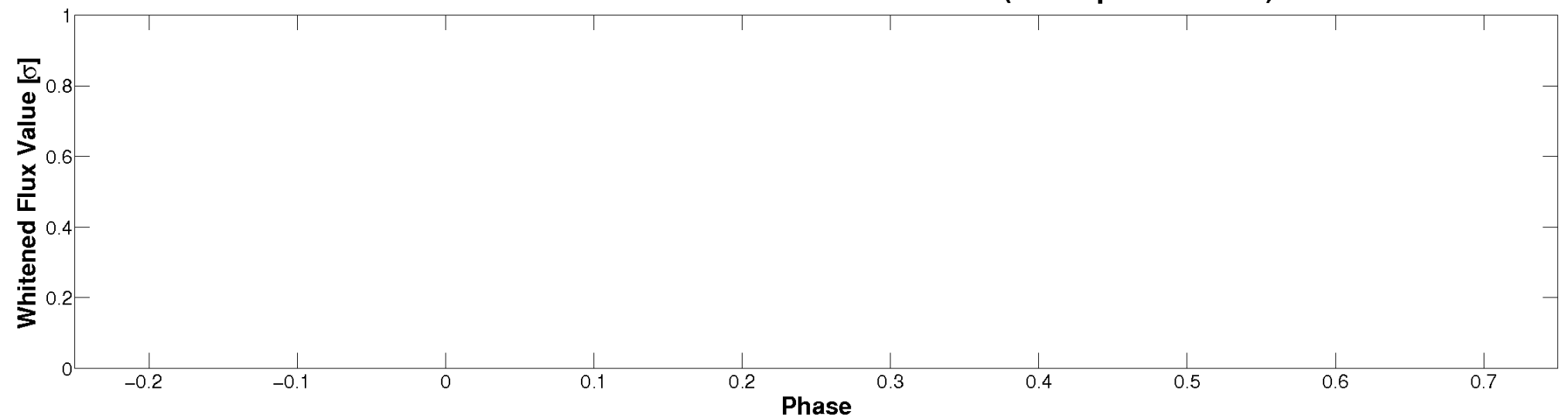


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

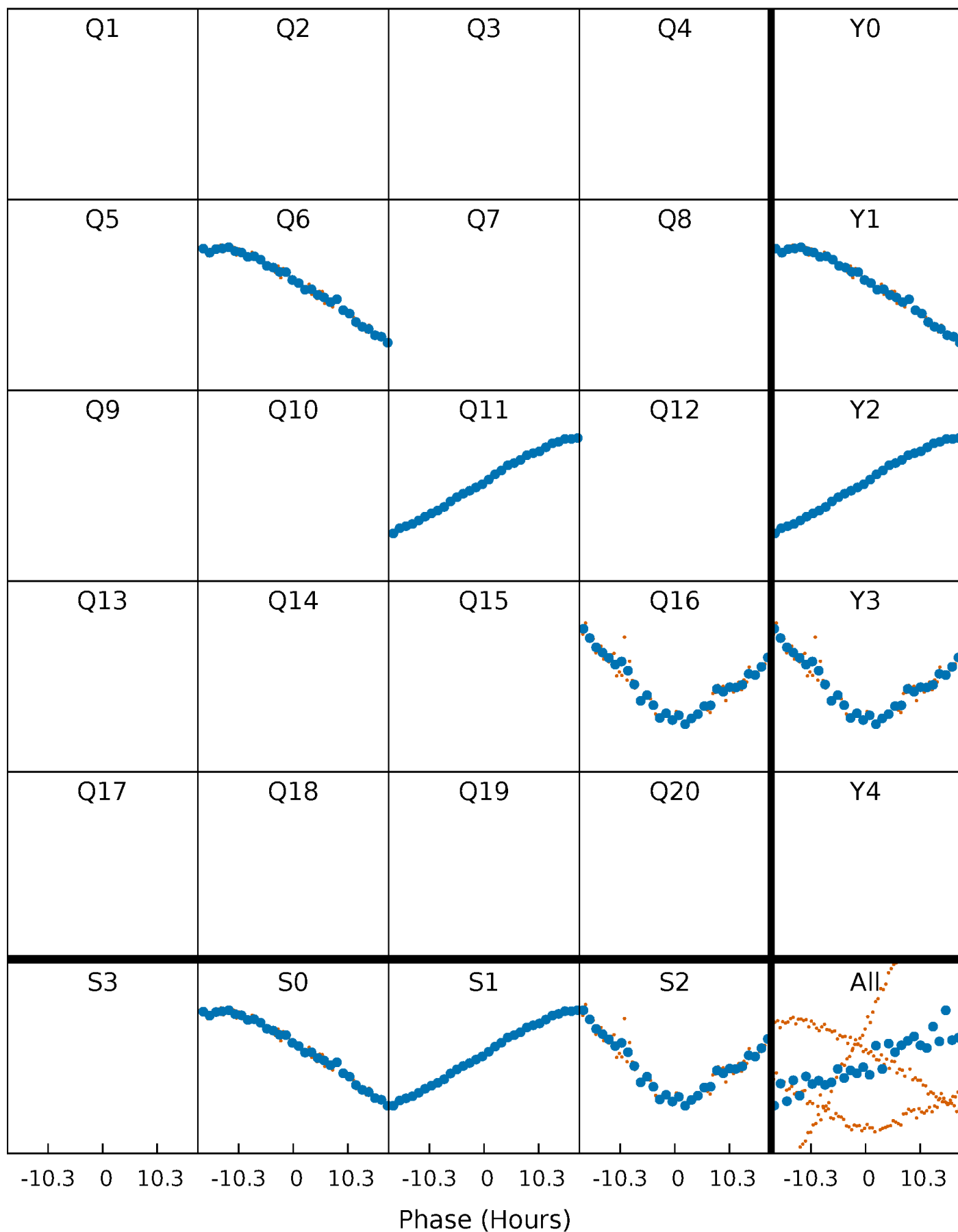


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



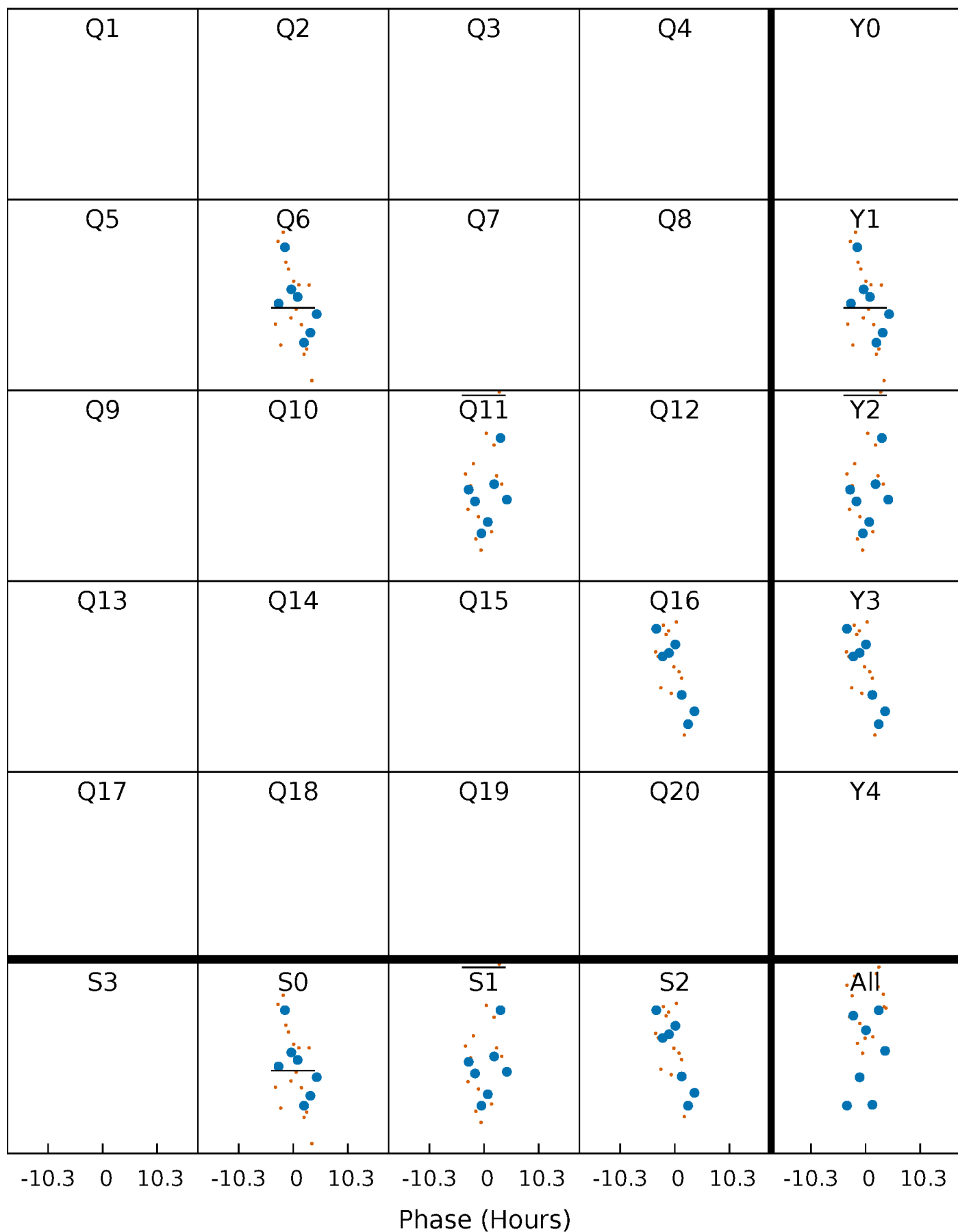
PDC Quarter-Phased Transit Curves

TCE 011620956-06 P=459.003247 Days $T_0=165.754235$ (BKJD)



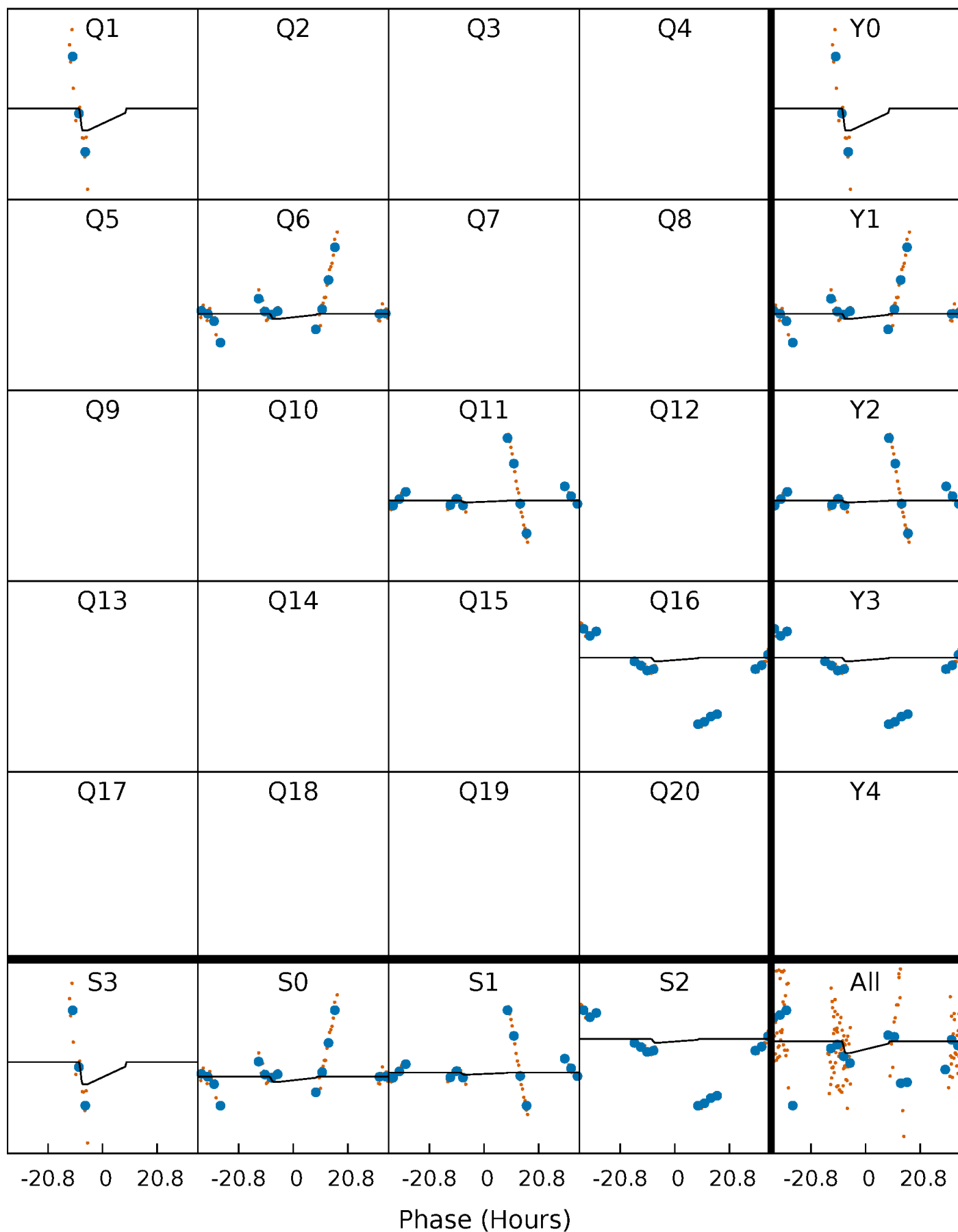
DV Quarter-Phased Transit Curves

TCE 011620956-06 P=459.003247 Days $T_0=165.754235$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

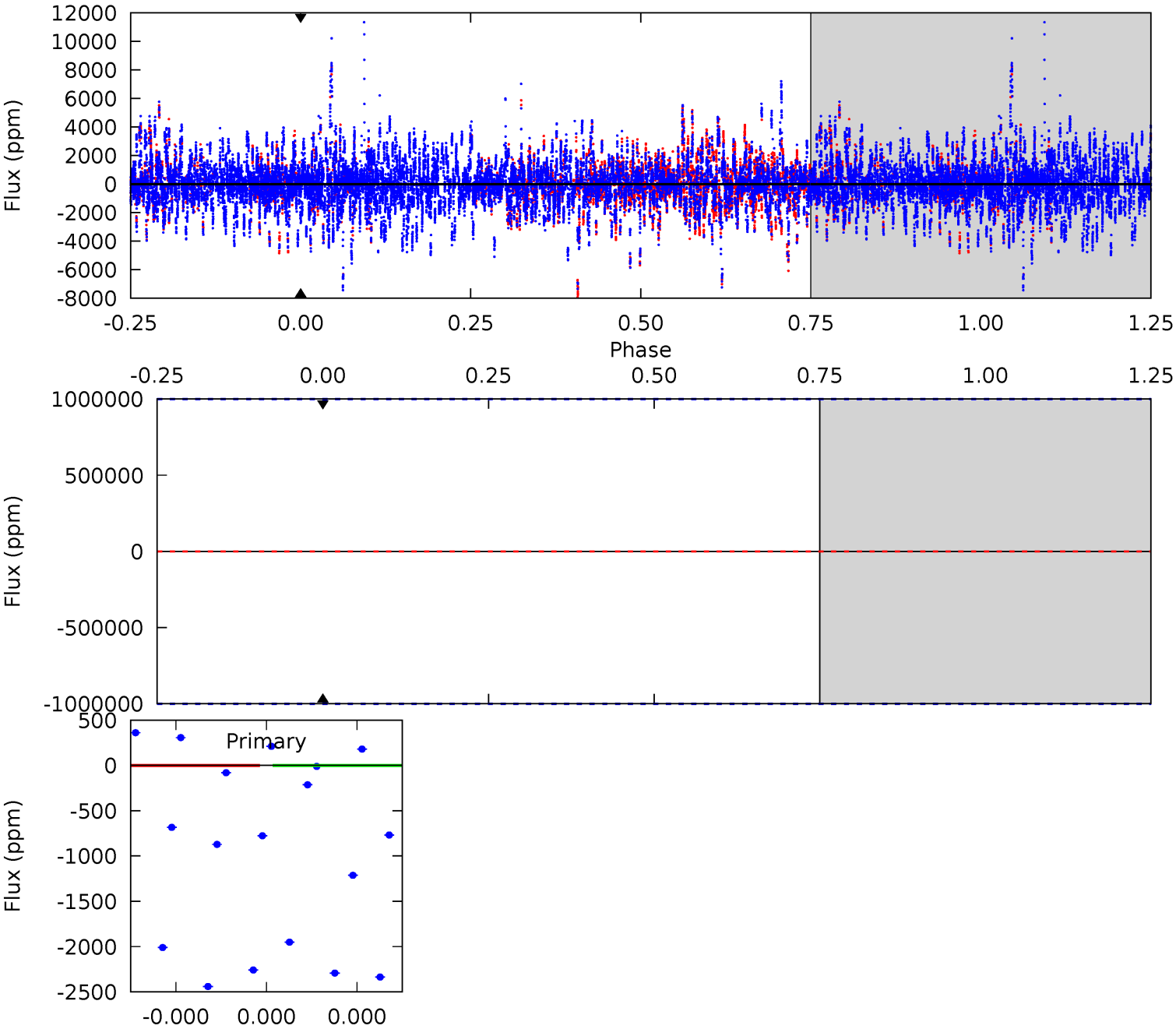
TCE 011620956-06 P=459.003247 Days $T_0=165.222852$ (BKJD)



DV Model-Shift Uniqueness Test

011620956-06, P = 459.003247 Days, E = 165.754235 Days

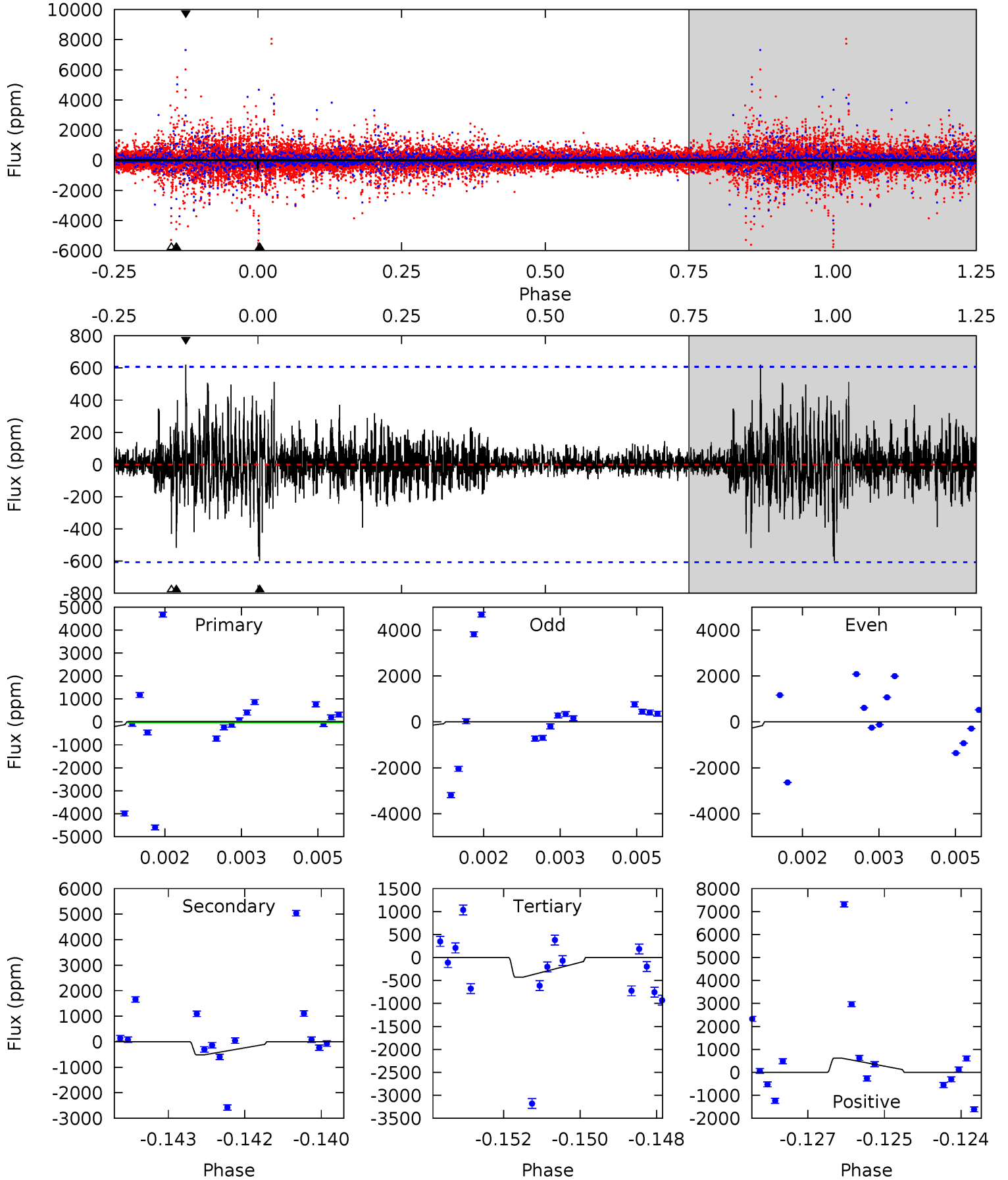
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011620956-06, P = 459.003247 Days, E = 165.222852 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.28	4.56	3.80	5.48	5.36	3.15	0.83	1.49	-0.20	0.76	-0.92	1.35	0.85	0.51	0



Stellar Parameters For KIC 011620956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5656^{+152}_{-152}	$4.605^{+0.036}_{-0.144}$	$-0.500^{+0.300}_{-0.300}$	$0.746^{+0.163}_{-0.054}$	$0.834^{+0.079}_{-0.088}$	$2.827^{+0.527}_{-1.131}$
	+3%/-3%	+1%/-3%	+60%/-60%	+22%/-7%	+9%/-11%	+19%/-40%
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 011620956-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$6.68^{+7.28}_{-4.70}$	294^{+15}_{-11}	-4535^{+22893}_{-15015}	$-26108.898^{+2447662.970}_{-2786896.349}$
Alt.	-516 ± 113	$6.04^{+6.48}_{-4.18}$	294^{+16}_{-11}	3625^{+2101}_{-711}	9178^{+85394}_{-7052}

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 $A_{obs} \gg 1.0$

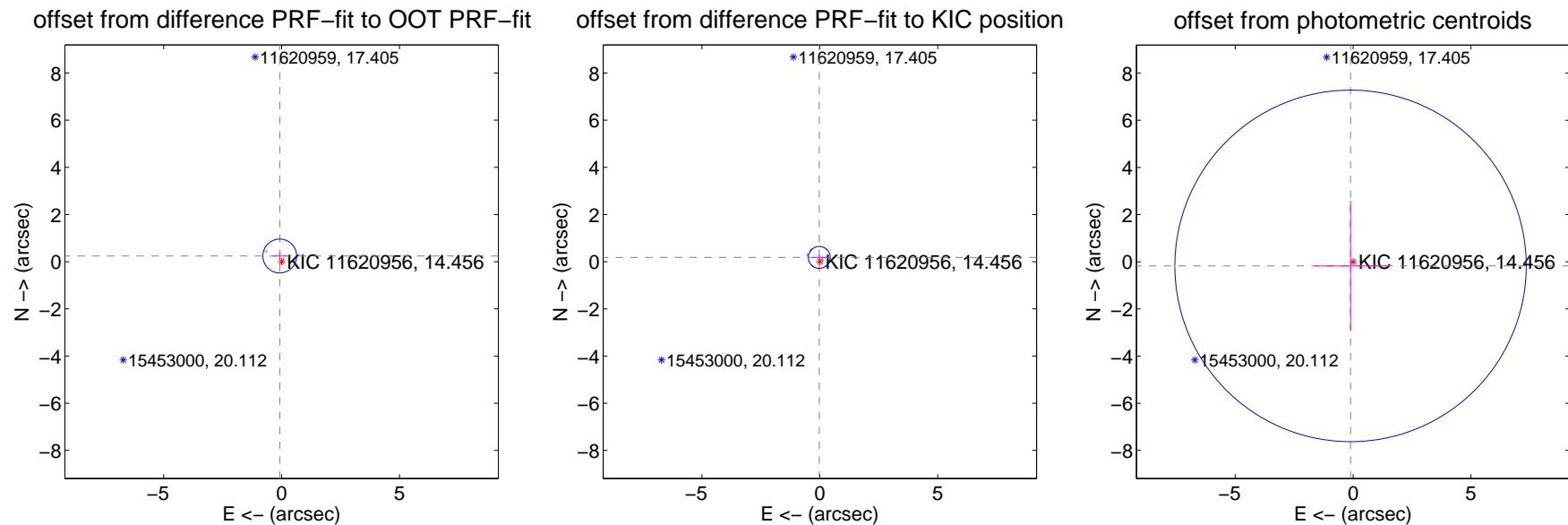
DV Centroid Data

Supplemental centroid analysis for 011620956-06. Kepler magnitude: 14.46. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

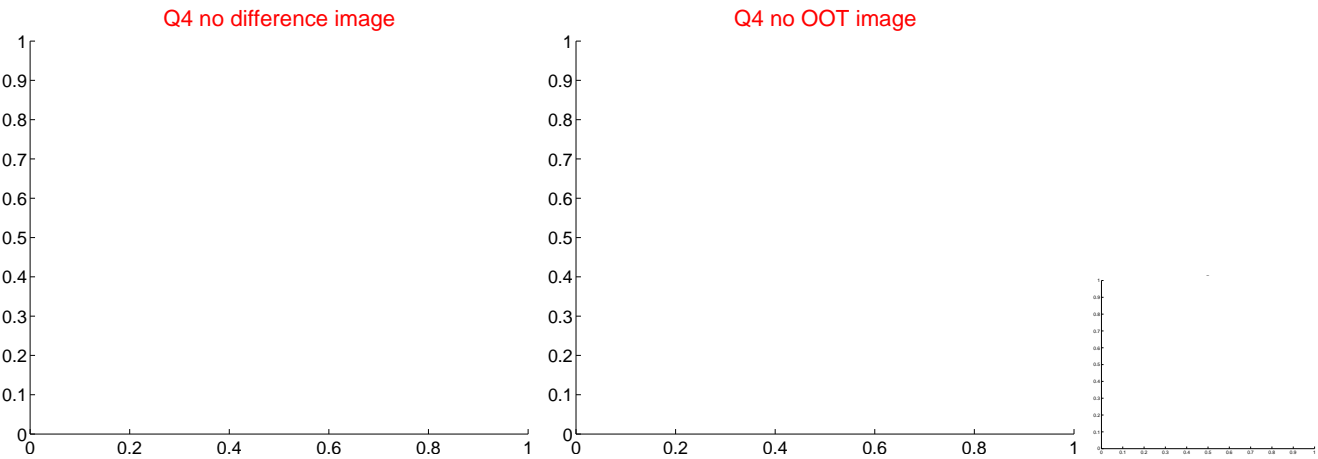
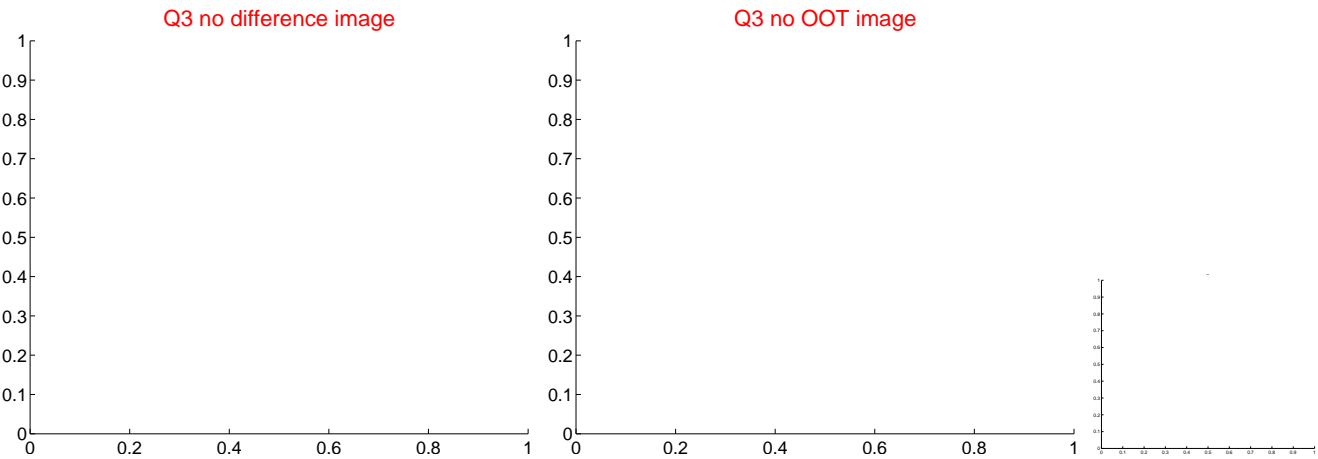
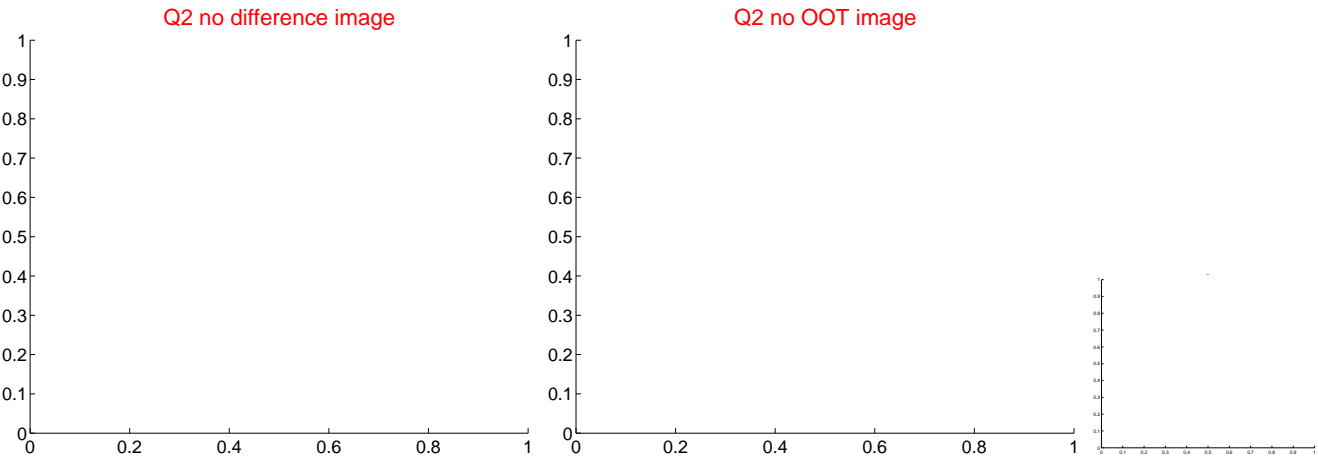
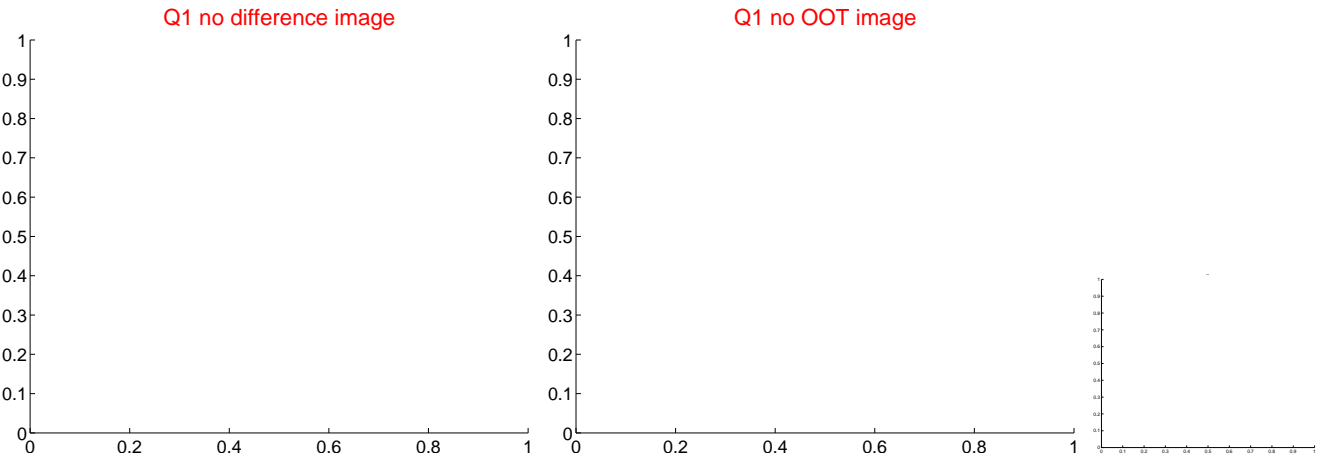
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.253 ± 0.239	1.06	0.077 ± 0.302	0.241 ± 0.161
PRF-fit source offset from KIC position	0.183 ± 0.155	1.18	0.025 ± 0.314	0.181 ± 0.119
photometric centroid source offset	0.21 ± 2.48	0.08	0.11 ± 1.54	-0.18 ± 2.76



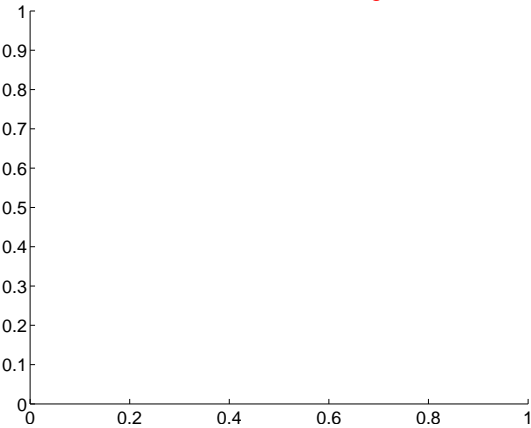
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

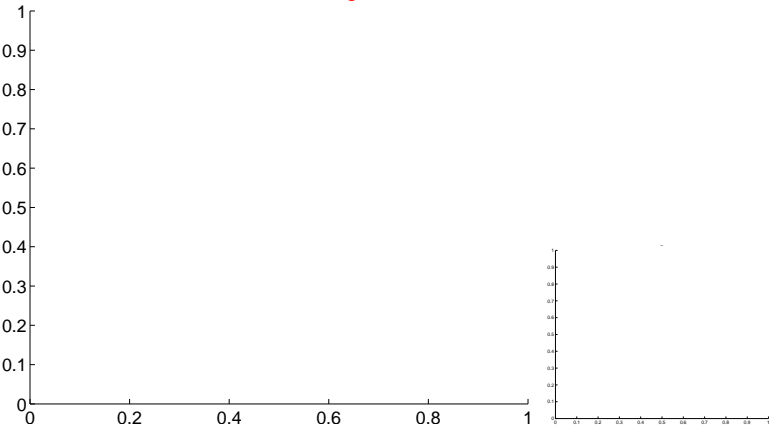


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

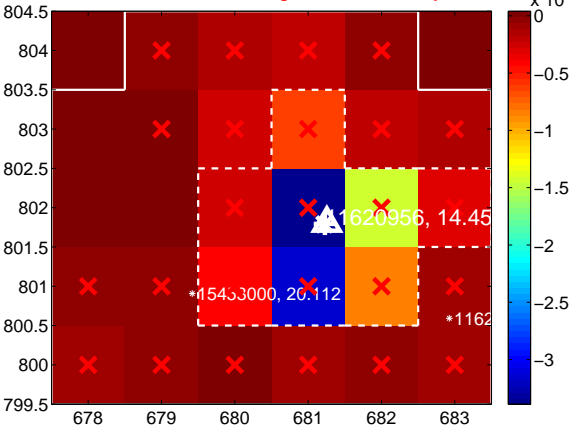
Q5 no difference image



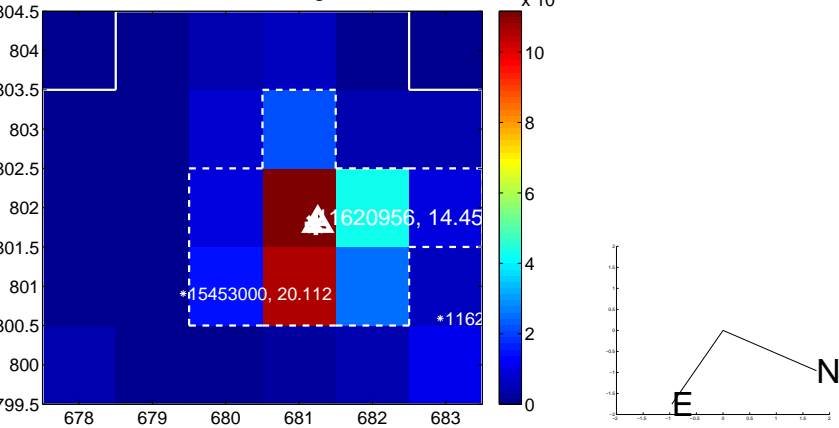
Q5 no OOT image



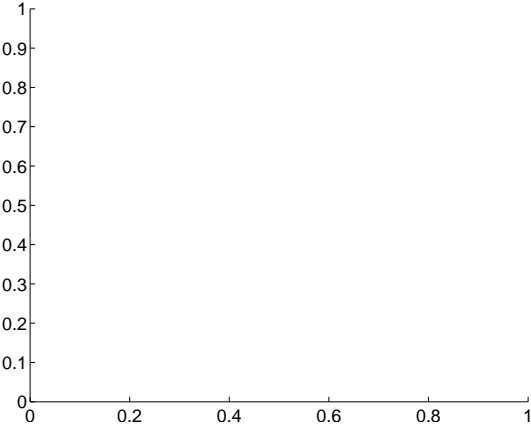
Q6 difference image. Poor Quality



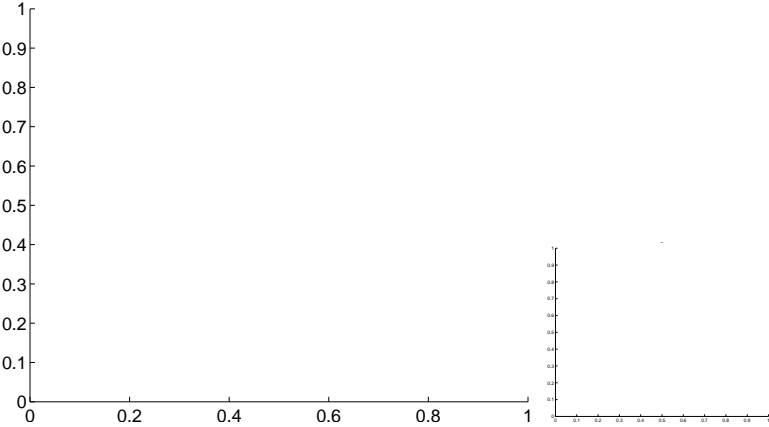
Q6 OOT image



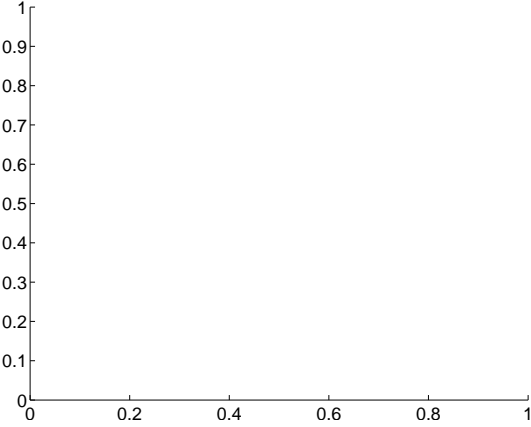
Q7 no difference image



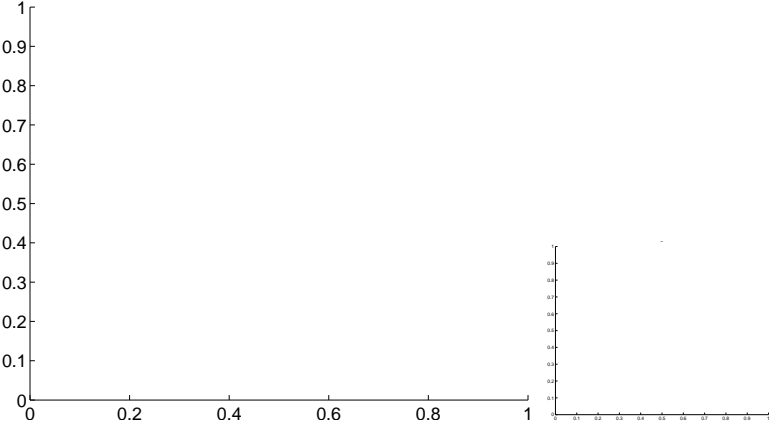
Q7 no OOT image



Q8 no difference image



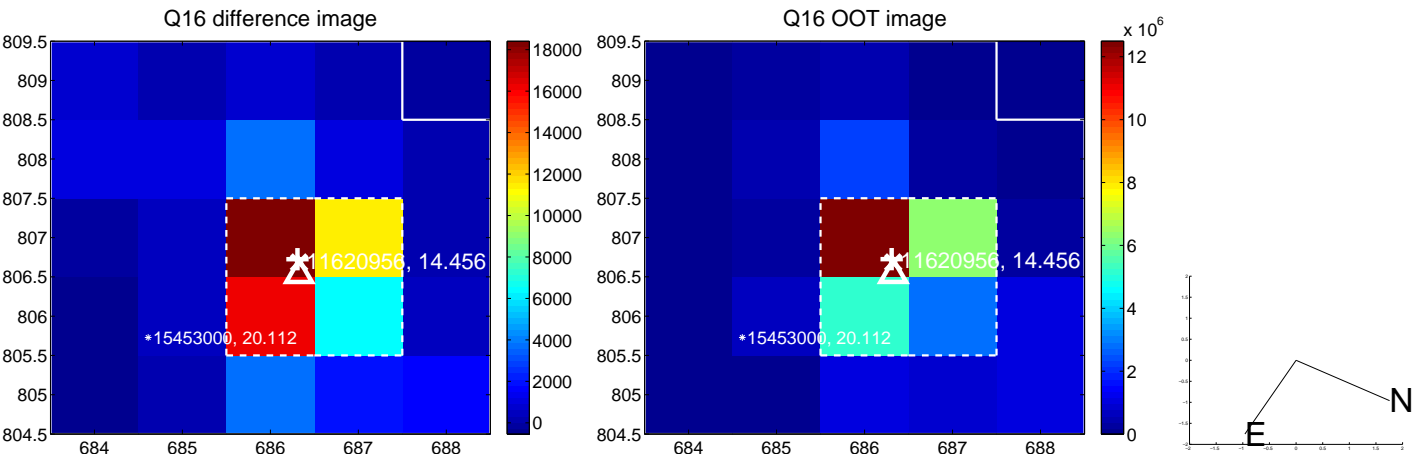
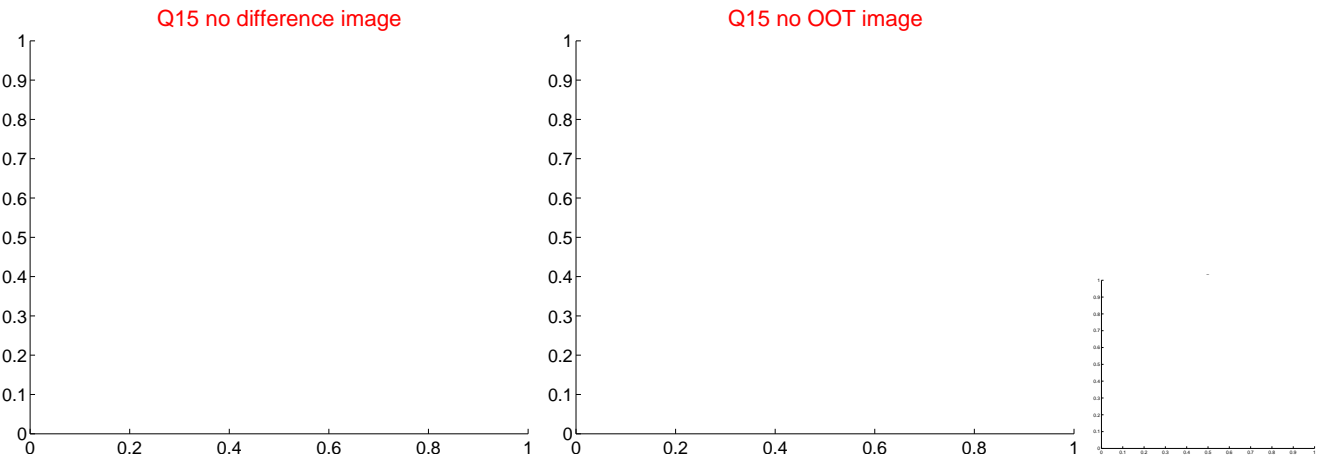
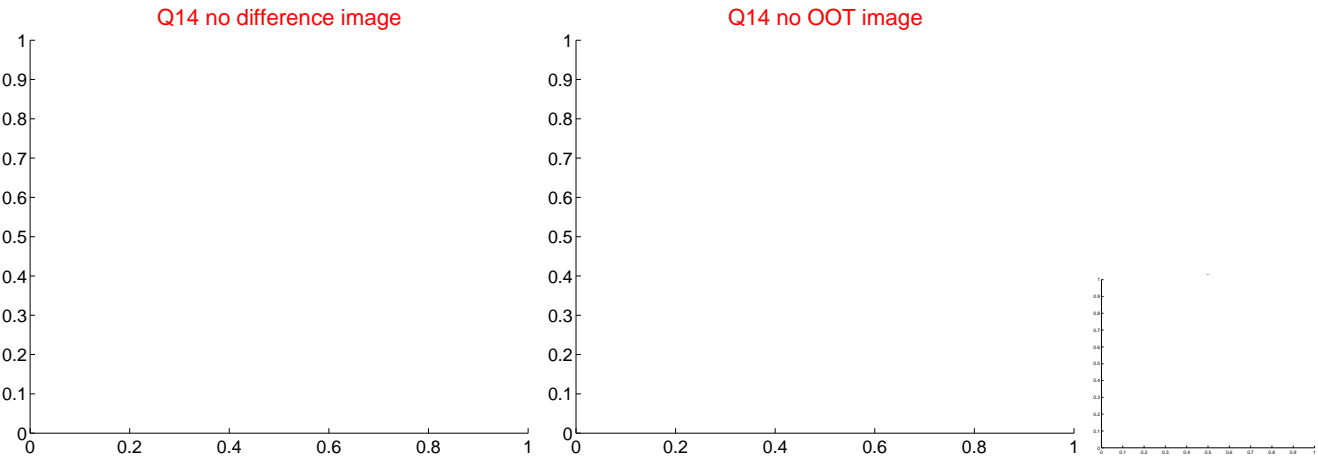
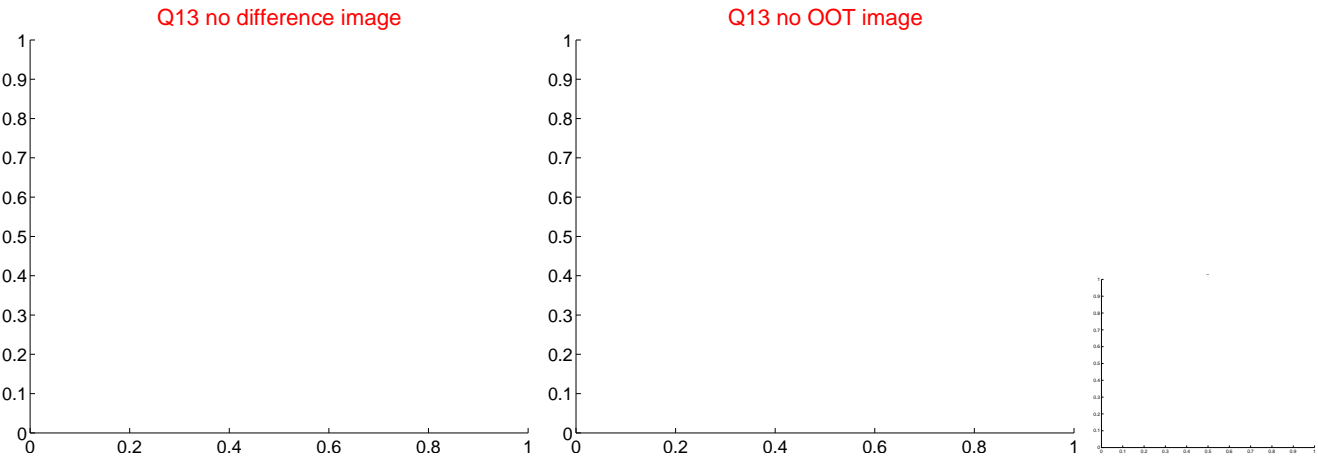
Q8 no OOT image



