

**2022-2023**

**2023 12**

2018 83

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16768

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525843

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ESI

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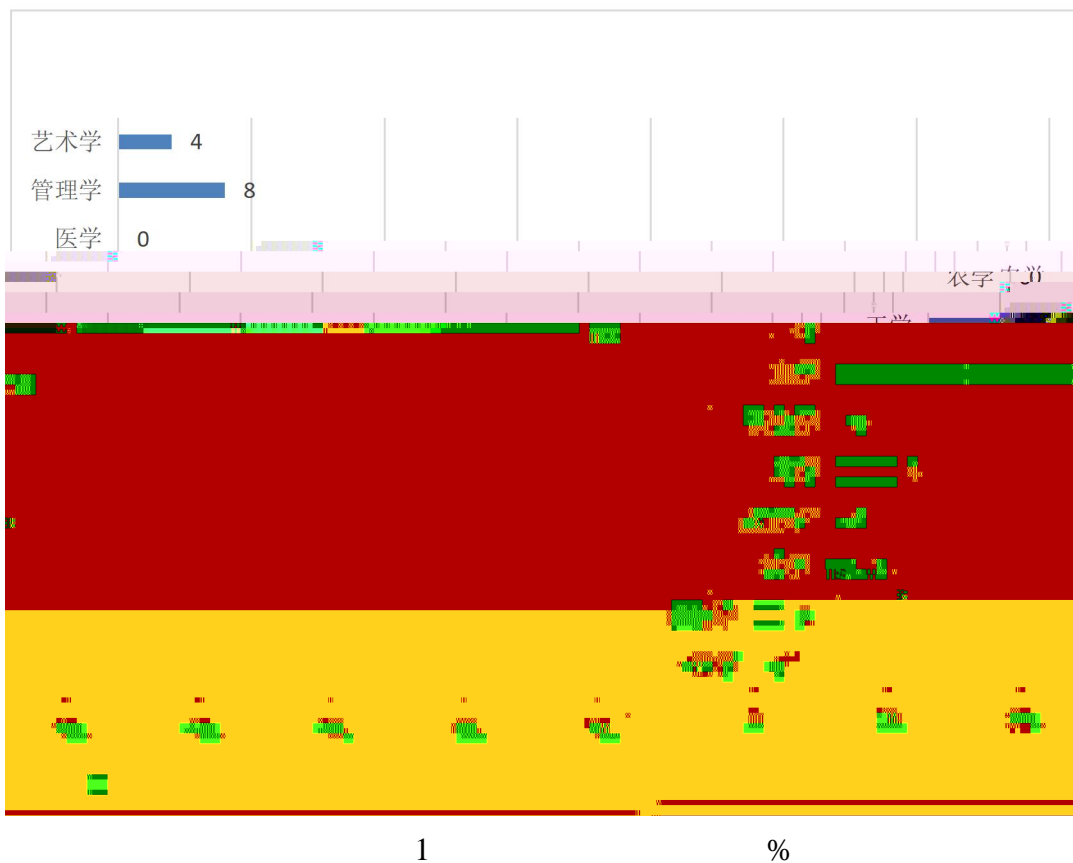
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35  
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Nature Geoscience  
1 26 2022  
125  
9 2021 28 2022  
1  
5 17 20+20 111

THE



15 16 34 2

2022-2023		8438	8369
2102	2096	2115	2056
69	40	29	
16770			50.32%



8438
7
69
5768
761
2341
50
192
31
76
85
5
31
1465
835
40925

83

Ε \ \* \* \ 0 ω 0 ω φ \ ω φ

8



1080                      649                      1404.5  
 27975.0                      19.92  
                                     87                      8.06%  
                                     724                      67.04%  
                                     1055                      97.69%  
                                     3  
                                     3

	1080	649	1404.5	19.92
	883	142	954.0	33.55

=                      /                      =                      +                      \*0.5+  
 \*0.5

