

KIC 009725543

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})
009725543-01	OBS	No	0.554672	131.773721	270.0	0.790	10.6	11.0	1.59	7078	3.08	24469.89
009725543-02	OBS	No	0.554667	132.052214	213.3	1.024	9.1	9.5	1.59	7078	2.51	24470.20
009725543-03	OBS	No	0.857741	132.108178	257.8	1.111	8.1	4.4	1.59	7078	2.99	13683.77
009725543-04	OBS	No	0.857685	131.979744	353.0	1.500	7.8	-1.0	1.59	7078	3.04	13684.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009725543-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009725543-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009725543-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009725543-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

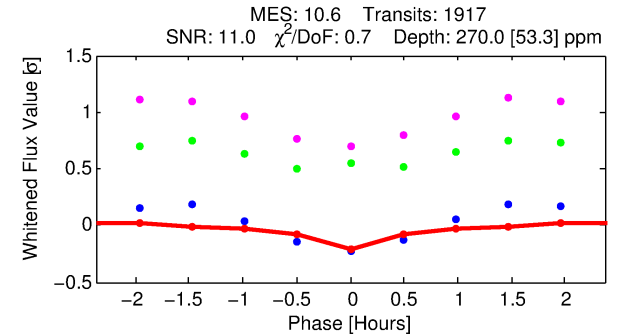
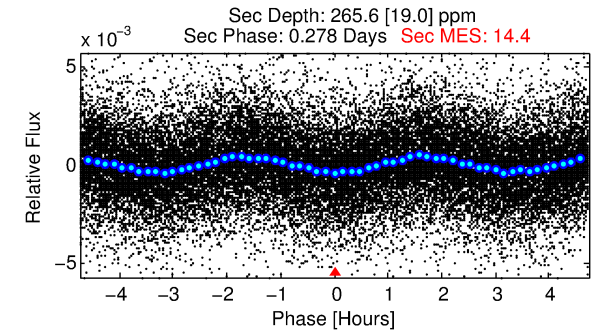
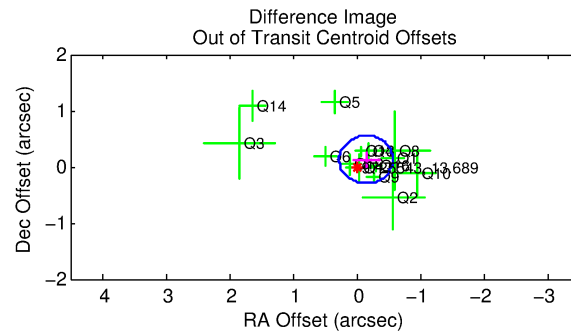
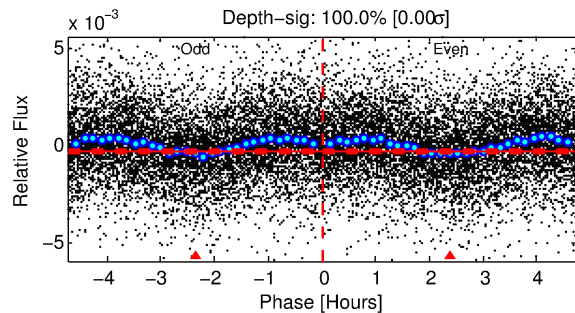
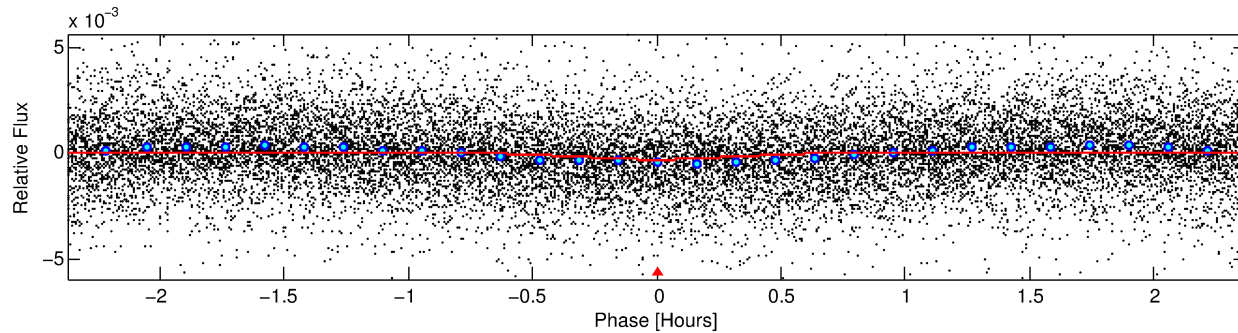
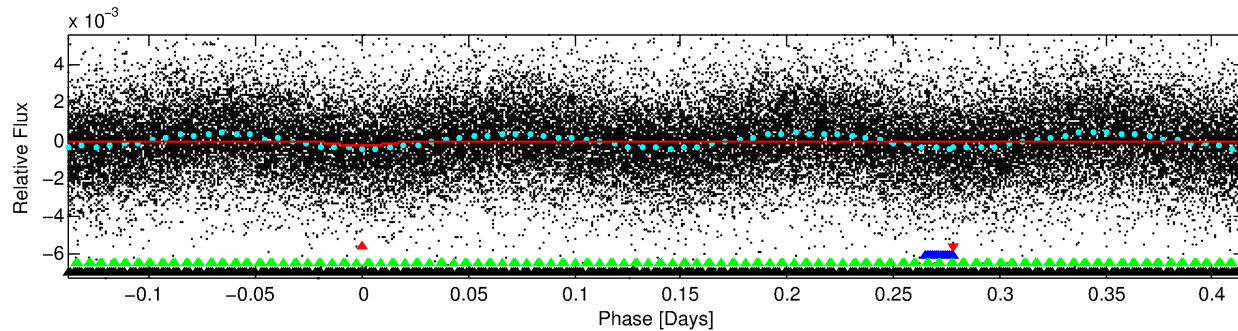
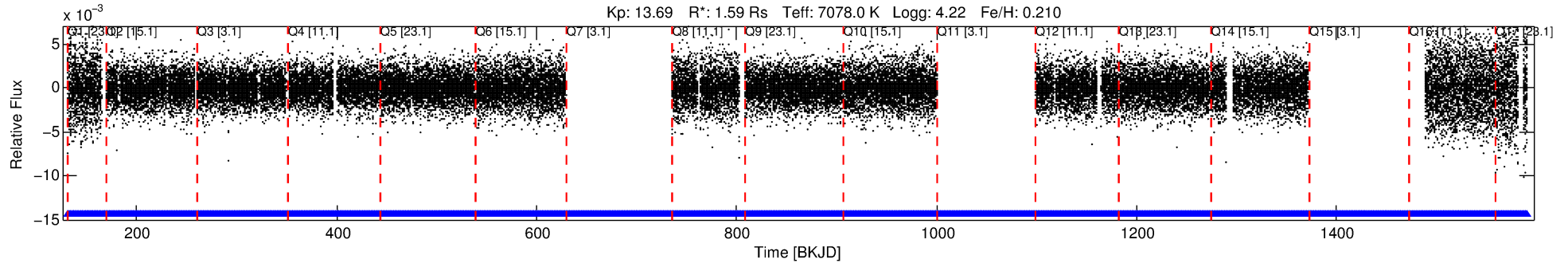
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009725543-01

No Significant Match Found

DV One-Page Summary

KIC: 9725543 Candidate: 1 of 4 Period: 0.555 d



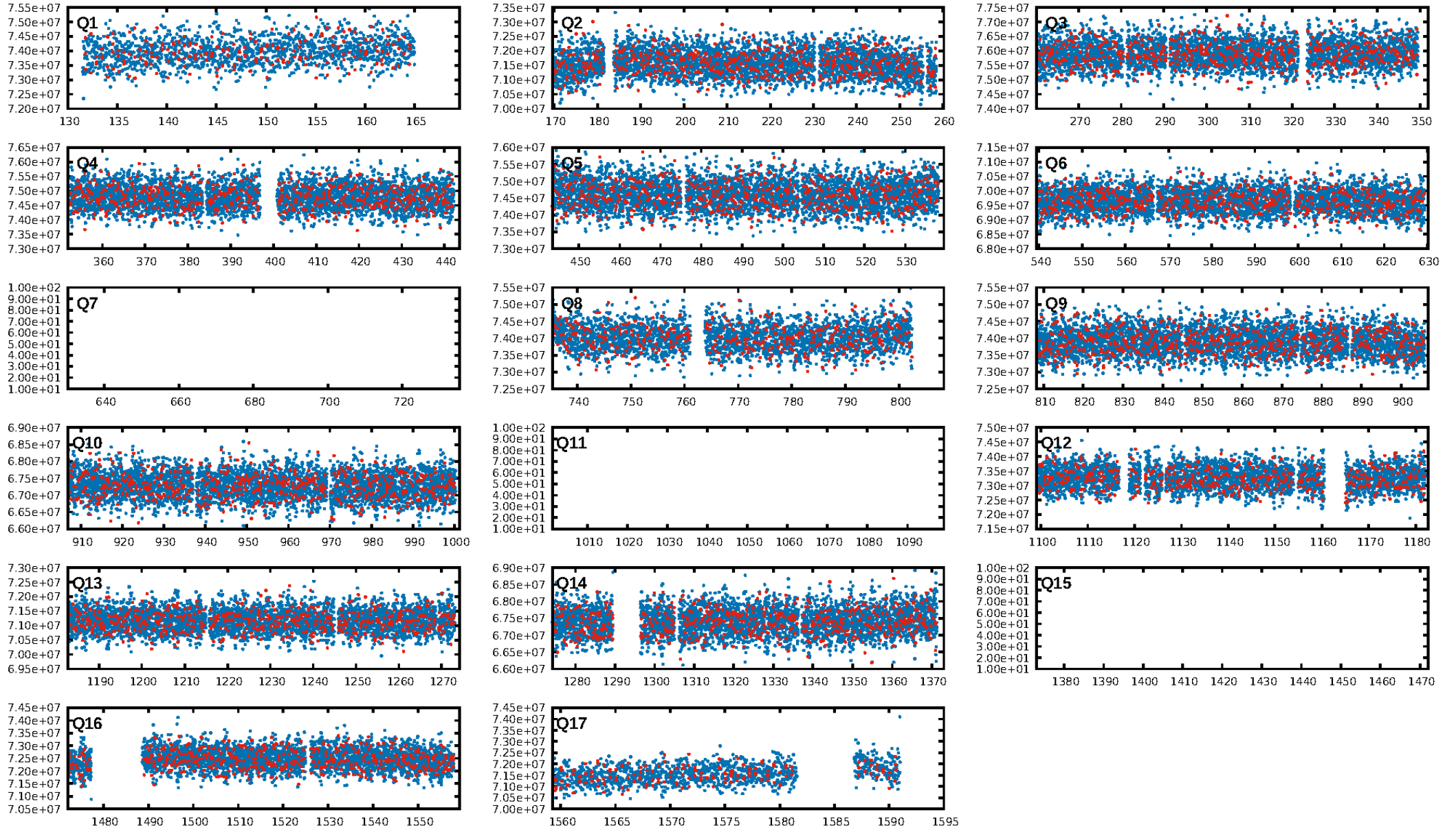
DV Fit Results:

Period = 0.55467 [0.00001] d
Epoch = 131.7737 [0.0017] BKJD
Rp/R* = 0.0177 [0.0132]
a/R* = 2.72 [10.51]
b = 0.90 [0.96]
Seff = 24469.89 [10753.30]
Teq = 3189 [350] K
Rp = 3.08 [2.55] Re
a = 0.0153 [0.0044] AU
Ag = 3.59 [5.55] [0.47σ]
Teffp = 6785 [2554] K [1.40σ]

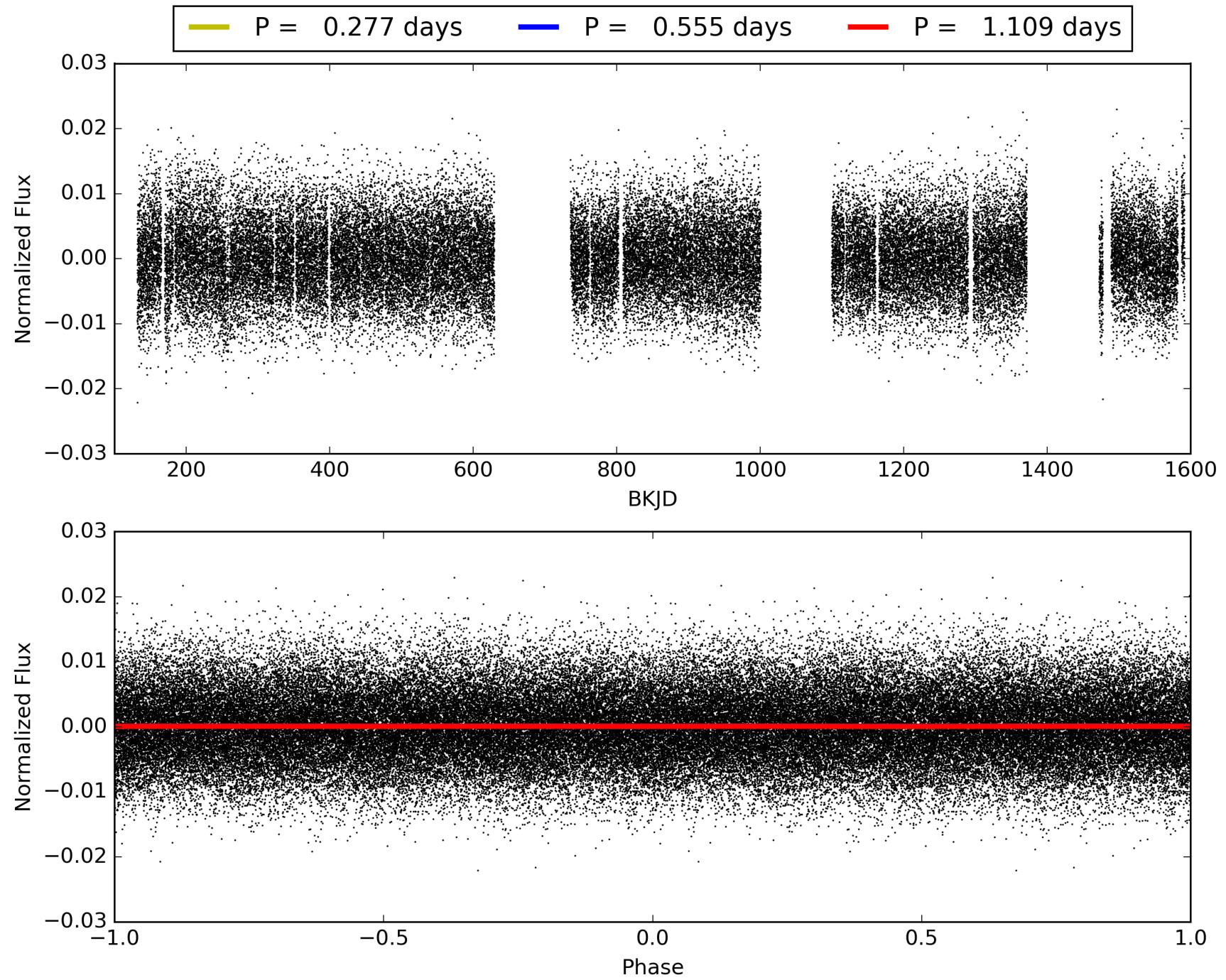
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [4.29σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1810/1810]
GhostDiagnostic-chr: 3.787
Centroid-sig: N/A
Centroid-so: 0.071 arcsec [0.45σ]
OotOffset-rm: 0.196 arcsec [1.39σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.247 arcsec [2.17σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009725543-01, PDC Light Curves

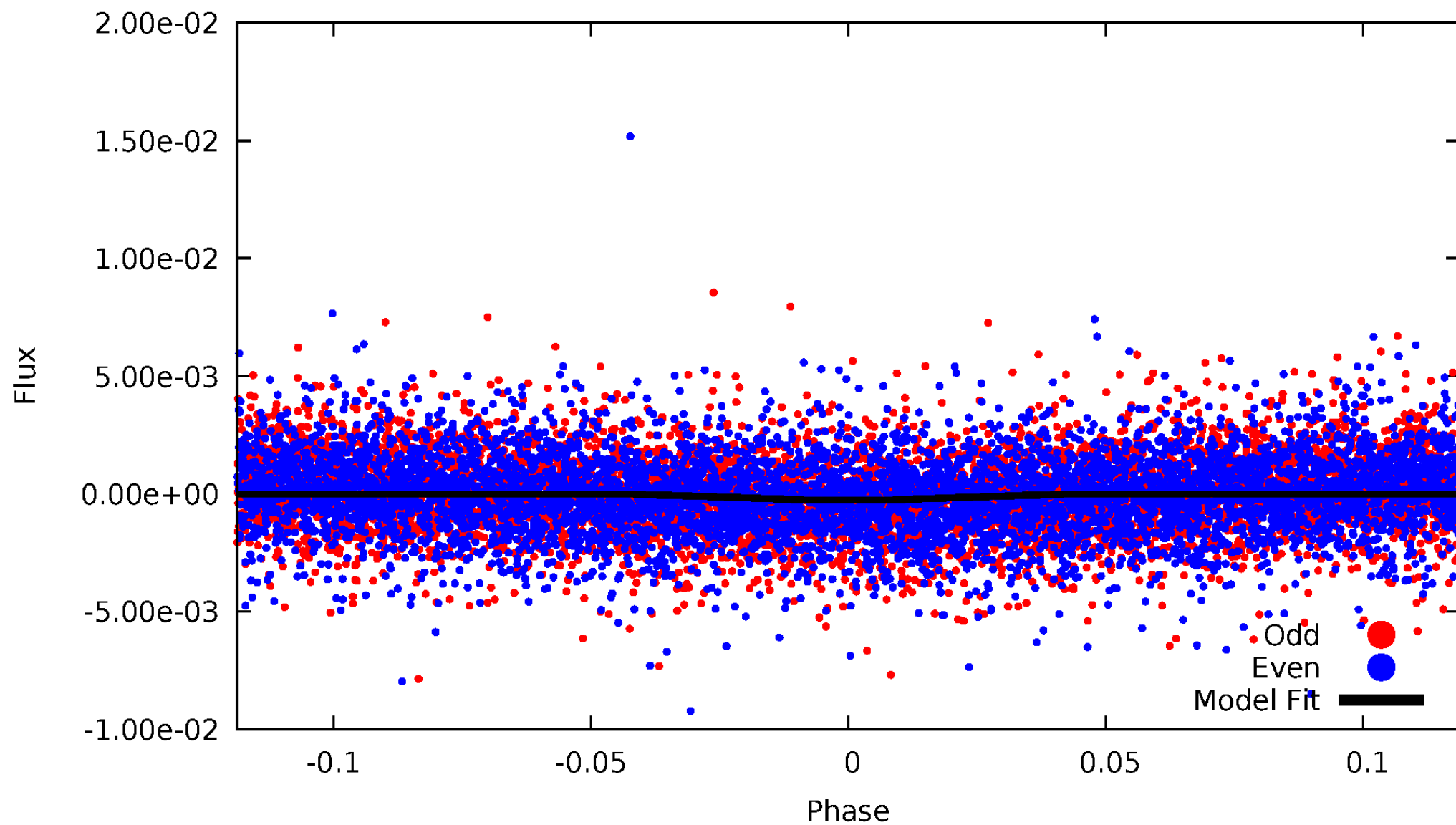


TCE 009725543-01



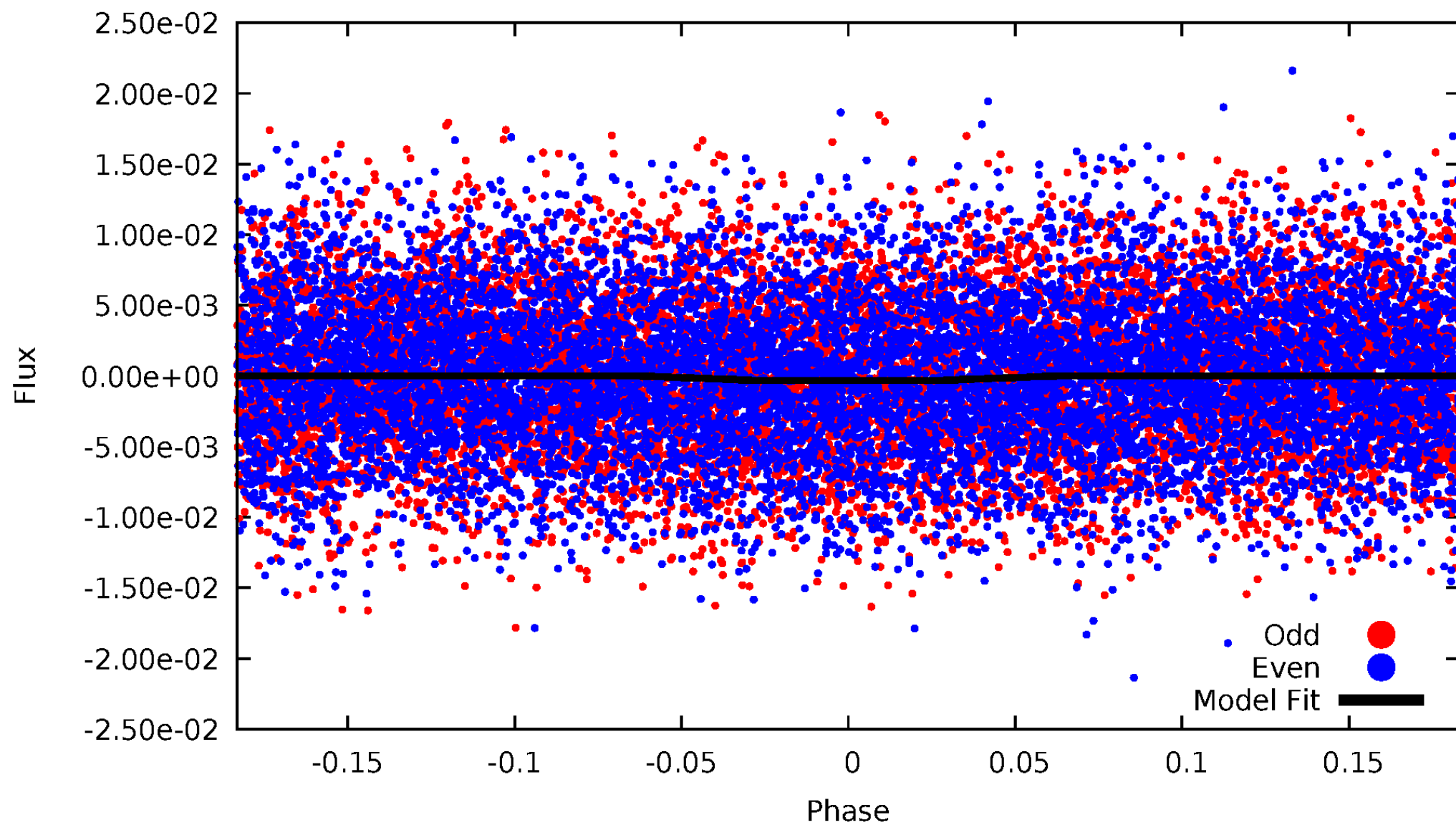
DV Odd/Even

TCE 009725543-01



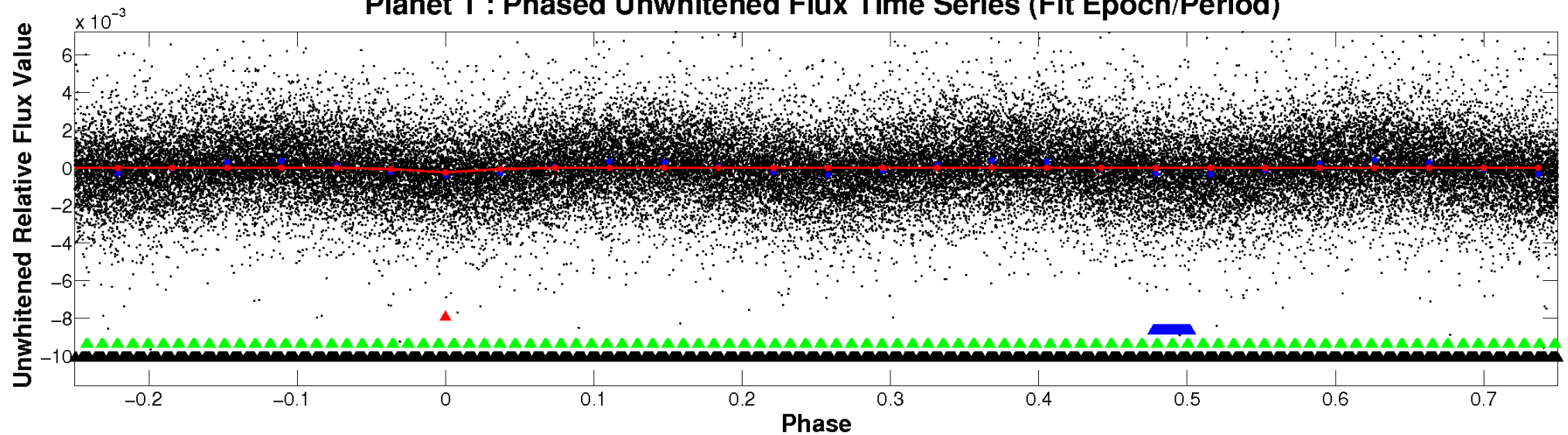
ALT Odd/Even

TCE 009725543-01

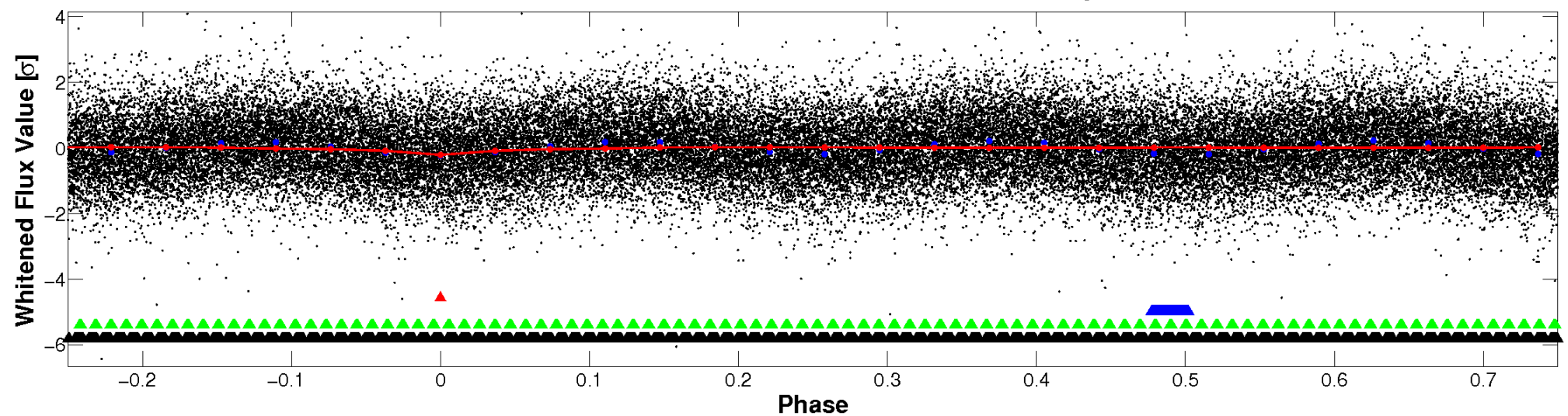


Non-Whitened Vs. Whitened Light Curve

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

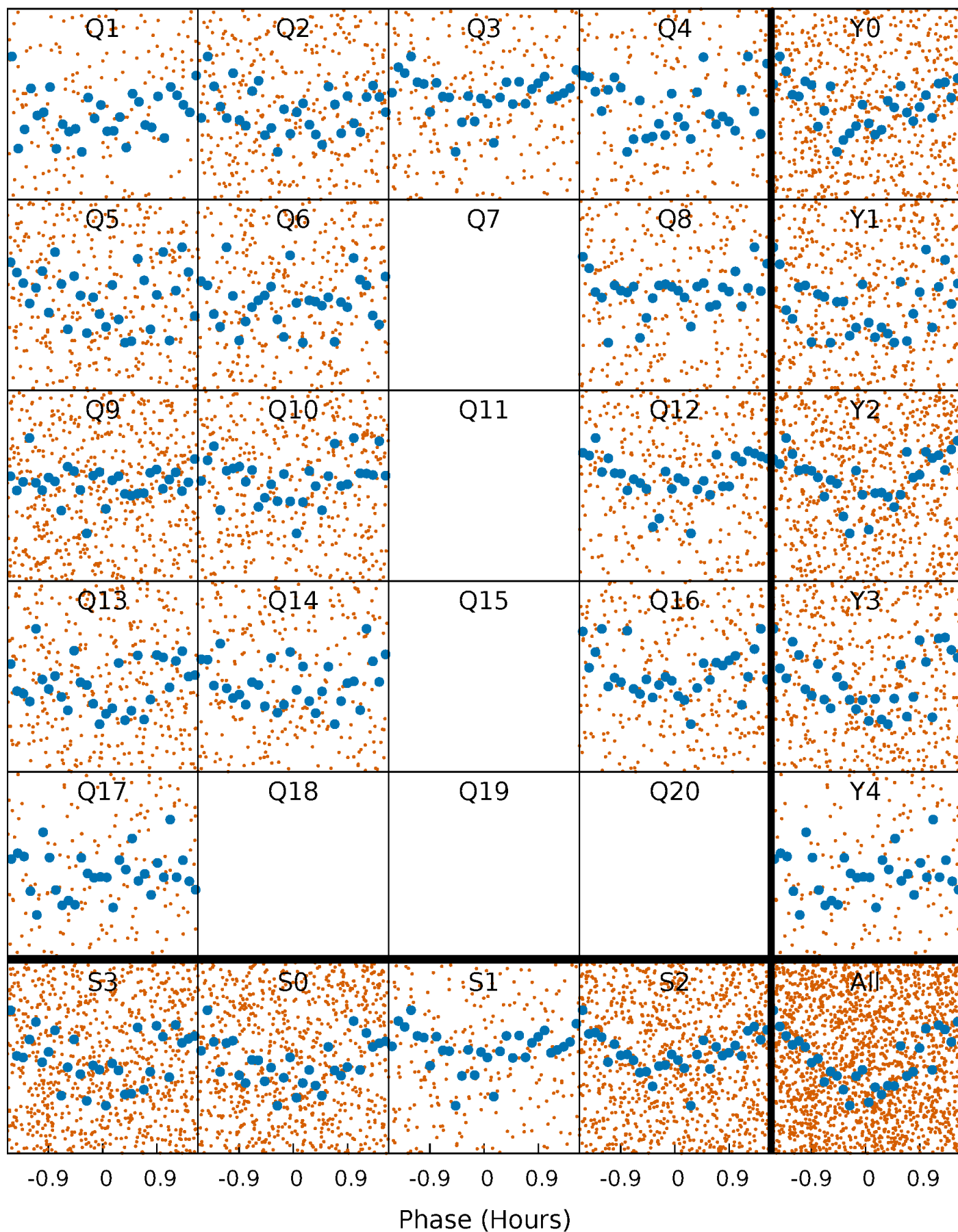


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



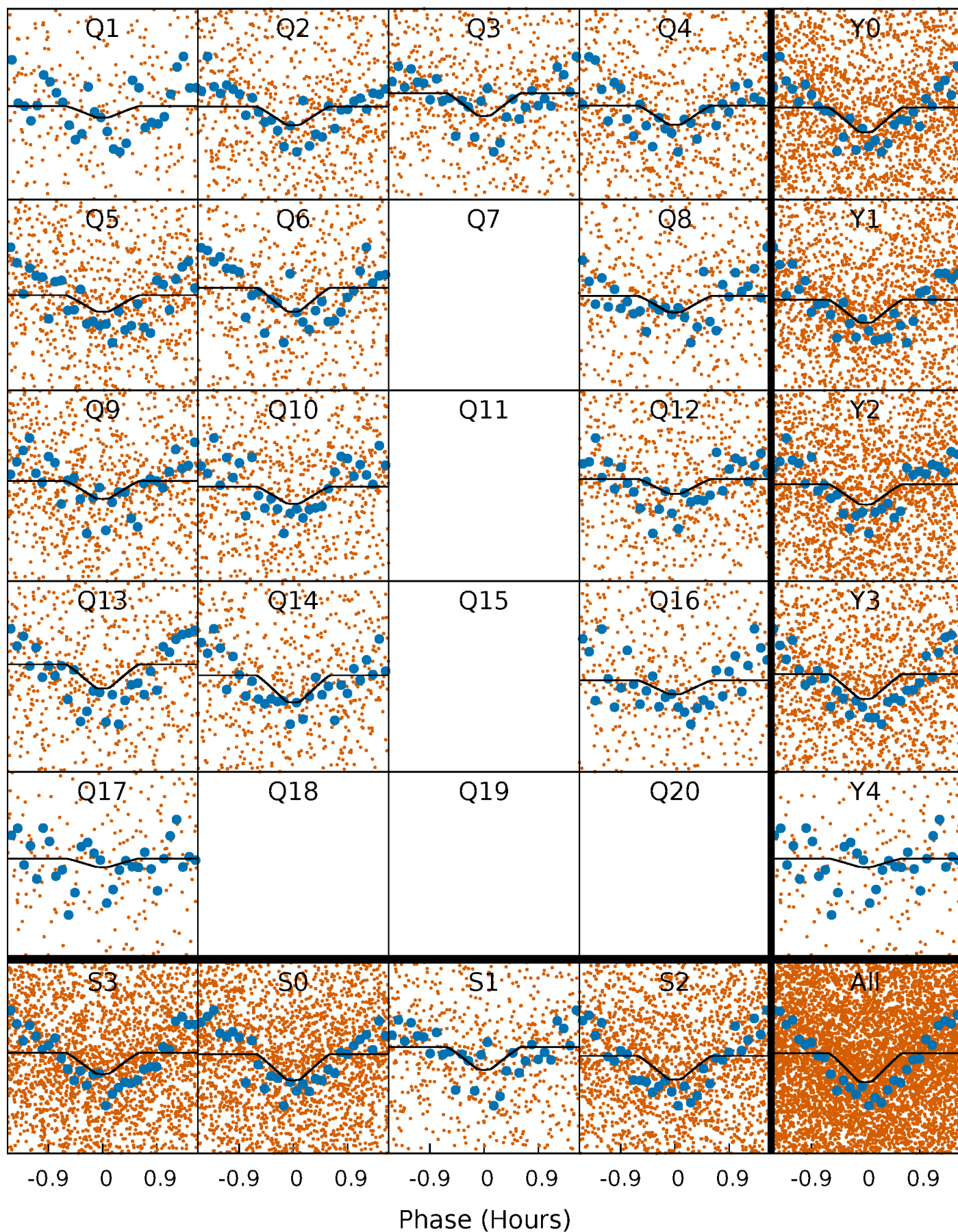
PDC Quarter-Phased Transit Curves

TCE 009725543-01 P= 0.554672 Days $T_0=131.773721$ (BKJD)



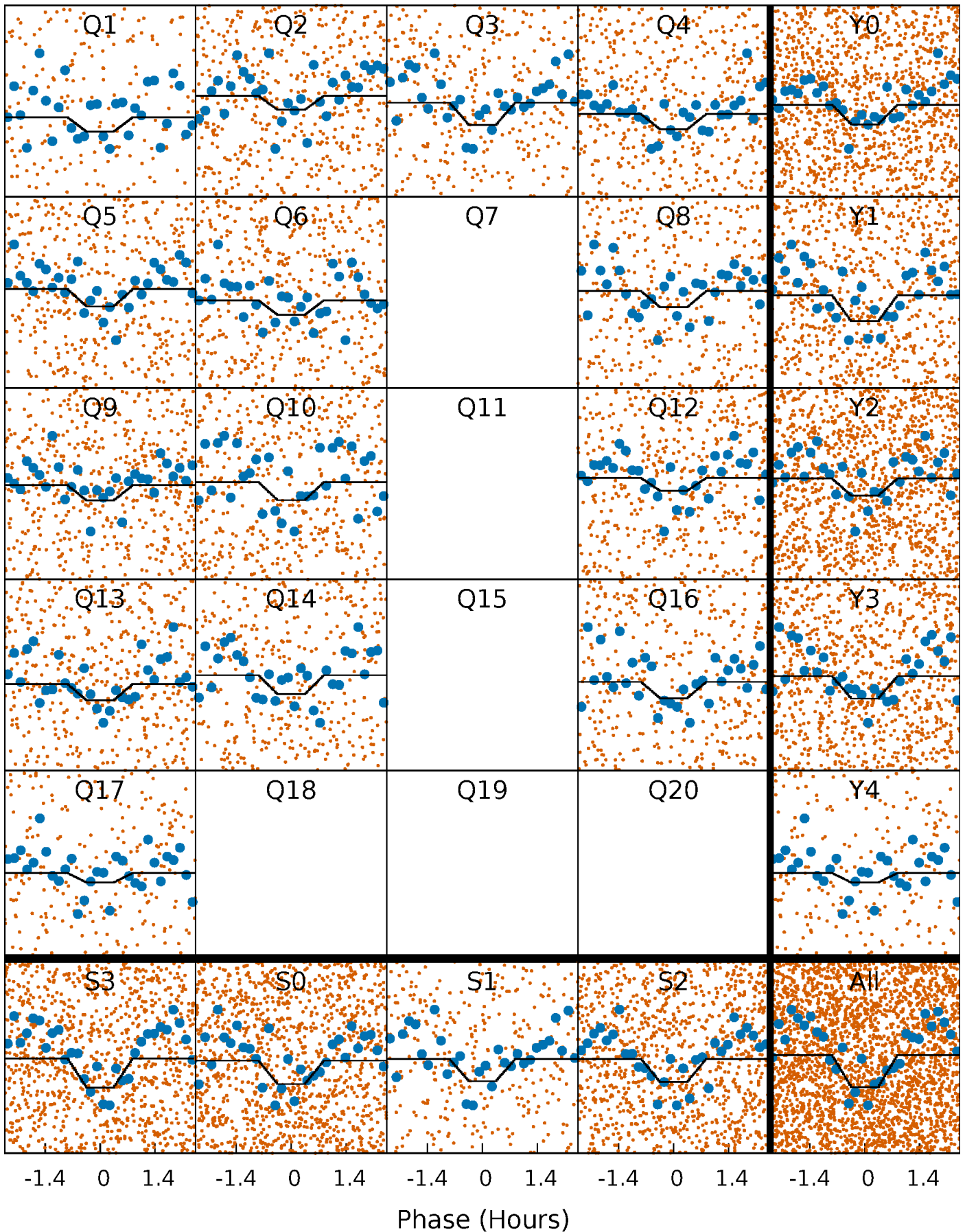
DV Quarter-Phased Transit Curves

TCE 009725543-01 P= 0.554672 Days $T_0=131.773721$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

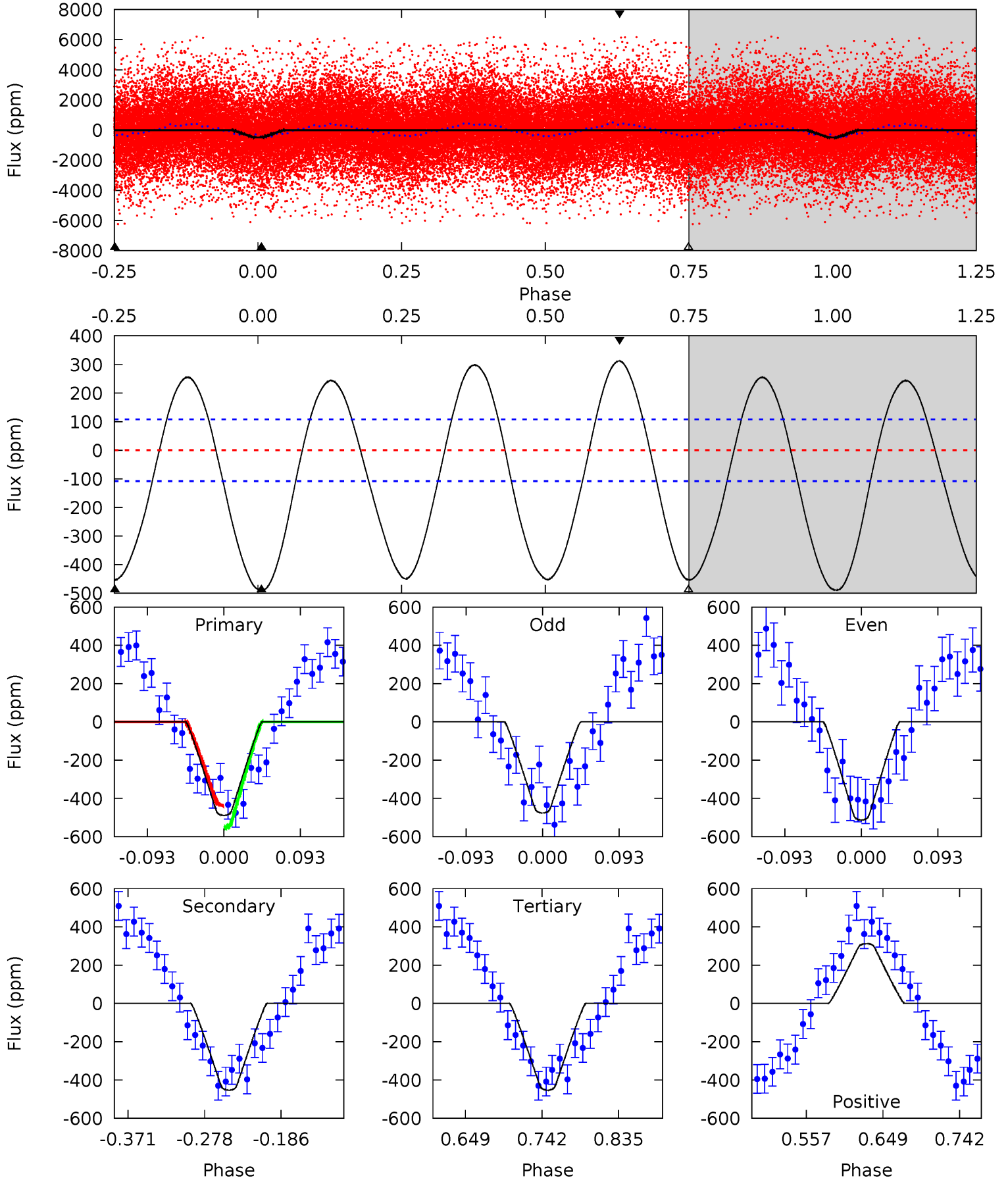
TCE 009725543-01 P= 0.554670 Days $T_0=131.773733$ (BKJD)



DV Model-Shift Uniqueness Test

009725543-01, P = 0.554672 Days, E = 131.219049 Days

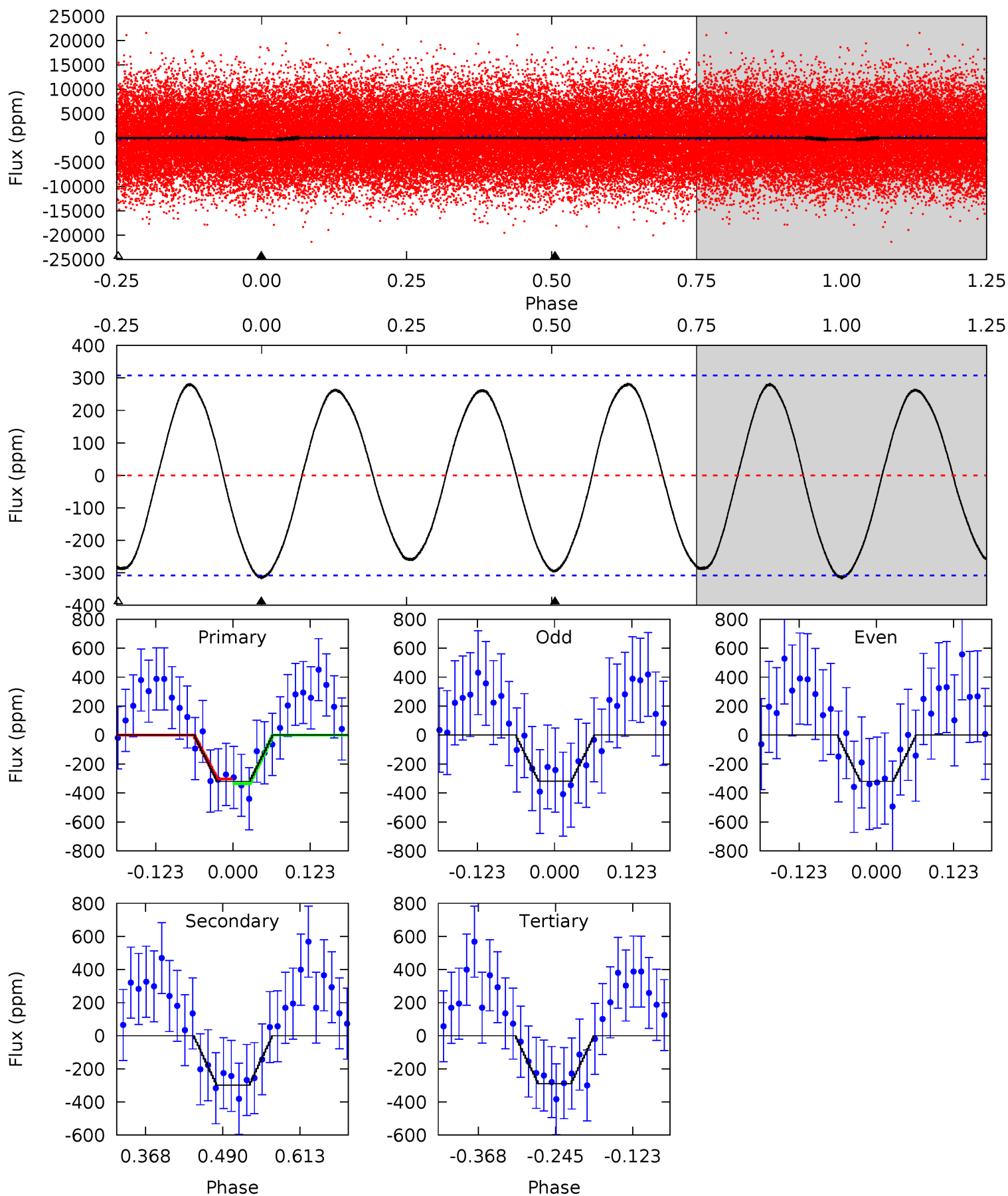
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	19.2	19.2	13.2	4.58	1.68	11.1	1.51	7.48	0.01	5.98	0.79	1.12	0.39	2.46