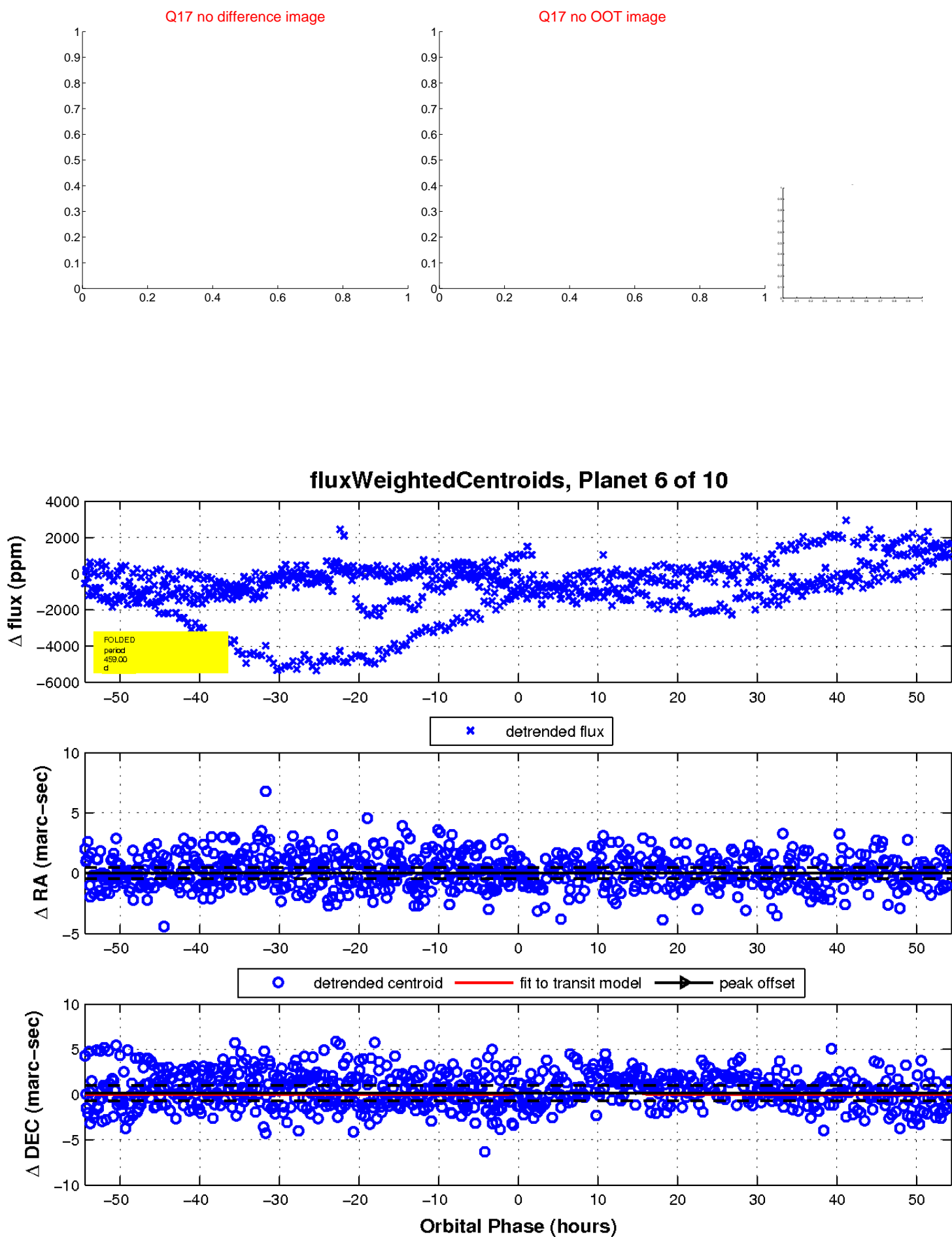
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

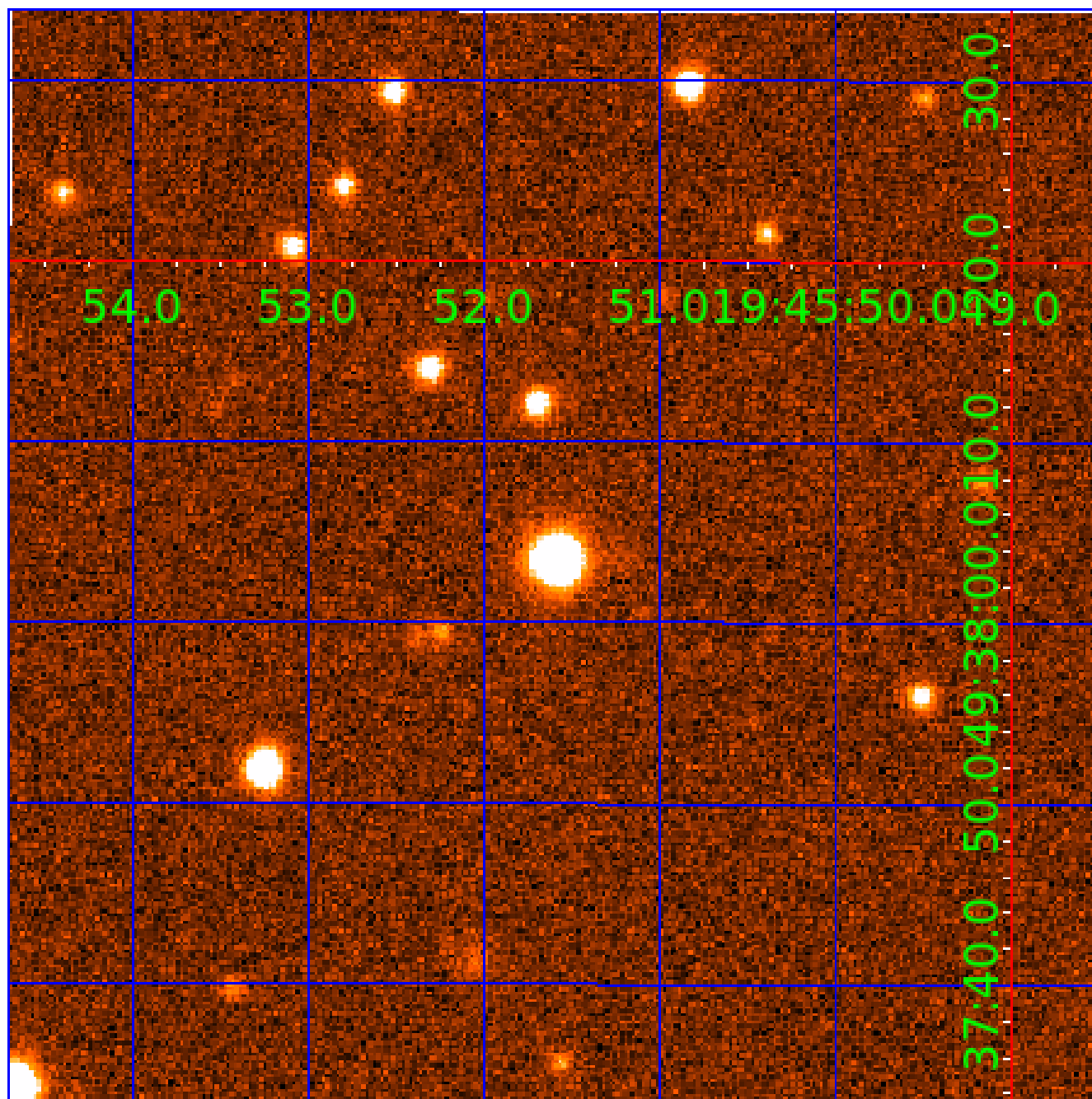


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011620956

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})
011620956-01	OBS	No	0.954225	131.920886	47.3	4.840	8.1	9.6	0.75	5656	0.61	1621.40
011620956-02	OBS	No	488.493304	207.854435	2379.7	7.562	20.9	10.3	0.75	5656	3.72	0.40
011620956-05	OBS	No	155.461423	175.622791	288.0	1.746	11.6	2.1	0.75	5656	1.48	1.82
011620956-06	OBS	No	459.003247	165.754235	723.4	9.000	11.9	-1.0	0.75	5656	1.99	0.43
011620956-07	OBS	No	466.607749	172.580412	4166.4	17.220	11.4	8.6	0.75	5656	5.27	0.42
011620956-08	OBS	No	170.727948	270.243744	1899.4	9.418	10.9	8.0	0.75	5656	6.17	1.61
011620956-09	OBS	No	120.662292	229.959456	645.1	11.187	12.9	4.3	0.75	5656	1.97	2.56
011620956-10	OBS	No	358.792880	323.205031	516.2	10.500	10.9	-1.0	0.75	5656	1.68	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011620956-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011620956-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
011620956-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
011620956-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011620956-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

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

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

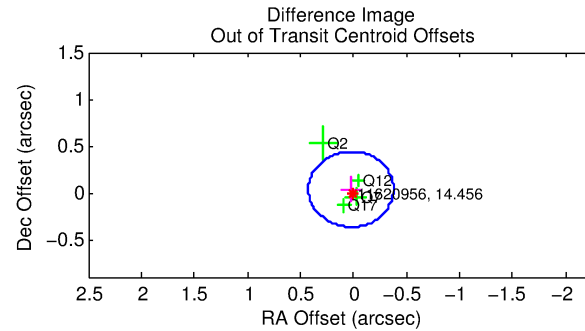
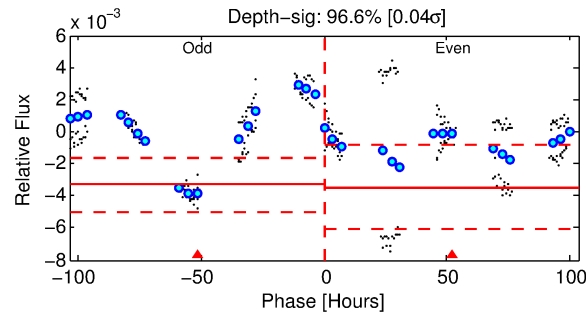
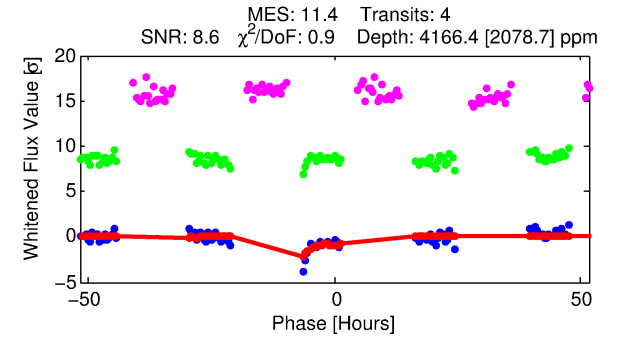
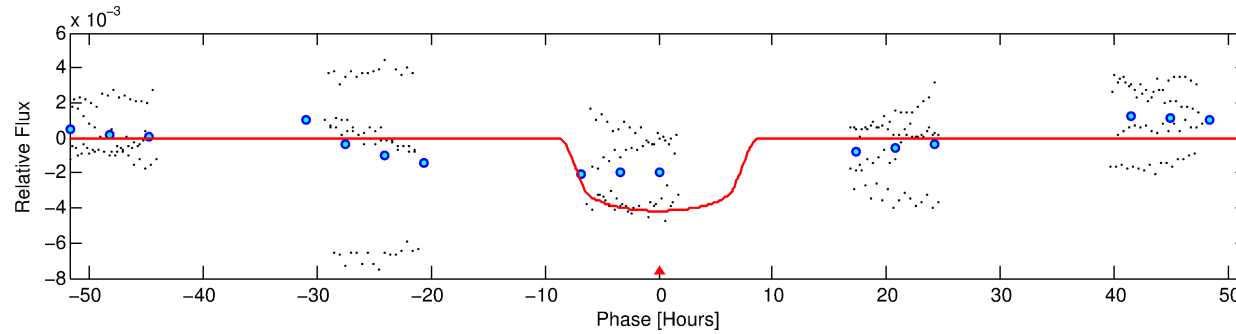
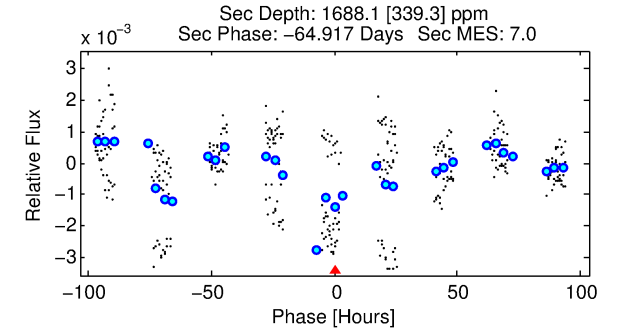
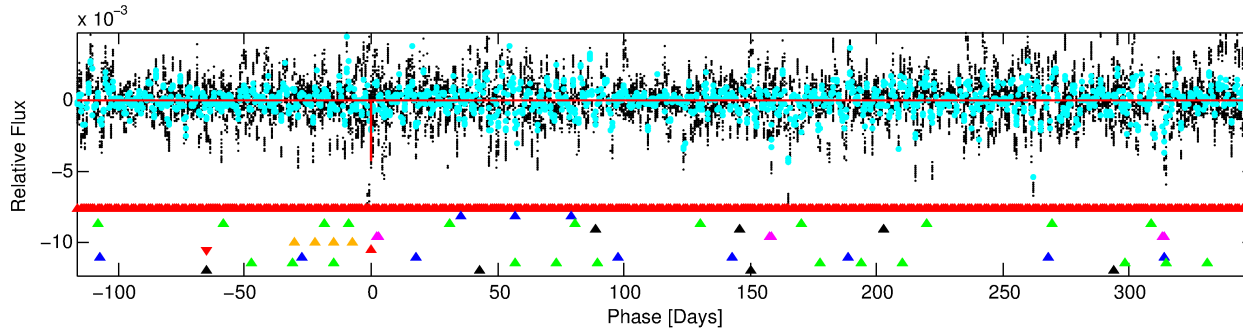
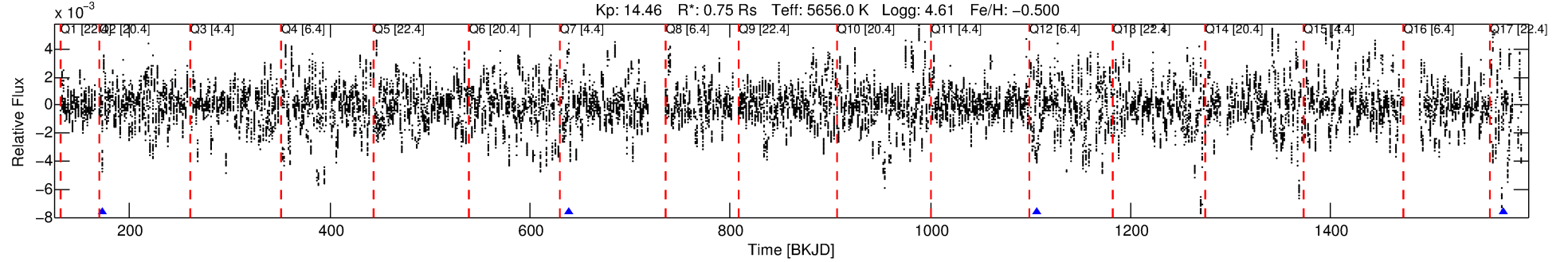
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011620956-07

No Significant Match Found

DV One-Page Summary

KIC: 11620956 Candidate: 7 of 10 Period: 466.608 d



DV Fit Results:

Period = 466.60775 [0.02307] d
Epoch = 172.5804 [0.0749] BKJD
Rp/R* = 0.0648 [0.0270]
a/R* = 152.26 [177.95]
b = 0.77 [0.49]
Seff = 0.42 [0.12]
Teq = 205 [15] K
Rp = 5.27 [2.48] Re
a = 1.1011 [0.2013] AU
Ag = 40515.65 [36385.99] [1.11σ]
Teffp = 4505 [974] K [4.41σ]

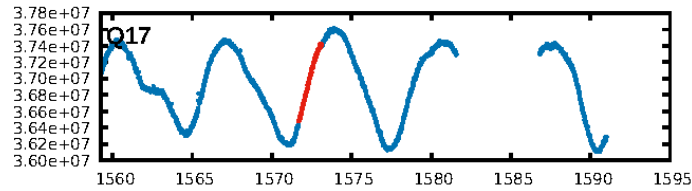
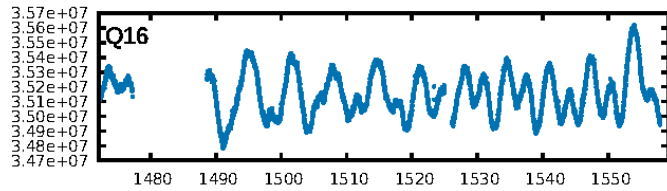
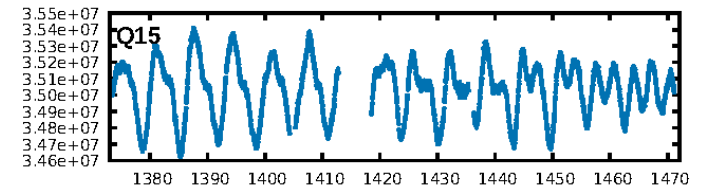
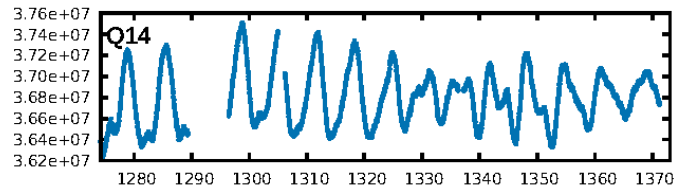
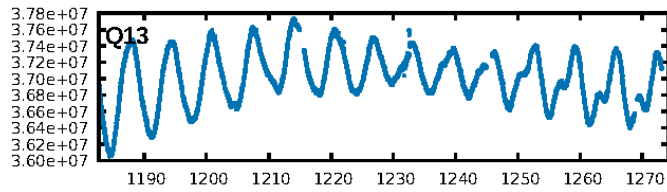
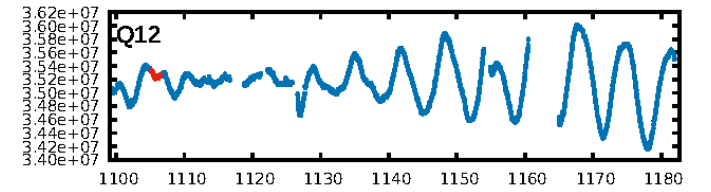
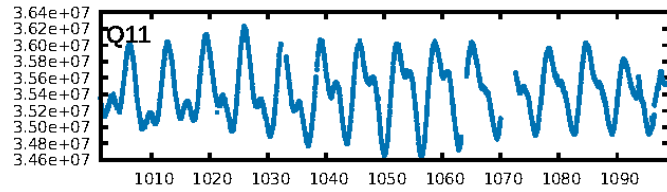
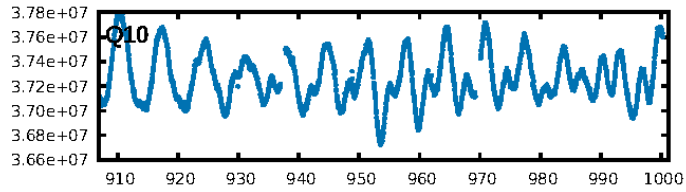
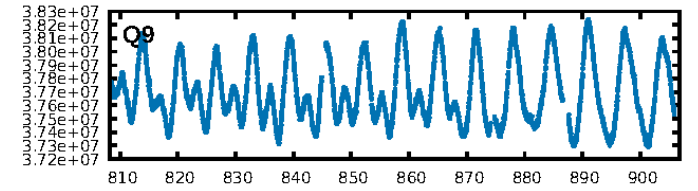
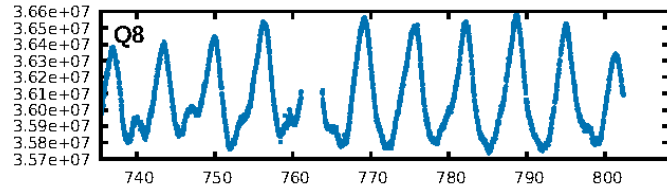
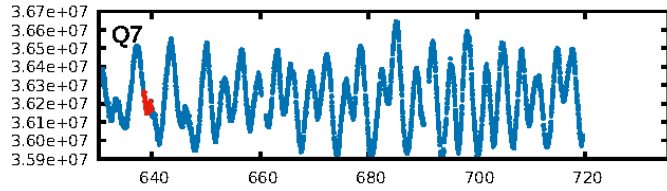
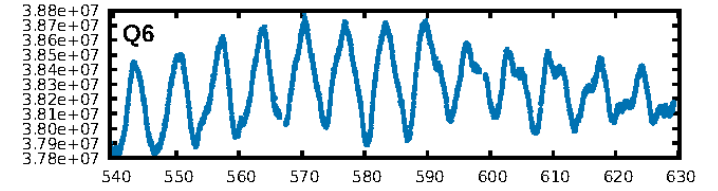
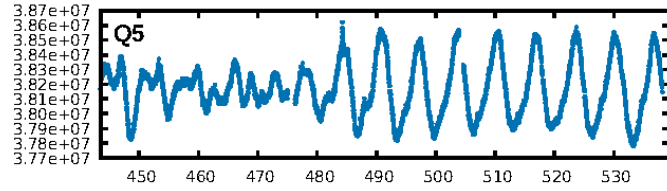
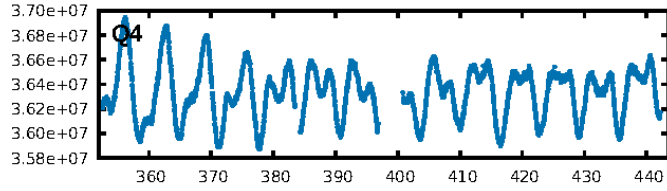
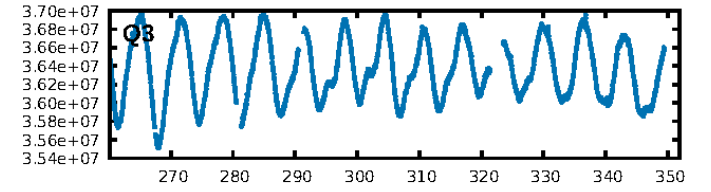
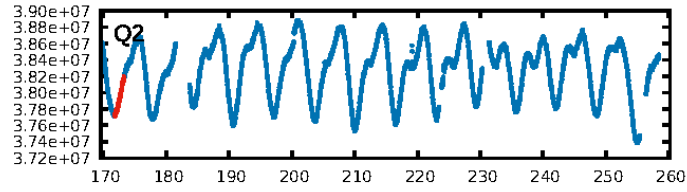
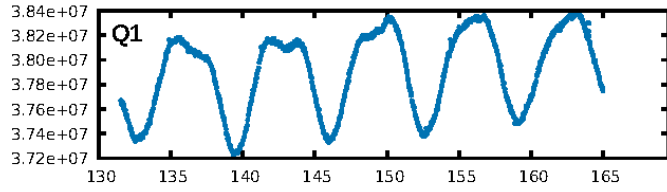
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.39σ]
LongPeriod-sig: 100.0% [27.93σ]
ModelChiSquare2-sig: 45.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.5538
Centroid-sig: 21.3%
Centroid-so: 0.280 arcsec [1.61σ]
OotOffset-rm: 0.042 arcsec [0.31σ]
KicOffset-rm: 0.072 arcsec [0.54σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.00 [0/4]

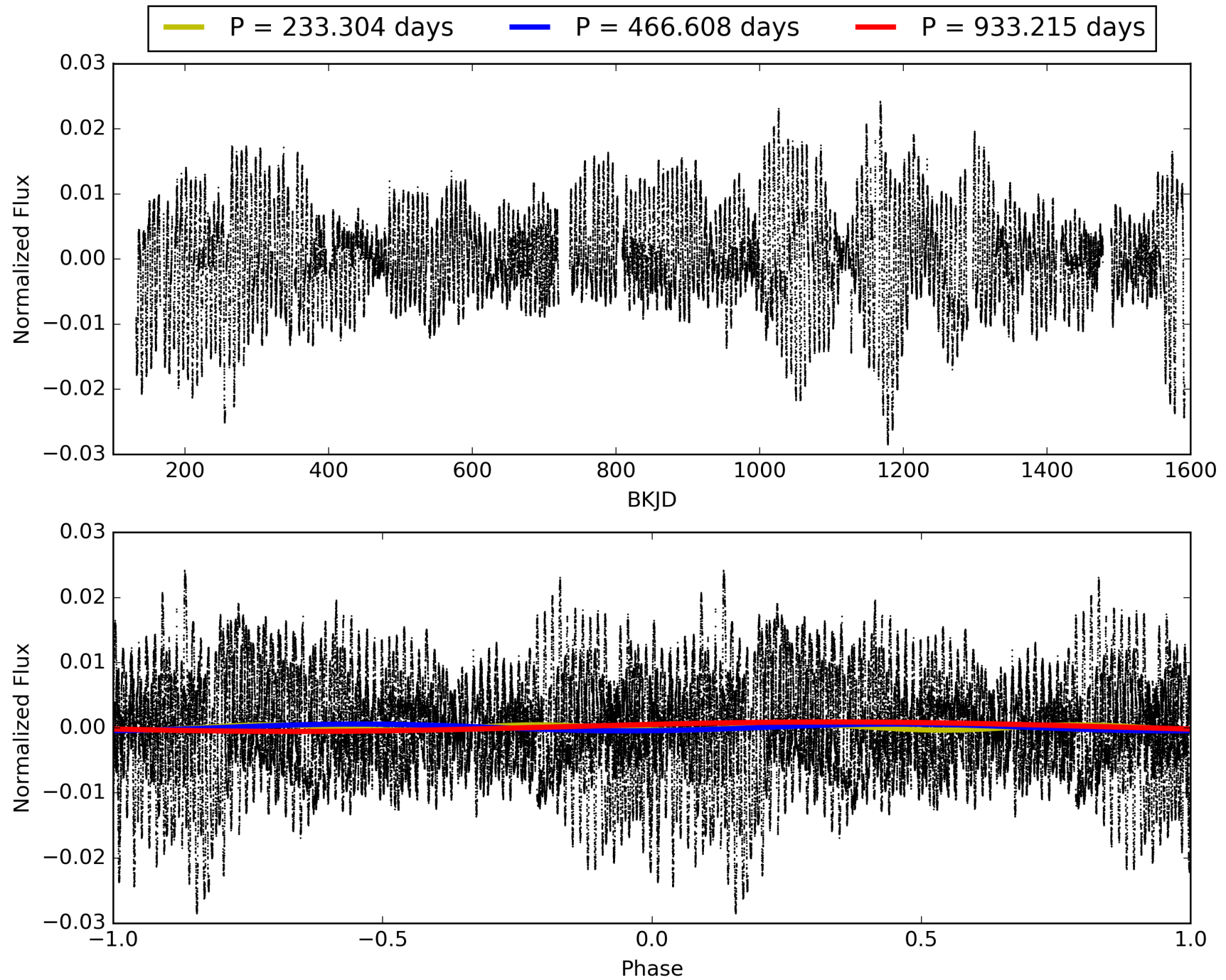
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:48:04 Z

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

TCE 011620956-07, PDC Light Curves

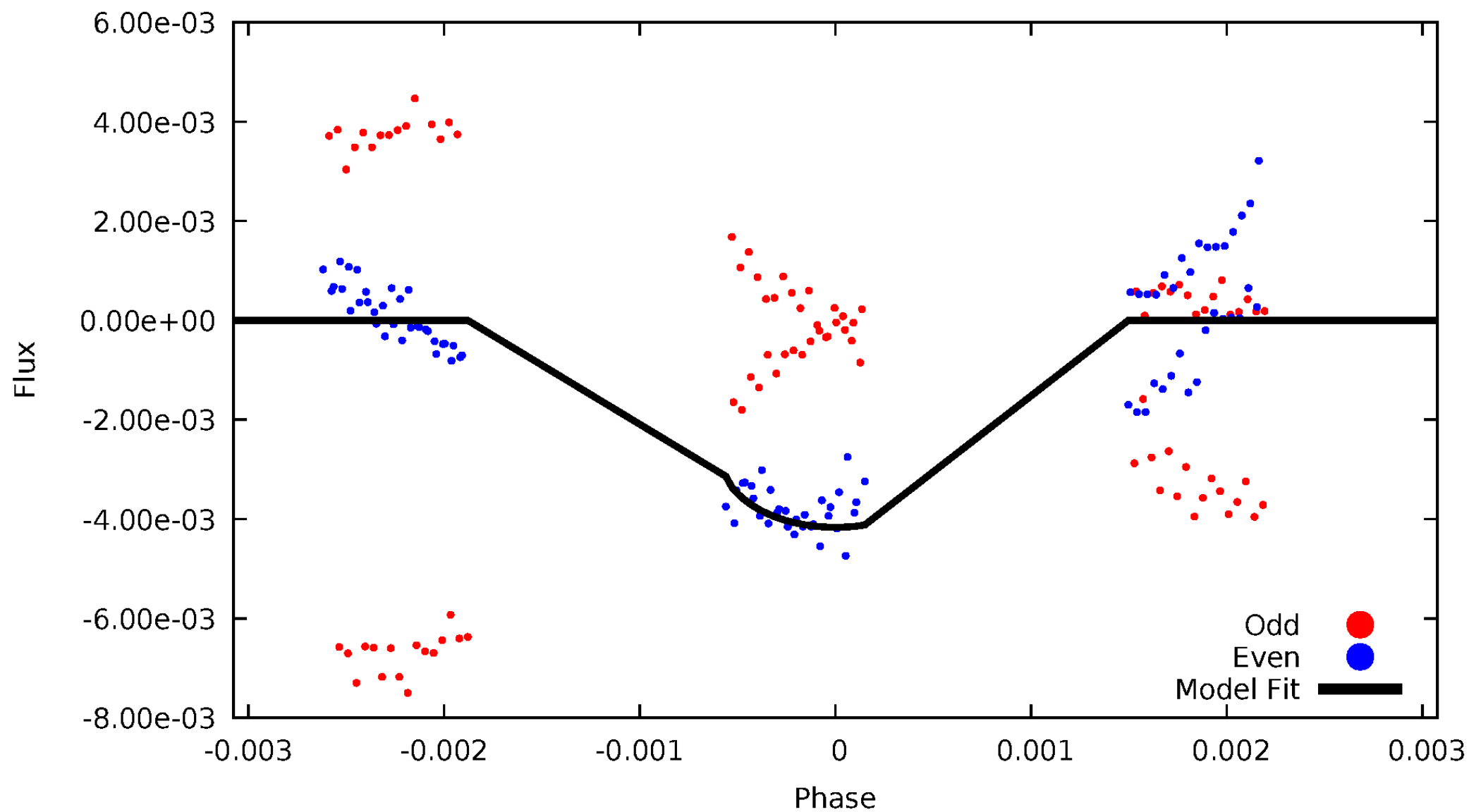


TCE 011620956-07



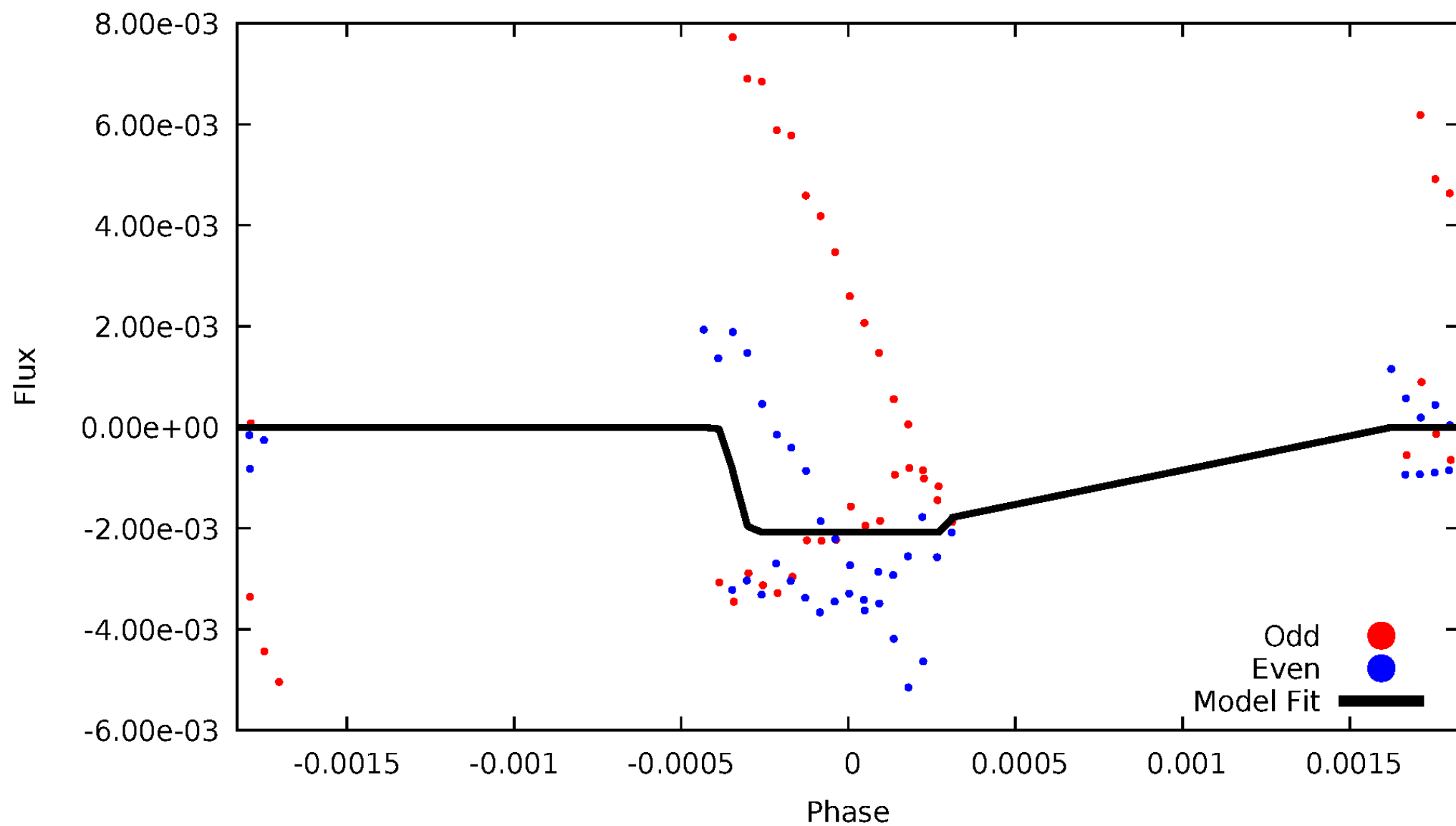
DV Odd/Even

TCE 011620956-07



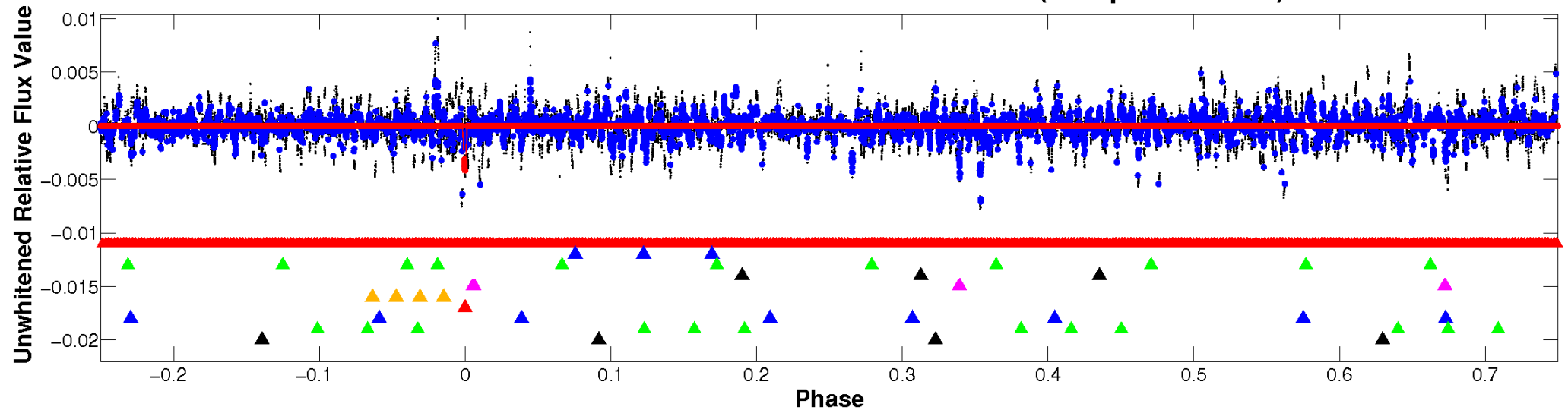
ALT Odd/Even

TCE 011620956-07

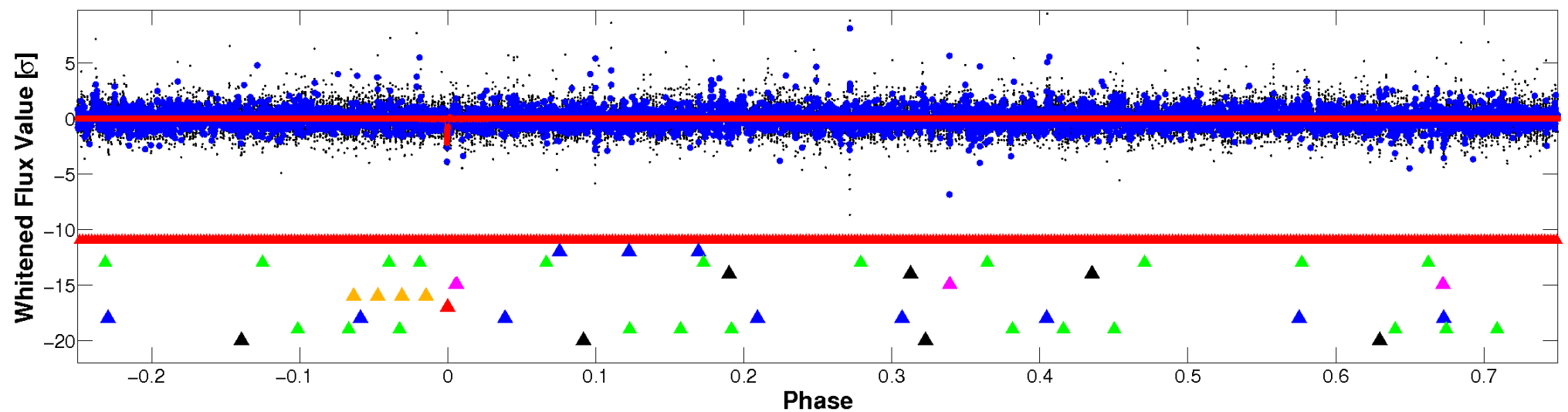


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

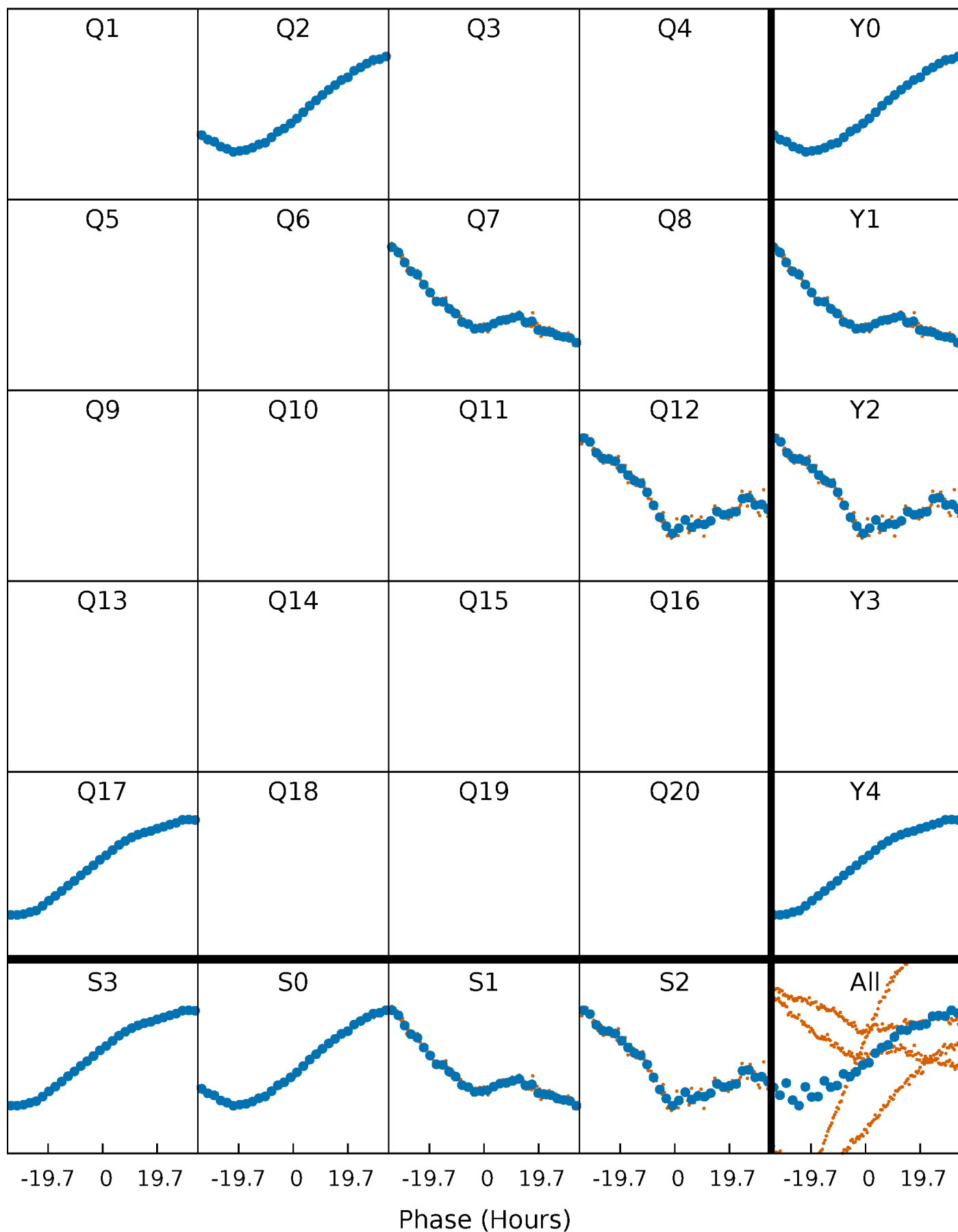


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



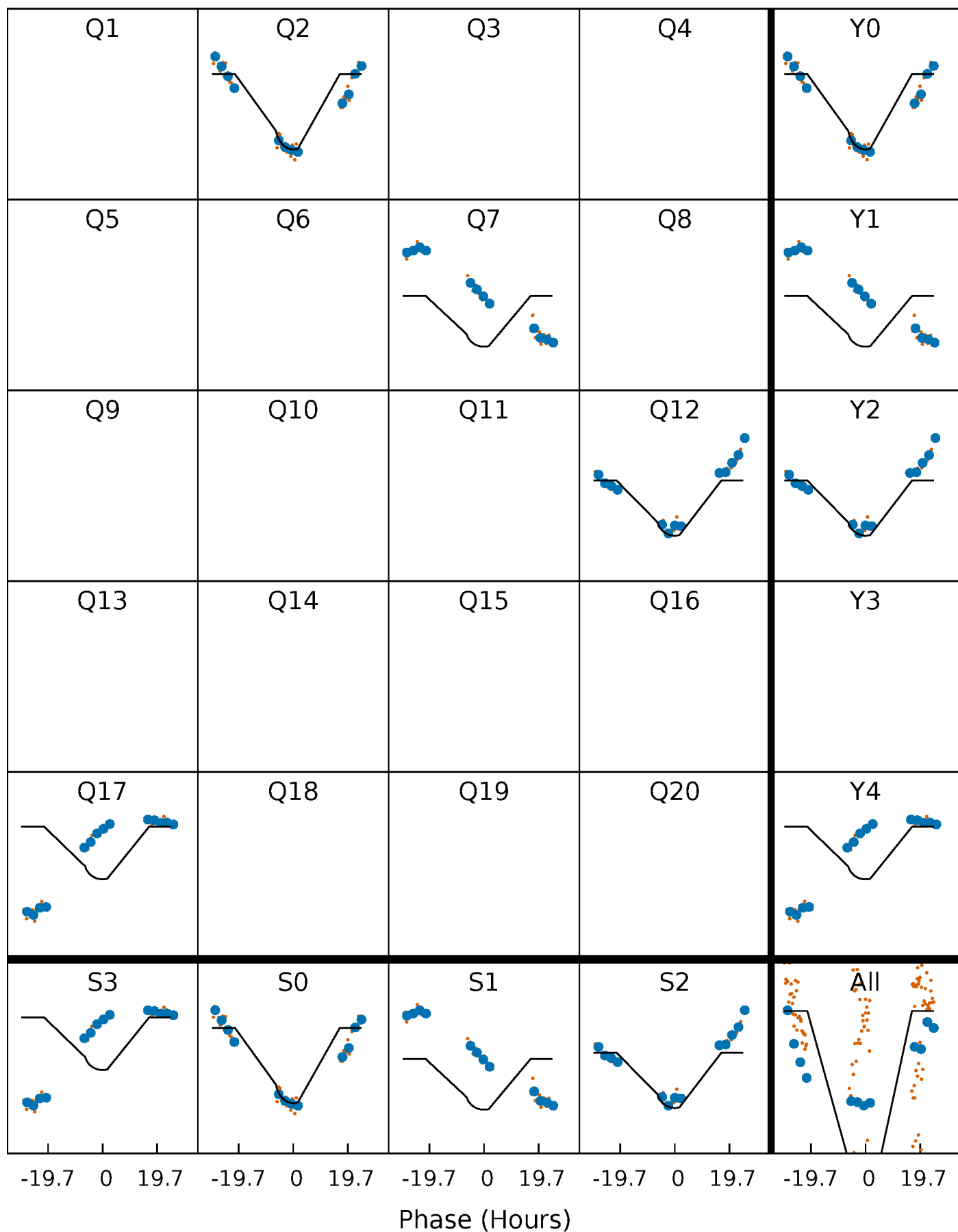
PDC Quarter-Phased Transit Curves

TCE 011620956-07 $P=466.607749$ Days $T_0=172.580412$ (BKJD)



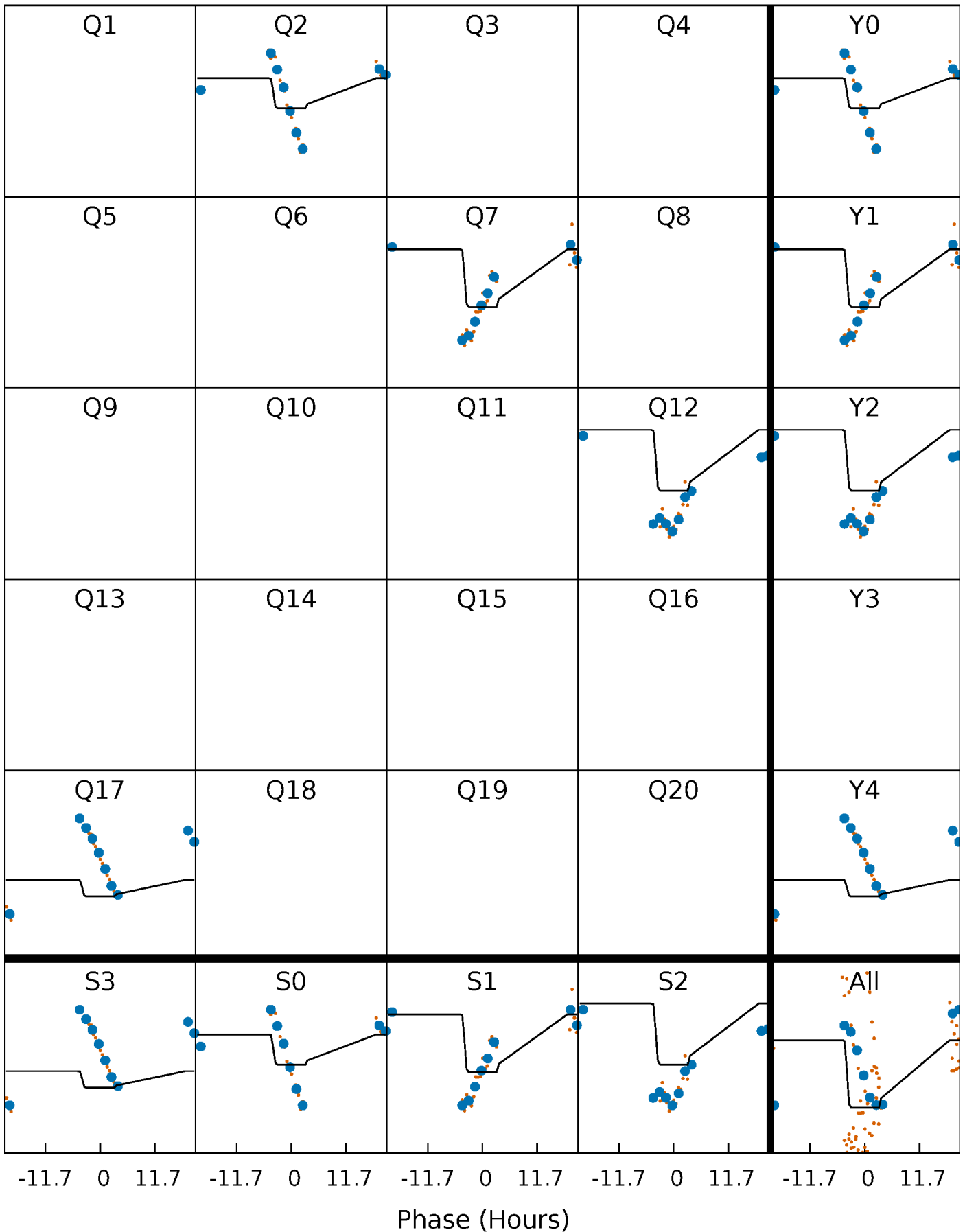
DV Quarter-Phased Transit Curves

TCE 011620956-07 P=466.607749 Days $T_0=172.580412$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