4

4

			%		%
		1080	/	649	/
		301	27.87	197	30.35
		297	27.50	60	9.24
		423	39.17	129	19.88
		408	37.78	48	7.40
		269	24.91	249	38.37
		250	23.15	143	22.03
		1	0.09	20	3.08
		1	0.09	10	1.54
		86	7.96	54	8.32
	910	84.26	173	26.66	

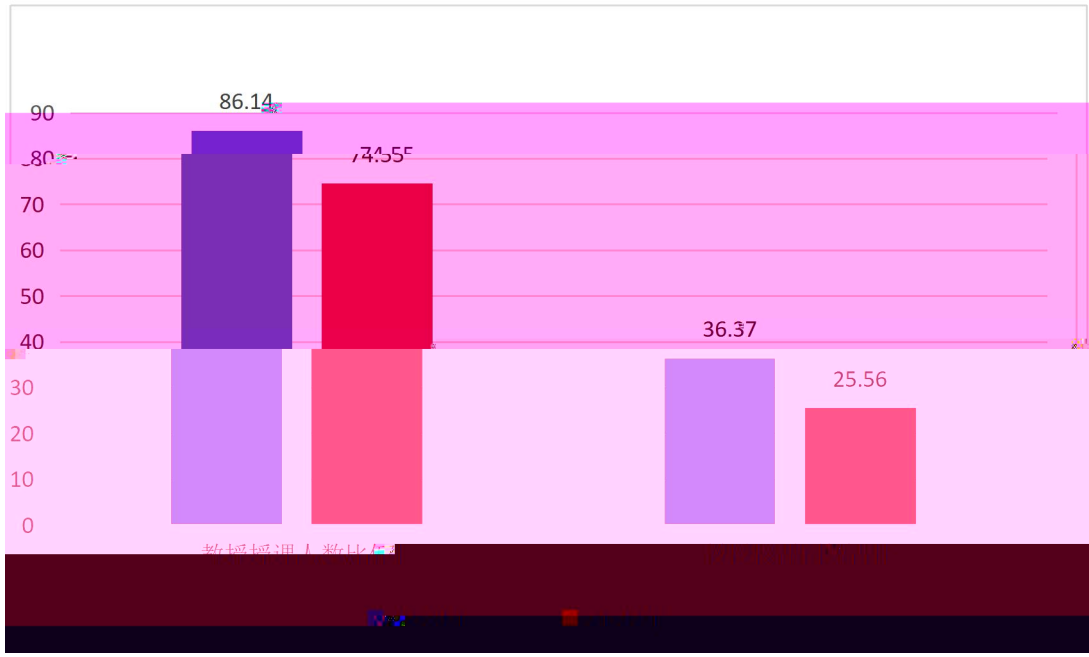
			%		%
		145	13.43	230	35.44
		23	2.13	226	34.82
		2	0.19	20	3.08
	<b>35</b>	340	31.48	98	15.10
	<b>36-45</b>	303	28.06	269	41.45
	<b>46-55</b>	263	24.35	156	24.04
	<b>56</b>	174	16.11	126	19.41





