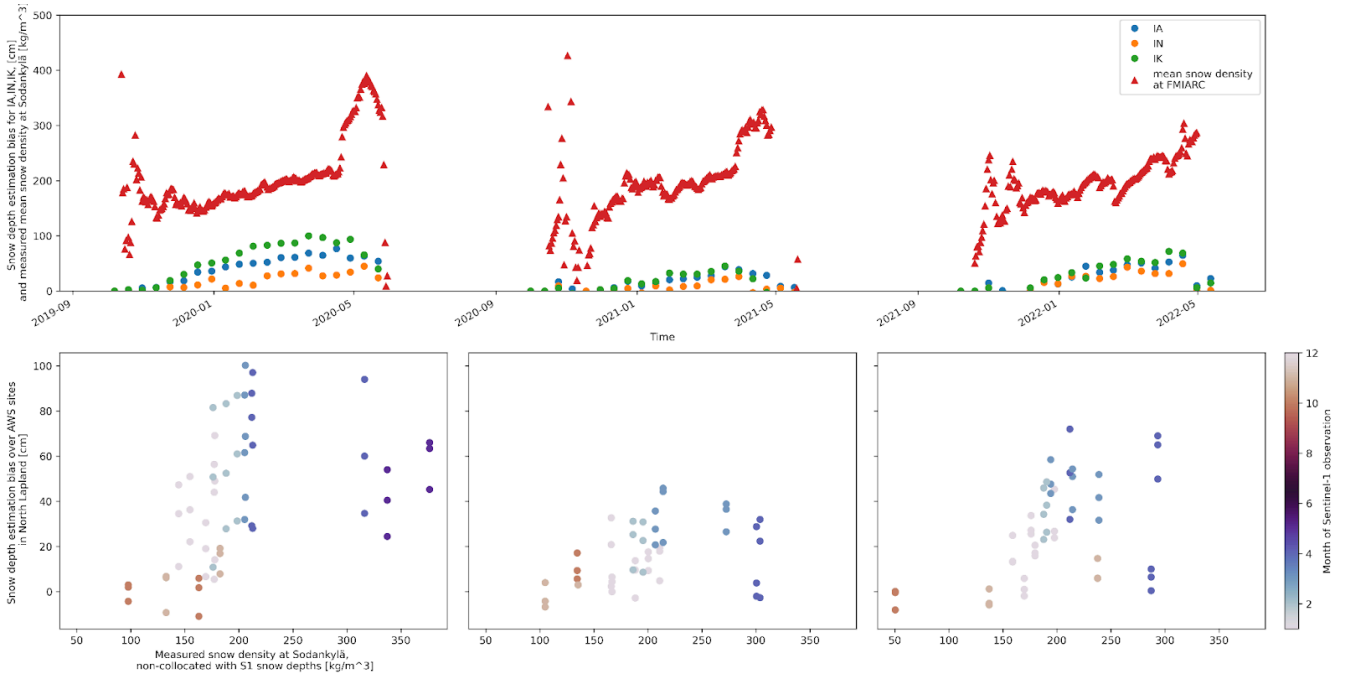
1 **Supplementary data from "Snow Depth derived from Sentinel-1 compared to in-situ observations in northern**

2 **Finland".**

3 **Figure S1:** Bias evolution of the snow depth as a function of the days of the year.

6 **Figure S2:** In situ measurements of snow depths from the snow pits (sp1 to sp4) compared to Sentinel-1 estimative at the
7 same locations.

