IRI output arrays

Output file OUTF(1:20,1:1000):

```
*********       ALL ANGLES ARE IN DEGREE           **************
*********       ALL DENSITIES ARE IN M-3           **************
*********       ALL ALTITUDES ARE IN KM            **************
*********     ALL TEMPERATURES ARE IN KELVIN       **************
*********     ALL TIMES ARE IN DECIMAL HOURS       **************
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OUTF(1,*) electron density in m^{-3}
OUTF(2,*) neutral temperature in K
OUTF(3,*) ion temperature in K
OUTF(4,*) electron temperature in K
OUTF(5,*) O^+ ion density in % or in m^{-3} if JF(22)=false
OUTF(6,*) H^+ ion density in % or in m^{-3} if JF(22)=false
OUTF(7,*) He^+ ion density in % or in m^{-3} if JF(22)=false
OUTF(8,*) O_2^+ ion density in % or in m^{-3} if JF(22)=false
OUTF(9,*) NO^+ ion density in % or in m^{-3} if JF(22)=false
and, if JF(6)=false:
OUTF(10,*) Cluster ion density in % or in m^{-3} if JF(22)=false
OUTF(11,*) N^+ ion density in % or in m^{-3} if JF(22)=false
OUTF(12,*) free
OUTF(13,*) free
If JF(24)=true
OUTF(14,1:11) standard IRI electron density at 60, 65, 70, ... , 110 km
If JF(24)=false
OUTF(14,12:22) Friedrich (FIRI) model at these heights
OUTF(14,23:33) standard Danilov model (SW=0, WA=0)
OUTF(14,34:44) Danilov model for minor Stratospheric Warming (SW=0.5)
OUTF(14,45:55) Danilov model for major Stratospheric Warming (SW=1)
OUTF(14,56:66) Danilov model for weak Winter Anomaly (WA=0.5) conditions
OUTF(14,67:77) Danilov model for strong Winter Anomaly (WA=1) conditions
OUTF(15-20,*) free

Output file OARR(1:100):

Several parameters (marked #) are used for input (user input) as well as output (IRI computed).

#OARR(1)=NMF2S	F2-peak density in m^{-3}
#OARR(2)=HMF2	F2-peak height in km
#OARR(3)=NMF1	F1-peak density in m^{-3}
#OARR(4)=XHMF1	F1-peak height in km
#OARR(5)=NMES	E-peak density in m^{-3}
#OARR(6)=HME	E-peak height in km

OARR(7)=NMD	density in m^{-3} of D-region inflection point
OARR(8)=HMD	height in km of D-region inflection point
OARR(9)=HHALF	height in km used by Gulyaeva B0 model
#OARR(10)=B0	bottomside thickness parameter in km
OARR(11)=VNER	density in m^{-3} at E-valley bottom
OARR(12)=HEF	height in km of E-valley top (Ne(HEF)=NmE)
OARR(13)=ATE(2)	electron temperature Te in K at AHH(2)
OARR(14)=AHH(2)	intermediate height between 120km and 300/350km
#OARR(15)=ATE(3)	Te at 300km/350km for BIL-1995/TBT2012+SA model
#OARR(16)=ATE(4)	Te at 400km/550km for BIL-1995/TBT2012+SA model
OARR(17)=ATE(5)	Te at 600km/850km for BIL-1995/TBT2012+SA model
OARR(18)=ATE(6)	Te at 1400km/1400km for BIL-1995/TBT2012+SA model
OARR(19)=ATE(7)	Te at 3000km/2000km for BIL-1995/TBT2012+SA model
OARR(20)=ATE(1)	Te at 120km = neutral temperature from CIRA
OARR(21)=TI1	ion temperature in K at 430km
OARR(22)=XTETI	altitude in km where Te=Ti
OARR(23)=XHI3	solar zenith angle at 200 km in degree
OARR(24)=SUNDEC	sun declination angle in degree
OARR(25)=DIP	IGRF magnetic inclination (dip) in degree
OARR(26)=MAGBR	IGRF dip latitude in degree
OARR(27)=MODIP	modified dip latitude in degree
OARR(28)=LATI	geographic latitude in degree
OARR(29)=SAX200	time of sunrise at 200 km in decimal hours
OARR(30)=SUX200	time of sunset at 200 km in decimal hours
OARR(31)=SEASON	=1 spring, =2 summer, =3 fall =4 winter assumes equal length seasons (92 days) with spring starting at day-of-year=45
OARR(32)=LONGI	geographic longitude in degree
#OARR(33)=rssn	12-month running mean of sunspot number
OARR(34)=COV	12-month running mean of F10.7
#OARR(35)=B1	Bottomside shape parameter
OARR(36)=xm3000	Propagation factor M(3000)F2
OARR(37)=TEC	Total Electron Content in m^{-2} (placeholder for for IRIWeb)
OARR(38)=TEC-top%	TEC-top/TEC * 100 (placeholder for for IRIWeb)
#OARR(39)=gind	12-month running mean of IG index
OARR(40)=f1pb	probability for an F1 layer
OARR(41)=f107d	daily solar radio flux at 10.7cm (F10.7)
OARR(42)=c1	shape parameter for F1 layer
OARR(43)=daynr	day of year
OARR(44)=drift	vertical ion drift at equator in m/s
OARR(45)=stormcorr	ratio foF2_storm/foF2_quiet
#OARR(46)=f10781	81-day average of F10.7
OARR(47)=estormcor	ratio foE_storm/foE_quiet
OARR(48)=spreadf	probability of spread-F occurrence
OARR(49)=MLAT	IGRF magnetic latitude in degree
OARR(50)=MLONG	IGRF magnetic longitude in degree

OARR(51)=index_3h_ap	ap index for current UT
OARR(52)=IAP_daily	daily ap index
OARR(53)=invdip	invariant dip latitude in degrees
OARR(54)=XMLT	Magnetic Local Time (MLT) in decimal hours
OARR(55)=cgm_lat	Corrected Geomagnetic (CGM) latitude[&]
OARR(56)=cgm_lon	Corrected Geomagnetic (CGM) longitude[&]
OARR(57)=cgm_mlt	Magnetic Local Time (MLT) for CGM coordinates[&]
OARR(58)=cgmlat	CGM latitude[&] of equatorward boundary
OARR(59)=cl(MLT=0)	CGM latitude[&] at MLT=0
OARR(60)=cl(MLT=1)	CGM latitude[&] at MLT=1
…… …..	….
OARR(81)=cl(MLT=22)	CGM latitude[&] at MLT=0
OARR(82)=clt(MLT=23)	CGM latitude[&] at MLT=23
OARR(83)=xkp	Kp at the time specified by the user
OARR(84)=dec	magnetic declination in degrees
OARR(85)=fl	L-value
OARR(86)=dimo	Earth's dipole moment
OARR(87)=SAX300	sunrise at 300km in decimal hours
OARR(88)=SUX300	sunset at 300km in decimal hours
[#]OARR(89)=HNEA	lower boundary in km of IRI profile
[#]OARR(90)=HNEE	upper boundary in km of IRI profile

[#]Parameter is used for input (user input) as well as output (IRI computed).

[&]Please check subroutine GEOCGM01 in file IGRF.FOR for more information on the Corrected Geomagnetic (CGM) coordinates. CGM coordinates are only calculated if you select JF(33)=.true. (auroral boundaries are calculated).