Alt Model-Shift Uniqueness Test

009725543-01, P = 0.554670 Days, E = 131.219063 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.69	4.38	4.26	0	4.52	1.54	2.86	0.43	4.69	0.13	4.38	0.00	0.84	0.47	0.23



Stellar Parameters For KIC 009725543

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7078^{+195}_{-318}	$4.222^{+0.070}_{-0.210}$	$0.210^{+0.150}_{-0.400}$	$1.593^{+0.570}_{-0.228}$	$1.546^{+0.214}_{-0.214}$	$0.538^{+0.208}_{-0.285}$
	+3%/-4%	+2%/-5%	+71%/-190%	+36%/-14%	+14%/-14%	+39%/-53%
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 009725543-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-454±24	$3.51^{+2.28}_{-1.78}$	4533^{+372}_{-258}	7408^{+4941}_{-1882}	$4.791^{+15.167}_{-3.067}$
Alt.	-299±68	$3.51^{+2.50}_{-2.15}$	4512^{+361}_{-243}	6389^{+6046}_{-1627}	$3.021^{+17.733}_{-2.018}$

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

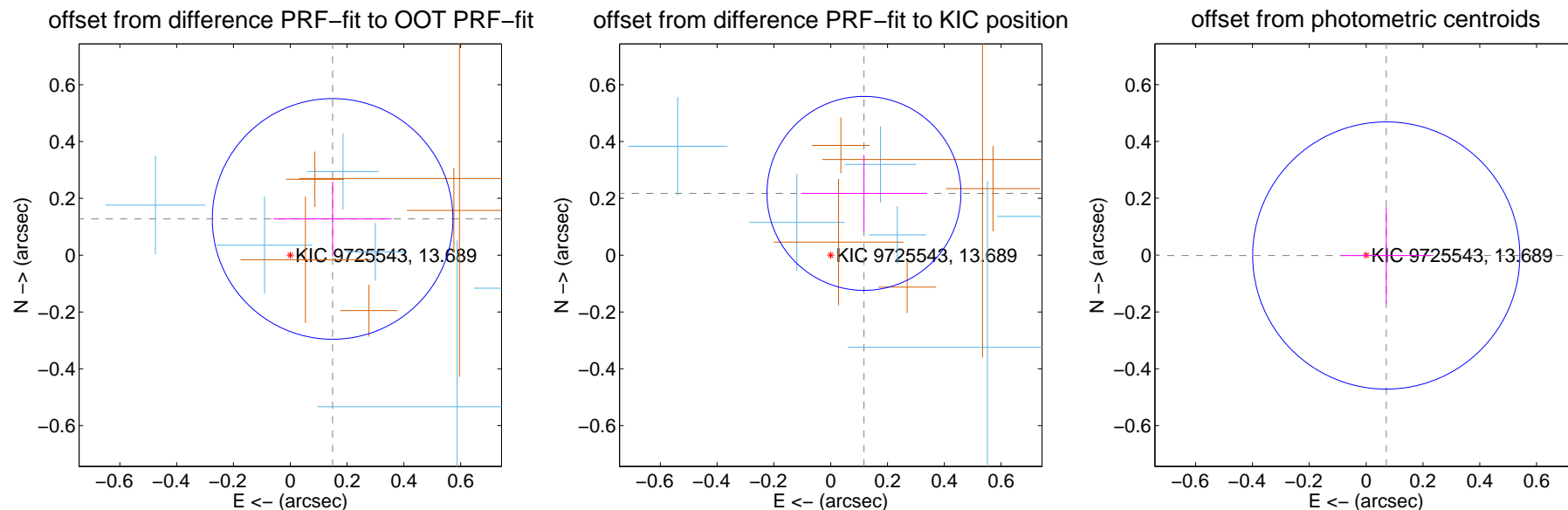
DV Centroid Data

Supplemental centroid analysis for 009725543-01. Kepler magnitude: 13.69. Transit SNR 11.02

There are 9 quarters with good PRF difference image offsets

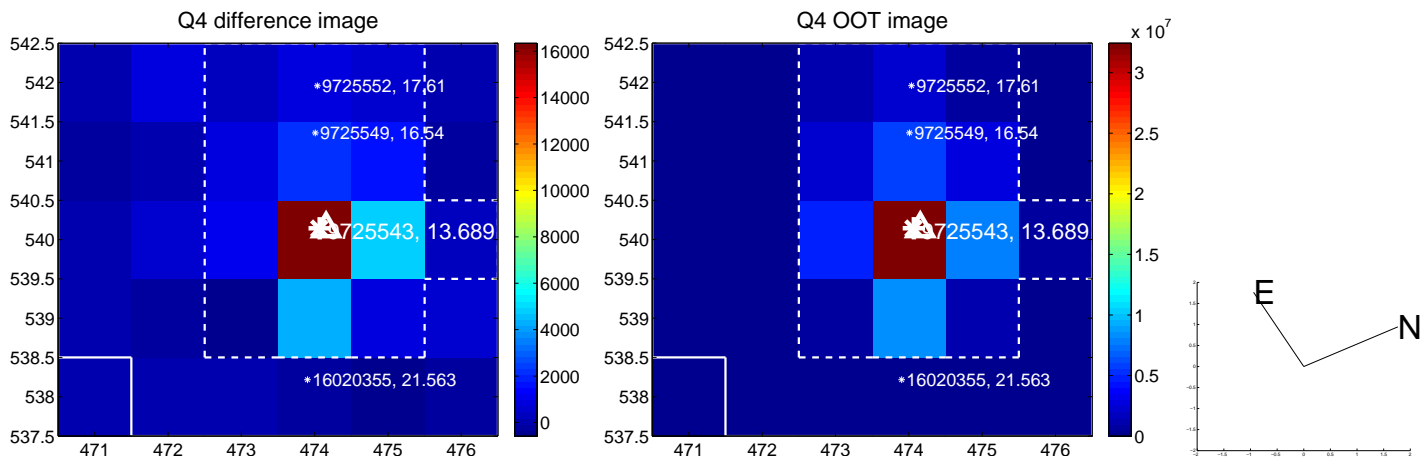
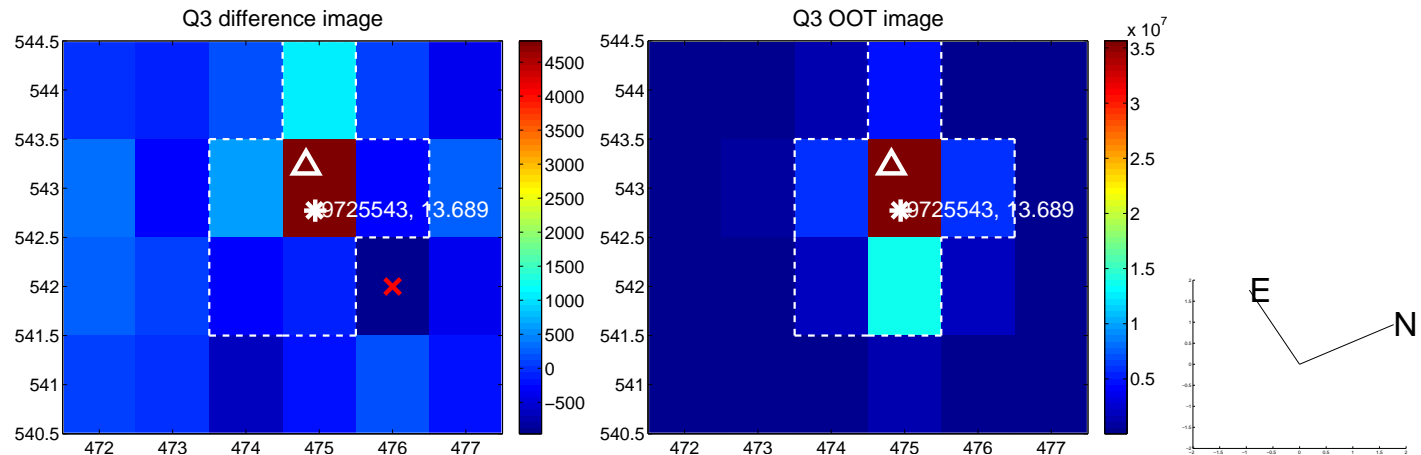
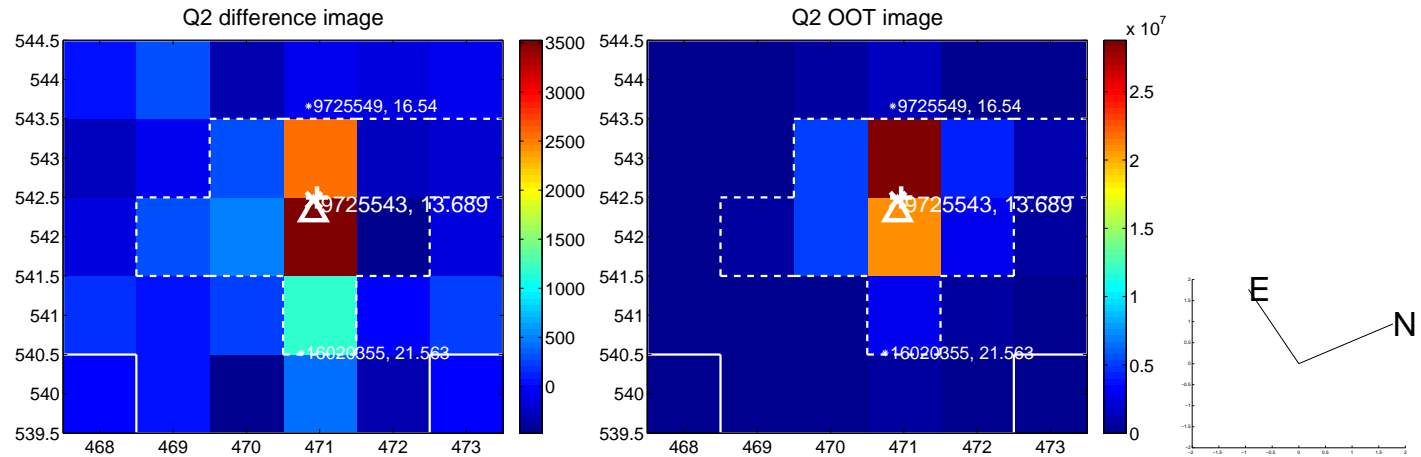
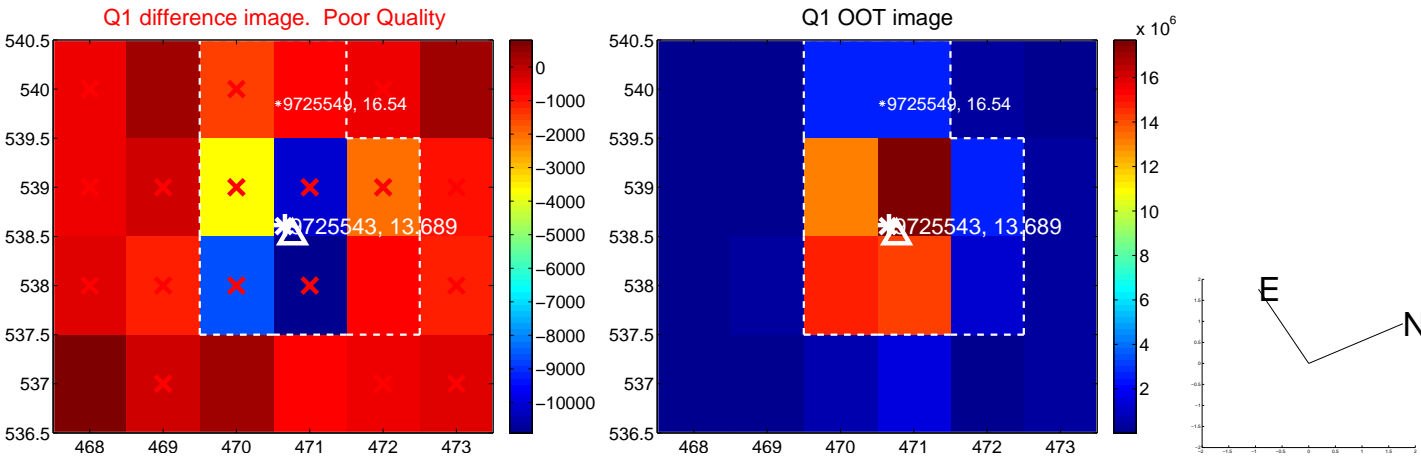
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.196 ± 0.141	1.39	-0.149 ± 0.207	0.128 ± 0.132
PRF-fit source offset from KIC position	0.247 ± 0.114	2.17	-0.117 ± 0.221	0.217 ± 0.136
photometric centroid source offset	0.07 ± 0.16	0.45	-0.07 ± 0.16	-0.00 ± 0.17

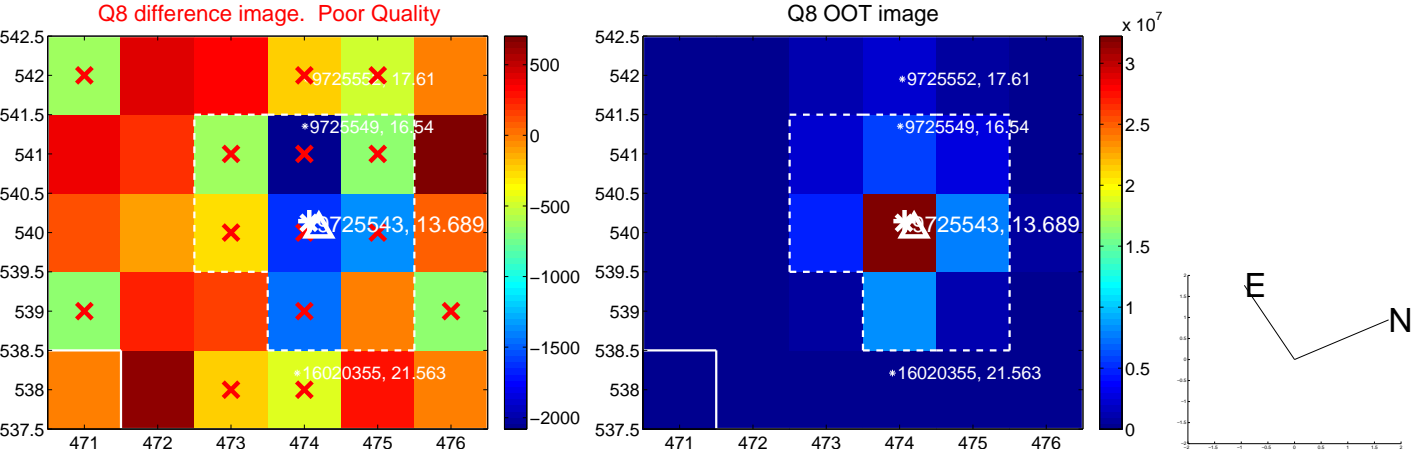
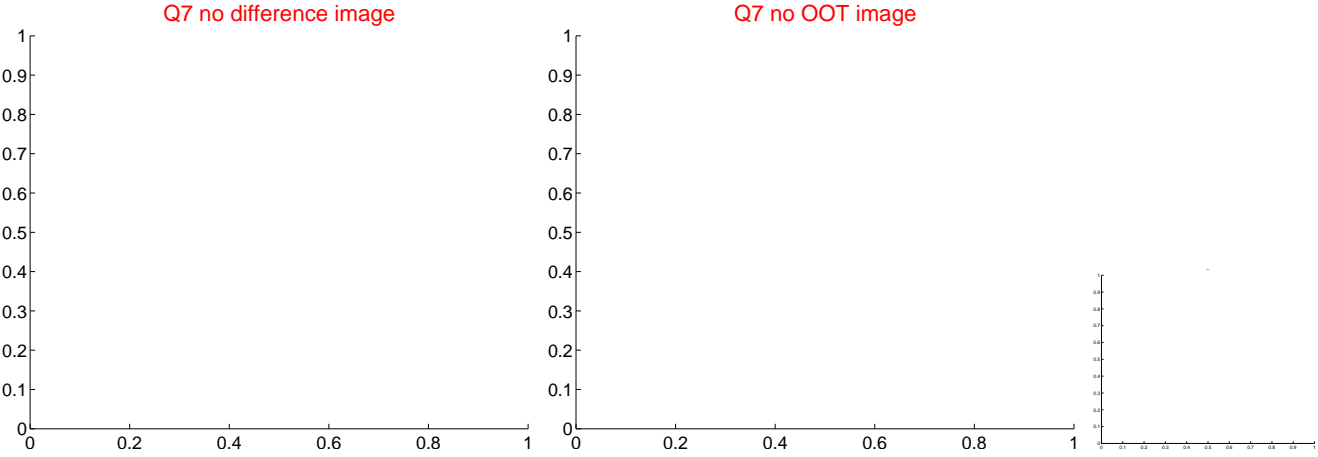
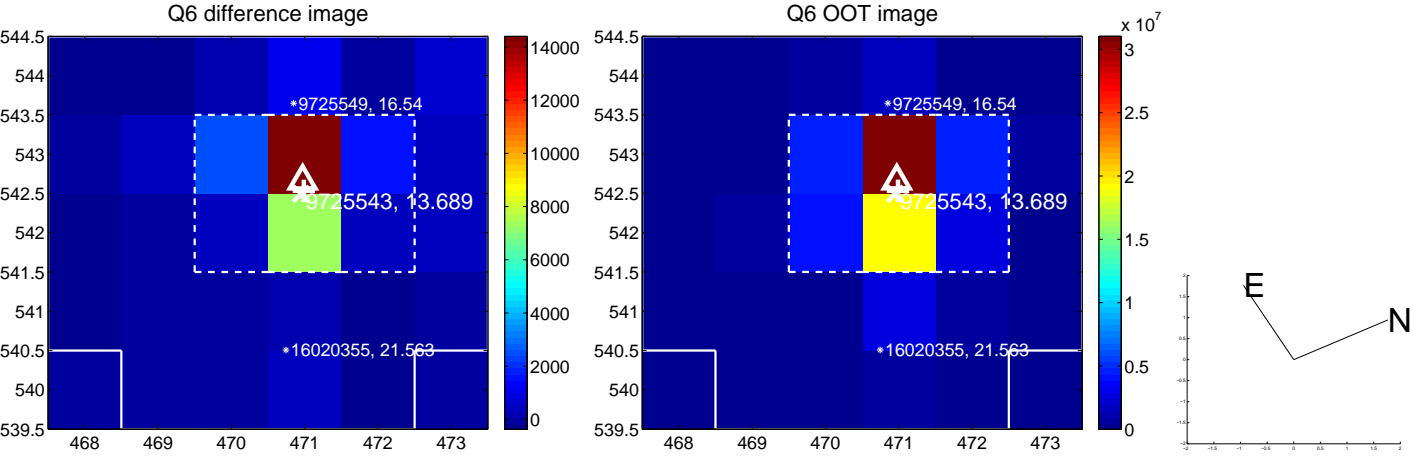
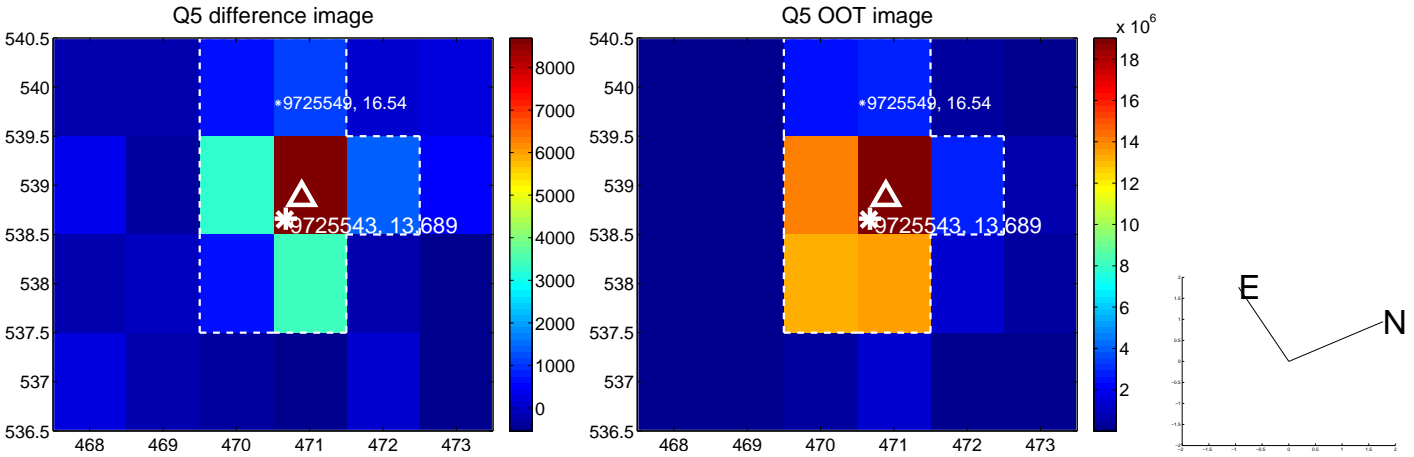


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

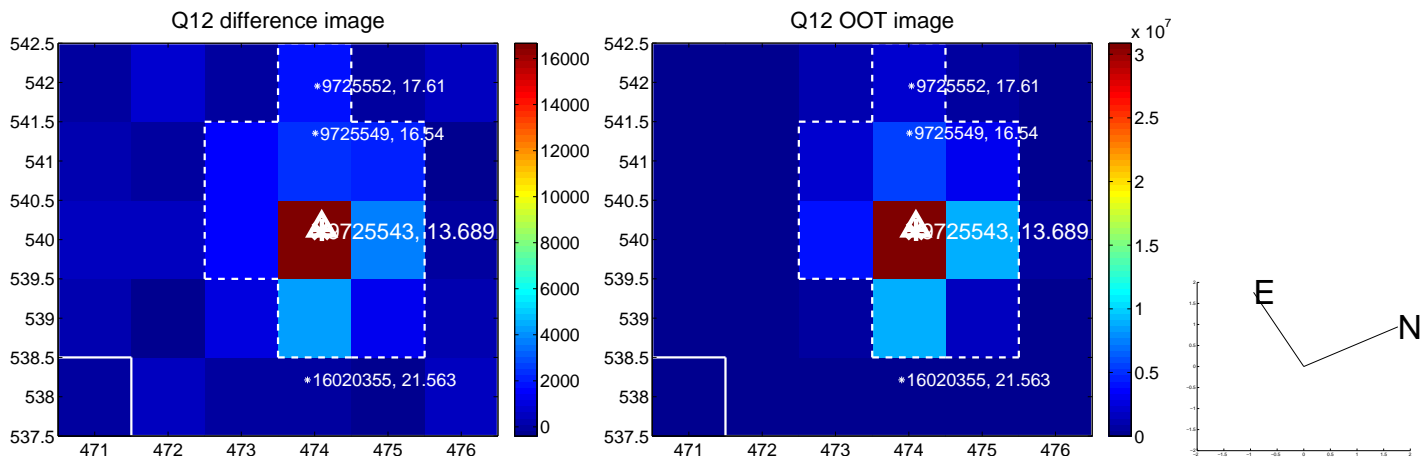
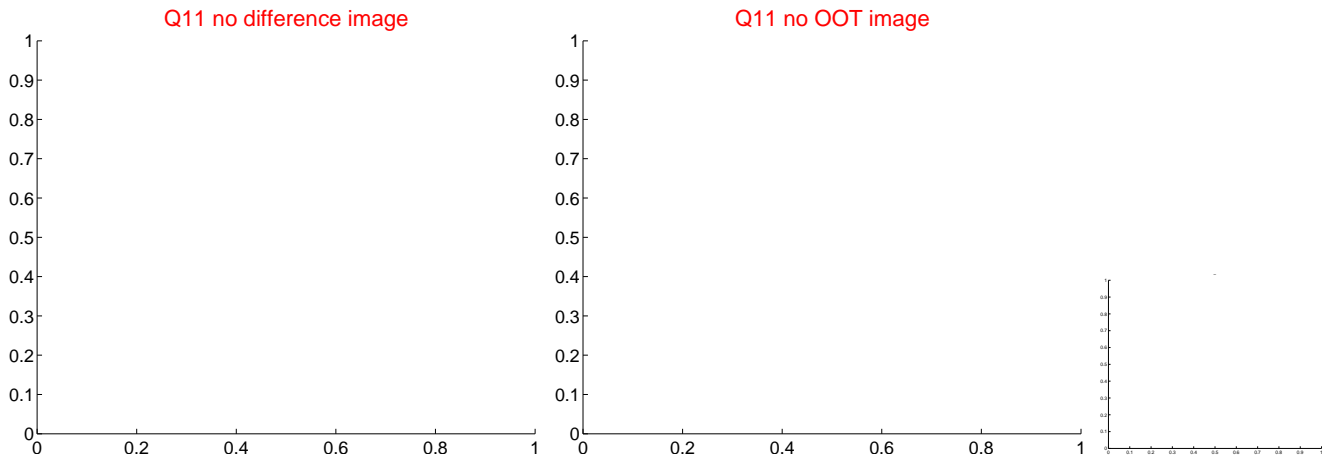
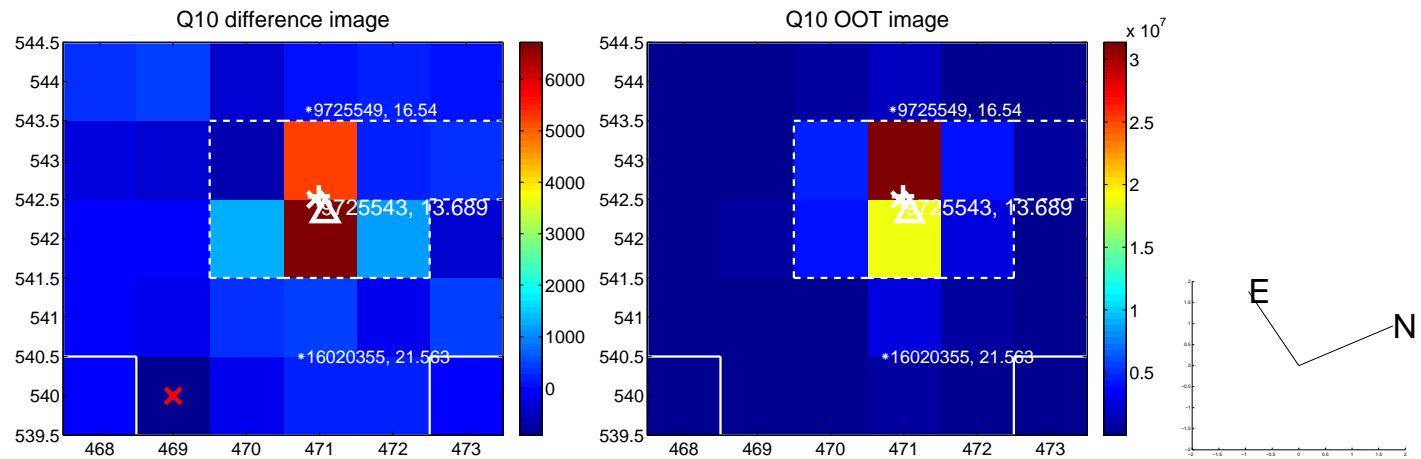
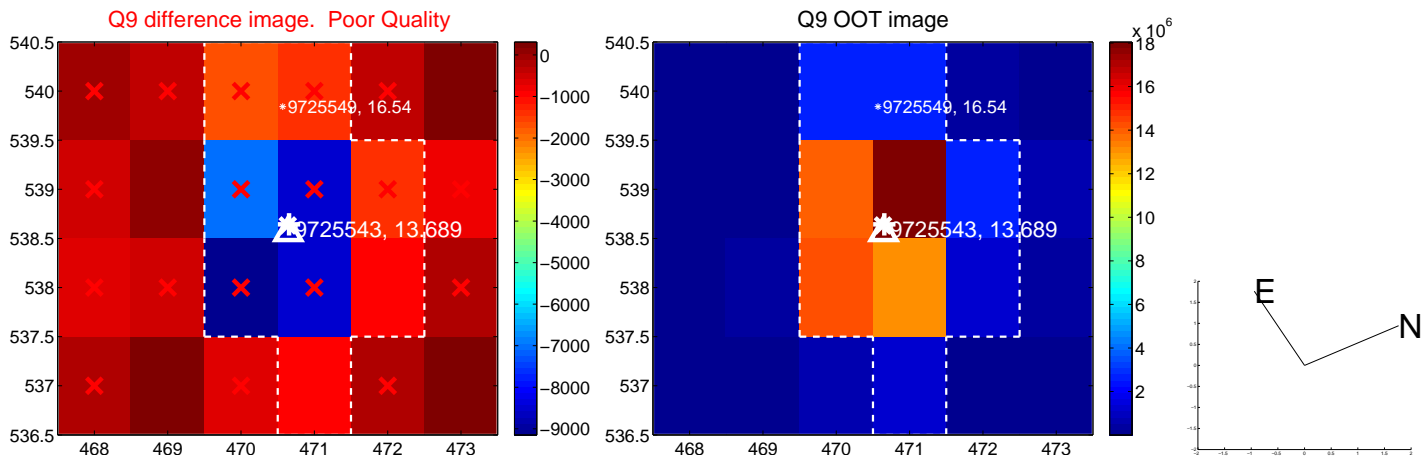
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



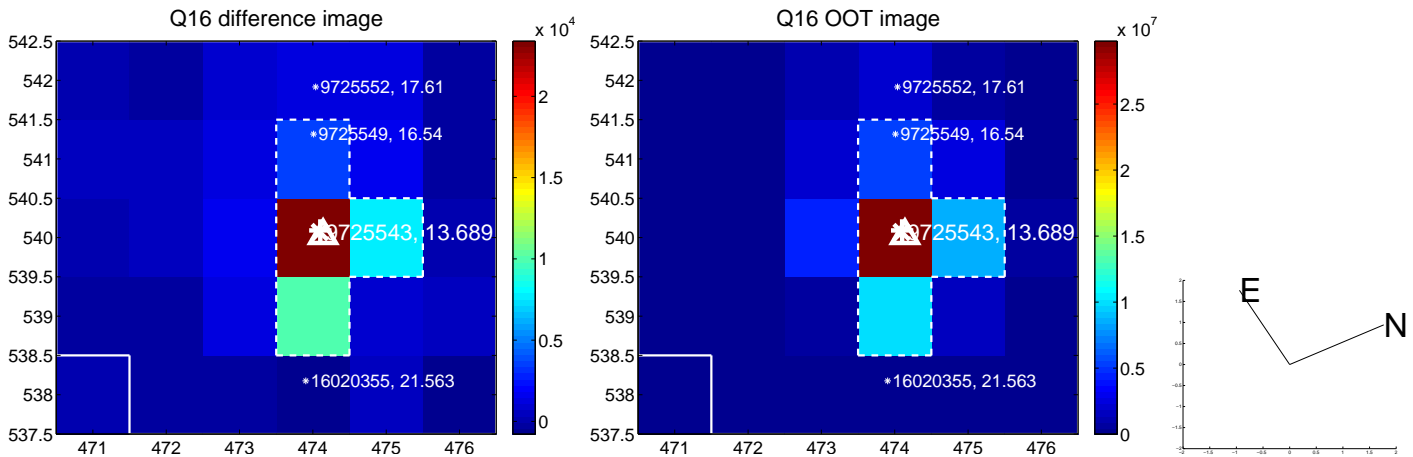
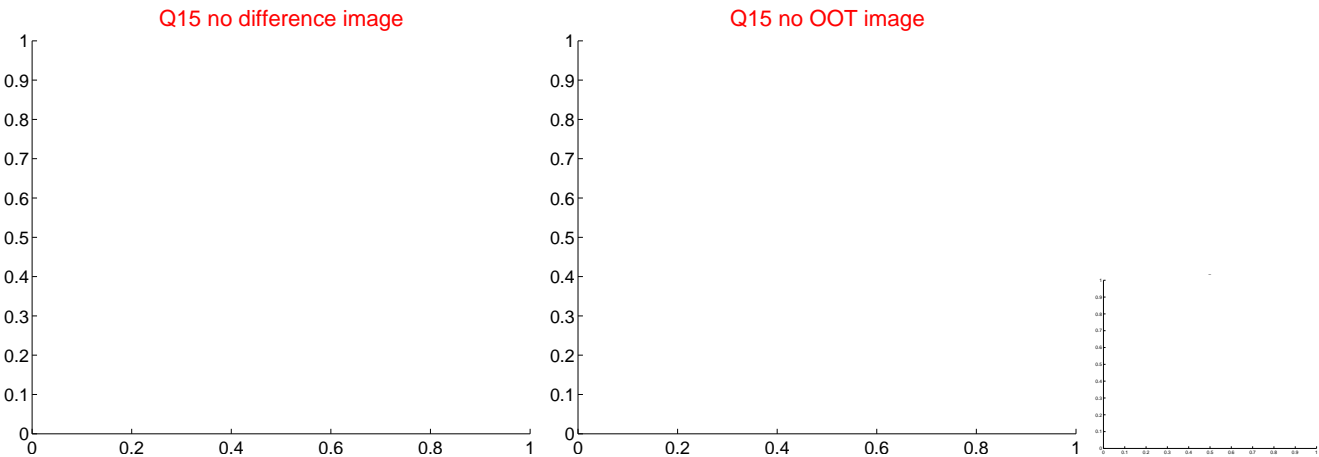
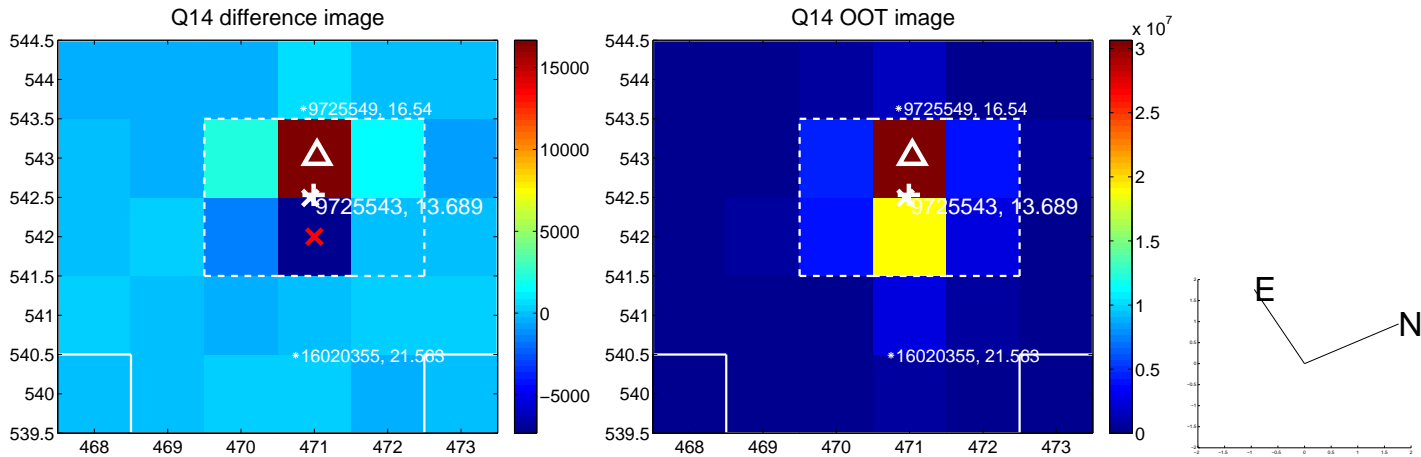
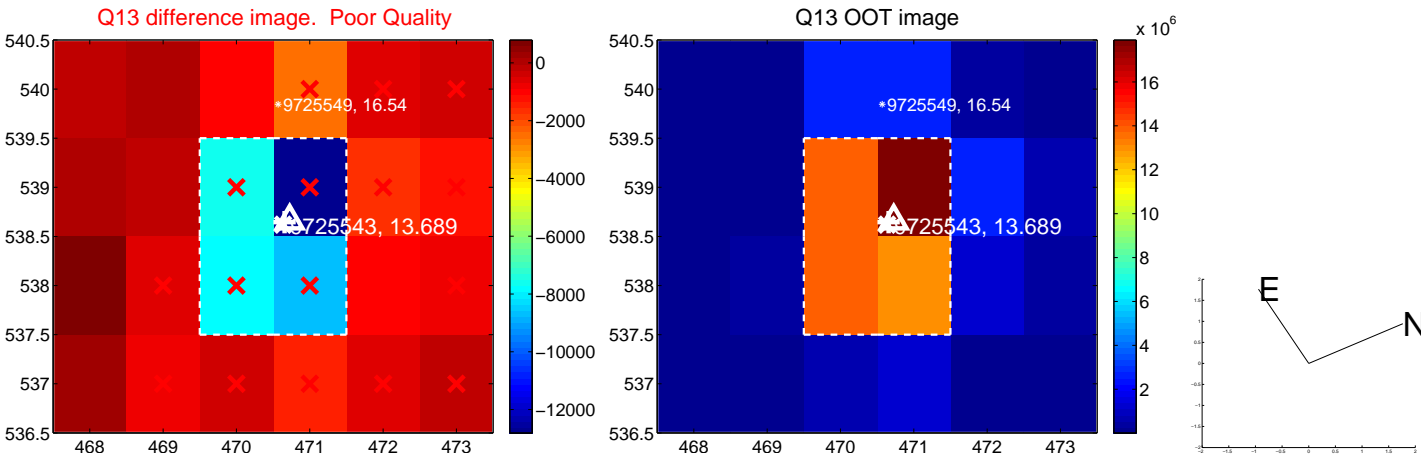
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



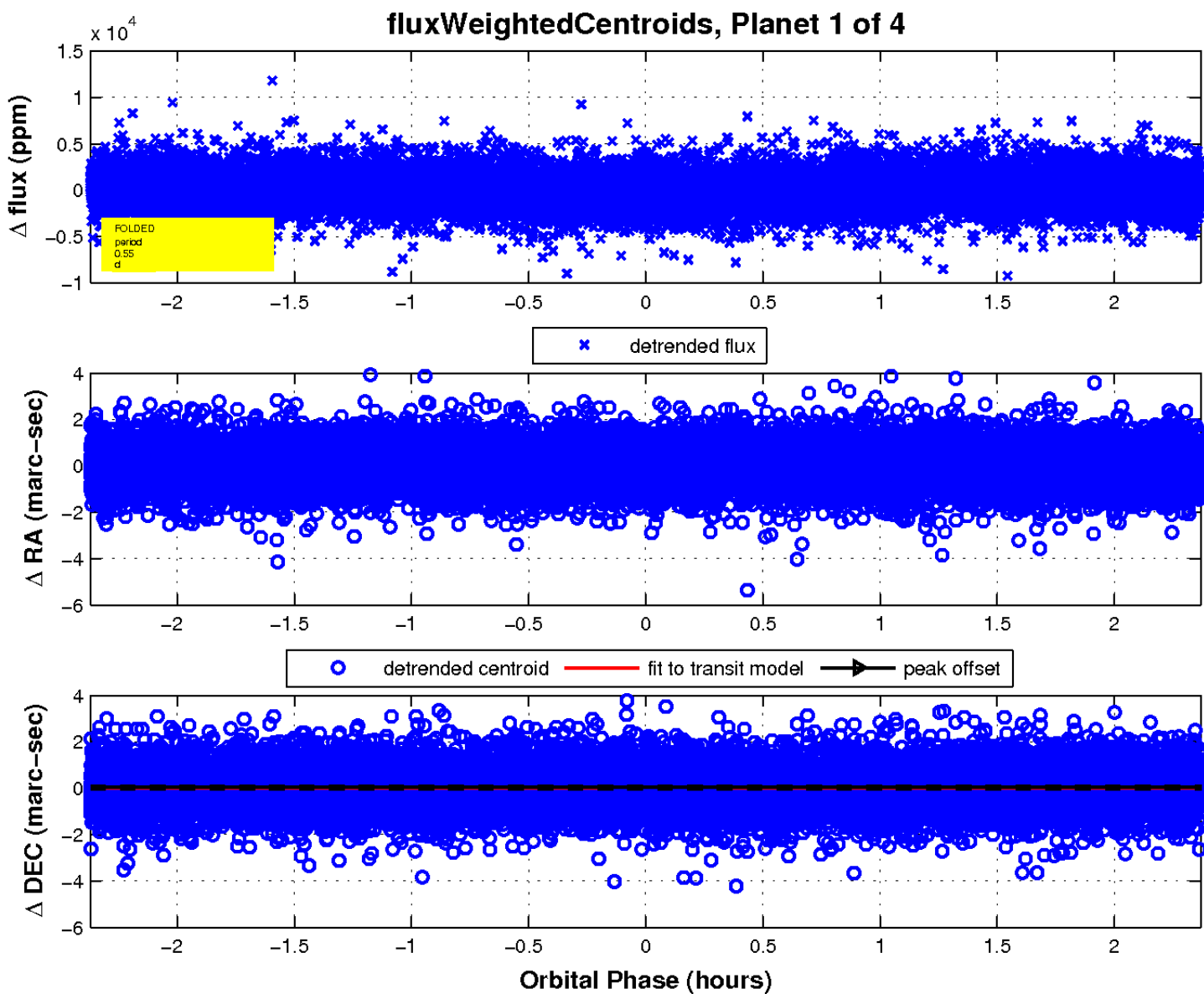
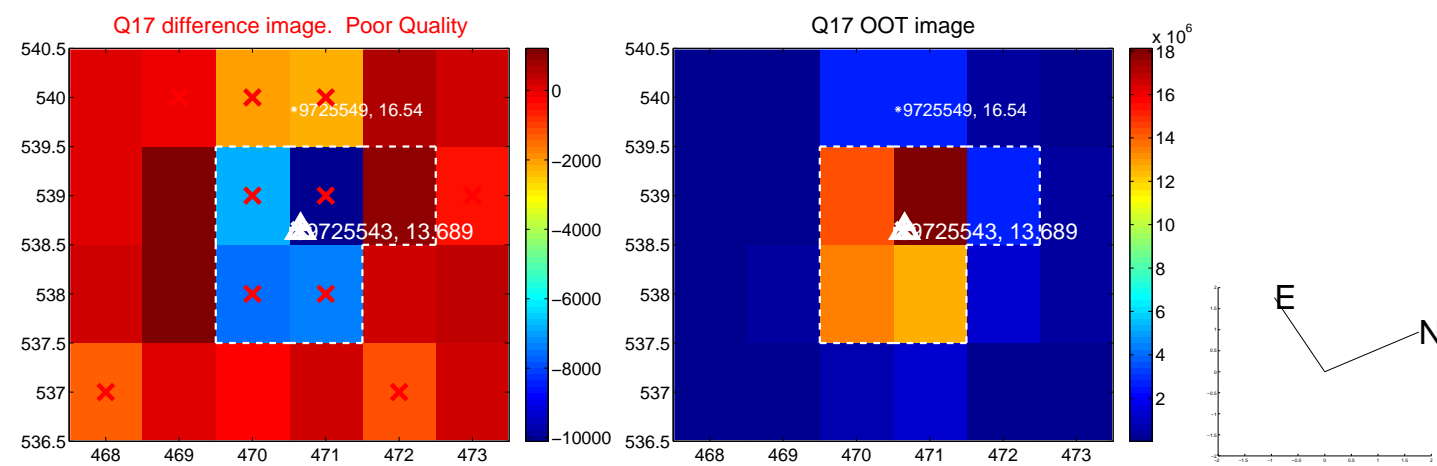
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



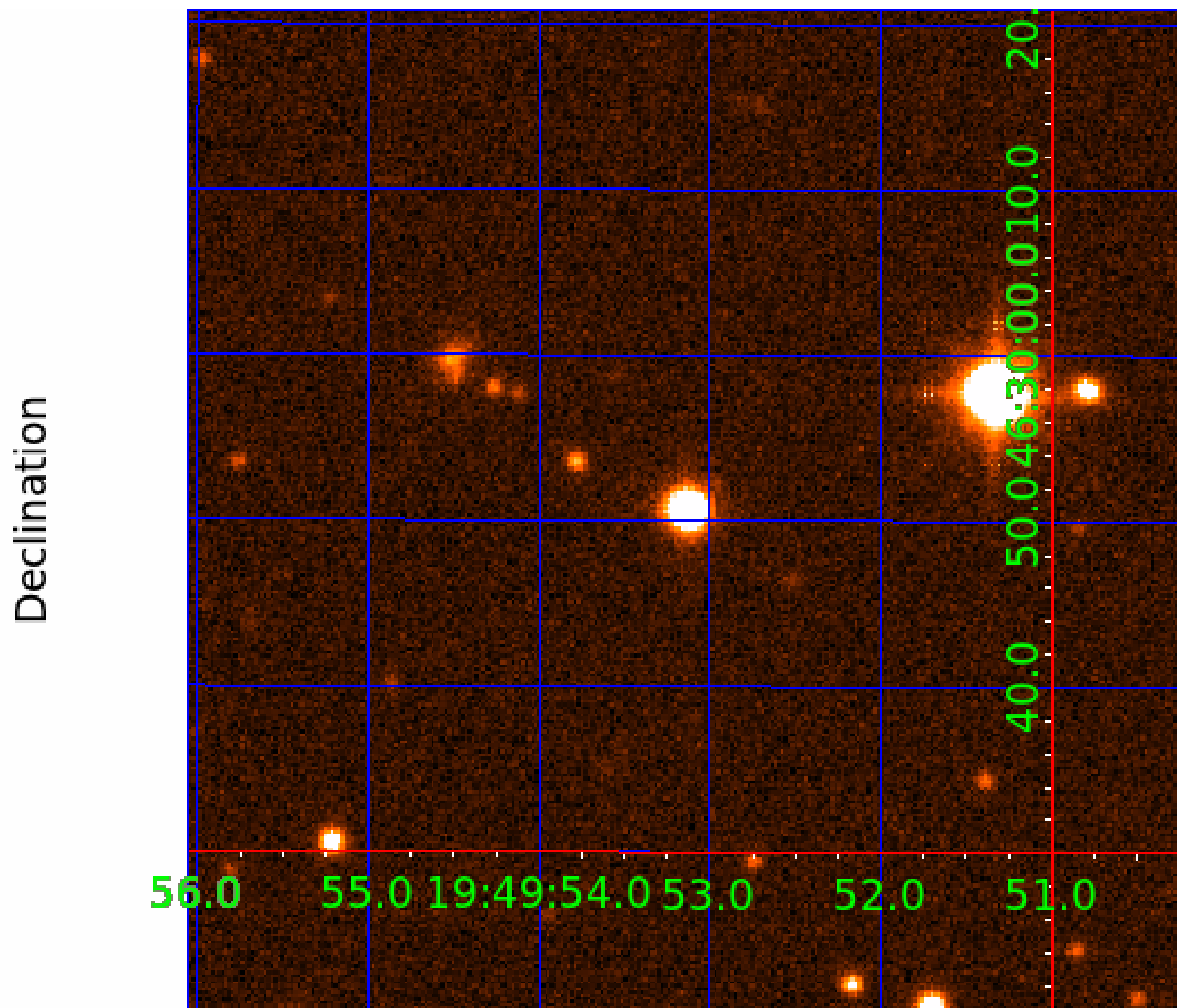
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009725543

