

# Criteria for Award of Postgraduate Degrees at the School of Astronomy and Space Science

Using the descriptors for qualifications at Master's and doctoral level developed by the Ministry of Education, the Ministry of Science and Technology of China and the University of Science and Technology of China (USTC) (Jiaokeji [2020] No. 2) as part of the framework, the School of Astronomy & Space Science has developed the following explicit, yet generic criteria for the award of Master's and doctoral degrees:

## **I.Requirements for cultivation of Postgraduates in Astronomy**

### 1.Academic Exchange Ability

Students awarded a master's degree should attend at least 10 academic lectures including academic activities of research groups, cross-groups, USTC's, PMO's and thematic, as well as regional and national academic conferences, among others, and actively participate in engineering and social practice activities.

Students awarded a doctoral degree should attend at least one national (or international) academic conference. Prior to graduation, he/she should attend at least one academic forum or annual academic conference held by USTC (or the School) for doctoral candidates, and have his/her paper presented in the event in the form of oral presentation or poster, or undertake at least one teaching assistantship set up by USTC or the School to gain relevant teaching experience.

### 2.Curriculum

All postgraduate applicants must meet the course requirements of the xxx

### 3.Conversion of Master's to Doctoral Study

Before starting doctoral study, students awarded a master's degree should pass the doctoral qualifying examination (assessment) organized by the relevant authority. The specific requirements are formulated independently by the relevant authority in accordance with the rules of USTC and the specific circumstances.

### 4.Evaluation of Dissertation Prospectus

Throughout the dissertation research phase, a postgraduate should demonstrate his/her dissertation topic and research approach as well as conduct a dissertation prospectus (which counts for 2 credits). At least one year before graduation, a review committee organized by supervisor consisting of experts of the discipline and related disciplines (doctoral candidates: at least three experts with a senior professional title; master's candidates: at least three experts with an associate senior professional title or above) should be formed to evaluate the dissertation prospectus. The doctoral candidate shall make an oral presentation of at least 20 minutes and the master's candidate, 15 minutes. The expert committee, by defending, shall

examine and grade the student and vote to decide whether he/she passes.

#### 5. Duration of Program

Students in a master's program are expected to spend 2-3 years of study, with a minimum of two years and a maximum of five years. Students admitted to a doctoral program will normally be expected to spend 3-4 years of study, with a minimum of two years and a maximum of eight years. Integrated M.S./ Ph.D. Program (those wishing to advance to a doctoral program) generally takes five to six years, with a minimum of four years and a maximum of eight years.

## **II. Dissertation and Related Innovative Achievements**

1. The dissertation is the primary source material for degree application and for USTC to evaluate the application. The innovative achievements obtained throughout the dissertation research phase shall be completed independently by the candidate applying for the degree during his/her program, and presented in the dissertation systematically and completely.

2. The research achievements presented in an academic doctoral dissertation shall be innovative and of a high academic level in the discipline; the research achievements presented in a professional doctoral dissertation shall be innovative and of excellent practicality in the field. The research achievements presented in an academic master's dissertation shall be advanced and of good academic level in the discipline; the research achievements presented in a professional master's dissertation shall be advanced and of good practicality in the field.

3. A postgraduate may present his or her relevant innovative achievements in the form of academic journal papers, academic conference papers, academic monographs, invention patents, research achievement reports, industry standards, scientific research awards or others (hereinafter collectively referred to as "relevant academic achievements"). In principle, an applicant engaged in basic scientific research shall, as the first author, publish a peer-reviewed high-level research paper as a representative achievement, and a research paper, in principle, can only be used as a representative achievement for the application of a degree by one candidate. The relevant academic achievements can be used as an important reference for evaluating the level of the dissertation.

4. The relevant academic achievements a candidate uses to apply for the degree shall have the training institution as the first signed institution and the School of Astronomy and Space Sciences, USTC as the second signed institution.