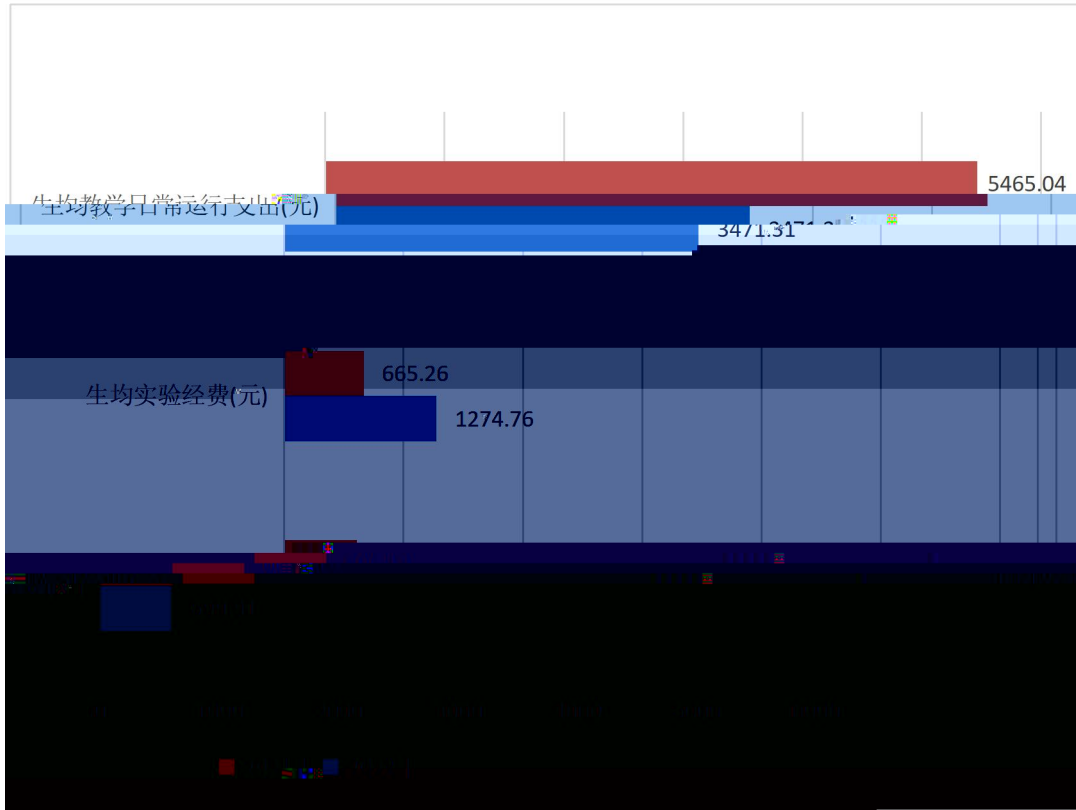
1

		1013	79.58%
1810	67.61%		
	465	36.53%	
640	23.91%		463
	36.37%	637	23.80%
		751	58.99%



6  
 %  
 2  
 30  
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 28  
 100.00%  
 88.4%  
 82.47%  
 259  
 781

2022  
 506.2  
 1274.76  
 9711.0  
 599.91  
 7  
 1075.64  
 3471.31



7

1.

		+
234811.02m <sup>2</sup>	23486.6m <sup>2</sup>	419.64m <sup>2</sup>
	71400.74m <sup>2</sup>	16870.46m <sup>2</sup>
40234.736m <sup>2</sup>		
	16768	33.40 m <sup>2</sup> /
	34.78 m <sup>2</sup> /	14.00 m <sup>2</sup> /
	4.26 m <sup>2</sup> /	1.01 m <sup>2</sup> /
2.40 m <sup>2</sup> /	5	



	5	
	560076.46	1.40
	583256.33	34.78
	234811.02	14.00
	71400.74	4.26
	16870.46	1.01
	40234.736	2.40

2.

3.13

4.05%

11509.0

3.451

10

1.11%

552

2779.32

8438

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16

25 10 1  
 2.0  
 56  
 55 53  
 96.36% 51 92.73%  
 2023 6

6 2023

	%	%	%
	68.35	14.56	23.02
	62.75	16.99	30.96
	76.78	11.15 0	24.11
	69.96	9.84	36.57
	68.6	10.29	34.37
	65.96	16.24	32.29
	70.76	14.62	52.53

2023 5 14  
 1 6  
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 2022

1.

