Record Nr. UNINA9910789917403321 Assessment of a plan for U.S. participation in Euclid [[electronic **Titolo** resource] /] / National Research Council of the National Academies Pubbl/distr/stampa Washington, D.C., : National Academies Press, 2012 **ISBN** 1-280-12352-4 9786613527387 0-309-25385-3 Descrizione fisica 1 online resource (61 p.) Disciplina 522,2919 Soggetti Dark matter (Astronomy) **Astronautics** Outer space Exploration Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali "Committee on the Assessment of a Plan for U.S. Participation in Euclid, Space Studies Board, Board on Physics and Astronomy, Division on Engineering and Physical Sciences." ""Front Matter""; ""Preface""; ""Acknowledgment of Reviewers""; Nota di contenuto ""Contents""; ""Executive Summary""; ""1 Background""; ""2 Findings""; ""3 Conclusions and Recommendations""; ""Notes""; ""Appendixes""; ""Appendix A: Statement of Task""; ""Appendix B: Meeting Agenda""; ""Appendix C: Meeting Presentations and Open Session Summaries""; ""Appendix D: Glossary""; ""Appendix E: Committee and Staff Biographical Information"" Sommario/riassunto "NASA proposed to make a hardware contribution to the European Space Agency's (ESA's) Euclid mission "in exchange for U.S. membership on the Euclid Science Team and science data access. The Euclid mission will employ a space telescope that will make potentially important contributions to probing dark energy and to the measurement of cosmological parameters. Euclid will image a large fraction of the extragalactic sky at unprecedented resolution and measure spectra for millions of galaxies. Assessment of a Plan for U.S. Participation in Euclid evaluates whether a small investment in Euclid (around 20 million dollars in hardware) is a viable part of an overall strategy to

pursue the science goals set forth in New Worlds, New Horizons in Astronomy and Astrophysics, a decadal plan for ground- and spacebased astronomy and astrophysics. The top-ranked large-scale, spacebased priority of the New Worlds, New Horizons is the Wide-Field Infrared Survey Telescope (WFIRST). WFIRST has a broad, wide-field, near-infrared capability that will serve a wide variety of science programs of U.S. astronomers, including exoplanet research, nearinfrared sky surveys, a guest observer program, and dark energy research. In carrying out this study the authoring committee's intent has been to be clear that this report does not alter New Worlds, New Horizon's plans for the implementation of the survey's priorities. Assessment of a Plan for U.S. Participation in Euclid concludes that the NASA proposal would represent a valuable first step toward meeting one of the science goals (furthering dark energy research) of WFIRST. While WFIRST dark energy measurements are expected to be superior to Euclid's, U.S. participation in Euclid will have clear scientific, technical, and programmatic benefits to the U.S. community as WFIRST and Euclid go forward. According to this report, the current NASA proposal, to invest modestly in Euclid, is consistent with an expeditious development of WFIRST and the achievement of the broader, and more ambitious, goals outlined in New Worlds, New Horizons. Knowledge gained from the Euclid project could help optimize the science return of the WFIRST mission as well. Such an investment will further the goals of New Worlds, New Horizons, be helpful to the preparations for WFIRST, and enhance WFIRST's chances of success."--Publisher's description.