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})
009725543-01	OBS	No	0.554672	131.773721	270.0	0.790	10.6	11.0	1.59	7078	3.08	24469.89
009725543-02	OBS	No	0.554667	132.052214	213.3	1.024	9.1	9.5	1.59	7078	2.51	24470.20
009725543-03	OBS	No	0.857741	132.108178	257.8	1.111	8.1	4.4	1.59	7078	2.99	13683.77
009725543-04	OBS	No	0.857685	131.979744	353.0	1.500	7.8	-1.0	1.59	7078	3.04	13684.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009725543-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009725543-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009725543-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009725543-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

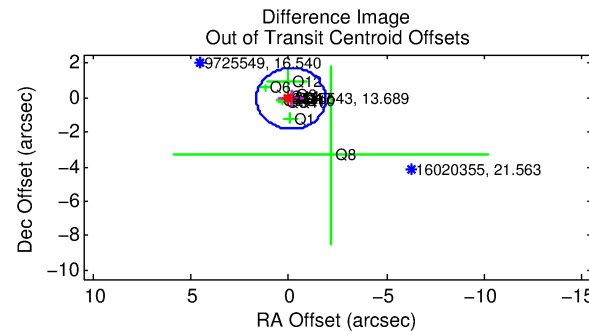
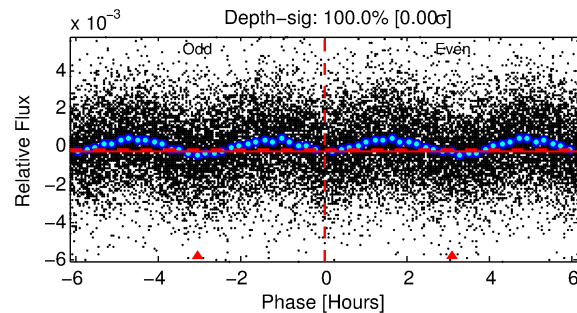
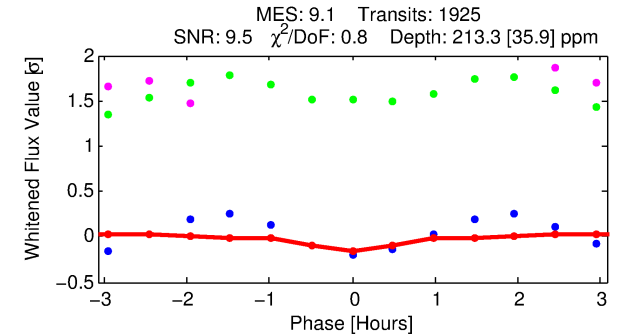
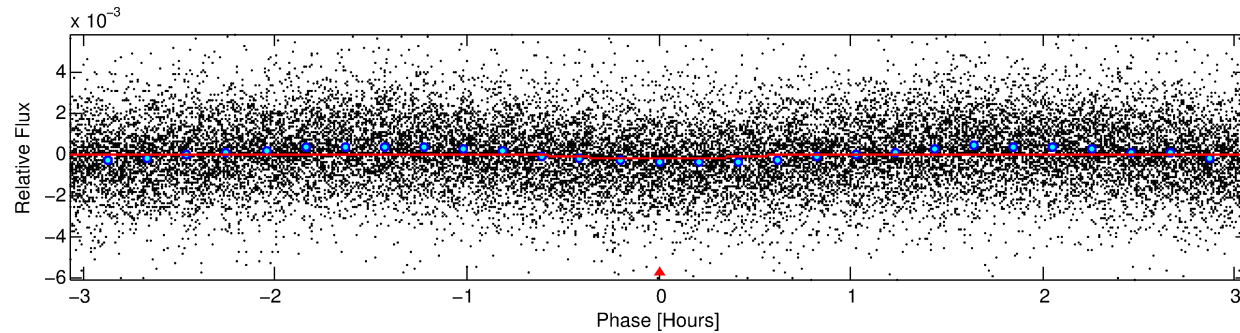
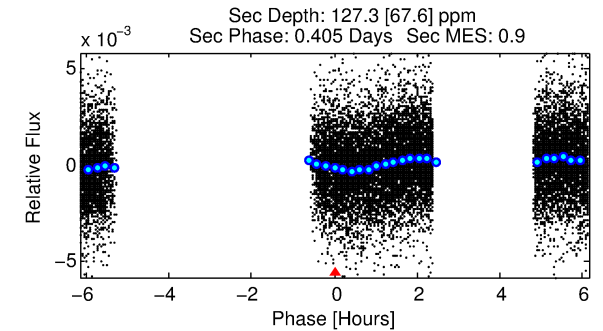
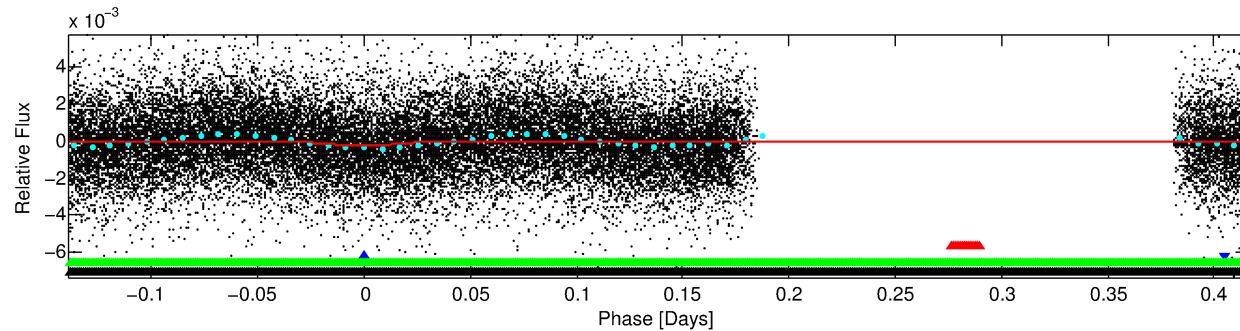
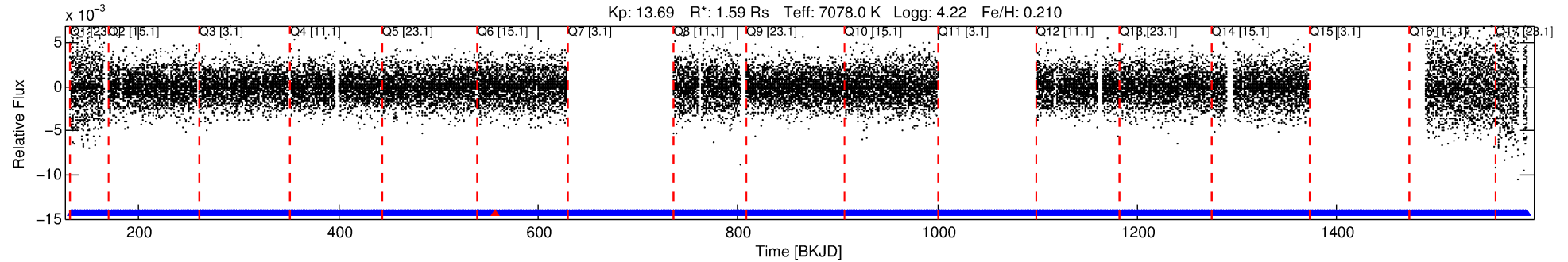
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009725543-02

No Significant Match Found

DV One-Page Summary

KIC: 9725543 Candidate: 2 of 4 Period: 0.555 d



DV Fit Results:

Period = 0.55467 [0.00001] d
Epoch = 132.0522 [0.0023] BKJD
Rp/R* = 0.0144 [0.0072]
a/R* = 3.15 [8.29]
b = 0.70 [2.14]
Seff = 24470.20 [10753.44]
Teq = 3189 [350] K
Rp = 2.51 [1.54] Re
a = 0.0153 [0.0044] AU
Ag = 2.59 [3.10] [0.51σ]
Teffp = 6257 [1782] K [1.69σ]

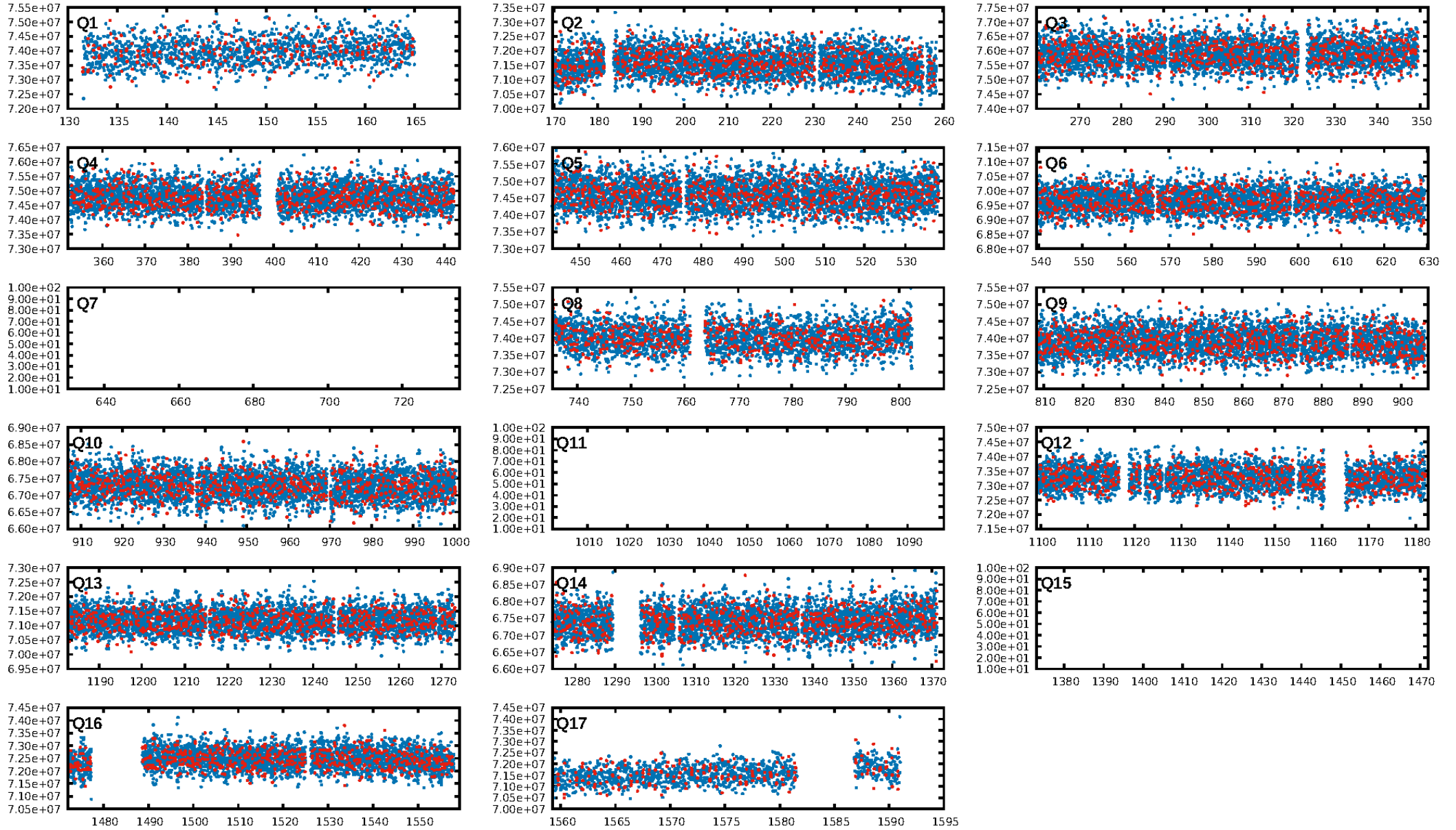
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1814/1815]
GhostDiagnostic-chr: 1.638
Centroid-sig: N/A
Centroid-so: 0.007 arcsec [0.04σ]
OotOffset-rm: 0.129 arcsec [0.22σ]
KicOffset-rm: 0.129 arcsec [0.23σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 1.00 [14/14]

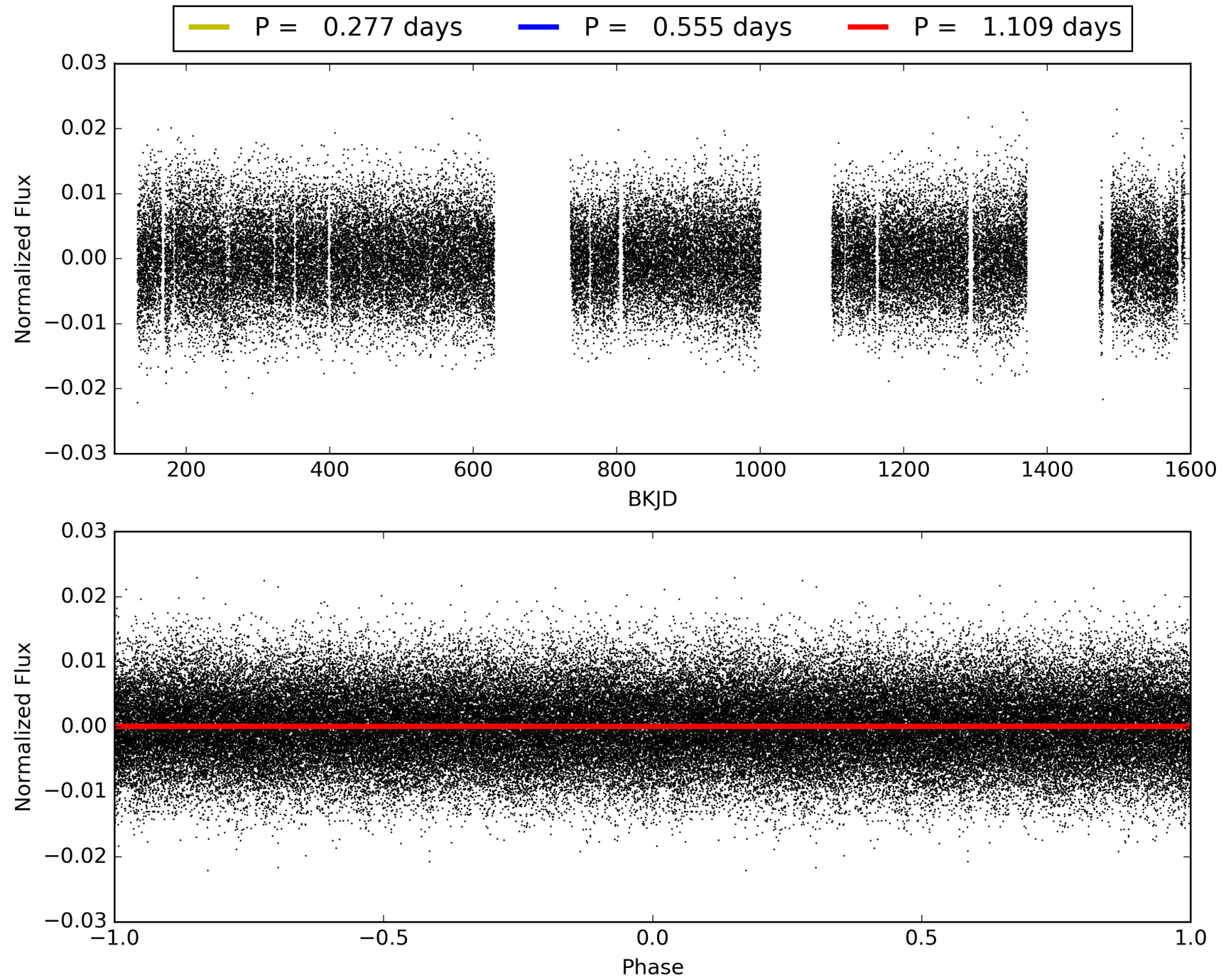
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:57:24 Z

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

TCE 009725543-02, PDC Light Curves

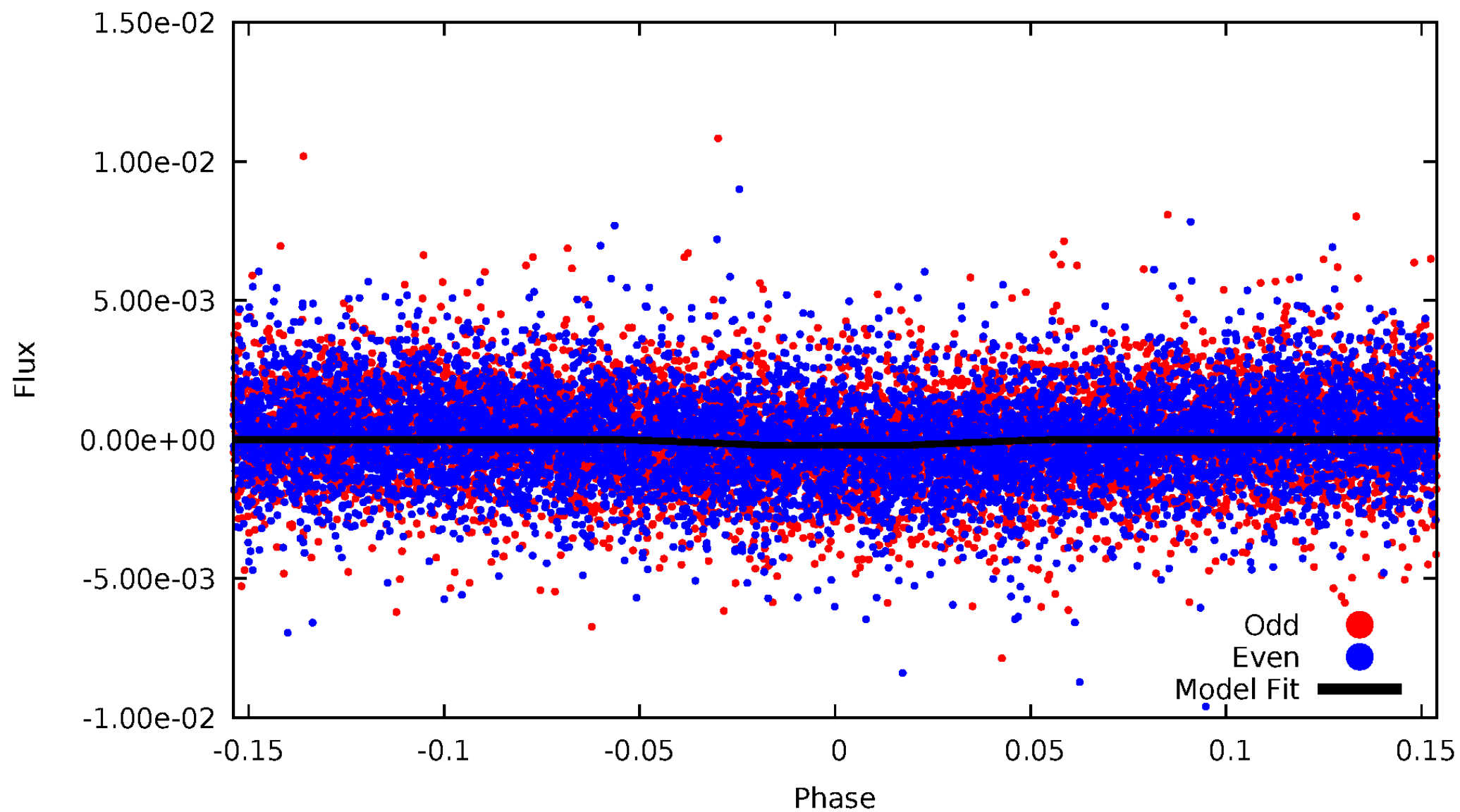


TCE 009725543-02



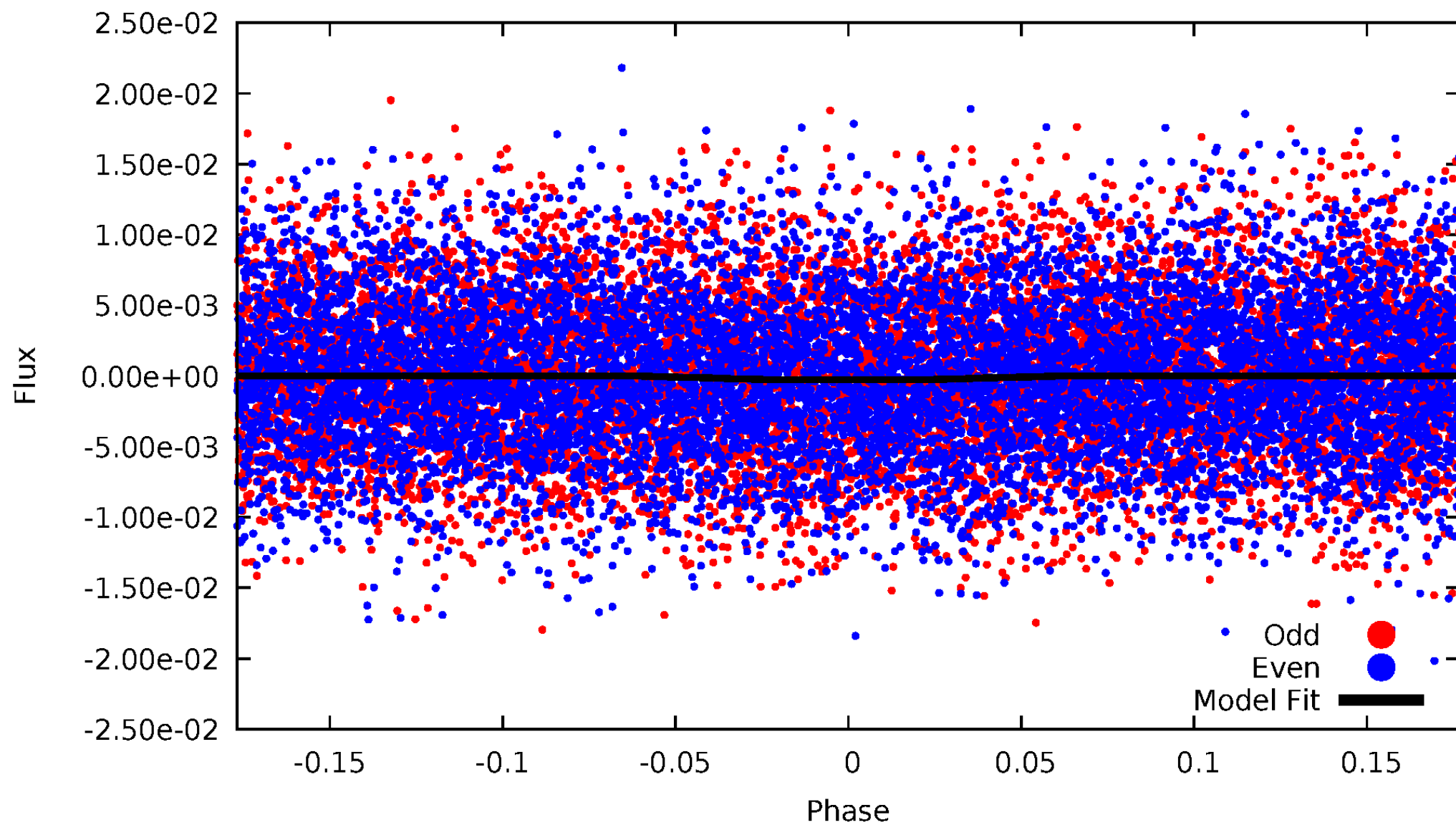
DV Odd/Even

TCE 009725543-02



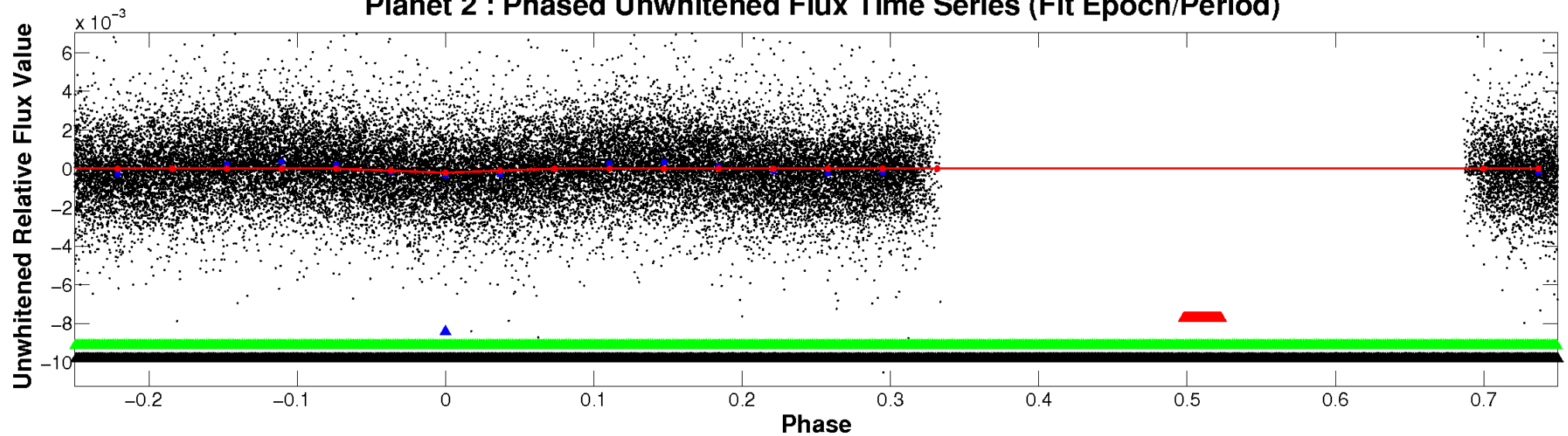
ALT Odd/Even

TCE 009725543-02

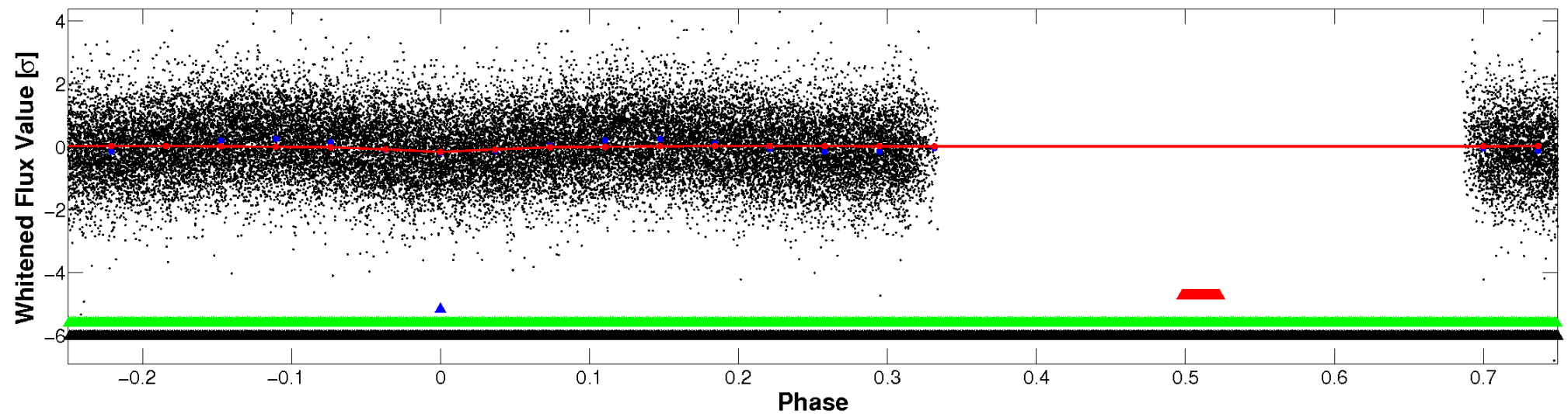


Non-Whitened Vs. Whitened Light Curve

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

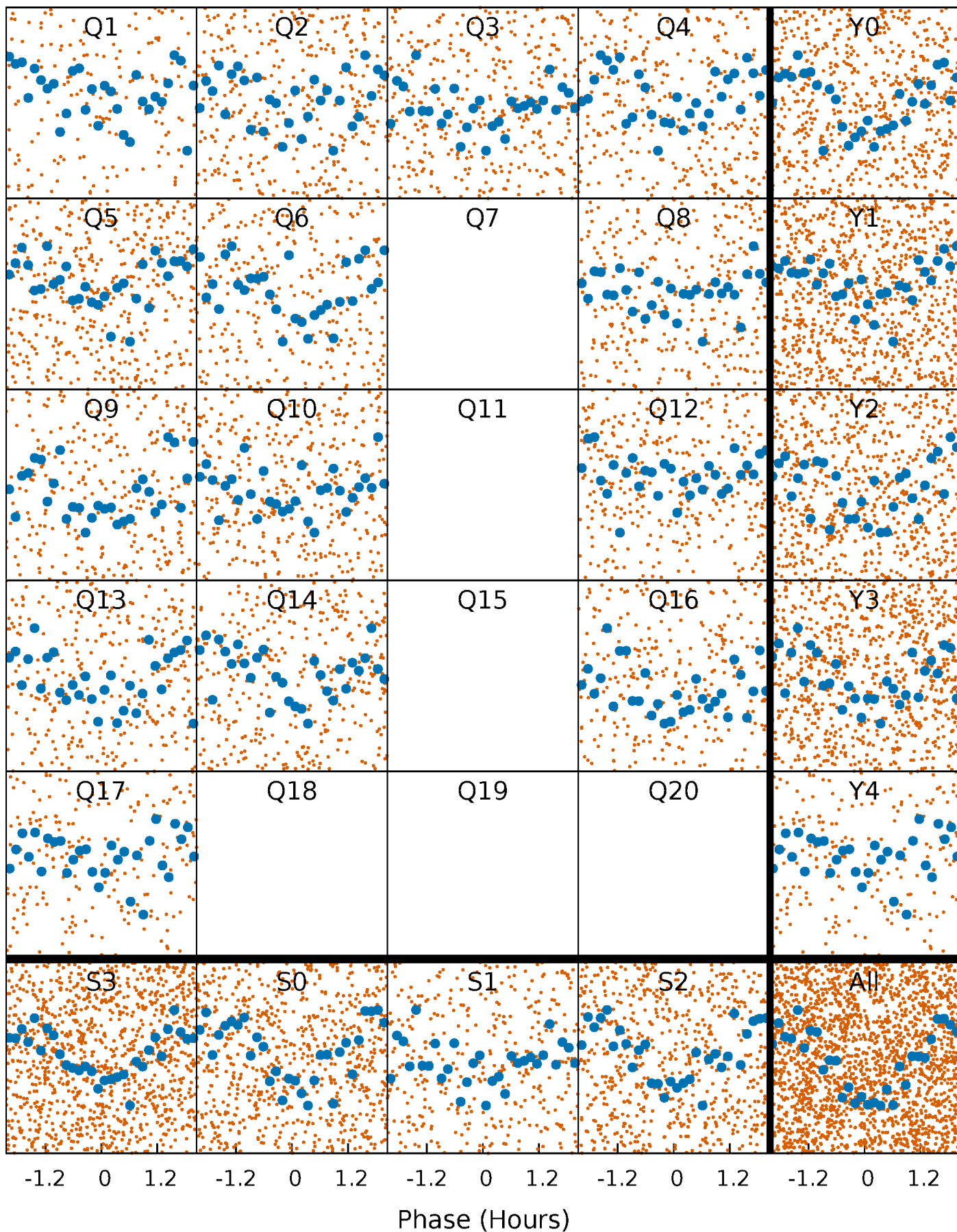


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



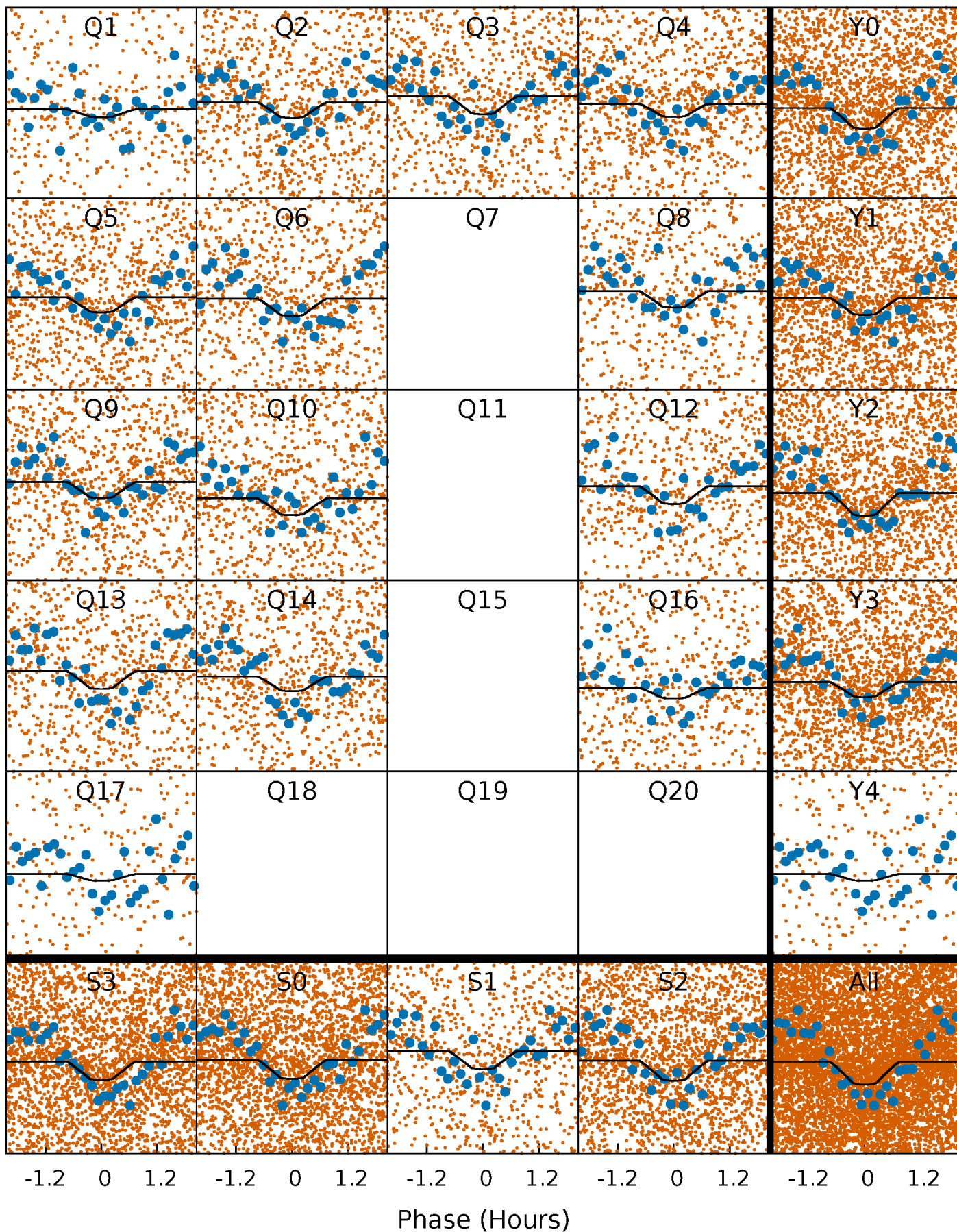
PDC Quarter-Phased Transit Curves

TCE 009725543-02 P= 0.554667 Days $T_0=132.052214$ (BKJD)



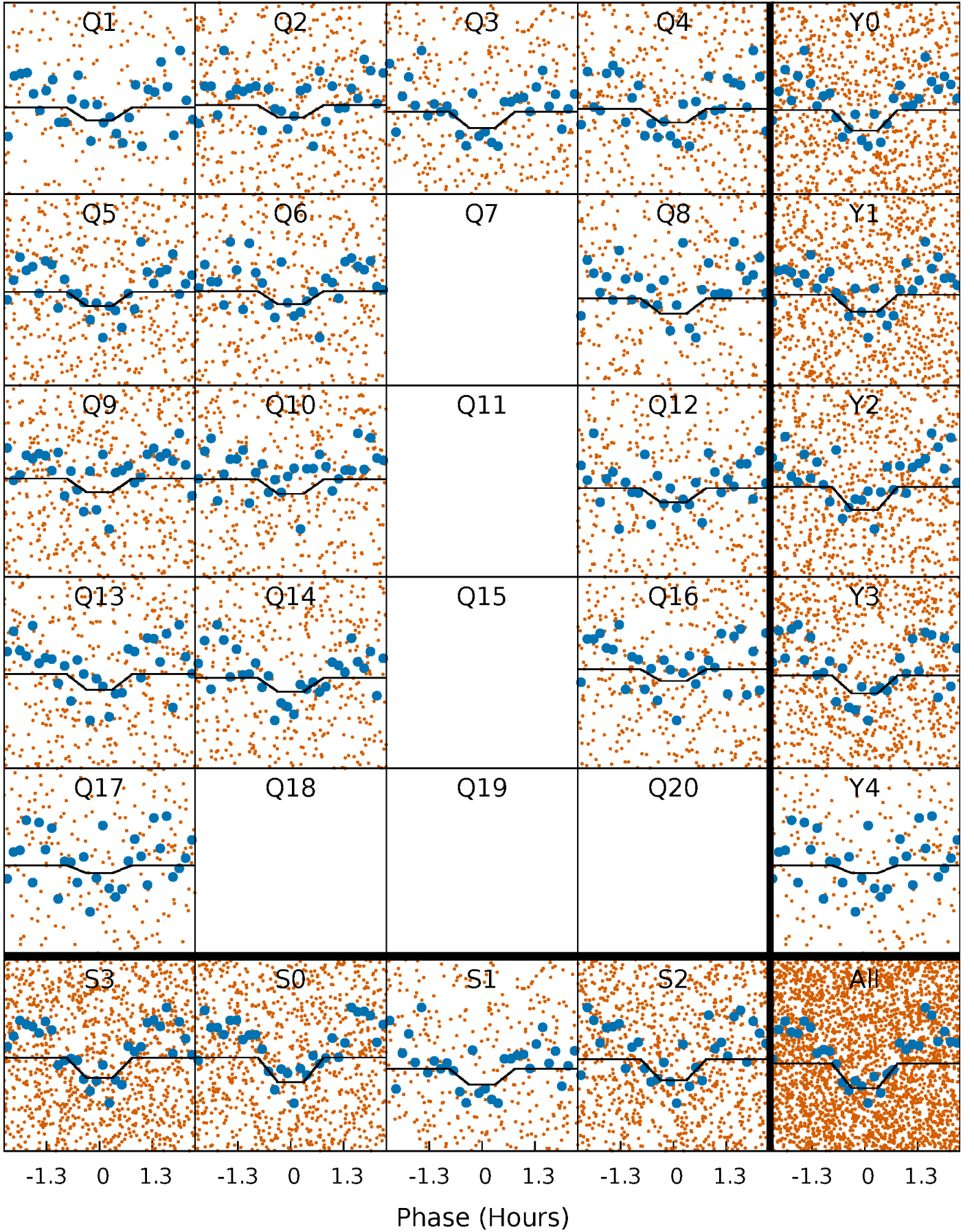
DV Quarter-Phased Transit Curves

TCE 009725543-02 P= 0.554667 Days $T_0=132.052214$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

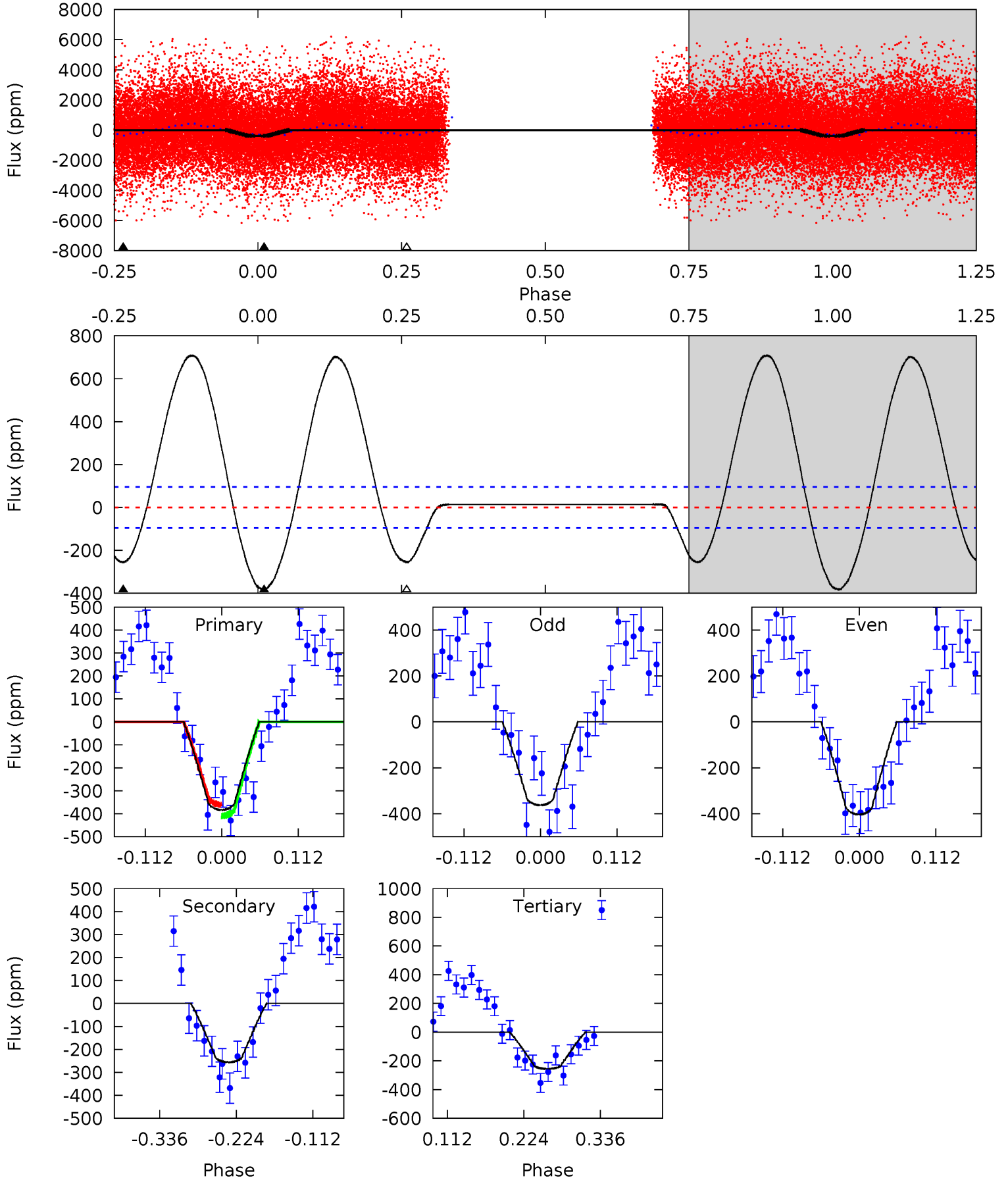
TCE 009725543-02 $P = 0.554670$ Days $T_0 = 132.054190$ (BKJD)



DV Model-Shift Uniqueness Test

009725543-02, P = 0.554667 Days, E = 131.497547 Days

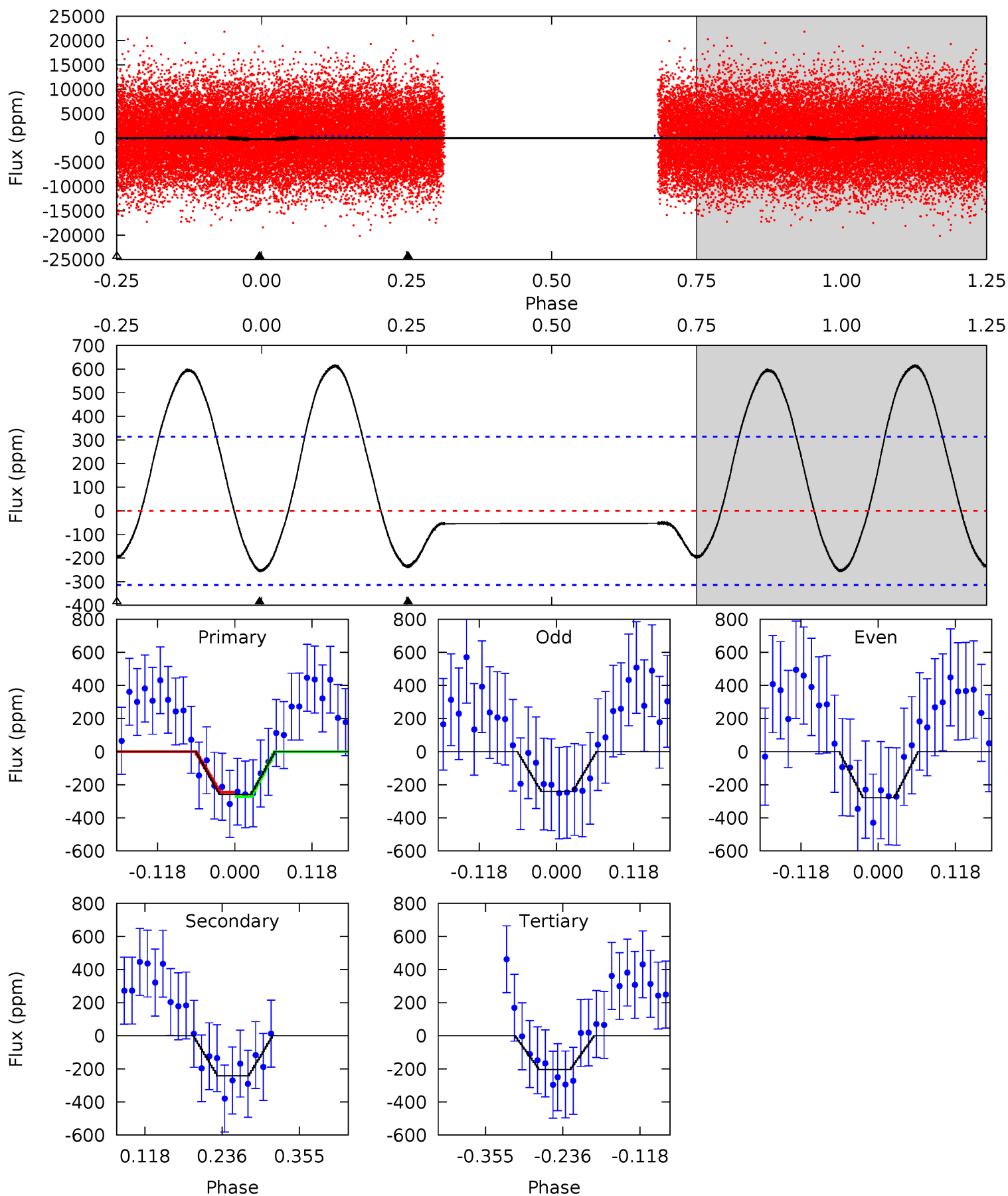
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	12.2	12.2	0	4.54	1.59	16.5	6.08	18.2	0.00	12.2	0.97	1.07	0.65	1.17