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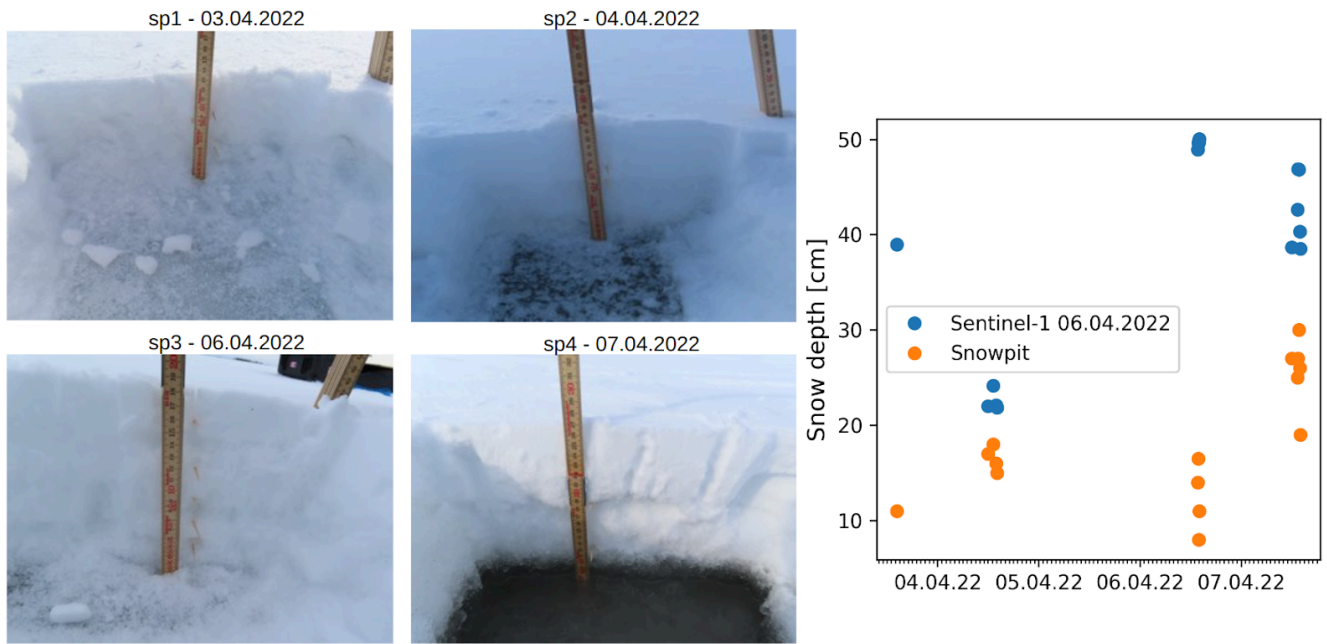
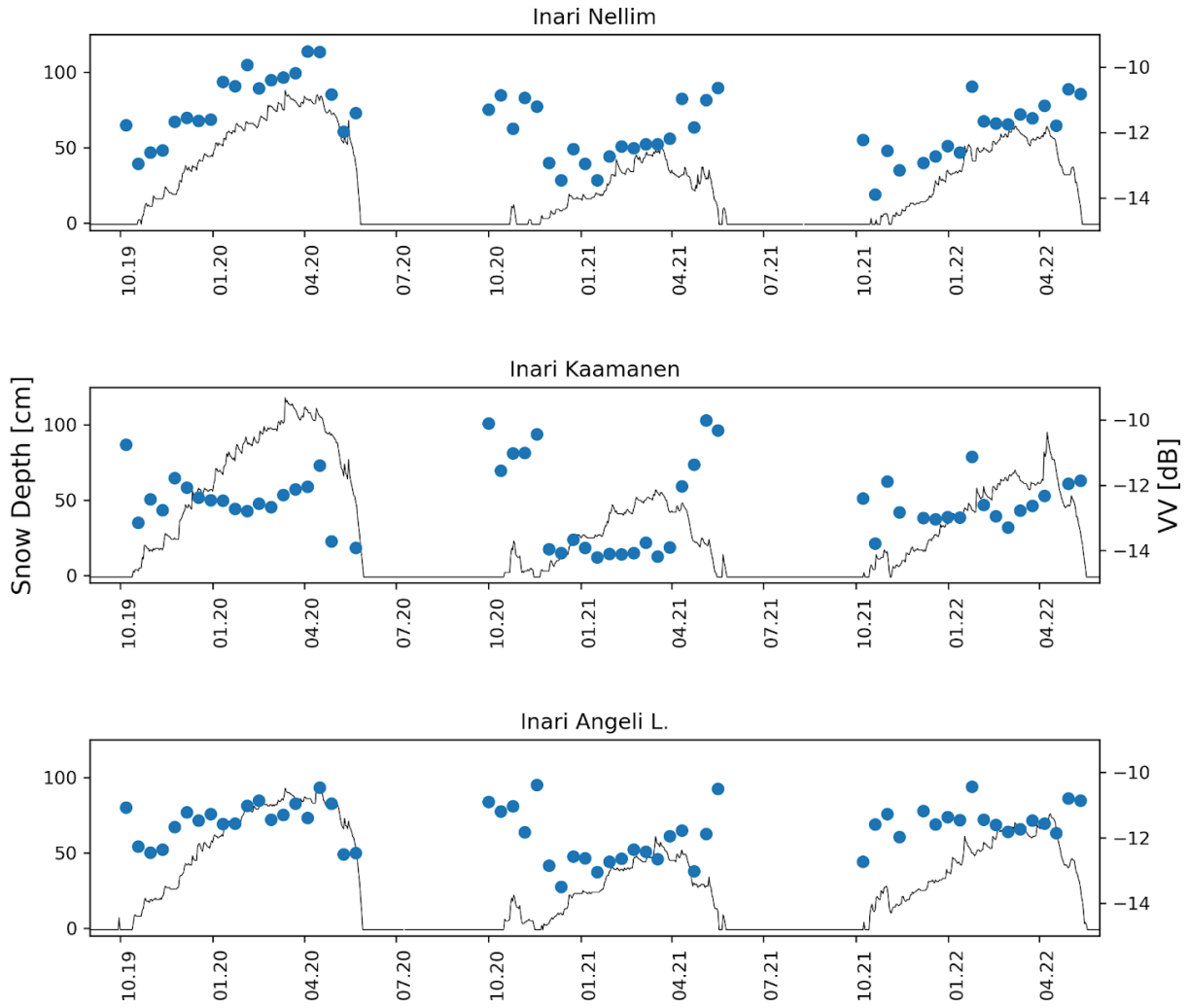
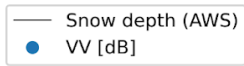
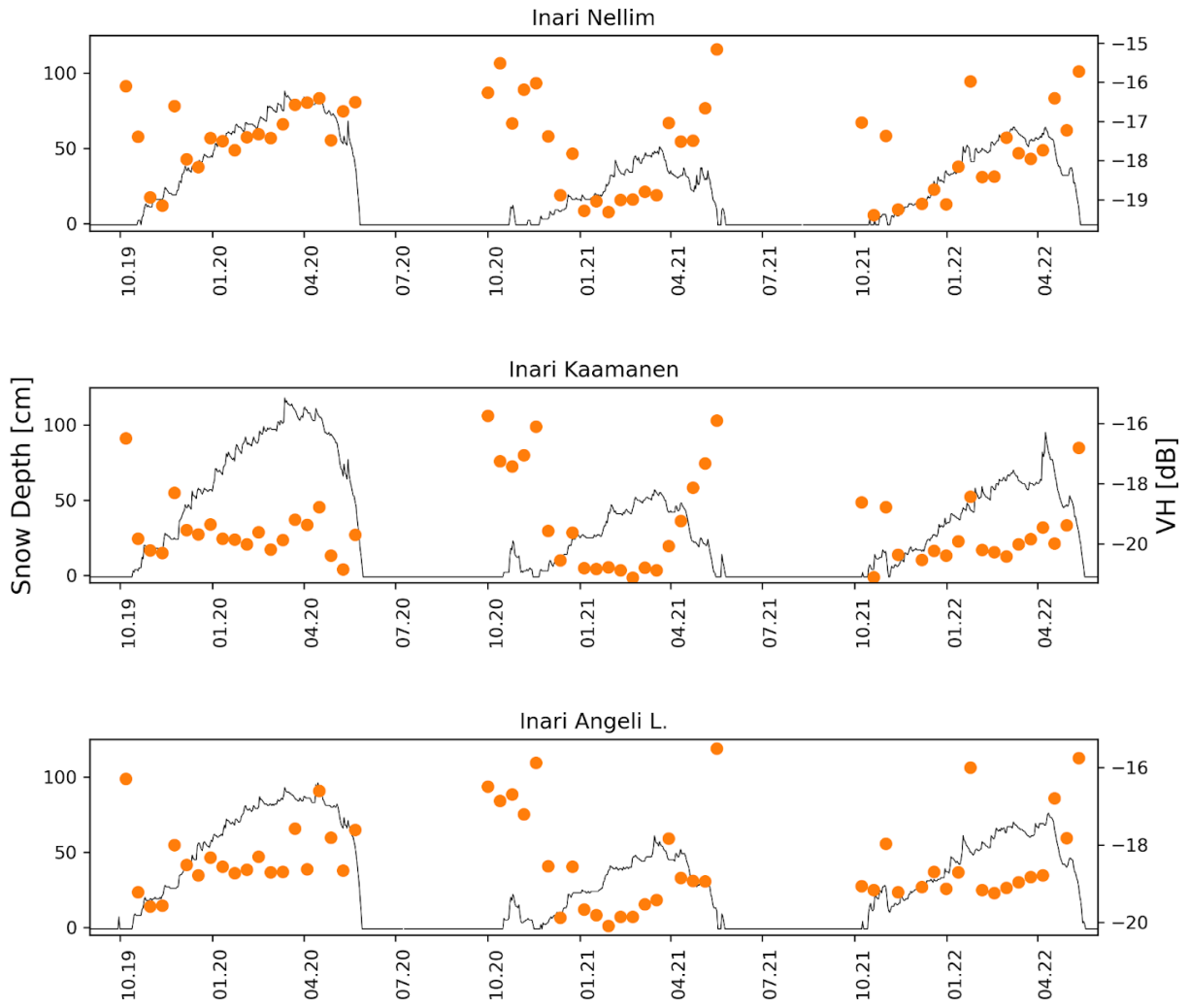
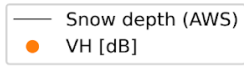

 Figure S3: Backscatter from (a) VV and (b) VH polarisation from the Sentinel-1 images extracted from the automatic

 weather stations' locations.

 (a)

17 (b)

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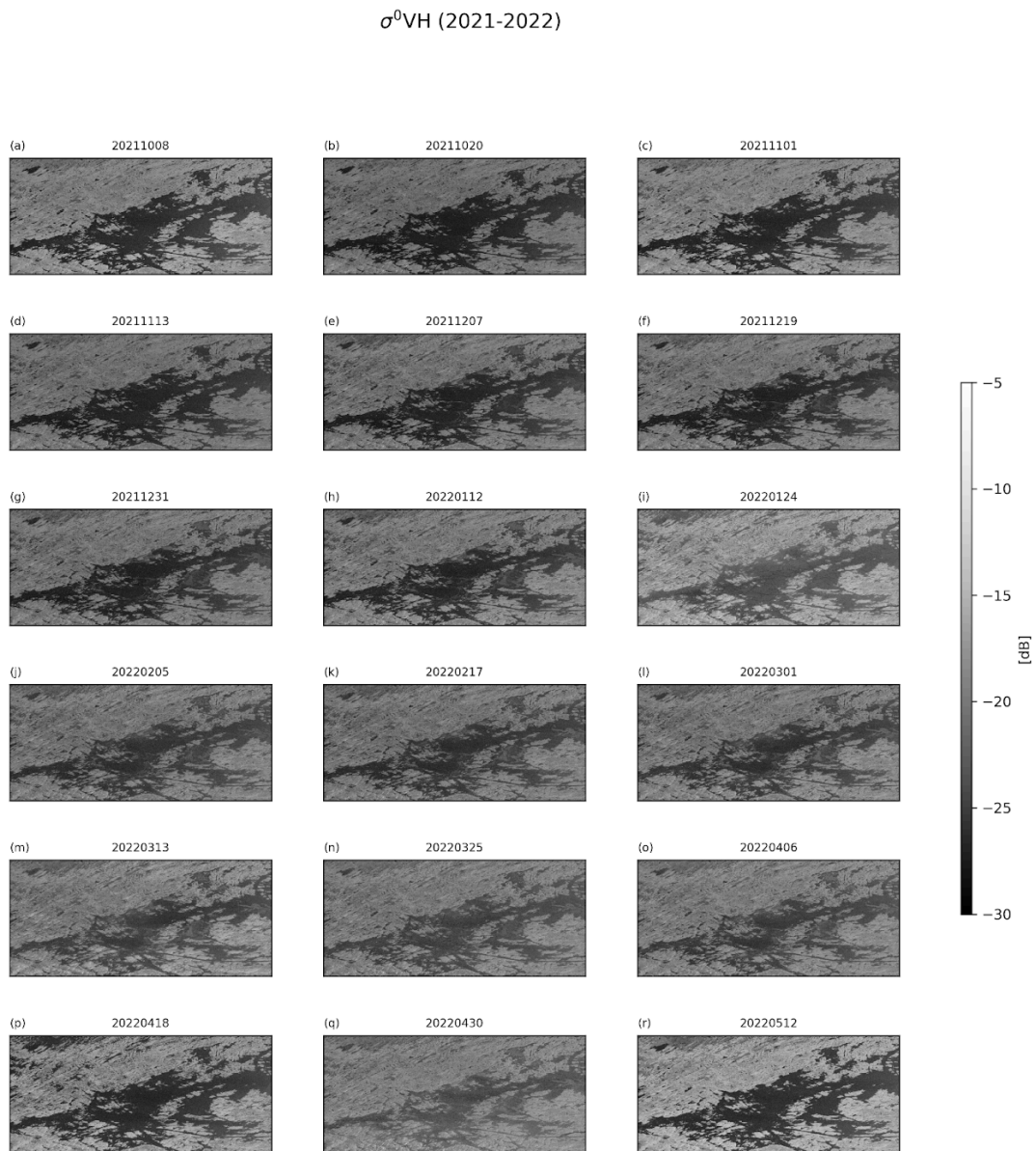
σ^0VV (2021-2022)
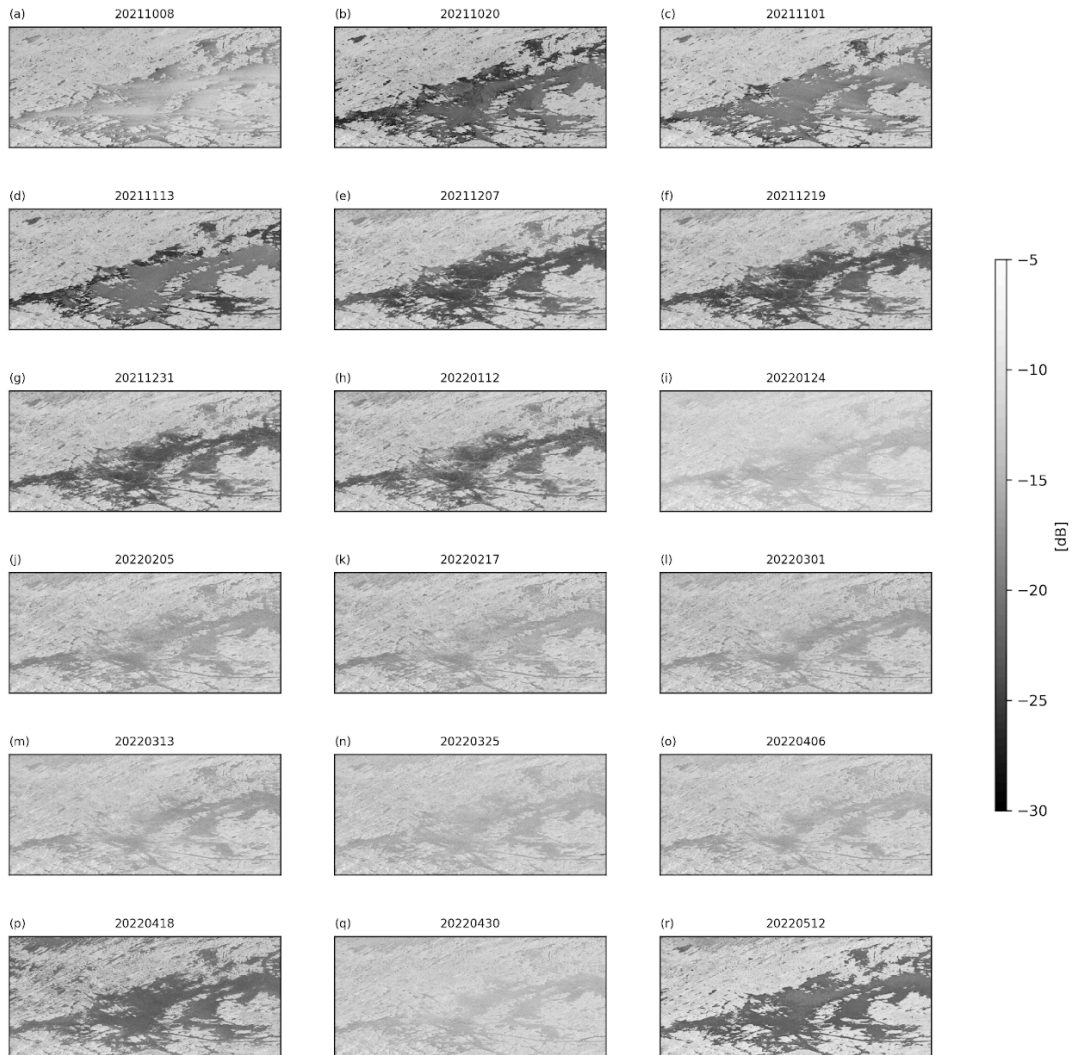
Table S1: List of Sentinel-1 used.

	Sentinel-1 scenes names
Season 2019–2020	S1A_IW_SLC__1SDV_20191007T044755_20191007T044822_029348_035610_BDD8.tif
	S1A_IW_SLC__1SDV_20191019T044755_20191019T044822_029523_035C15_1155.tif