88  
54 61 416 33 54.1%  
88.52%

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2067 680  
80.59% 86  
2.7

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198 7149  
2 3  
367 20 1  
19 96 85  
11 190 167  
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1 8  
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7 2022

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	12	12

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050201		13	16.92	1	0	0
050261		0	--	0	0	0
070101		19	7.89	8	0	0
070104T		0	--	0	0	0
070504		16	16.13	2	0	0
070701		28	8.07	10	3	5
070703T		12	9.33	5	1	4
070801		24	7.96	9	2	6
070901		115	3.27	35	5	51
070902		24	1.58	3	1	6
070903T		4	13.50	0	0	0
080202		11	11.82	1	1	0
080301		13	19.00	5	3	2
080401		17	9.59	3	6	4
080402		11	4.82	1	5	4
080403		17	6.35	3	4	6
080410T		14	16.36	4	4	3
080414T		0	--	0	0	0
080503T		0	--	0	0	0
080601		5	34.20	0	0	2
080701		6	22.83	0	0	2
080717T		2	42.00	2	0	0
080901		13	22.08	2	0	2
080902		9	28.56	0	0	1
080910T		2	40.00	2	0	0
081001		28	8.11	13	2	0
081005T		2	36.50	2	0	0

081102	22	6.05	4	0	4
081201	20	10.10	2	3	1
081202	1	82.00	1	0	0
081401	38	9.37	16	5	0
081402	30	7.03	6	7	11
081403	97	3.27	36	8	23
081404T	30	8.23	17	0	3
081406T	0	--	0	0	0
081502	31	5.26	14	2	24
081508TK	0	--	0	0	0
082306T	10	9.70	2	2	2
082502					

050261		0	0	--	0	0	0	0	0
070101		19	6	100.00	7	6	18	1	0
070104T		0	0	--	0	0	0	0	0
070504		16	6	83.00	4	6	13	3	0
070701		28	5	100.00	16	7	28	0	0
070703T		12	3	100.00	5	4	12	0	0
070801		24	8	100.00	9	7	21	3	0
070901		115	45	82.00	40	28	113	1	1
070902		24	14	86.00	7	3	23	1	0
070903T		4	1	100.00	1	2	3	1	0
080202		11	6	100.00	4	1	10	1	0
080301		13	0	--	5	8	10	3	0
080401		17	8	88.00	6	3	16	0	1
080402		11	2	100.00	7	2	11	0	0
080403		17	10	100.00	4	3	16	1	0
080410T		14	5	100.00	6	3	12	2	0
080414T		0	0	--	0	0	0	0	0
080503T		0	0	--	0	0	0	0	0
080601		5	0	--	5	0	5	0	0
080701		6	1	100.00	3	2	5	1	0
080717T		2	0	--	0	2	2	0	0
080901		13	3	100.00	5	5	11	2	0
080902		9	1	100.00	3	4	7	2	0

080910T		2	0	--	0	2	2	0	0	
081001		28	4	100.00	10	14	27	1	0	
081005T		2	0	--	0	2	2	0	0	
081102		22	8	75.00	7	7	22	0	0	
081201		20	3	100.00	13	3	16	4	0	
081202		1	0	--	0	1	1	0	0	
081401		38	15	73.00	12	10	35	2	1	
081402		30	12	92.00	12	6	30	0	0	
081403		97	31	90.00	29	37	97	0	0	
081404T		30	8	100.00	7	15	30	0	0	
081406T		0	0	--	0	0	0	0	0	
081502		31	11	91.00	10	10	30	1	0	
081508TK		0	0	--	0	0	0	0	0	
082306T		10	3	100.00	5	2	8	2	0	
082502		32	10	80.00	11	11	30	2	0	
082504		0	0	--	0	0	0	0	0	
082901		13	3	100.00	6	4	13	0	0	
120102		20	7	86.00	7	5	20	0	0	
120201K		16	5	100.00	8	3	15	1	0	
120203K		11	2	100.00	5	3	6	3	2	
120404		10	5	100.00	3	2	10	0	0	
120417T		5	3	100.00	0	2	5	0	0	
130504		14	0	--	8	6	7	6	1	
130509T		0	0	--	0	0	0	0	0	