Alt Model-Shift Uniqueness Test

009725543-02, P = 0.554670 Days, E = 131.499520 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.74	3.50	2.93	0	4.53	1.56	4.38	0.81	3.74	0.56	3.50	0.27	0.96	0.70	0.19



Stellar Parameters For KIC 009725543

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7078^{+195}_{-318}	$4.222^{+0.070}_{-0.210}$	$0.210^{+0.150}_{-0.400}$	$1.593^{+0.570}_{-0.228}$	$1.546^{+0.214}_{-0.214}$	$0.538^{+0.208}_{-0.285}$
	+3%/-4%	+2%/-5%	+71%/-190%	+36%/-14%	+14%/-14%	+39%/-53%
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 009725543-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-256 ± 21	$2.78^{+1.37}_{-1.31}$	4536^{+387}_{-238}	7129^{+3671}_{-1449}	$4.191^{+10.480}_{-2.321}$
Alt.	-242 ± 69	$2.77^{+1.53}_{-1.26}$	4528^{+331}_{-262}	6862^{+3234}_{-1538}	$3.837^{+8.863}_{-2.277}$

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

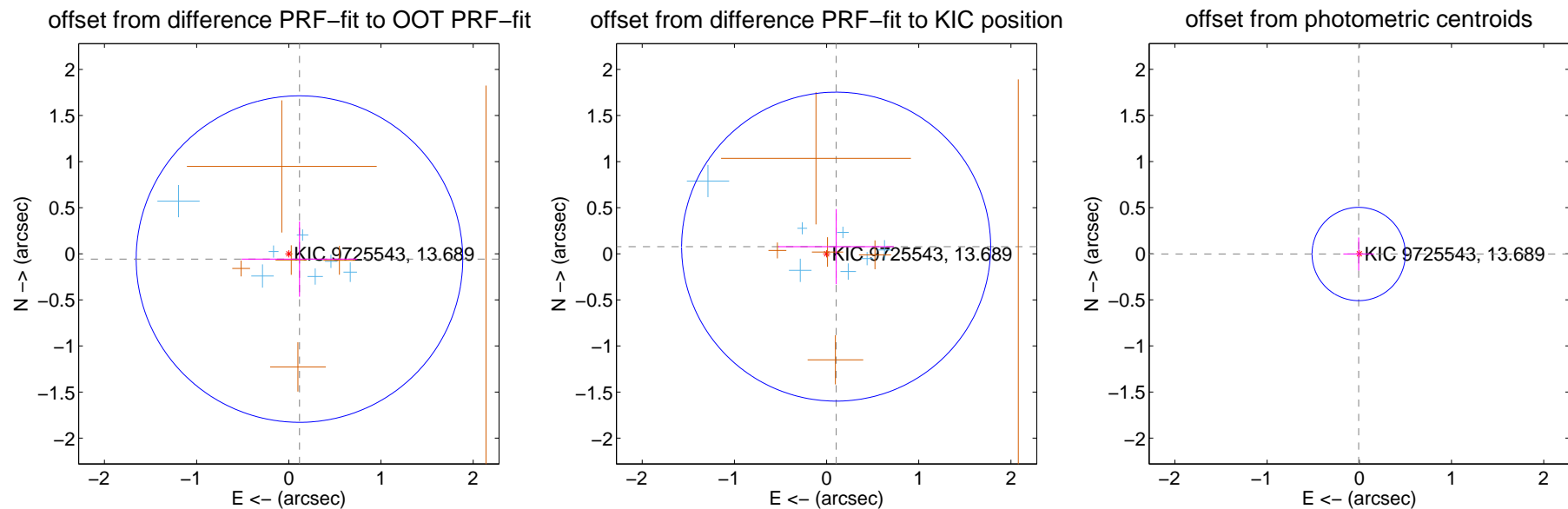
DV Centroid Data

Supplemental centroid analysis for 009725543-02. Kepler magnitude: 13.69. Transit SNR 9.51

There are 7 quarters with good PRF difference image offsets

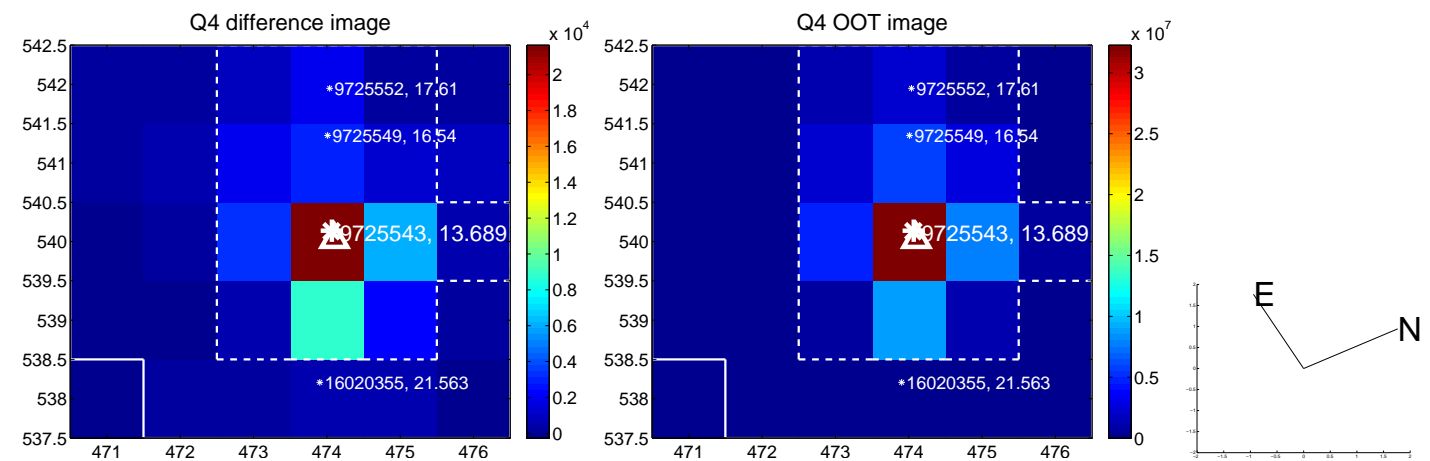
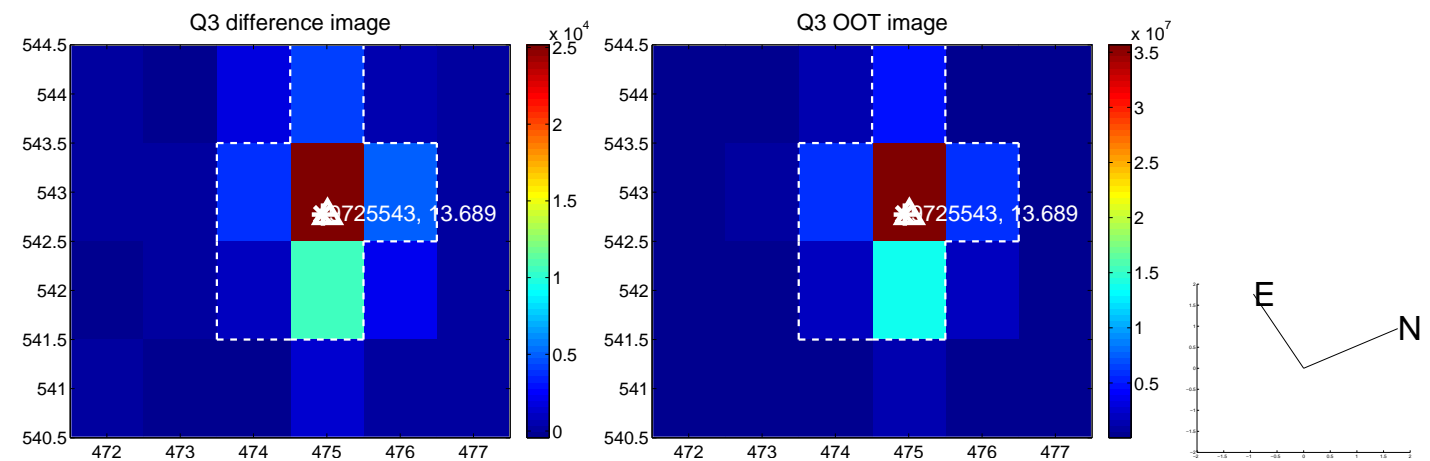
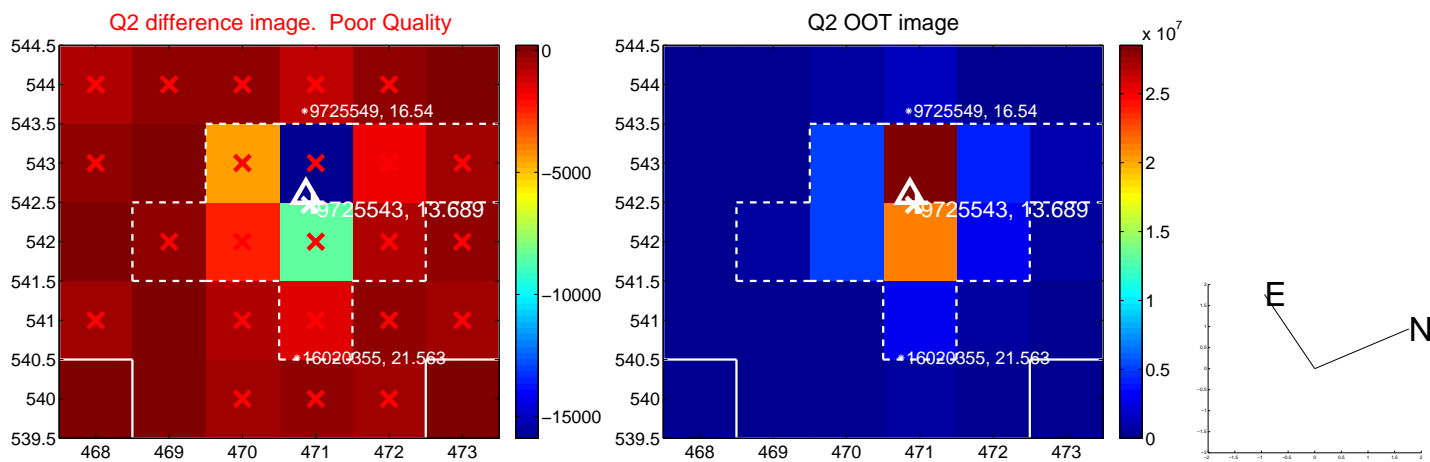
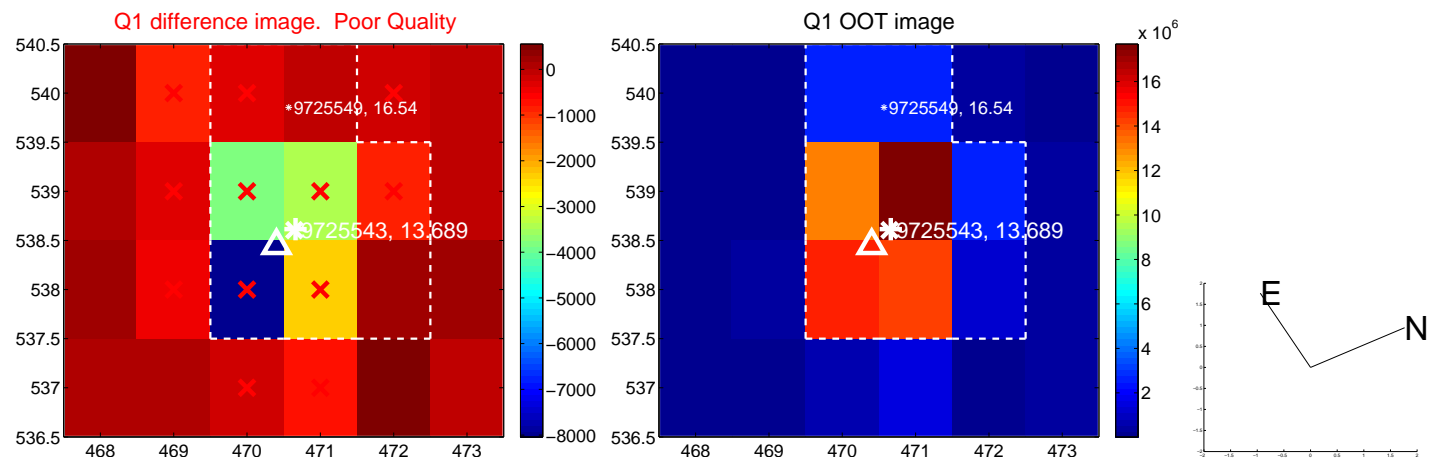
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.129 ± 0.590	0.22	-0.115 ± 0.627	-0.057 ± 0.408
PRF-fit source offset from KIC position	0.129 ± 0.559	0.23	-0.104 ± 0.627	0.077 ± 0.408
photometric centroid source offset	0.01 ± 0.17	0.04	0.01 ± 0.17	-0.00 ± 0.18

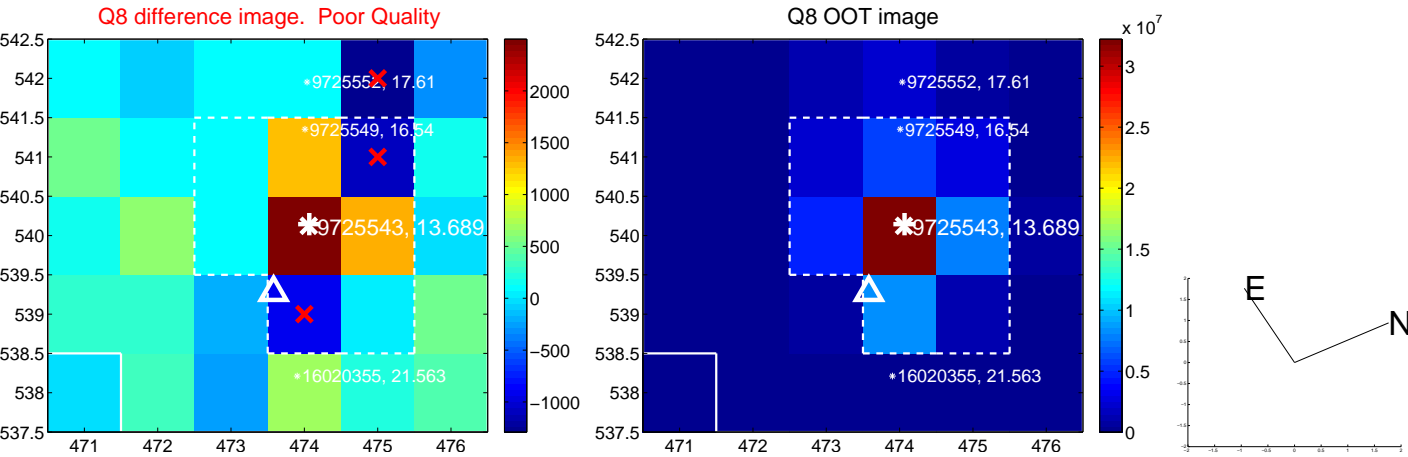
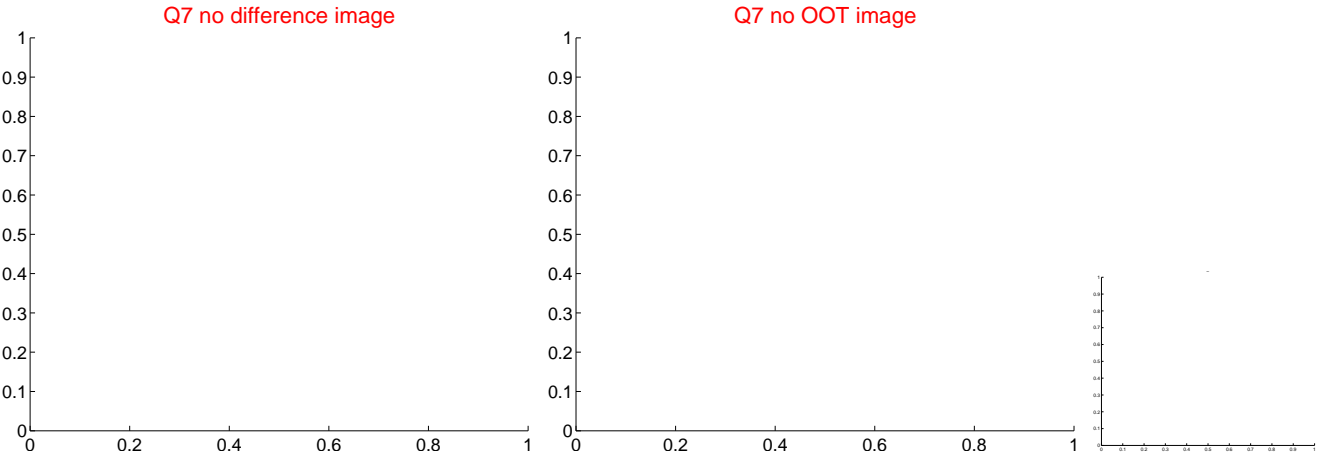
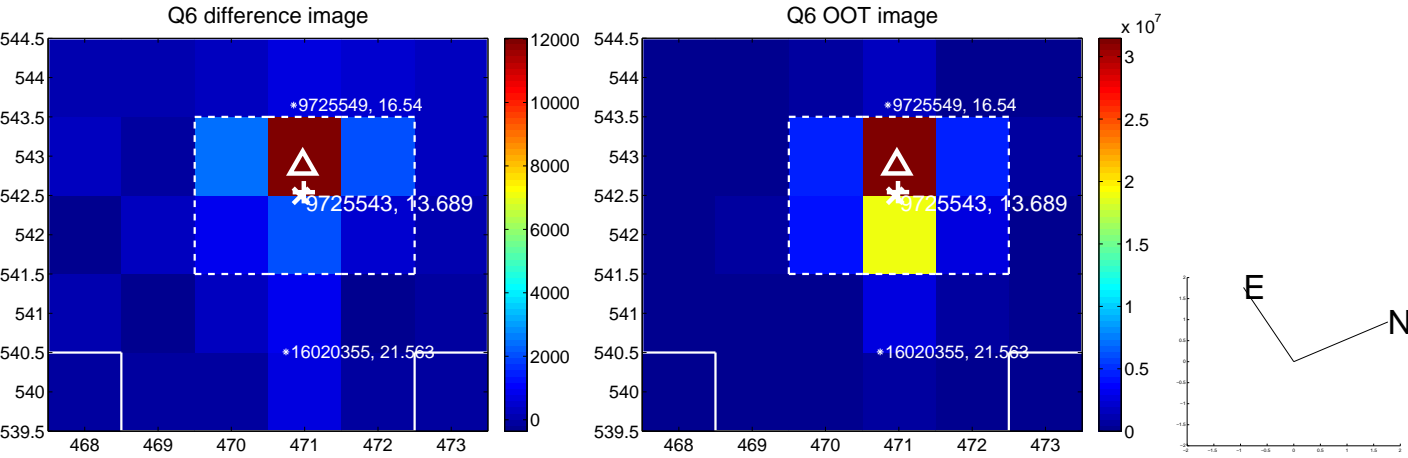
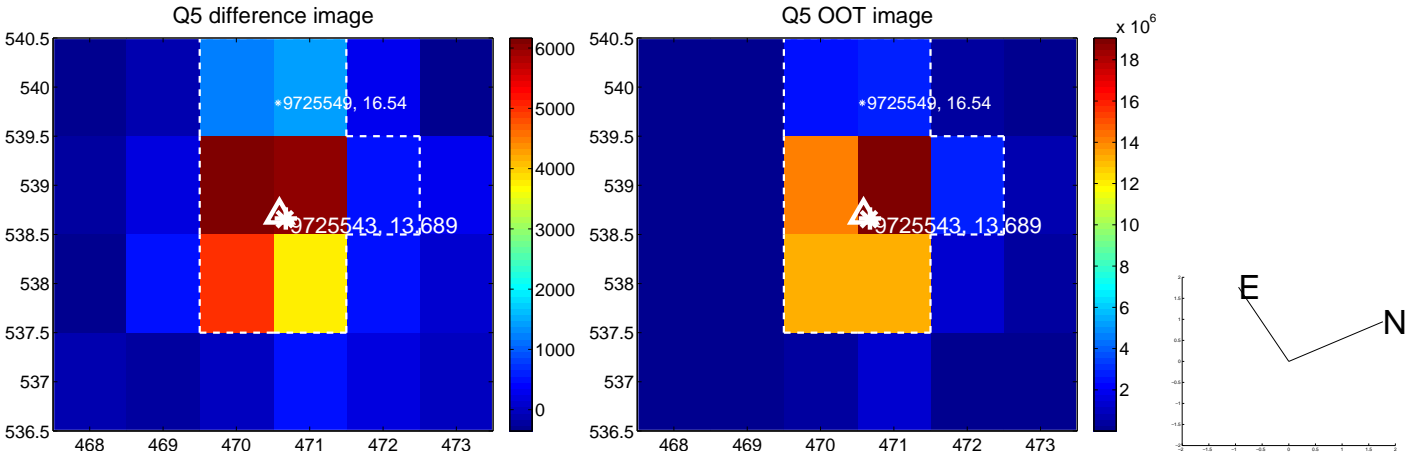


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

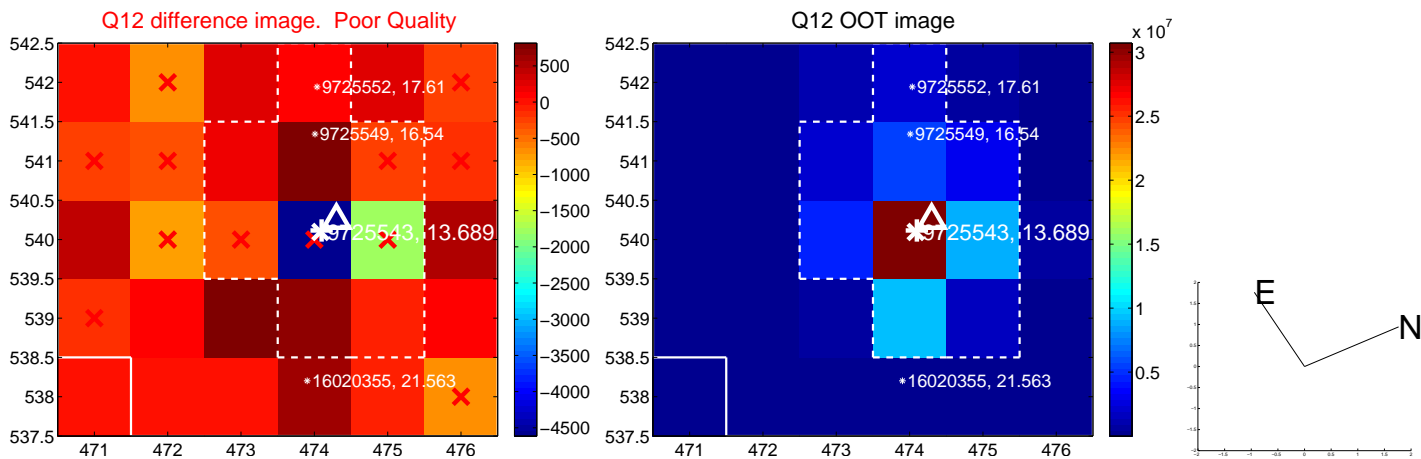
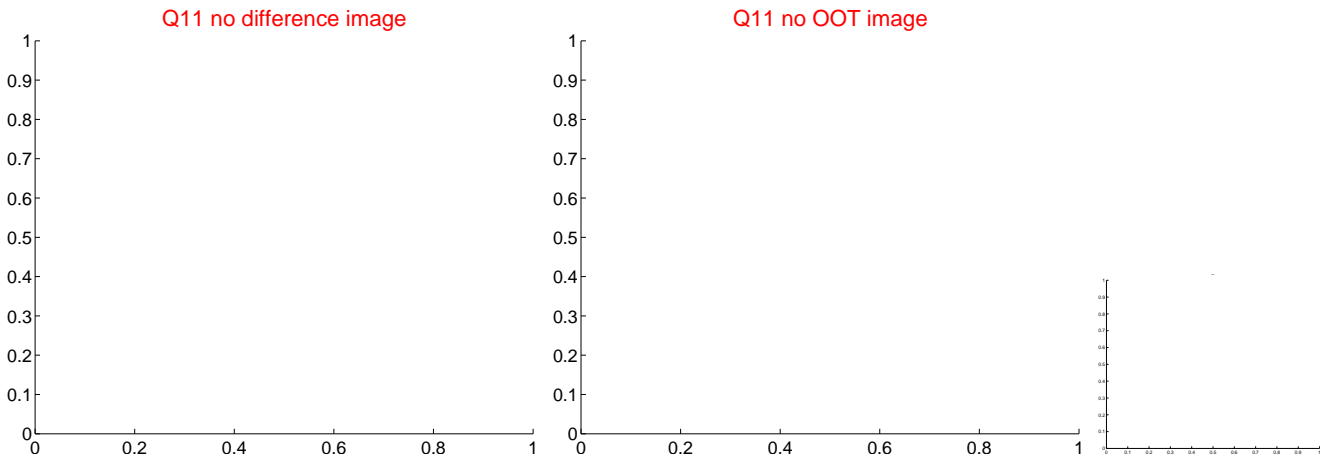
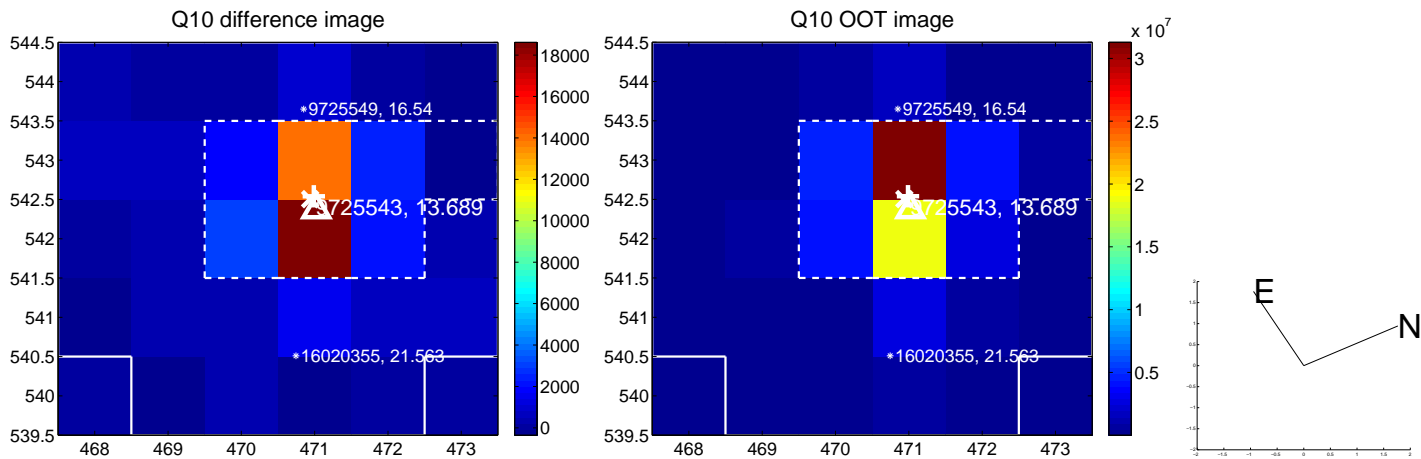
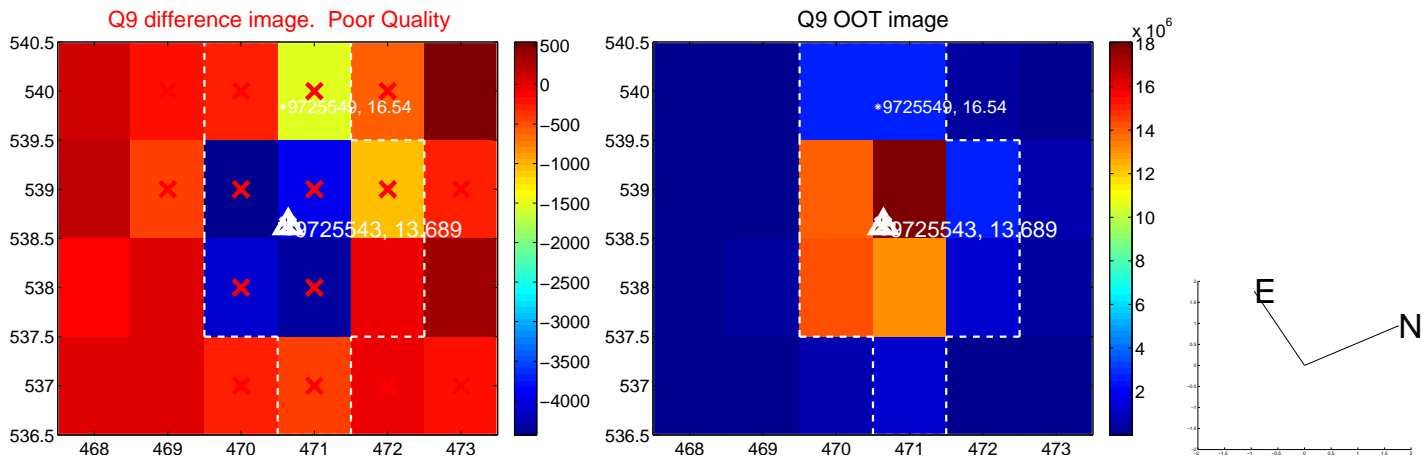
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



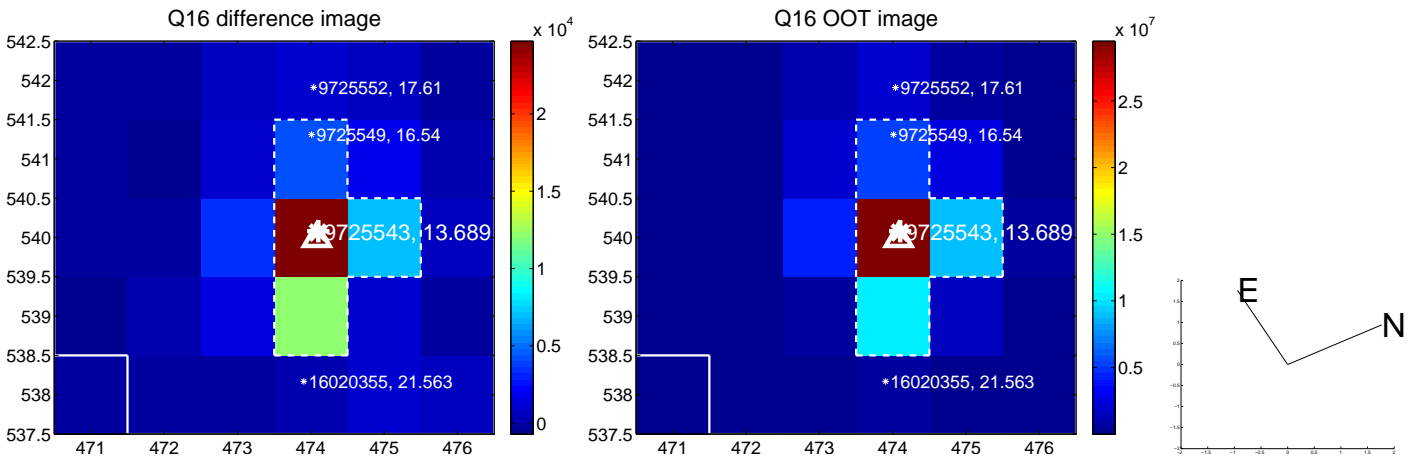
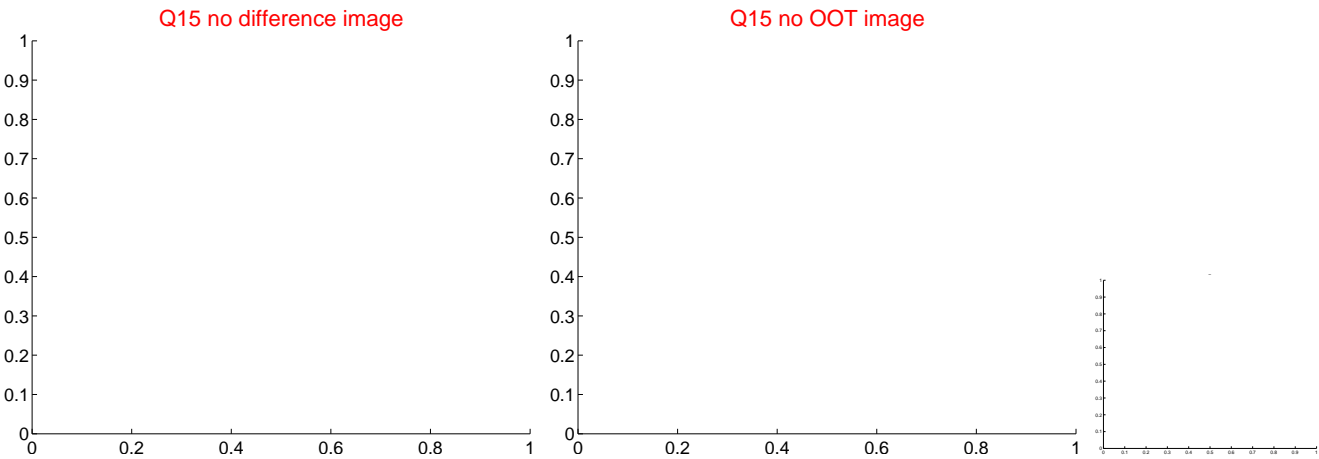
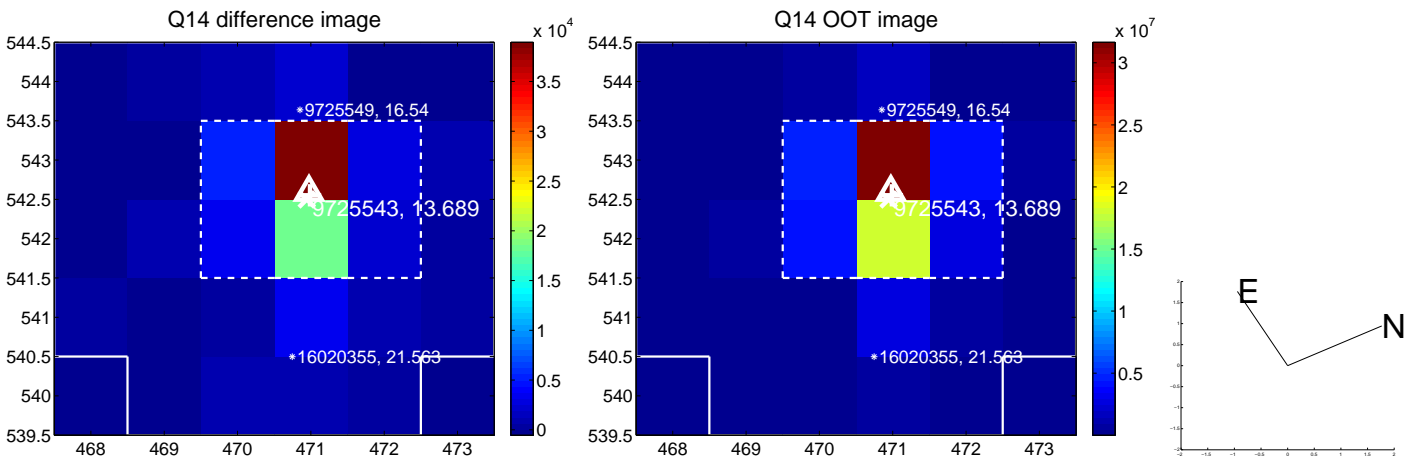
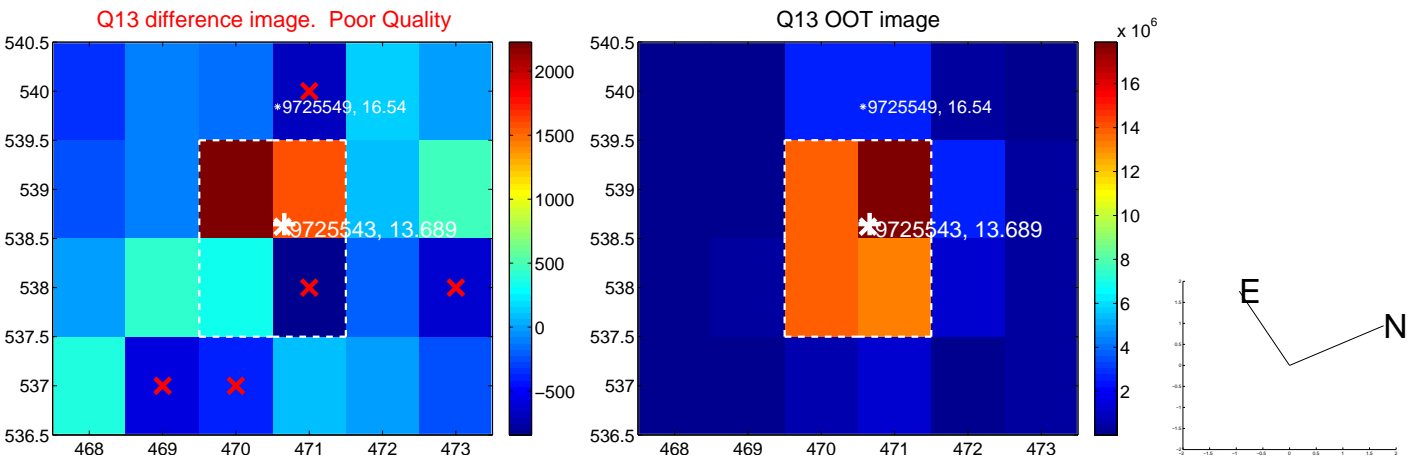
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



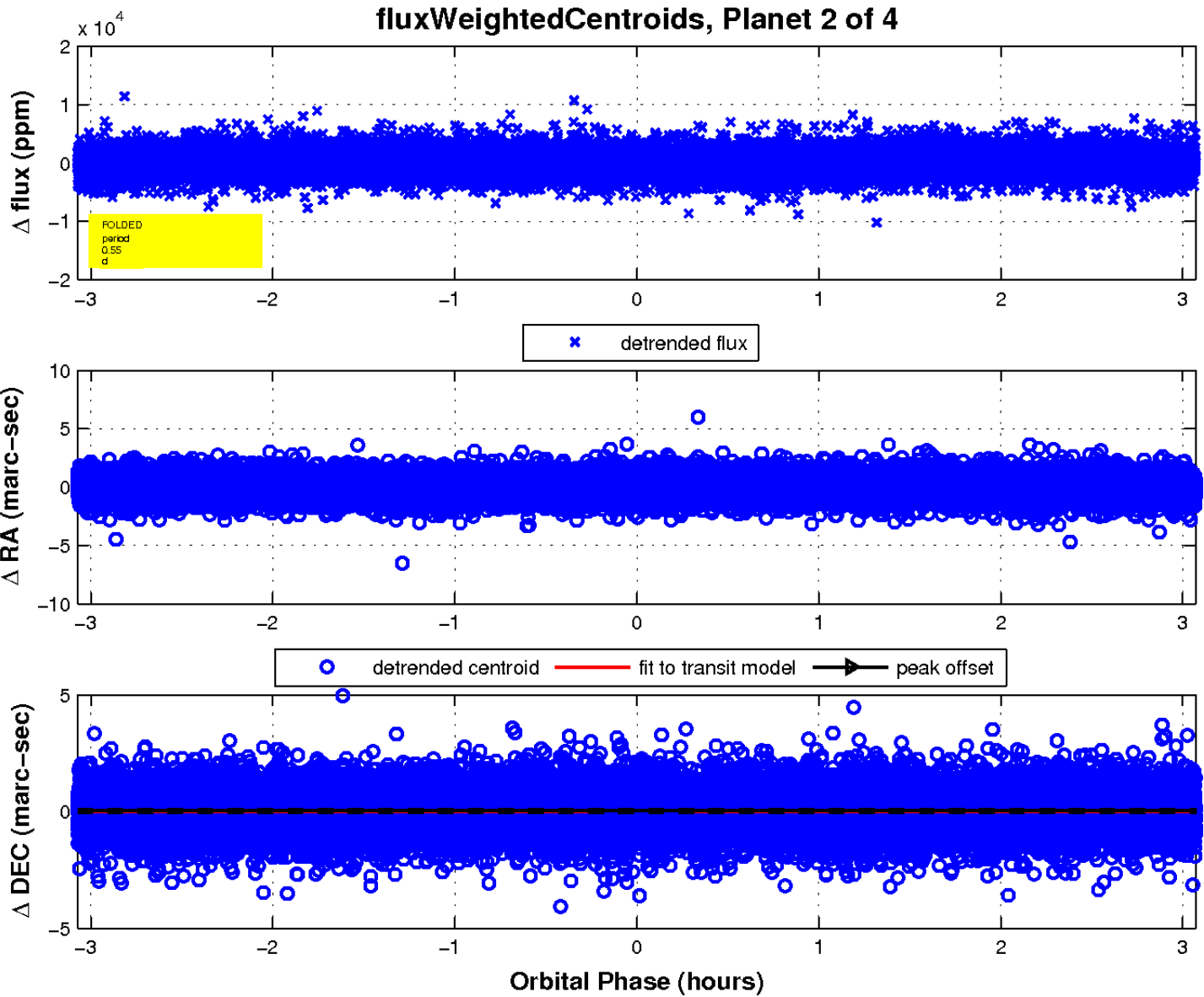
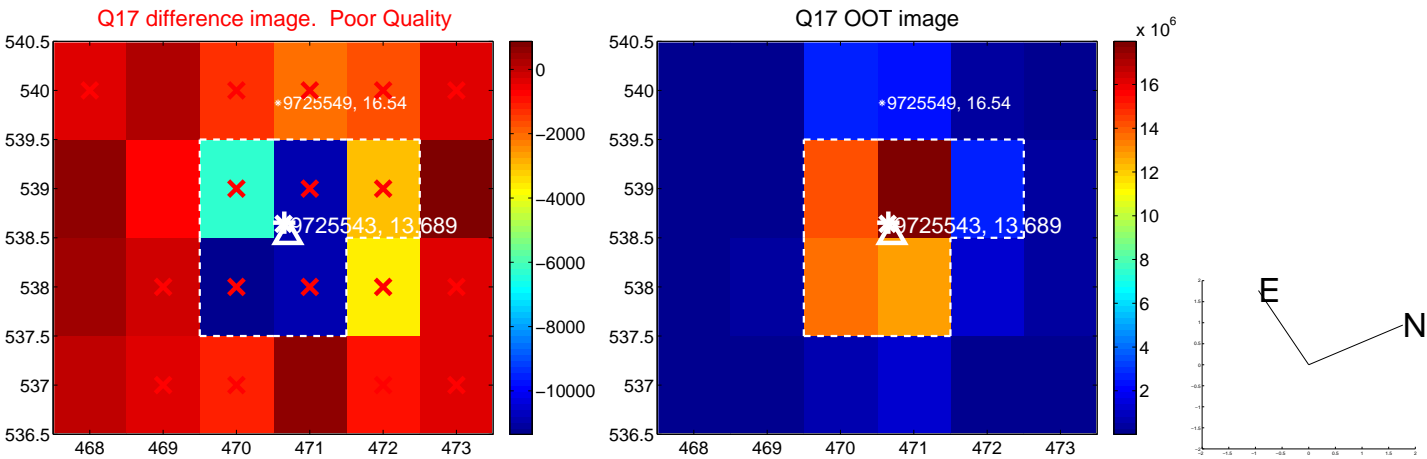
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



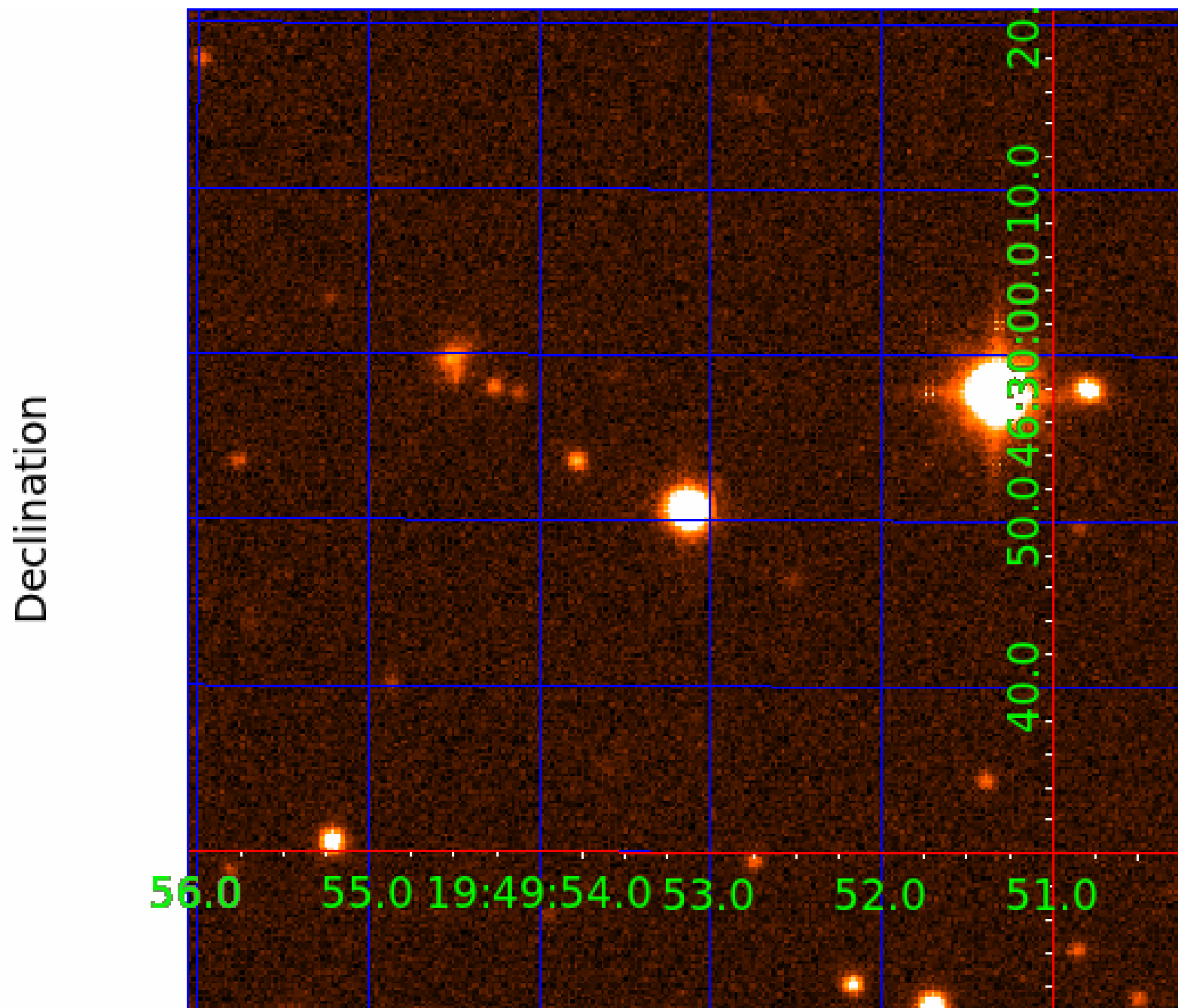
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009725543