## **III. Criteria for Award of Postgraduate Degrees in Astronomy**

1. Students awarded a doctoral degree need to meet one of the following prerequisites:

A candidate engaged in basic scientific research: as the first author or the first corresponding author, has had innovative research paper that is related to the dissertation and represents an important breakthrough or systematic progress published or accepted by a foreign or domestic mainstream academic journal (see Annex 1);

A candidate engaged in technology research: as the first author, has had a conference paper admitted by an international mainstream academic journal (see Annex 1) or an important intellectual property right such as an invention patent and a software copyright granted as first inventor, or have made a technical achievement proven by its user (enterprise or field) as

first contributor;

The candidate has participated in a major national scientific mission or project, a major national defense scientific research mission or major international scientific collaboration, made important scientific or technical contribution: as Primary Author, write the work report recognized by the relevant authority (or the chief scientist or head of the expert group);

A scientific research achievement related to the dissertation that has won a provincial or ministerial level (above) scientific research achievement award (State level: ranked among top five; provincial or ministerial-level: ranked among top three);

2.Students awarded a master's degree need to meet one of the following prerequisites:

A candidate engaged in basic scientific research: as the first author (except for the Supervisor's signature), have research paper related to the dissertation published or accepted in a foreign or domestic mainstream academic journal (see Annexes 1 and 2);

A candidate engaged in technology research: have made certain technological innovations in an important project or mission, and have published research paper in a foreign or domestic professional technical journal (see Annexes 1 and 2) as the first author (except for the Supervisor's signature), or have an intellectual property right such as invention patent or software copyright granted as first inventor (except for the Supervisor's signature);

A candidate has completed an important experiment or observation or an analysis technical report of an important experiment or observation result as first achiever (except for the Supervisor's signature) and be approved by at least three members of the degree subcommittee in a related field;

A scientific research achievement related to the dissertation that has won a provincial or ministerial level (above) scientific research achievement award (State level: ranked among top three; provincial or ministerial-level: ranked among top five).

### 3.Other Special Cases

The Supervisor shall submit a written application and present the reasons at the meeting of the degree subcommittee where a secret ballot will be conducted (a quorum of at least two-thirds of the subcommittee members). Only if at least two-thirds of the members present vote in favor can the candidate be deemed to have met the graduation requirements to apply for the degree. And then be submitted to the USTC Degree Committee for approval.

**IV.**This revision of the criteria for award of a degree represents additional requirements, and shall prevail in the event of any inconsistency with the Implementing Regulations of USTC for Award of Master's and Doctoral Degrees (Xiaoxueweizi [2009] No. 173); other provisions of the said implementing regulations shall remain valid.

**V.**This revision of the criteria for award of a degree shall take effect from January 2022 in accordance with the Notice on the 2020 Edition of Criteria for Award of Degrees issued by USTC Degree Management Office.

## Catalog of International Journals

序号	期刊名称	ISSN
1	<b>ACTA Astronomica</b>	0001-5237
2	<b>Advances in Astronomy</b>	1687-7969
3	<b>Advances in Space Research</b>	0273-1177
4	<b>Annales Geophysicae</b>	0992-7689
5	<b>Annals of Physics</b>	0003-4916
6	<b>Applied Mathematics and Mechanics</b>	0253-4827
7	<b>Applied Optics</b>	0003-6935
8	<b>Applied Physics Letters</b>	0003-6951
9	<b>Astrobiology</b>	1531-1074
10	<b>Astronomical Journal</b>	0004-6256
11	<b>Astronomische Nachrichten</b>	0004-6337
12	<b>Astronomy &amp; Astrophysics</b>	0004-6361
13	<b>Astronomy &amp; Geophysics</b>	1366-8781
14	<b>Astronomy &amp; Computing</b>	2213-1337
15	<b>Astronomy Letters-A Journal of Astronomy and Space Astrophysics</b>	1063-7737
16	<b>Astronomy Reports</b>	1063-7729
17	<b>Astroparticle Physics</b>	0927-6505
18	<b>Astrophysical Bulletin</b>	1990-3413
19	<b>Astrophysical Journal</b>	0004-637X
20	<b>Astrophysical Journal Letters</b>	2041-8205
21	<b>Astrophysical Journal Supplement Series</b>	0067-0049
22	<b>Astrophysics</b>	0571-7256
23	<b>Astrophysics and Space Science</b>	0004-640X
24	<b>Celestial Mechanics &amp; Dynamical Astronomy</b>	0923-2958
25	<b>Chinese Physics C</b>	1674-1137
26	<b>Chinese Physics Letters</b>	0256-307X
27	<b>Classical and Quantum Gravity</b>	0264-9381
28	<b>Communications in Theoretical Physics</b>	0253-6102
29	<b>Cosmic Research</b>	0010-9525
30	<b>Earth and Planetary Science Letters</b>	0012-821X
31	<b>Earth and Space Science</b>	2333-5084
32	<b>Earth Moon and Planets</b>	0167-9295