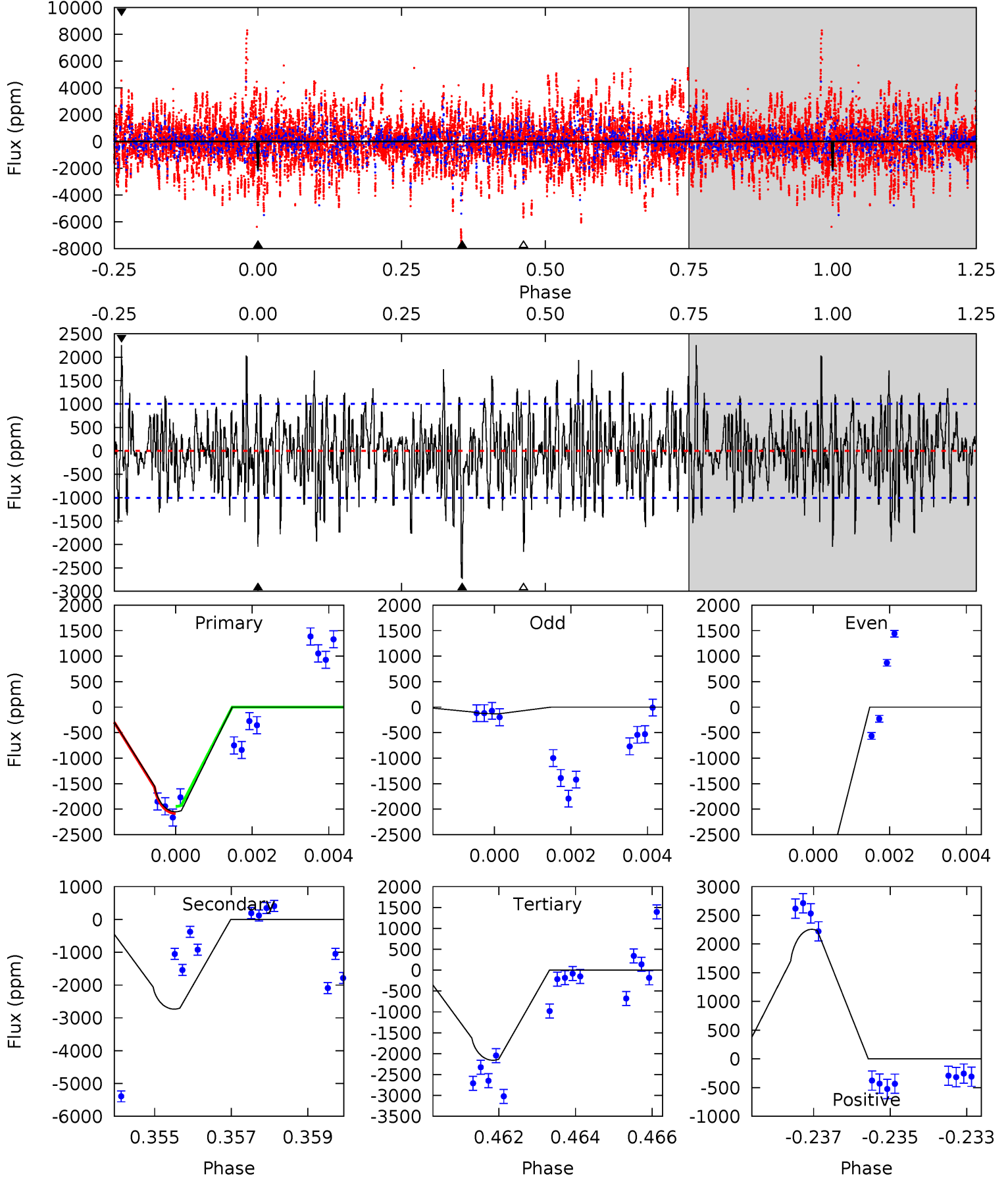
TCE 011620956-07 P=466.600343 Days $T_0=172.521068$ (BKJD)



DV Model-Shift Uniqueness Test

011620956-07, P = 466.607749 Days, E = 172.580412 Days

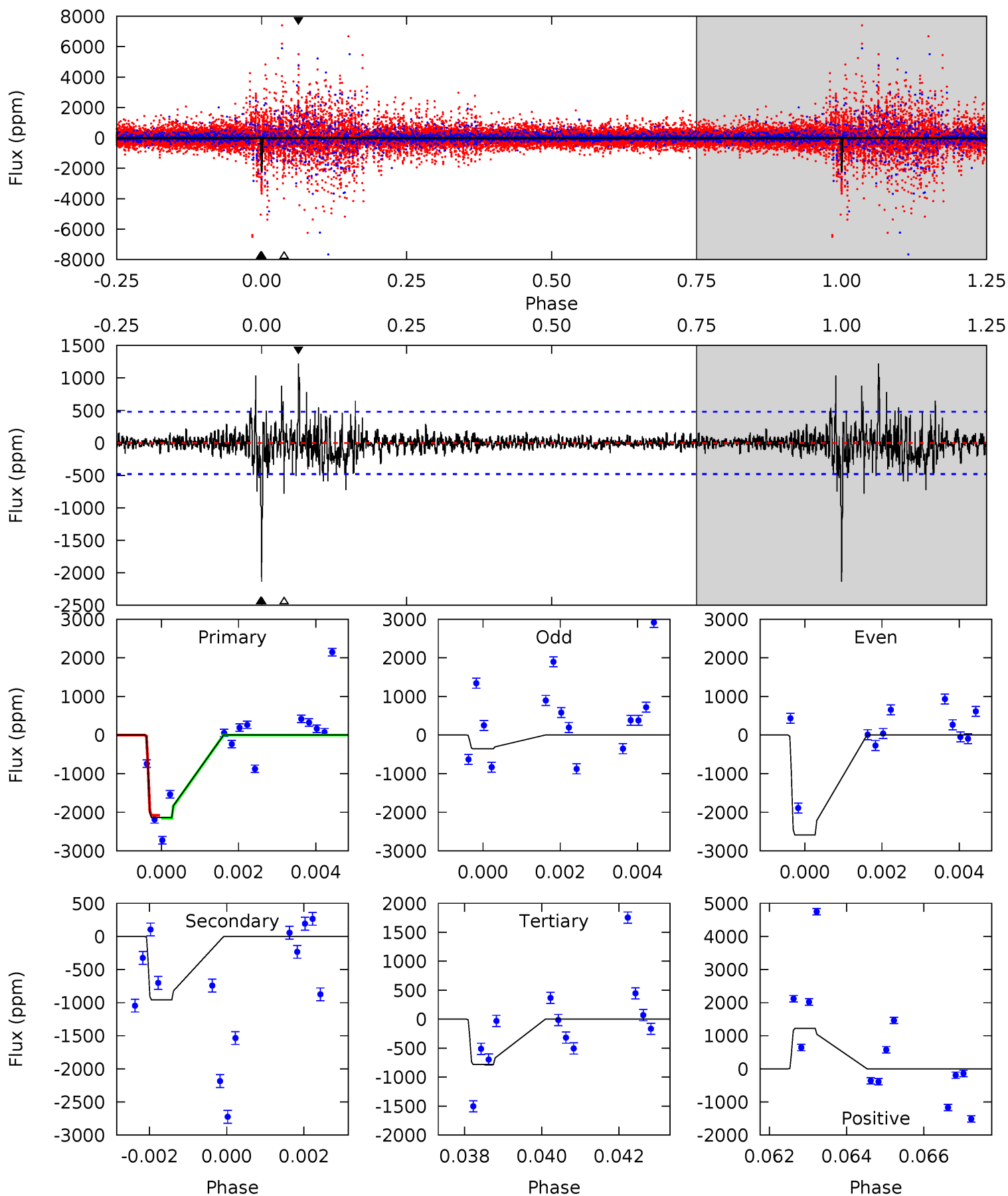
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	14.5	11.4	12.0	5.32	3.09	3.39	-0.57	-1.09	3.04	2.52	10.2	0.94	0.45	0.31



Alt Model-Shift Uniqueness Test

011620956-07, P = 466.600343 Days, E = 172.521068 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.7	10.7	8.67	13.6	5.33	3.09	1.44	15.1	10.2	1.99	-2.89	11.4	0.51	0.36	0.40



Stellar Parameters For KIC 011620956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5656^{+152}_{-152}	$4.605^{+0.036}_{-0.144}$	$-0.500^{+0.300}_{-0.300}$	$0.746^{+0.163}_{-0.054}$	$0.834^{+0.079}_{-0.088}$	$2.827^{+0.527}_{-1.131}$
	+3%/-3%	+1%/-3%	+60%/-60%	+22%/-7%	+9%/-11%	+19%/-40%
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 011620956-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2732 ± 189	$5.60^{+2.42}_{-2.15}$	293^{+16}_{-12}	5098^{+1263}_{-671}	57130^{+96013}_{-28234}
Alt.	-960 ± 90	$4.01^{+2.21}_{-2.17}$	292^{+15}_{-12}	4702^{+1988}_{-725}	$39730^{+142305}_{-23436}$

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 $A_{obs} \gg 1.0$

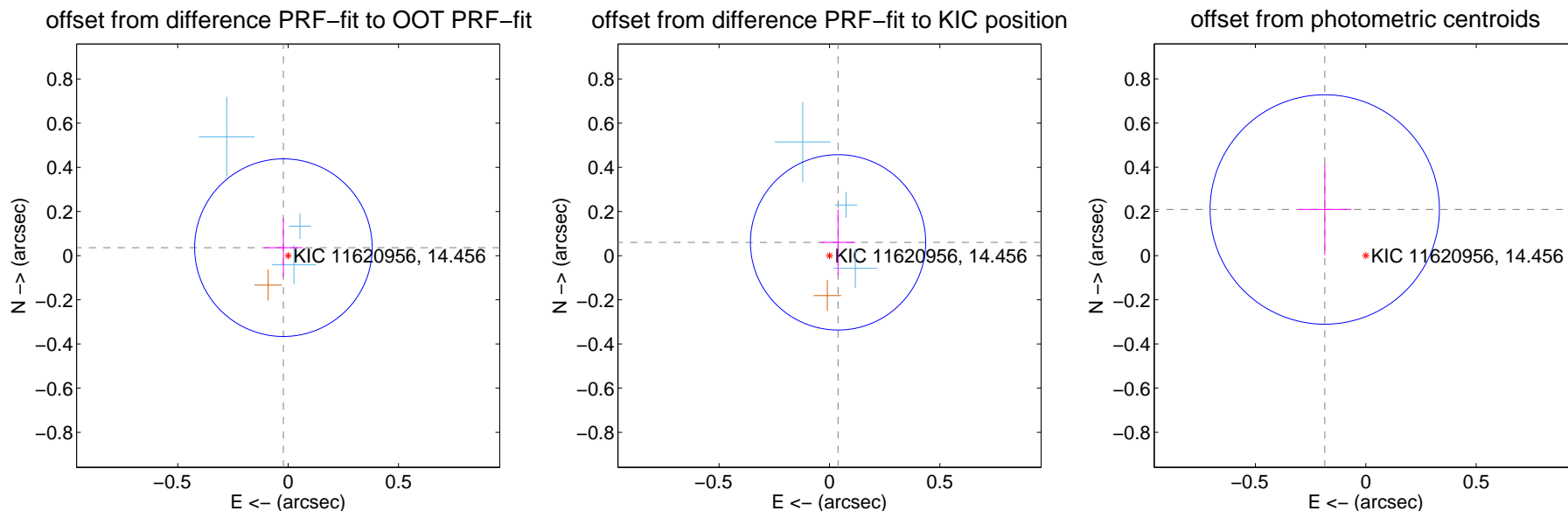
DV Centroid Data

Supplemental centroid analysis for 011620956-07. Kepler magnitude: 14.46. Transit SNR 8.60

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

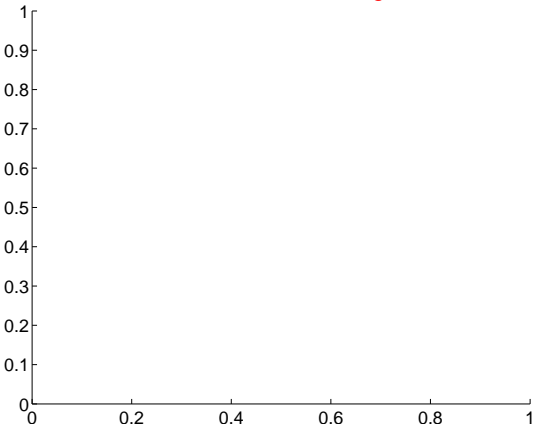
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.042 ± 0.134	0.31	0.021 ± 0.086	0.036 ± 0.132
PRF-fit source offset from KIC position	0.072 ± 0.132	0.54	-0.039 ± 0.079	0.060 ± 0.149
photometric centroid source offset	0.28 ± 0.17	1.61	0.19 ± 0.12	0.21 ± 0.21



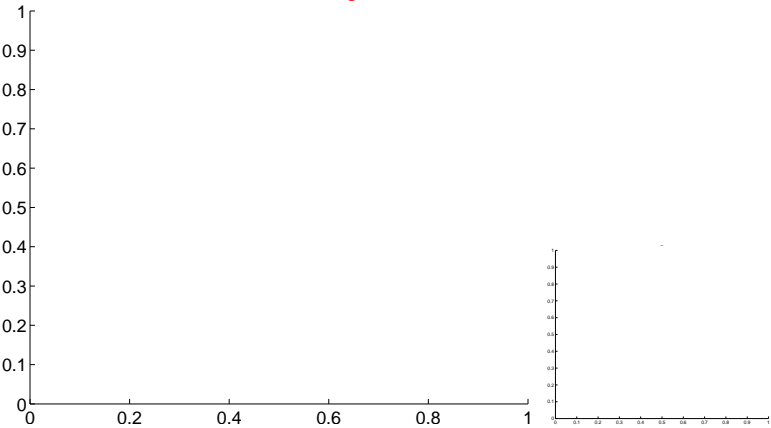
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

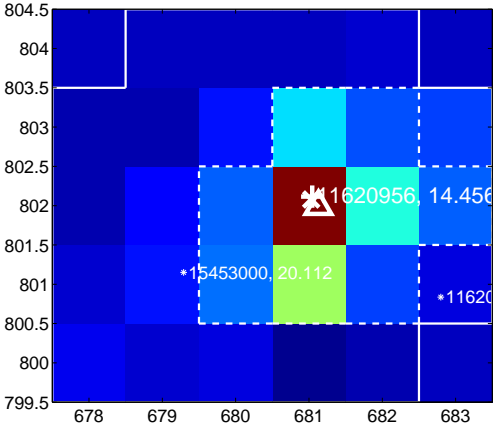
Q1 no difference image



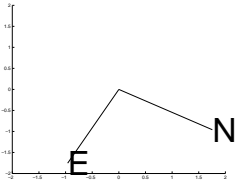
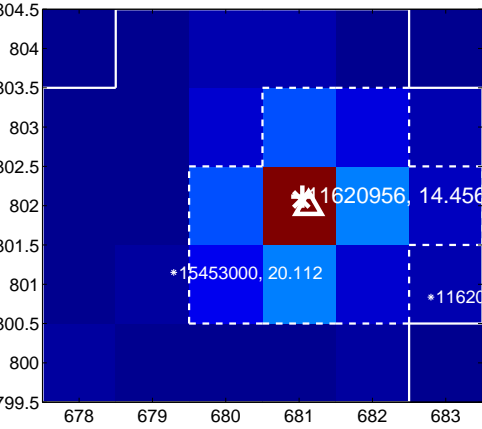
Q1 no OOT image



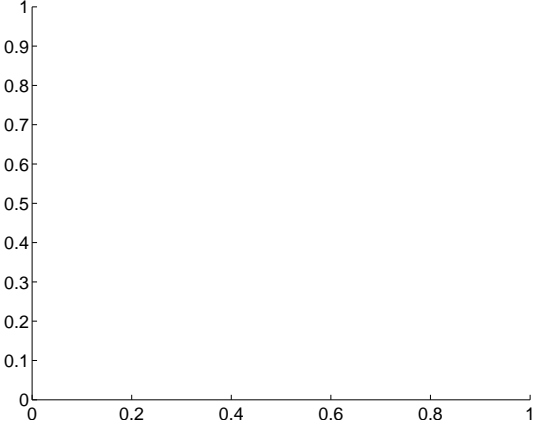
Q2 difference image



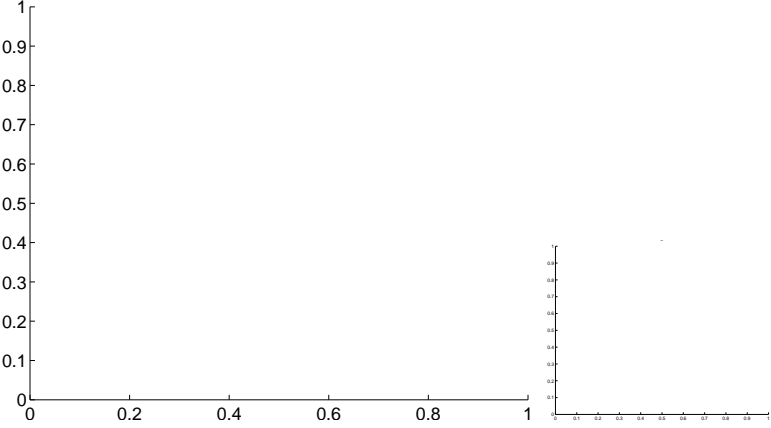
Q2 OOT image



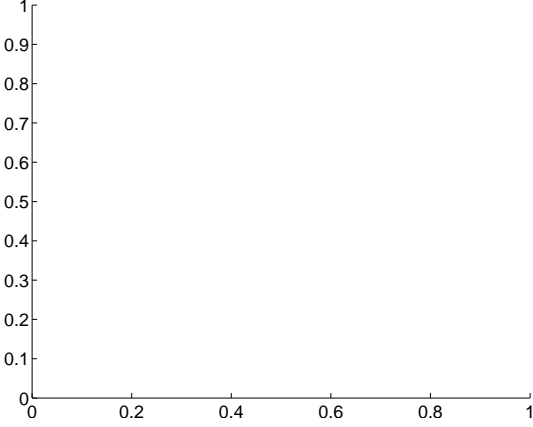
Q3 no difference image



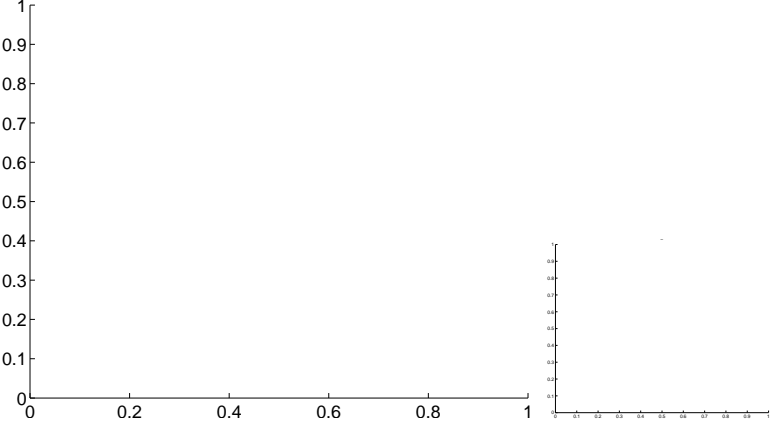
Q3 no OOT image



Q4 no difference image

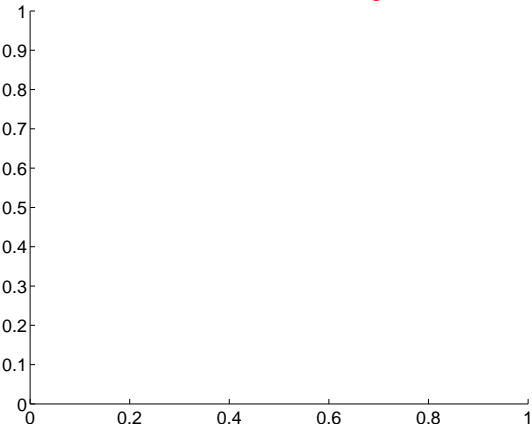


Q4 no OOT image

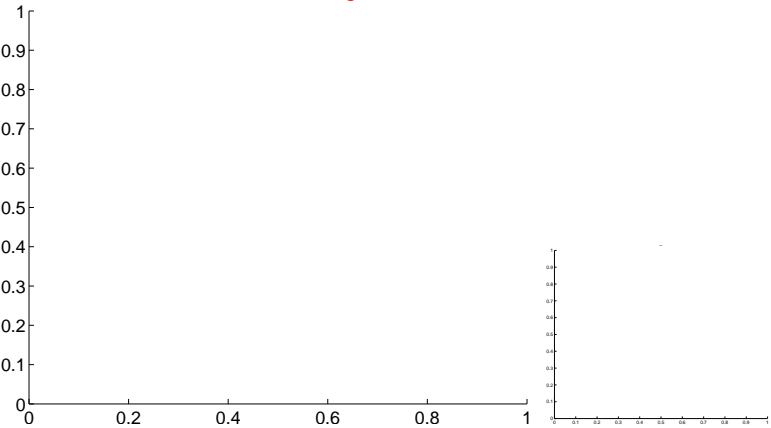


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

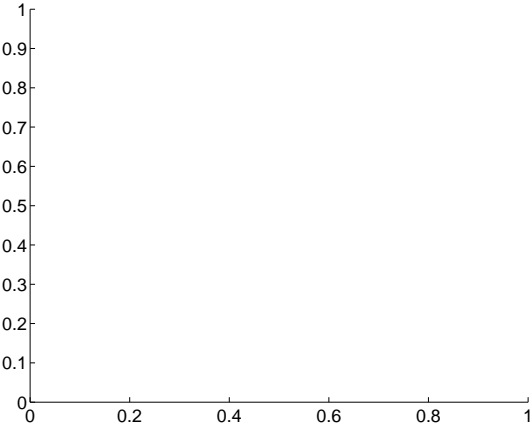
Q5 no difference image



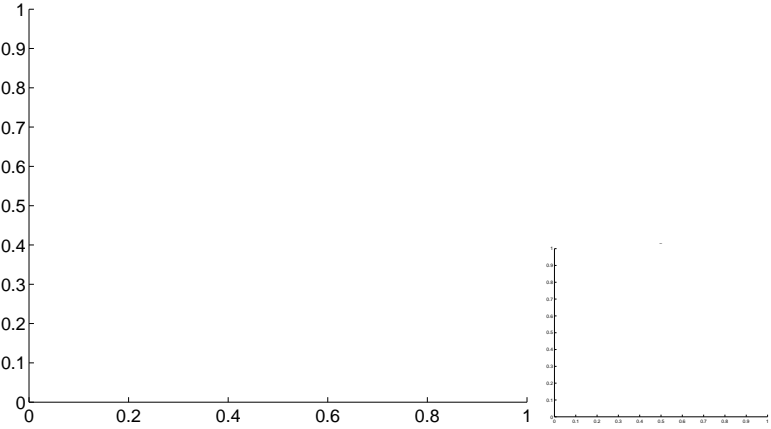
Q5 no OOT image



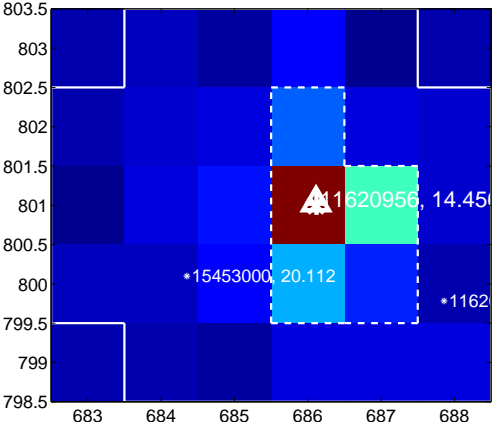
Q6 no difference image



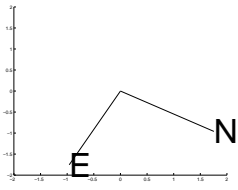
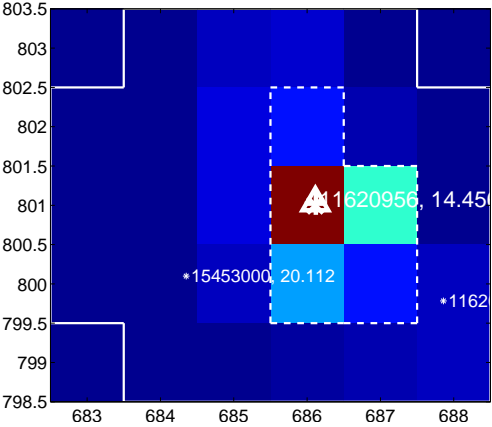
Q6 no OOT image



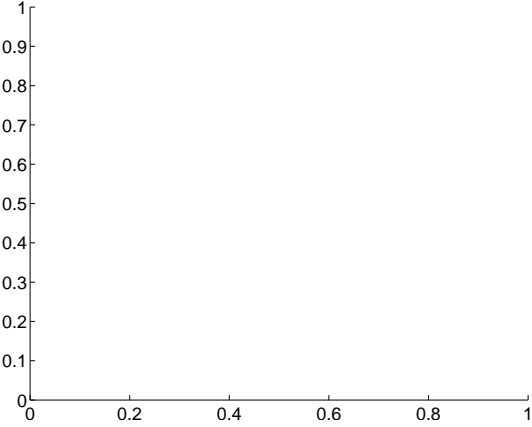
Q7 difference image



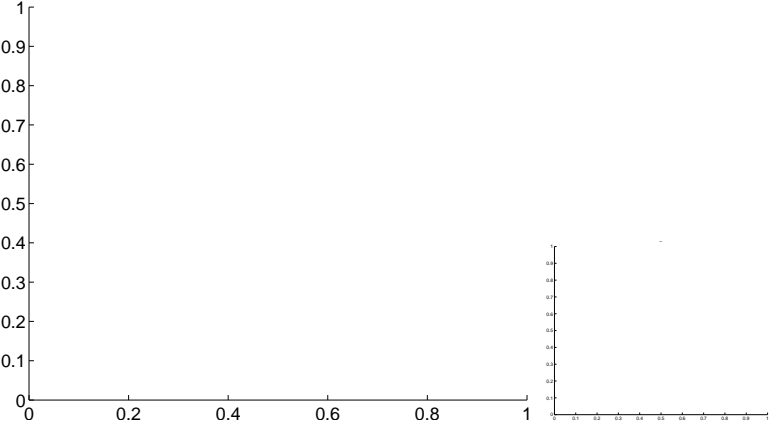
Q7 OOT image



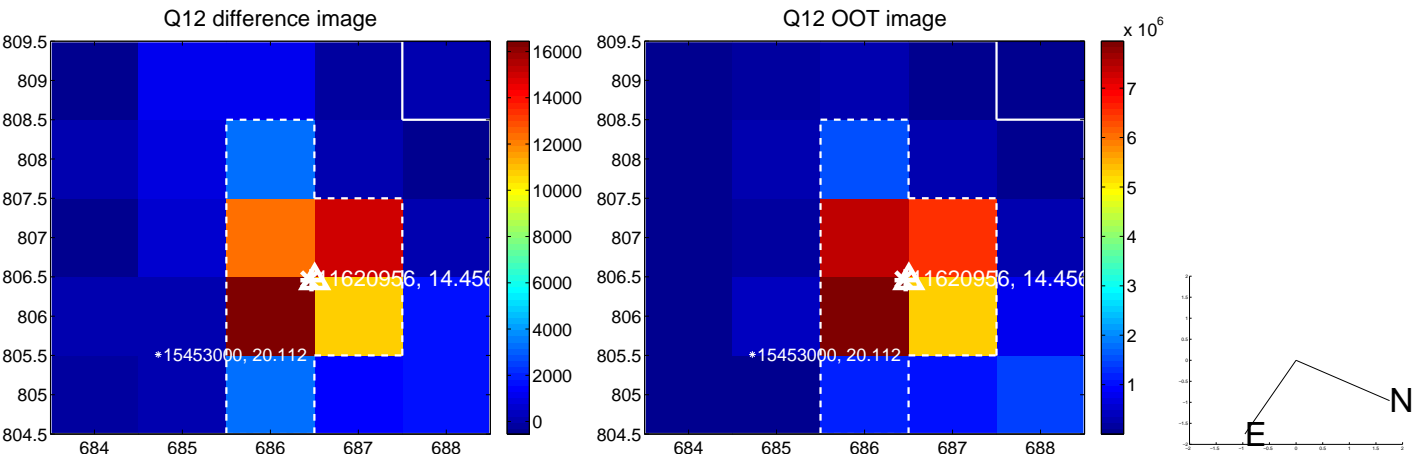
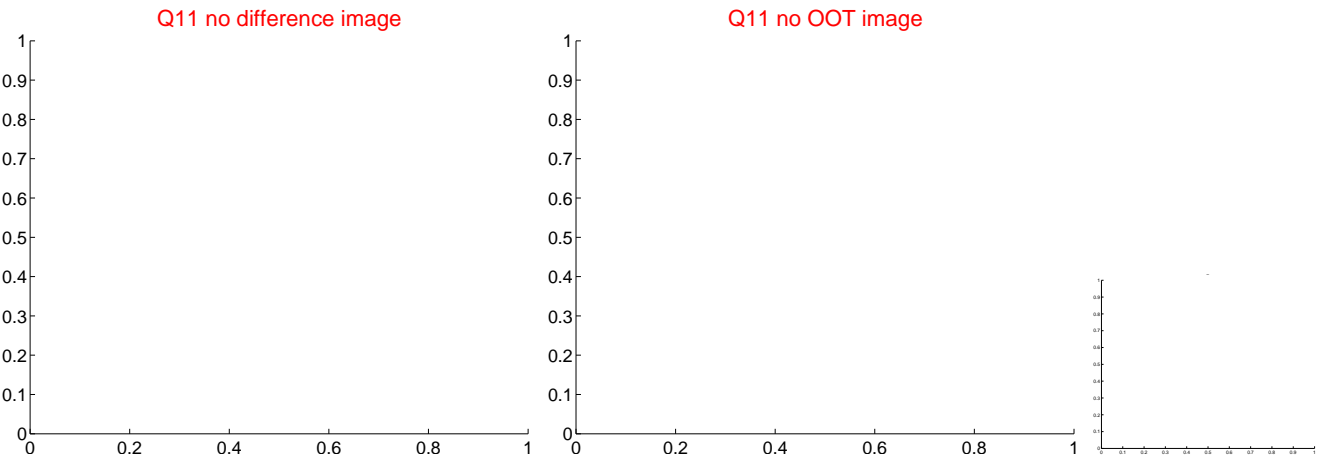
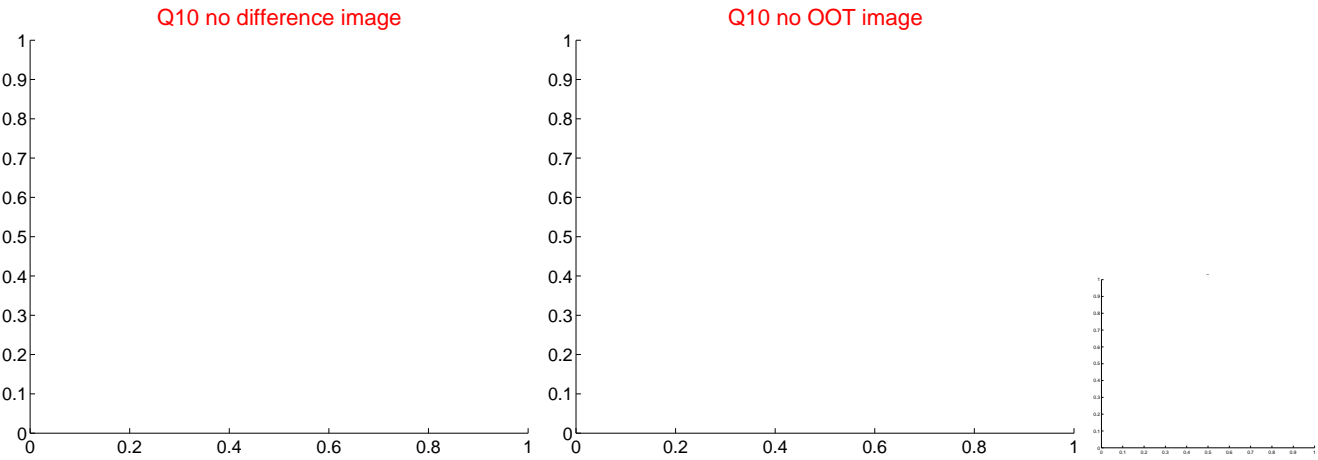
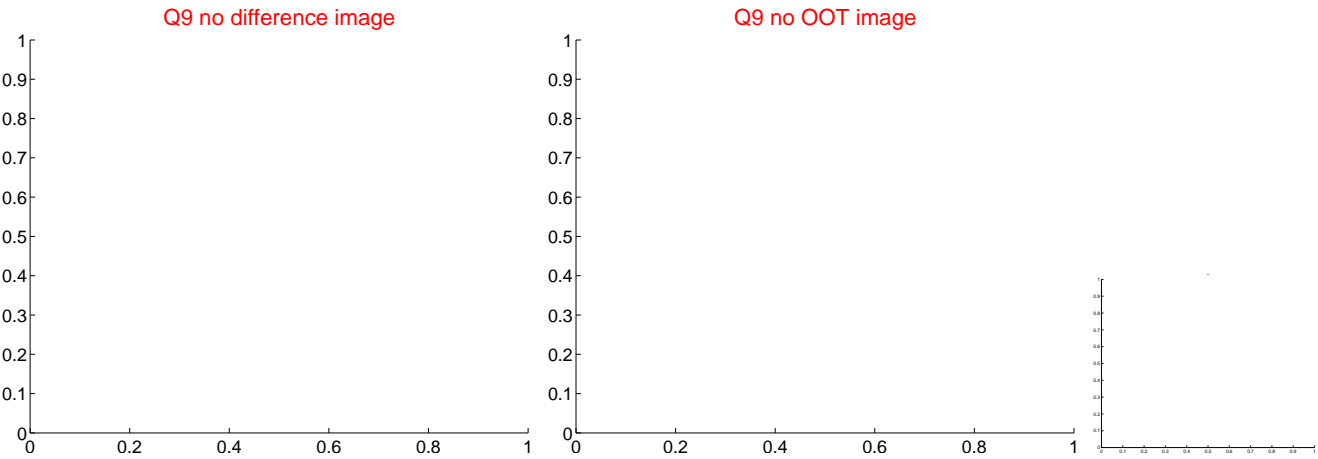
Q8 no difference image



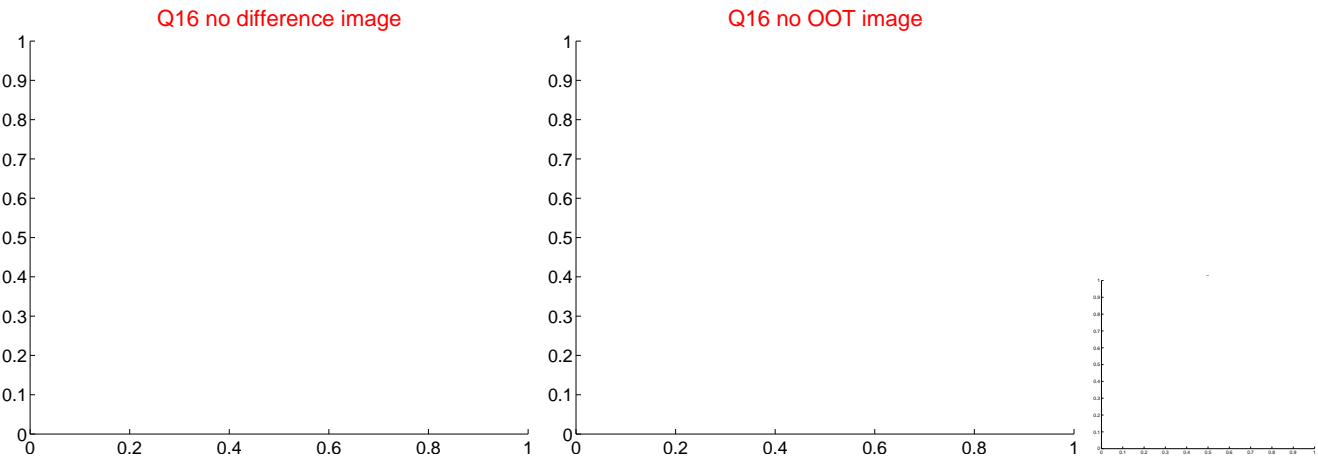
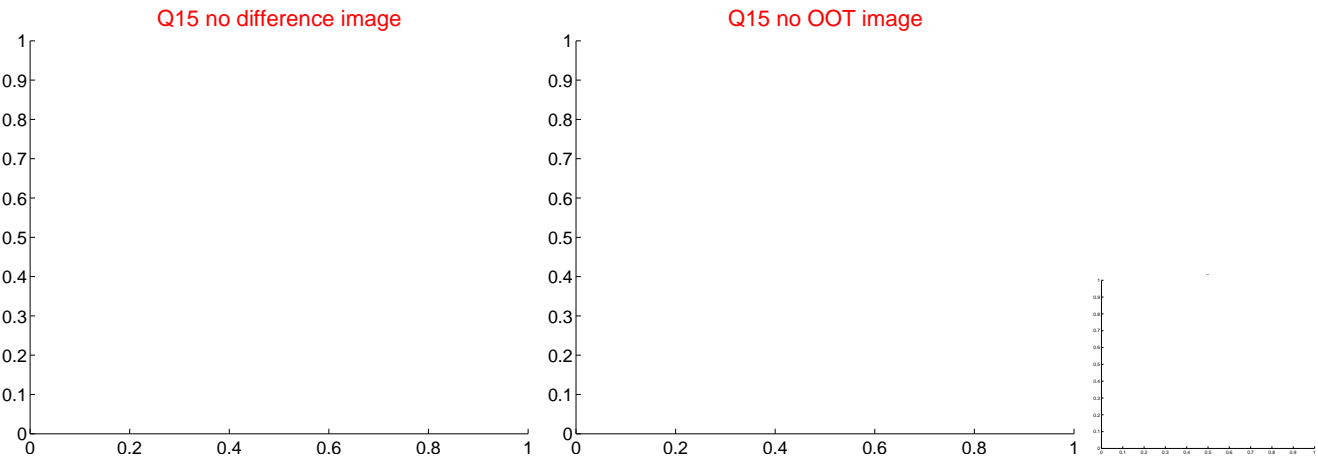
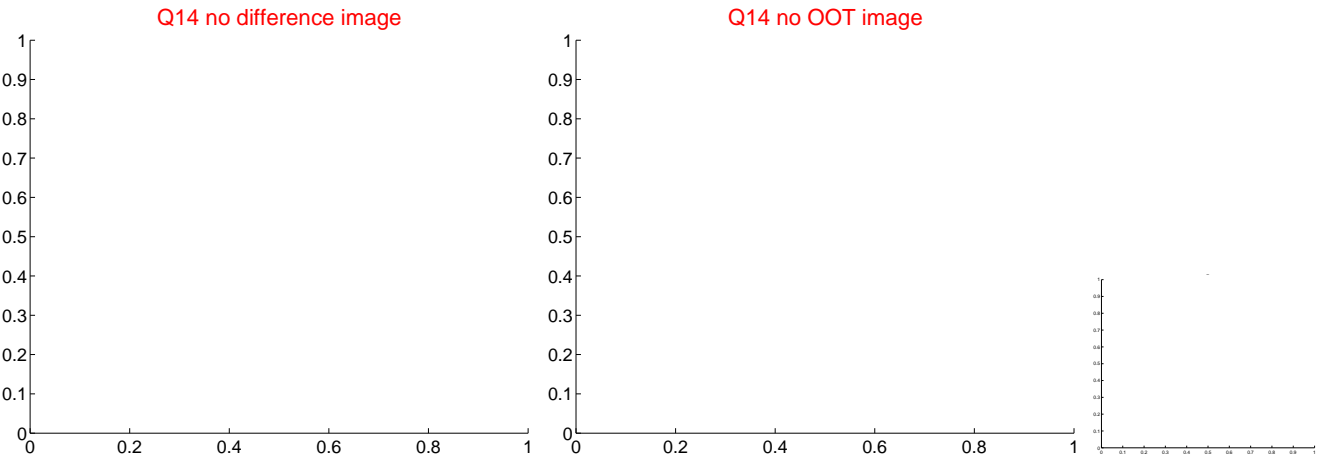
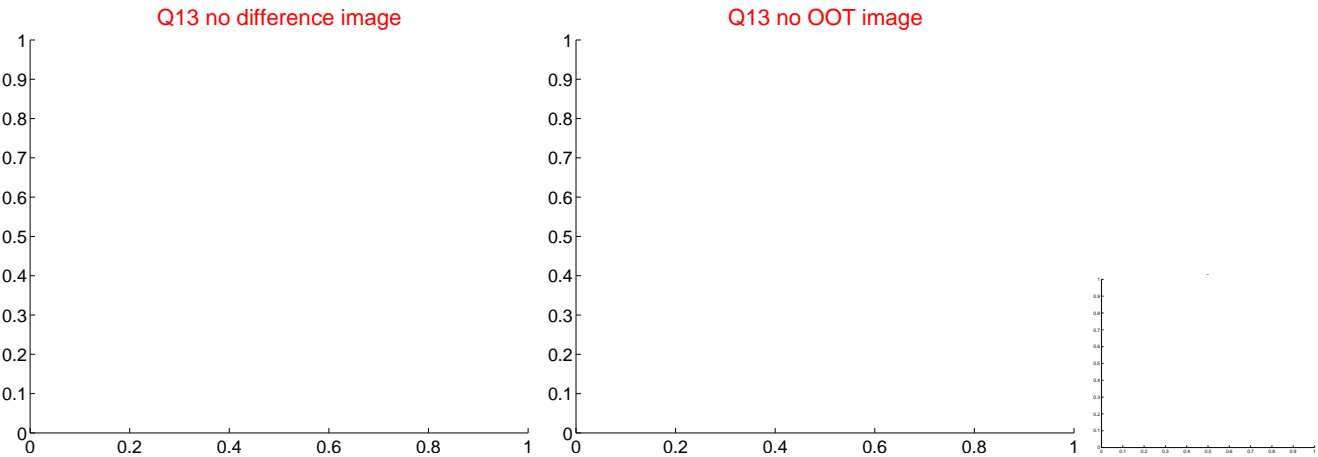
Q8 no OOT image



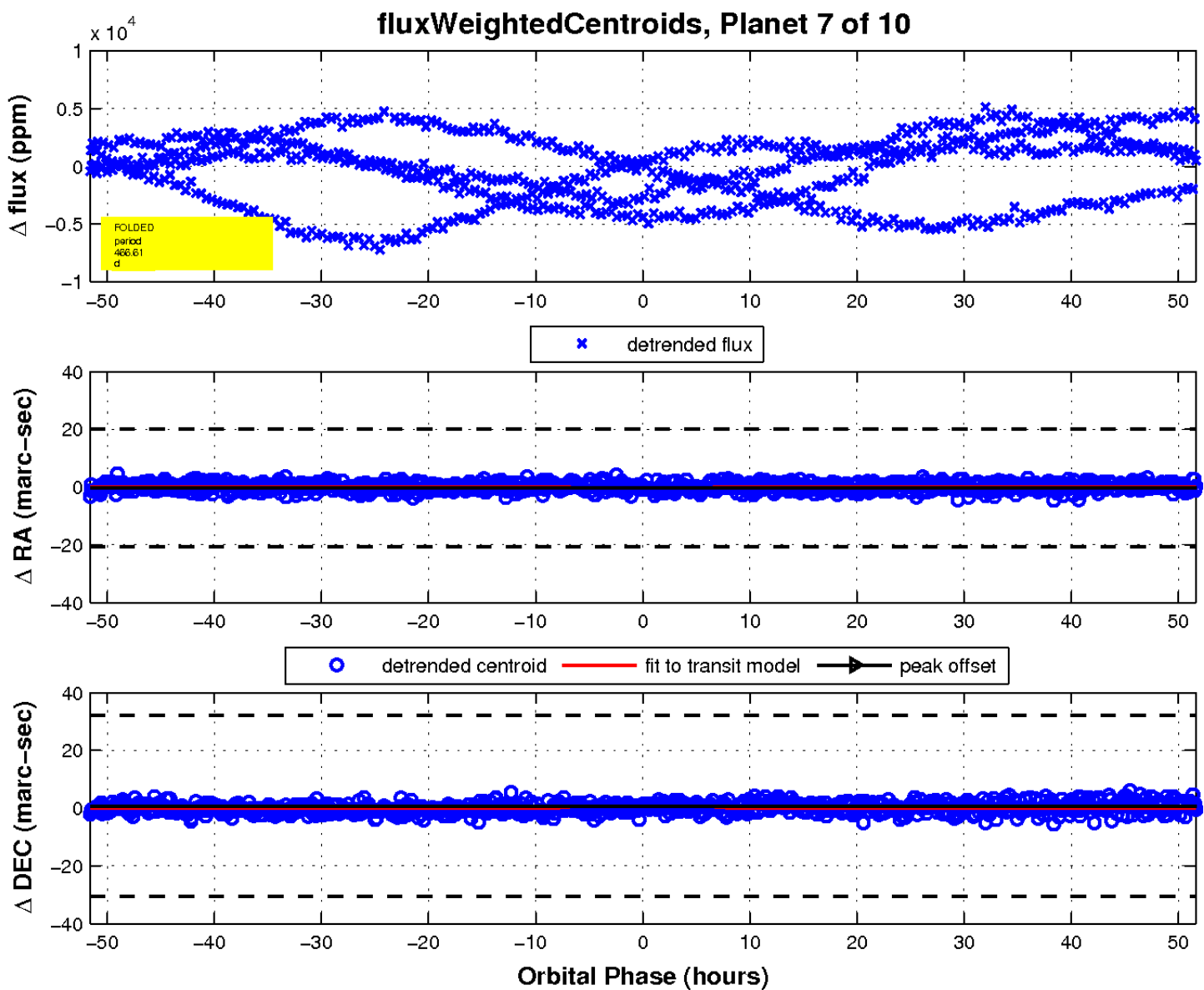
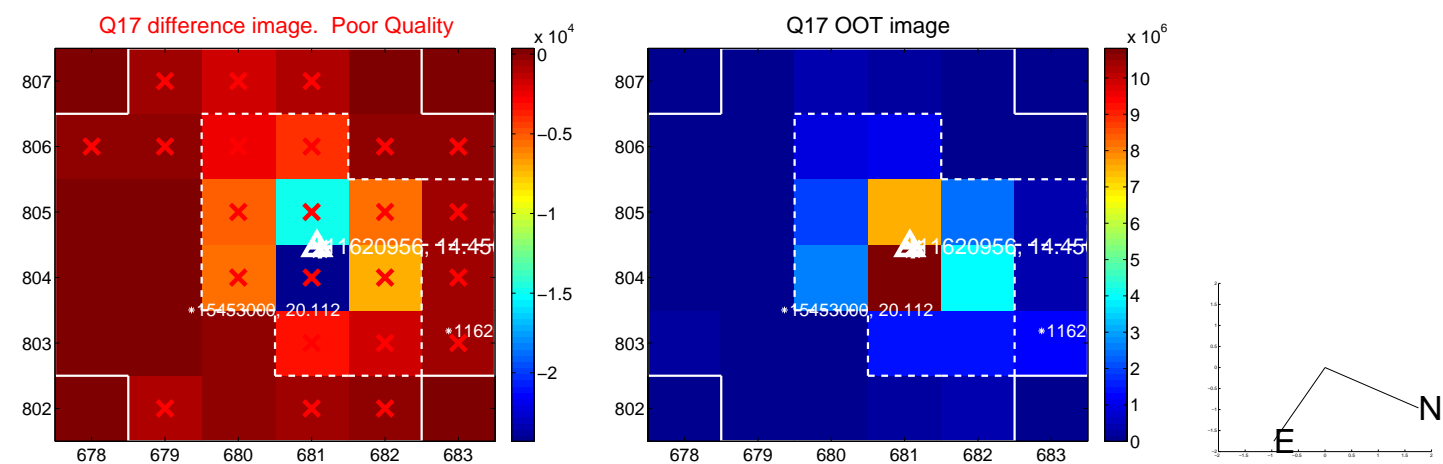
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