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})
009725543-01	OBS	No	0.554672	131.773721	270.0	0.790	10.6	11.0	1.59	7078	3.08	24469.89
009725543-02	OBS	No	0.554667	132.052214	213.3	1.024	9.1	9.5	1.59	7078	2.51	24470.20
009725543-03	OBS	No	0.857741	132.108178	257.8	1.111	8.1	4.4	1.59	7078	2.99	13683.77
009725543-04	OBS	No	0.857685	131.979744	353.0	1.500	7.8	-1.0	1.59	7078	3.04	13684.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009725543-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009725543-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009725543-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009725543-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

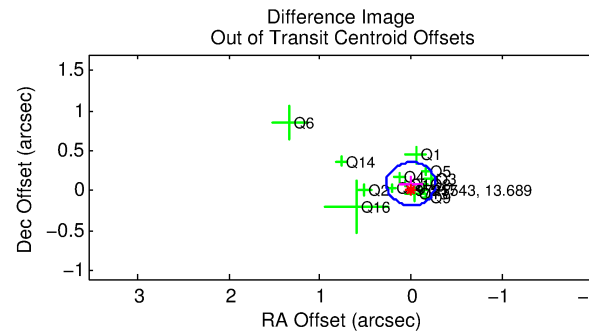
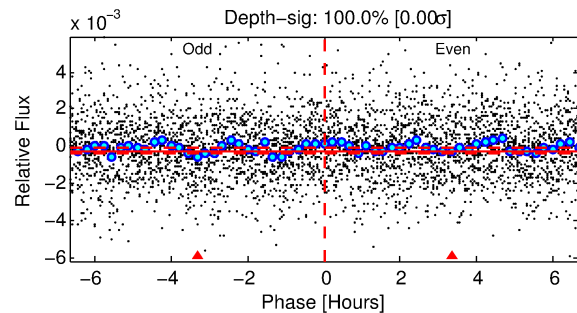
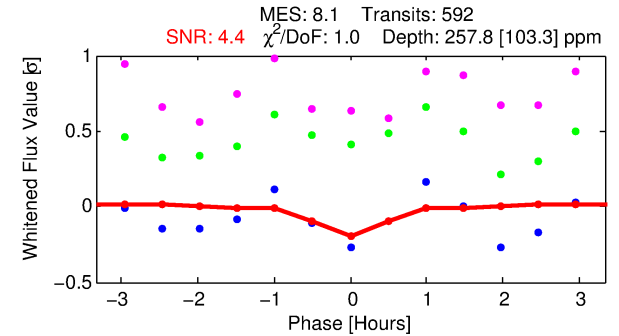
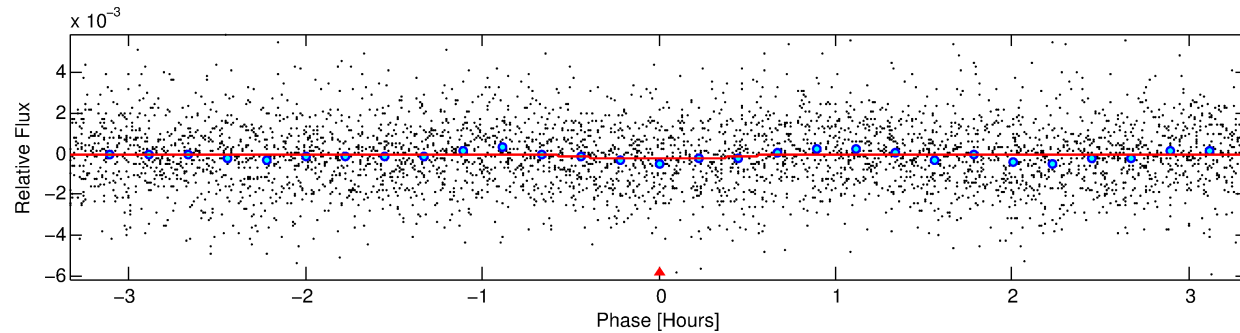
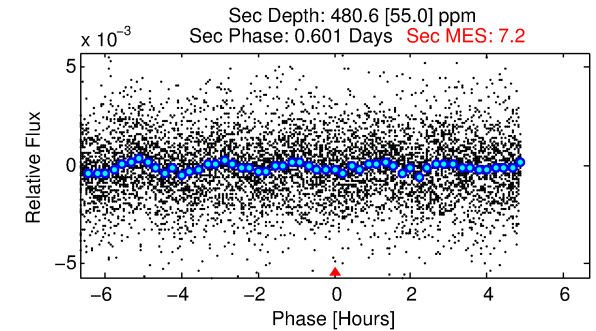
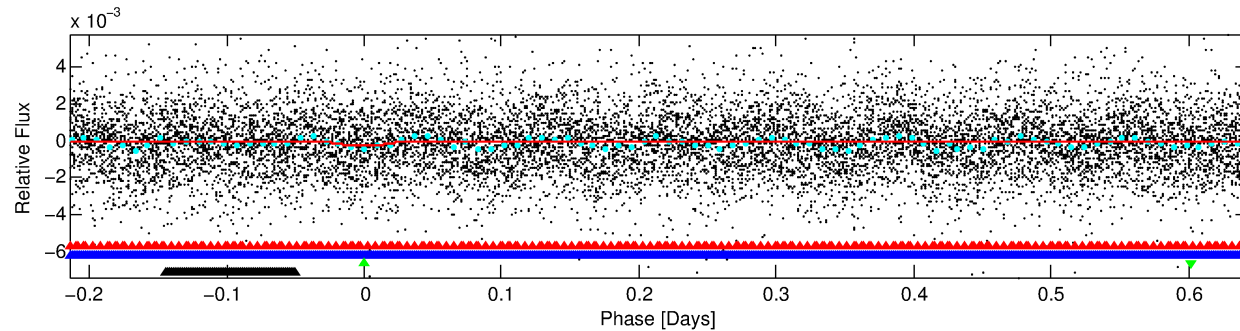
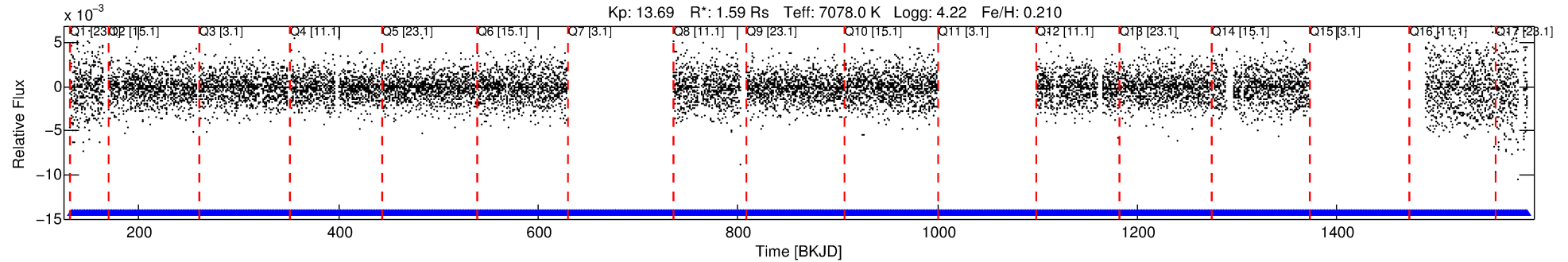
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009725543-03

No Significant Match Found

DV One-Page Summary

KIC: 9725543 Candidate: 3 of 4 Period: 0.858 d



DV Fit Results:

Period = 0.85774 [0.00003] d
Epoch = 132.1082 [0.0051] BKJD
Rp/R* = 0.0172 [0.0241]
a/R* = 2.95 [21.99]
b = 0.90 [1.80]
Seff = 13683.77 [6013.34]
Teq = 2758 [303] K
Rp = 2.99 [4.32] Re
a = 0.0204 [0.0059] AU
Ag = 12.34 [34.89] [0.32σ]
Teffp = 7991 [5604] K [0.93σ]

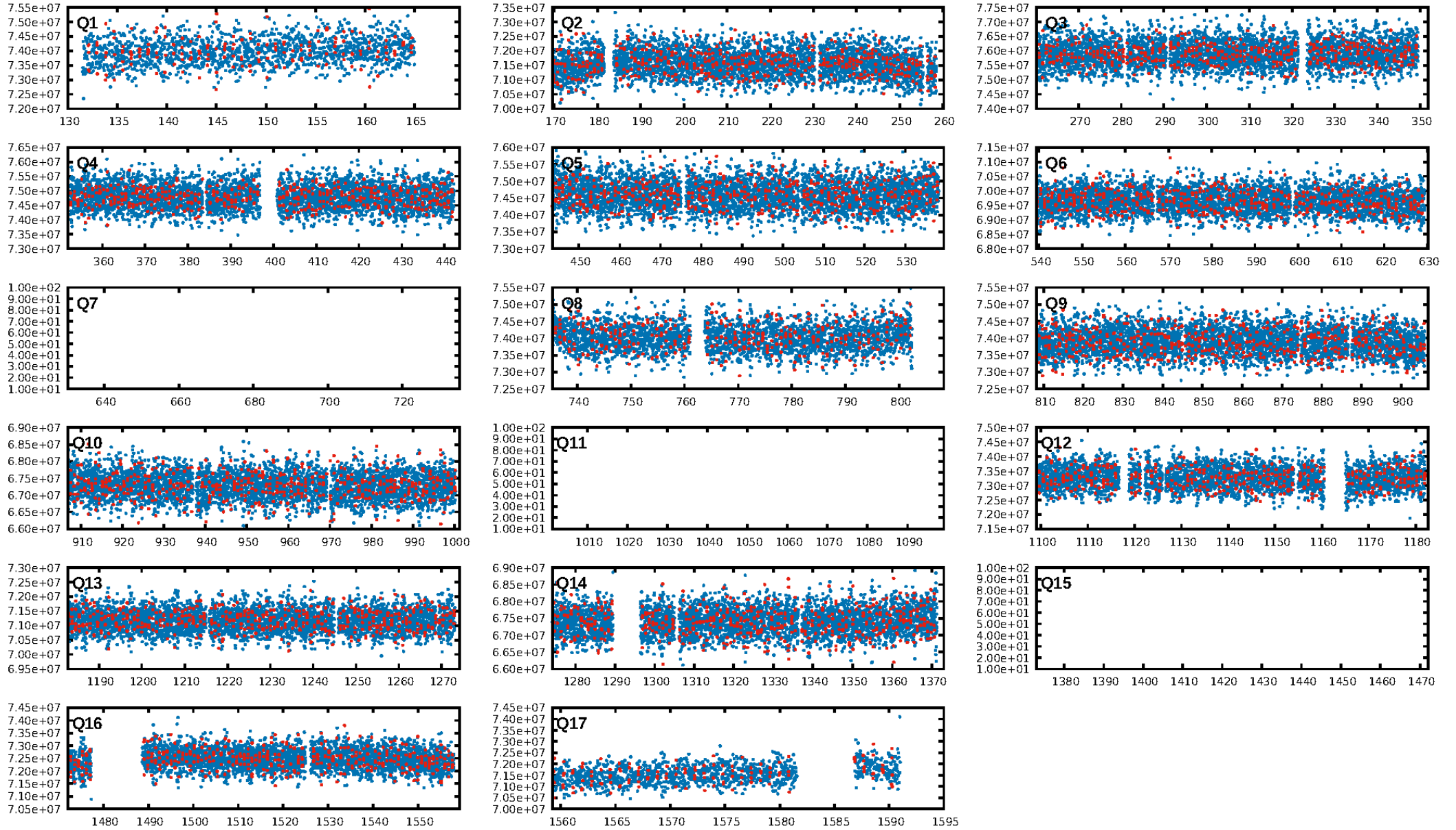
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [558/558]
GhostDiagnostic-chr: 2.546
Centroid-sig: N/A
Centroid-so: 0.169 arcsec [0.95σ]
OotOffset-rm: 0.085 arcsec [0.94σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.189 arcsec [1.69σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/14]

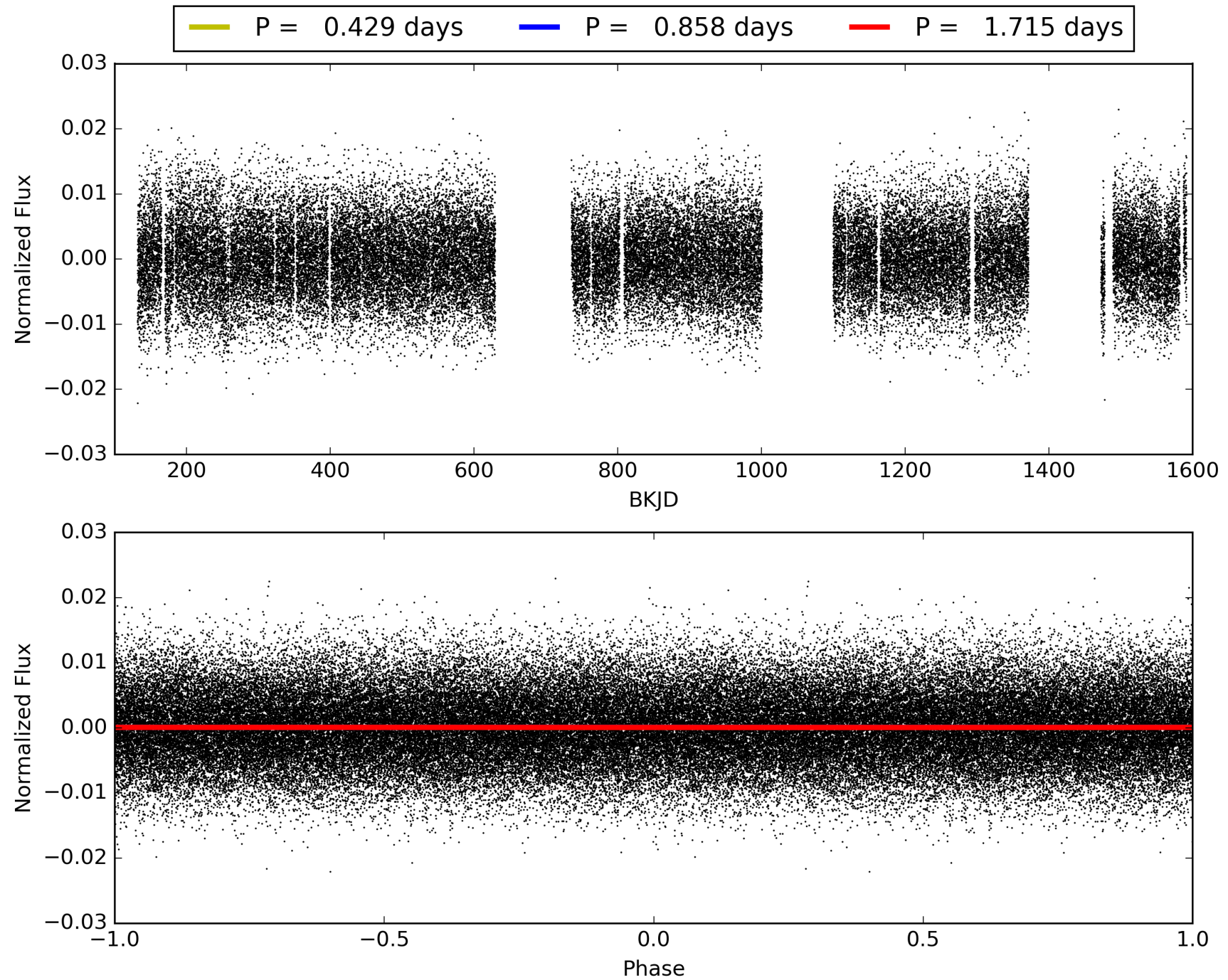
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:57:31 Z

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

TCE 009725543-03, PDC Light Curves

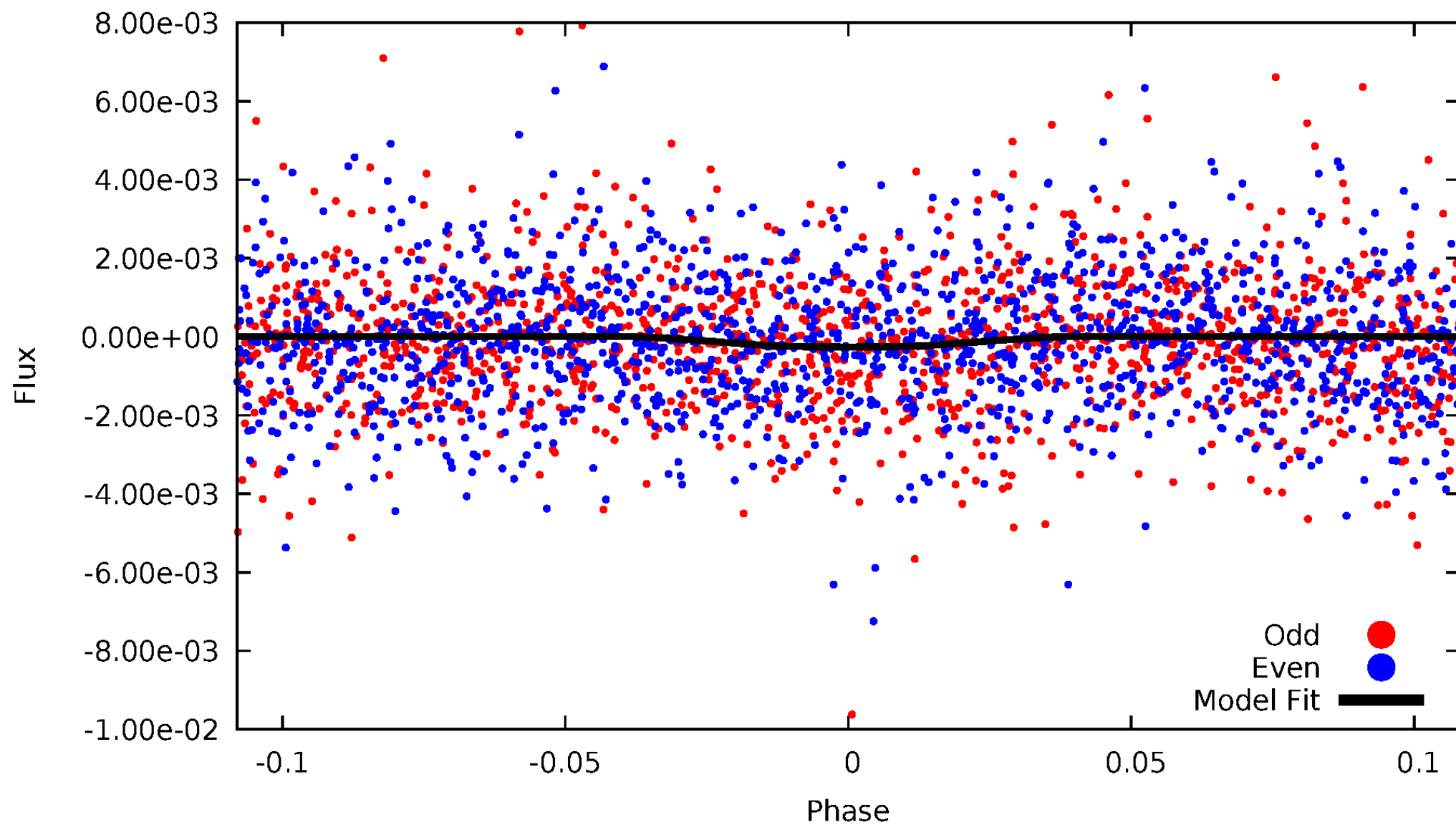


TCE 009725543-03



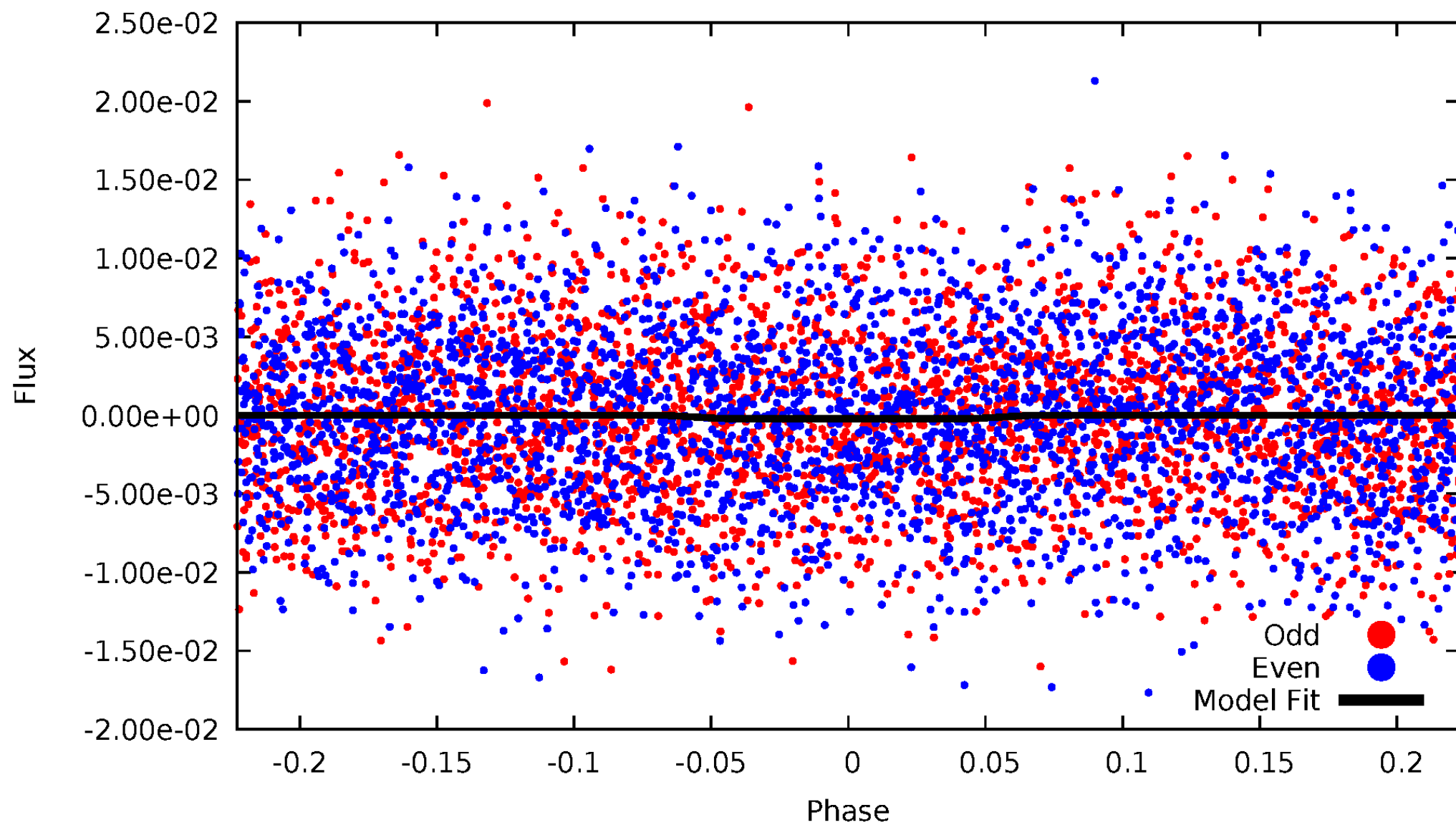
DV Odd/Even

TCE 009725543-03

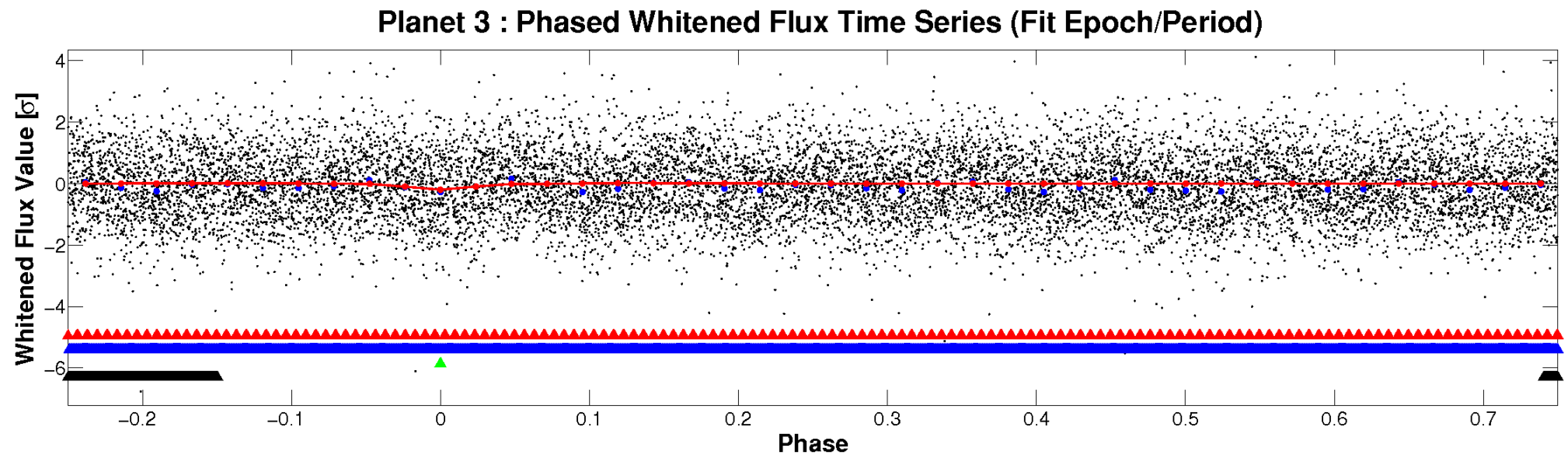
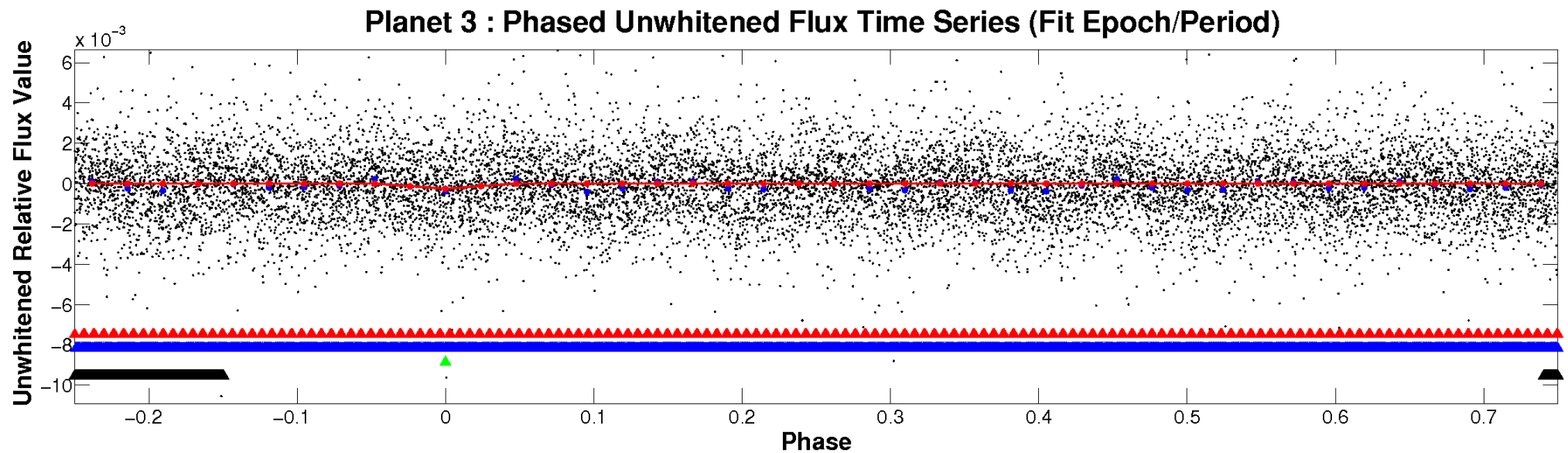


ALT Odd/Even

TCE 009725543-03

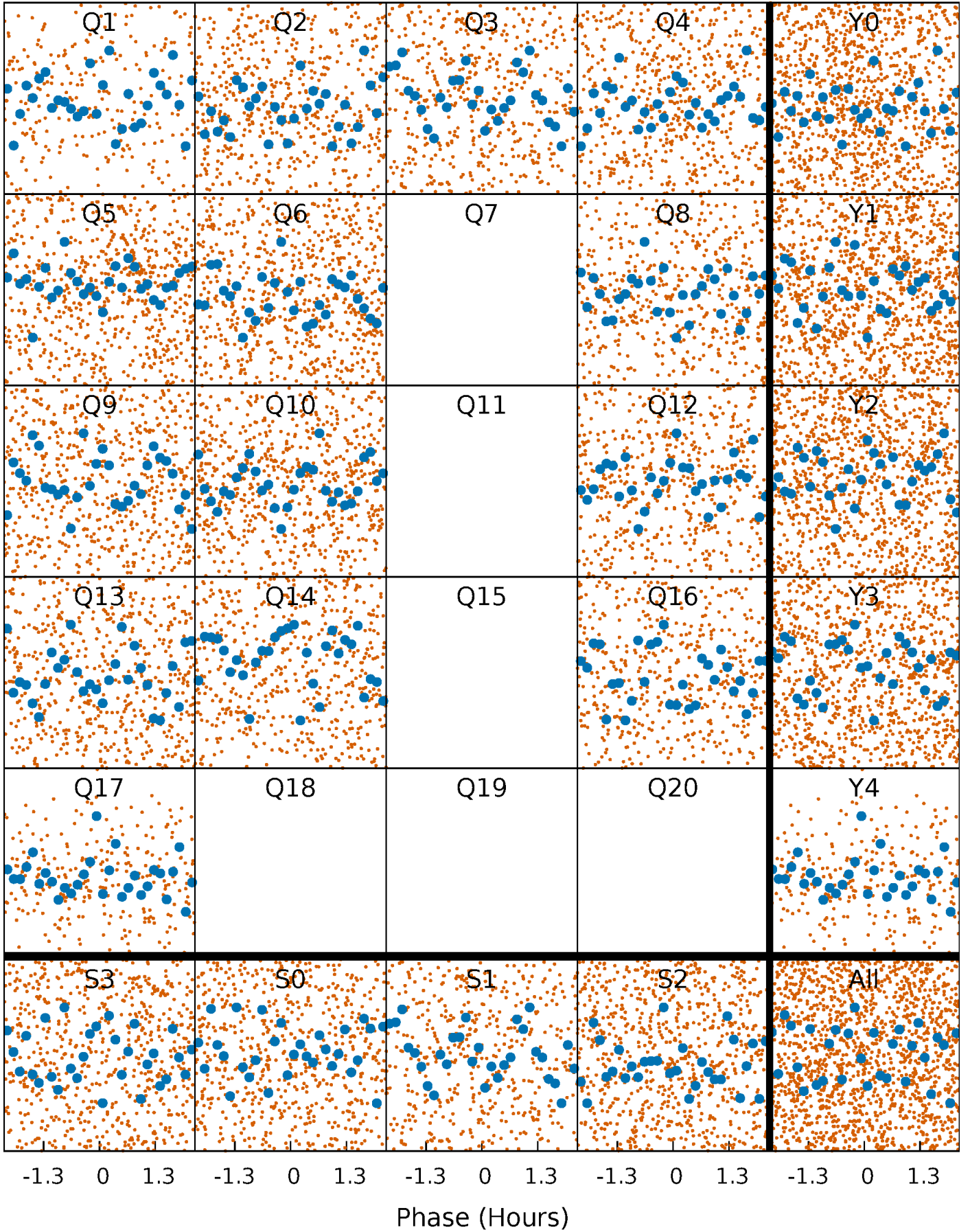


Non-Whitened Vs. Whitened Light Curve



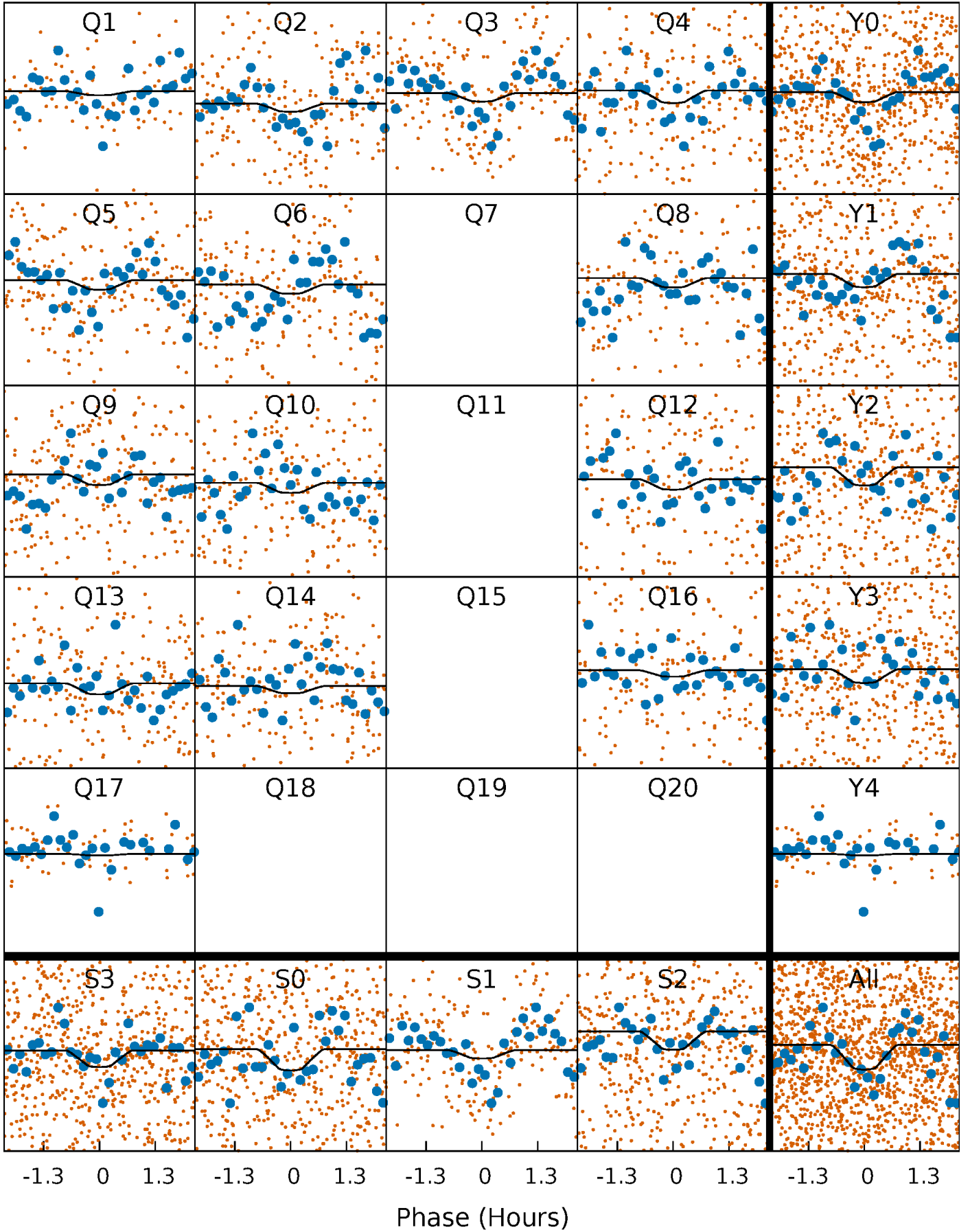
PDC Quarter-Phased Transit Curves

TCE 009725543-03 $P = 0.857741$ Days $T_0 = 132.108178$ (BKJD)



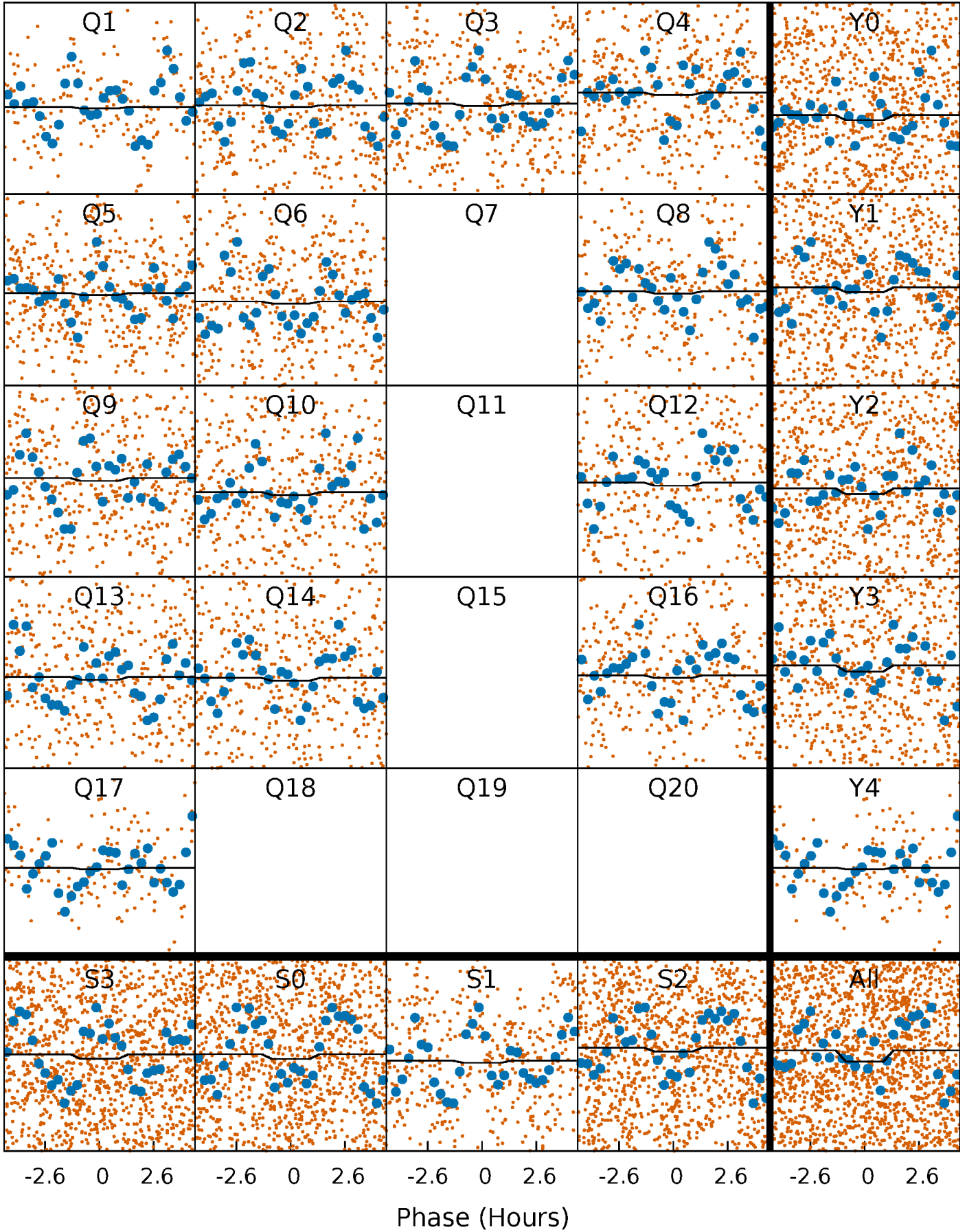
DV Quarter-Phased Transit Curves

TCE 009725543-03 P= 0.857741 Days $T_0=132.108178$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

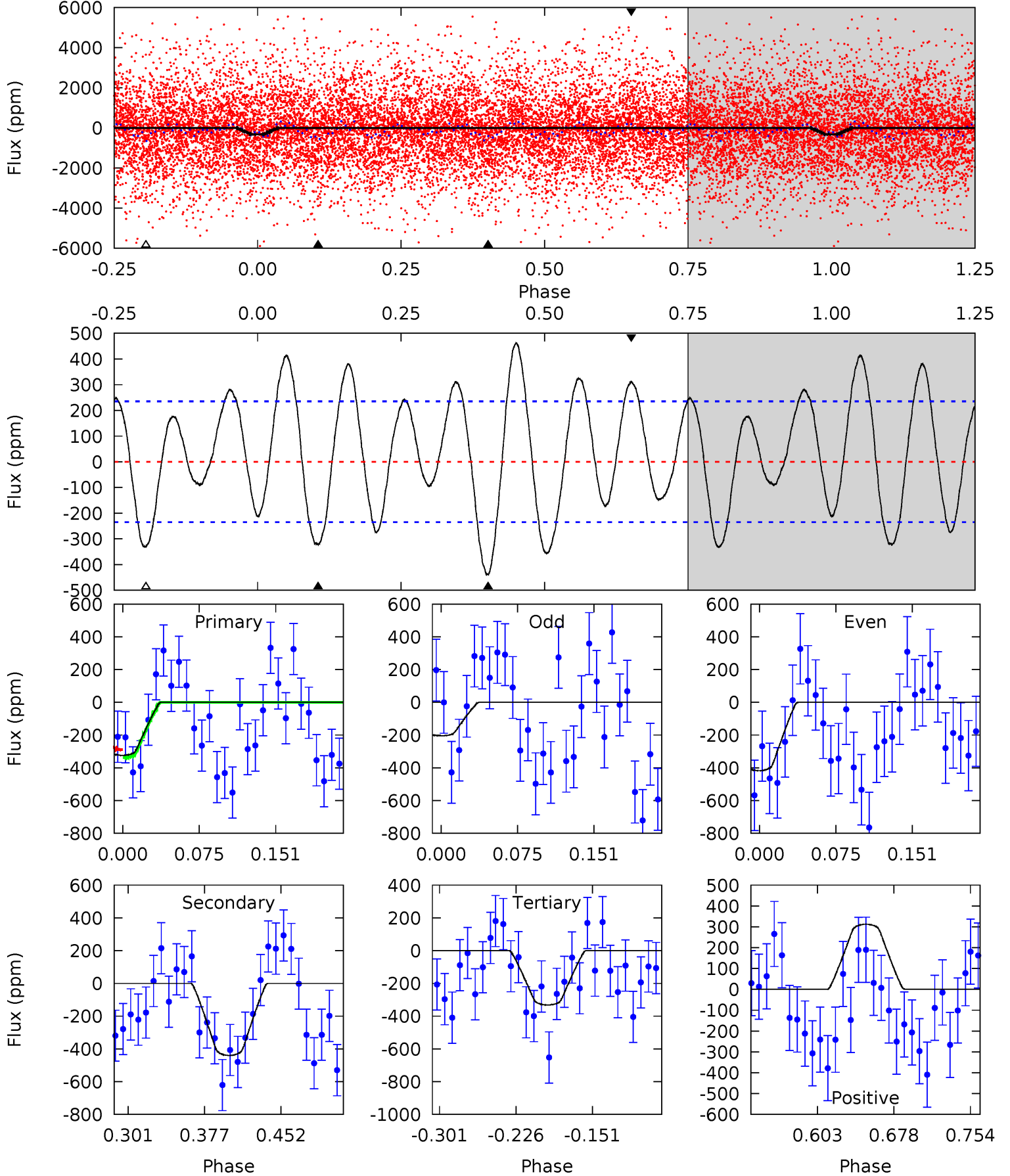
TCE 009725543-03 P= 0.857693 Days $T_0=132.049153$ (BKJD)