	S1A_IW_SLC__1SDV_20191031T044755_20191031T044822_029698_03622A_DD6C.tif
	S1A_IW_SLC__1SDV_20191112T044755_20191112T044822_029873_03684A_F1FA.tif
	S1A_IW_SLC__1SDV_20191124T044755_20191124T044822_030048_036E5B_64B0.tif
	S1A_IW_SLC__1SDV_20191206T044755_20191206T044822_030223_03746B_256E.tif
	S1A_IW_SLC__1SDV_20191218T044754_20191218T044821_030398_037A78_1FB2.tif
	S1A_IW_SLC__1SDV_20191230T044754_20191230T044821_030573_038079_E3DD.tif
	S1A_IW_SLC__1SDV_20200111T044753_20200111T044820_030748_038687_C332.tif
	S1A_IW_SLC__1SDV_20200123T044753_20200123T044820_030923_038CAD_3902.tif
	S1A_IW_SLC__1SDV_20200204T044752_20200204T044819_031098_0392D5_77CD.tif
	S1A_IW_SLC__1SDV_20200216T044752_20200216T044819_031273_0398DF_6F36.tif
	S1A_IW_SLC__1SDV_20200228T044752_20200228T044819_031448_039EDE_2B46.tif
	S1A_IW_SLC__1SDV_20200311T044752_20200311T044819_031623_03A4F3_6B66.tif