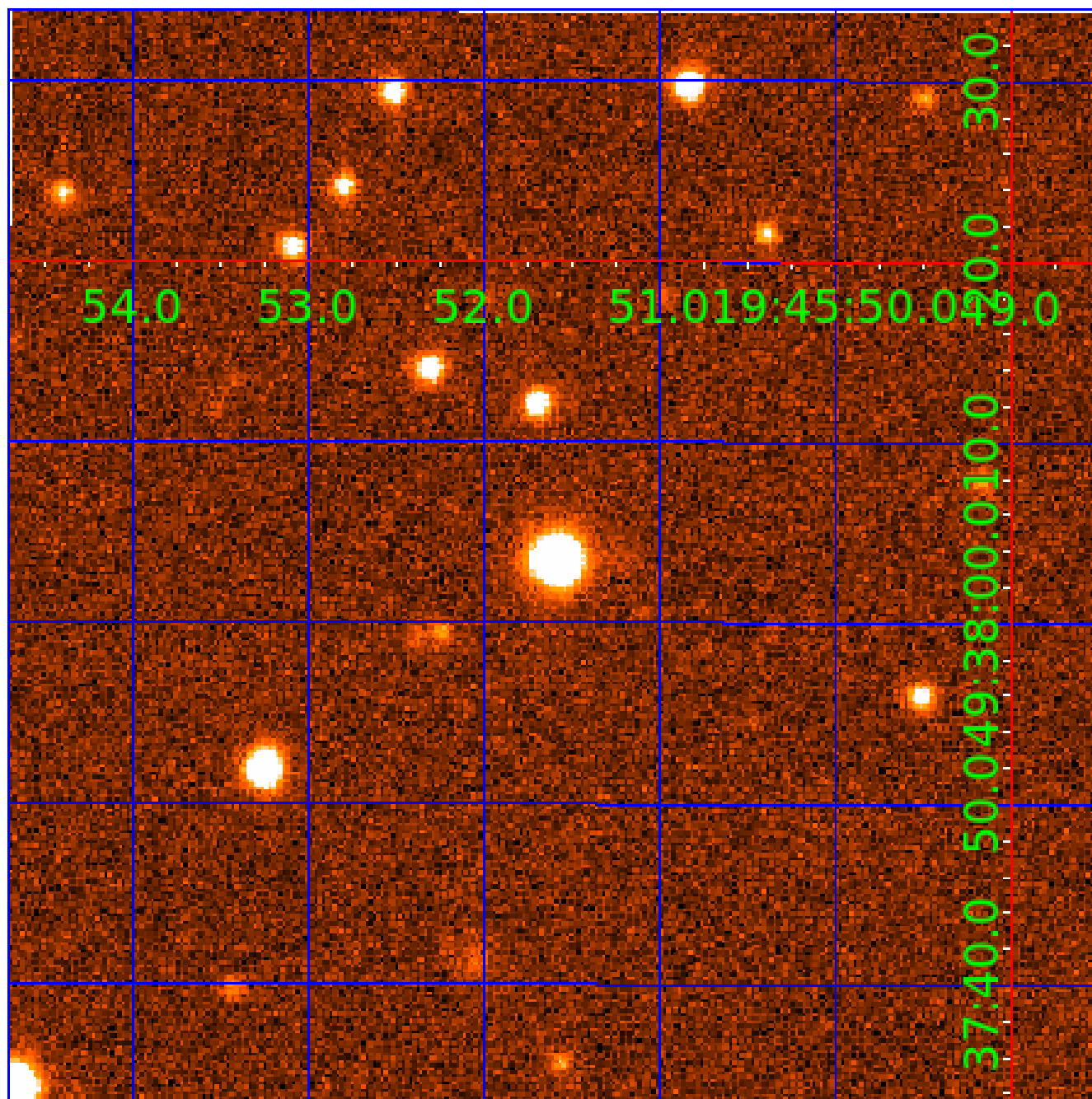


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011620956

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})
011620956-01	OBS	No	0.954225	131.920886	47.3	4.840	8.1	9.6	0.75	5656	0.61	1621.40
011620956-02	OBS	No	488.493304	207.854435	2379.7	7.562	20.9	10.3	0.75	5656	3.72	0.40
011620956-05	OBS	No	155.461423	175.622791	288.0	1.746	11.6	2.1	0.75	5656	1.48	1.82
011620956-06	OBS	No	459.003247	165.754235	723.4	9.000	11.9	-1.0	0.75	5656	1.99	0.43
011620956-07	OBS	No	466.607749	172.580412	4166.4	17.220	11.4	8.6	0.75	5656	5.27	0.42
011620956-08	OBS	No	170.727948	270.243744	1899.4	9.418	10.9	8.0	0.75	5656	6.17	1.61
011620956-09	OBS	No	120.662292	229.959456	645.1	11.187	12.9	4.3	0.75	5656	1.97	2.56
011620956-10	OBS	No	358.792880	323.205031	516.2	10.500	10.9	-1.0	0.75	5656	1.68	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011620956-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011620956-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
011620956-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
011620956-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011620956-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

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

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

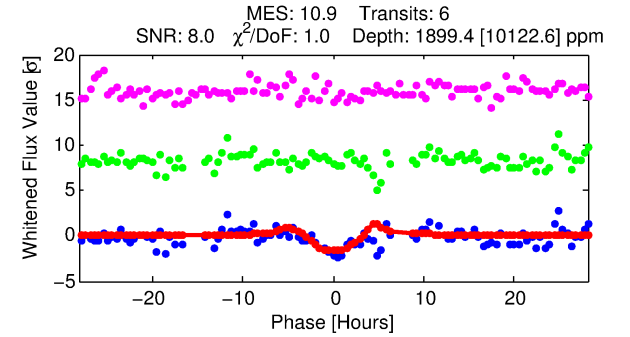
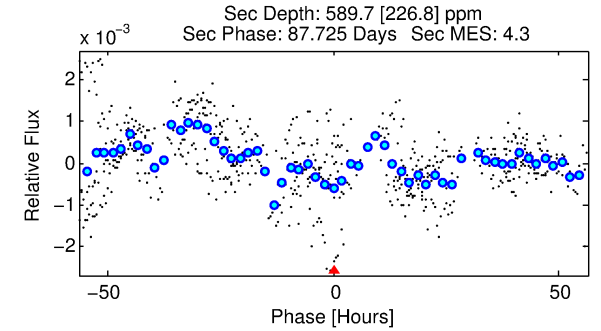
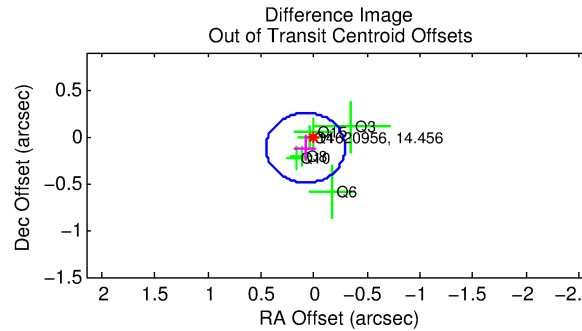
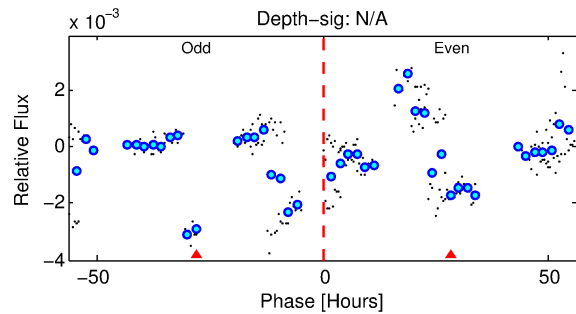
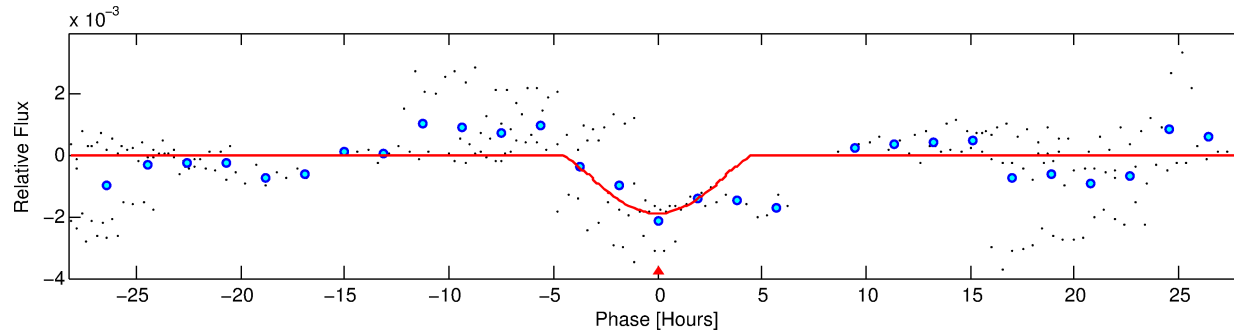
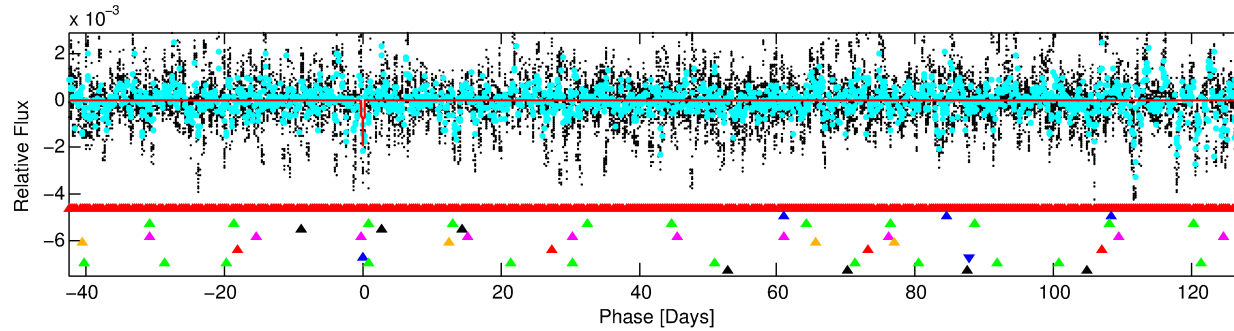
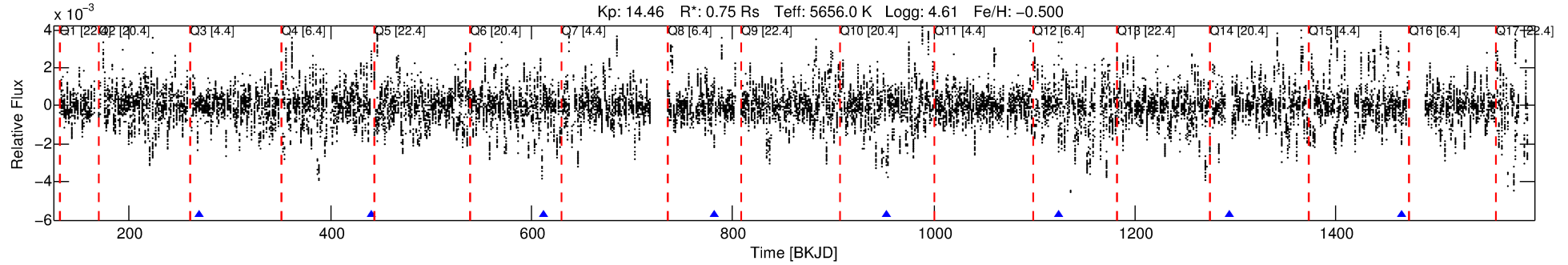
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011620956-08

No Significant Match Found

DV One-Page Summary

KIC: 11620956 Candidate: 8 of 10 Period: 170.728 d



DV Fit Results:

Period = 170.72795 [0.01009] d
Epoch = 270.2437 [0.0516] BKJD
Rp/R* = 0.0759 [0.1800]
a/R* = 54.96 [28.22]
b = 1.00 [0.53]
Seff = 1.61 [0.46]
Teq = 287 [21] K
Rp = 6.17 [14.71] Re
a = 0.5633 [0.1030] AU
Ag = 2699.82 [12874.13] [0.21σ]
Teffp = 3200 [3810] K [0.76σ]

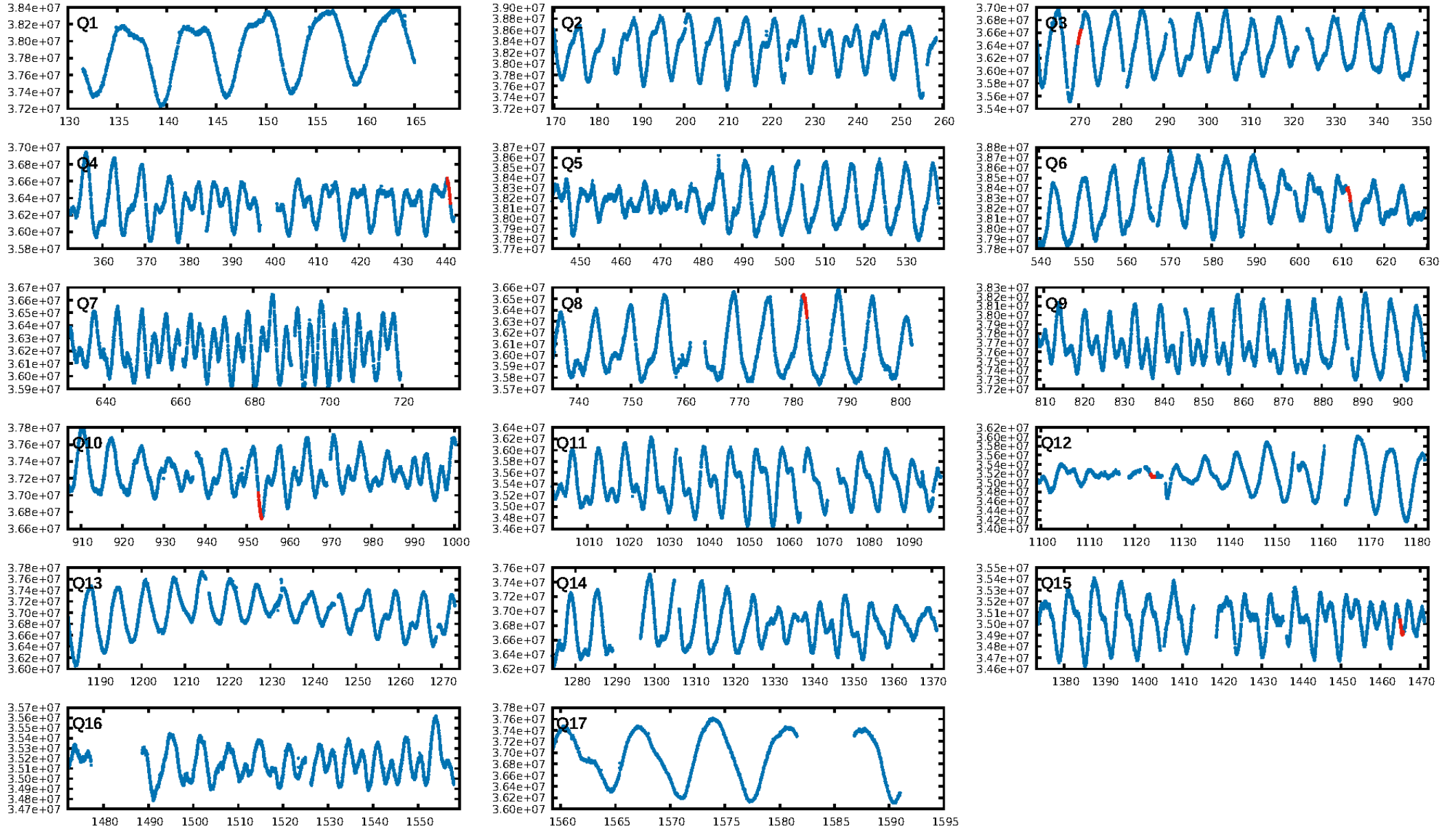
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [38.25σ]
LongPeriod-sig: 100.0% [320.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -7.744
Centroid-sig: 98.3%
Centroid-so: 0.445 arcsec [1.10σ]
OotOffset-rm: 0.145 arcsec [1.16σ]
OotOffset-st: 2/2/2/0 [6]
KicOffset-rm: 0.188 arcsec [1.88σ]
KicOffset-st: 2/2/2/0 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.00 [0/6]

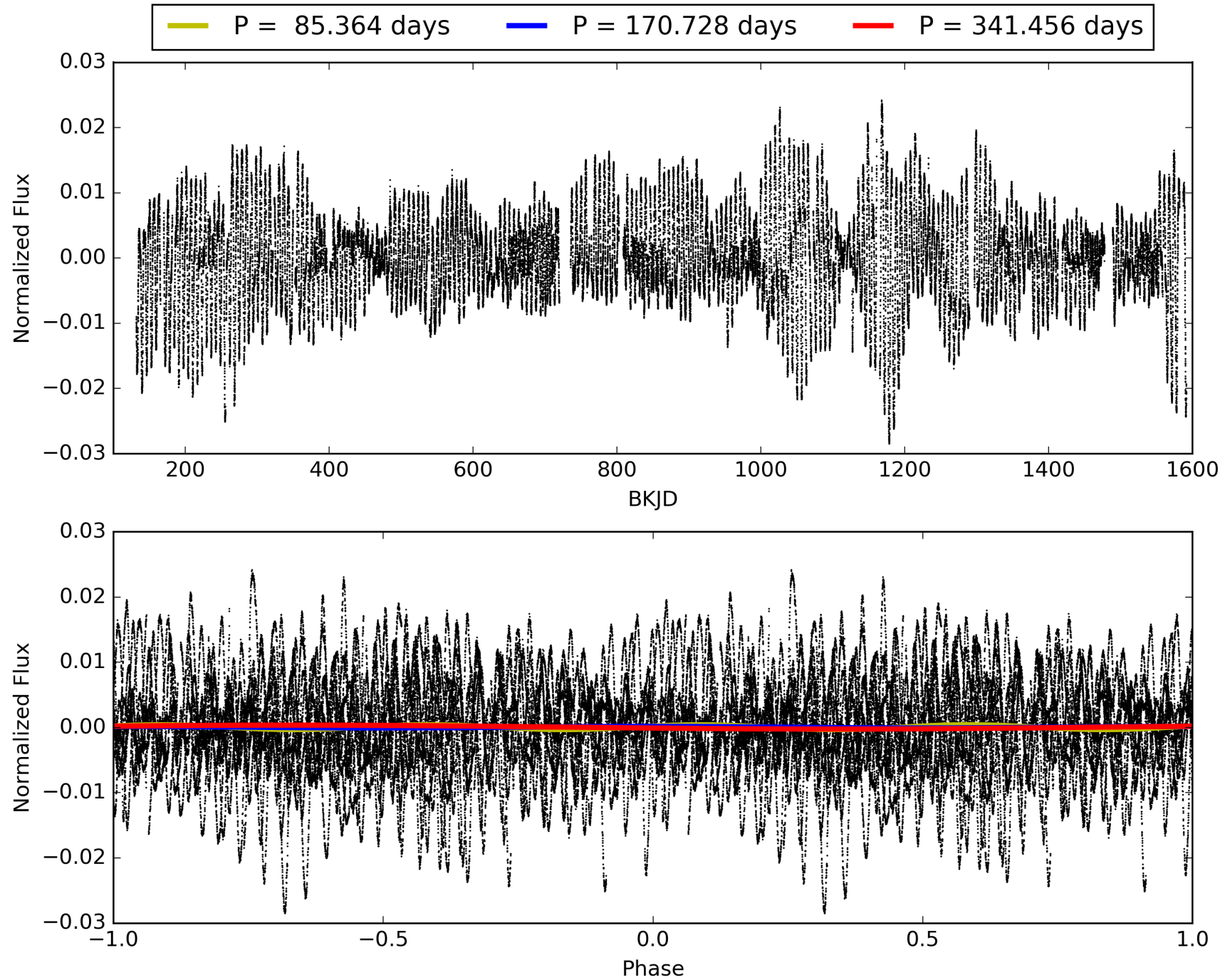
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:48:09 Z

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

TCE 011620956-08, PDC Light Curves

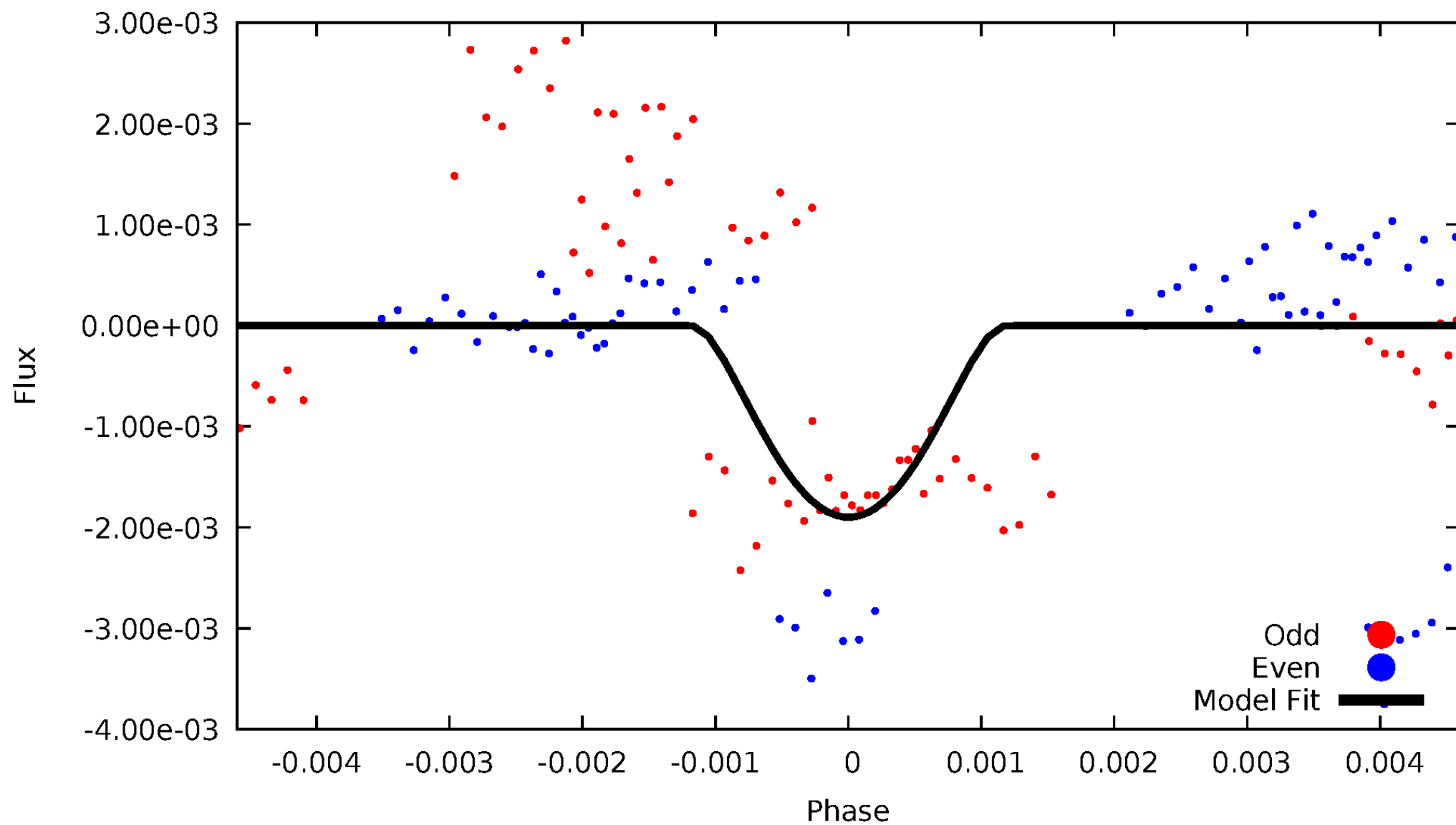


TCE 011620956-08



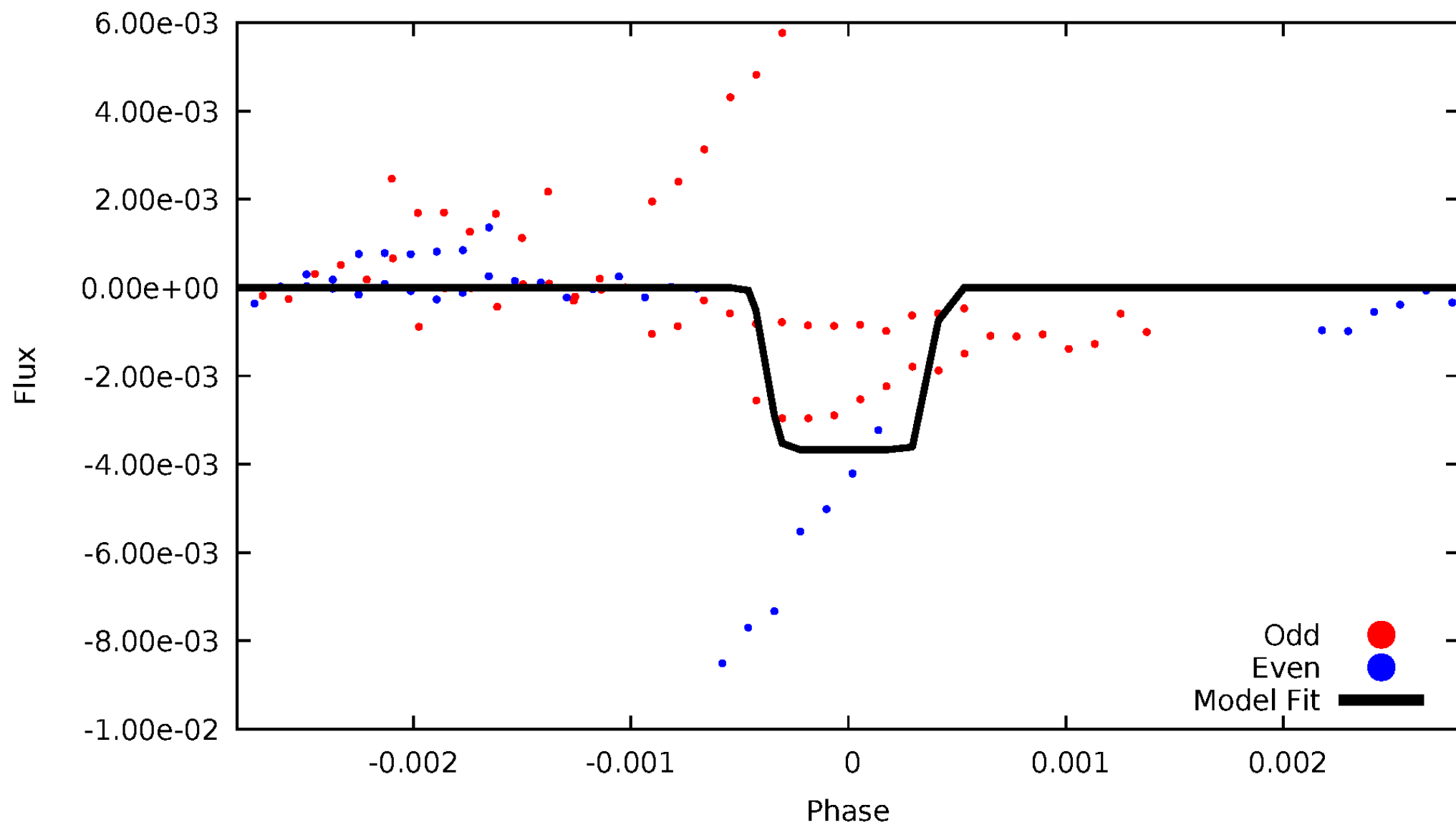
DV Odd/Even

TCE 011620956-08



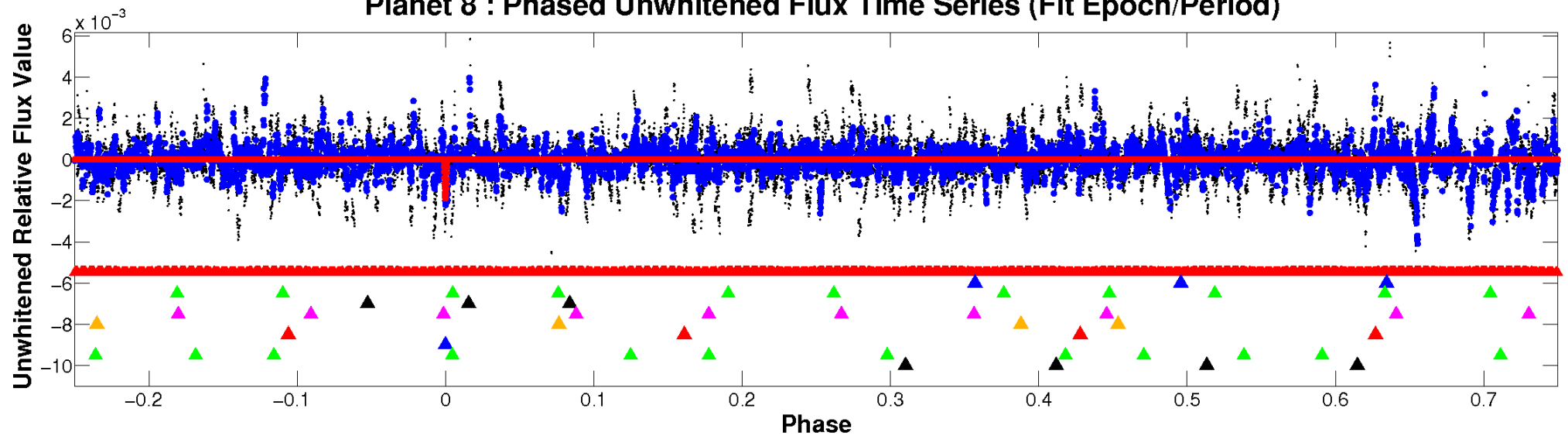
ALT Odd/Even

TCE 011620956-08

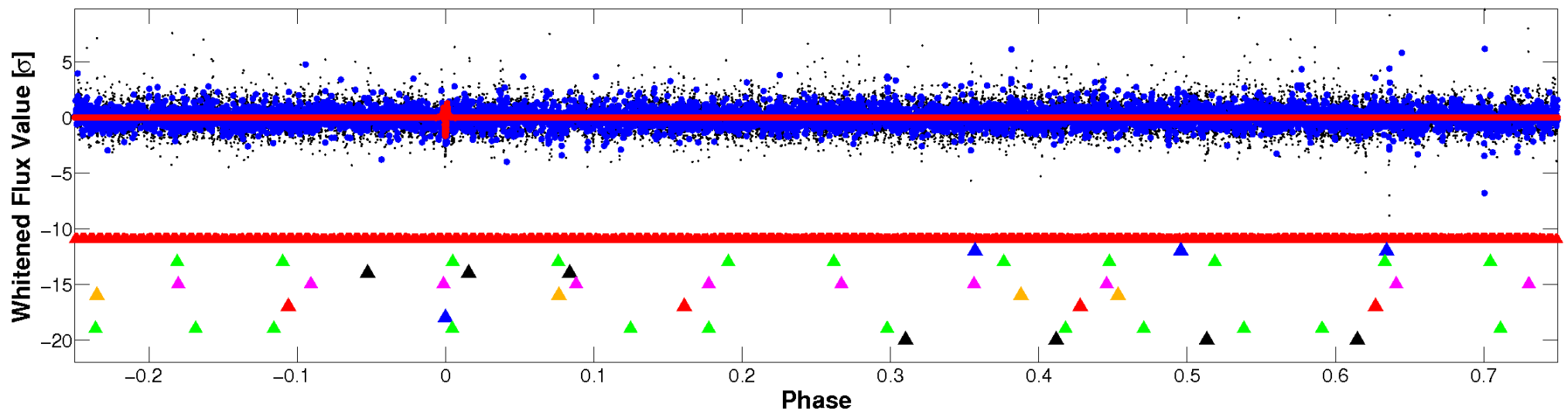


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

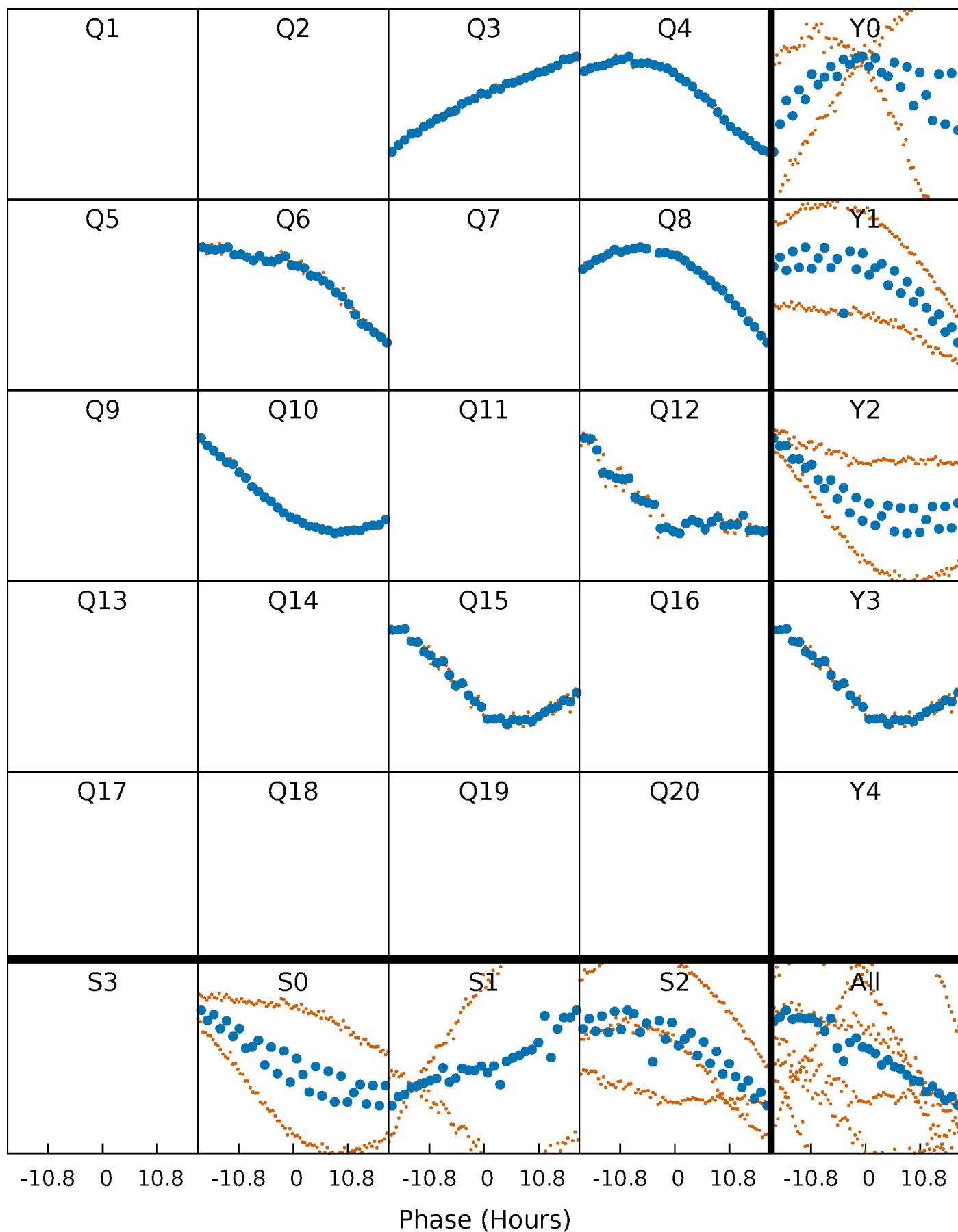


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



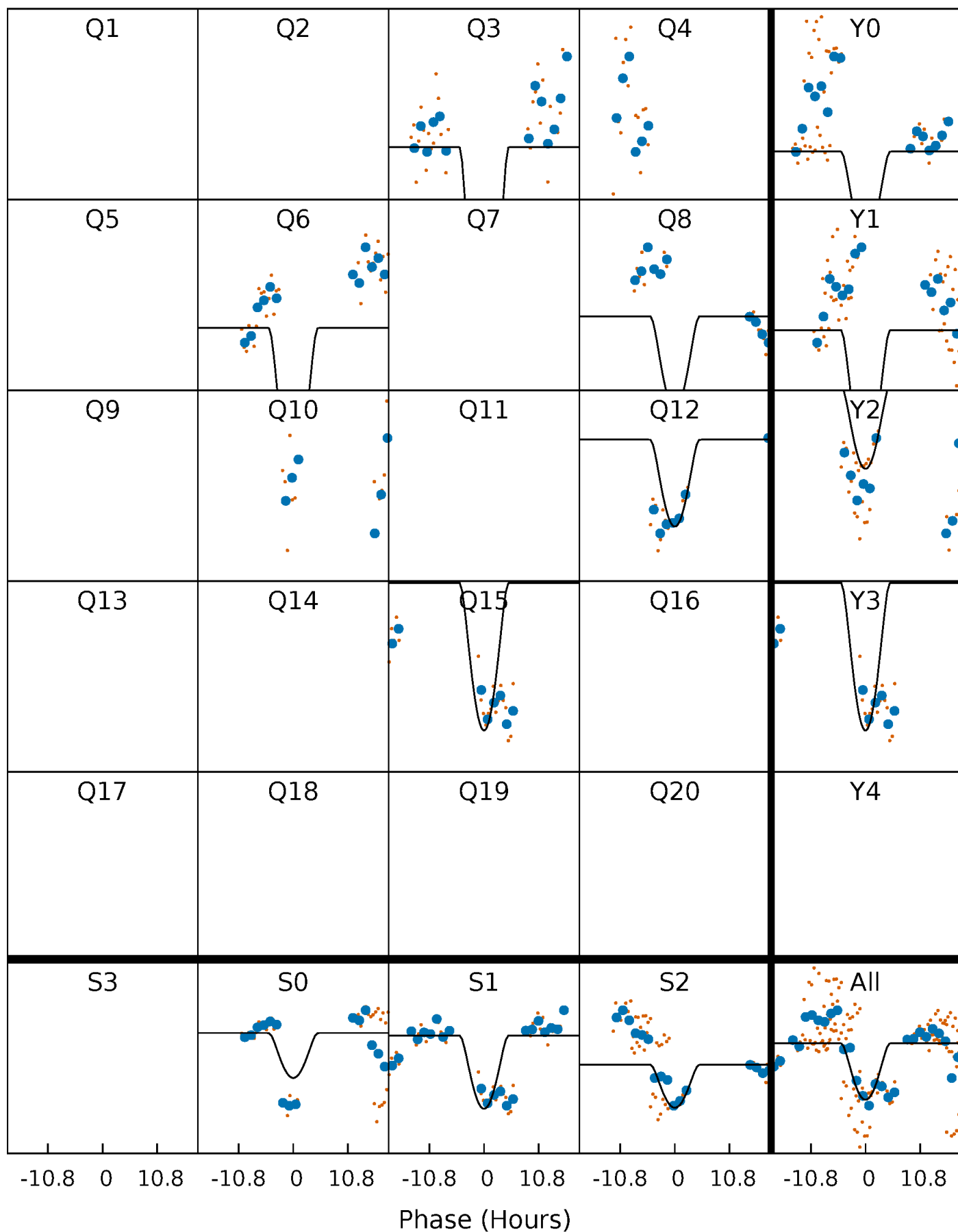
PDC Quarter-Phased Transit Curves

TCE 011620956-08 P=170.727948 Days $T_0=270.243744$ (BKJD)



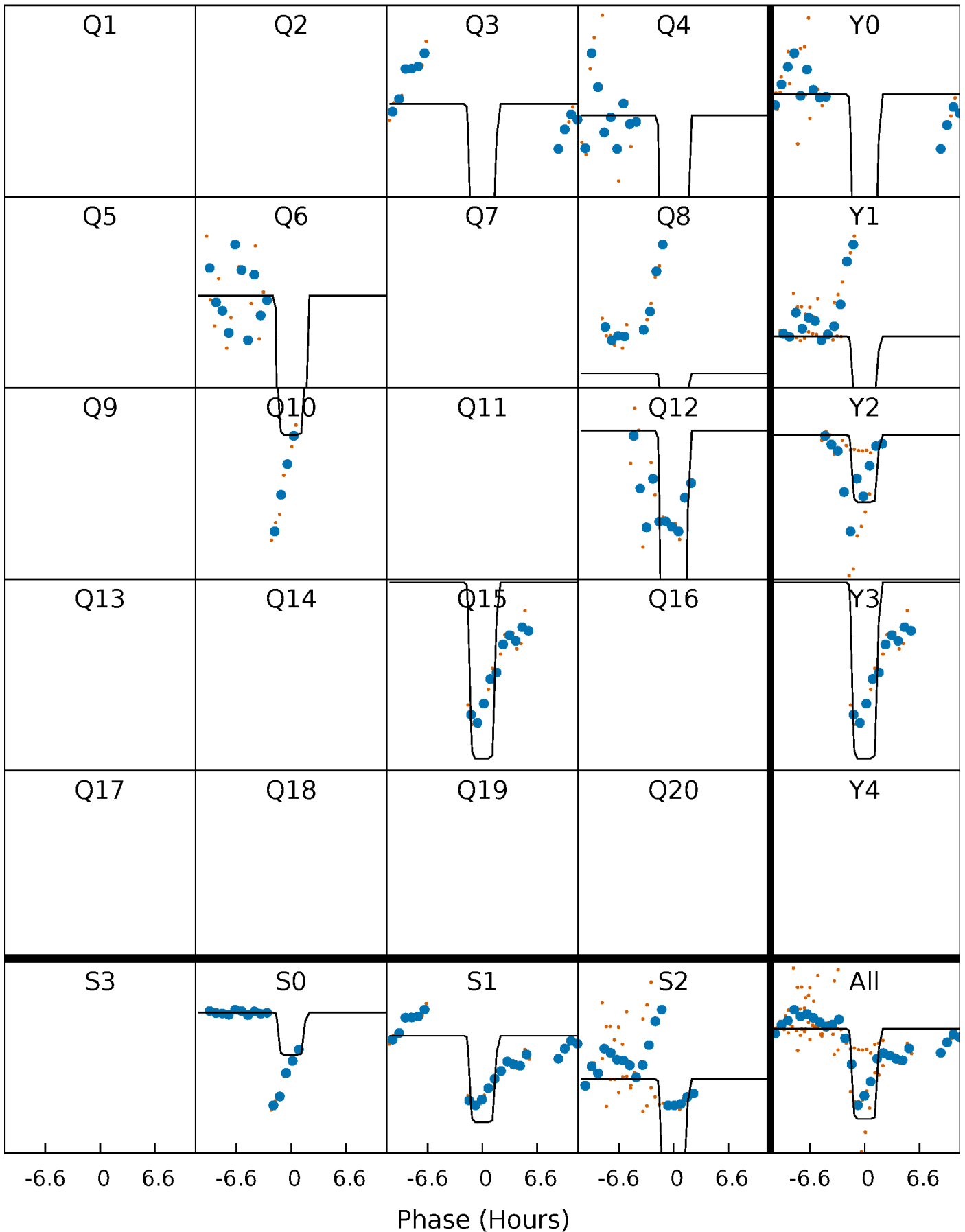
DV Quarter-Phased Transit Curves

TCE 011620956-08 $P=170.727948$ Days $T_0=270.243744$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

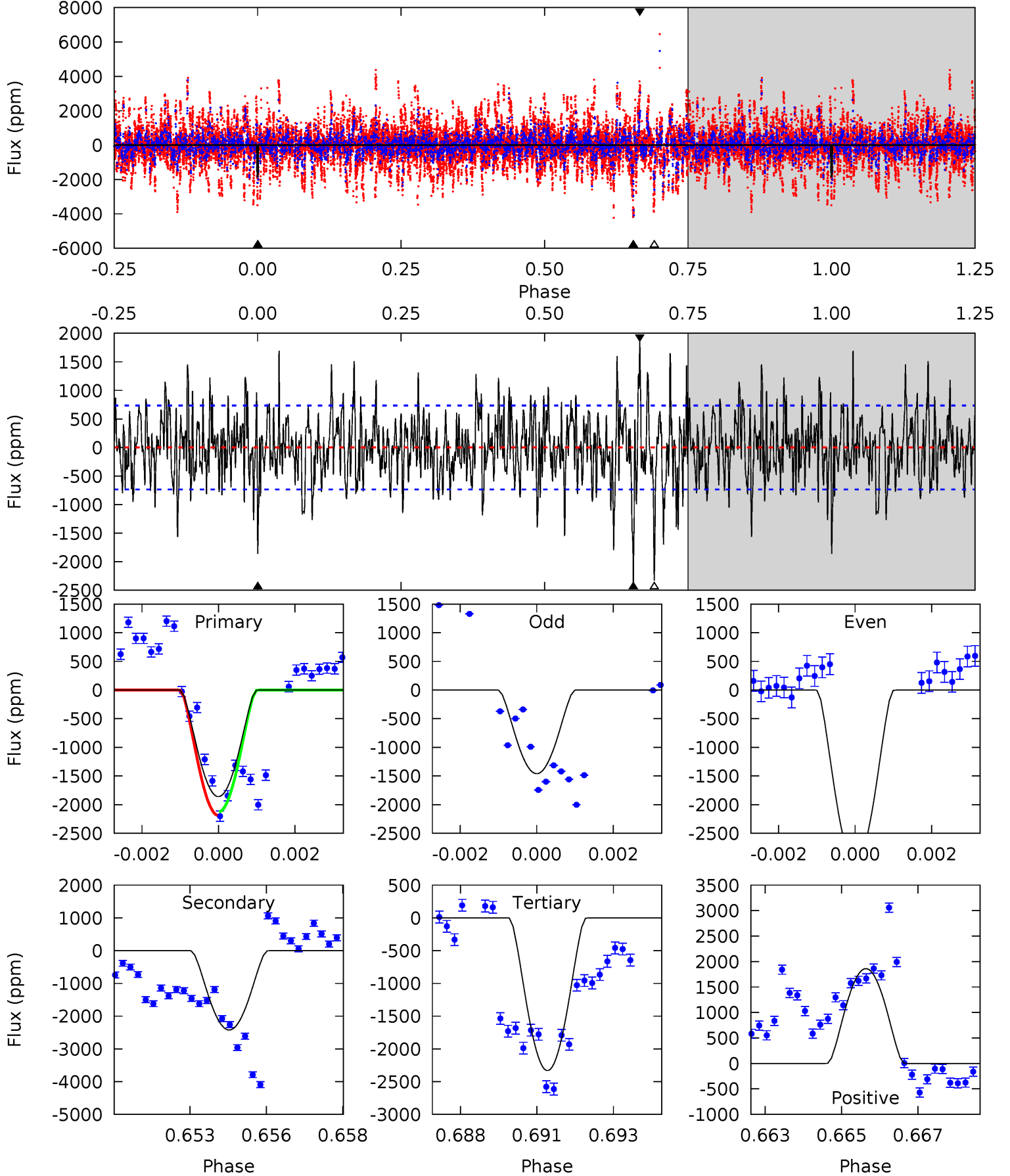
TCE 011620956-08 P=170.733229 Days $T_0=270.233113$ (BKJD)