DV Model-Shift Uniqueness Test

009725543-03, P = 0.857741 Days, E = 131.250437 Days

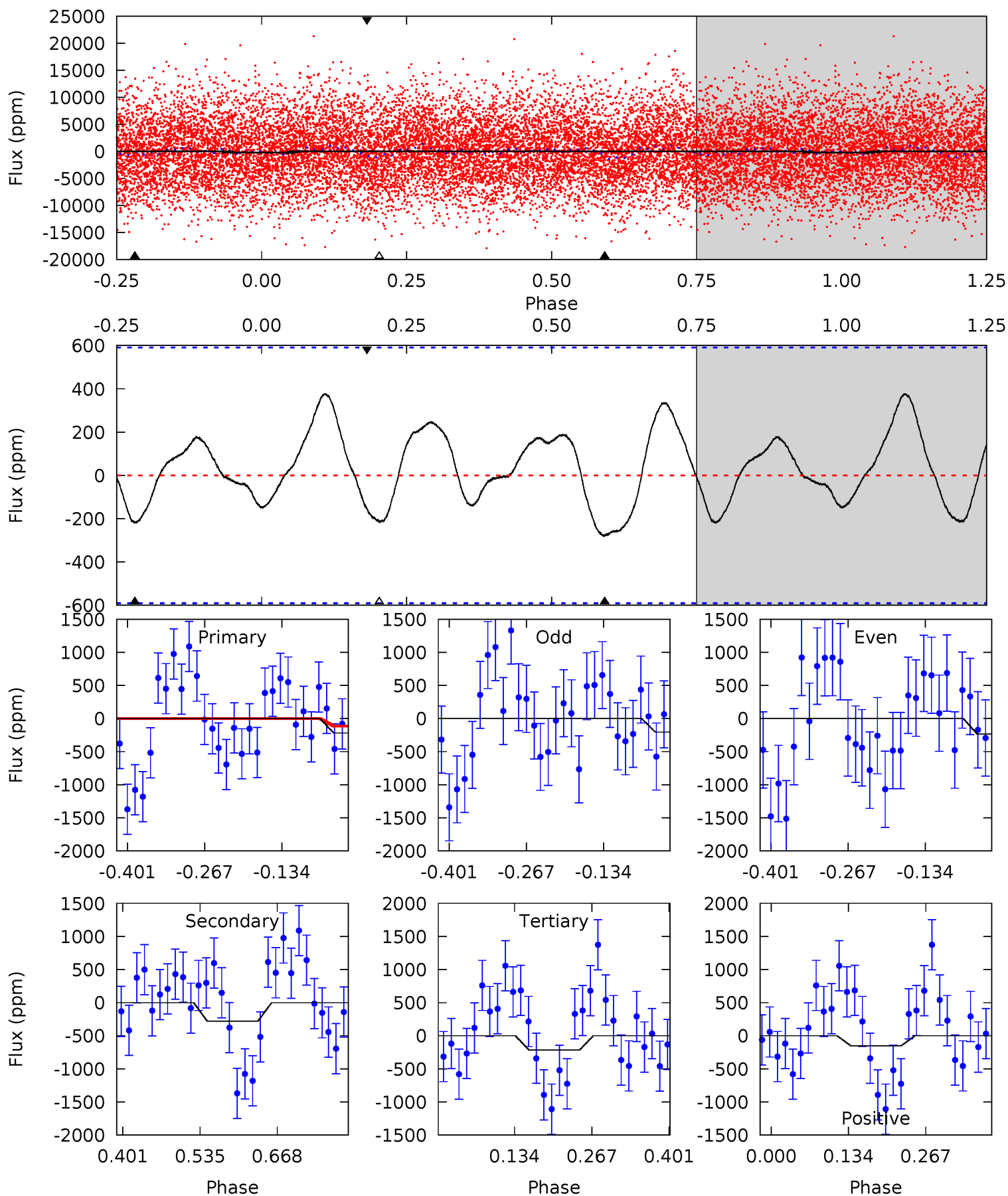
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.37	8.66	6.53	6.14	4.62	1.78	3.49	-0.16	0.23	2.13	2.52	2.11	1.10	0.51	0



Alt Model-Shift Uniqueness Test

009725543-03, P = 0.857693 Days, E = 131.191460 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.67	2.14	1.64	-1.15	4.50	1.50	1.13	0.03	2.82	0.50	3.29	0.11	0.77	0.57	0.80



Stellar Parameters For KIC 009725543

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7078^{+195}_{-318}	$4.222^{+0.070}_{-0.210}$	$0.210^{+0.150}_{-0.400}$	$1.593^{+0.570}_{-0.228}$	$1.546^{+0.214}_{-0.214}$	$0.538^{+0.208}_{-0.285}$
	+3%/-4%	+2%/-5%	+71%/-190%	+36%/-14%	+14%/-14%	+39%/-53%
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 009725543-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-440 ± 51	$4.46^{+4.02}_{-2.89}$	3908^{+329}_{-218}	6347^{+6644}_{-1765}	$5.028^{+35.457}_{-3.695}$
Alt.	-281 ± 131	$4.42^{+3.78}_{-3.17}$	3913^{+313}_{-210}	5556^{+6841}_{-1620}	$3.120^{+33.549}_{-2.347}$

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 $A_{obs} \gg 1.0$

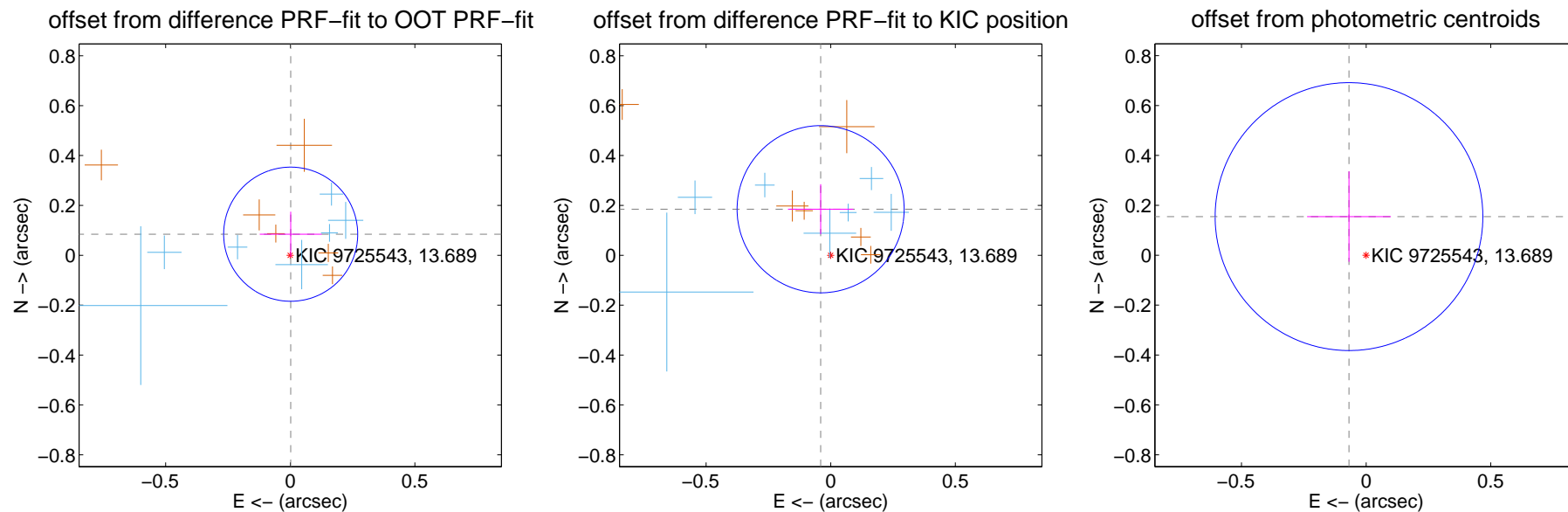
DV Centroid Data

Supplemental centroid analysis for 009725543-03. Kepler magnitude: 13.69. Transit SNR 4.37

There are 7 quarters with good PRF difference image offsets

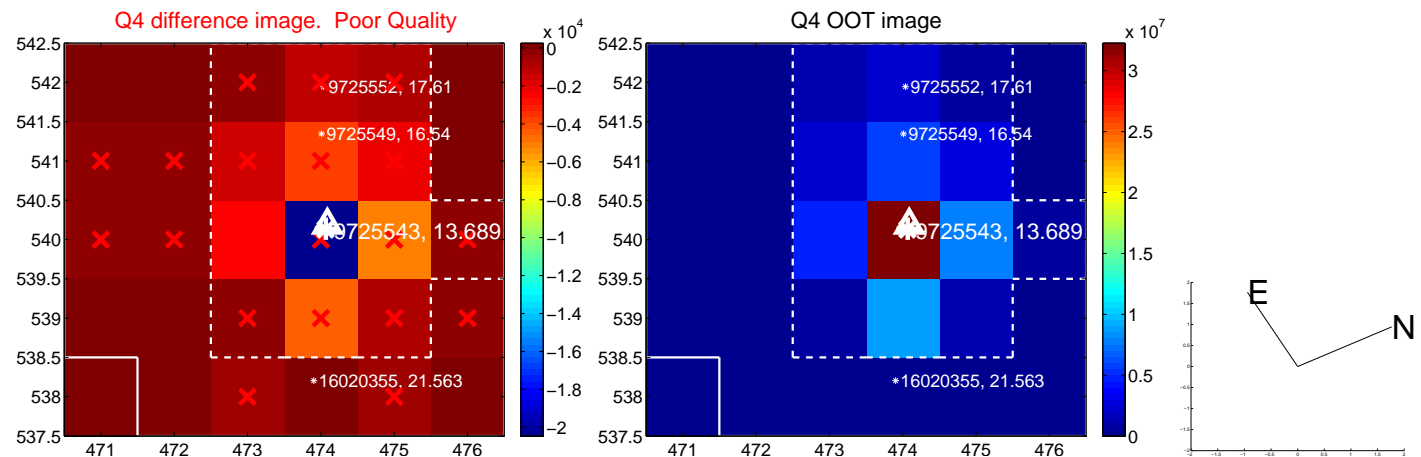
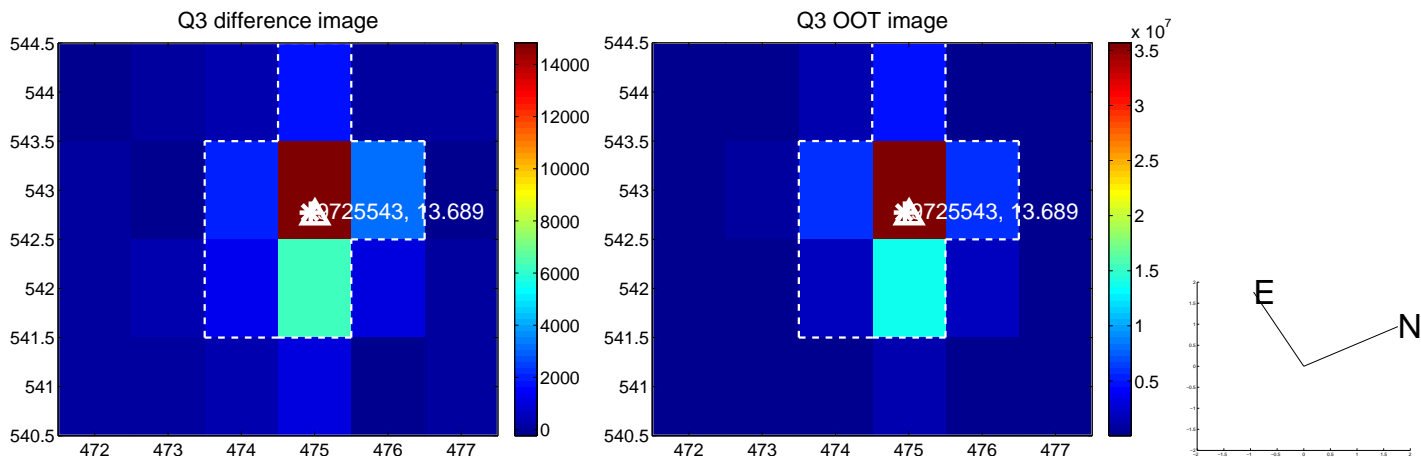
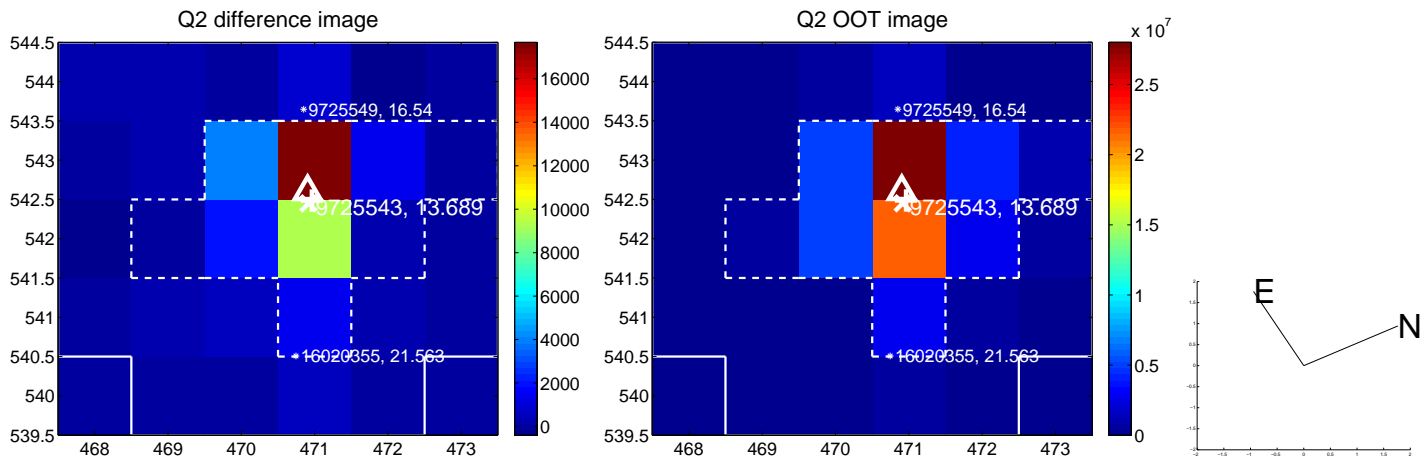
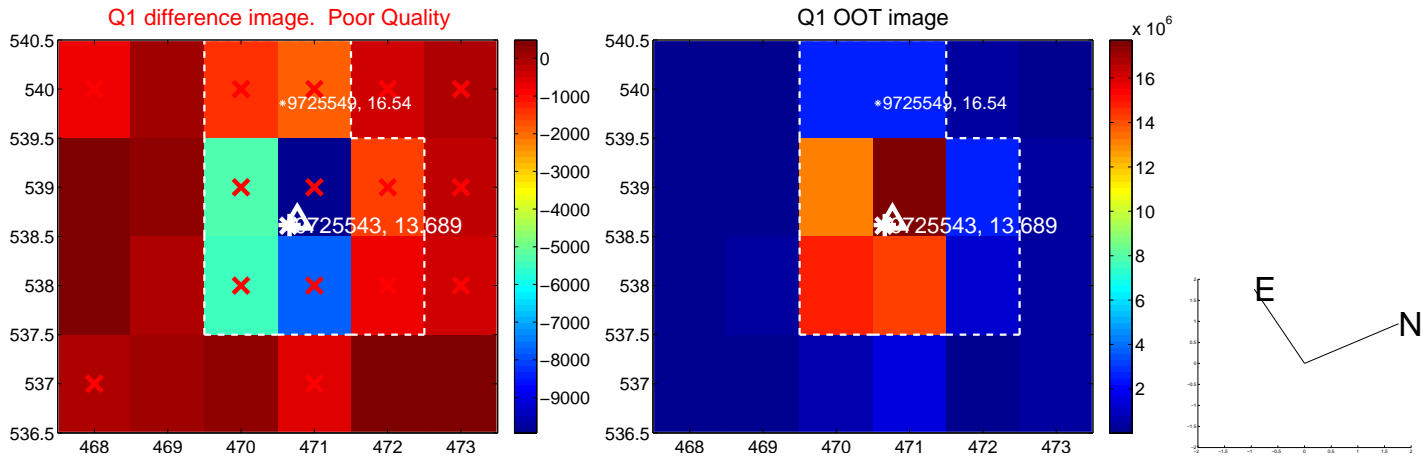
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.085 ± 0.090	0.94	-0.002 ± 0.124	0.085 ± 0.090
PRF-fit source offset from KIC position	0.189 ± 0.112	1.69	0.040 ± 0.131	0.185 ± 0.100
photometric centroid source offset	0.17 ± 0.18	0.95	0.07 ± 0.17	0.15 ± 0.18

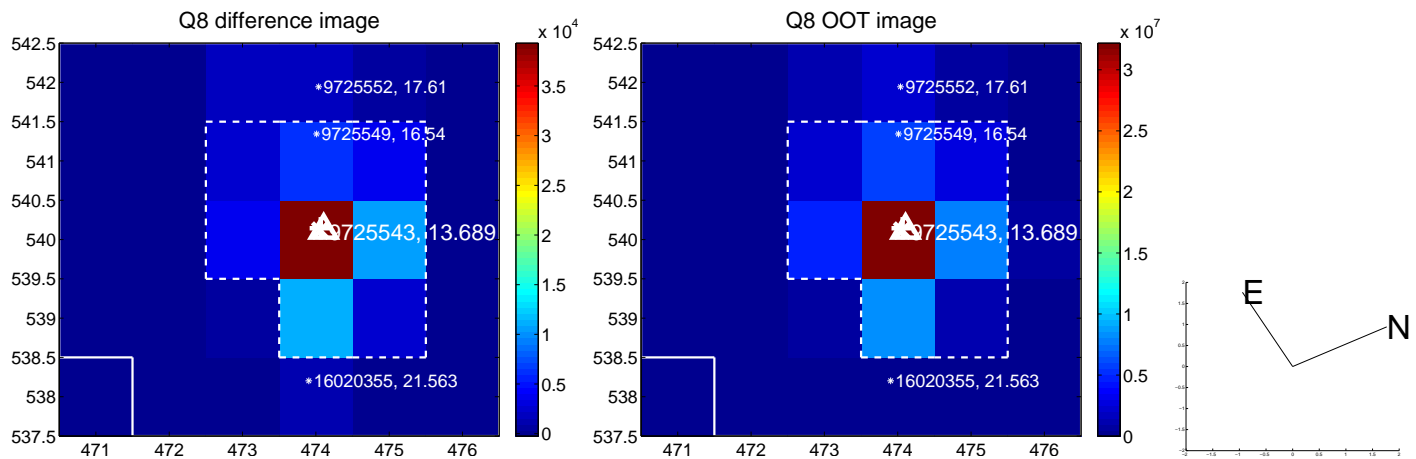
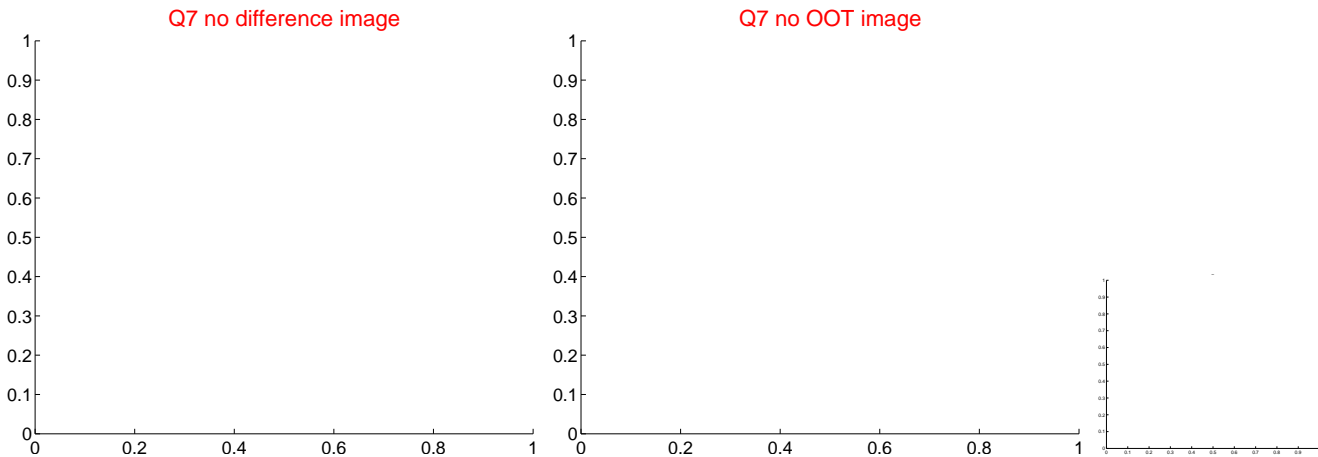
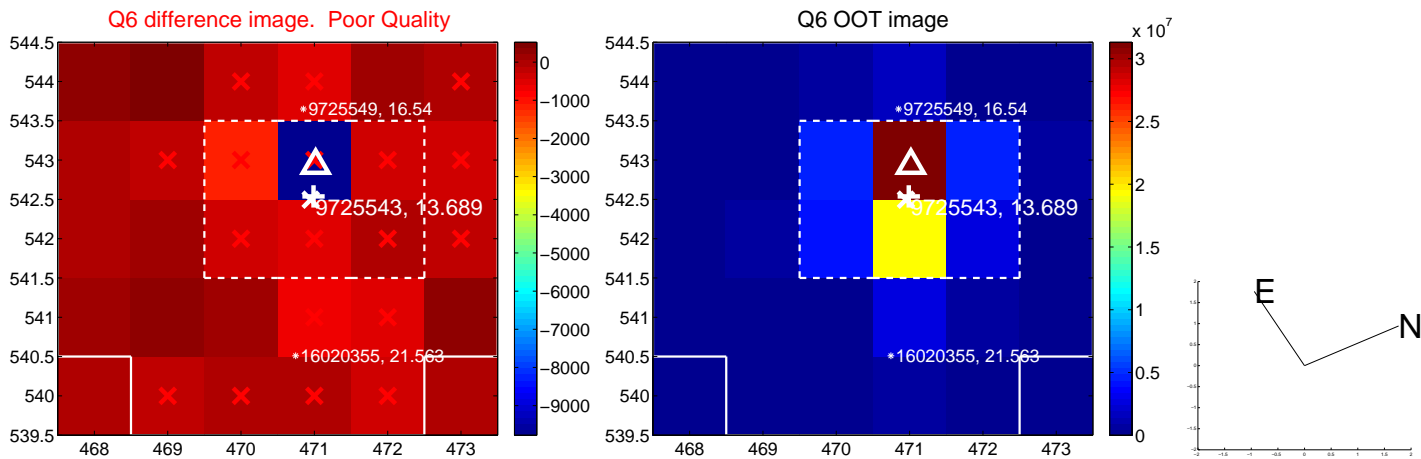
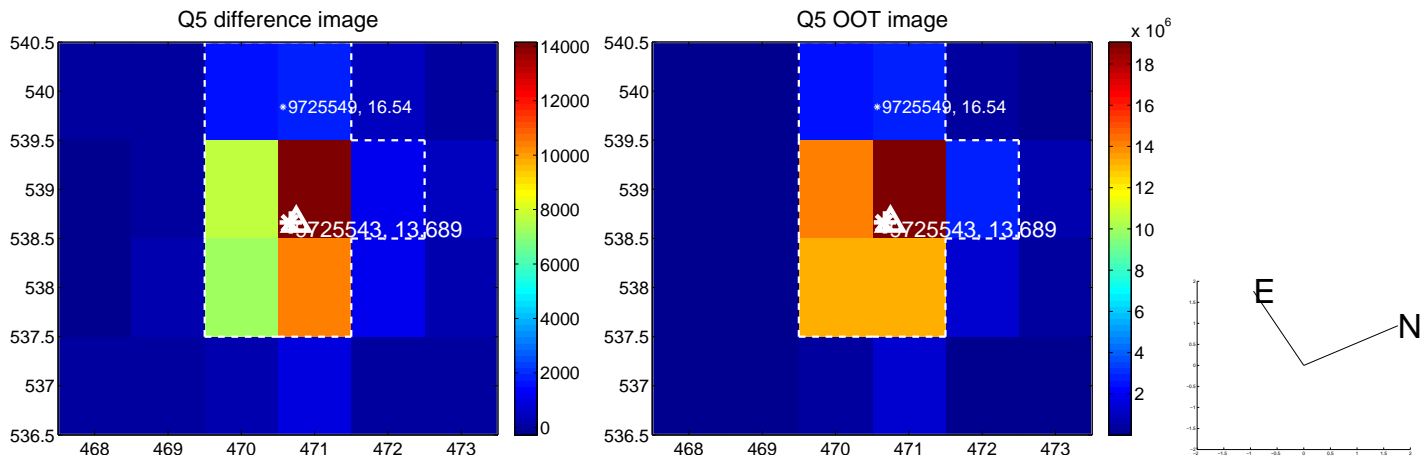


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

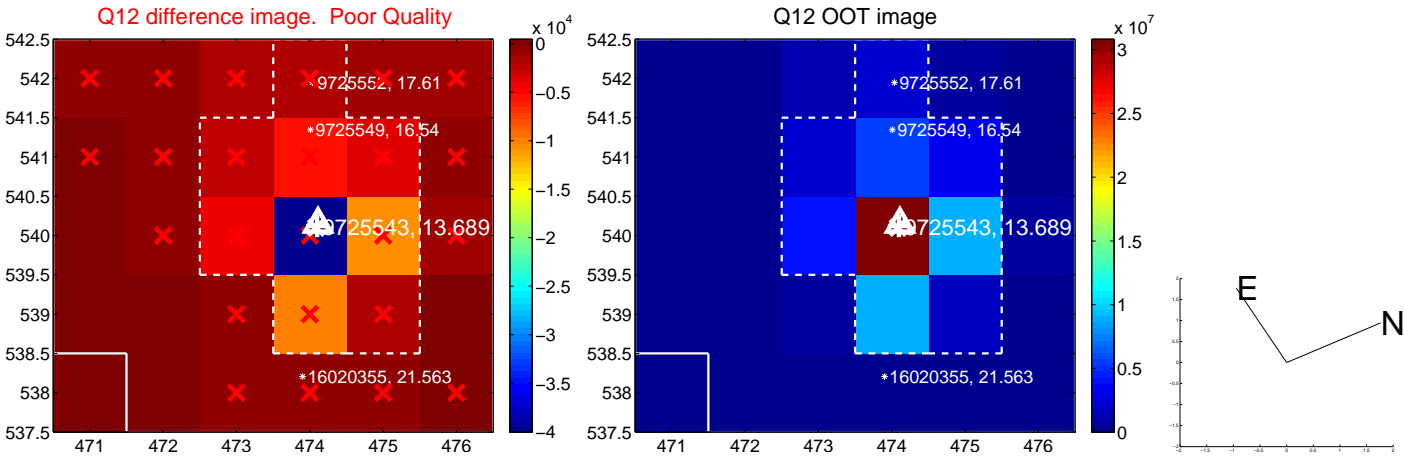
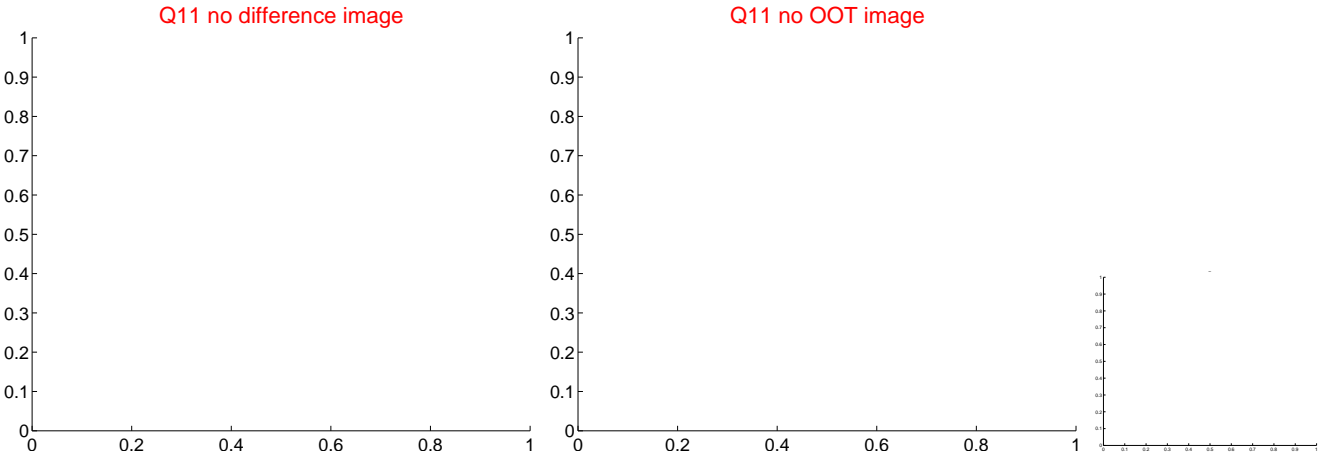
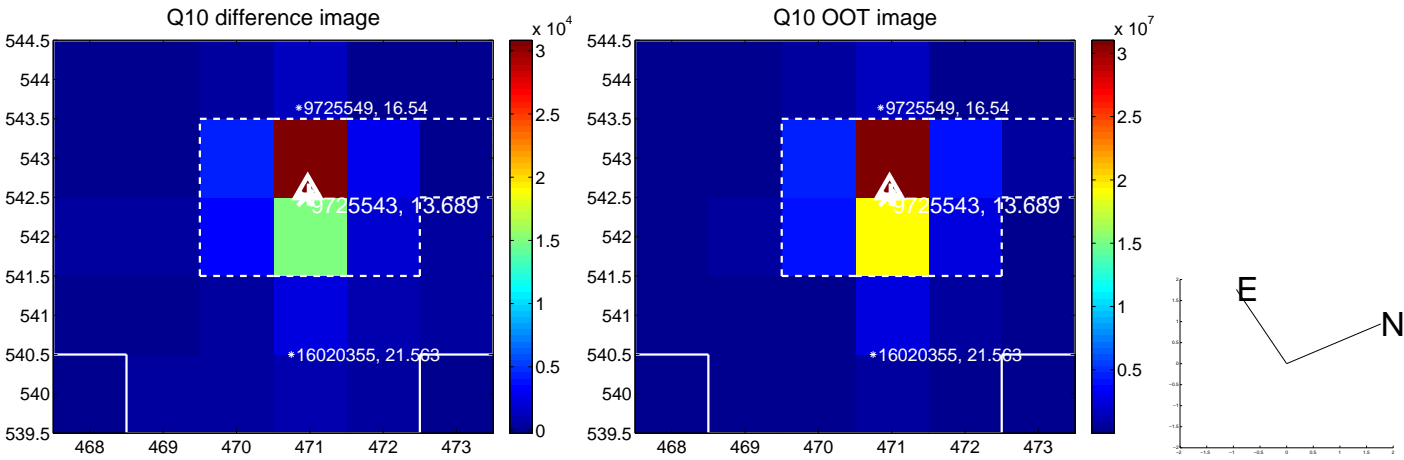
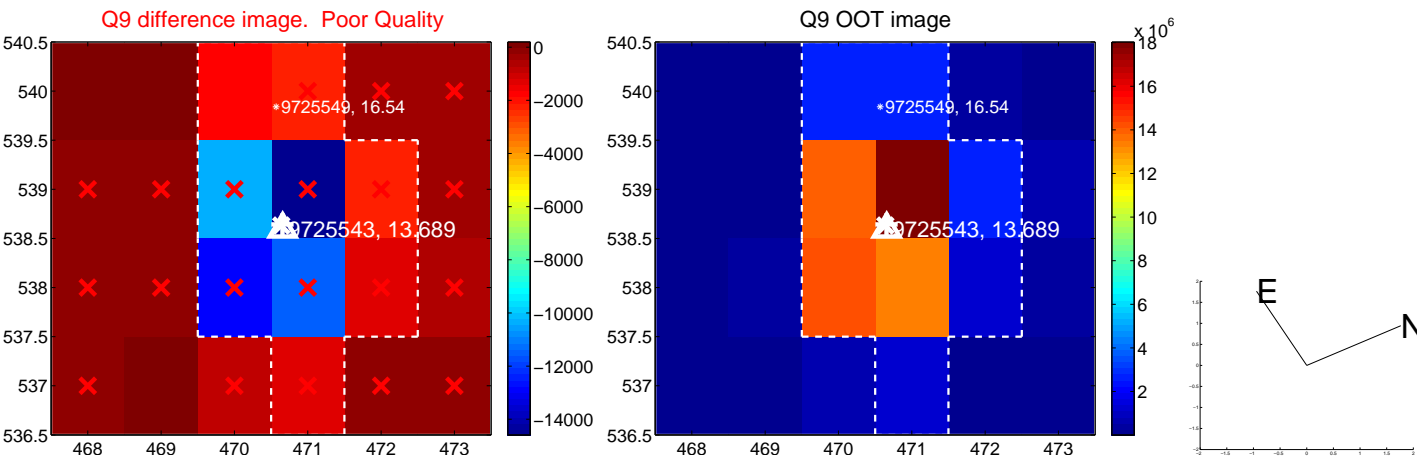
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



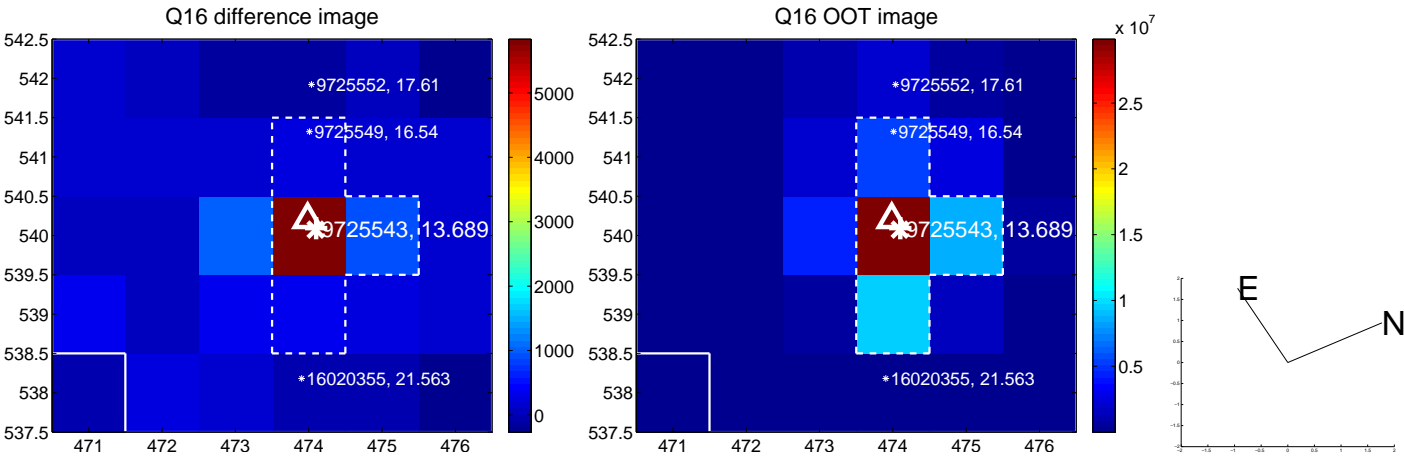
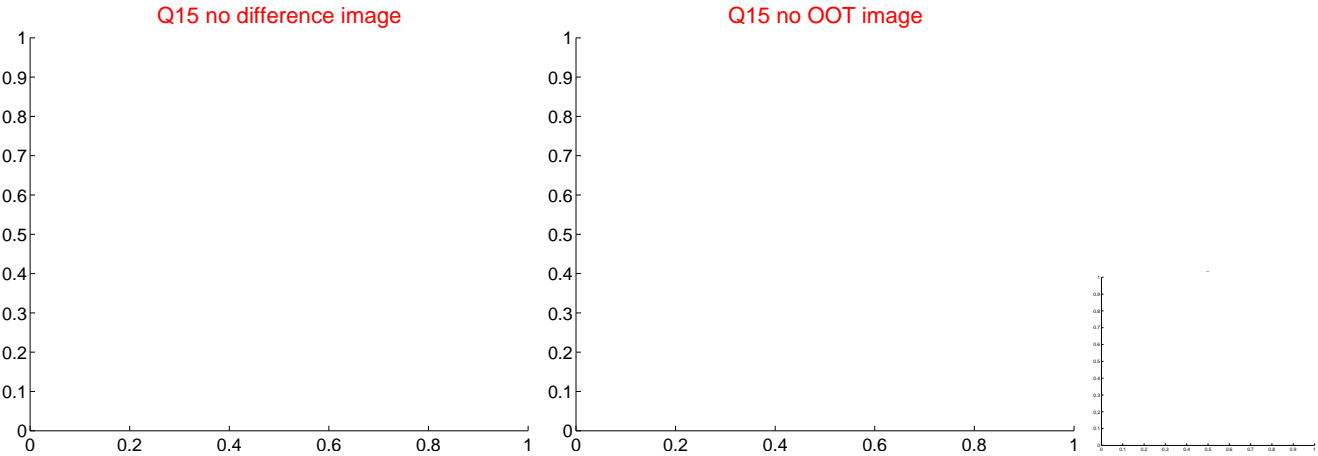
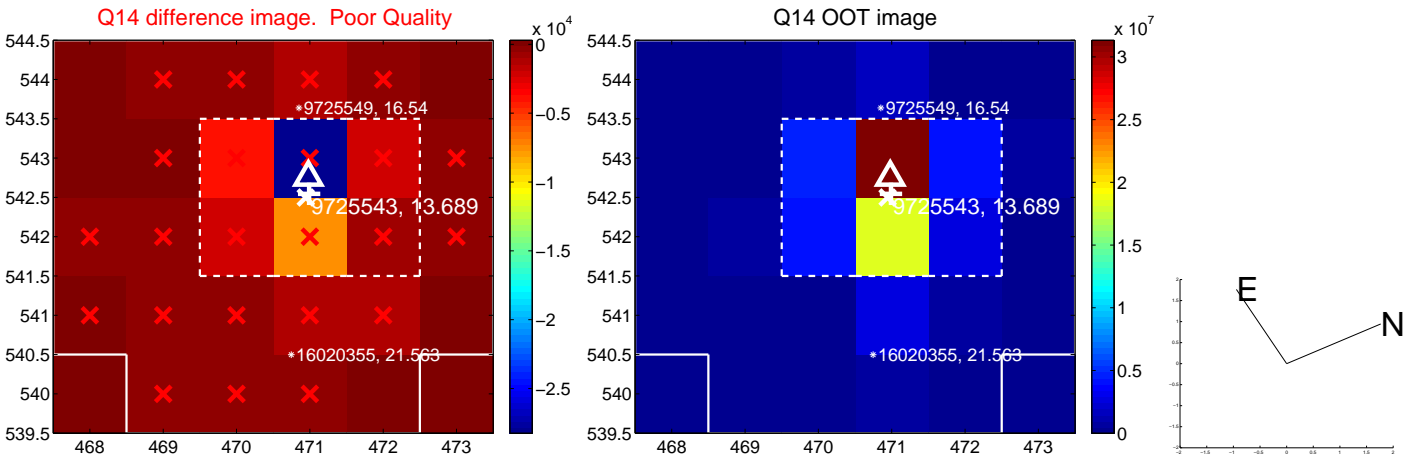
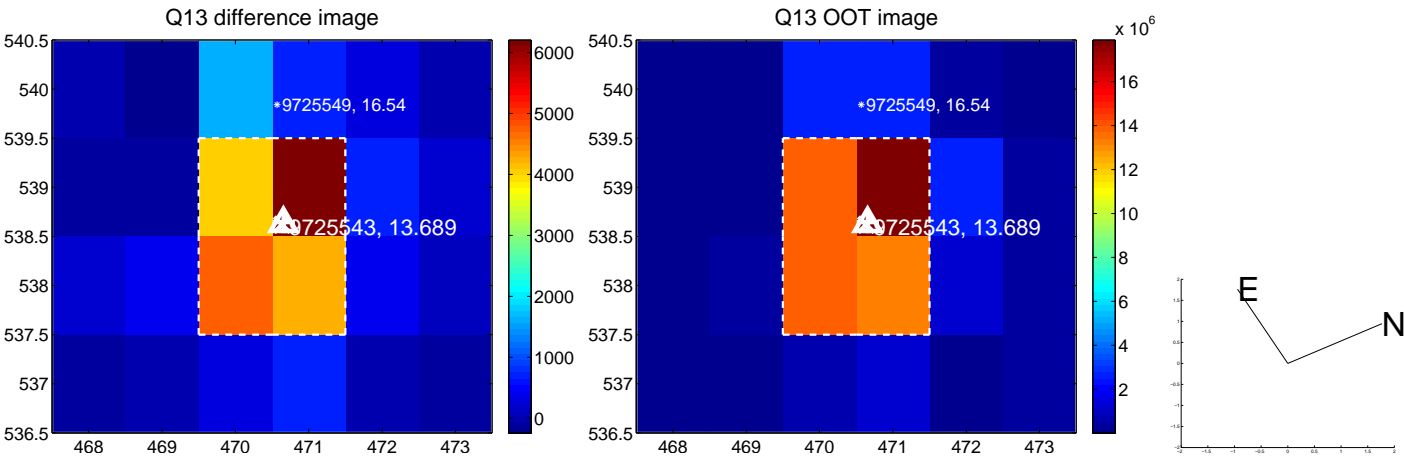
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



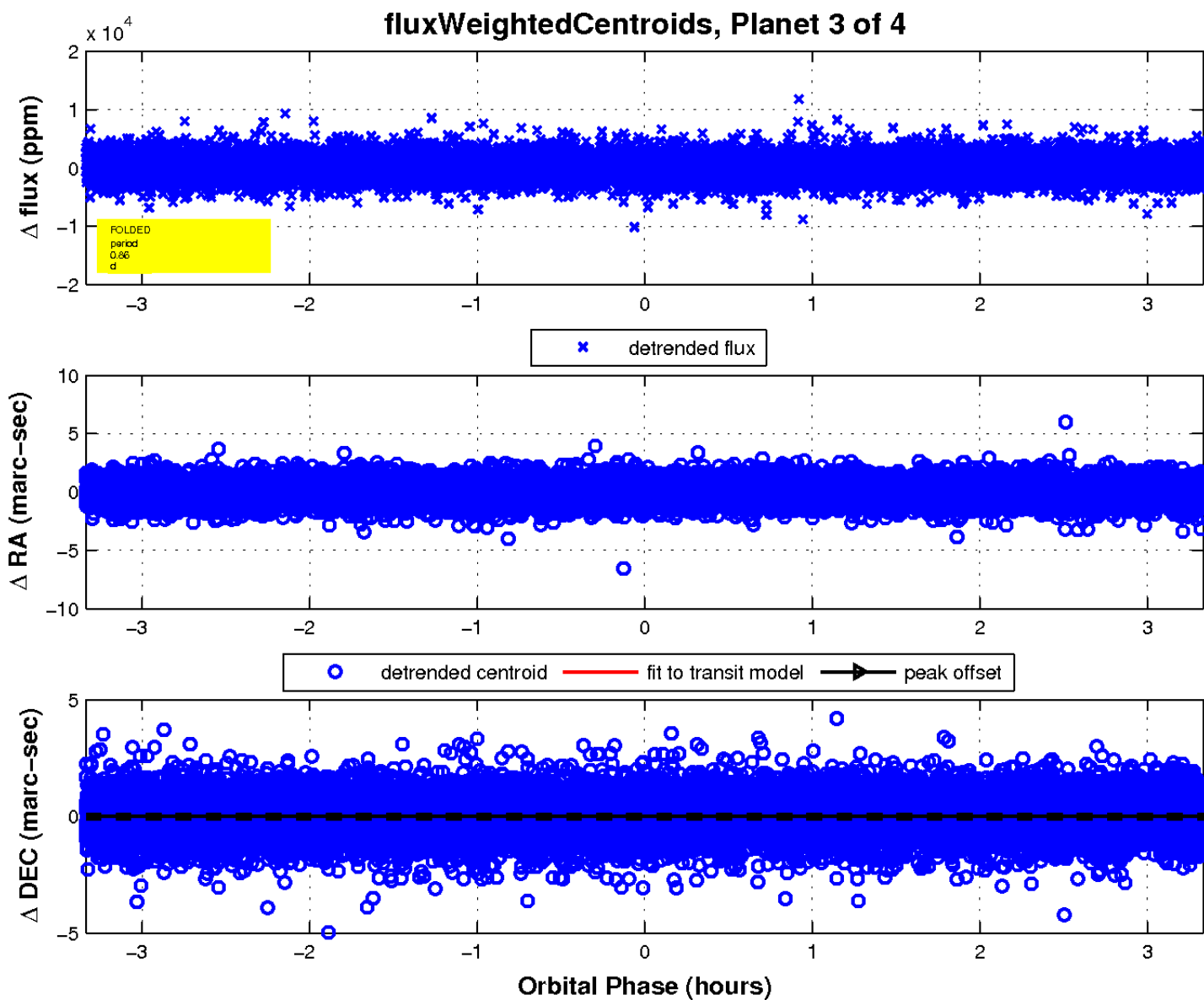
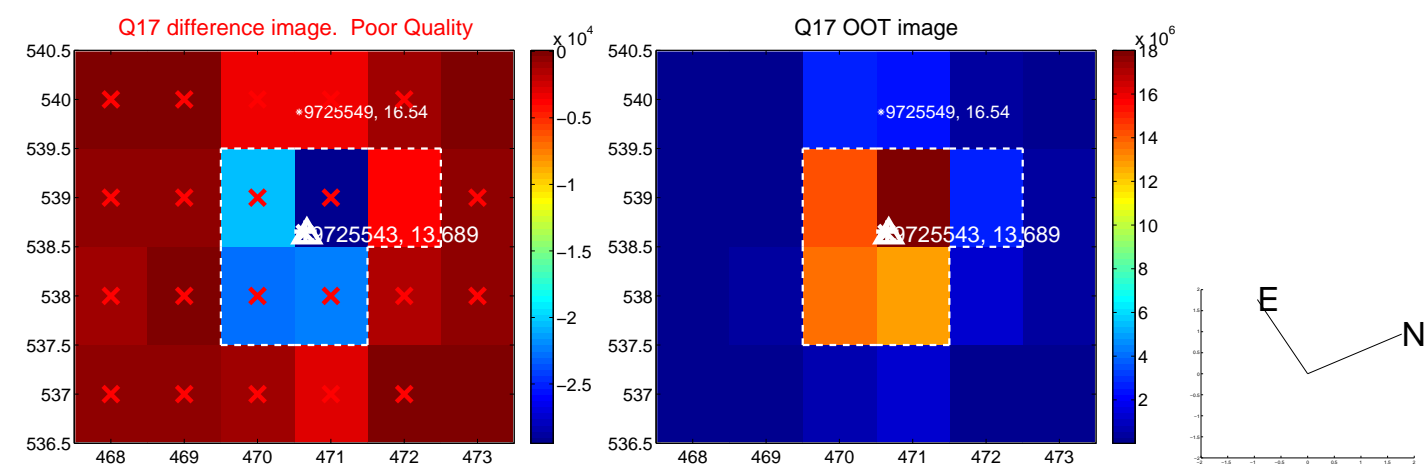
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