	S1A_IW_SLC__1SDV_20200323T044752_20200323T044819_031798_03AB20_08D0.tif
	S1A_IW_SLC__1SDV_20200404T044752_20200404T044819_031973_03B148_D2B4.tif
	S1A_IW_SLC__1SDV_20200416T044753_20200416T044820_032148_03B76D_8D8C.tif
	S1A_IW_SLC__1SDV_20200428T044753_20200428T044820_032323_03BD91_C1E6.tif
	S1A_IW_SLC__1SDV_20200510T044754_20200510T044821_032498_03C376_7D5D.tif
	S1A_IW_SLC__1SDV_20200522T044755_20200522T044822_032673_03C8C4_4203.tif
Season 2020–2021	S1A_IW_SLC__1SDV_20201001T044802_20201001T044829_034598_040729_AEC3.tif
	S1A_IW_SLC__1SDV_20201013T044802_20201013T044829_034773_040D44_6213.tif
	S1A_IW_SLC__1SDV_20201025T044802_20201025T044829_034948_041356_0BA9.tif
	S1A_IW_SLC__1SDV_20201106T044802_20201106T044829_035123_041956_4C11.tif
	S1A_IW_SLC__1SDV_20201118T044802_20201118T044828_035298_041F7A_F1EA.tif
	S1A_IW_SLC__1SDV_20201130T044801_20201130T044828_035473_042581_BA52.tif
	S1A_IW_SLC__1SDV_20201212T044801_20201212T044828_035648_042B82_A1D1.tif
	S1A_IW_SLC__1SDV_20201224T044800_20201224T044827_035823_043186_C4A1.tif
	S1A_IW_SLC__1SDV_20210105T044759_20210105T044826_035998_04379A_75AB.tif
	S1A_IW_SLC__1SDV_20210117T044759_20210117T044826_036173_043DBE_FB99.tif
	S1A_IW_SLC__1SDV_20210129T044759_20210129T044826_036348_0443DB_DCD3.tif

	S1A_IW_SLC__1SDV_20210210T044758_20210210T044825_036523_0449EF_0CFC.tif
	S1A_IW_SLC__1SDV_20210222T044758_20210222T044825_036698_04500B_CF84.tif
	S1A_IW_SLC__1SDV_20210306T044758_20210306T044825_036873_04561A_4149.tif
	S1A_IW_SLC__1SDV_20210318T044758_20210318T044825_037048_045C36_0446.tif
	S1A_IW_SLC__1SDV_20210330T044758_20210330T044825_037223_046245_474D.tif