DV Model-Shift Uniqueness Test

011620956-08, P = 170.727948 Days, E = 99.515796 Days

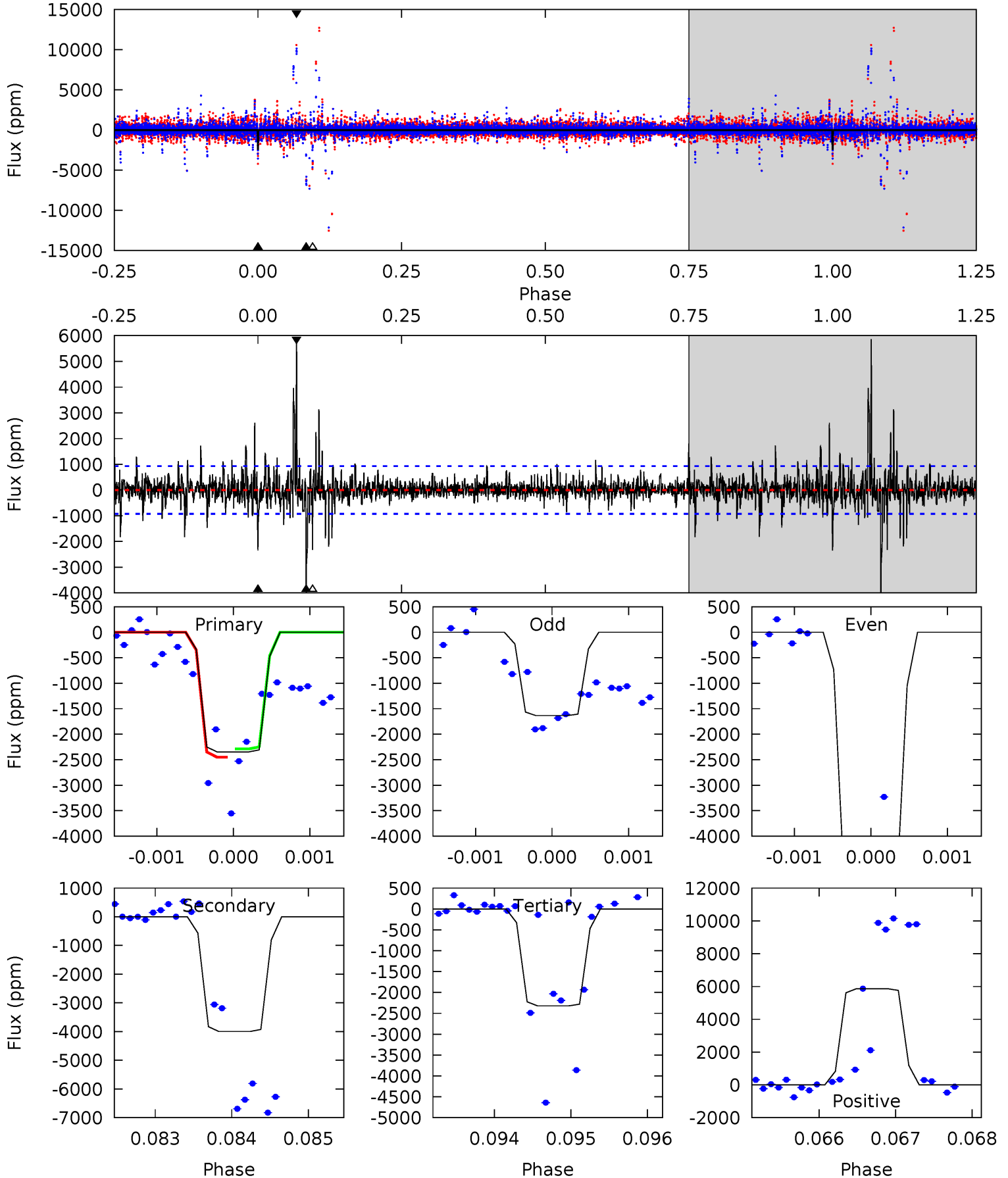
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	17.4	16.8	13.4	5.30	3.04	3.65	-3.38	-0.00	0.66	4.04	4.66	0.50	0.43	0.20



Alt Model-Shift Uniqueness Test

011620956-08, P = 170.733229 Days, E = 99.499884 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	23.6	13.7	34.7	5.48	3.33	1.89	0.16	-20.8	9.91	-11.0	4.82	0.29	0.59	0.48



Stellar Parameters For KIC 011620956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5656^{+152}_{-152}	$4.605^{+0.036}_{-0.144}$	$-0.500^{+0.300}_{-0.300}$	$0.746^{+0.163}_{-0.054}$	$0.834^{+0.079}_{-0.088}$	$2.827^{+0.527}_{-1.131}$
	+3%/-3%	+1%/-3%	+60%/-60%	+22%/-7%	+9%/-11%	+19%/-40%
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 011620956-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2421 ± 139	$12.38^{+12.60}_{-8.51}$	407^{+21}_{-15}	3686^{+2143}_{-712}	2711^{+24450}_{-2042}
Alt.	-3996 ± 169	$13.00^{+11.60}_{-8.91}$	407^{+22}_{-15}	3975^{+2278}_{-776}	4254^{+35246}_{-3140}

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 $A_{obs} \gg 1.0$

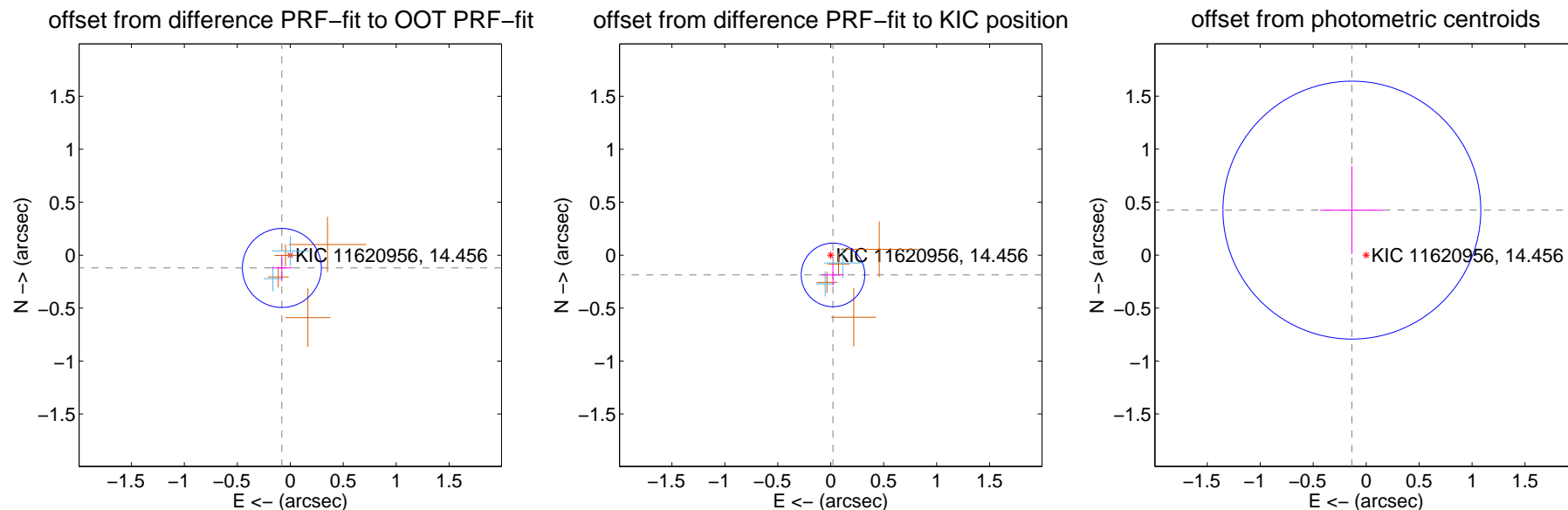
DV Centroid Data

Supplemental centroid analysis for 011620956-08. Kepler magnitude: 14.46. Transit SNR 8.03

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

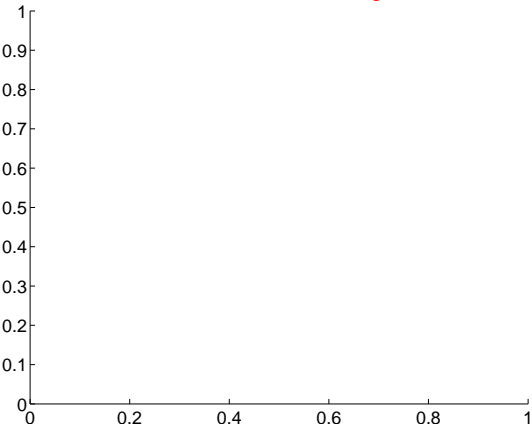
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.145 ± 0.124	1.16	0.079 ± 0.098	-0.121 ± 0.126
PRF-fit source offset from KIC position	0.188 ± 0.100	1.88	-0.021 ± 0.105	-0.187 ± 0.100
photometric centroid source offset	0.45 ± 0.41	1.10	0.13 ± 0.30	0.42 ± 0.42



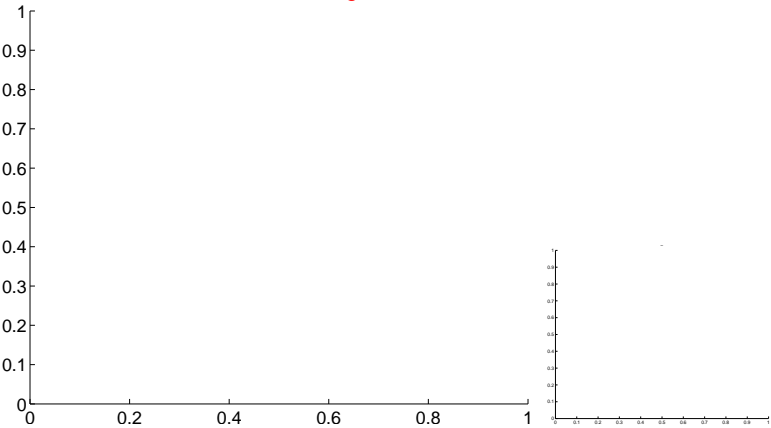
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

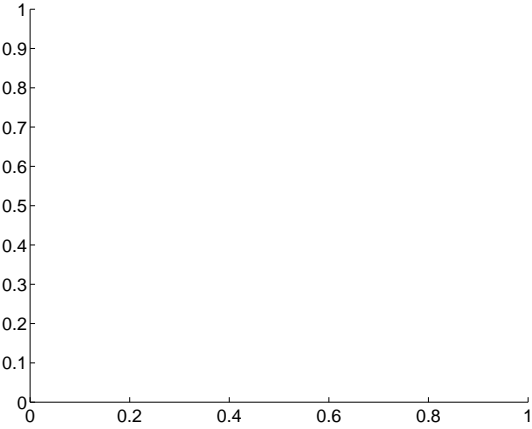
Q1 no difference image



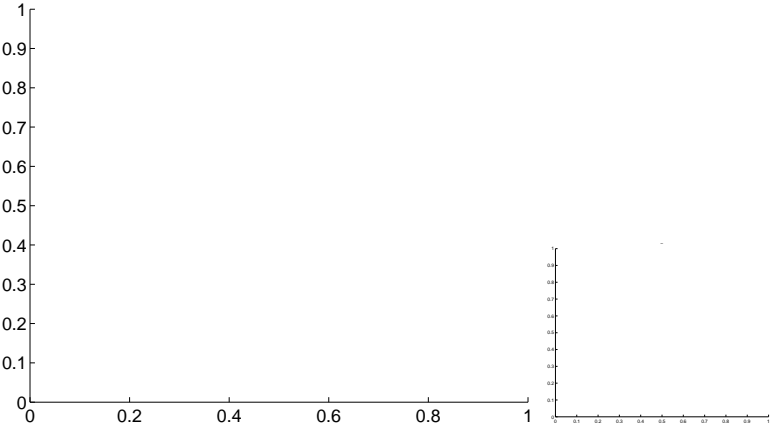
Q1 no OOT image



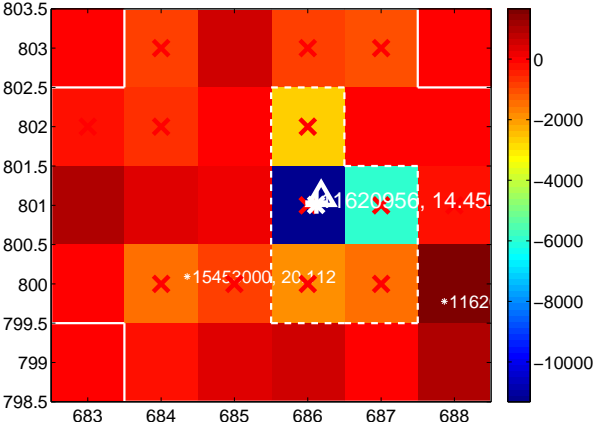
Q2 no difference image



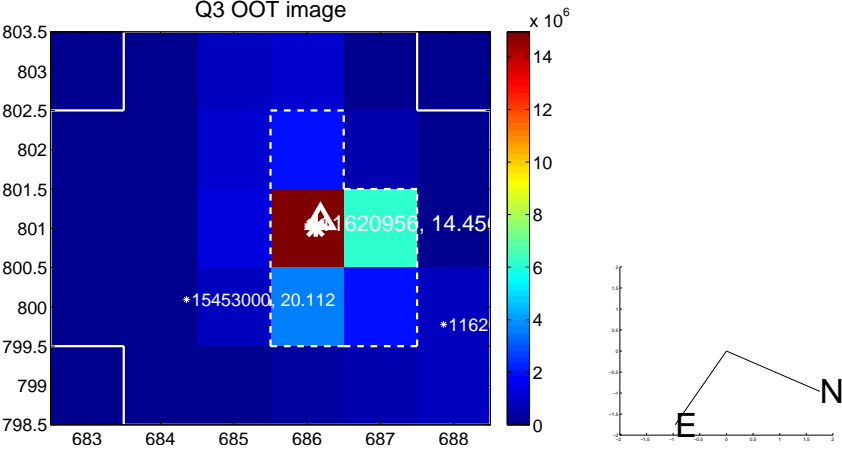
Q2 no OOT image



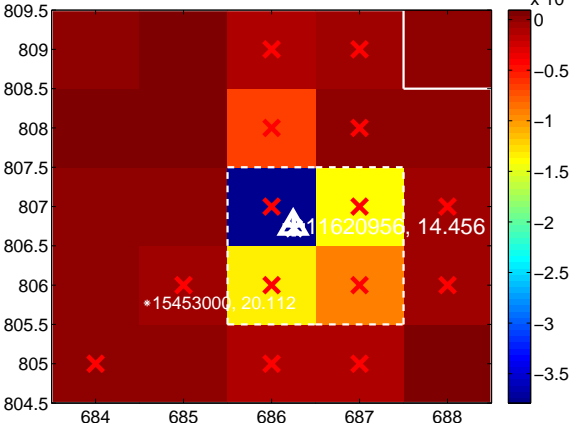
Q3 difference image. Poor Quality



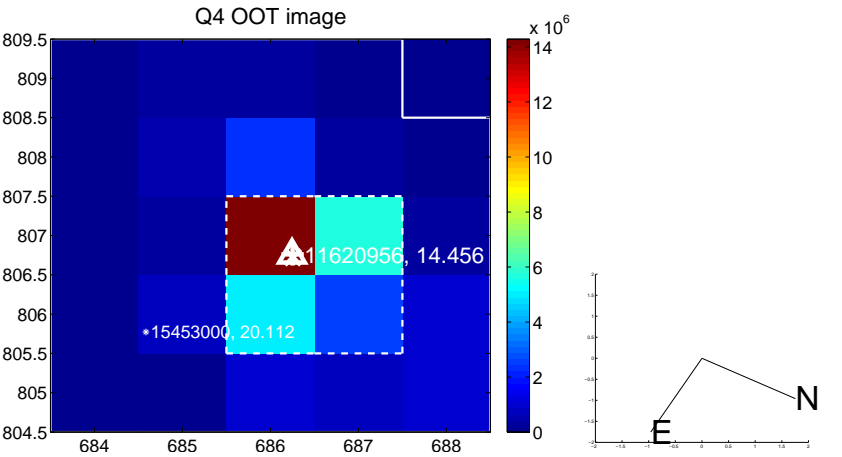
Q3 OOT image



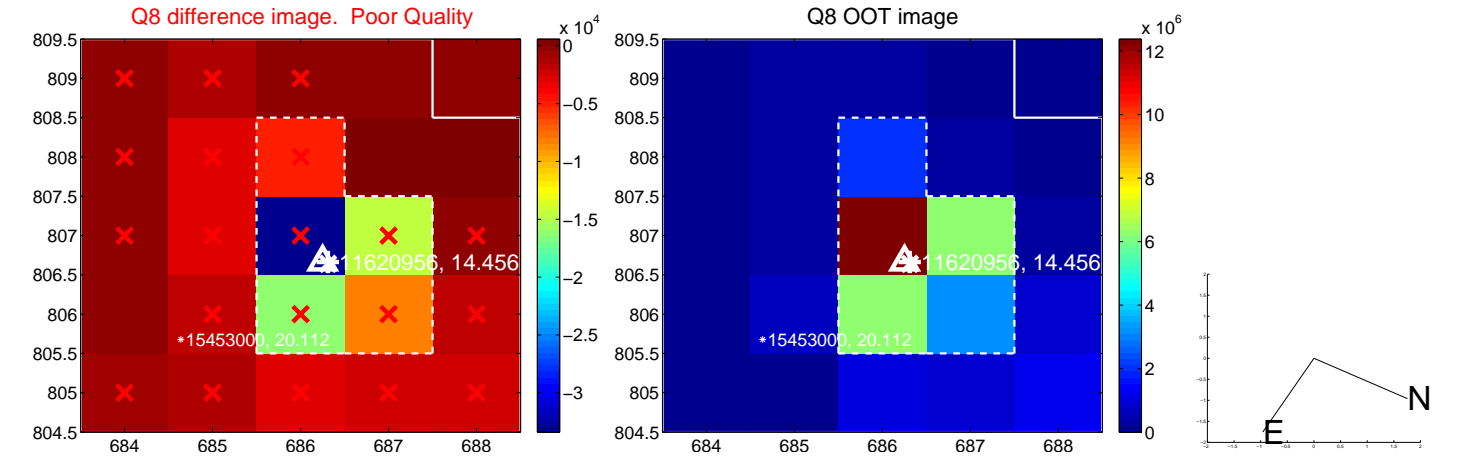
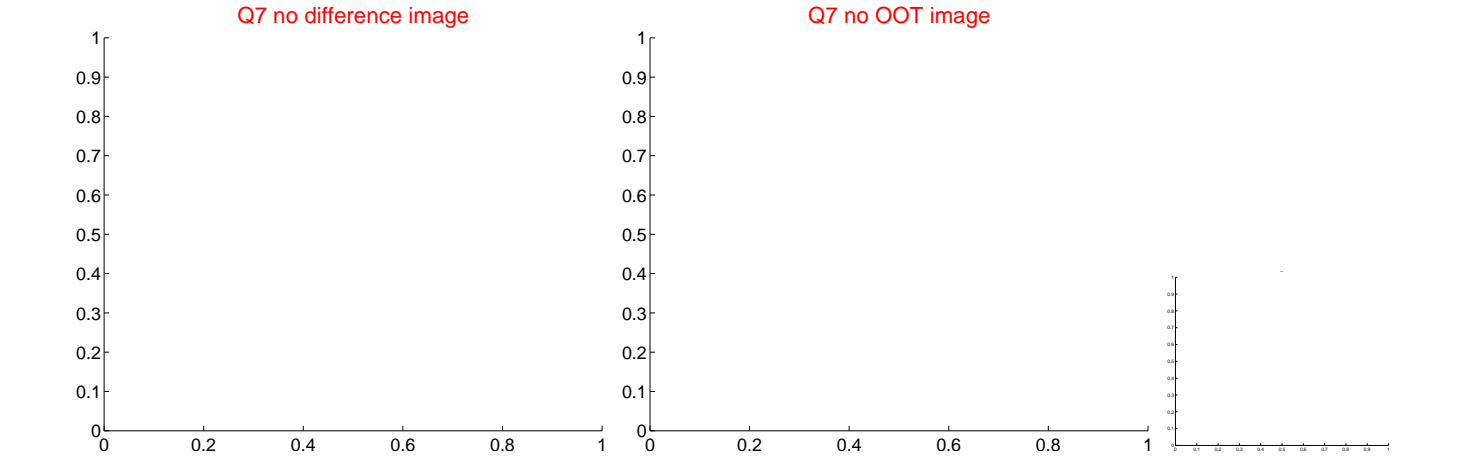
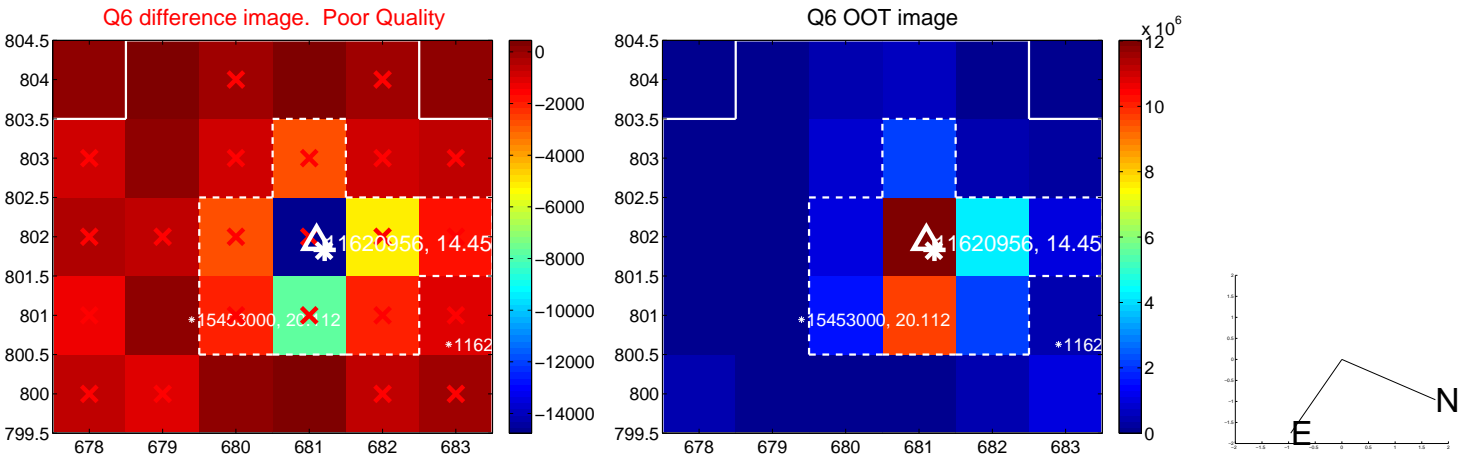
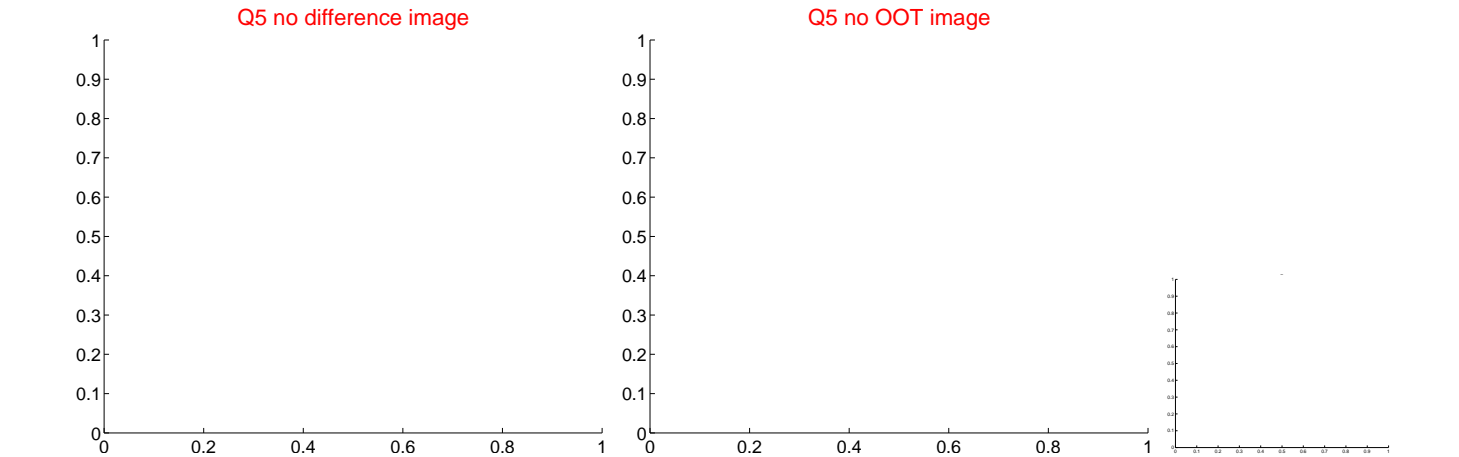
Q4 difference image. Poor Quality



Q4 OOT image

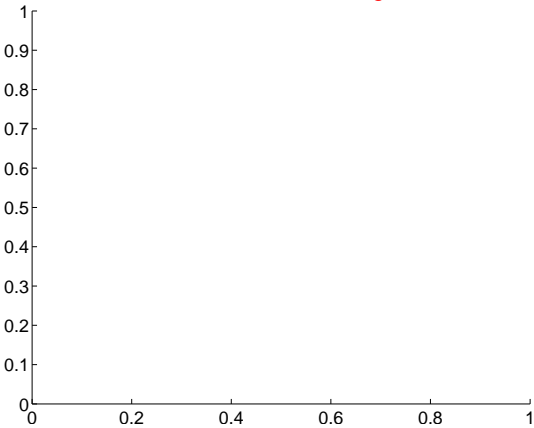


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

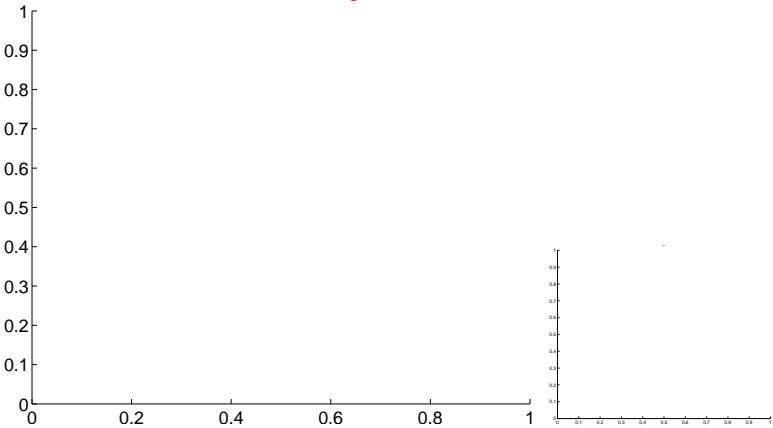


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

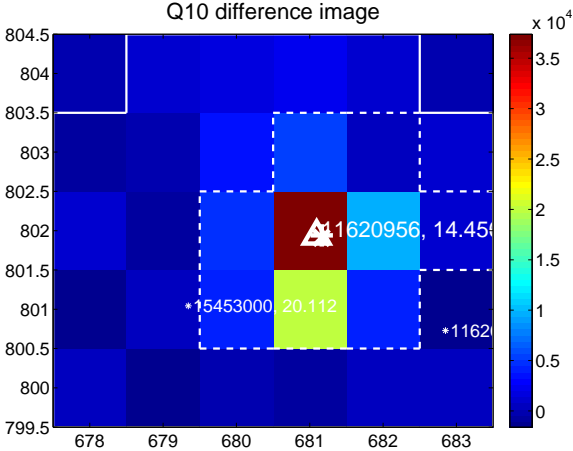
Q9 no difference image



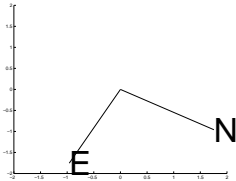
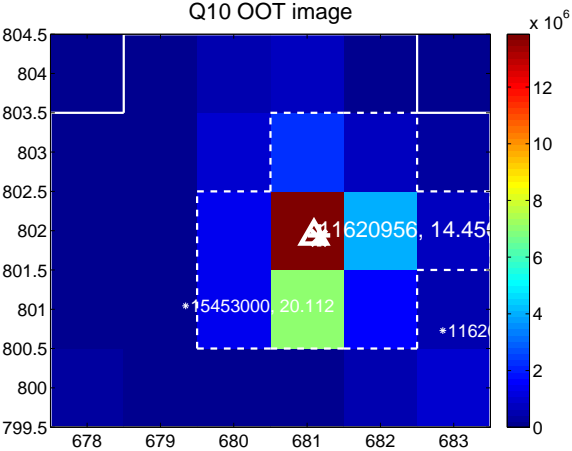
Q9 no OOT image



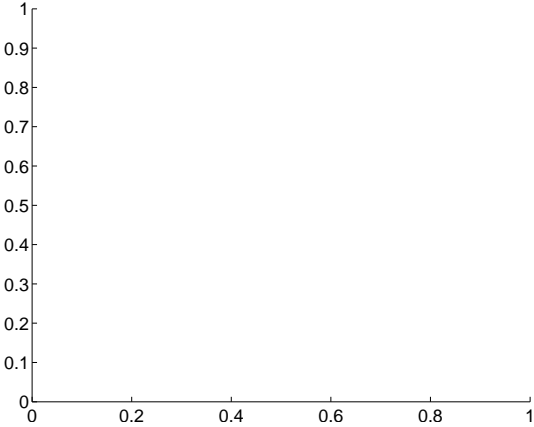
Q10 difference image



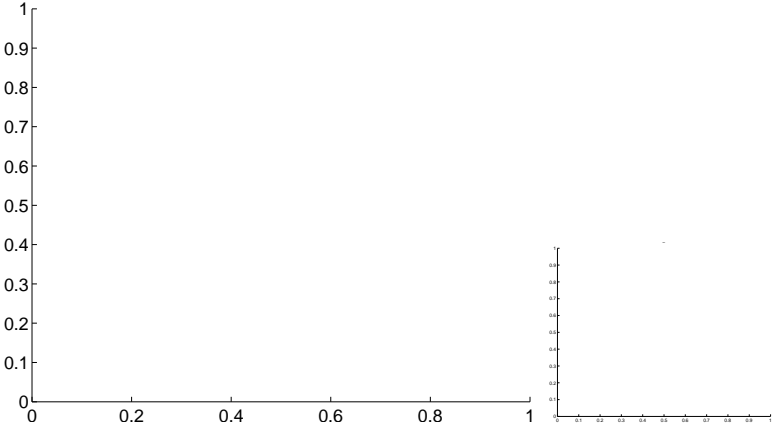
Q10 OOT image



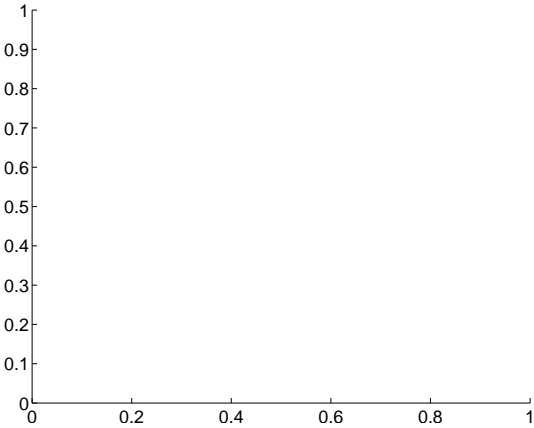
Q11 no difference image



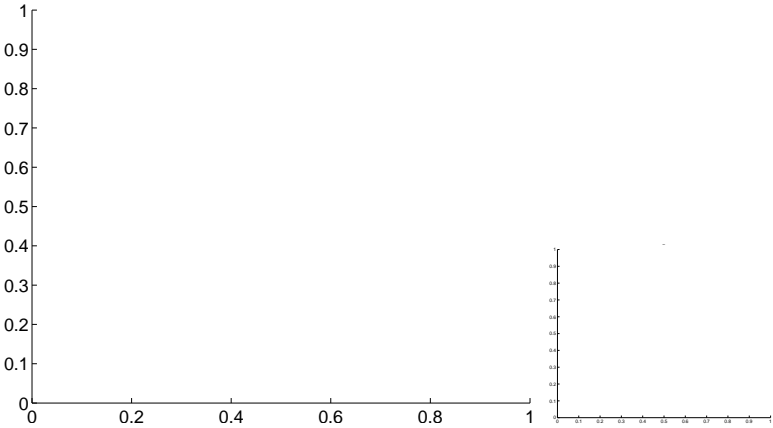
Q11 no OOT image



Q12 no difference image

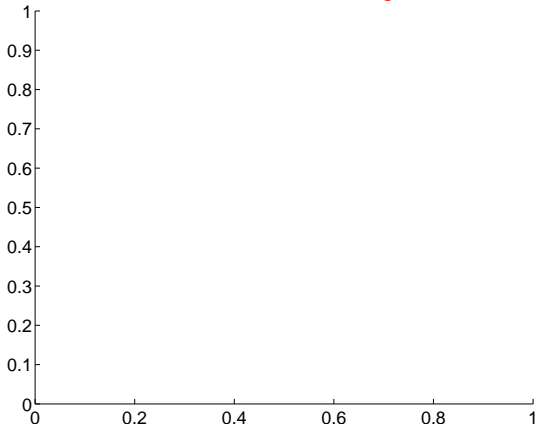


Q12 no OOT image

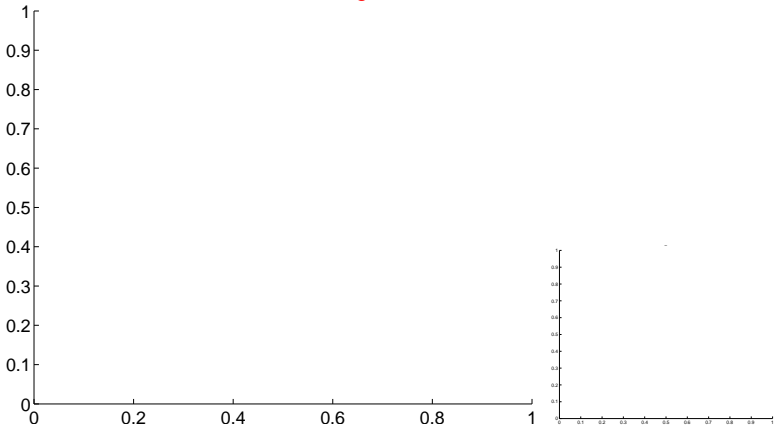


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

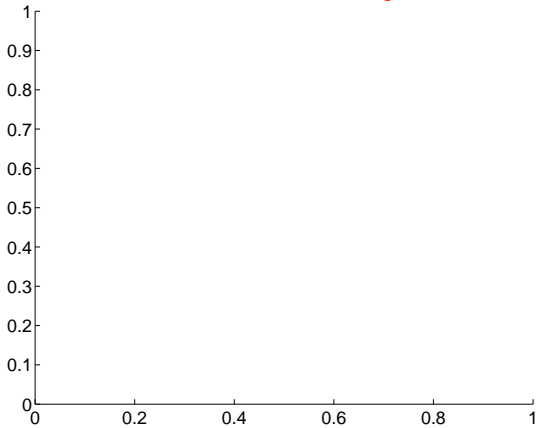
Q13 no difference image



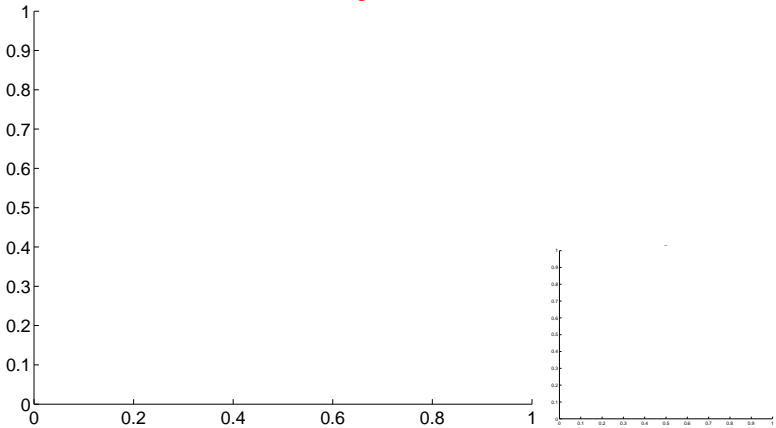
Q13 no OOT image



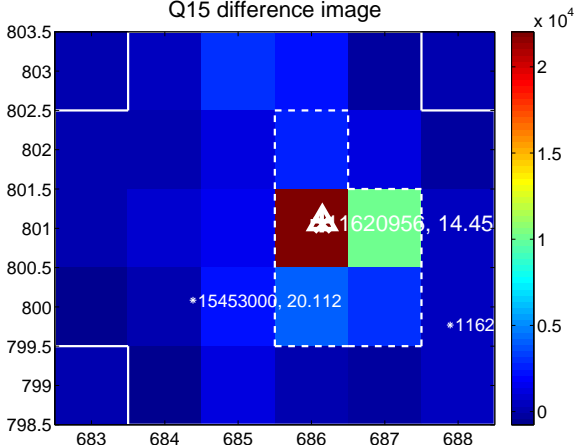
Q14 no difference image



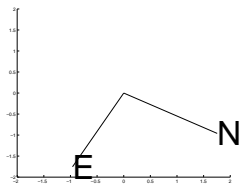
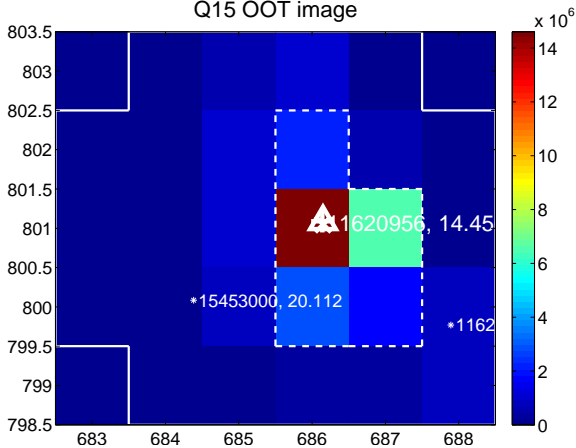
Q14 no OOT image



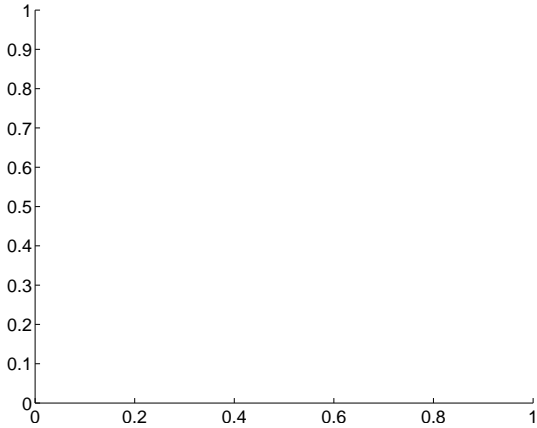
Q15 difference image



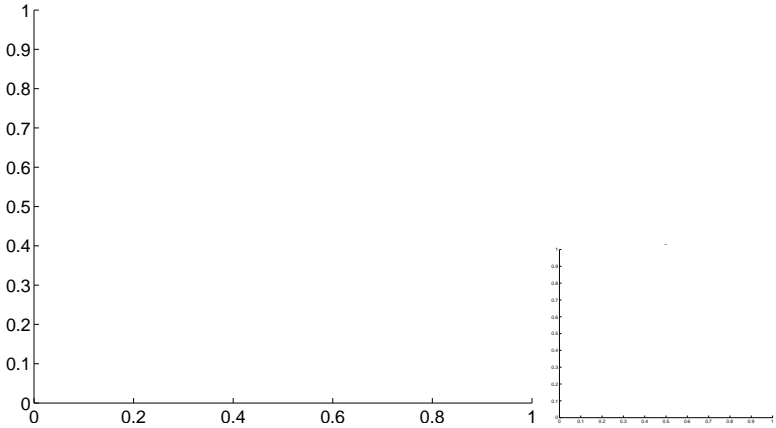
Q15 OOT image



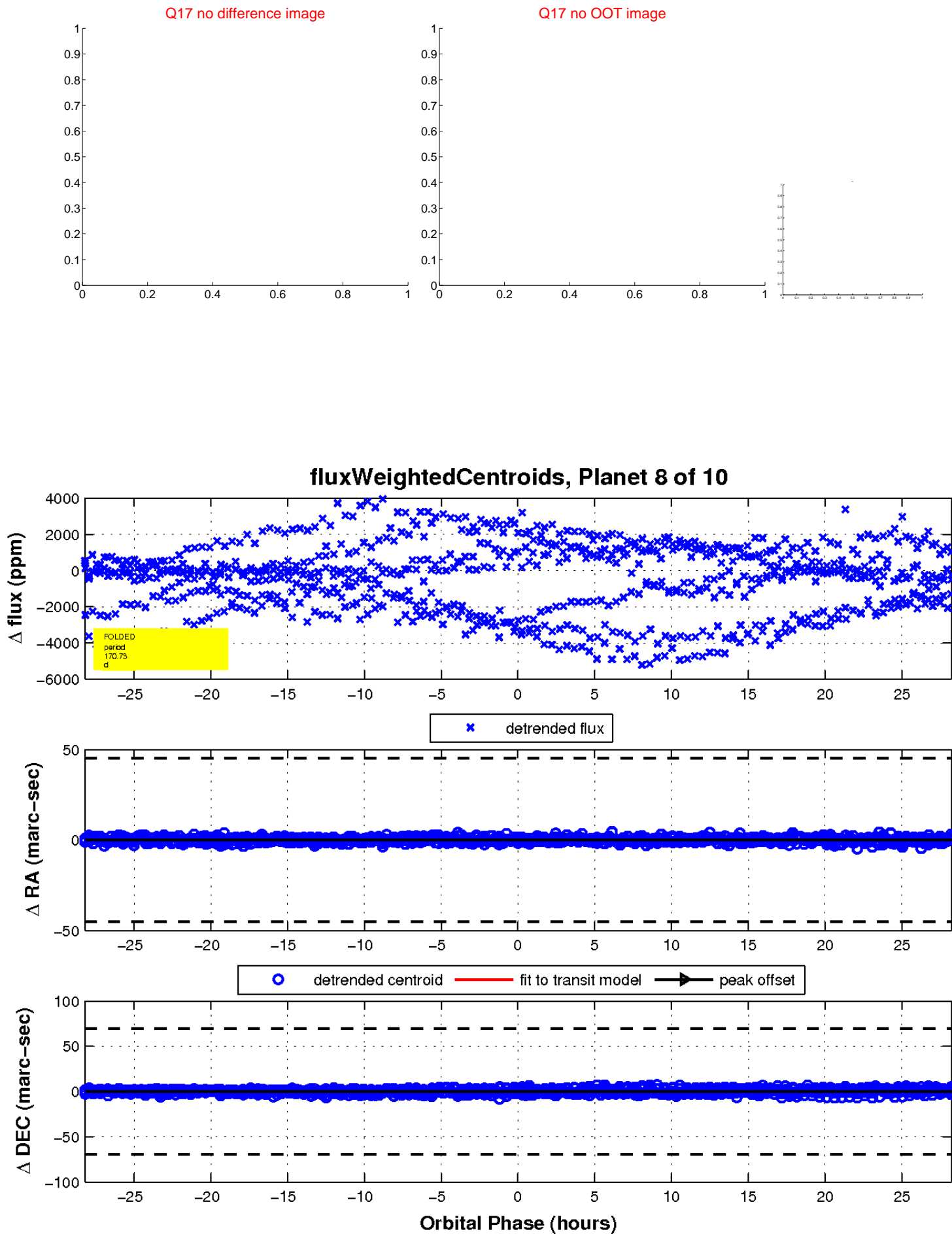
Q16 no difference image



Q16 no OOT image

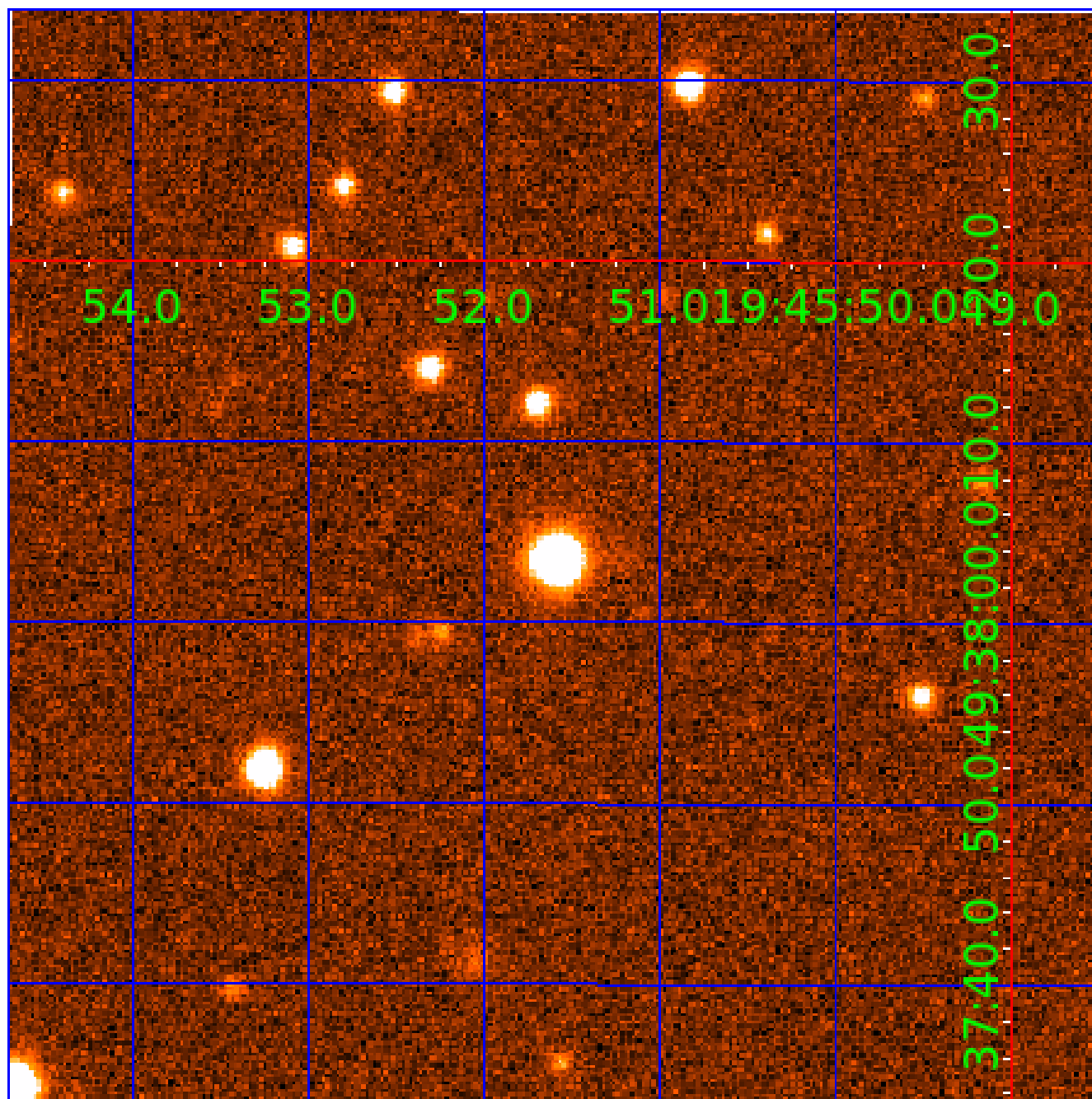


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011620956

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})
011620956-01	OBS	No	0.954225	131.920886	47.3	4.840	8.1	9.6	0.75	5656	0.61	1621.40
011620956-02	OBS	No	488.493304	207.854435	2379.7	7.562	20.9	10.3	0.75	5656	3.72	0.40
011620956-05	OBS	No	155.461423	175.622791	288.0	1.746	11.6	2.1	0.75	5656	1.48	1.82
011620956-06	OBS	No	459.003247	165.754235	723.4	9.000	11.9	-1.0	0.75	5656	1.99	0.43
011620956-07	OBS	No	466.607749	172.580412	4166.4	17.220	11.4	8.6	0.75	5656	5.27	0.42
011620956-08	OBS	No	170.727948	270.243744	1899.4	9.418	10.9	8.0	0.75	5656	6.17	1.61
011620956-09	OBS	No	120.662292	229.959456	645.1	11.187	12.9	4.3	0.75	5656	1.97	2.56
011620956-10	OBS	No	358.792880	323.205031	516.2	10.500	10.9	-1.0	0.75	5656	1.68	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011620956-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011620956-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
011620956-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
011620956-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011620956-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