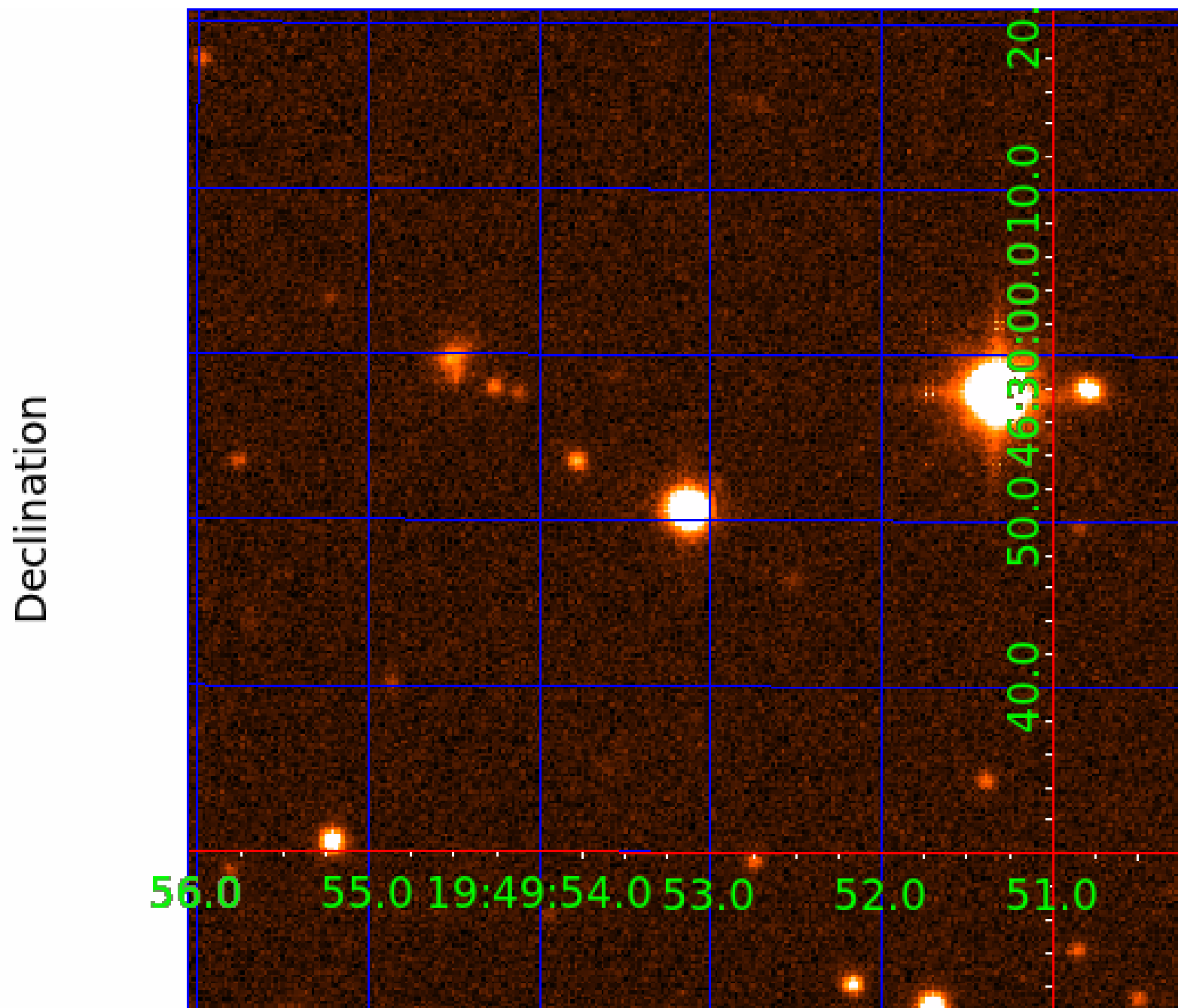
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009725543

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})
009725543-01	OBS	No	0.554672	131.773721	270.0	0.790	10.6	11.0	1.59	7078	3.08	24469.89
009725543-02	OBS	No	0.554667	132.052214	213.3	1.024	9.1	9.5	1.59	7078	2.51	24470.20
009725543-03	OBS	No	0.857741	132.108178	257.8	1.111	8.1	4.4	1.59	7078	2.99	13683.77
009725543-04	OBS	No	0.857685	131.979744	353.0	1.500	7.8	-1.0	1.59	7078	3.04	13684.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009725543-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009725543-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009725543-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009725543-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

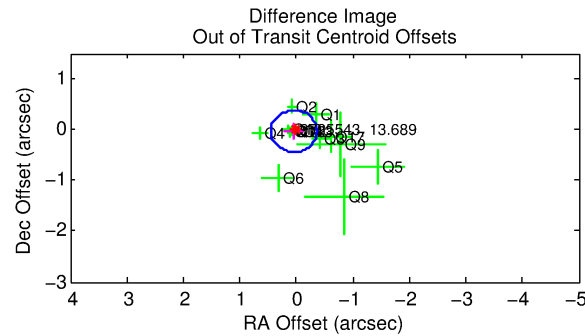
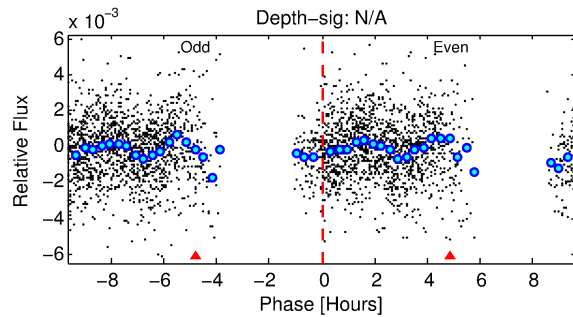
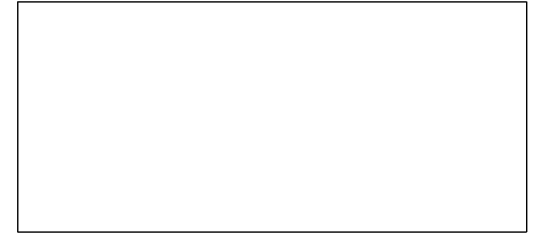
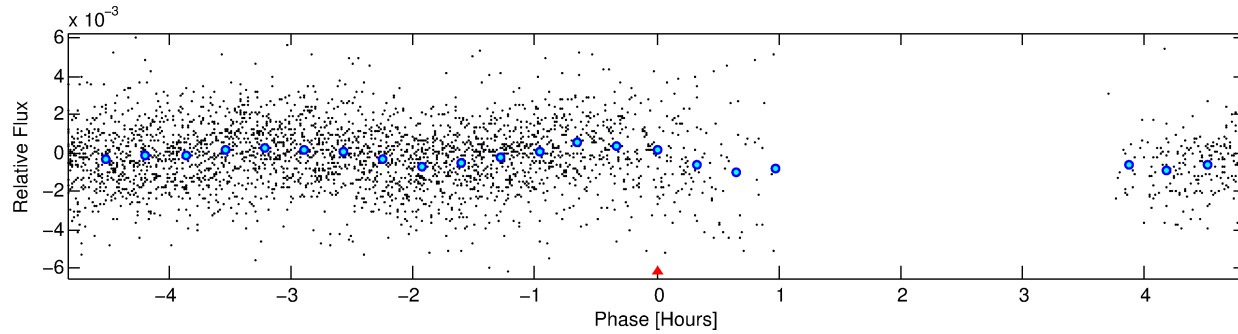
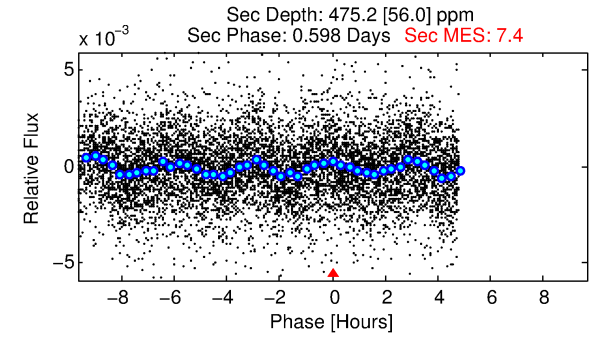
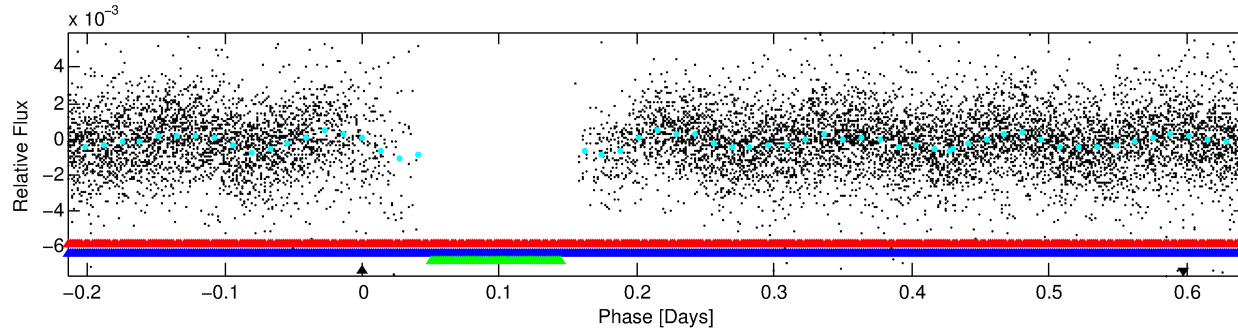
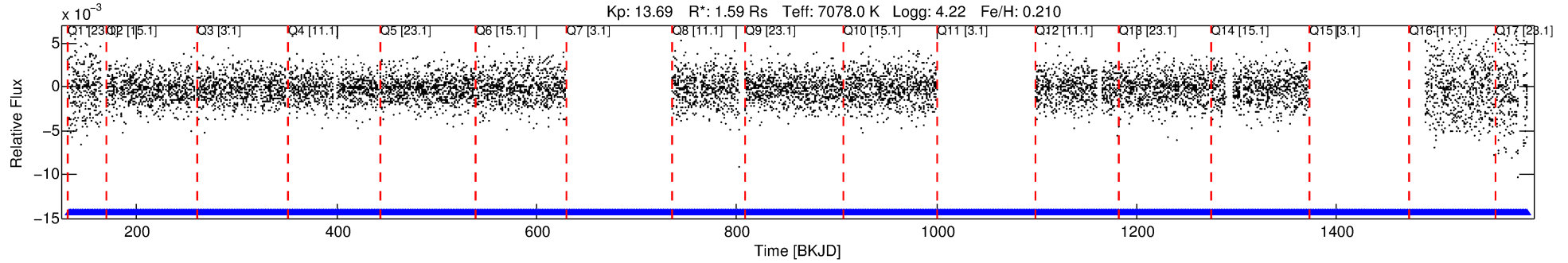
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009725543-04

No Significant Match Found

DV One-Page Summary

KIC: 9725543 Candidate: 4 of 4 Period: 0.858 d



TPS TCE Results:

Period = 0.85769 d
Epoch = 131.9797 BKJD

DV fit results are unavailable

DV Diagnostic Results:

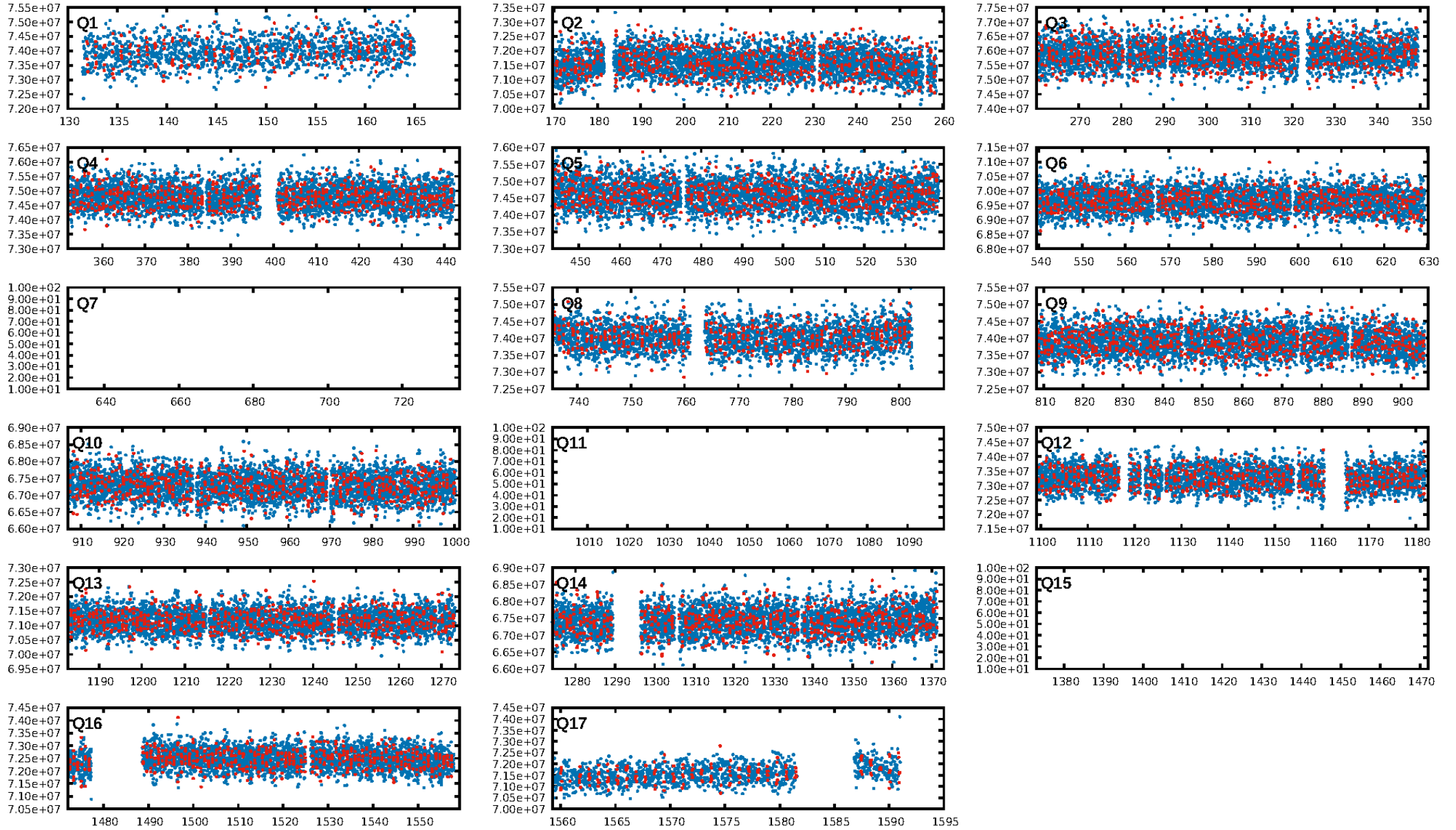
ShortPeriod-sig: 100.0% [4.29 σ]
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [297/297]
GhostDiagnostic-chr: -1.297

Centroid-sig: N/A
Centroid-so: 0.358 arcsec [2.29 σ]
OotOffset-rm: 0.051 arcsec [0.37 σ]
KicOffset-rm: 0.136 arcsec [0.76 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 0.00 [0/14]

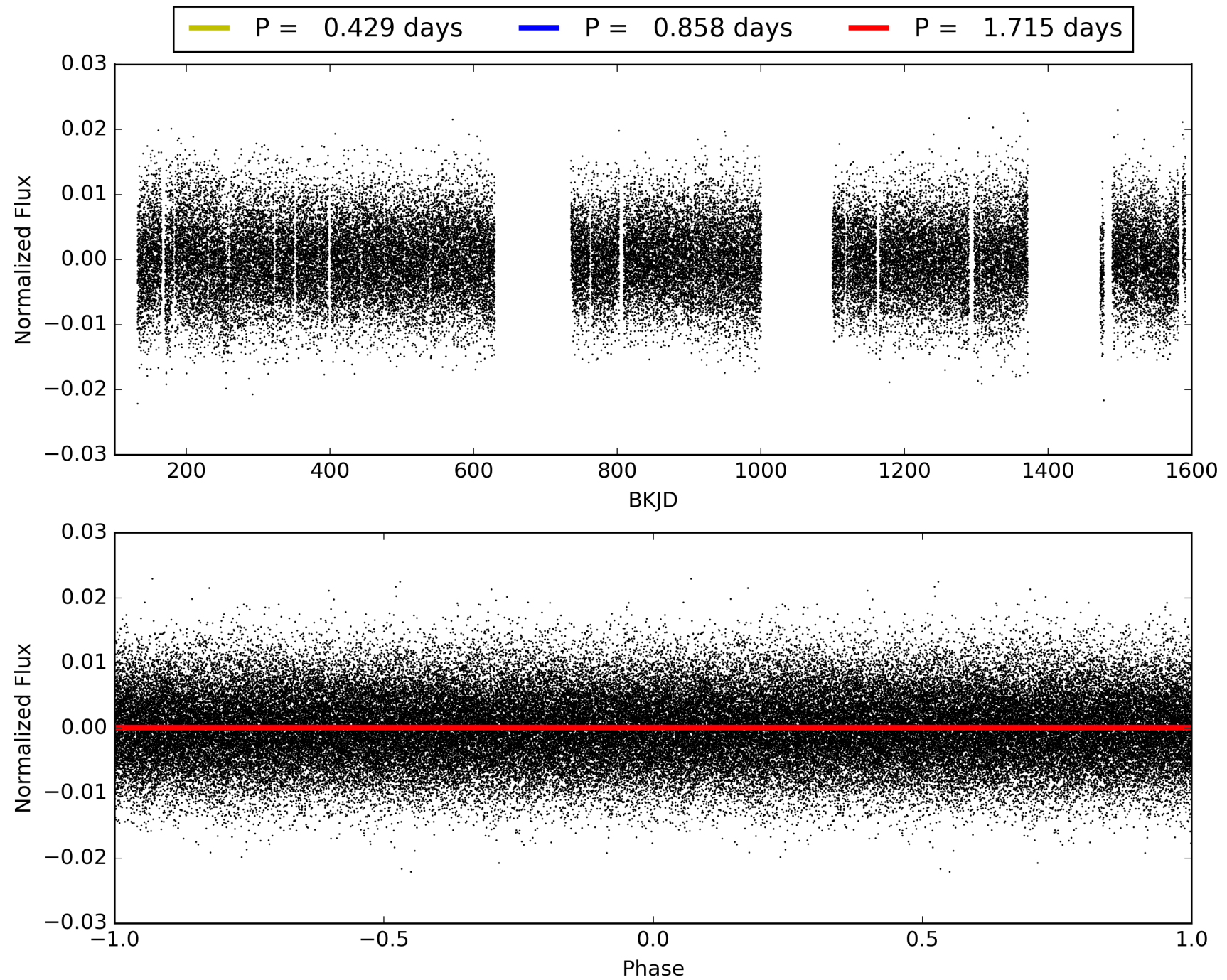
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:57:36 Z

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

TCE 009725543-04, PDC Light Curves

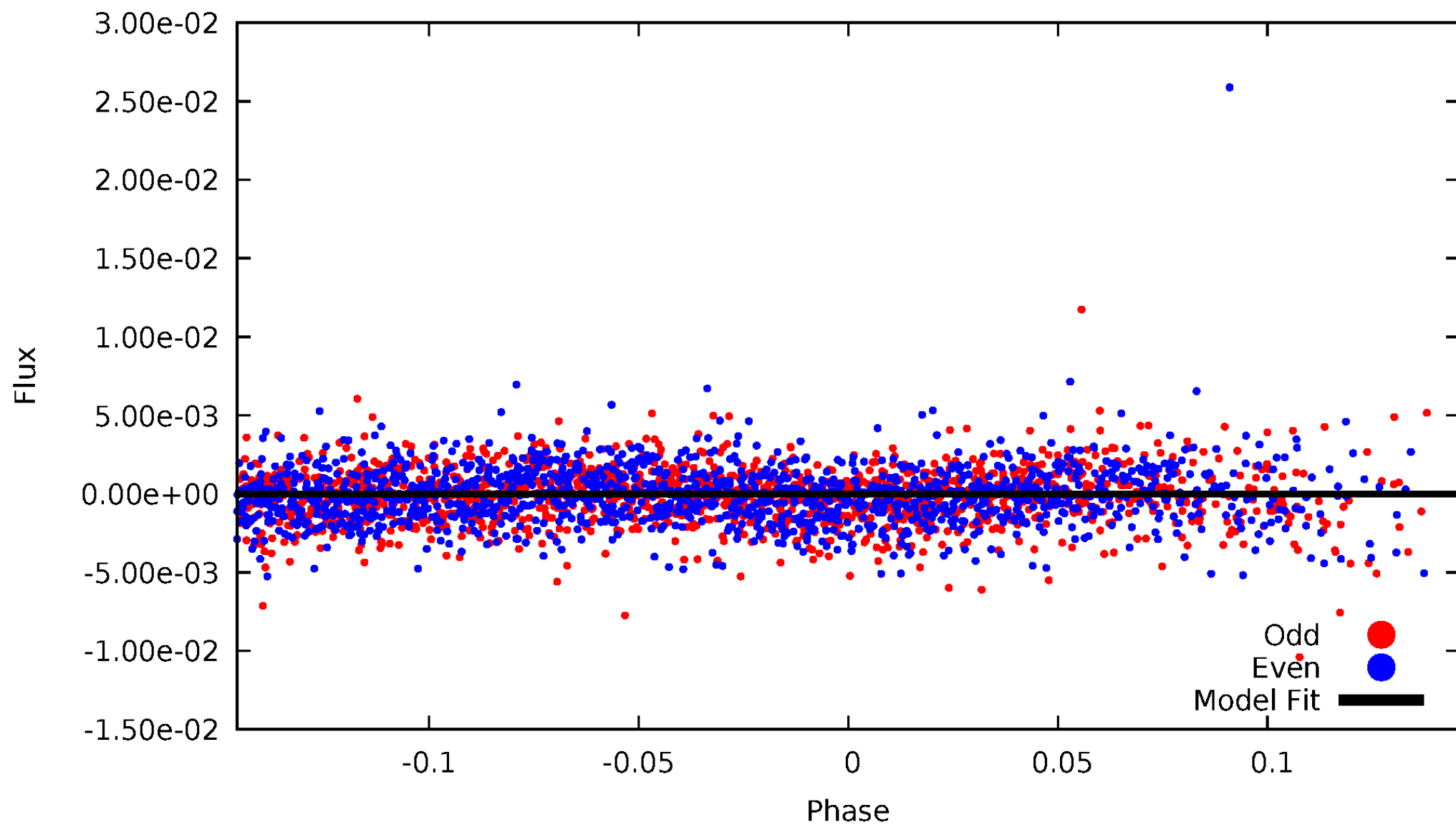


TCE 009725543-04



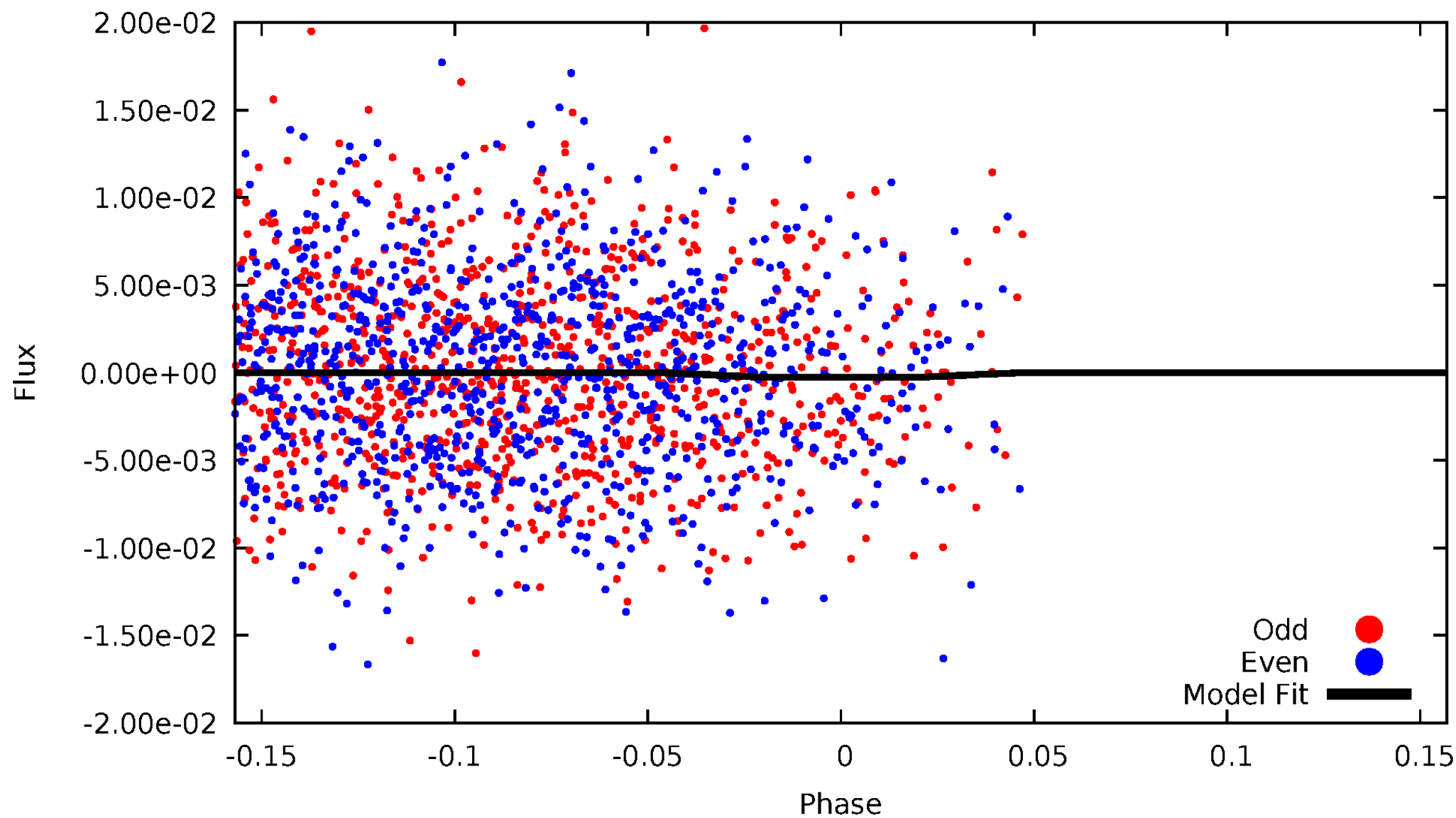
DV Odd/Even

TCE 009725543-04



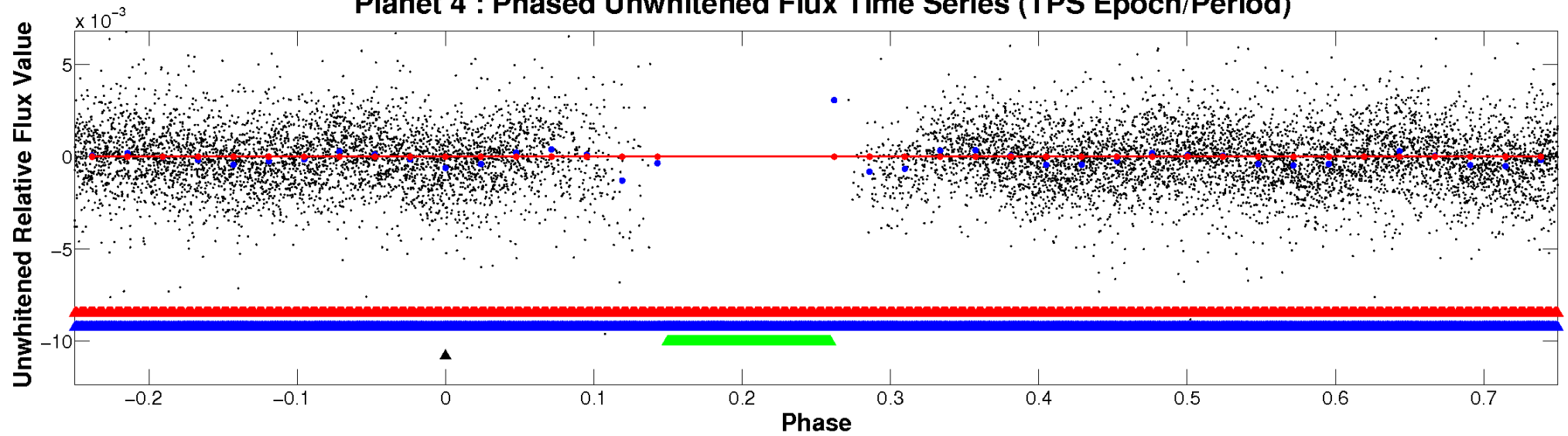
ALT Odd/Even

TCE 009725543-04

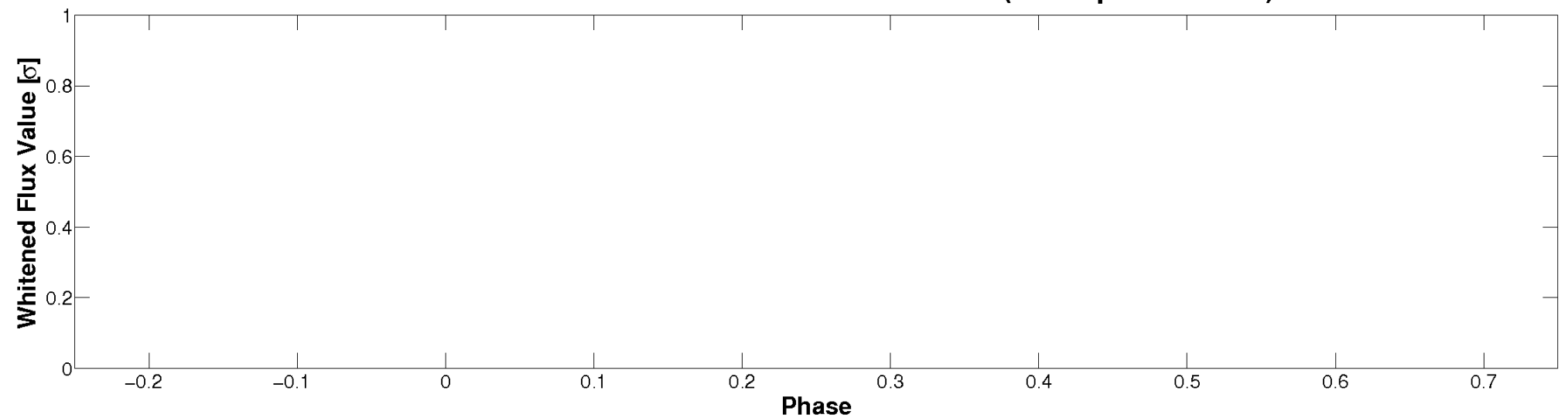


Non-Whitened Vs. Whitened Light Curve

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

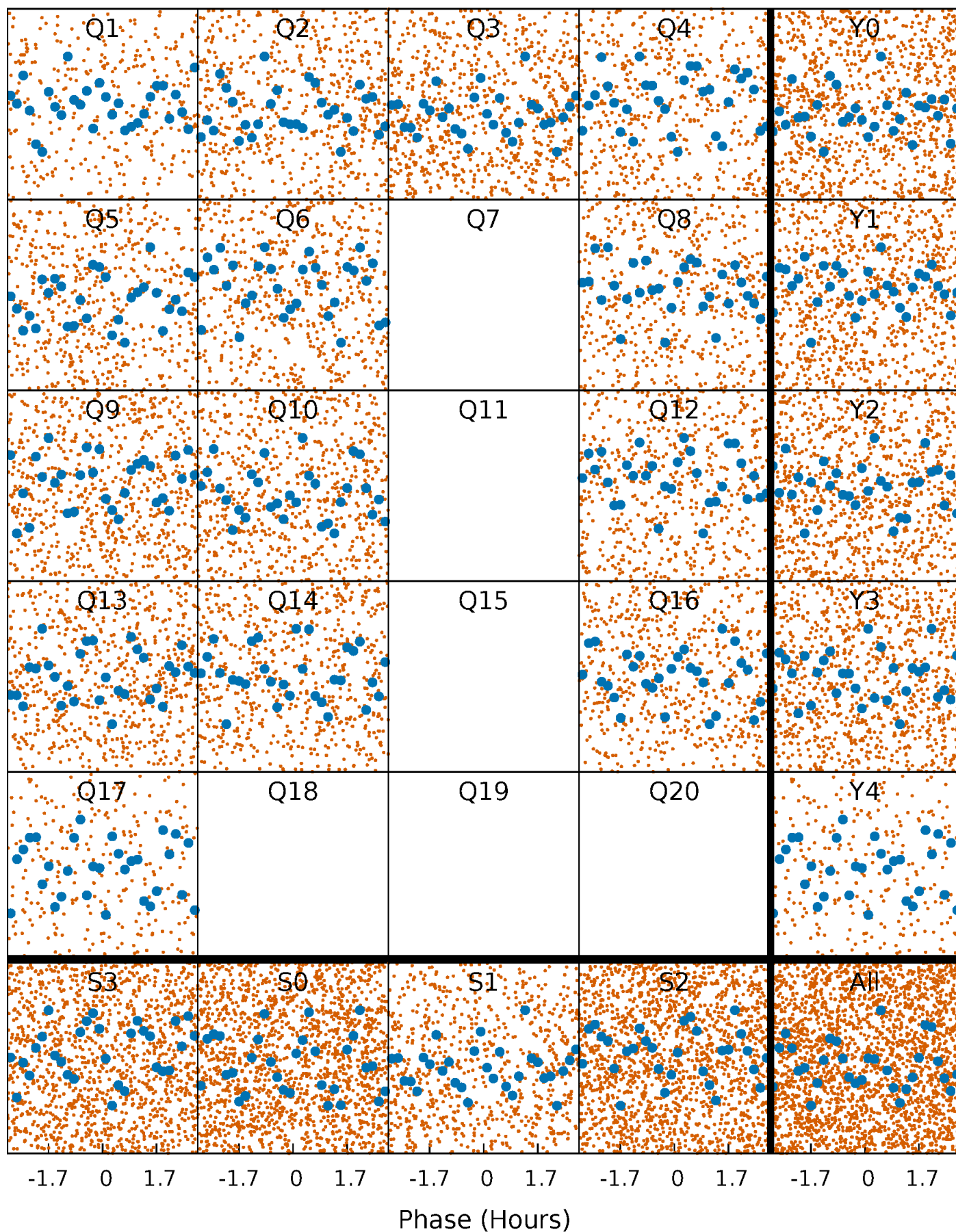


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



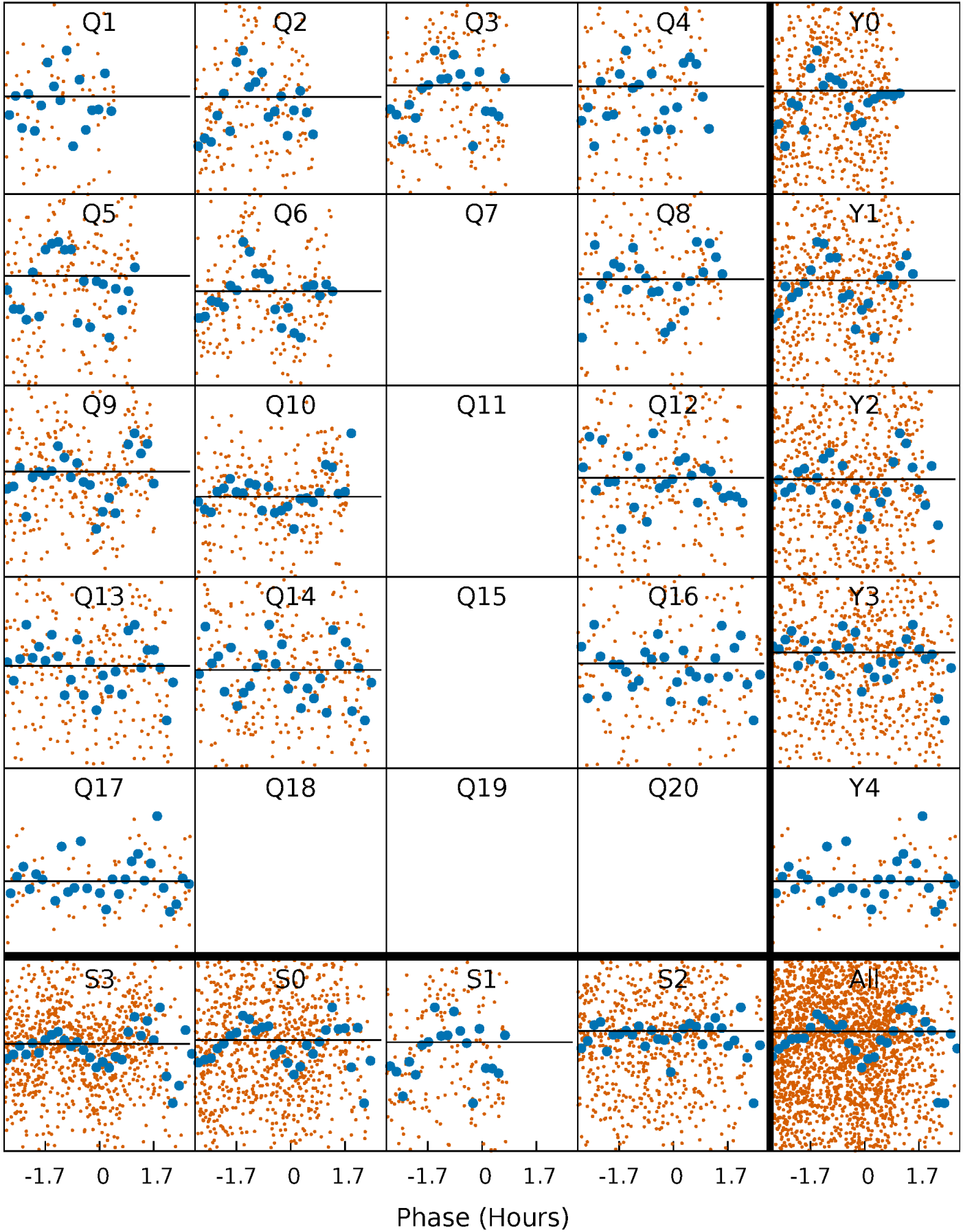
PDC Quarter-Phased Transit Curves

TCE 009725543-04 P= 0.857685 Days $T_0=131.979744$ (BKJD)



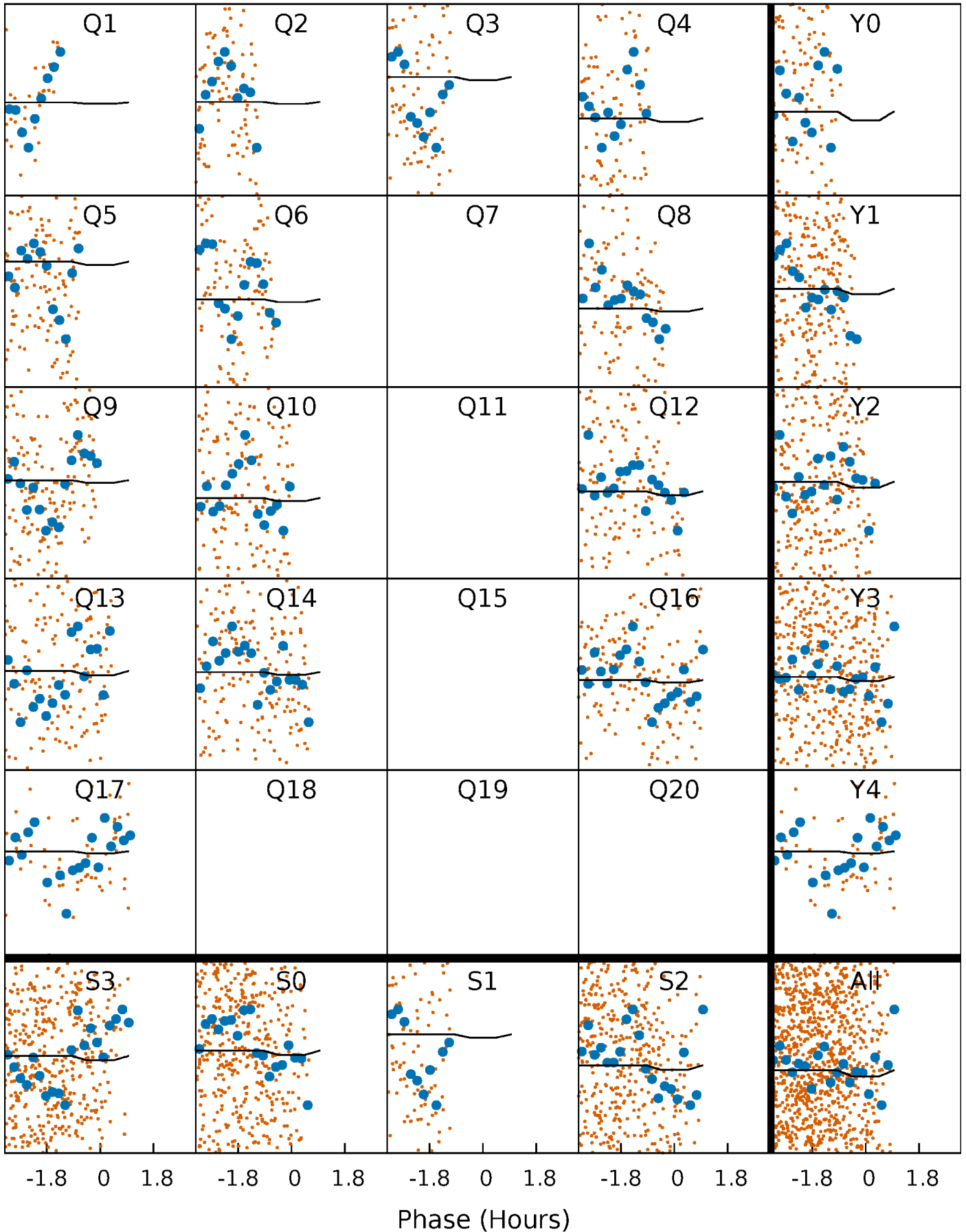
DV Quarter-Phased Transit Curves

TCE 009725543-04 $P = 0.857685$ Days $T_0 = 131.979744$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

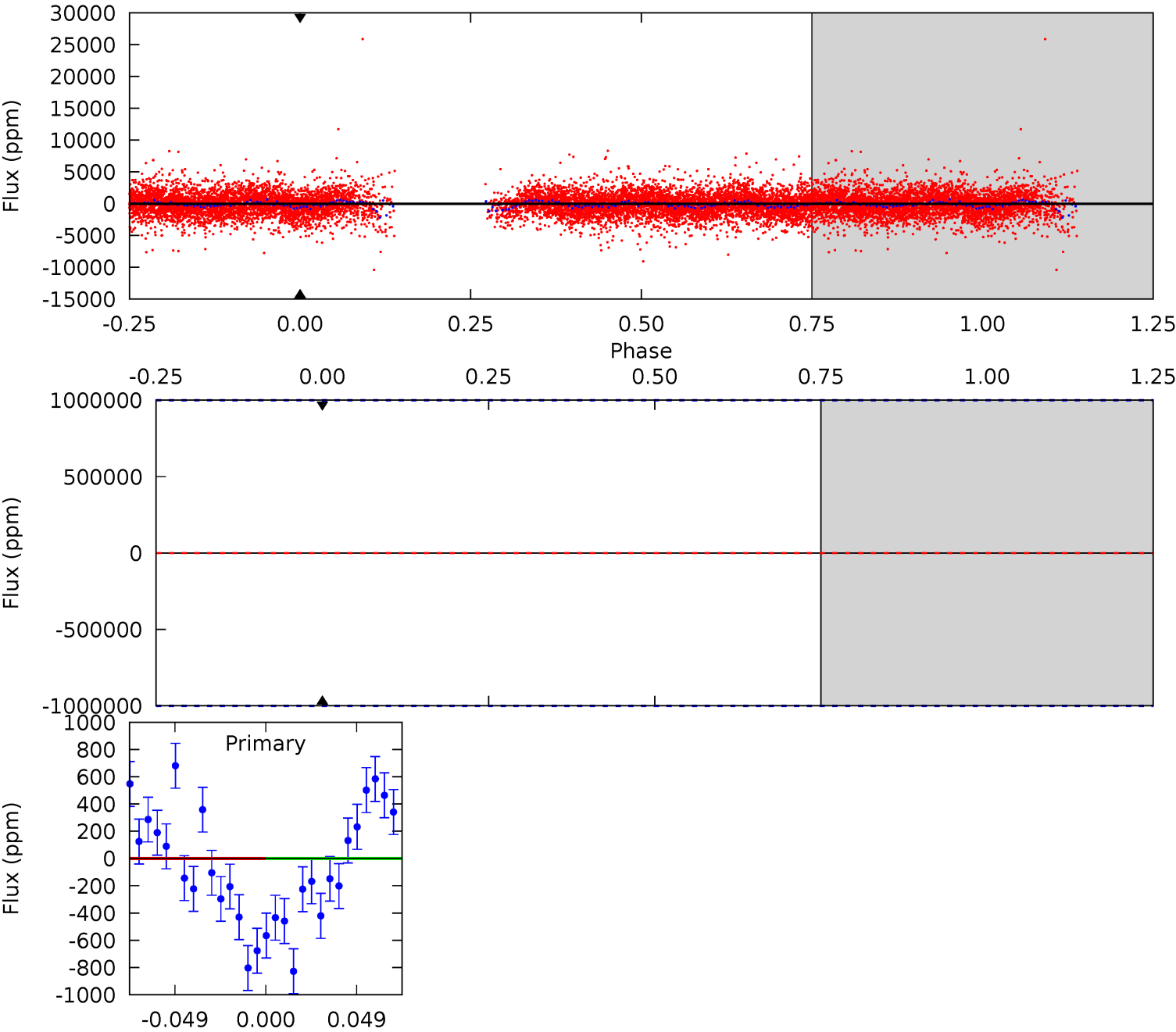
TCE 009725543-04 P= 0.857685 Days $T_0=132.057766$ (BKJD)