	S1A_IW_SLC__1SDV_20210411T044759_20210411T044826_037398_04684D_3768.tif
	S1A_IW_SLC__1SDV_20210423T044759_20210423T044826_037573_046E5A_7D15.tif
	S1A_IW_SLC__1SDV_20210505T044800_20210505T044827_037748_04747C_B769.tif
	S1A_IW_SLC__1SDV_20210517T044800_20210517T044827_037923_0479C0_9BA9.tif
Season 2021–2022	S1A_IW_SLC__1SDV_20211008T044805_20211008T044832_040023_04BCCC_67B0.tif
	S1A_IW_SLC__1SDV_20211020T044805_20211020T044832_040198_04C2E7_C550.tif
	S1A_IW_SLC__1SDV_20211101T044805_20211101T044832_040373_04C8F4_E56E.tif
	S1A_IW_SLC__1SDV_20211113T044805_20211113T044832_040548_04CF12_9C4E.tif
	S1A_IW_SLC__1SDV_20211207T044804_20211207T044831_040898_04DB35_5580.tif
	S1A_IW_SLC__1SDV_20211219T044803_20211219T044830_041073_04E11E_4CAC.tif
	S1A_IW_SLC__1SDV_20211231T044802_20211231T044829_041248_04E6E8_6629.tif