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

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

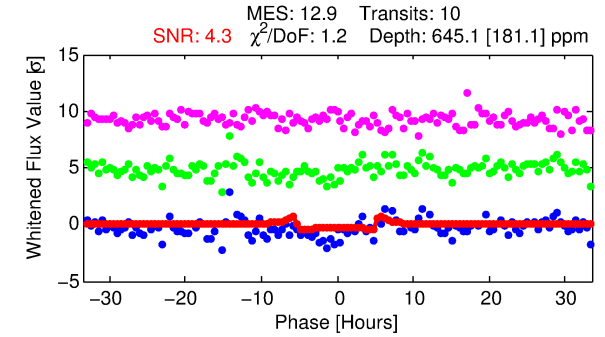
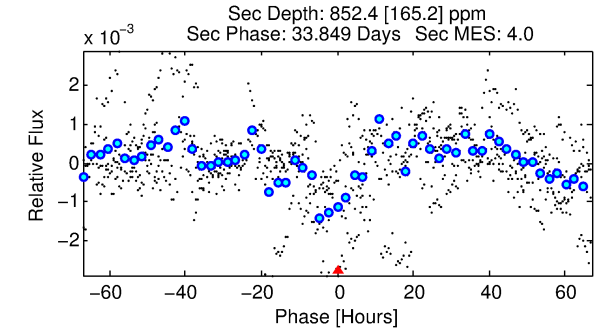
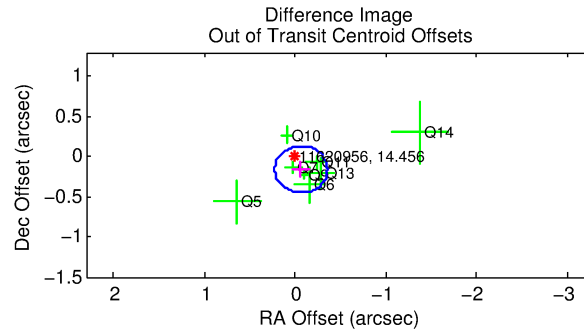
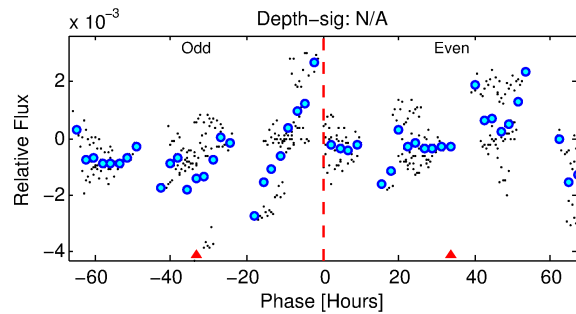
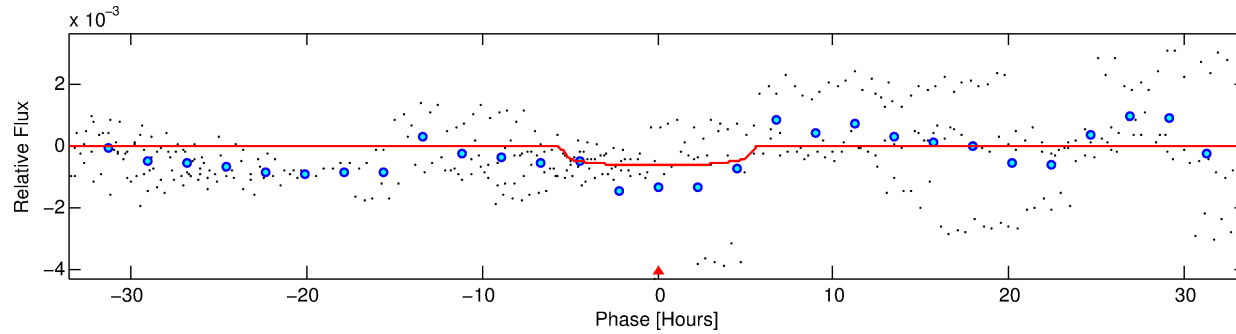
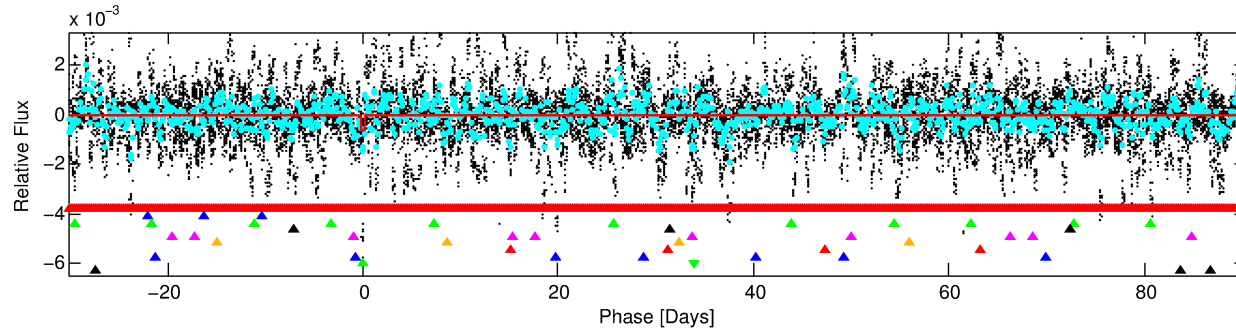
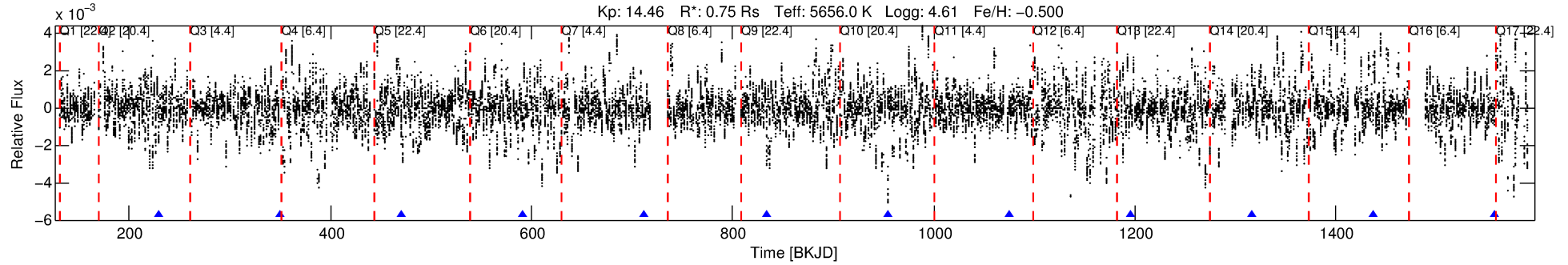
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011620956-09

No Significant Match Found

DV One-Page Summary

KIC: 11620956 Candidate: 9 of 10 Period: 120.662 d



DV Fit Results:

Period = 120.66229 [0.00231] d
Epoch = 229.9595 [0.0194] BKJD
Rp/R* = 0.0242 [0.0143]
a/R* = 69.28 [174.91]
b = 0.58 [2.87]
Seff = 2.55 [0.73]
Teq = 322 [23] K
Rp = 1.97 [1.24] Re
a = 0.4469 [0.0817] AU
Ag = 24181.59 [29671.83] [0.81σ]
Teffp = 6215 [1869] K [3.15σ]

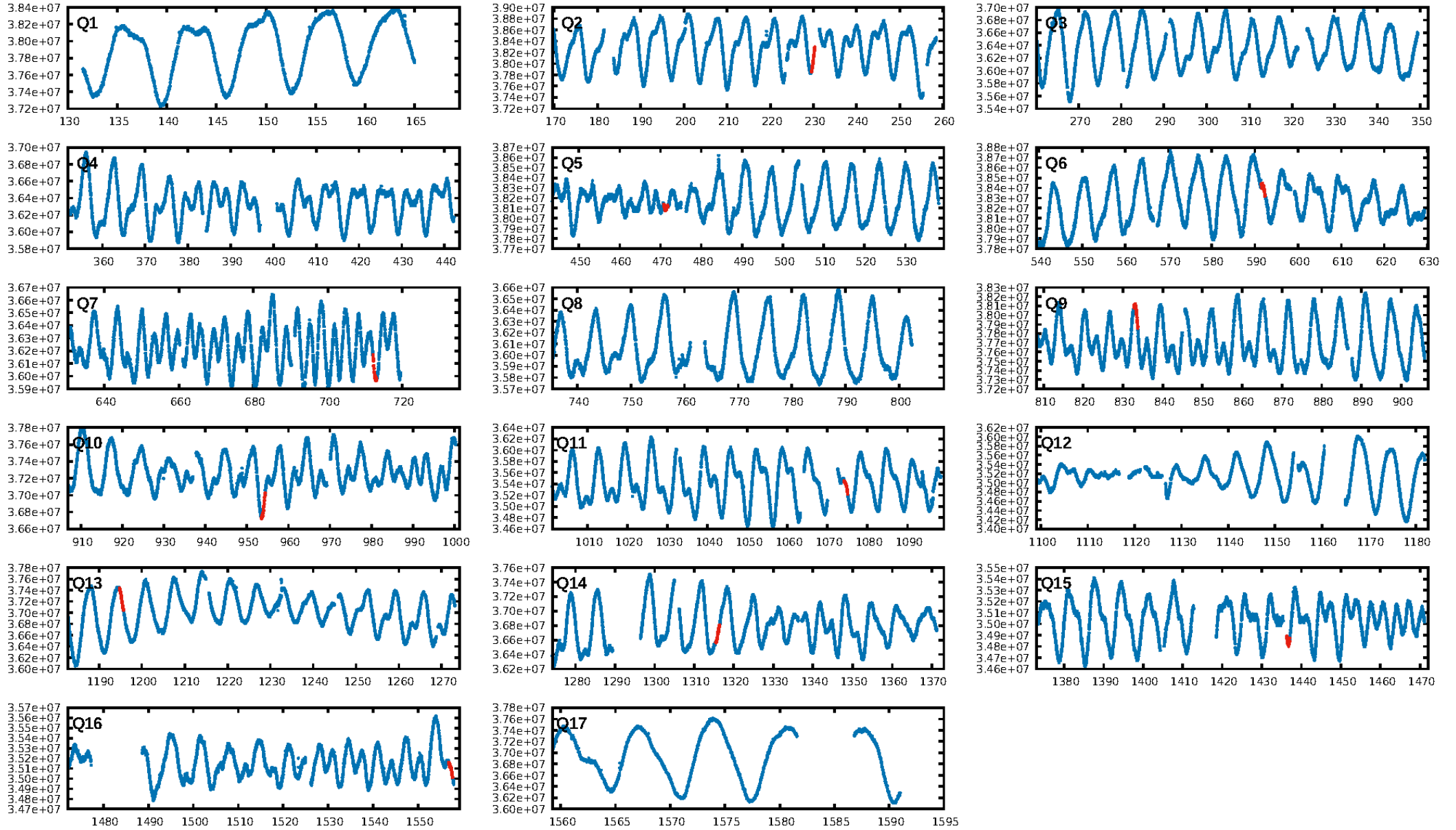
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [235.70σ]
LongPeriod-sig: 100.0% [27.03σ]
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -0.9798
Centroid-sig: 44.8%
Centroid-so: 0.631 arcsec [0.91σ]
OotOffset-rm: 0.173 arcsec [1.79σ]
OotOffset-st: 3/2/0/3 [8]
KicOffset-rm: 0.264 arcsec [2.28σ]
KicOffset-st: 3/2/0/3 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 0.00 [0/8]

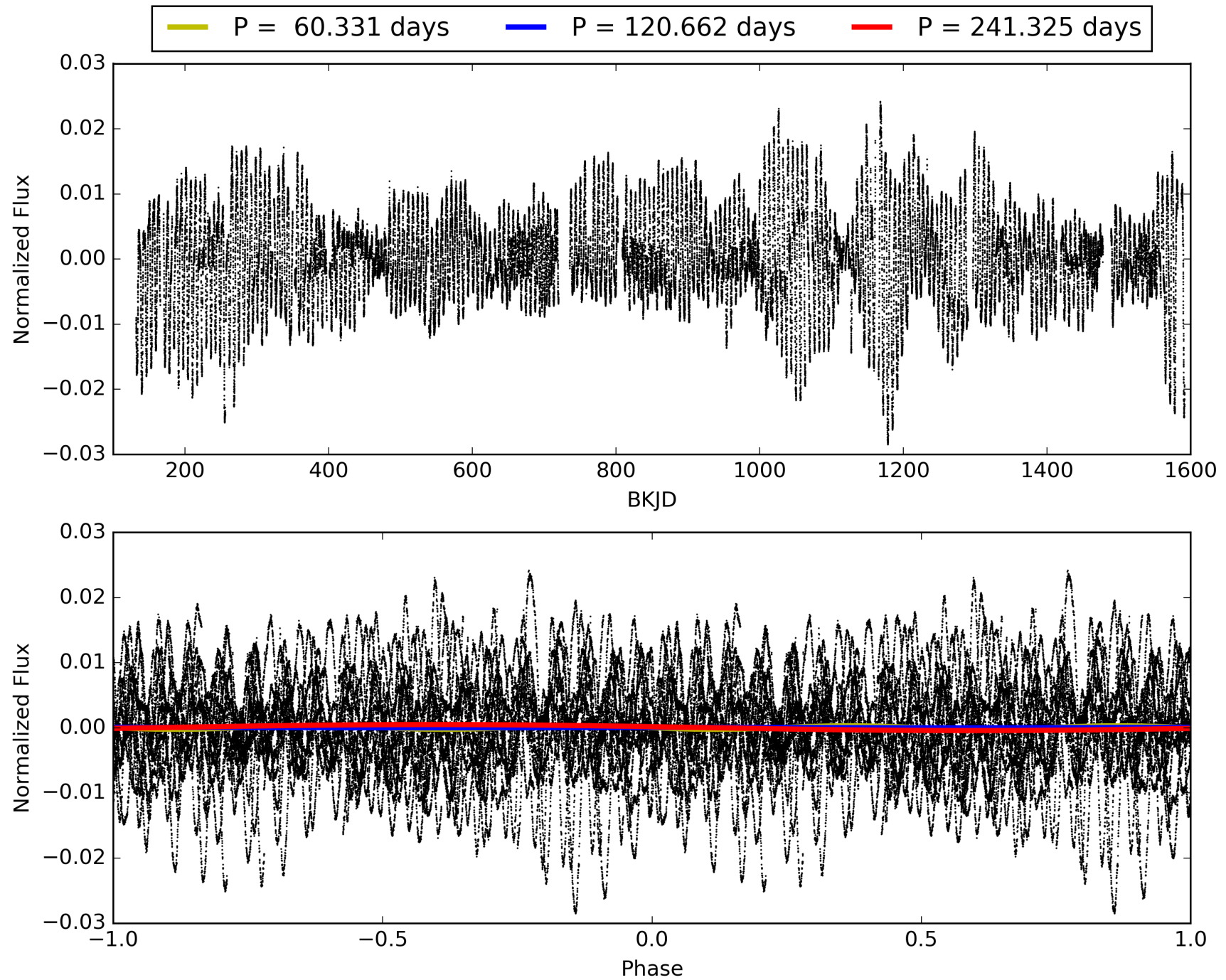
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:48:13 Z

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

TCE 011620956-09, PDC Light Curves

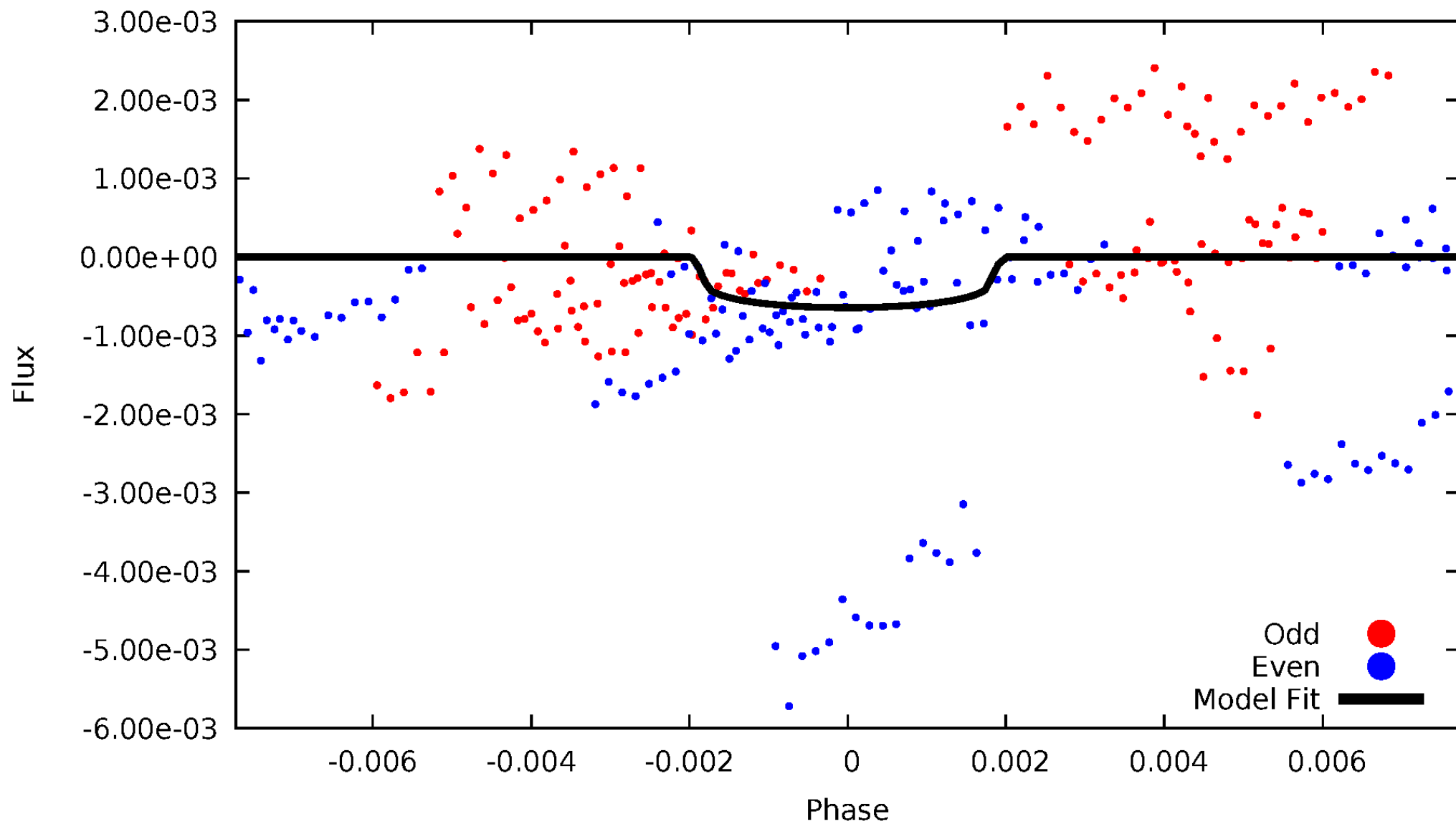


TCE 011620956-09



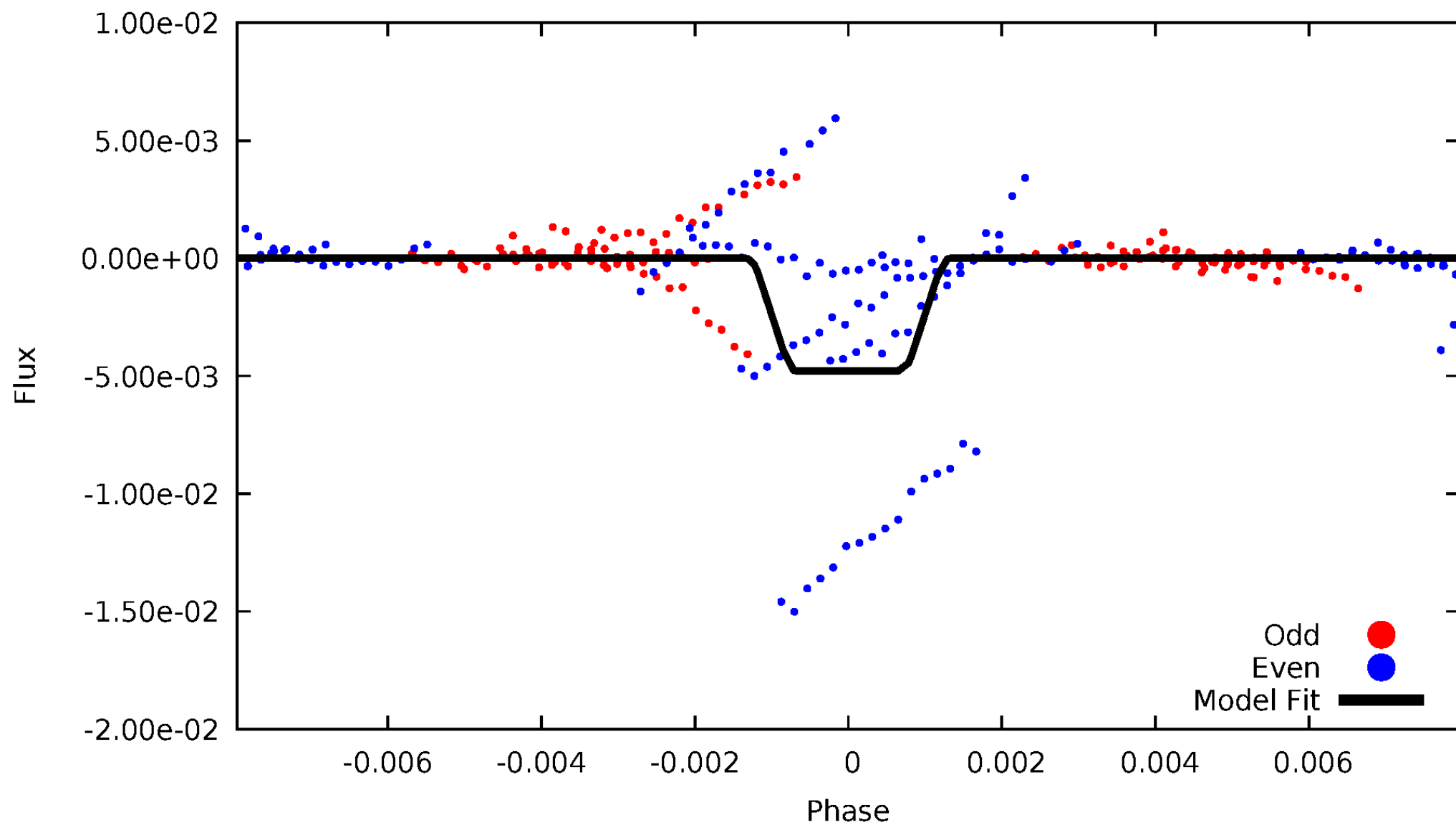
DV Odd/Even

TCE 011620956-09



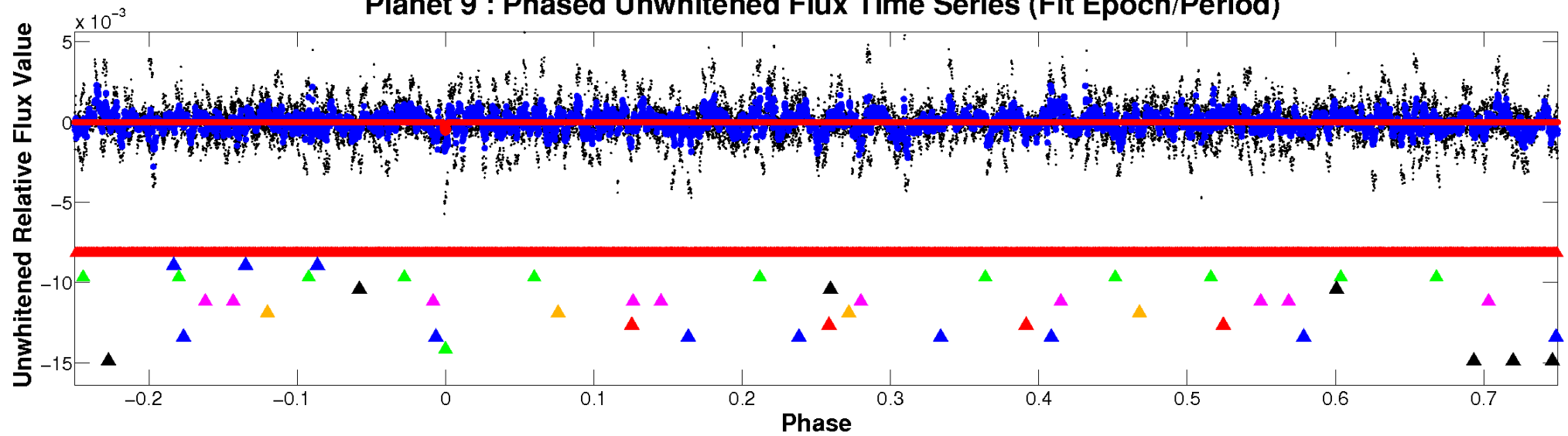
ALT Odd/Even

TCE 011620956-09

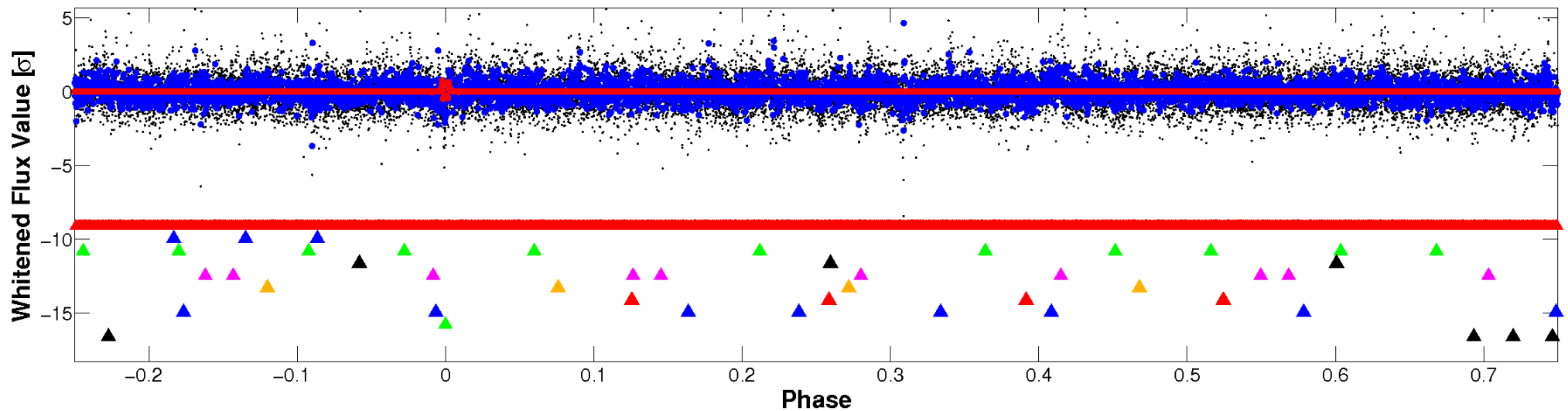


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

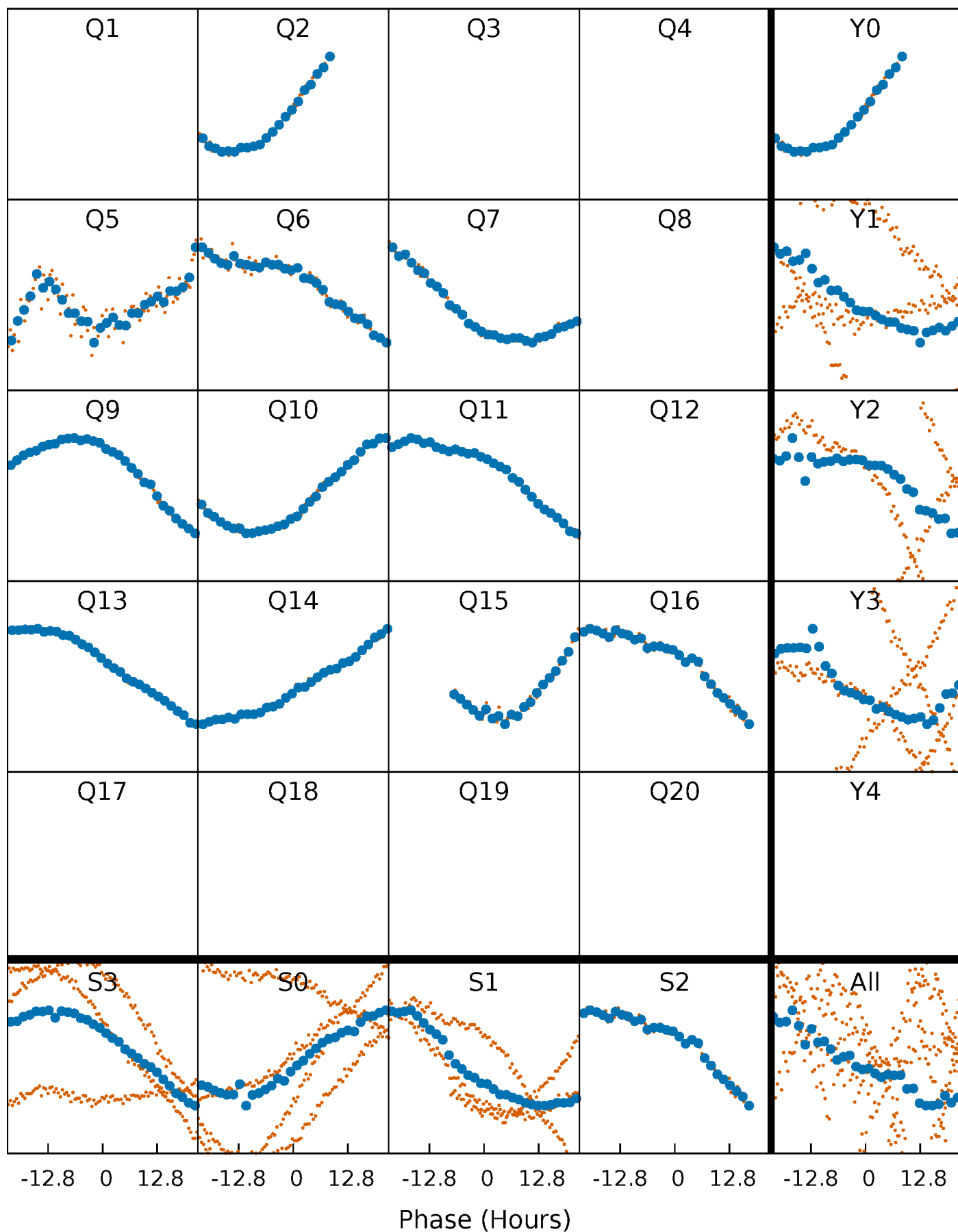


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



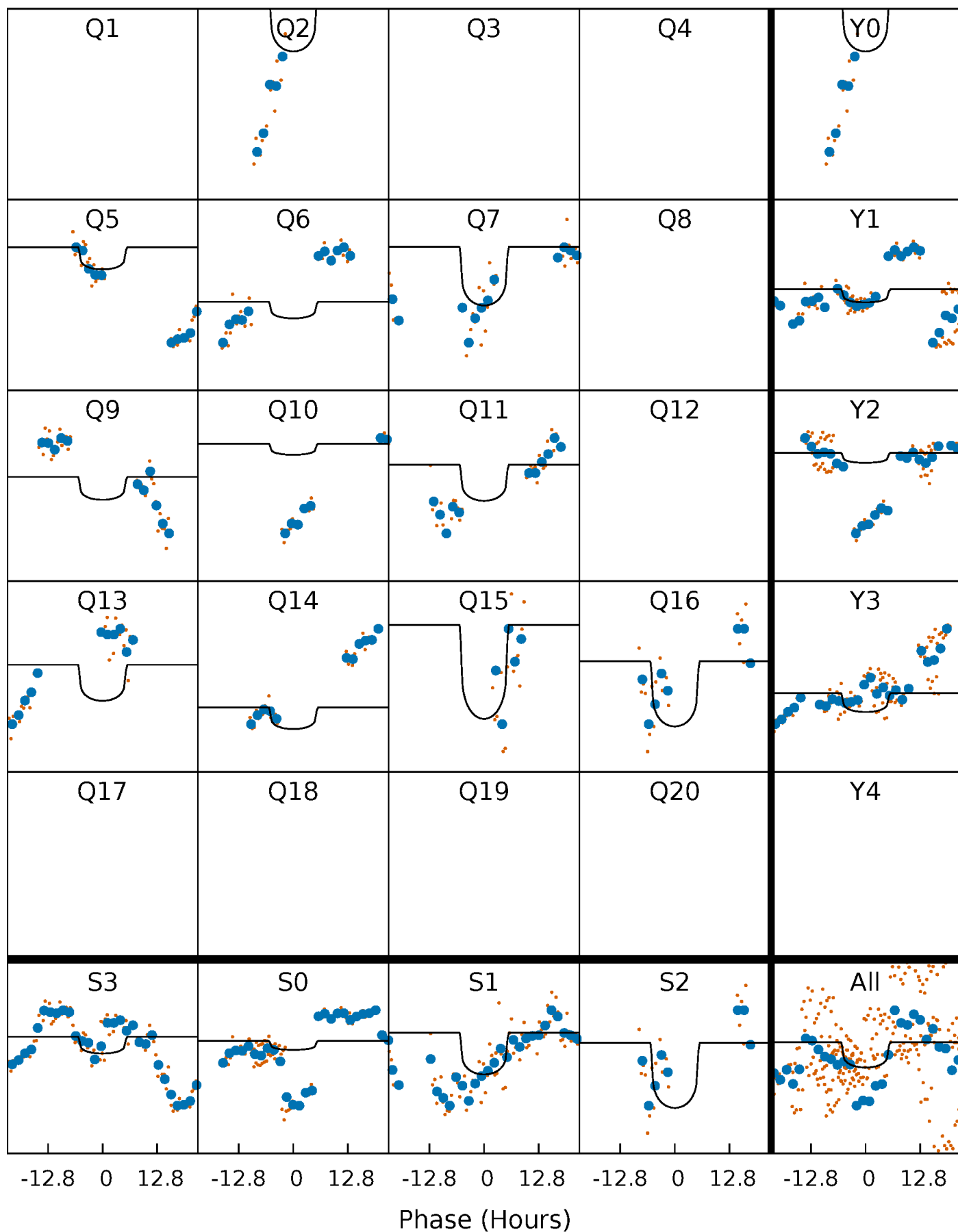
PDC Quarter-Phased Transit Curves

TCE 011620956-09 P=120.662292 Days $T_0=229.959456$ (BKJD)



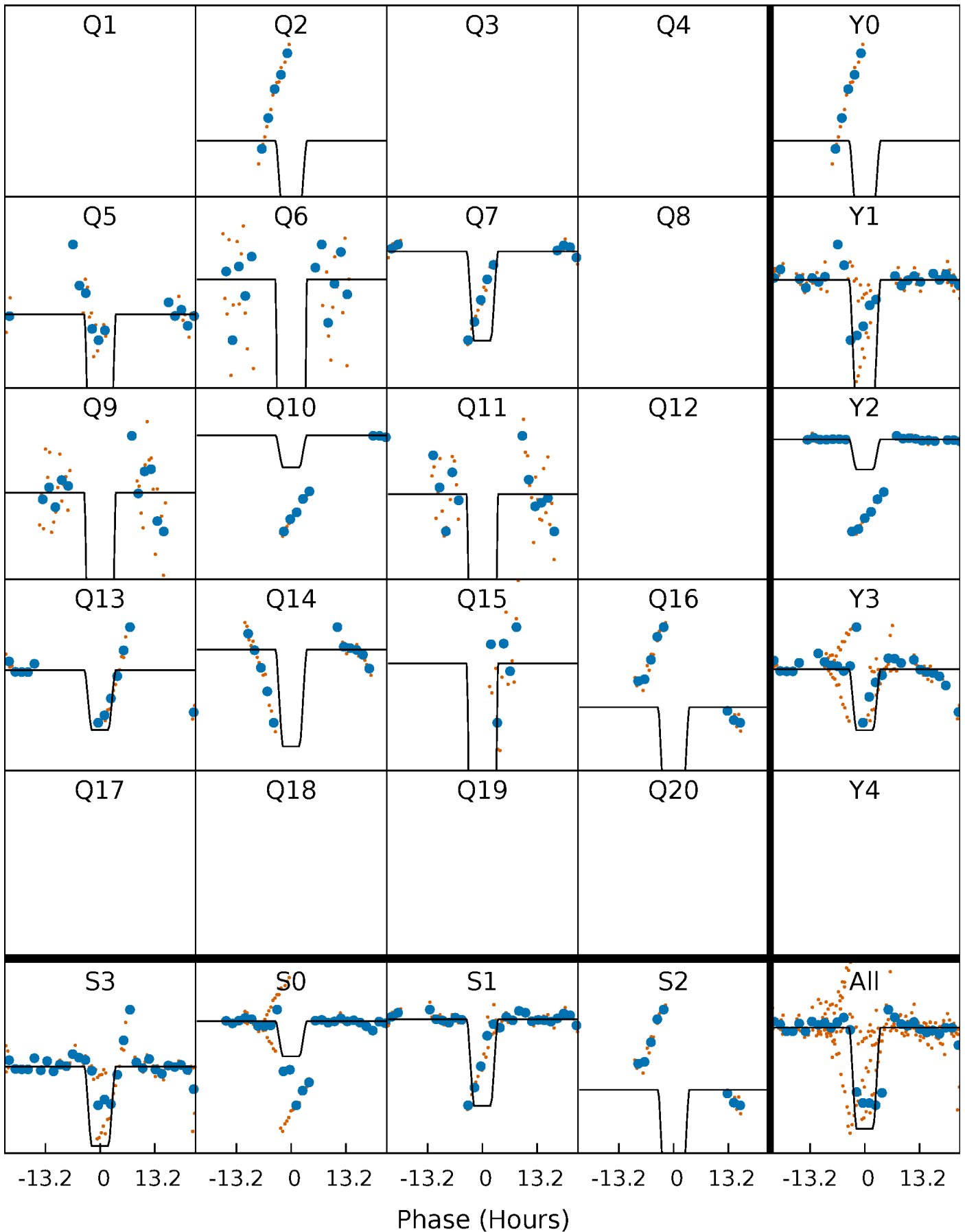
DV Quarter-Phased Transit Curves

TCE 011620956-09 P=120.662292 Days $T_0=229.959456$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

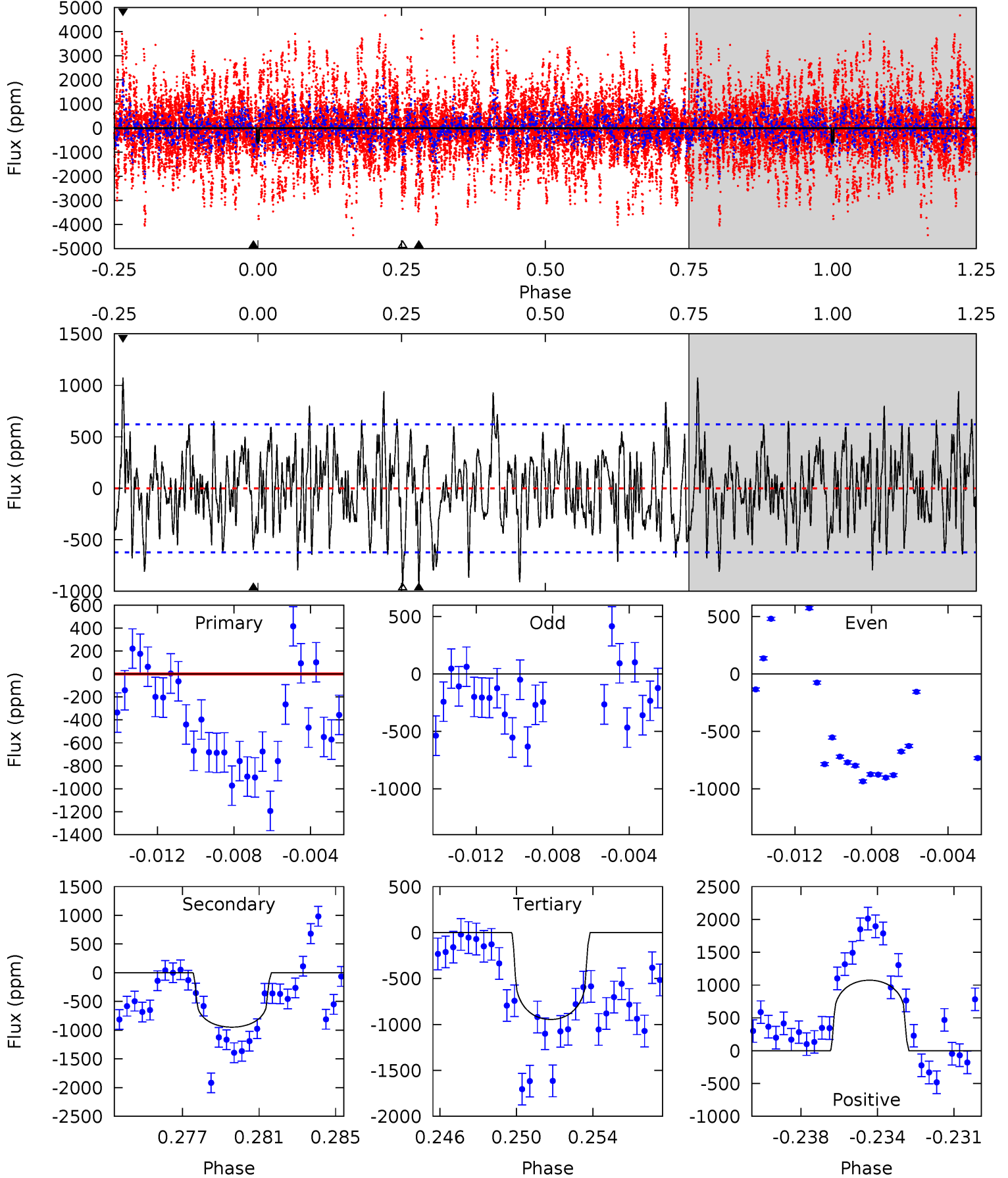
TCE 011620956-09 $P=120.671205$ Days $T_0=229.901322$ (BKJD)



DV Model-Shift Uniqueness Test

011620956-09, P = 120.662292 Days, E = 109.297164 Days

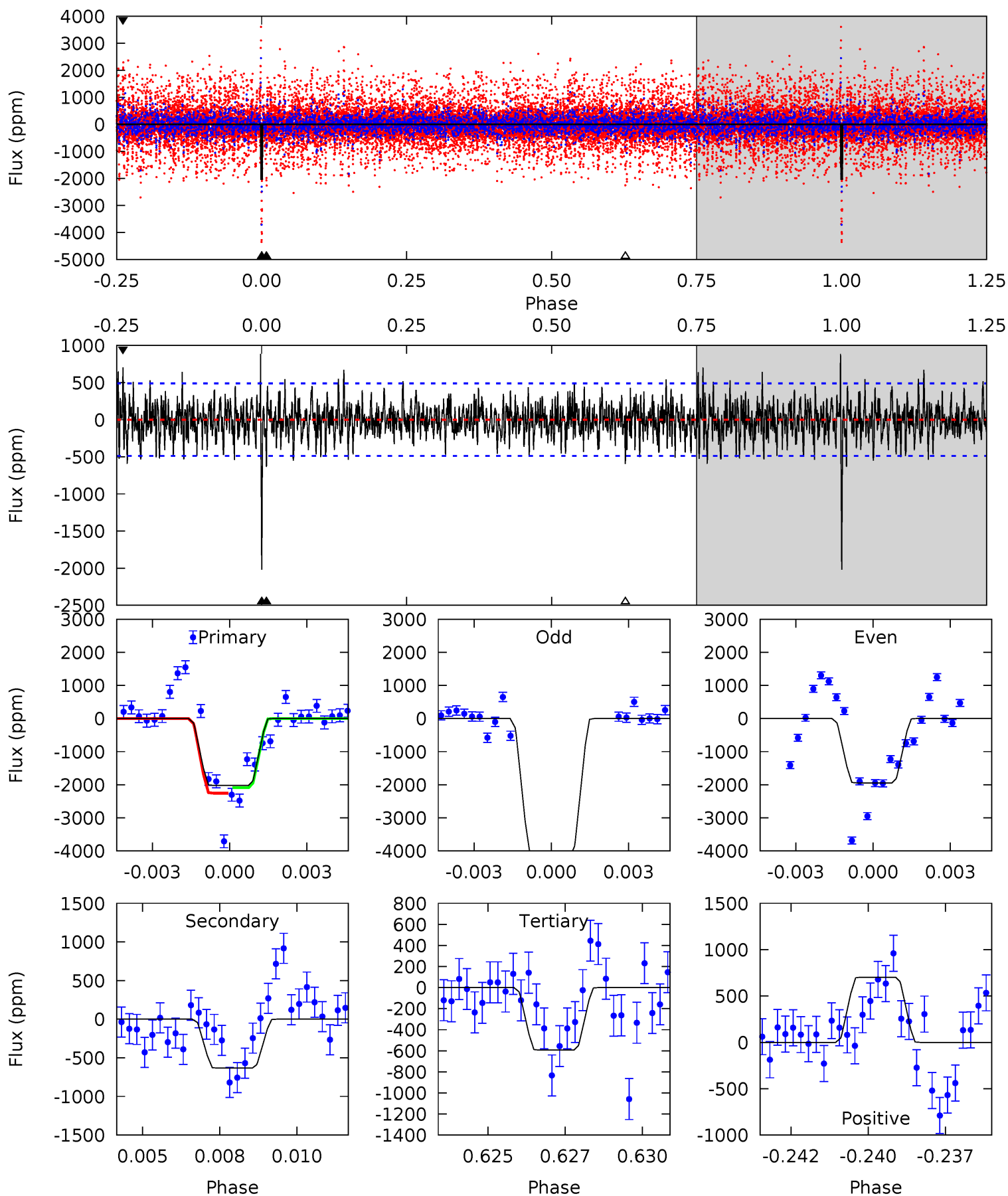
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.98	7.94	7.93	9.00	5.20	2.89	2.59	-2.96	-4.03	0.01	-1.06	0.73	1.57	0.53	0.87



Alt Model-Shift Uniqueness Test

011620956-09, P = 120.671205 Days, E = 109.230117 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	6.84	6.42	7.59	5.28	3.01	1.97	15.4	14.3	0.43	-0.75	7.42	4.25	0.30	0



Stellar Parameters For KIC 011620956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5656^{+152}_{-152}	$4.605^{+0.036}_{-0.144}$	$-0.500^{+0.300}_{-0.300}$	$0.746^{+0.163}_{-0.054}$	$0.834^{+0.079}_{-0.088}$	$2.827^{+0.527}_{-1.131}$
	+3%/-3%	+1%/-3%	+60%/-60%	+22%/-7%	+9%/-11%	+19%/-40%
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 011620956-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-947 ± 119	$2.08^{+1.25}_{-1.17}$	460^{+23}_{-18}	6304^{+4166}_{-1236}	$23092^{+101817}_{-13814}$
Alt.	-633 ± 92	$5.79^{+1.44}_{-1.34}$	458^{+22}_{-18}	3792^{+374}_{-265}	2000^{+1505}_{-708}

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 $A_{obs} \gg 1.0$

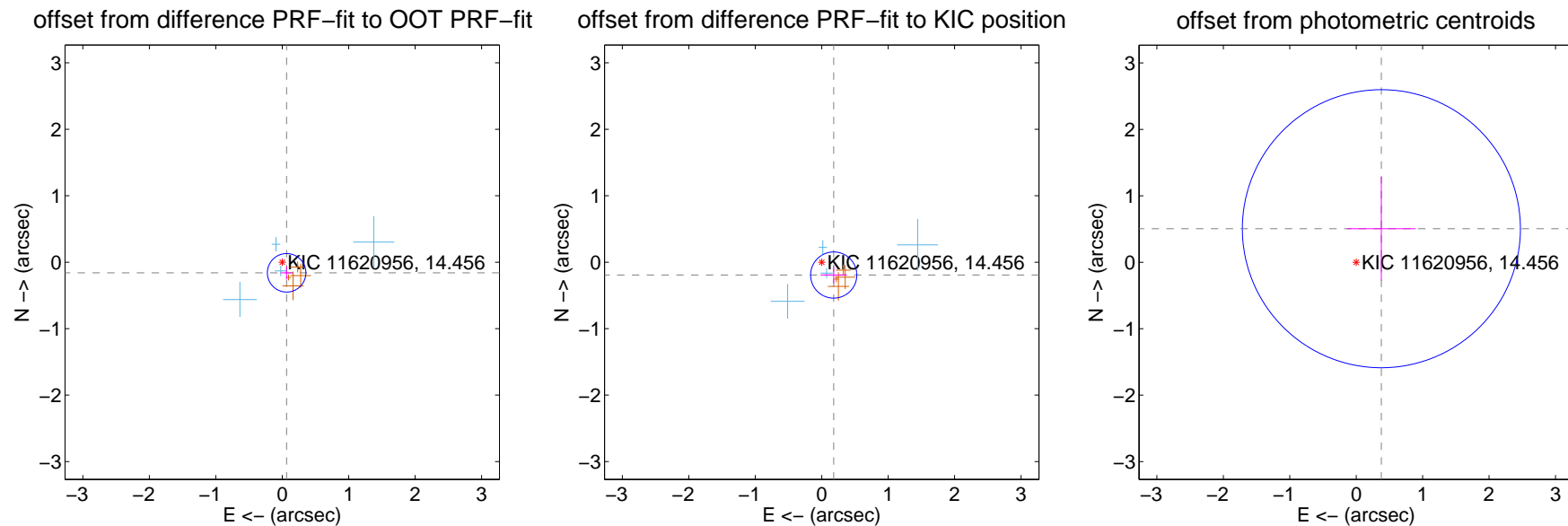
DV Centroid Data

Supplemental centroid analysis for 011620956-09. Kepler magnitude: 14.46. Transit SNR 4.29