序号	期刊名称	ISSN
33	<b>Experimental Astronomy</b>	0922-6435
34	<b>Galaxy</b>	2278-9529
35	<b>General Relativity and Gravitation</b>	0001-7701
36	<b>Geochimica et Cosmochimica Acta</b>	0016-7037
37	<b>Geophysical and Astrophysical Fluid Dynamics</b>	0309-1929
38	<b>Geophysical Research Letters</b>	0094-8276
39	<b>Gravitation &amp; Cosmology</b>	0202-2893
40	<b>ICARUS</b>	0019-1035
41	<b>IEEE Microwave and Wireless Components Letters</b>	1558-1764
42	<b>IEEE Transactions on Applied Superconductivity</b>	1558-2515
43	<b>IEEE Transactions on Microwave Theory and Techniques</b>	0018-9480
44	<b>IEEE Transactions on Nuclear Science</b>	0018-9499
45	<b>IEEE Transactions on Terahertz Science &amp; Technology</b>	2156-342X
46	<b>International Journal of Astrobiology</b>	1473-5504
47	<b>International Journal of Modern Physics D</b>	0218-2718
48	<b>Journal of Applied Physics</b>	0021-8979
49	<b>Journal of Astrophysics and Astronomy</b>	0250-6335
50	<b>Journal of Cosmology and Astroparticle Physics</b>	1475-7516
51	<b>Journal of Geophysical Research</b>	8755-8556
52	<b>Journal of Geophysical Research-Planets</b>	2169-9100
53	<b>Journal of Geophysical Research-Space Physics</b>	2169-9380
54	<b>Journal of High Energy Astrophysics</b>	2214-4048
55	<b>Journal of Low Temperature Physics</b>	0022-2291
56	<b>Journal of Plasma Physics</b>	0022-3778
57	<b>Journal of Space Weather and Space Climate</b>	2115-7251
58	<b>Journal of the Korean Astronomical Society</b>	1225-4614
59	<b>Kinematics and Physics of Celestial Bodies</b>	0884-5913
60	<b>Life Sciences in Space Research</b>	2214-5524
61	<b>Light: Science and Applications</b>	2095-5545
62	<b>Meteoritics &amp; Planetary Science</b>	1086-9379
63	<b>Modern Physics Letters A</b>	0217-7323
64	<b>Monthly Notices of the Royal Astronomical Society</b>	0035-8711
65	<b>Nature</b>	1476-4687
66	<b>Nature Astronomy</b>	2397-3366
67	<b>Nature Communication</b>	2041-1723

