SATELLITE SPECTRAL BANDS - CONVERSION TABLE

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This whole table is under work / verification

SATELLITE		SENTINEL-2-MSI Swath:100km;Revisit:5d.;Resolution:10-60m							SkyMap50-SOAR Swath:12km; Revisit:2d. Resolution:PAN 0.5m / MS 2m (2013-05-30+)				CBERS04A - INPE Orbit H: 628,6 km (2019-12-20+)					LANDSAT-8-OLI Swath:185km;Revisit:16d. Resolution:15-60m (2013-05-30+)				Sentinel-3-OLCI Swath:1270km;Revisit:4d Resolution:300m (2016-01-16+)				Sentinel-3-SLSTR Swath:1400km;Revisit:2d Resolution:500/1000m			
WaveLenght		#order	Sentinel-2A (2015-06-23+)			Sentinel-2B (2017-03-07+)																						
(nm)		BAND	Min.	Central Wave L.	Max.	Min.	Central W.L.	Max.	Sp. Res	BAND*	Min.	Max.	Sp. Res	WPM 31d	MUX 31d	WFI 5dias	Min.	Max.	BAND*	Min.	Central Wave L.	Max.	Sp. Res	BAND	Min.	Central Wave L.	Max.	BAND	Min. Wave L. Max.	MULTIPLIER	COIMMENTS: Purposes (S2/L8/S3):
400	Aerosol																							B01	392.5	400.0	407.5				/Coastal aerosol, correction
420	Aerosol																							B02	407.5	412.5	417.5				/Yellow subs.,detrital pig. (turbidity)
440	Aerosol	#12-B01	432.2	442.7	453.2	431.7	442.2	452.7	60	PAN	450.0	890.0	.5	B0-P			450.0	900.0	#3-B01	433.0	443.0	453.0	30	B03	437.5	442.5	447.5				Aerosol//Chlorophyll abs., vegetation
460	*BLUE*	#1-B02	459.4	492.4		459.1	492.1		10	B1	450.0		2	B1	B05	B13	450.0		#2-B02	450.0	482.5	515.0	30	B04	485.0	490.0	495.0	reflect			SoilxVeg.,water/Bathym./Chlorophyll MAX.
530					525.4			525.1				520.0						520.0	#1-B08	500.0	PAN	680.0		B05	505.0	510.0	515.0	500m			/Chlorophyll, sedim., turbid., red tide
560	*GREEN*	#3-B03	541.8	559.8		541.0	559.0		10	B2	520.0		2	B2	B06	B14	520.0		#6-B03	525.0	562.5	600.0	30	B06	555.0	560.0	565.0	S1	554.3	1	Turbidity,oil//Chlorophyll MIN.
590					577.8			577.0				590.0						590.0					15								L-8 Panchromatic //
600																								B07	615.0	620.0	625.0				/Sediment loading
630	*RED*	#5-B04	649.1			649.4			10	B3	630.0		2	B3	B07	B15	630.0		#5-B04	630.0	655.0	680.0	30	B08	660.0	665.0	670.0	S2	659.5	1	Soil,veg//2nd Chl.MAX,sedim.,yellow subs.
670				664.6			664.9																	B09	670.0	673.8	677.5				/Improved fluorescence,Surface Mix.Layer
690					680.1			680.4				690.0						690.0						B10	677.5	681.3	685.0				/Chlorophyll fluorescence peak
700	RedEdge	#6-B05	696.6	704.1	711.6	695.8	703.8	711.8	20															B11	703.8	708.8	713.8				Vegetation//Chl.fl.basel.
740	RedEdge	#8-B06	733.0	740.5	748.0	731.6	739.1	746.6	20															B12	750.0	753.8	757.5				Vegetation//O2 abs.,clouds,veg.
760	RedEdge																							B13	760.0	761.3	762.5				/O2 abs.,clouds,veg.;aerosol corr.
765	RedEdge																							B14	762.5	764.4	766.3				/Atmospheric correction
767	RedEdge																							B15	766.3	767.5	768.8				/Cloud top press.,fluore.over land
780	NIR	#9-B07	772.8	782.8	792.8	769.7	779.7	789.7	20	B4	770.0		2	B4	B08	B16	770.0							B16	771.3	778.8	786.3				Vegetation//Atmos.corr.
830	NIR	#2-B08	779.8	832.8	885.8	779.9	832.9	885.9	10	NIR				NIR																	Vegetation
860	NarrNIR	#10-B8A	854.2	864.7	875.2	853.0	864.0	875.0	20										#4-B05	845.0	865.0		30	B17	855.0	865.0	875.0	S3	868.0	1	Vegetation//Atmos.aeros.corr.,clouds
880												890.0						890.0				885.0		B18	880.0	885.0	890.0				Vegetation//Water vapour reference; SLSTR
900																								B19	895.0	900.0	905.0				/Water vapour abs.,Veg.(max.reflect.)
940	SWIR	#13-B09	935.1	945.1	955.1	932.7	943.2	953.7	60															B20	930.0	940.0	950.0				/Water vapour abs.,Atmos.aeros.corr.
1300	SWIR	#4-B10	1358.0	1373.5	1389.0	1361.9	1376.9	1391.9	60										#9-B09	1360.0	1375.0	1390.0	30	B21	1000.0	1020.0	1040.0	S4	1374.8	3	Cirrus cloud detection//Atmos.aeros.corr.
1600	SWIR	#7-B11	1568.2	1613.7	1659.2	1563.4	1610.4	1657.4	20										#8-B06	1560.0	1610.0	1660.0	30					S5	1613.4	3	Snow/ice/cloud disc>0.025;moist.soil-veg.//
2200	SWIR	#11-B12	2114.9	2202.4	2289.9	2093.2	2185.7	2278.2	20										#7-B07	2100.0	2200.0	2300.0	60					S6	2250.7	3	Fire/Snow/ice/cloud>0.015;moist.soil-veg.//
																													1km/IR		
														2-8m	17m	55m	Resol											S7/F1	3742.0	.001	
														92Km	95Km	684Km	Swath		#10-B10	TIRS1		100					S8/F2	10850.0	.001	/Thermal map, soil moist/
																			B11	TIRS2		100					S9	12020.5	.001	/Improved thermal map/