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~~P-2C~~ 1274.76

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020101		24.0	12.38	6.0	23.02
030101K		24.0	23.38	6.0	30.96
050201		18.0	16.38	6.0	21.62
050261		13.0	30.5	6.0	26.52
070101		26.0	9.25	6.0	20.98
070104T		26.0	23.25	6.0	29.49
070504		23.0	38.25	6.0	35.92
070701		26.0	37.75	6.0	38.52
070703T		26.0	36.0	6.0	36.36
070801		32.0	14.38	6.0	27.04
070901		29.0	44.38	6.0	41.63
070902		29.0	41.38	6.0	41.15
070903T		31.0	42.0	6.0	41.71
080202		32.0	29.12	6.0	33.22
080301		27.0	39.0	6.0	37.29
080401		29.0	30.12	6.0	31.7
080402		30.0	27.25	6.0	31.37
080403		29.0	27.75	6.0	31.35
080410T		28.0	45.25	6.0	41.27
080414T		30.0	27.25	6.0	31.37
080503T		29.0	32.75	6.0	35.9
080601		22.0	21.62	6.0	26.36
080701		24.0	31.0	6.0	32.07
080717T		32.0	28.12	6.0	36.0
080901		32.0	23.88	6.0	34.49
080902		23.0	43.12	6.0	40.44

080910T		22.0	35.38	6.0	35.2
081001		37.0	21.38	6.0	32.61
081005T		37.0	21.38	6.0	32.61
081102		29.0	38.88	6.0	36.99
081201		32.0	16.75	6.0	27.7
081202		33.0	21.62	6.0	31.39
081401		42.0	20.88	6.0	33.99
081402		37.0	32.12	6.0	37.88
081403		29.67	37.98	6.0	38.0
081404T		30.0	35.62	6.0	35.96
081406T		37.0	32.12	6.0	37.88
081502		32.0	30.38	6.0	33.0
081508TK		32.0	30.38	6.0	33.0
082306T		28.0	25.75	6.0	31.07
082502		38.0	26.88	6.0	34.42
082504		38.0	26.88	6.0	34.42
082901		37.0	26.12	6.0	35.27
120102		24.0	33.25	6.0	35.56
120201K		24.0	24.81	6.0	30.51
120203K		23.0	30.62	6.0	33.94
120404		30.0	18.88	6.0	30.55
120417T		30.0	17.12	6.0	29.18
130504		21.0	58.06	6.0	52.53
130509T		21.0	58.06	6.0	52.53
	/	29.04	30.83	6.00	34.62

			%	%	%	%		%	%
130509T		2094.00	83.19	16.81	50.00	39.30	150.50	70.76	14.62
130504		2094.00	83.19	16.81	50.00	39.30	150.50	70.76	14.62
120417T		2194.00	86.87	13.13	79.03	17.87	161.50	69.04	11.15
120404		2170.00	86.73	13.27	77.51	19.17	160.00	68.75	11.25
120203K		2266.00	85.17	14.83	69.46	19.95	158.00	67.09	13.29
120201K		2234.00	71.35	28.65	75.34	17.50	160.00	58.75	25.00
120102		2298.00	82.59	17.41	68.06	16.28	161.00	68.94	15.53
082901		2394.00	89.31	10.69	73.43	12.53	179.00	67.04	8.94
082504		2530.00	86.09	13.91	74.39	11.70	188.50	64.99	11.67
082502		2530.00	86.09	13.91	74.39	11.70	188.50	64.99	11.67
082306T		2426.00	88.13	11.87	74.69	17.89	173.00	71.10	10.40
081508T K		2634.00	89.07	10.93	73.27	16.40	189.00	70.37	9.52
081502		2634.00	89.07	10.93	73.27	16.40	189.00	70.37	9.52
081406T		2434.00	90.80	9.20	70.58	15.61	182.50	69.86	7.67
081404T		2562.00	87.51	12.49	69.24	15.30	182.50	67.95	10.96
081403		2495.33	88.67	11.33	66.91	20.48	178.00	70.04	9.93
081402		2434.00	90.80	9.20	70.58	15.61	182.50	69.86	7.67
081401		2538.00	88.65	11.35	73.21	13.55	185.00	68.65	9.73