序号	期刊名称	ISSN
68	<b>Nature Physics</b>	1745-2473
69	<b>New Astronomy</b>	1384-1076
70	<b>Nonlinear Processes in Geophysics</b>	1023-5809
71	<b>Optical Engineering</b>	0091-3286
72	<b>Optics Express</b>	1094-4087
73	<b>Optics Letters</b>	0146-9592
74	<b>Physics Letters B</b>	0370-2693
75	<b>Physics of Plasmas</b>	1070-664X
76	<b>Physical Review D</b>	1550-7998
77	<b>Physical Review E</b>	2470-0045
78	<b>Physical Review Letters</b>	0031-9007
79	<b>Physics of the Dark Universe</b>	2212-6864
80	<b>Planetary and Space Science</b>	0032-0633
81	<b>Plasma Physics and Controlled Fusion</b>	0741-3335
82	<b>Plasma Science &amp; Technology</b>	1009-0630
83	<b>Publications of the Astronomical Society of Australia</b>	1323-3580
84	<b>Publications of the Astronomical Society of Japan</b>	0004-6264
85	<b>Publication of the Astronomical Society of the Pacific</b>	0004-6280
86	<b>Radio Science</b>	0048-6604
87	<b>Research in Astronomy and Astrophysics</b>	1674-4527
88	<b>Review of Scientific Instruments</b>	0034-6748
89	<b>Science</b>	0036-8075
90	<b>Science Advances</b>	2375-2548
91	<b>Science Bulletin</b>	2095-9273
92	<b>Science China Physics, Mechanics &amp; Astronomy</b>	1869-1927
93	<b>Solar Physics</b>	0038-0938
94	<b>Solar System Research</b>	0038-0946
95	<b>Space Weather – The International Journal of Research and Applications</b>	1542-7390
96	<b>SPIE (The International Society for Optical Engineering) Proceedings</b>	1996-756X
97	<b>Superconductor Science and Technology</b>	0953-2048
98	<b>The European Physical Journal C</b>	1434-6044
99	<b>The European Physical Journal Plus</b>	2190-5444
100	<b>Universe</b>	2218-1997

## Catalog of Domestic Journals

序号	刊 名	主 办 单 位
1	《天文学报》	中国天文学会、中国科学院紫金山天文台
2	《中国科学（各辑）》	中国科学院、国家自然科学基金委员会
3	《空间科学学报》	中国科学院国家空间科学中心、中国空间科学学会
4	《核技术》	中国科学院上海应用物理研究所
5	《科学通报》	中国科学院、国家自然科学基金委员会
6	《计算机科学》	国家科技部西南信息中心
7	《计算机仿真》	中国航天科工集团公司第十七研究所
8	《沉积学报》	中国矿物岩石地球化学学会沉积学专业委员会、中国地质学会沉积地质专业委员会
9	《矿物岩石地球化学通报》	中国矿物岩石地球化学学会、中国科学院地球化学研究所
10	《光学学报》	中国科学院上海光学精密机械研究所、中国光学学会
11	《光学技术》	北京兵工学会、北京理工大学、中国北方光电工业总公司
12	《应用光学》	西安应用光学研究所
13	《量子电子学报》	中国光学学会基础光学专业委员会、中国科学院安徽光学精密机械研究所
14	《红外技术》	昆明物理研究所、中国兵工学会夜视技术专业委员会
15	《激光技术》	西南技术物理研究所
16	《光学精密工程》	中国科学院长春光学精密机械与物理研究所、中国仪器仪表学会
17	《机械研究与应用》	甘肃省机械科学研究院
18	《机械设计与制造工程》	中国生产力促进中心协会
19	《振动与冲击》	中国振动工程学会、上海交通大学、上海市振动工程学会

序号	刊 名	主 办 单 位
20	《机电工程》	浙江大学、浙江省机电集团有限公司
21	《传感器与微系统》	中国电子科技集团公司主管、中国电子科技集团公司第四十九研究所
22	《制造业自动化》	北京机械工业自动化研究所
23	《传感技术学报》	中国微米纳米技术学会、东南大学
24	《微计算机信息》	中国计算机用户协会
25	《光电工程》	中国科学院光电技术研究所、中国光学学会
26	《中国激光》	中国科学院上海光学精密机械研究所、中国光学学会
27	《红外与激光工程》	天津津航技术物理研究所
28	《中国科学技术大学学报》	中国科学技术大学

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