

MULTI SATELLITE SPECTRAL BANDS CONVERSION TABLE - Follow Wave-Lenghts										RGBN					MULTISPECTRAL										By: @sergioajv1 (Twitter)													
SATELLITES >		SENTINEL-2-MSI				LANDSAT-8-OLI				CBERS - INPE					SKYMAP50-SV1			JL1GP - CGSat			Sentinel-3-OLCI			Sentinel-3-SLSTR			COIMMENTS: Purposes (S2/L8/S3):											
		Swath:100km; Revisit:5d				Swath:185km;Revisit:16d.				Orbit H: 628,6 km					Swath:12km; Revisit:2d.						Swath:1270km;Revisit:4d			Swath:1400km;Revisit:2d														
WaveLenght	Approximate	#order	Sentinel-2A (~2B)			Res:15-60m			4A		Wave		3 e 4	Resolution: 0.5m / 2m						(2016-01-16+)																		
(nm)	TYPE	BAND #order:	Min.	Max.	RES: m	BAND #order:	Min.	Max.	RES: m	WPM 2 - 8m	MUX 17m	WFI 55m	Min.	Max.	IDEM 5-80m	BAND	Min	Max	RES: m	BAND	Wave L. nm	RES: m	BAND	Min.	Max.	BAND	Central W. L.	MULTIPLIER										
400	Aerosol									31d	31d	5d			26-5d					B1	403-423	5	B01	392,5	407,5				/Coastal aerosol, correction									
420	Aerosol									92Km	95Km	684K			60-866km			=CBERS		B2	433-453	5	B02	407,5	417,5				/Yellow subs. ,detrital pig. (turbidity)									
440	Aerosol	#12-B01	432,2	453,2	60	#3-B01	433	453	30	B0-PAN			450	900		B0-PAN	450	890	0,5	B0	450-800	5	B03	437,5	447,5				Aerosol//Chlorophyll abs., vegetation									
460	*BLUE*	#1-B02	459,4	525,4	10	#2-B02	450	519	30	B1-B	B05	B13	450	520		B1	450	520	2	B3	450-515	5	B04	485	495	reflect			SoilxVeg.,water/Bathym./Chlorophyll MAX.									
530						#1-B08-PAN	500	680	15							B7	485-495	10		B05	505	519			500m				/Chlorophyll, sedim., turbid., red tide									
560	*GREEN*	#3-B03	541,8	577,8	10	#6-B03	525	600	30	B2-G	B06	B14	520	590		B2	520	590	2	B4	525-600	5	B06	555	565	S1	554,27	1	Turbidity,oil//Chlorophyll MIN.									
590																				B8	615-625	10							L-8 Panchromatic //									
600																				B5	630-680	5	B07	615	625				/Sediment loading									
630	*RED*	#5-B04	649,1	680,1	10	#5-B04	630	680	30	B3-G	B07	B15	630	690		B3	630	690	2	B9	650-680	10	B08	660	670	S2	659,47	1	Soil,veg//2nd Chl.MAX,sedim.,yellow subs.									
670																				B14	660-670	20	B09	670	677,5					/Improved fluorescence,Surface Mix.Layer								
690																				B15	678-685	20	B10	677,5	685					/Chlorophyll fluorescence peak								
700	RedEdge	#6-B05	696,6	711,6	20															B10	699-719	10	B11	703,75	713,75					Vegetation//Chl.fl.basel.								
740	RedEdge	#8-B06	733	748	20															B11	733-748	10	B12	750	757,5					Vegetation//O2 abs.,clouds,veg.								
760	RedEdge																			B16	750-758	20	B13	760	762,5					/O2 abs.,clouds,veg.;aerosol corr.								
765	RedEdge																			B17	759-763	20	B14	762,5	766,25					/Atmospheric correction								
767	RedEdge																			B12	773-793	10	B15	766,25	768,75					/Cloud top press.,fluore.over land								
780	NIR	#9-B07	772,8	792,8	20					B4-N	B08	B16	770	890		B4-NIR	770	890	2	B6	785-900	5	B16	771,25	786,25					Vegetation//Atmos.corr.								
830	NIR	#2-B08	779,8	885,8	10																									Vegetation								
860	NarrNIR	#10-B8A	854,2	875,2	20	#4-B05	845	885	30											B13	855-875	20	B17	855	875	S3	868	1		Vegetation//Atmos.aeros.corr.,clouds								
880																				B18	935-955	20	B18	880	890					Vegetation//Water vapour reference; SLSTR								
900																				B19	1000-1040	20	B19	895	905					/Water vapour abs.,Veg.(max.reflect.)								
940	SWIR	#13-B09	935,1	955,1	60															SW1	1195-1225	100	B20	930	950					/Water vapour abs.,Atmos.aeros.corr.								
1300	SWIR	#4-B10	1358	1389	60	#9-B09	1360	1390	30											SW2	1360-1390	100	B21	1000	1040	S4	1374,8	3		Cirrus cloud detection//Atmos.aeros.corr.								