There are 4 quarters with good PRF difference image offsets

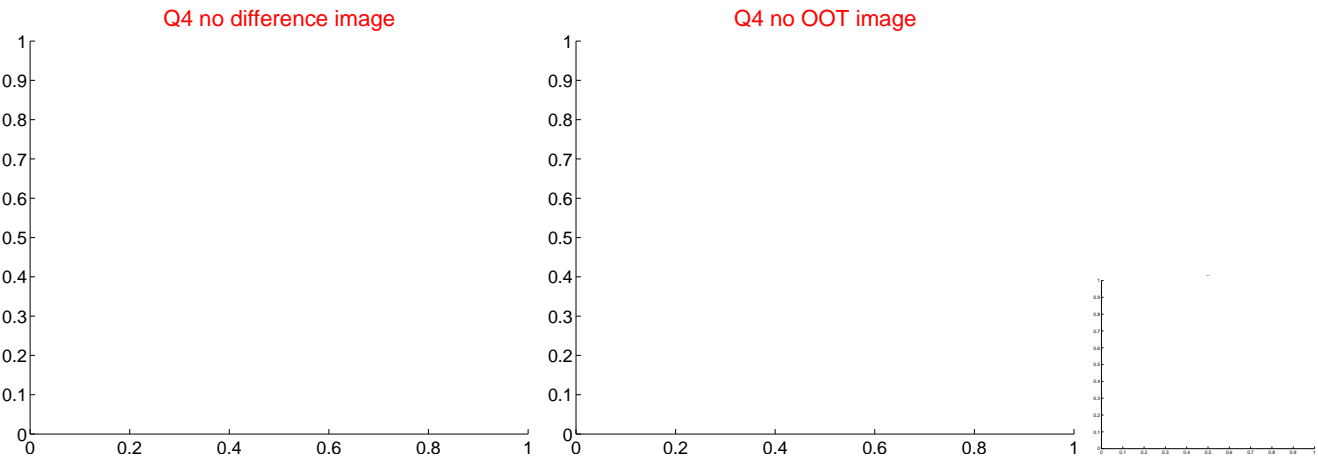
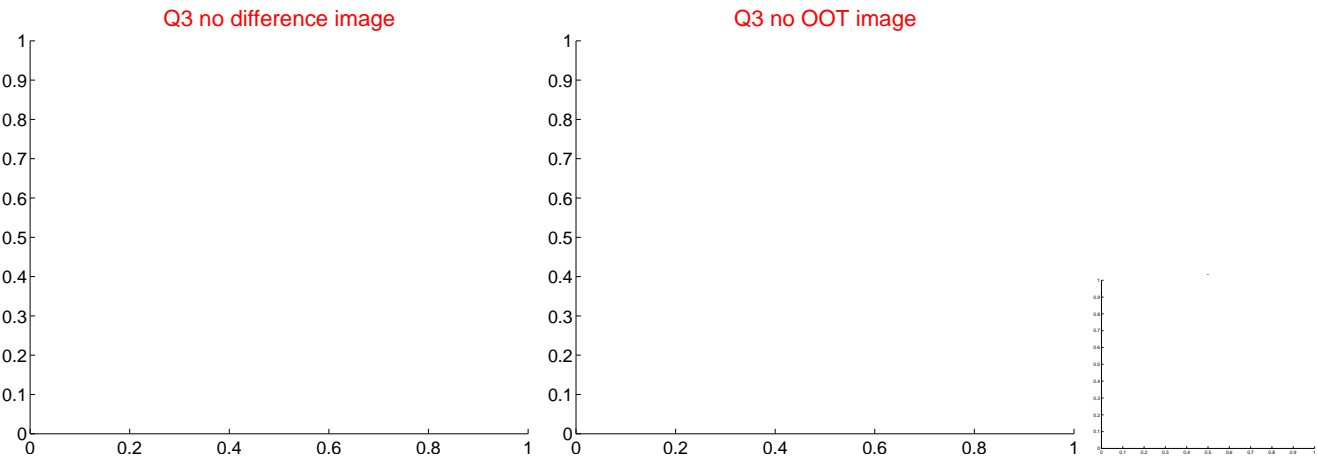
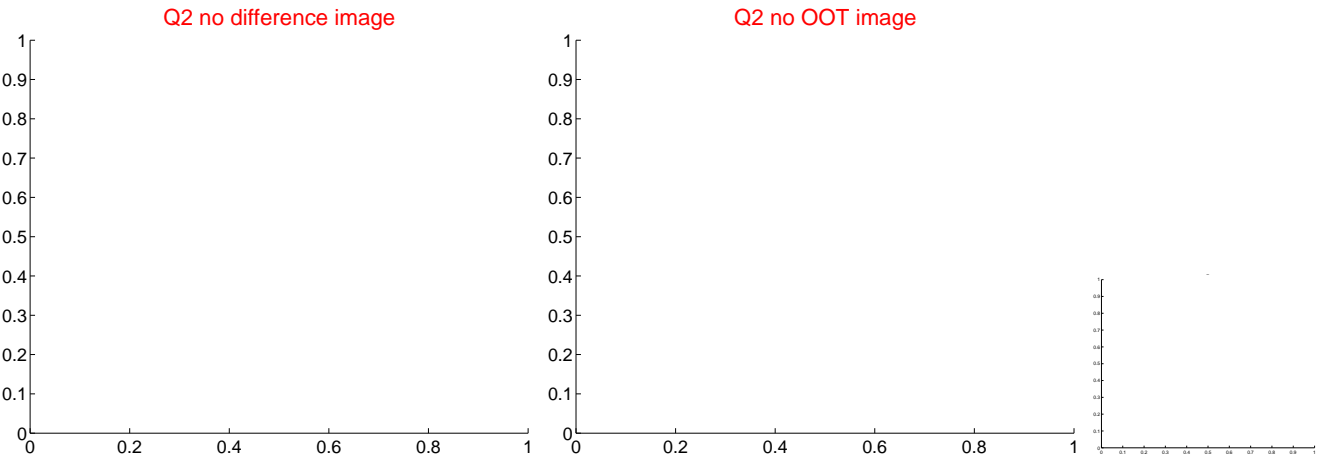
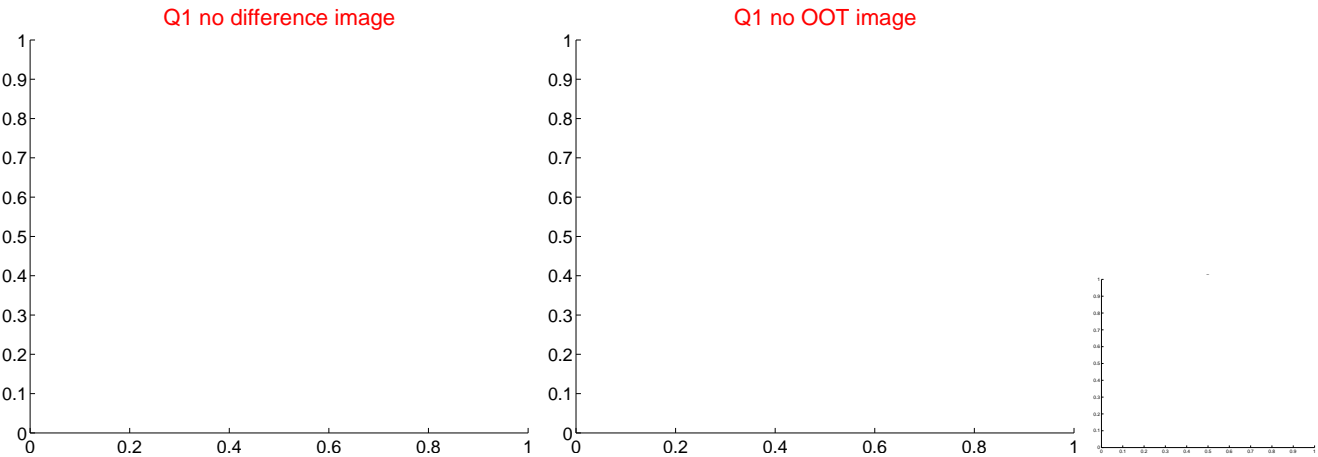
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.173 ± 0.097	1.79	-0.066 ± 0.090	-0.160 ± 0.098
PRF-fit source offset from KIC position	0.264 ± 0.116	2.28	-0.180 ± 0.198	-0.193 ± 0.125
photometric centroid source offset	0.63 ± 0.70	0.91	-0.38 ± 0.52	0.51 ± 0.78

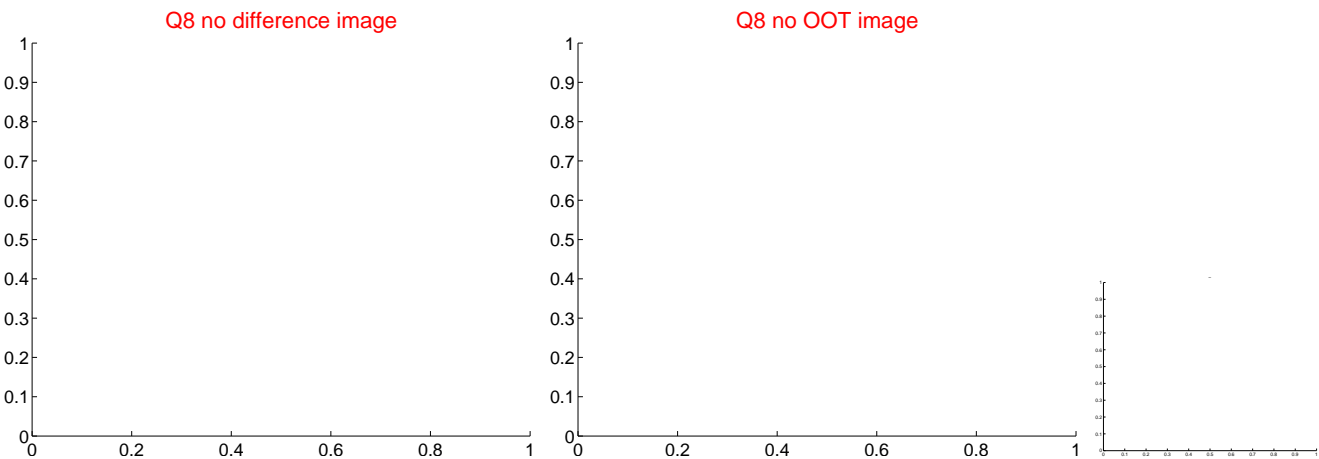
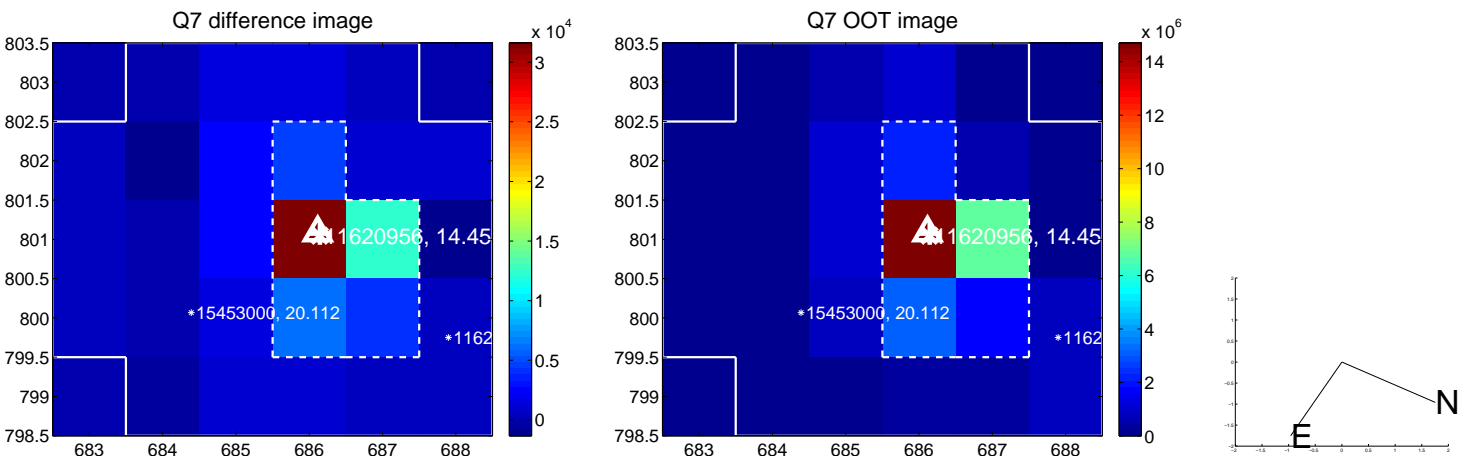
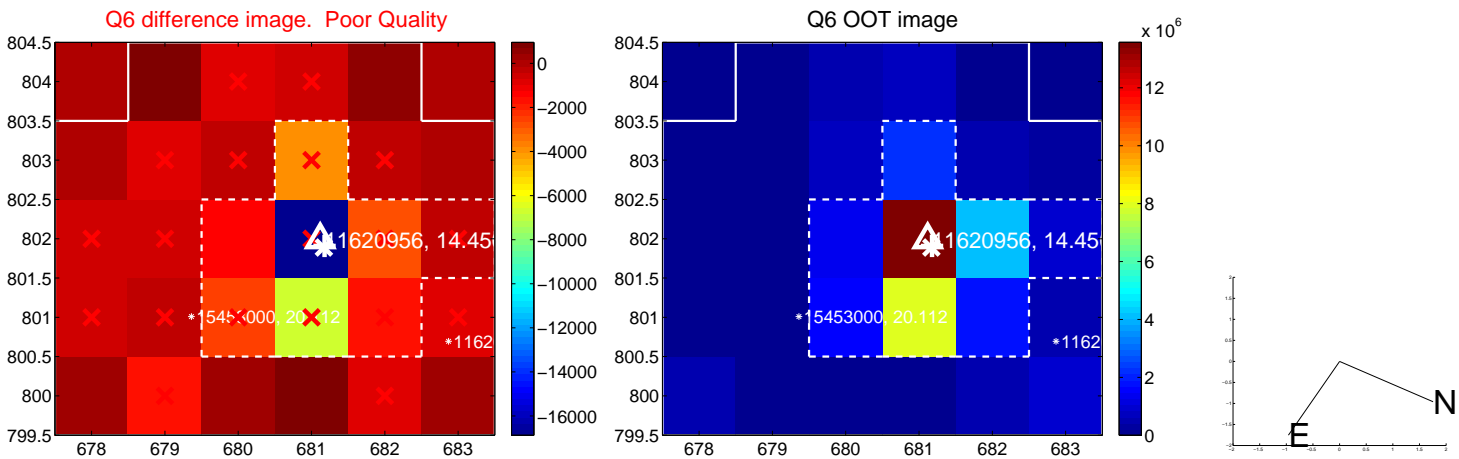
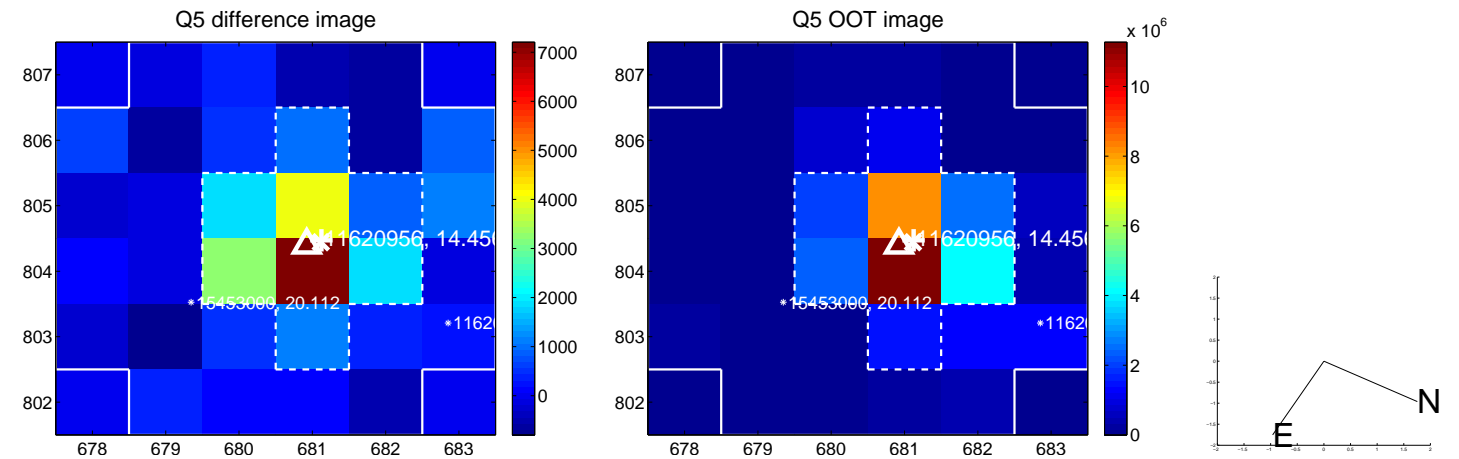


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

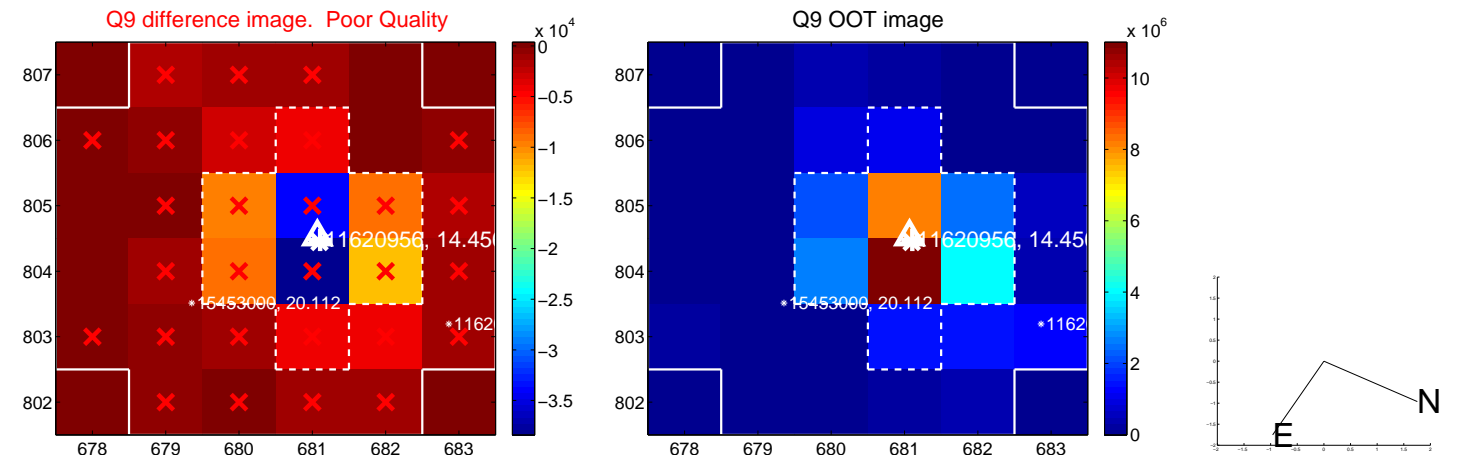
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



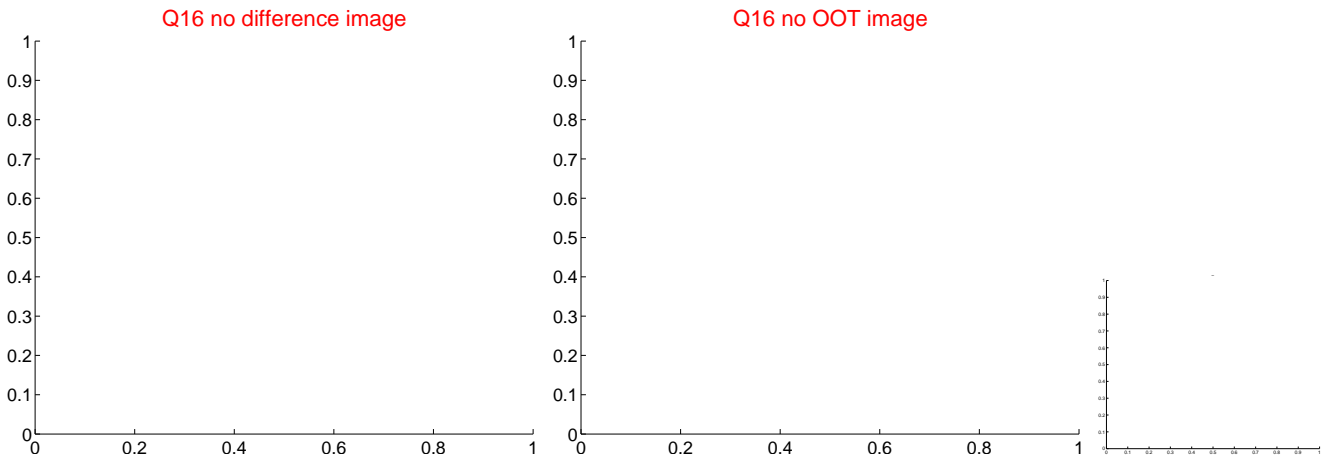
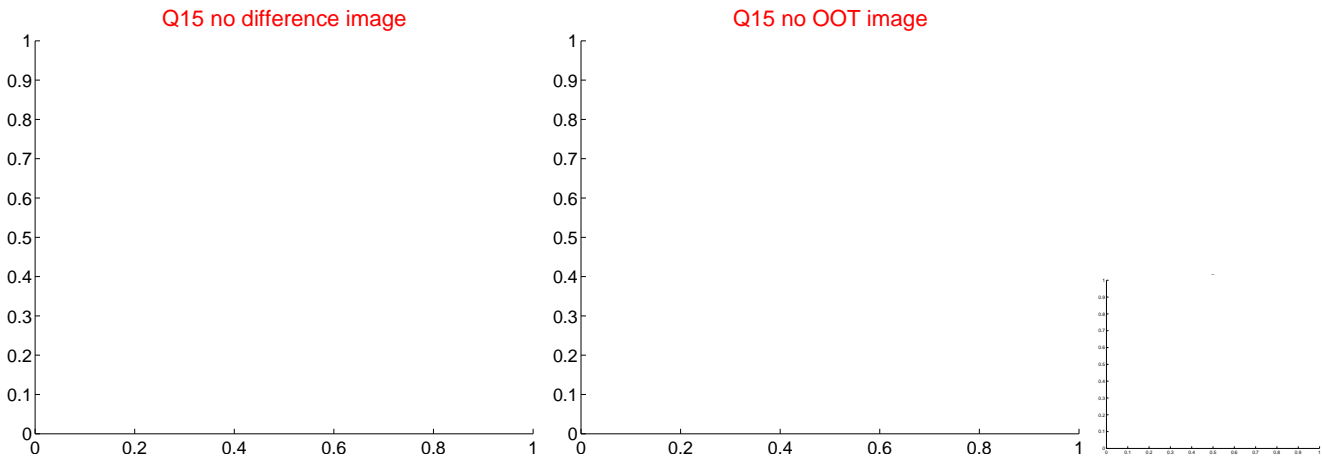
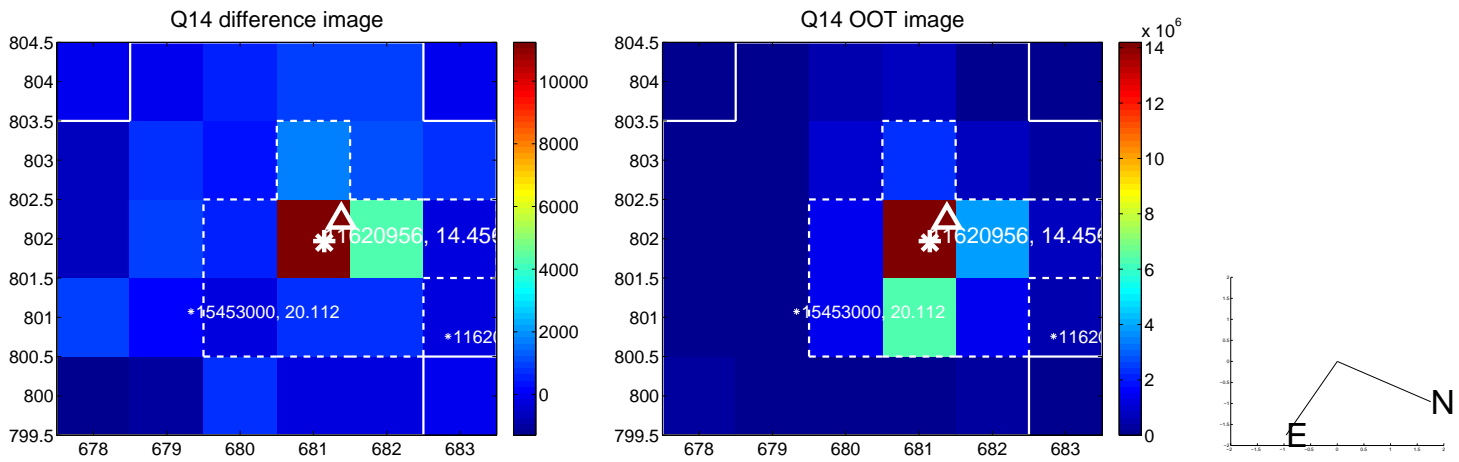
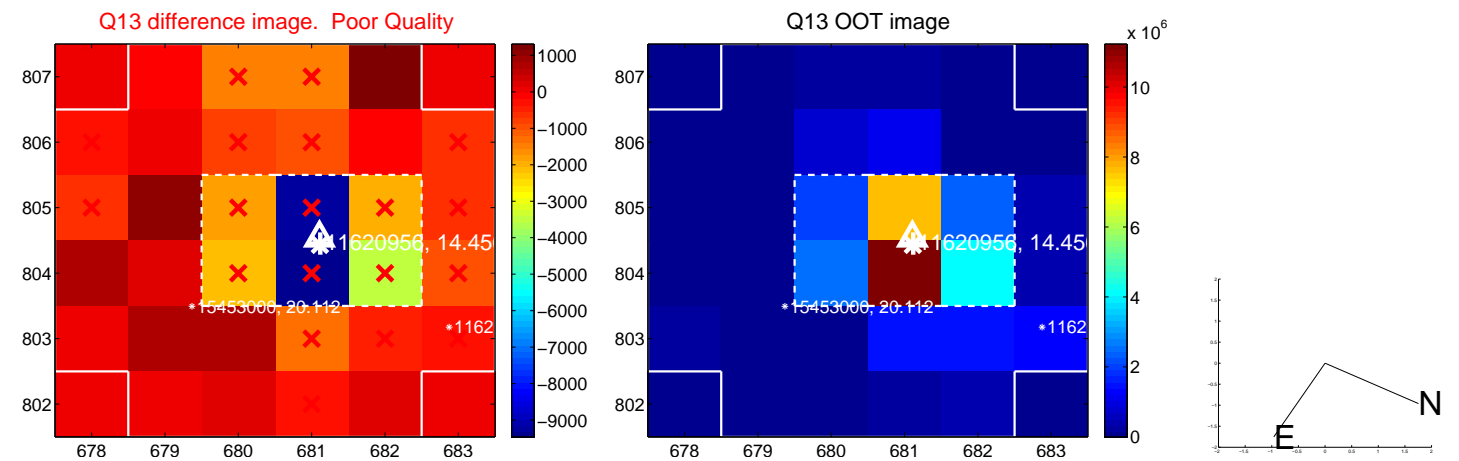
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



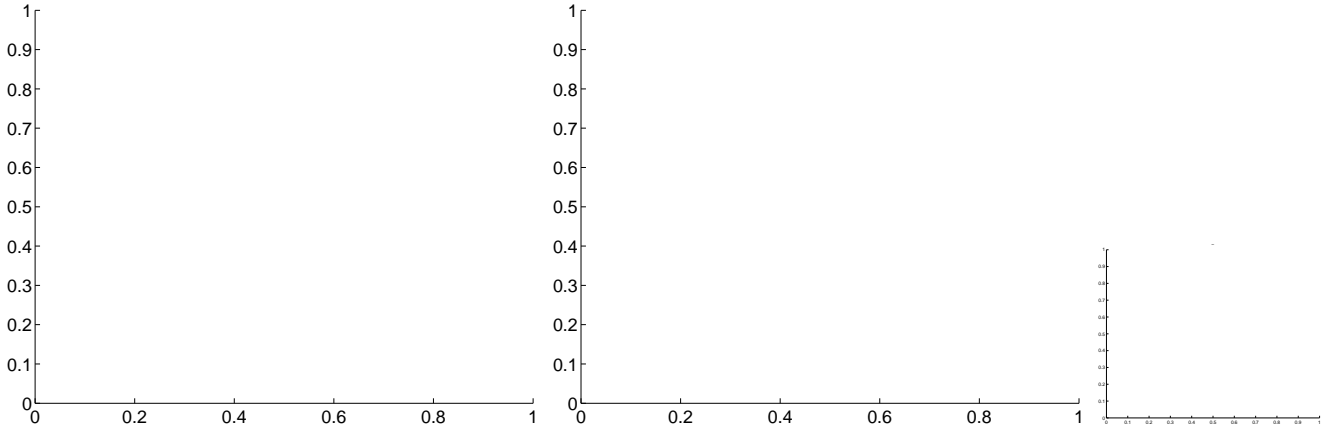
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



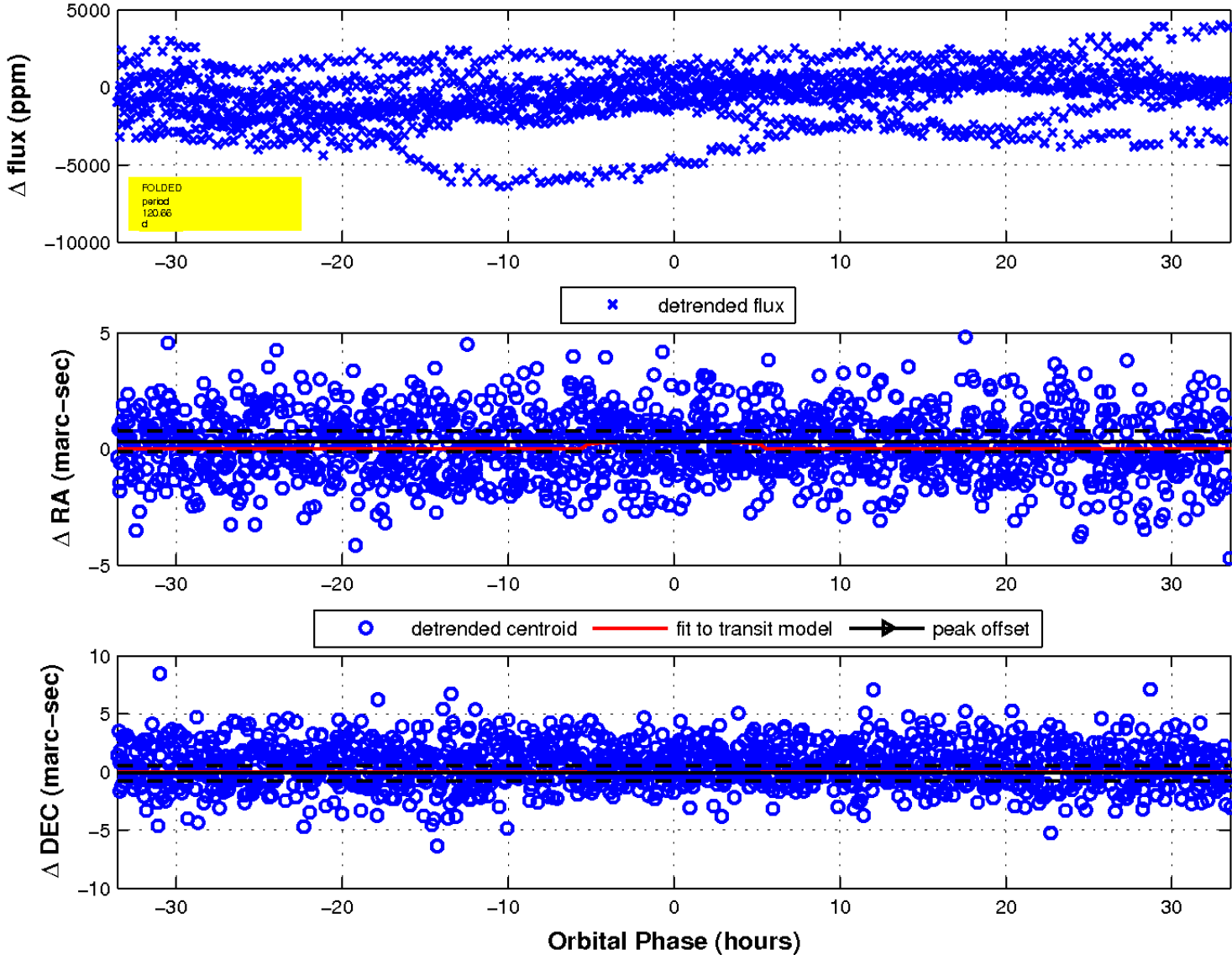
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image

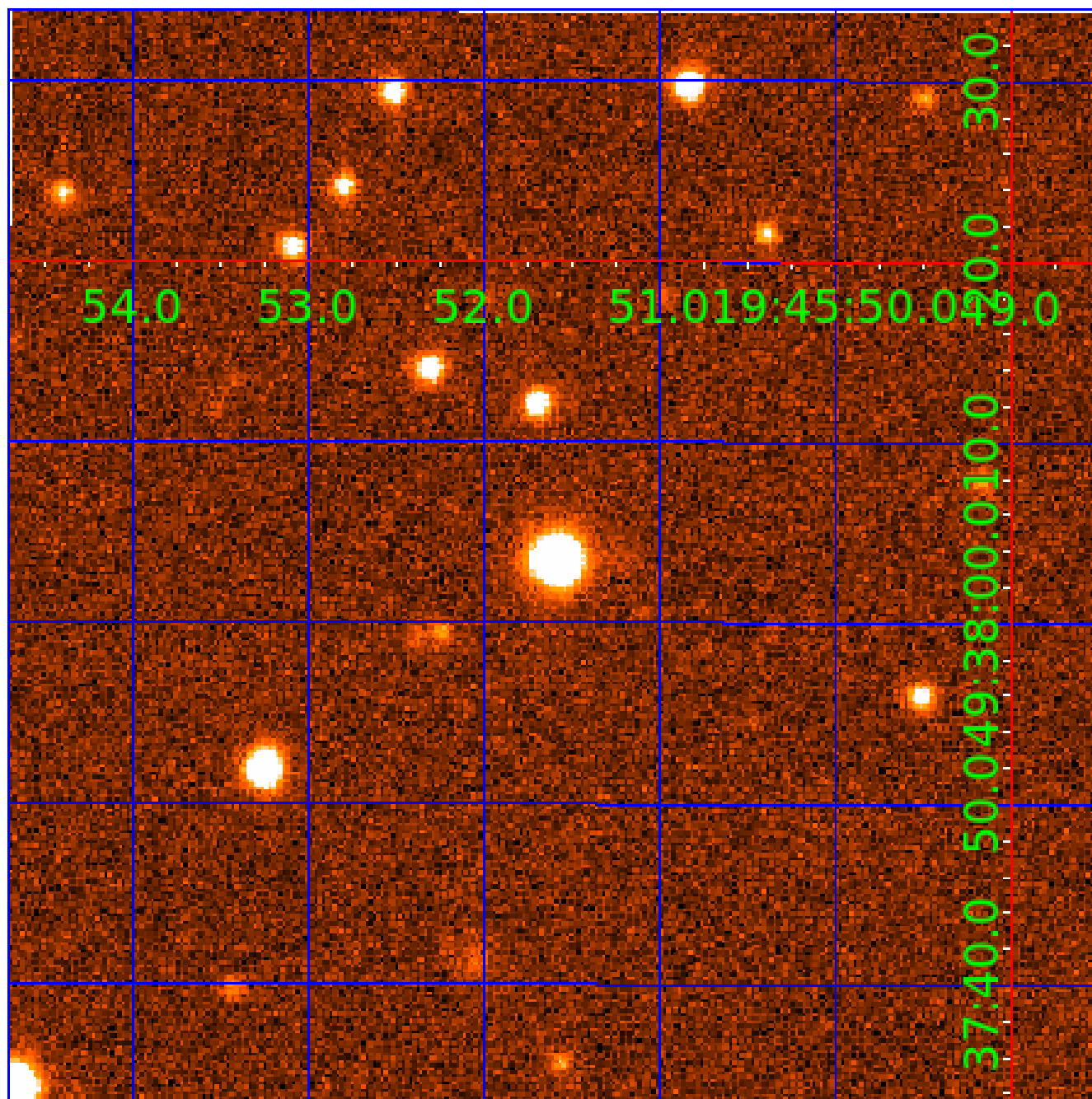


fluxWeightedCentroids, Planet 9 of 10



UKIRT Image

Declination



KIC 011620956

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})
011620956-01	OBS	No	0.954225	131.920886	47.3	4.840	8.1	9.6	0.75	5656	0.61	1621.40
011620956-02	OBS	No	488.493304	207.854435	2379.7	7.562	20.9	10.3	0.75	5656	3.72	0.40
011620956-05	OBS	No	155.461423	175.622791	288.0	1.746	11.6	2.1	0.75	5656	1.48	1.82
011620956-06	OBS	No	459.003247	165.754235	723.4	9.000	11.9	-1.0	0.75	5656	1.99	0.43
011620956-07	OBS	No	466.607749	172.580412	4166.4	17.220	11.4	8.6	0.75	5656	5.27	0.42
011620956-08	OBS	No	170.727948	270.243744	1899.4	9.418	10.9	8.0	0.75	5656	6.17	1.61
011620956-09	OBS	No	120.662292	229.959456	645.1	11.187	12.9	4.3	0.75	5656	1.97	2.56
011620956-10	OBS	No	358.792880	323.205031	516.2	10.500	10.9	-1.0	0.75	5656	1.68	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011620956-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
011620956-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
011620956-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
011620956-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011620956-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011620956-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

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.

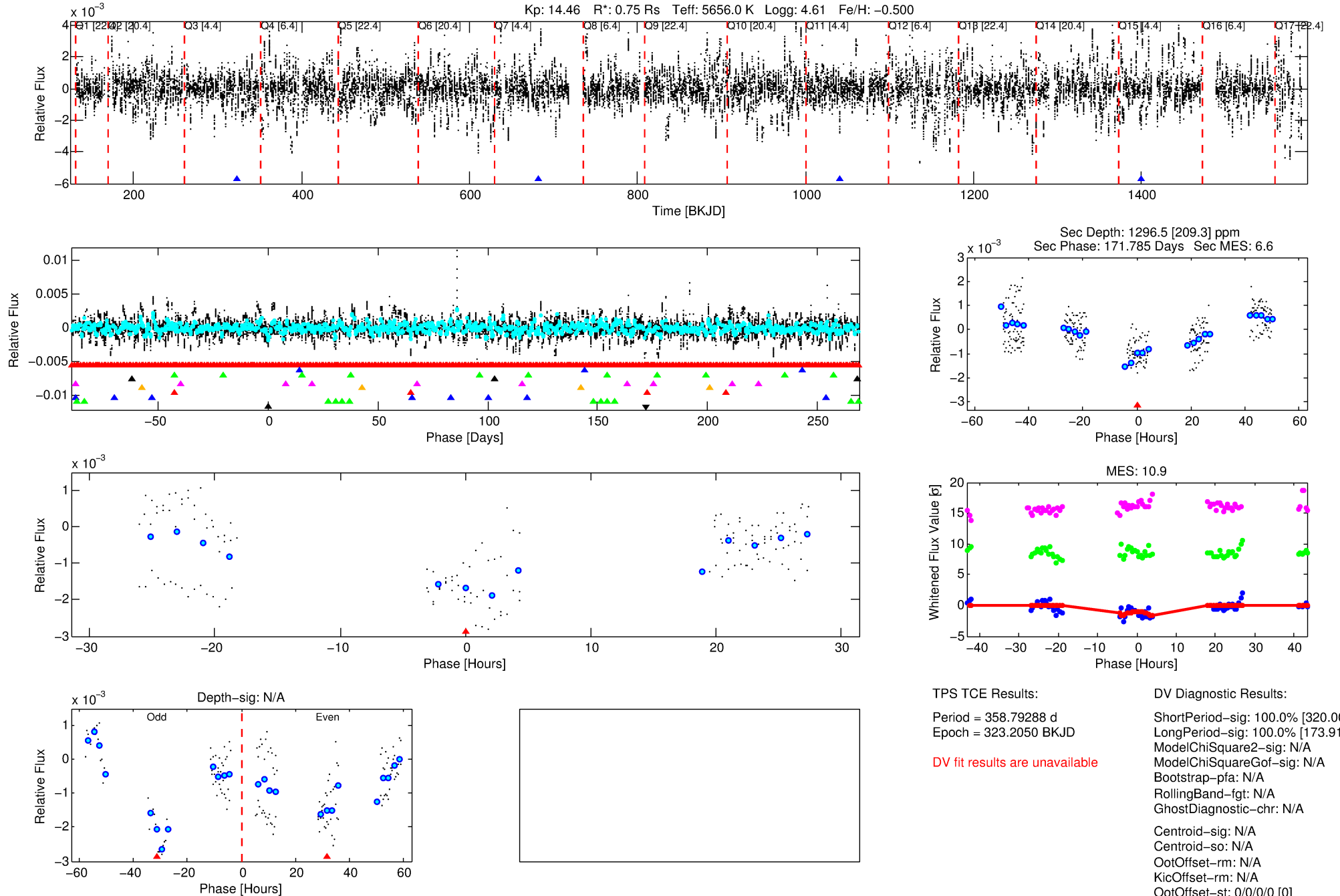
Ephemeris Match Information For 011620956-10

No Significant Match Found

DV One-Page Summary

KIC: 11620956 Candidate: 10 of 10 Period: 358.793 d

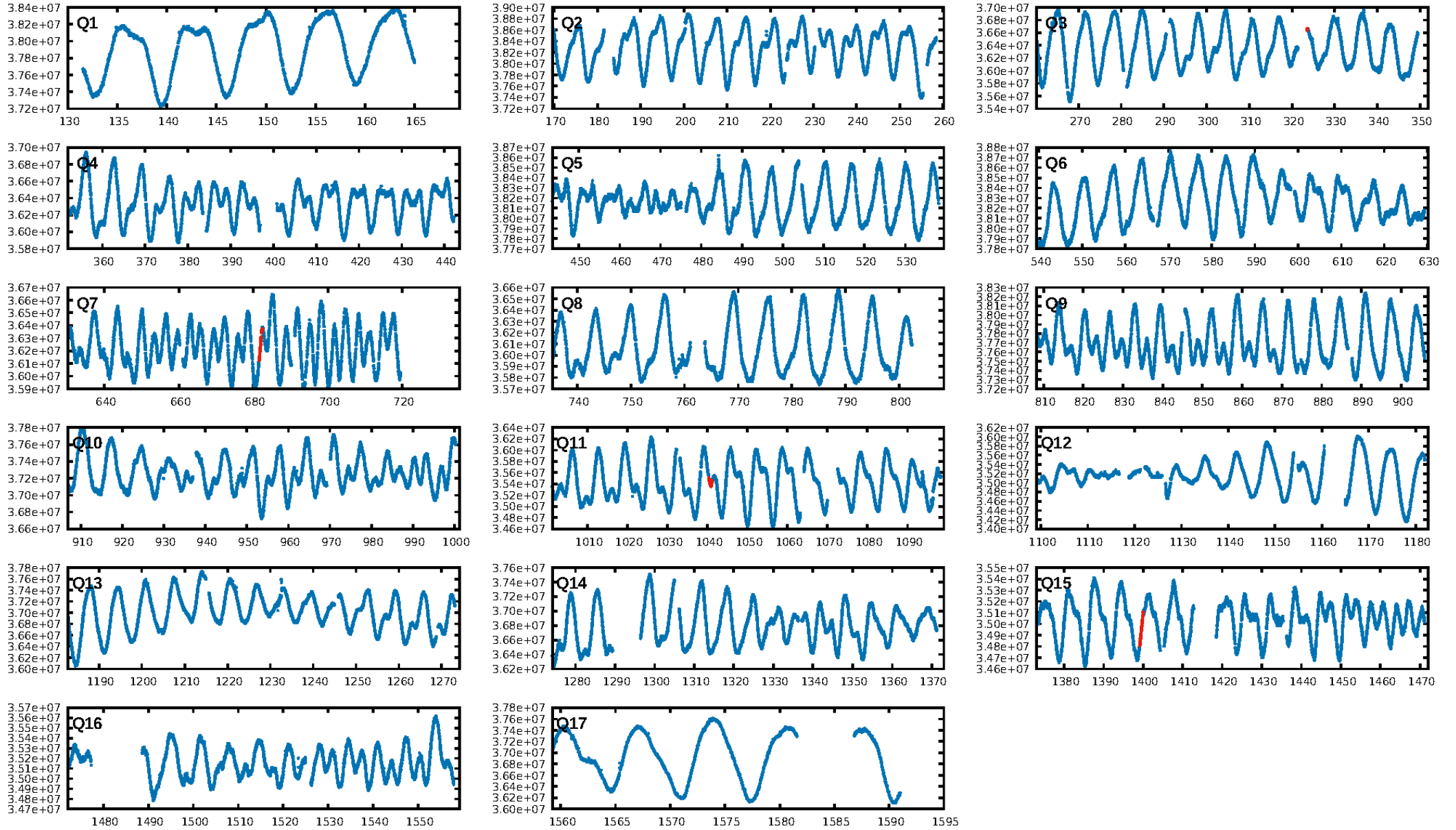
Kp: 14.46 R*: 0.75 Rs Teff: 5656.0 K Logg: 4.61 Fe/H: -0.500



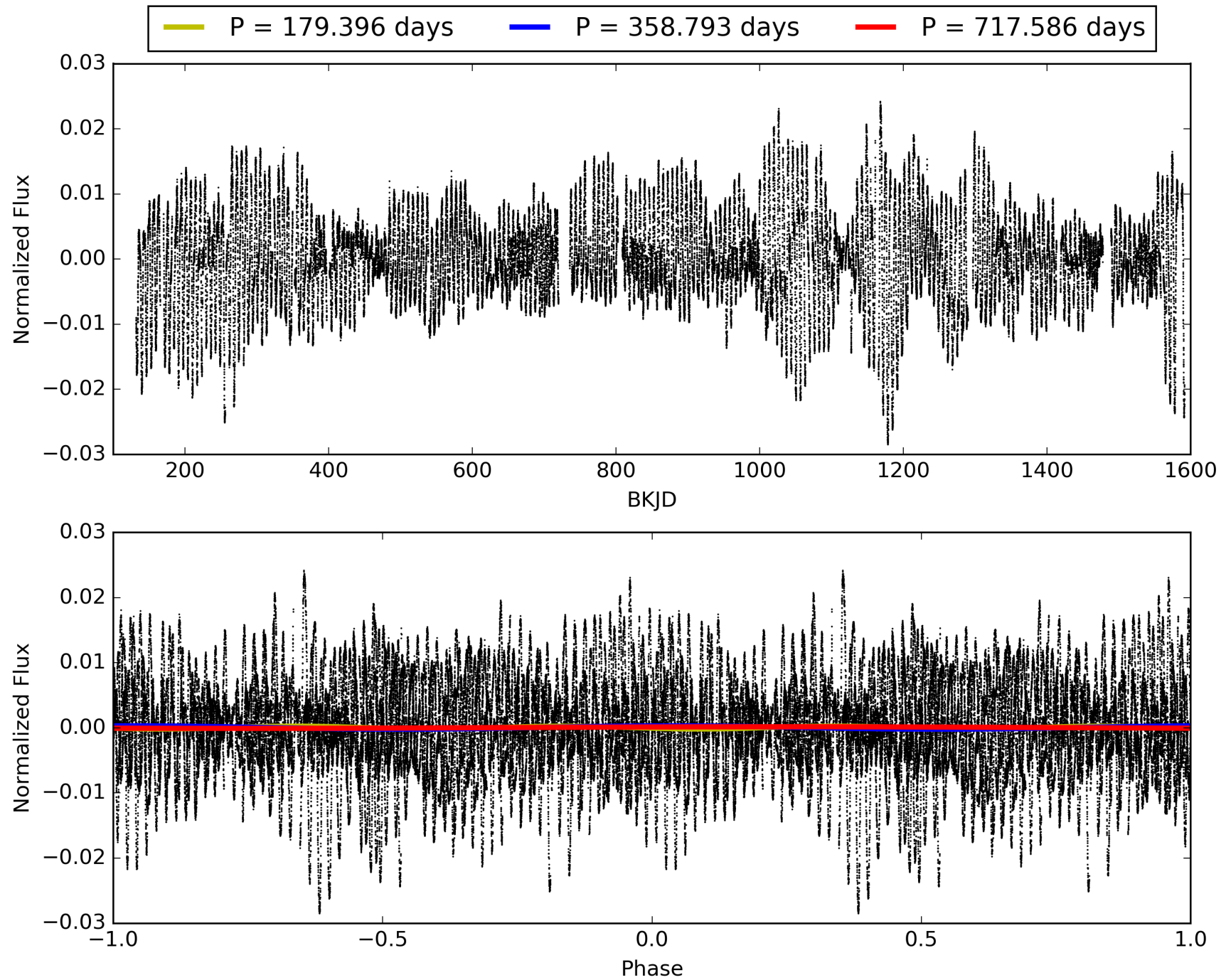
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:48:18 Z