			%	%	%	%		%	%
081202		2362.00	86.45	13.55	76.80	18.63	174.00	67.24	11.49
081201		2410.00	88.05	11.95	80.50	14.11	176.00	69.32	10.23
081102		2594.00	87.66	12.34	67.62	15.27	183.50	66.49	10.90
081005T		2530.00	82.92	17.08	72.49	12.96	179.00	64.25	15.08
081001		2530.00	82.92	17.08	72.49	12.02	179.00	64.25	15.08
080910T		2346.00	88.41	11.59	67.95	17.99	163.00	71.78	10.43
080902		2338.00	88.37	11.63	62.53	28.14	163.50	69.42	10.40
080901		2154.00	86.63	13.37	74.37	17.18	162.00	66.05	11.11
080717T		2234.00	87.82	12.18	72.25	19.87	167.00	67.66	10.18
080701		2434.00	89.48	10.52	72.64	12.41	171.50	69.68	9.33
080601		2370.00	87.85	12.15	78.23	16.37	165.50	69.18	10.88
080503T		2410.00	88.05	11.95	69.21	16.85	172.00	69.19	10.47
080414T		2594.00	90.13	9.87	73.55	9.02	182.50	69.32	8.77
080410T		2514.00	86.63	13.37	62.53	24.74	177.50	69.01	11.83

% %

			%	%	%	%		%	%	
050201		2256.00	87.23	12.77	84.13	9.22	159.00	76.10	11.32	
030101K		2170.00	80.83	19.17	73.46	11.80	153.00	62.75	16.99	
020101		2250.00	83.64	16.36	82.22	11.38	158.00	68.35	14.56	
	/	2422.07	87.47	12.53	70.73	17.18	172.95	68.97	10.88	

17. 86.14%  
3

18. 23.76%

19. 5

20. 99.90%  
7

				%
020101		75	75	100.00
030101K		40	40	100.00
050201		68	68	100.00
070101		38	38	100.00
070504		69	69	100.00
070701		51	51	100.00
070703T		29	29	100.00
070801		40	40	100.00
070901		157	157	100.00
070902		29	29	100.00
080202		34	34	100.00
080301		75	75	100.00
080401		84	84	100.00
080402		29	29	100.00
080403		56	56	100.00
080410T		61	61	100.00
080601		59	59	100.00
080701		30	30	100.00
080901		72	72	100.00

				%
080902		62	61	98.39
081001		65	64	98.46
081102				



%

080403		56	55	98.21
080410T		61	60	98.36
080601		59	56	94.92
080701		30	29	96.67
080901		72	71	98.61
080902		61	56	91.80
081001		64	60	93.75
081102		33	29	87.88
081201		56	46	82.14
081401		79	73	92.41
081402		59	55	93.22
081403		123	116	94.31
081404T		73	68	93.15
081502		48	44	91.67
082306T		30	28	93.33
082502		37	35	94.59
082901		30	30	100.00
120102		67	62	92.54
120201K		52	48	92.31
120203K		68	62	91.18
120404		66	63	95.45
130504		51	44	86.27
	/	2093	1947	93.02

23.

87.33%

10

10

%

020101	235	213	90.64
030101K	161	150	93.17
050201	229	199	86.90
050261	0	0	0.00
070101	144	129	89.58
070104T	49	41	83.67
070504	249	207	83.13
070701	211	186	88.15
070703T	107	97	90.65
070801	173	144	83.24
070901	366	312	85.25
070902	46	38	82.61