1600	SWIR	#7-B11	1568,2	1659,2	20	#8-B06	1560	1660	30				1550	1750	SWIR1					SW3	1550-1590	100				S5	1613,4	3		Snow/ice/cloud disc>0.025,moist.soil-veg.//								
2200	SWIR	#11-B12	2114,9	2289,9	20	#7-B07	2100	2300	60				2080	2350	SWIR2					SW4	1610-1690	100				S6	2250,7	3		Fire/Snow/ice/cloud>0.015,moist.soil-veg.//								
+	IR																									S7/F1	3742	.001		/ IR 1km								
+	THERMAL					#10-B10	TIRS1		100				10400	12500	Thermal					MW	3700-4950	150				S8/F2	10850	.001		Thermal map, soil moist/								
+	THERMAL					B11	TIRS2		100											LW	7500-13500	150				S9	12020,5	.001		Improved thermal map/								
BAND OFFSET TIME:		B02-B12: 2.09s 12 tracks				0.96s / 14 tracks (FPM)																																
INDICES FORMULAS - CONVERSION:						R,G,B,NIR only:												NOTES - Purposes:																				
NDVI (NDNR)	(B08-B04)/(B08+B04)					(B05-B04)/(B05+B04)					(N-R)/(N+R) // SimpleDiff.: N/R (DVI)										(B17-B08)/(B17+B08)						Normalized Difference Vegetation Index											
Burn Ratio	(B08-B12)/(B08+B12)					(B05-B07)/(B05+B07)															Convert according to						(B08-S6)/(B8+S6)						Vegetation					
NDMI	(B08-B11)/(B08+B11)					(B03-B05)/(B03+B05)															Sentinel 1 or 3						(B06-B17)/(B06+B17)						Water on Leaves					
NDWI (NDGN)	(B03-B08)/(B03+B08)					(B03-B05)/(B03+B05)					(G-N)/(G+N) // SimpleDiff.: G/N										(B06-B17)/(B06+B17)						Water Bodies: Normalized Difference Water Index											
NDSI	(B03-B11)/(B03+B11)					(B03-B06)/(B03+B06)																					Cut mask near (S2NDSI>0.2 & B03>0.15)											
GEOAlteration	B11/B12					B06/B07															B20/B21						Geology											
FeOx	B11/B08					B06/B05															B20/B17						Geology											
IOx (R/B)	B04/B02 - Alternative: B05/B01					B04/B02					R/B										B08/B04						Geology: Iron Oxide Index R/B											
Clouds	~ B01>0.3 B09>0.1 B10>0.01										G > .3 (?)																Clouds(any)											
Brovey(Sharp)											BROVEY PAN = ((R ; G ; B ; N) / (R + G + B + N)) * PAN																Simple Color Sharpening or Pan-Sharpening											
BAND COMBINATIONS: S-2 SENTINEL						LANDSAT-8-OLI				CBERS04A - INPE: 3 / 4 / 4A					SKYMAP50-SV1			JL1GP - CGSat			Sentinel-3-OLCI						Sources:											
NATURAL		B04*3, B03*3, B02*3				B04*3, B03*3, B02*3				R, G, B											(B08+B09+B10)*1, B06*3, (B04+B05)*1.5						https://www.usgs.gov/faqs/what-are-best-landsat-sp											
FALSE NIR (RED VEG)		B08*2,B04*3,B03*3				B05*2,B04*3,B03*3				N, R, G (~R, N, G)					N, G, B						B17*2, (B08+B09+B10)*1, (B04+B05)*1.5						https://en.wikipedia.org/wiki/Sentinel-2											
NATURAL ENHANCED		B04*2+B12*0.5,B03*2+B08*0.4,B02*2.5				B04*3,B03*2+B05*5,B02*3				IOX(R/B), N, G					N, G, IOX(R/B)					(B08+B09+B10)*1+B11*3, B06*2*(B16+B18)*5, (B04+B05)*1.5						https://www.sentinel-hub.com/develop/documentation												
FALSE COL. URBAN - SWIR		B12*2,B11*3,B04*3				B07*2,B06*3,B04*3				N, NDRG((R-G)/(R+G)), B																https://sentinel.esa.int/web/sentinel/technical-guides												
F.SWIR-NIR (SWIR)		B12*3,B8A*3,B04*3				B07*3,B05*3,B04*3				DVI((N/R), G, B																https://sentinel.esa.int/web/sentinel/user-guides/sen												
FALSE COL.GEOLOGY		B12*3,B04*3,B02*3				B07*3,B04*3,B02*3																																
GEOLOGY ENHANCED		B04*1+B12*1.5,B05*1.5+B08*0.5,B02*2.8				B07*2,B04*1.5+B05*0.5,B02*2.8														B20*.15+B08*1.7,B06*1.6+B17*2,B04*2-B21*1																		
AGRICULTURE		B11*3,B08*3,B02*3				B06*3,B05*3,B02*3				N/G																https://earth.esa.int/web/eoportal/satellite-missions/c												
BATHYMETRIC		B04*3,B03*3,B01*3				B04*3,B03*3,B01*3				(R-B)/(R+B)					IOX(R/B), N, G						(B08+B09+B10)*1, B06*3, (B02+B03)*1.5						http://www2.dgi.inpe.br/catalogo/explore											