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

TCE 011620956-10, PDC Light Curves

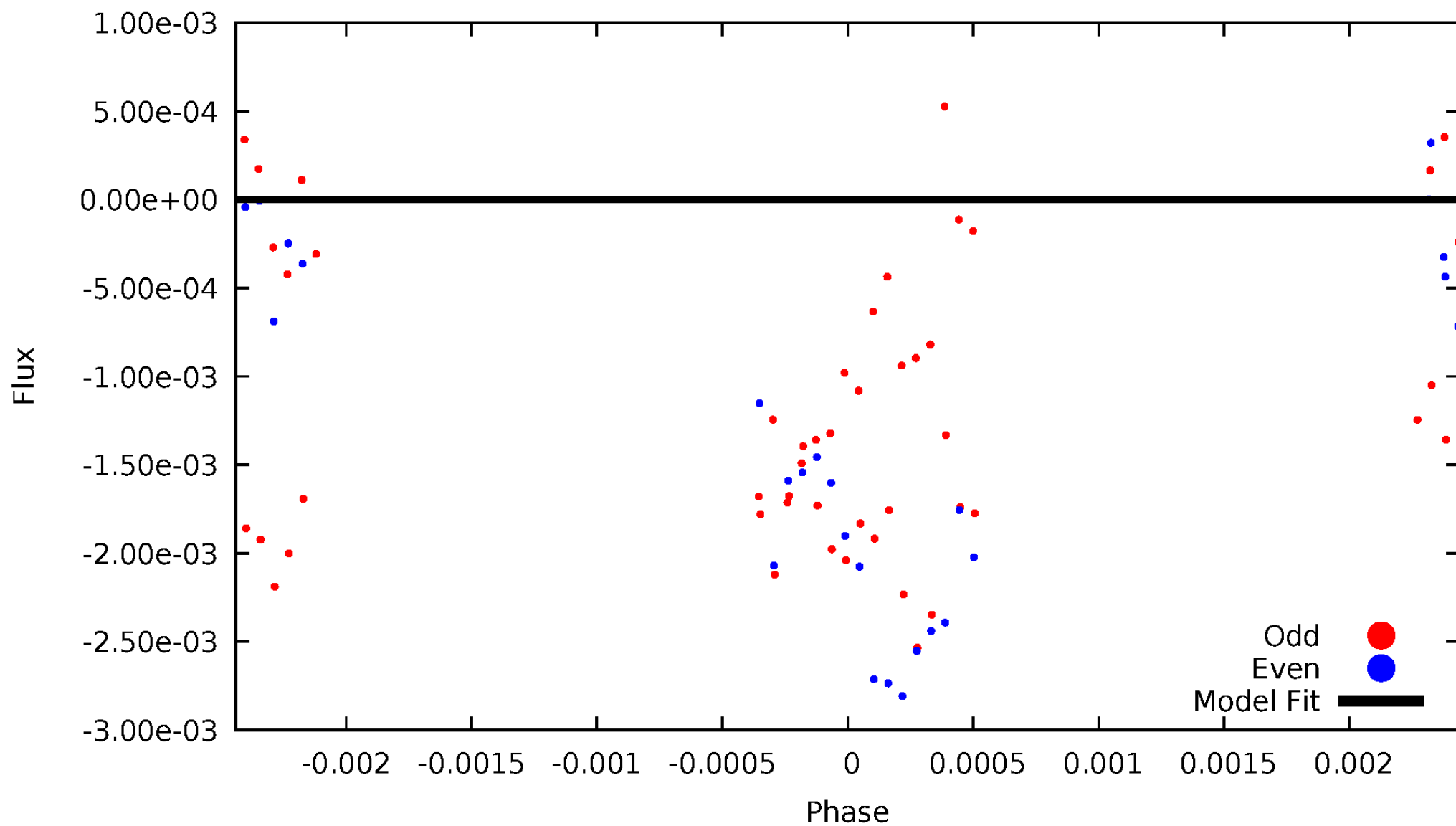


TCE 011620956-10



DV Odd/Even

TCE 011620956-10

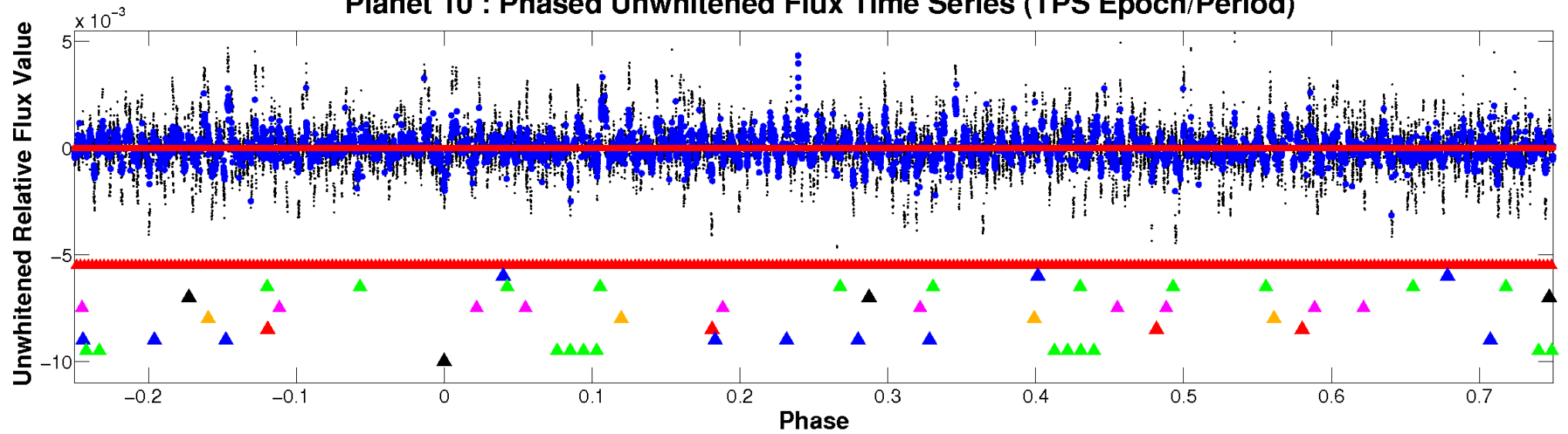


ALT Odd/Even

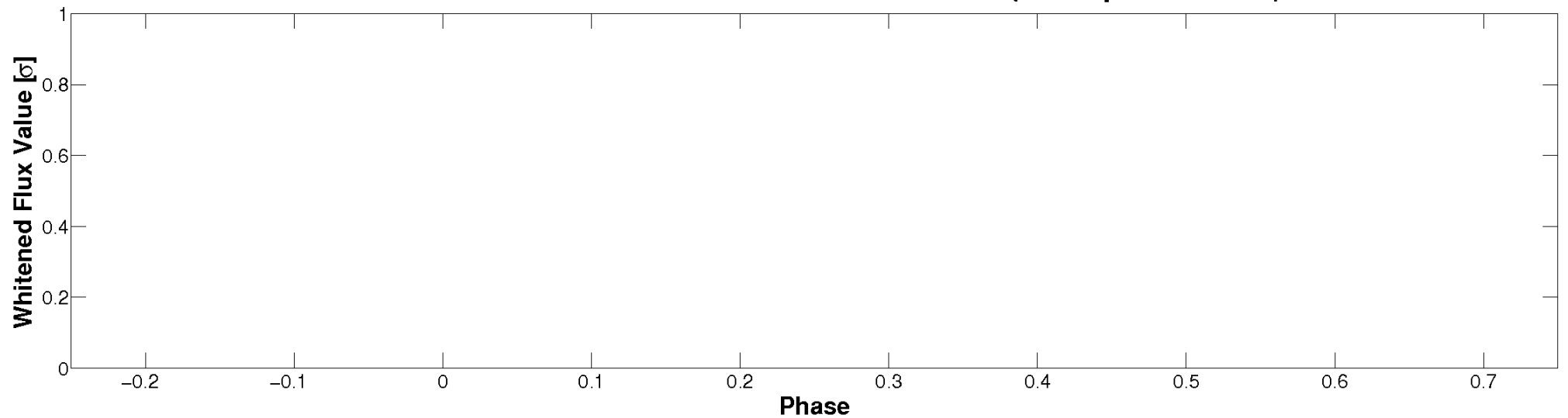
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

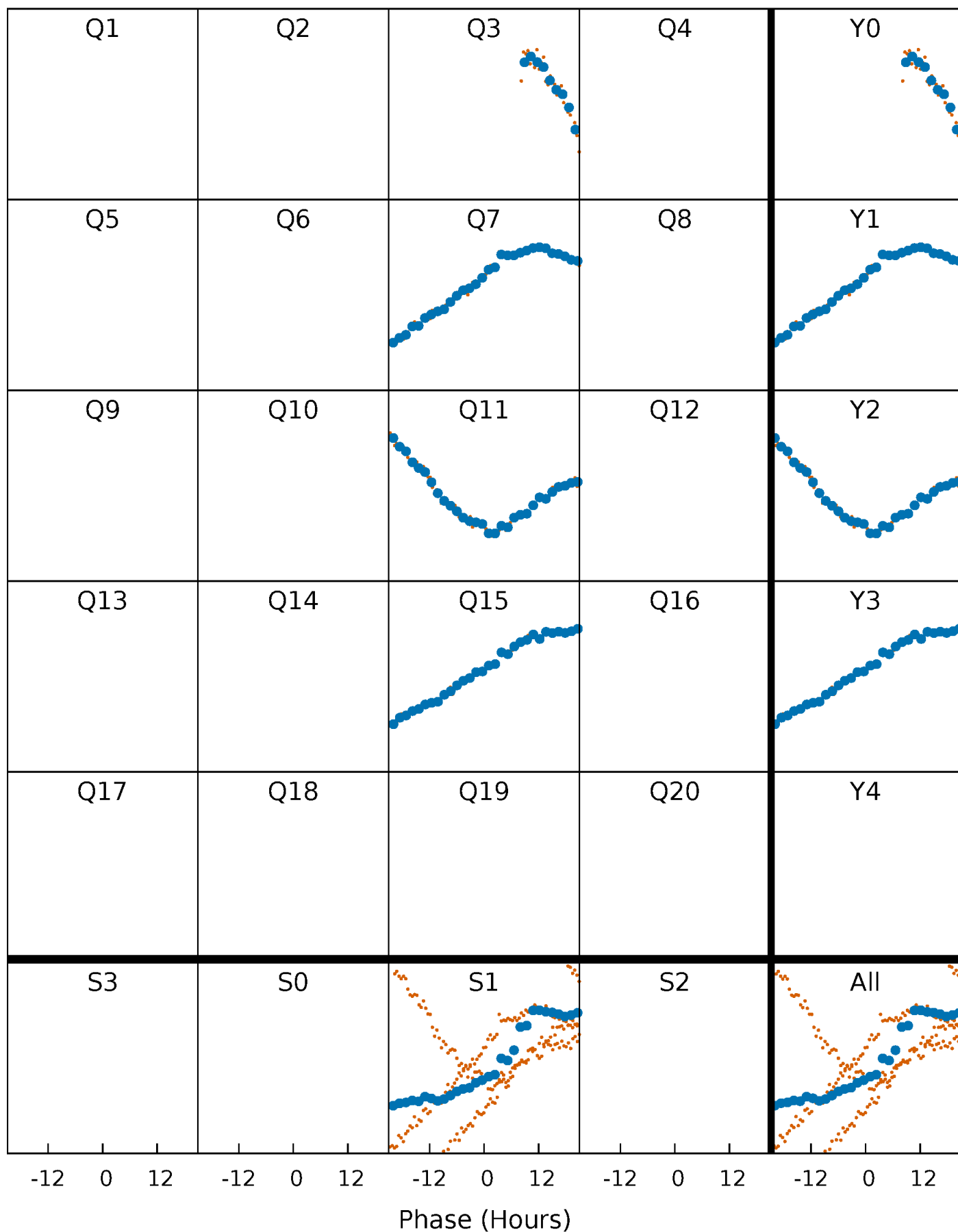


Planet 10 : Phased Whitened Flux Time Series (TPS Epoch/Period)



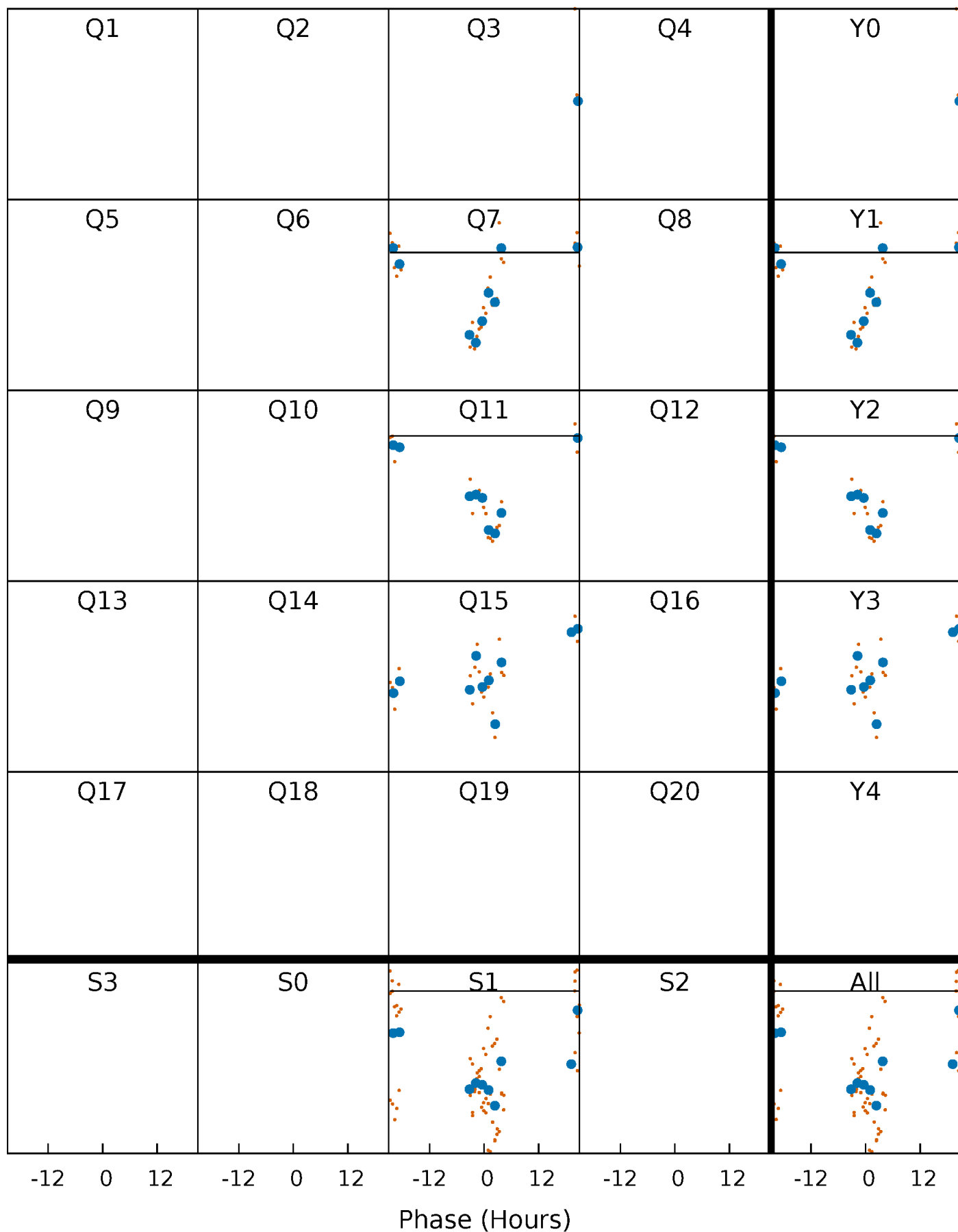
PDC Quarter-Phased Transit Curves

TCE 011620956-10 $P=358.792880$ Days $T_0=323.205031$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011620956-10 $P=358.792880$ Days $T_0=323.205031$ (BKJD)

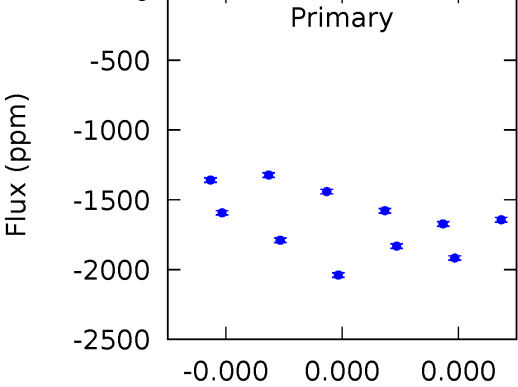
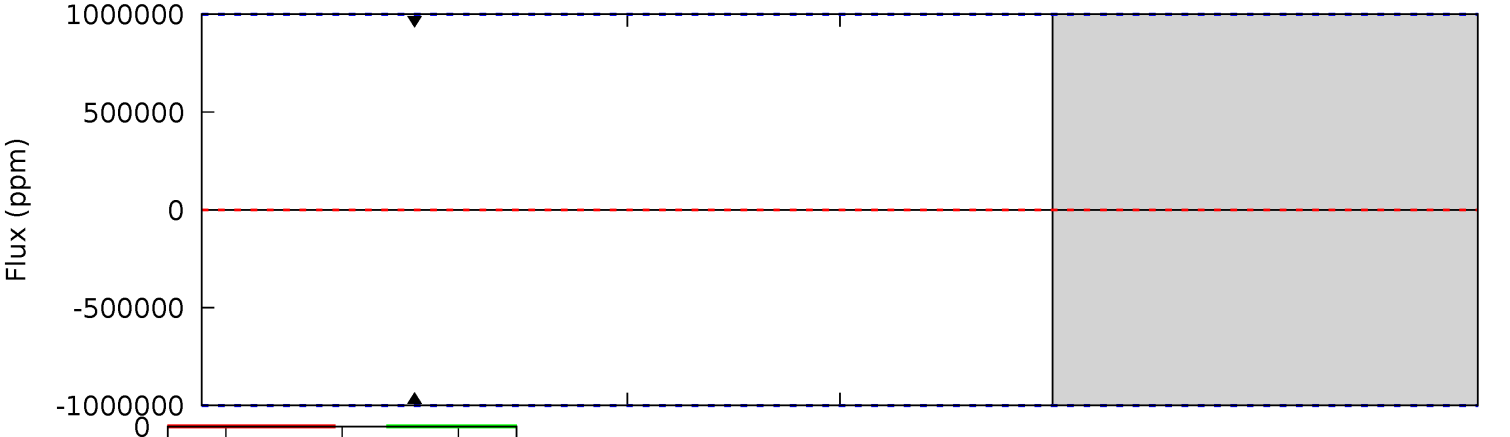
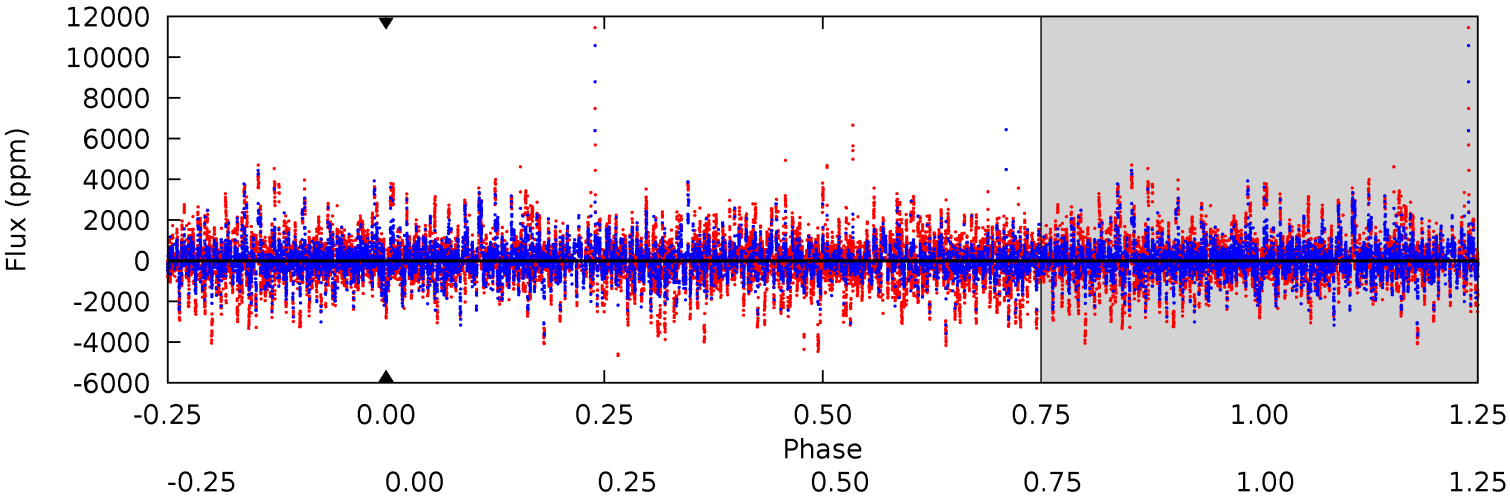


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

011620956-10, P = 358.792880 Days, E = 323.205031 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

This plot does not exist for this TCE.

Stellar Parameters For KIC 011620956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5656^{+152}_{-152}	$4.605^{+0.036}_{-0.144}$	$-0.500^{+0.300}_{-0.300}$	$0.746^{+0.163}_{-0.054}$	$0.834^{+0.079}_{-0.088}$	$2.827^{+0.527}_{-1.131}$
	+3%/-3%	+1%/-3%	+60%/-60%	+22%/-7%	+9%/-11%	+19%/-40%
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 011620956-10 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$6.55^{+6.52}_{-4.60}$	319^{+17}_{-13}	4184^{+15584}_{-24124}	$11926^{+2042879}_{-2045262}$
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

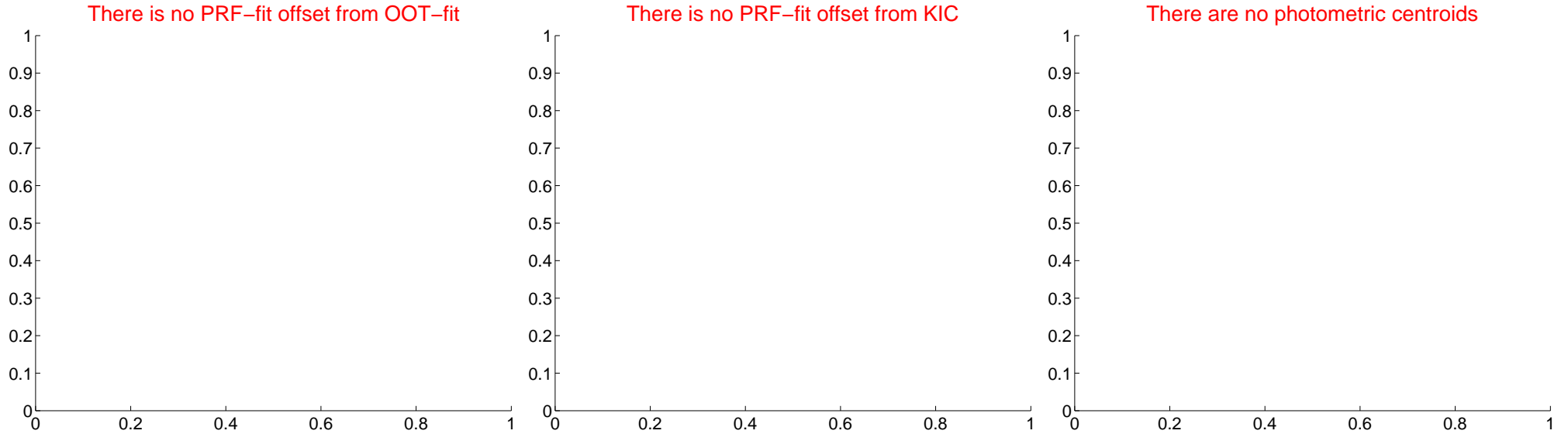
DV Centroid Data

Supplemental centroid analysis for 011620956-10. Kepler magnitude: 14.46. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

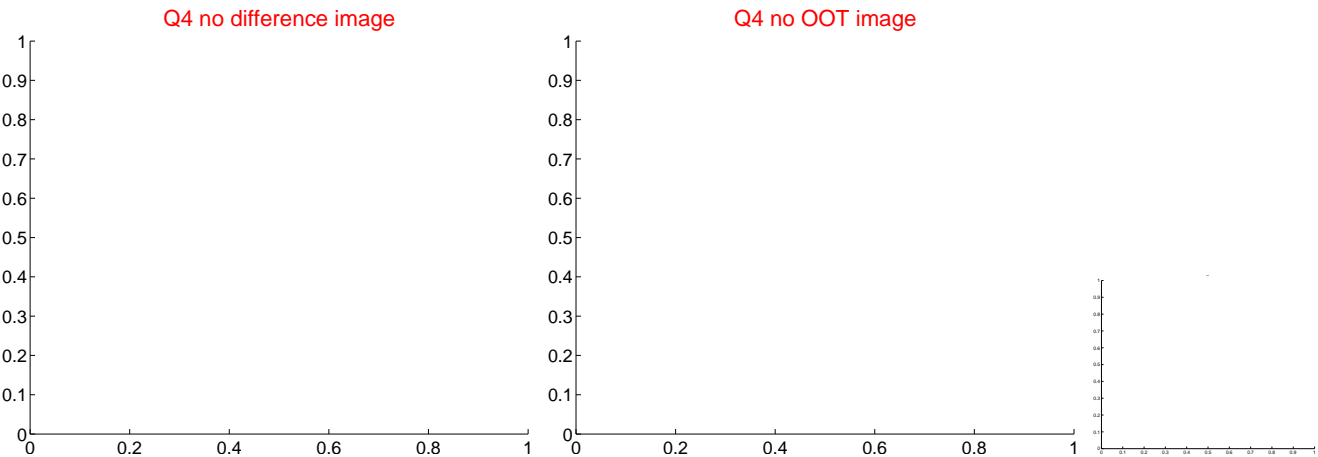
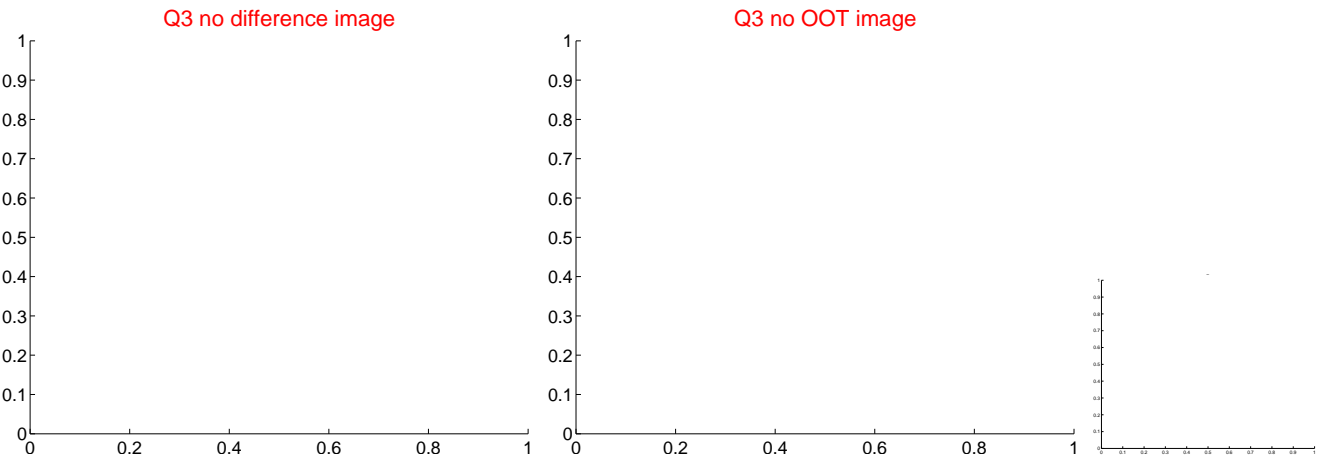
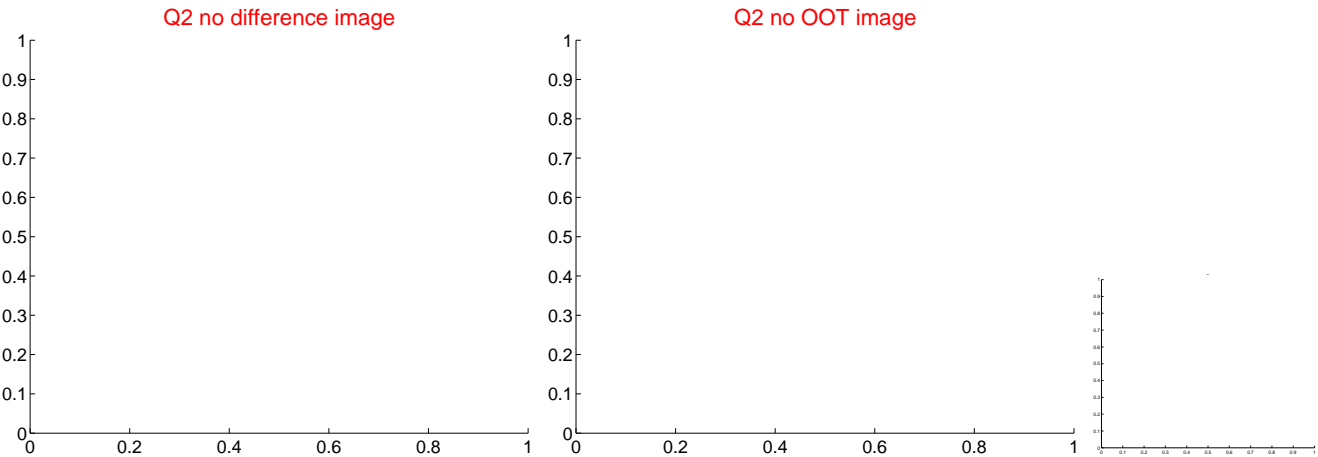
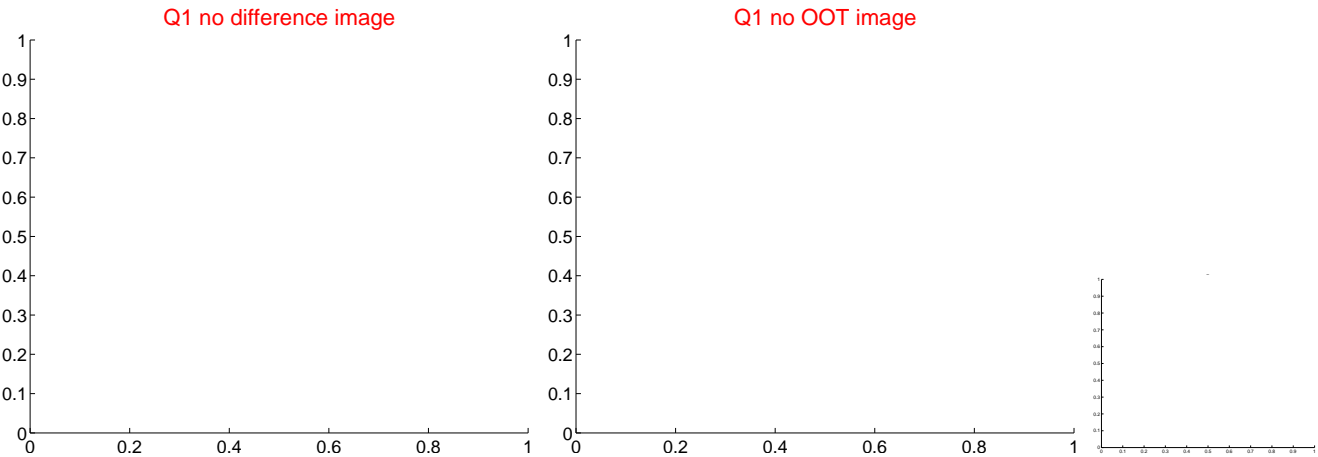
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	—	—	—	—

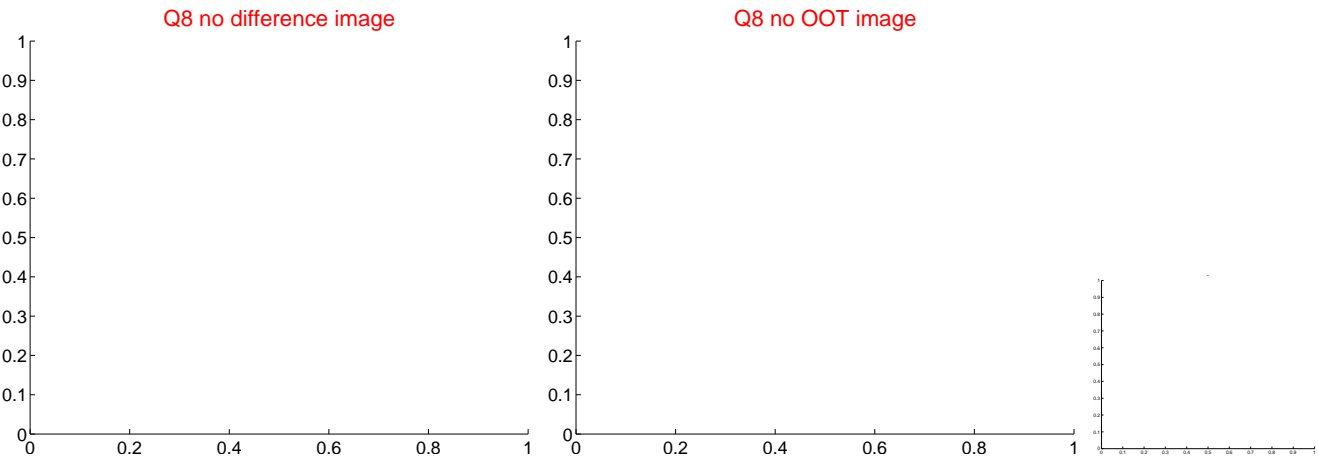
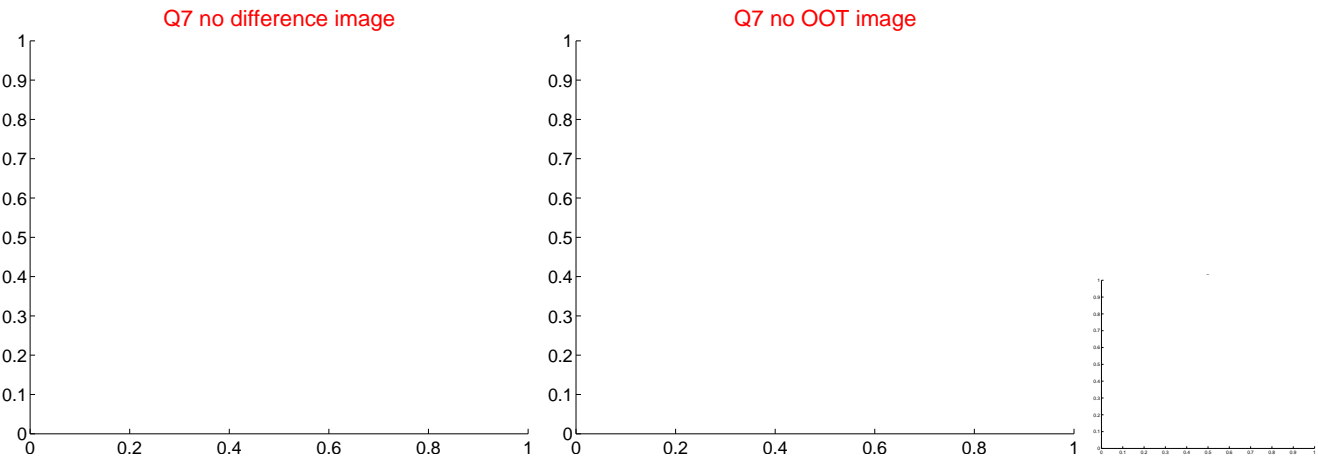
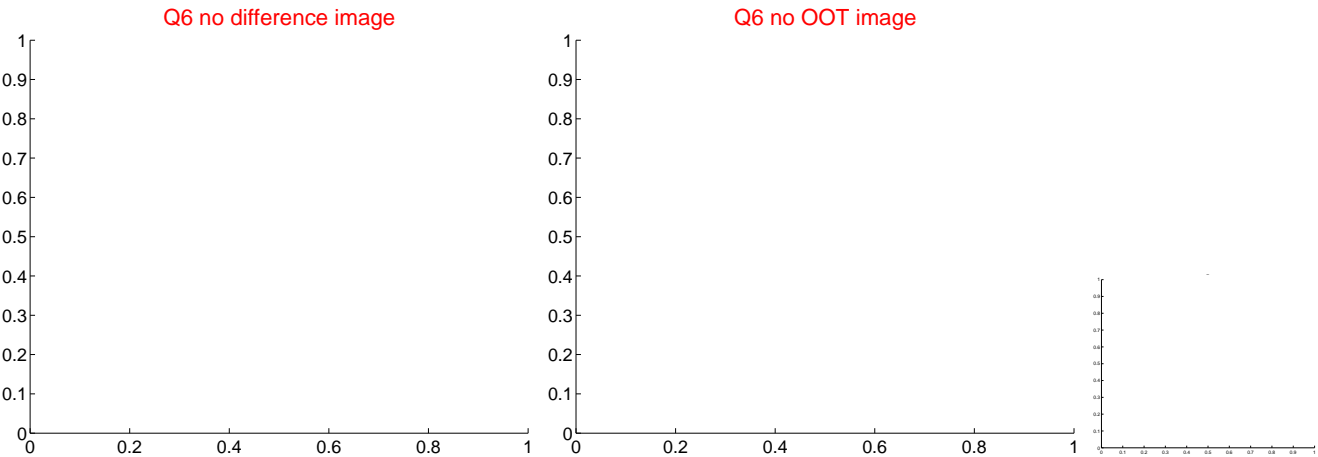
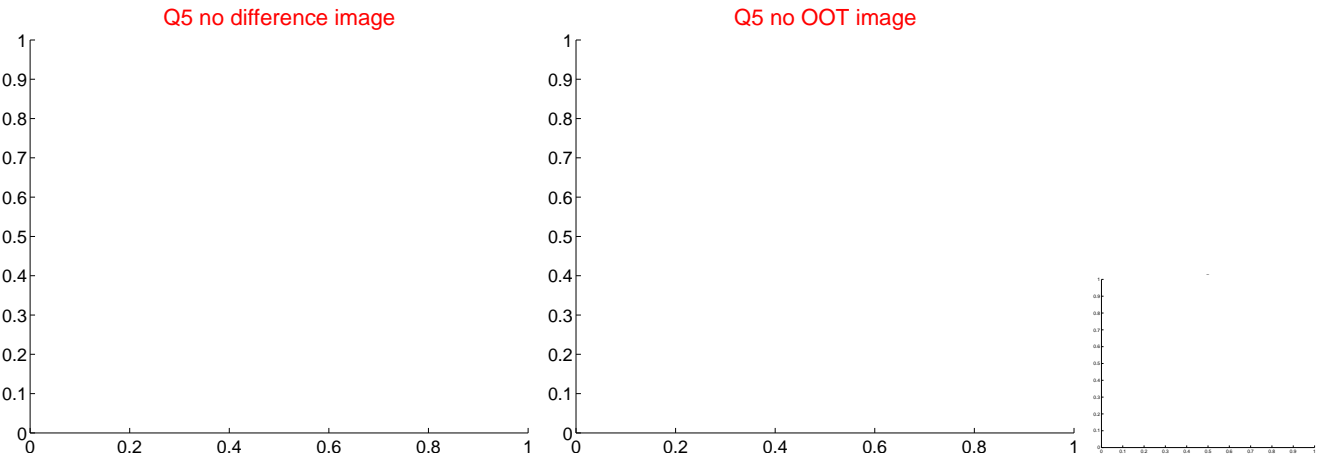


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

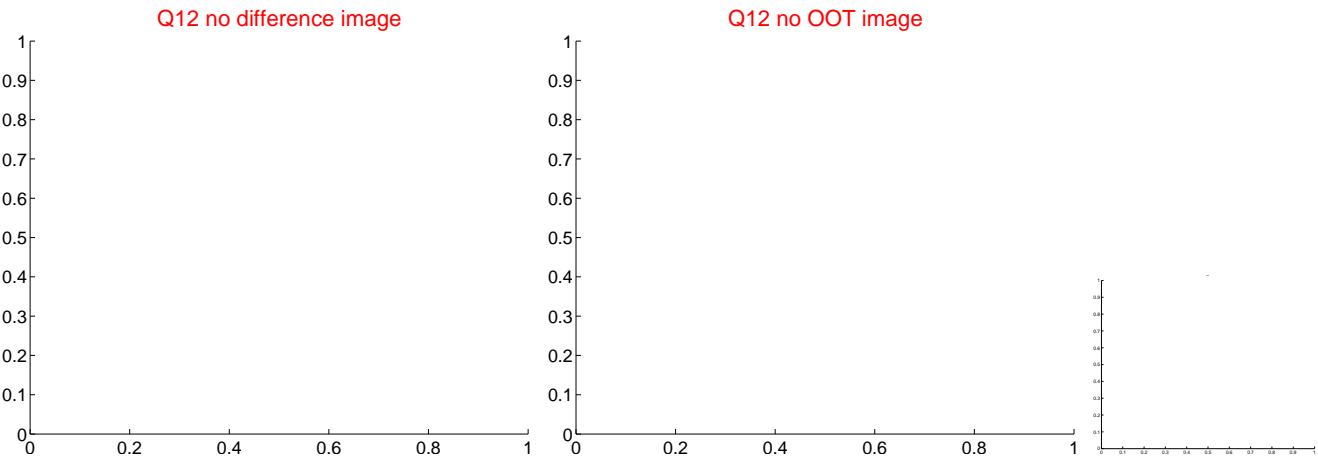
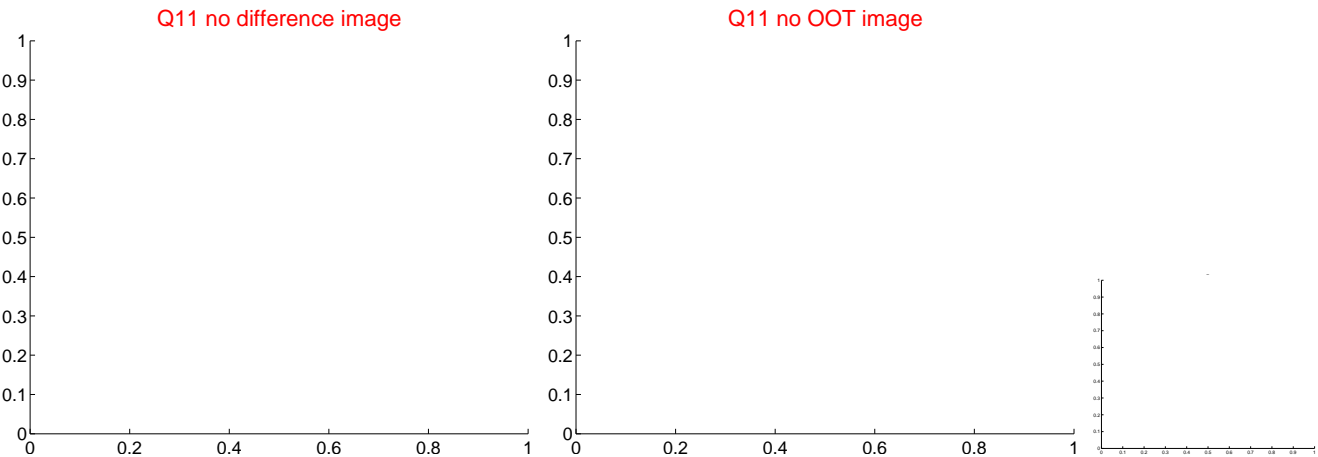
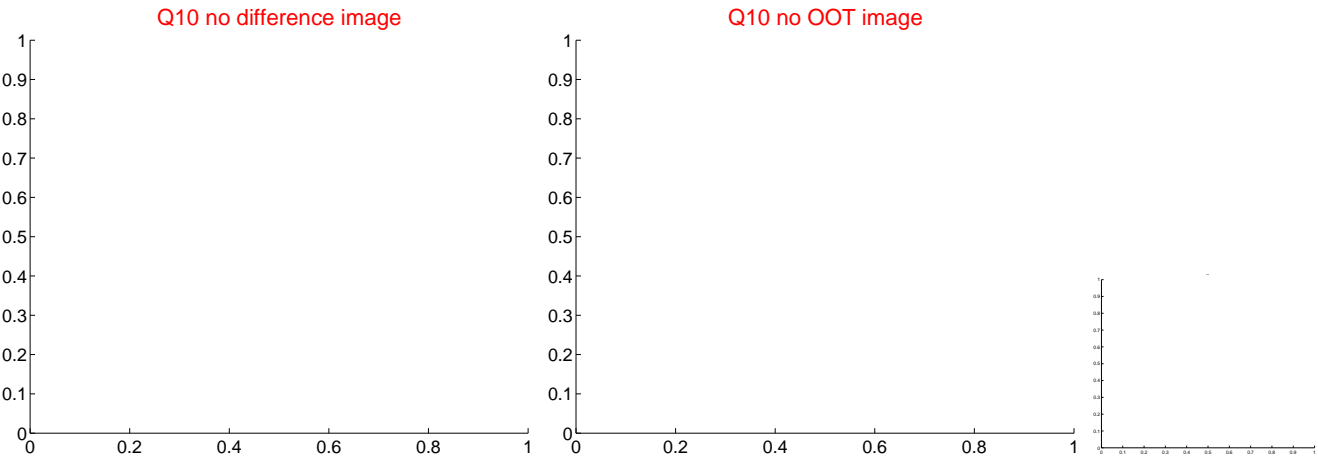
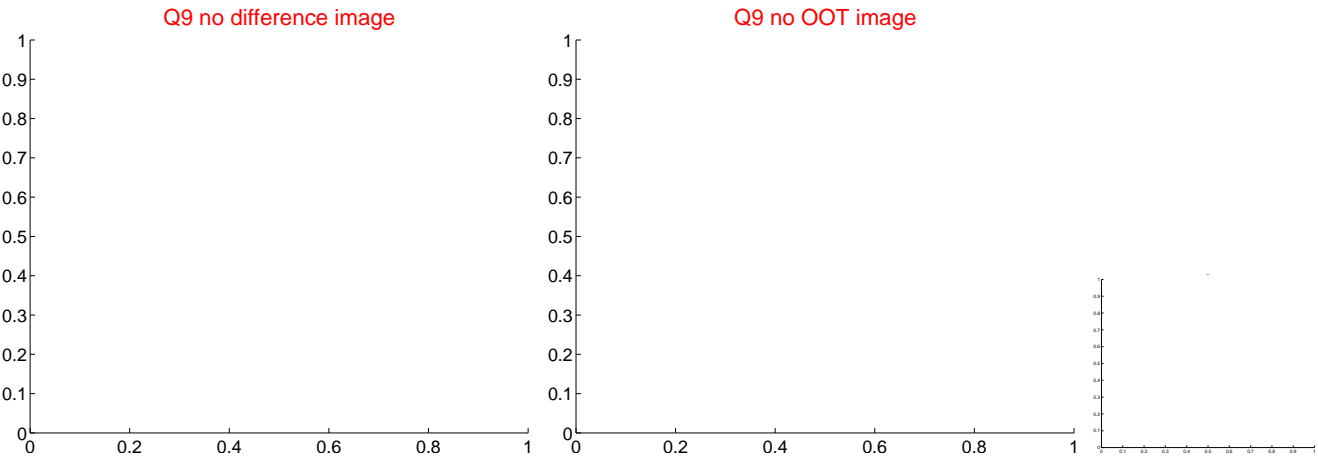
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



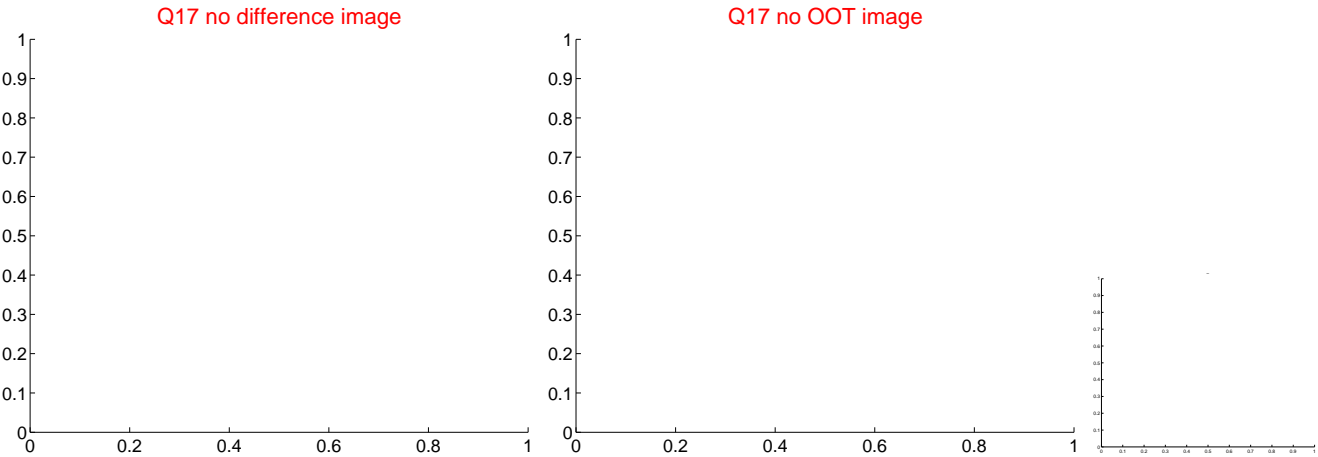
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