	S1A_IW_SLC__1SDV_20220112T044802_20220112T044829_041423_04ECDC_BFE6.tif
	S1A_IW_SLC__1SDV_20220124T044801_20220124T044828_041598_04F2AC_C9C4.tif
	S1A_IW_SLC__1SDV_20220205T044801_20220205T044828_041773_04F8A7_5B61.tif
	S1A_IW_SLC__1SDV_20220217T044801_20220217T044828_041948_04FEC3_FF8E.tif
	S1A_IW_SLC__1SDV_20220301T044801_20220301T044828_042123_0504C2_9F84.tif
	S1A_IW_SLC__1SDV_20220313T044801_20220313T044828_042298_050AB5_EEB4.tif
	S1A_IW_SLC__1SDV_20220325T044801_20220325T044828_042473_0510A6_B4D3.tif
	S1A_IW_SLC__1SDV_20220406T044801_20220406T044828_042648_051694_2956.tif
	S1A_IW_SLC__1SDV_20220418T044802_20220418T044829_042823_051C71_BBA7.tif
	S1A_IW_SLC__1SDV_20220430T044802_20220430T044829_042998_052230_B61A.tif
	S1A_IW_SLC__1SDV_20220512T044803_20220512T044830_043173_0527F2_0BF5.tif

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