DV Model-Shift Uniqueness Test

009725543-04, P = 0.857685 Days, E = 131.122059 Days

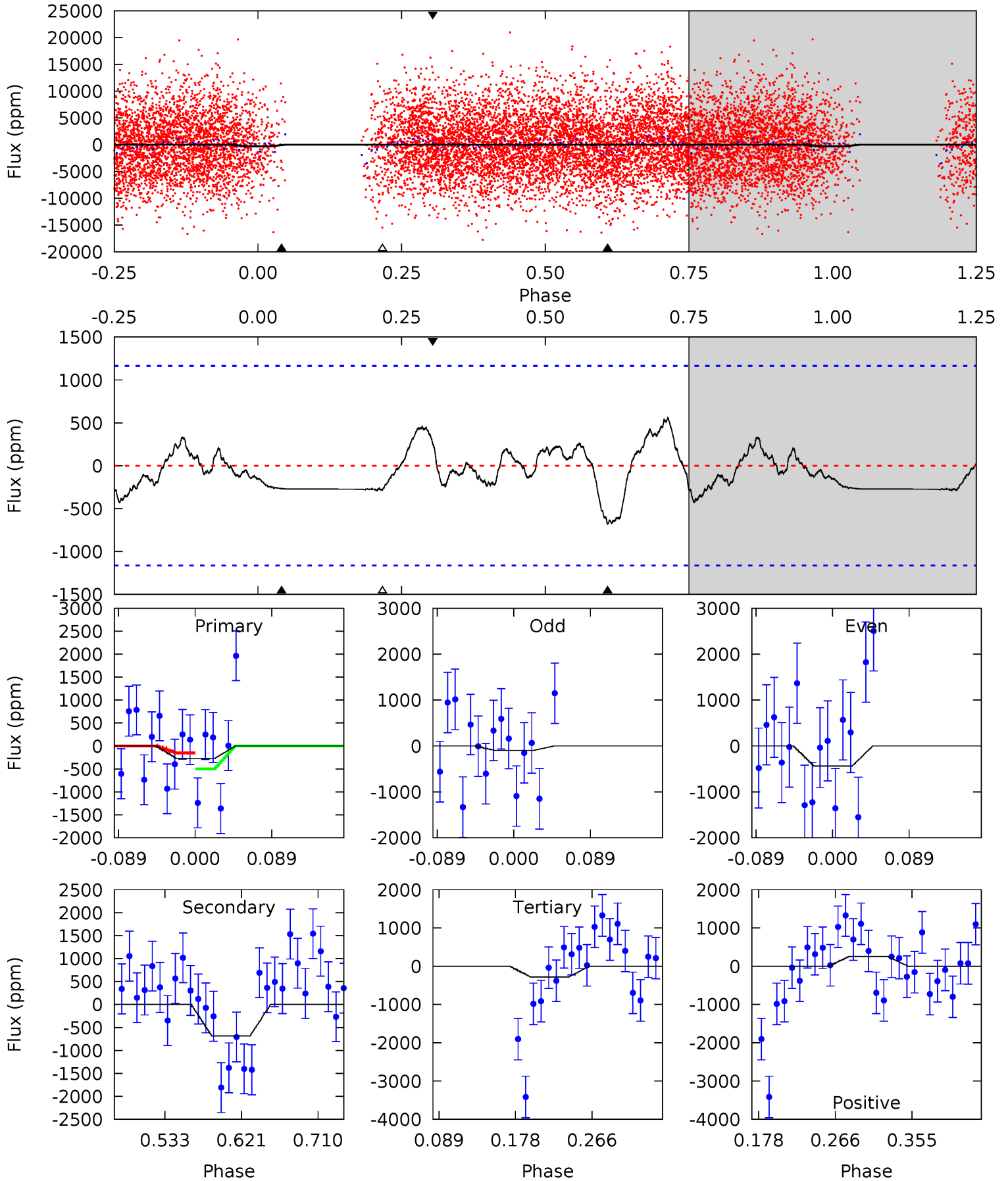
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009725543-04, P = 0.857685 Days, E = 131.200081 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.07	2.70	1.11	1.02	4.59	1.70	0.86	-0.03	0.06	1.59	1.68	0.67	-0.44	0.45	0.59



Stellar Parameters For KIC 009725543

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7078^{+195}_{-318}	$4.222^{+0.070}_{-0.210}$	$0.210^{+0.150}_{-0.400}$	$1.593^{+0.570}_{-0.228}$	$1.546^{+0.214}_{-0.214}$	$0.538^{+0.208}_{-0.285}$
	+3%/-4%	+2%/-5%	+71%/-190%	+36%/-14%	+14%/-14%	+39%/-53%
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 009725543-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$13.67^{+14.15}_{-9.60}$	3911^{+295}_{-221}	-4222^{+43667}_{-29885}	$-0.154^{+289.379}_{-237.220}$
Alt.	-684 ± 253	$13.15^{+14.59}_{-8.94}$	3938^{+294}_{-244}	4001^{+3548}_{-7167}	$0.834^{+7.723}_{-0.666}$

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

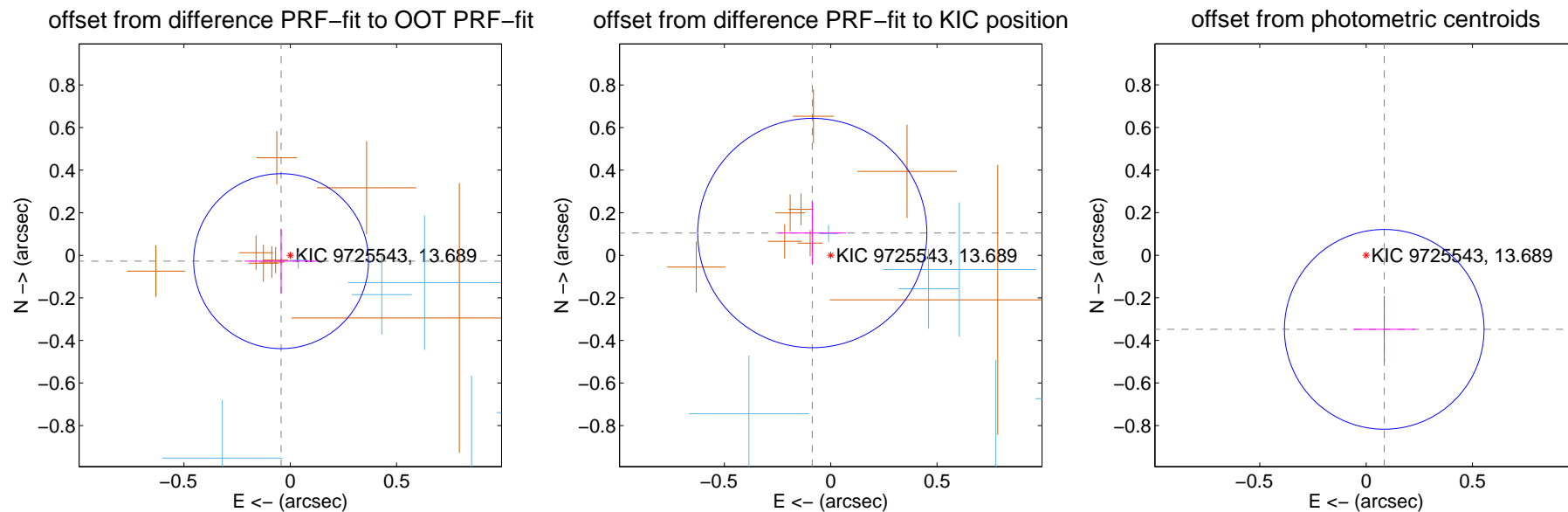
DV Centroid Data

Supplemental centroid analysis for 009725543-04. Kepler magnitude: 13.69. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

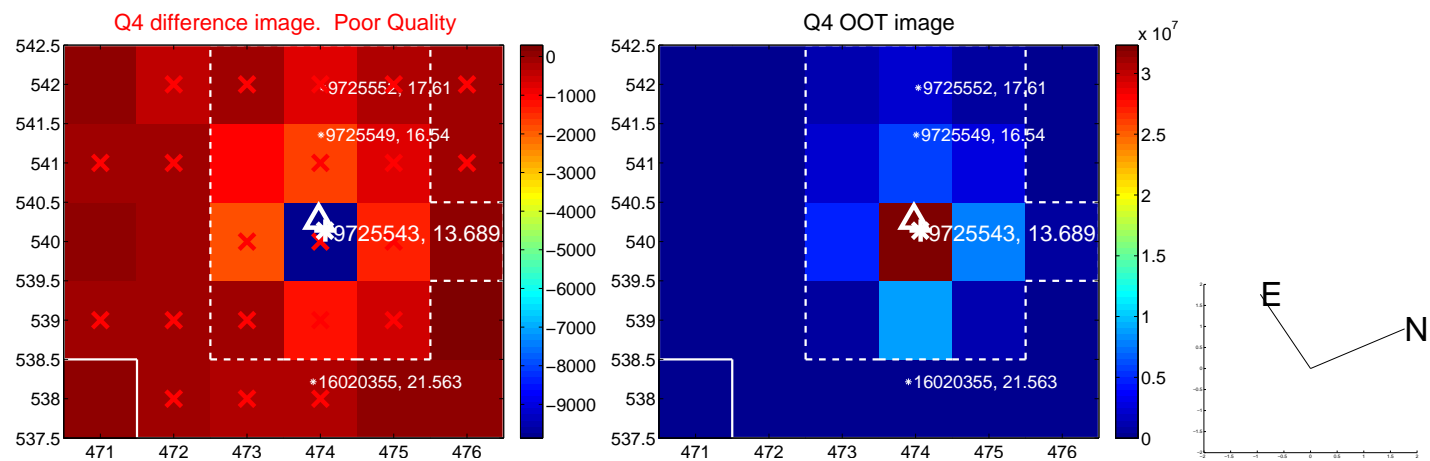
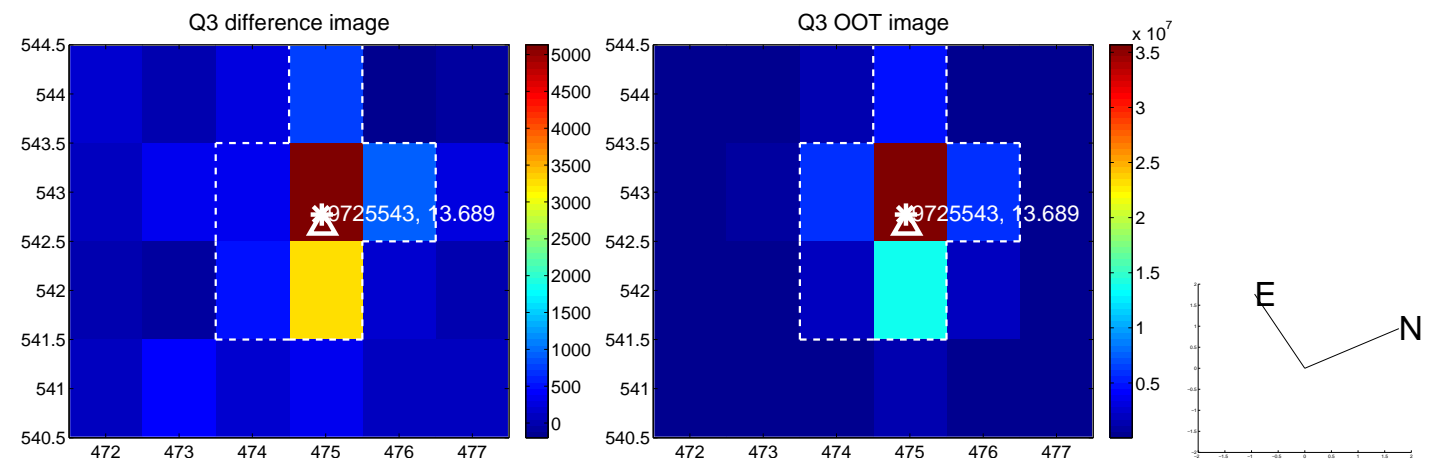
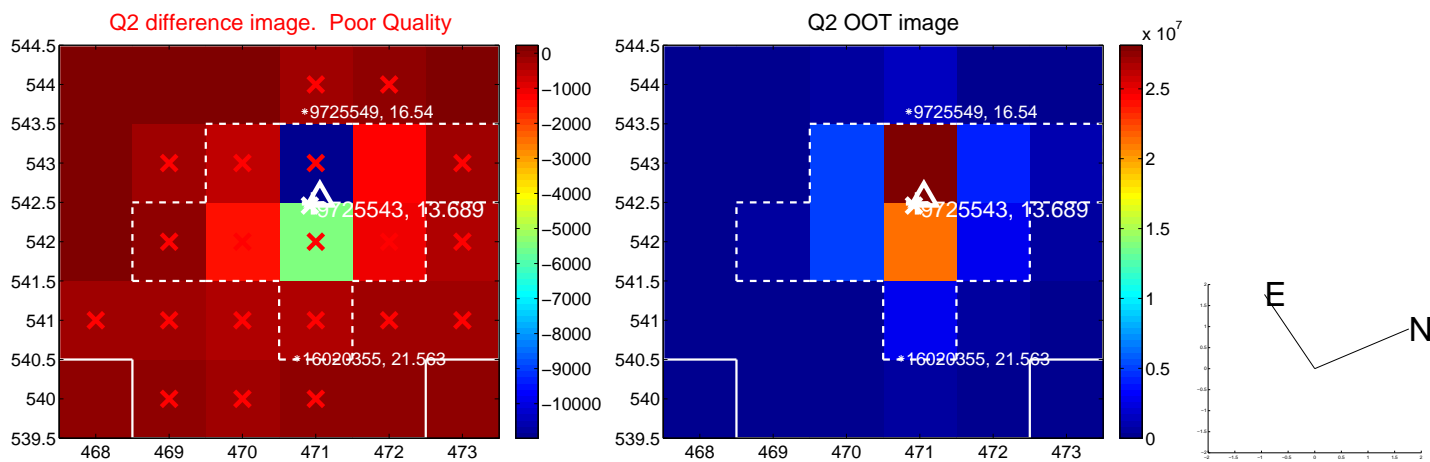
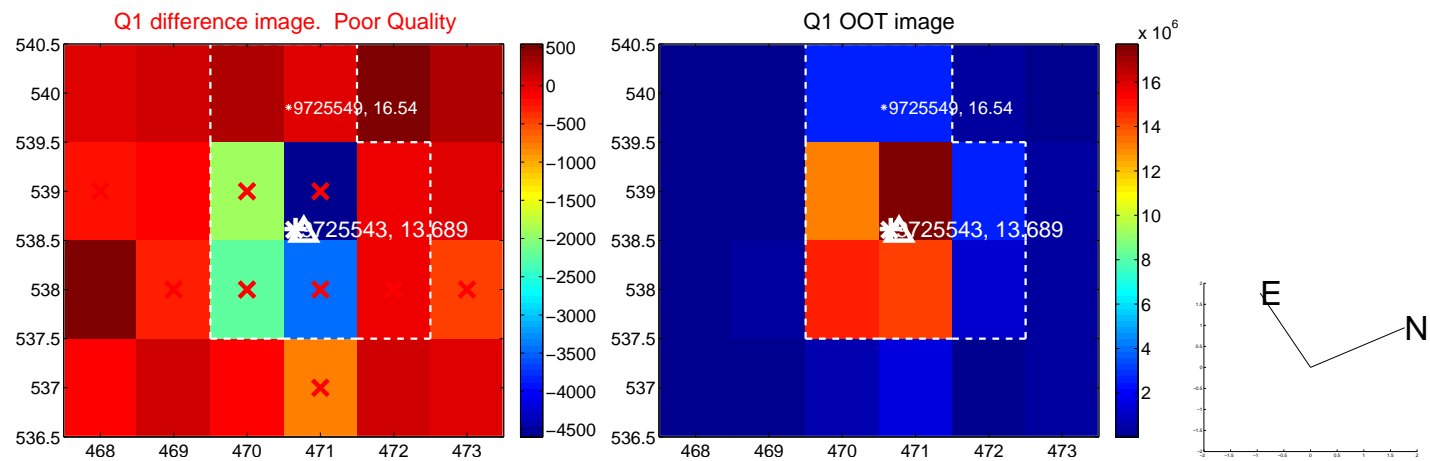
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.137	0.37	0.043 ± 0.172	-0.028 ± 0.151
PRF-fit source offset from KIC position	0.136 ± 0.180	0.76	0.087 ± 0.158	0.105 ± 0.146
photometric centroid source offset	0.36 ± 0.16	2.29	-0.09 ± 0.15	-0.35 ± 0.16

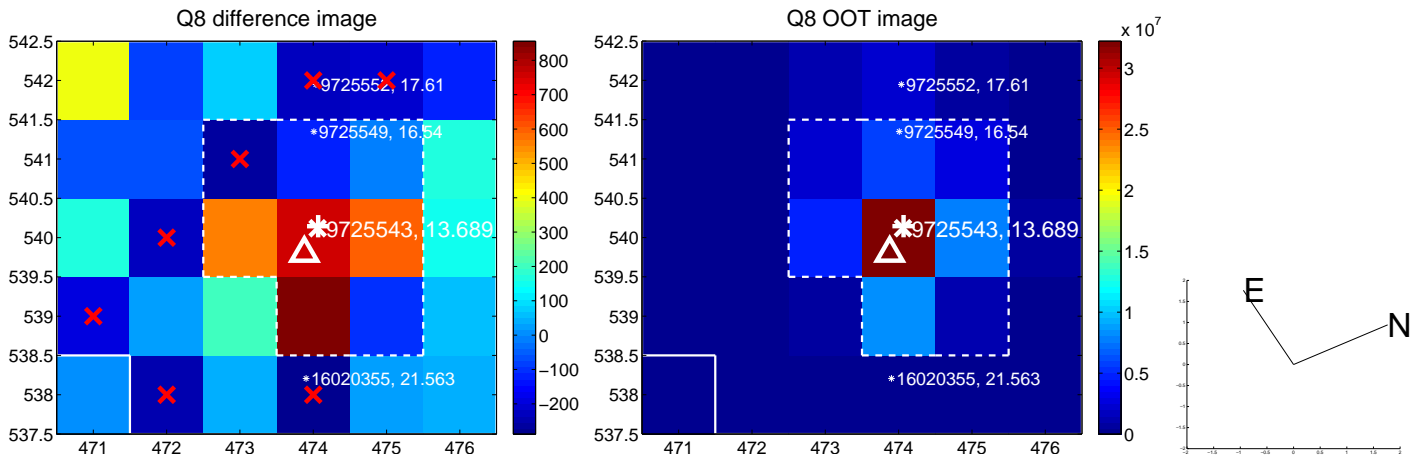
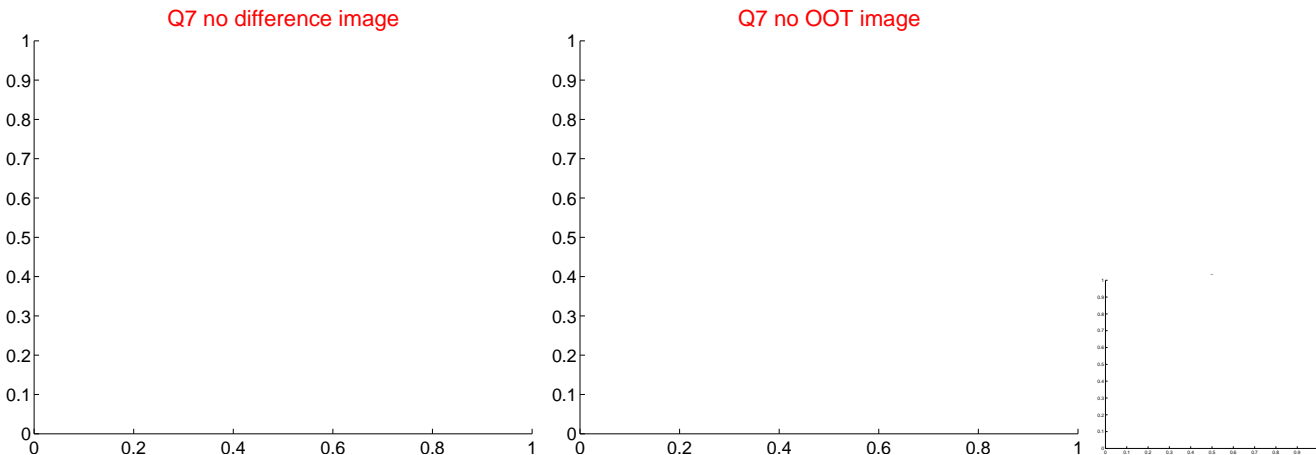
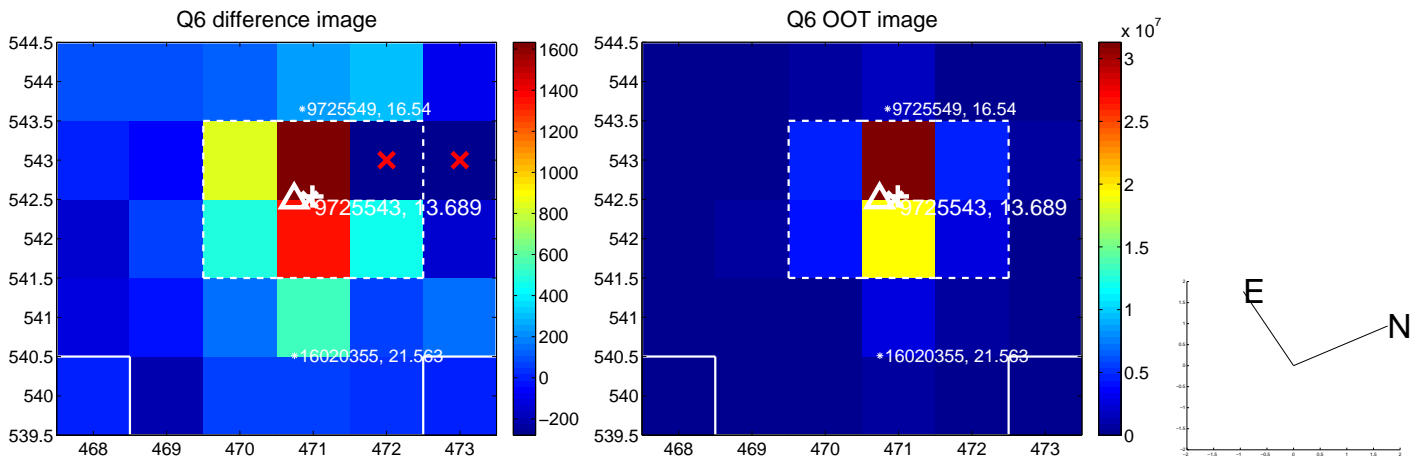
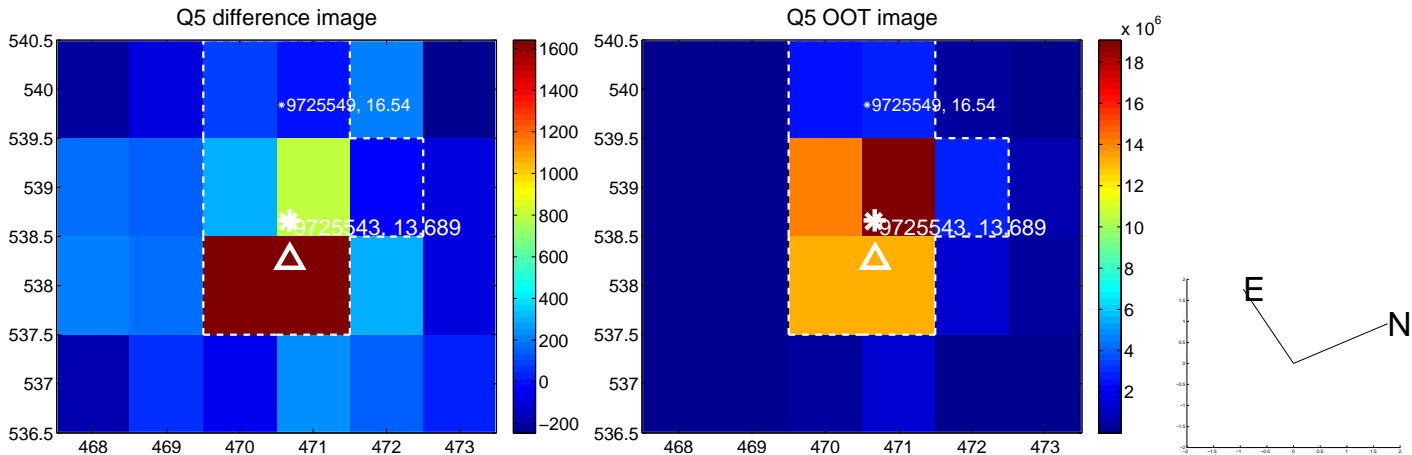


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

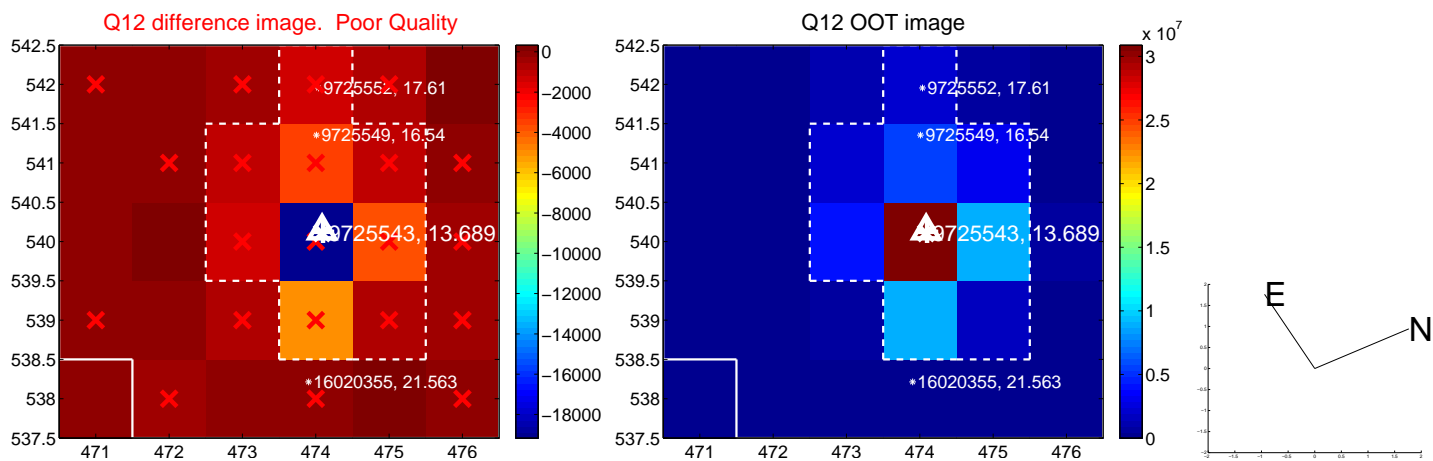
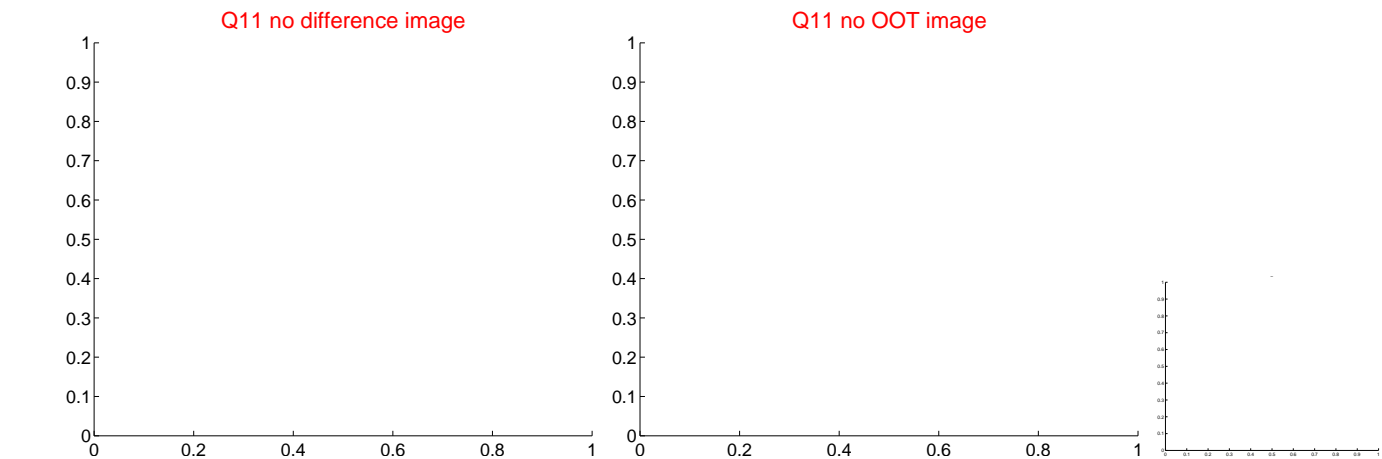
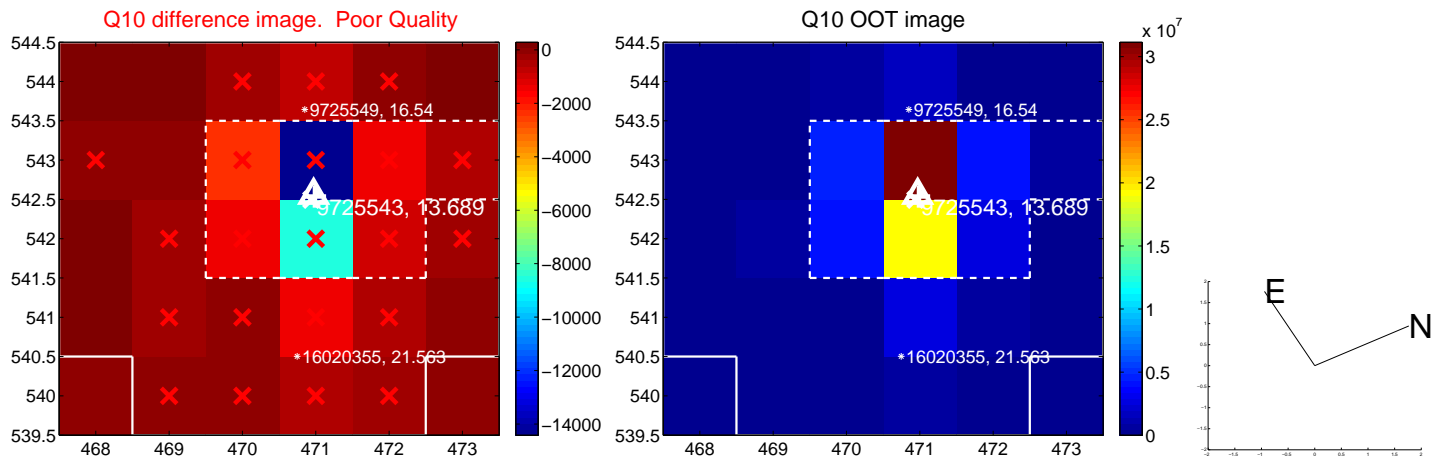
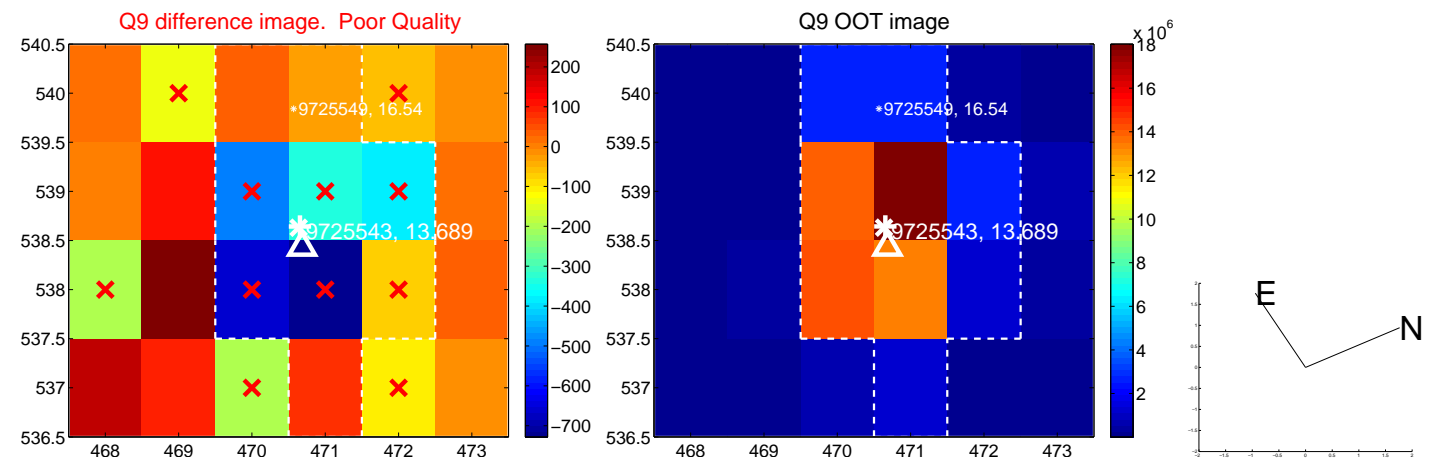
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



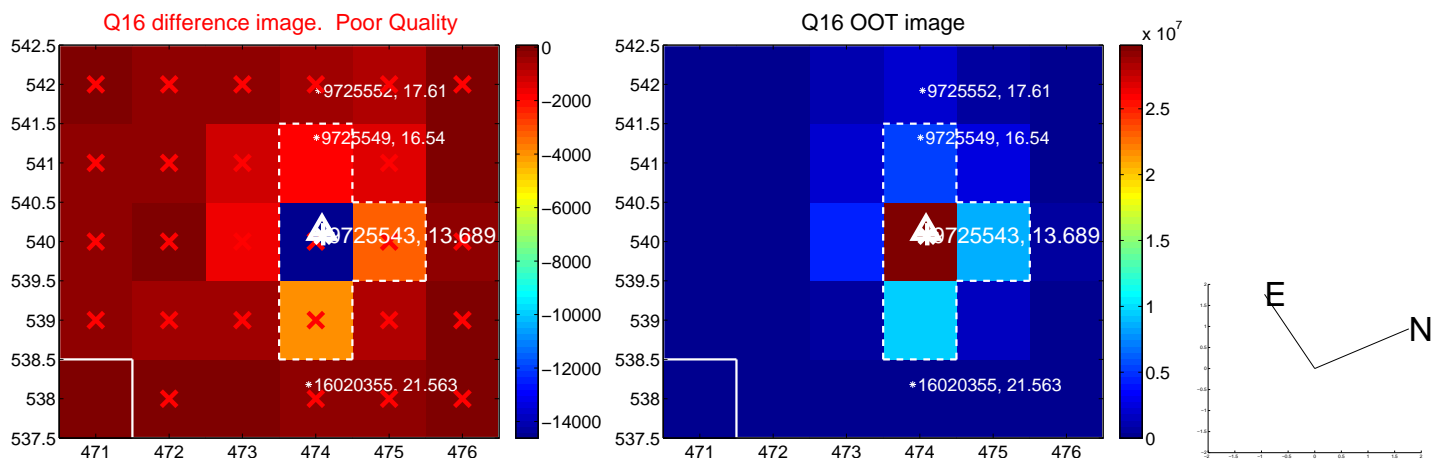
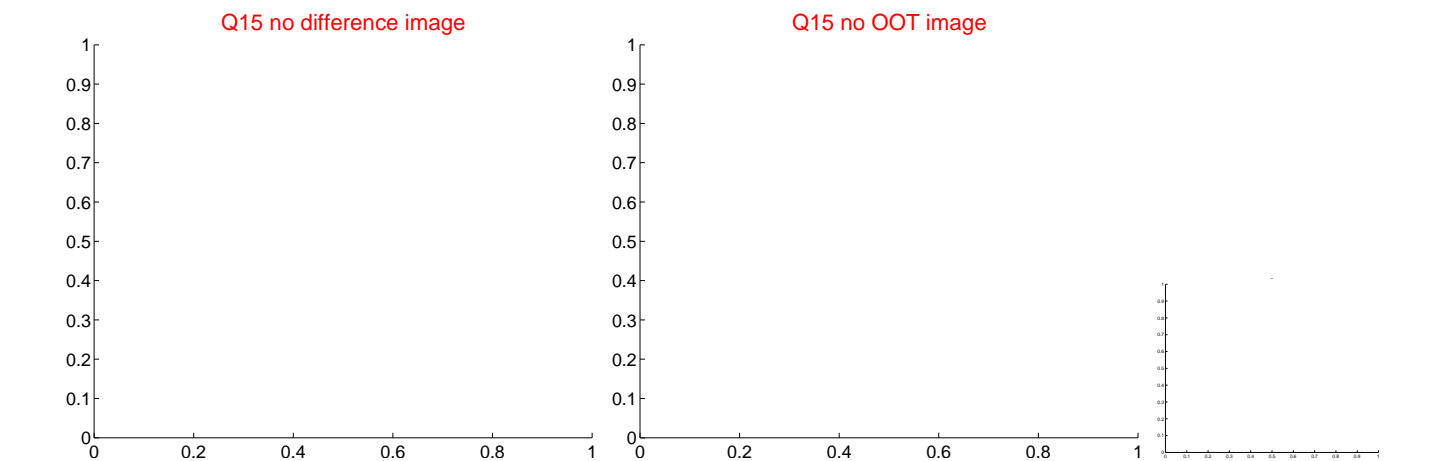
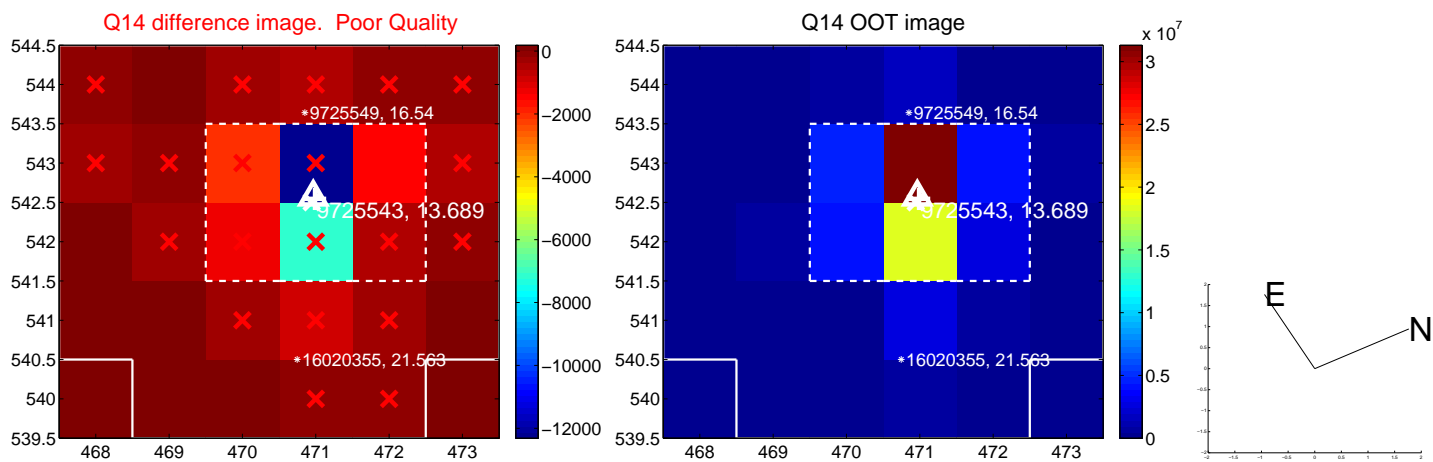
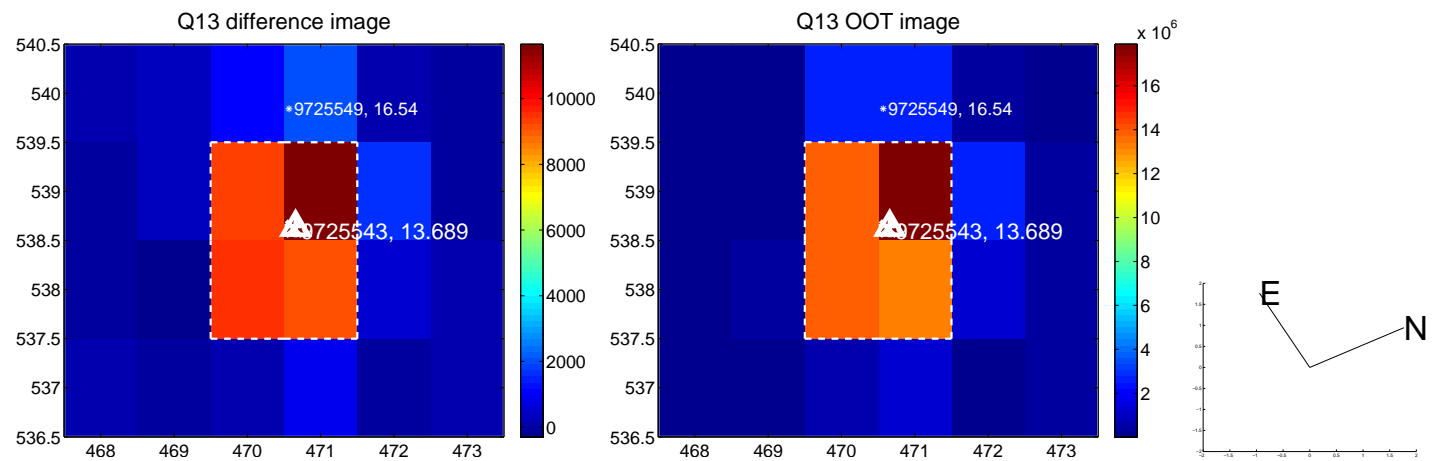
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



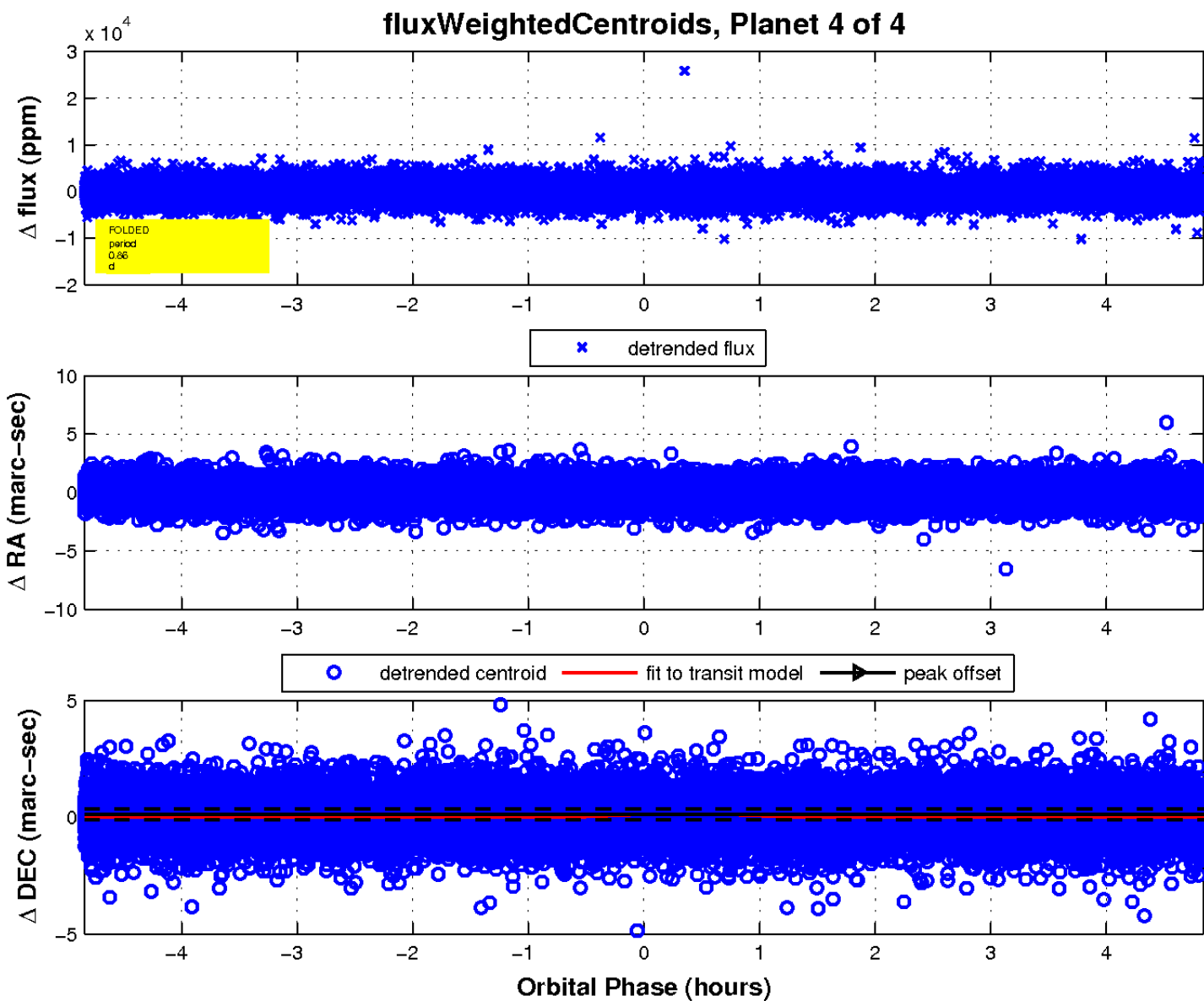
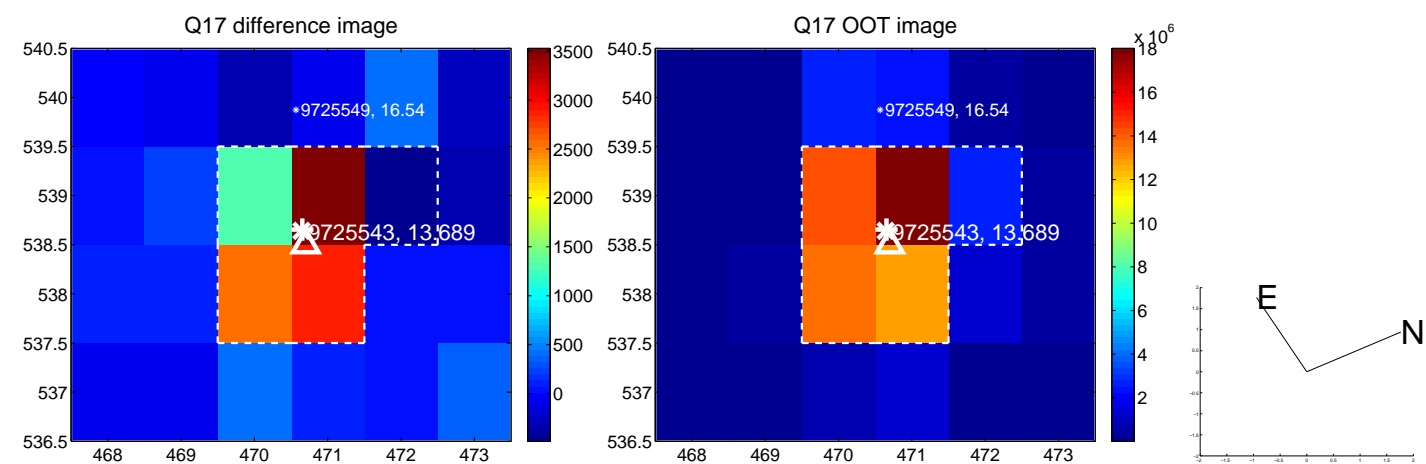
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