BAND OFFSET TIME:	B02 to B12: 2.09s / 12 tracks			0.96s / 14 tracks (FPM)		
INDICES CONVERSION:						Description: Note: under testings
NDVI	(B08-B04)/(B08+B04)	B4/B3	B4/B3	(B05-B04)/(B05+B04)	(B17-B08)/(B17+B08)	
NDWI1	(B08-B11)/(B08+B11) : Leaves			(B03-B05)/(B03+B05)	(B06-B17)/(B06+B17)	: Leaves
NDWI2	(B03-B08)/(B03+B08) : Water bodies	B2/B4	B2/B4	(B03-B05)/(B03+B05)	(B06-B17)/(B06+B17)	: Water bodies
NDSI	(B03-B11)/(B03+B11)			(B03-B06)/(B03+B06)		(S2NDSI>0.2 & B03>0.15) OPT:SOFT=(S2NDSI<0.55 & B03<0.4)
	(S2NDSI>0.2 & B03>0.15) OPT:SOFT=(S2NDSI<0.55 & B03<0.4)					
GEOAlteration	B11/B12			B06/B07	B20/B21	
FeOx	B11/B08			B06/B05	B20/B17	
IOx (R/B)	B05/B01 Alternative: B04/B02	B3/B1	B3/B1	B04/B02	B08/B04	
Brovey	Br1;2;3: B04; B03; B02 / (B04+B03+B02)	B3;B2;B1(B3+B2+B1)	B3;B2;B1(B3+B2+B1)			NIR;RED;GREEN/(NIR+RED+GREEN)
Burn Ratio	(B08-B12)/(B08+B12)			(B05-B07)/(B05+B07)	(B08-S6)/(B8+S6)	
Clouds	(B02>.3) OR (B10>0.01) ~ ANY CLOUDS					
	(B02>.1 & B10>0.02) ~CIRRUS					

BASIC BAND COMBINATIONS AND CONVERSIONS - Note: for each new image may have to adjust values and/or set additional bands for better results

AFTER S-2 SENTINEL-HUB ORIGINAL COMBINATIONS:		SkyMap50 (B,G,R,NIR)	CBERS04A - INPE	LANDSAT-8-OLI	Sentinel-3-OLCI
NATURAL	B04*3, B03*3, B02*3	B3, B2, B1	B3, B2, B1	B04*3, B03*3, B02*3	(B08+B09+B10)*1, B06*3, (B04+B05)*1.5
NAT.ENH.(MARKUSE)	B04*2+B05*.2,B03*2+B08*.4,B02*4		=SkyMap50 (B,G,R,NIR)	B04*3,B03*2+B05*.5,B02*3	(B08+B09+B10)*1+B11*.3, B06*2+(B16+B18)*.5, (B04+B05)*1.5
FALSE NIR (RED VEG)	B08*2,B04*3,B03*3	B4, B3, B2	B4, B3, B2	B05*2,B04*3,B03*3	B17*2, (B08+B09+B10)*1, (B04+B05)*1.5
FALSE SWIR (URBAN)	B12*2,B11*3,B04*3			B07*2,B06*3,B04*3	S6, S5, (B08+B09+B10)*1
F.SWIR-NIR (SWIR)	B12*3,B8A*3,B04*3			B07*3,B05*3,B04*3	S6*3, B17*3, (B08+B09+B10)*1
FALSE COL.GEOLOGY	B12*3,B04*3,B02*3			B07*3,B04*3,B02*3	S6, (B08+B09+B10)*1, (B04+B05)*1.5
BATHYMETRIC	B04*3,B03*3,B01*3			B04*3,B03*3,B01*3	(B08+B09+B10)*1, B06*3, (B02+B03)*1.5
AGRICULTURE	B11*3,B08*3,B02*3			B06*3,B05*3,B02*3	S5*3, (B16+B17)*1.5, (B04+B05)*1.5
GEOLOGY ENHANCED	B12*1.5+B04*1,B05*1.5+B08*0.5,B02*2.8			B07*2,B04*1.5+B05*0.5,B02*2.8	S6*1.5+B08*1, B11*1.5+B17*.5, (B04+B05)*1.5

Sources:
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*L8:The along-track spectral band separation
This time delay creates a small but significan
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